



SKOKHOLM

BIRD OBSERVATORY



Annual Report 2022

Ymddiriedolaeth Natur
De a Gorllewin Cymru
Wildlife Trust of
South & West Wales

Wardens' Report		
Introduction to the Skokholm Island Annual Report 2022		iii
The 2022 Season and Weather Summary		iv
Highly Pathogenic Avian Influenza		x
Spring Work Party		xi
Spring Long-term Volunteers		xii
Lighthouse Works and a June Work Party		xiii
Spring Migration Highlights		xiv
The Breeding Season		xvi
Autumn Migration Highlights		xviii
Autumn Long-term Volunteers		xx
Autumn Work Party		xx
The Crab Bay Puffin Hide		xxii
Skokholm Bird Observatory		xxv
Ringing Projects		xxv
Visiting Ringers		xxvi
Birds Ringed in 2022		xxvi
Catching Methods		xxviii
Arrival and Departure Dates		xxxi
2021 Rarity Decisions and DNA Results		xxxii
Research Projects		xxxiii
Bird Observatory Fundraising and Donations		xxxiii
Acknowledgments and Thanks		xxxiv
Definitions and Terminology		1
The Systematic List of Birds		
Anatidae	Geese, Whooper Swan and Ducks	1
Apodidae	Alpine Swift and Swift	7
Cuculidae	Cuckoo	8
Columbidae	Pigeons and Doves	8
Rallidae	Water Rail, Corncrake and Moorhen	10
Haematopodidae	Oystercatcher	13
Charadriidae	Plovers	16
Scolopacidae	Sandpipers and their allies	19
Laridae	Gulls and Terns	34
Stercorariidae	Great and Arctic Skua	61
Alcidae	Auks	62
Gaviidae	Red-throated and Great Northern Diver	84
Hydrobatidae	Storm Petrel	85
Procellariidae	Fulmar and Shearwaters	96
Sulidae	Gannet	113
Phalacrocoracidae	Shag and Cormorant	115
Ardeidae	Grey Heron and Little Egret	118
Accipitridae	Sparrowhawk, Harriers, Red Kite and Buzzard	119
Strigidae	Short-eared Owl	123
Upupidae	Hoopoe	124
Alcedinidae	Kingfisher	125
Picidae	Wryneck and Great Spotted Woodpecker	125
Falconidae	Kestrel, Merlin and Peregrine	126
Corvidae	Crows	129
Paridae	Great and Blue Tit	135
Alaudidae	Skylark and Shore Lark	136

Hirundinidae	Swallow and Martins	138
Phylloscopidae	<i>Phylloscopus</i> Warblers	142
Acrocephalidae	Sedge, Reed and Icterine Warbler	148
Locustellidae	Grasshopper Warbler	151
Sylviidae	<i>Sylvia</i> and <i>Curruca</i> Warblers	152
Regulidae	Firecrest and Goldcrest	158
Troglodytidae	Wren	160
Sturnidae	Starling	161
Turdidae	Thrushes	162
Muscicapidae	Chats and Flycatchers	167
Passeridae	House Sparrow	177
Prunellidae	Dunnock	178
Motacillidae	Wagtails and Pipits	179
Fringillidae	Finches	187
Parulidae	Tennessee Warbler	192
Emberizidae	Yellowhammer and Reed Bunting	193
Calcariidae	Lapland and Snow Bunting	195
The Non-avian Report		
Invertebrates		197
Dragonflies		197
Moths		199
Butterflies		240
Hippoboscidae		252
Amphibians		252
Mammals		253
Rabbit		253
Bats		255
Grey Seal		257
Cetaceans		259
Fish		262
Additional Species		262
Observers, Photographers and Literature Cited in the Text		
		263

Wardens' Report

Introduction to the Skokholm Island Annual Report 2022

Our tenth year as Wardens of this remarkable Island proved to be the first since 2019 where activities could resume without any restrictions; following two years of Covid-19 dictated disruption, years which saw the Island closed to visitors and then partially reopened, we were excited to be able to operate at full guest capacity from April to September. We should be familiar enough with Skokholm by now to know that there is no such thing as 'normal', but 2022 was by no means typical. Major renovation works at the Lighthouse saw us living in Bullhouse for the first four months of the year, whilst replacing the Crab Bay Hide with an exciting new structure was a logistical feat which saw staff, volunteers, researchers, guests and contractors rally together to complete the project. Although there was much to be celebrated, the excitement which normally dominates the seabird season was dampened by a growing worry; an outbreak of highly pathogenic avian influenza, which hit the UK at the end of 2021, was spreading through Britain's seabird colonies, leaving in its wake tens of thousands of dead birds. Whilst Skokholm's seabirds seemingly avoided the virus in 2022, it reached nearby Grassholm in late summer and caused a devastating crash in the population.

On a more positive note, another exciting birding year saw three additions to the Skokholm list, with the third Welsh record of **Pallid Harrier**, the first Welsh record of **Moltoni's Warbler** and the sixth

British record of **Tennessee Warbler** (which was also a first for Wales). An engrossing collection of other birding highlights included the second ever **Olive-backed Pipit**, the fourth Skokholm records of **Alpine Swift** (the second in as many years), **Shore Lark** and **Serin**, the seventh and eighth records of **Cory's Shearwater** and the first 21st century sighting of **Corncrake**. The non-avian taxa put on a good show, with the moths proving particularly exciting; a **Radford's Flame Shoulder** was a first for Wales, a **Vagrant China-mark** was a first for Pembrokeshire and a **Slender Burnished Brass** was the first county record since 1875. With a decade of relatively consistent recording now under our belt, it is with great pleasure that we bring to you our tenth Annual Report, detailing the highs and lows (and everything in between) of the 2022 season on Dream Island.



Whilst following the same format as used in the previous nine years, the 2022 report is a slightly scaled down version to those which have been produced since 2013, although the introduction and breeding bird accounts remain in full. The decision to begin creating lighter documents was taken to free up more time to work on the 'Birds of Skokholm' and to pursue other Island projects. Nevertheless, this report still provides a full account of the 2022 season, documenting the fortunes of Skokholm's breeding birds, along with a detailed record of migrant birds and the non-avian wildlife encountered this year. Each species logged during 2022 is addressed separately and all key information gathered during the season can be found under that species title; thus the details of first and last dates, peak numbers, breeding, ringing totals, ringing recoveries, specific projects and all other relevant information can be found in the one place. Following the success of our previous online reports, the Skokholm Island Annual Report 2022 has again been produced in a free to download, tree-saving, searchable PDF format. For any readers wishing to contribute to our work, a 'donate now' button is available on the source page.

The 2022 Season and Weather Summary

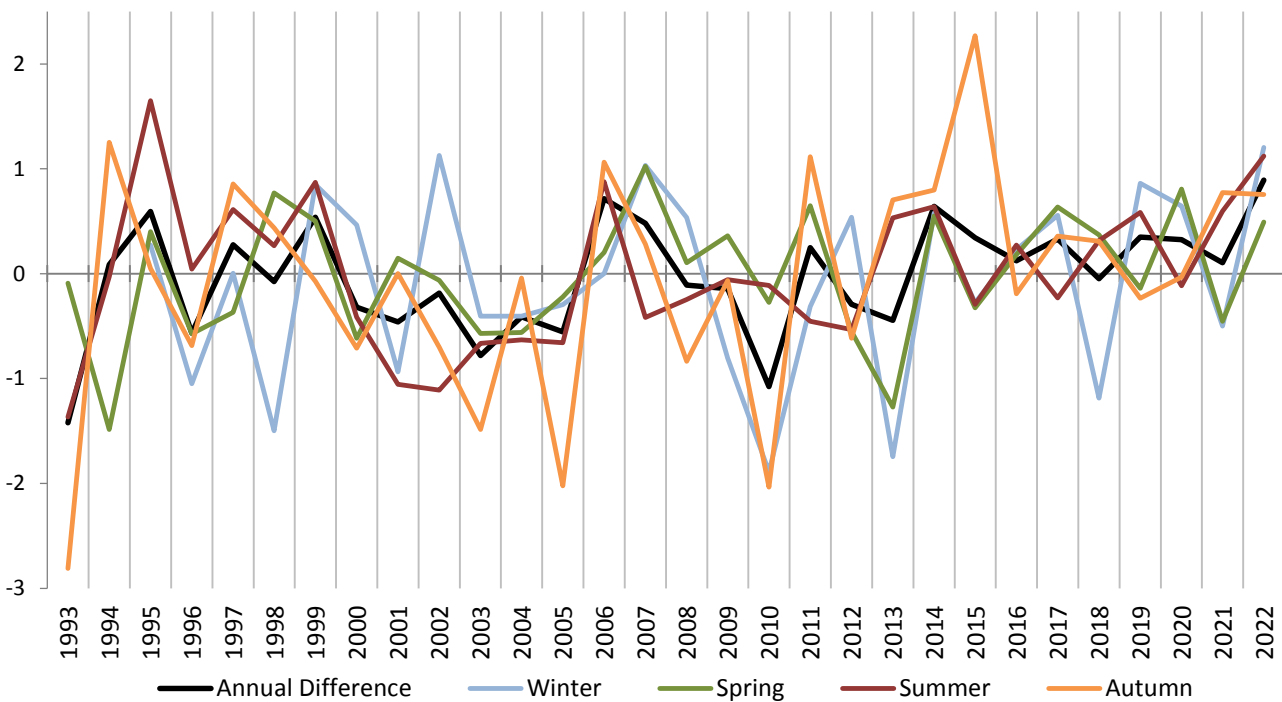
The season ran from 1st March to 10th December and we welcomed paying guests from 15th April to 29th September. The Island was thus occupied for a total of 285 days (including the arrival and departure dates), this two more than last year and the longest period of occupation in recent times.

The following weather summary is compiled using observations noted during the daily Birdlog, meteorological measurements taken by the weather station at the Coastguard Lookout on Wooltack Point (4km to our northnortheast, managed by Natural Resources Wales and referred to as 'the

weather station’ from this point onwards) and wave height and wind data retrieved from the Mid Channel Rock Lighthouse Beacon (nearly 8km to our westsouthwest, owned by Milford Haven Port Authority and referred to as ‘the beacon’ from this point onwards).

A total of six named storms hit the UK between our departure from Skokholm in December 2021 and our return in March 2022. Perhaps the most significant were the trio of Storms Dudley, Eunice and Franklin which arrived in short succession between the 16th and 20th February. Storm Eunice brought the most extreme weather and was labelled as the most severe and damaging storm to impact England and Wales since February 2014 (Met Office, 2023). Two red weather warnings were issued by the Met Office and the entire Welsh coastline was flagged as at severe risk of flooding, this due to a combination of a storm surge and high spring tides. The strongest winds hit on the 18th and the weather station registered a gust of 114mph at 1000hrs before the anemometer failed.

The extent to which the mean seasonal temperatures and the mean annual temperature differed from the long-term average during each year between 1993 and 2022.



With the swell finally abating, staff arrived to the Island on 1st March. Light northerlies dominated for the first week, the wind switching to the southeast on the 7th and increasing in strength. By the 9th winds had reached gale force and regular gusts of 51mph were registered, these accompanied by lashing showers and occasional heavier rain. A gentle southwester on the 10th brought milder conditions, although this was short-lived and by the 11th a stiffening southeaster produced mid-morning gusts of 55mph. Conditions calmed again during the day, a respite broken by the arrival of a gale force southwesterly on the 12th which produced average wind speeds of 45mph and Force 10 gusts of 63mph at 1700hrs; this resulted in rough sea conditions. The remainder of the month was largely uneventful; winds blew from the easterly quarter on all but five dates, only exceeding Force 6 on the 19th, whilst the period between the 23rd and 30th proved exceptionally calm and mild, with temperatures peaking at 16°C on the 26th. March was atypically dry, the weather station logging just 23.1mm of rainfall and precipitation on only 29% of days; a third of this fell as isolated light showers, whilst foggy conditions dominated on the 29th.



Northeasters for the first three days of April brought hail showers on the 1st and heavy rain on the 2nd, though winds were light. Backing to the northwest on the 4th and then to the west on the 6th, winds rapidly increased in strength; although only averaging 38mph at 2100hrs, savage gusts reached 72mph. The gale continued into the 7th, with peak gusts averaging 62mph until 1400hrs. The wind lost strength as it veered to the north, resulting in a flat calm morning on the 8th. Other than a strong southeasterly breeze on the 10th, which escalated to gale force the following day, the remainder of April was relatively calm, with winds primarily from the easterly quarter and rarely exceeding a gentle breeze. Precipitation was logged on only 11 April dates, all but one of which occurred in the first half of the month, with rain or heavy showers noted on the 2nd, 4th, 6th and 12th and thick mist on the afternoon of the 12th which persisted on-and-off until the 15th.

May began wet, with persistent drizzle and occasional heavy showers on the 1st. Indeed it proved a fairly unsettled month, with precipitation logged on a further 11 dates; although this was often overnight and brief, heavy rain fell during the day on the 16th and 17th. Gentle southwesterlies dominated for the first six days, resulting in calm seas, though livelier conditions followed. The wind toured the compass between the 7th and 17th, reaching at least Force 5 on all but four days and producing moderate sea conditions. Warmer than average temperatures were logged from the 13th, peaking at 18.2°C on the 15th. A rough sea developed during a strong southwesterly blow on the 17th and the beacon logged frequent eight metre waves overnight. Although the wind backed to the southeast the following day, the sea state remained rough and gusts of up to 45mph were

registered. Although the sea remained moderate, conditions were again favourable by the 19th, with a light southerly producing a warm and sunny day. The wind settled in the west for the next eight days, with average speeds ranging from 13mph on the 27th to 21mph on the 26th; the weather was changeable, with intermittent, light precipitation. The month ended with northerlies, bringing some sunny, clear days to the Island, though maximum daily temperatures averaged just 13.3°C.



June was, for the most part, a typically dry and settled month. A continuation of northerlies produced a cool, light to moderate breeze for the first five days. Winter Pond, which contained a small puddle on the 2nd, was empty by the 3rd (this the first of the larger water bodies to dry out each year). A strong southwesterly blow on the 8th produced gusts of up to 46mph, with light to moderate winds from the same direction maintaining rough sea conditions on the 10th and 11th and bringing brief but heavy showers on the 11th. The 13 days that followed were rather uneventful, a pattern interrupted by a freshening southeasterly on the 25th which veered to the southwest overnight. Gusts of up to 60mph in the early hours of the 26th brought heavy showers, occasional hail and impressive skies. A rough sea developed, although this was soon dampened by an overnight switch to calmer northwesterlies. The lull was short, with regular southerly gusts of 53mph logged on the morning of the 28th; prolonged rain, heavy at times, fell for much of the day. This too was short-lived; by the early evening winds averaged just 16mph. Temperatures were about average for the month, with a high of 18.4°C on the 23rd, whilst precipitation was logged on 11 June dates.

It was the seventh warmest July in the UK since 1884, with a record breaking temperature of 40.3°C logged in Lincolnshire on the 19th (Met Office, 2023). The temperature spike occurred during what was described by the Met Office as a ‘brief but unprecedented heatwave’ caused by the northerly movement of hot air from the near continent, this hitting the UK between the 16th and 19th July. Central and southeast England were most severely affected and a number of wildfires were ablaze, some of which set fire to properties; the London Fire Brigade reported its busiest day since World War II. A new Welsh record of 37.1°C was set in Hawarden, Flintshire on the 18th, whilst the weather station logged 29.7°C on the same day (with a minimum temperature of 18.2°C). Nevertheless the month began cool, with moderate westerly winds easing and shifting to the north on the 6th where, barring a brief southeaster on the 12th, they remained until the 17th. Hot southerlies dominated for the next three days, with calm and humid conditions on the 19th proving stifling at times. A return to

moderate northerlies on the 20th provided a slightly cooler breeze, though it remained humid. Northerlies dominated for more than half of the remaining days of July and flat calm conditions were logged between the 25th and 29th. Precipitation, which was mostly very light, occurred on 26% of days, with rain noted on the 24th and 31st; a July rainfall total of 13.1mm was registered at the weather station. North Pond rapidly receded during the first two weeks of the month; by the 16th damp mud had replaced the last standing water and by the 21st it was entirely dry. It did not hold water again until 27th October.



High pressure dominated during the first half of August, resulting in settled conditions, indeed the period between the 6th and 15th proved exceptionally calm and hot; winds averaged just 9mph over these ten days, whilst a peak in temperatures over a six day period from the 10th reached 27.4°C on the 13th and averaged 25.1°C. A strengthening northerly on the 16th brought cooler temperatures and a Force 5 southwester on the 18th produced a day of drizzle. A return to gentle, albeit somewhat less settled, conditions from the 24th resulted in a warm and calm end to the month. It was the eighth driest August in Wales since 1836 and just 9.0mm of rain was collected at the weather station during the month. Whilst precipitation was logged on ten dates, it often fell as brief, light spots, with heavier showers or drizzle noted on the 2nd, 18th, 22nd, 24th and 26th. The rainwater-fed toilet tank at the Lighthouse ran dry on the 21st for the first time in at least a decade.



September was typically unsettled and oftentimes overcast, with winds blowing from the northerly quarter for two-thirds of the month. A six day period of moderate to stiff southeasters from the 3rd produced gusts of up to 69mph in the early hours of the 4th, whilst gusts on the 5th and 6th peaked at 49mph and 46mph respectively. Rain fell throughout this period, with heavier showers noted on the evenings of the 5th and 6th and on the morning of the 8th, indeed precipitation was logged on 50% of September days. Whilst calm days were enjoyed between the 1st and 2nd, on the 10th and 12th and between the 17th and 20th, winds yo-yoed between light and moderate throughout the rest of the month. Temperatures were above average, especially so in the first half of the month; maximum air temperatures averaged 18.0°C between the 1st and 15th, peaking at 22.3°C on the 12th, whilst a mean of 15.4°C was logged between the 16th and 30th. September was thus hotter than June and the third warmest month of the season.

Mild conditions continued; without exception, the first 24 days of October felt unusually warm. The spring fed Well (which provides the Island's drinking water), had all but stopped running by the 3rd, whilst the weather station logged a high of 18.0°C on the 19th. The mean temperature was 14.2°C and in Wales it was, on average, 1.9°C hotter than the June mean. However it did become wetter, with precipitation logged on 23 days, this falling as heavy showers on 48% of dates, whilst spectacular lightning storms occurred on the evenings of the 18th and 19th. A strengthening southeaster on the 4th produced gusts of up to 49mph and of 60mph the following day, this leaving behind a rough sea. Heavy rain fell for most of the morning of the 5th, however all three ponds remained dry. The next notable blow was not until the 19th, when a stiff easterly produced average winds of 33mph and storm force gusts of up to 63mph. The last week of the month was a rough and largely wet one, with winds predominantly from the south and average maximum gusts of 53mph. A small puddle at North Pond on the 27th was the first standing water at this site since July. Although North Pond dries out most summers, the return of standing water this year was exceptionally late; this site held water again from 5th October in 2021 and from 27th August in 2020.



Rough weather continued for much of November, the winds hitting near gale force or above on 17 dates; there were gusts, all from the southerly quarter, of up to 79mph on the 2nd, 60mph on the 6th, 76mph on the 7th, 71mph on the 8th, 63mph on both the 20th and 21st, 68mph on the 23rd and 74mph on the 24th. Winds were from the south for 77% of the month, with the sea state on these dates consistently moderate to rough and at times very rough. A changeable but comparatively calm period between the 15th and 19th saw northwesterly winds which flattened the sea and brought cooler temperatures (however the mean November temperature in Wales remained 1.5°C above average).

Precipitation was logged on all but nine days, with heavy to very heavy showers or heavy rain noted between the 1st and 3rd, on the 7th and 8th (torrential), from the 14th to the 16th, from the 20th to the 24th (with hail showers and lightning storms on the 23rd and 24th) and on the 26th. The water level at North Pond began to rise from the 6th and had reached capacity by the 27th. A total of 73mm of rainfall was collected at the weather station, making November the joint wettest month of the year (along with February). Despite this, the European Black Slug *Arion ater*, which oftentimes carpet the short grassy areas around the Farm (especially so in wet autumn weather), were conspicuous by their absence, this perhaps testament to the dry earlier months. By stark contrast, the first ten days of December were tranquil, with gentle southeasters on the 1st backing to the northeast on the 2nd, this where a light wind remained until the evening of the 9th; the sea was almost flat throughout this period. A stunning cloudless day on the 6th gave way to light showers on the 8th, whilst the 9th saw a hard ground frost and an average temperature of just 3.8°C. Light northwesterlies on the 10th carried icy showers, though the sea remained flat; staff had departed the Island by late morning.



Highly Pathogenic Avian Influenza

An unprecedented outbreak of the H5N1 subtype of highly pathogenic avian influenza (HPAI) has caused devastating population changes in wild birds since it was first detected in UK breeding colonies in the summer of 2021. Persisting through the winter of that year, it resulted in the deaths of a minimum of 13,200 Barnacle Geese overwintering in the Solway Firth, this a third of the Svalbard breeding population. Continuing to spread throughout the 2022 breeding season, the virus killed tens of thousands of breeding seabirds. Over 1500 adult Great Skua died between May and August at their largest breeding colony on Foula, Shetland, whilst it was estimated that 8% of the world population succumbed. By the end of September 2022, the virus had been detected in more than 60 UK wild bird species and large numbers of mortalities had been recorded in Gannet, Sandwich Tern, Roseate Tern, Kittiwake and Guillemot. HPAI wiped out more than 30% of breeding Roseate Terns on Coquet Island, Northumberland and in July the virus was detected in Gannets at the Bass Rock colony, the largest gannetry in the world, where more than 11,000 were found dead.

Atypically high numbers of dead Gannets were off Skokholm in August, this coinciding with the devastating, but perhaps inevitable, news on 2nd August that dead Grassholm Gannets had tested

positive for the virus. It has been crudely estimated that in excess of 5000 birds were either lost or abandoned the site during 2022, however the impact this has had on the third largest east Atlantic gannetry will not be known until a drone survey is undertaken in June 2023 (Morgan, *pers. comm.*).

Originally detected in Asia and then Europe, the virus spread to North America and many countries in Africa during the three years between 2020 and 2022. In wild bird populations, HPAI is spread through saliva and nasal secretions, through the predation of infected birds and through faeces (Pearce-Higgins *et al.*, 2023). Given the presence on Skokholm of both gregarious species such as Puffin and Guillemot, along with scavenging species such as Great Black-backed Gull and Raven, staff were on the lookout for any unusual behaviour throughout the season. Storm Petrel ringing sessions in South Haven on the 17th, 20th and 23rd July saw atypically low catches; whilst there were several explanations for this, there was a risk that it was due to the presence of HPAI. It was thus decided to suspend this activity for the remainder of the season. Nevertheless a Storm Petrel found dead and sent for HPAI testing came back negative on 22nd July. Natural Resources Wales (NRW) suspended all ringing and nest recording of seabirds at any location in the country, as well as any non-seabird ringing or nest recording that would take place within seabird colonies, on 5th August. On 6th August applications were submitted to NRW for exemptions, these to allow the remaining seabird productivity monitoring to be completed and ringing activities along the Skokholm Bird Observatory trapping route to recommence. Exemptions were granted by NRW on 12th August; we were able to continue the Fulmar productivity monitoring, the core ringing work of the Bird Observatory, to undertake a maximum of two further Storm Petrel nest checks by 31st August (to allow for weighing, measuring and ringing at 24 nest chambers) and to undertake a maximum of two further Manx Shearwater checks by 31st August (to allow for weighing, measuring and ringing of the five remaining chicks). Strict hygiene practices were put in place to ensure no cross-contamination between different nest sites, whilst at the Bird Observatory bird bags and equipment were disinfected after each use. On 25th August, one adult Lesser Black-backed Gull and one adult Herring Gull were found dead and sent for testing; both came back negative. A juvenile Great Black-backed Gull watched dying on 9th September could not be accessed for testing (see the systematic list below). Although dead Gannets were seen offshore during late summer and autumn, it was not until 5th December that the only dead bird to be found ashore was encountered (this probably that seen low over the Island on 6th October); the remains were not sent for testing.

Although HPAI almost certainly arrived onto Skokholm in 2022, there was no indication by the end of the season that it was present in the Island's breeding species.

Spring Work Party

We welcomed the 2022 spring Work Party team of John Hayes, Howard Driver, Phil and Dorothy Blatcher, Ian Sutcliffe, Rob Smith, Chris Thomas and Lucy Griffiths on 28th March and we were joined on 3rd April by Pete Thomas, Alun Lewis, Mike Penny and Sam O'Shea. The COVID-19 dictated lockdown and subsequent restrictions meant that we had been unable to get a volunteer lime-washing team onto the Island since 2019; in the three years since the Farm buildings were last coated, the exteriors had unsurprisingly started to deteriorate. The first job this spring was thus to scrape and brush down all of the walls, removing the loose, cracked and flaking lime, a task which took four days. With the surfaces prepared, the next eight days were spent recoating the walls with fresh lime; every wall and roof received four coats, with a drying period left between applications.

A myriad of other jobs were also completed; a hole which had appeared during the winter was patched up in the Wheelhouse roof, the Wheelhouse block solar panel stand was rebuilt following winter damage, the mouse-proof Pantry door (oftentimes left ajar) was replaced with a self-closing one, rotting vegetation quadrat markers were replaced with recycled plastic posts, the leaking Wheelhouse water tank was repaired, the Lighthouse generator was serviced and delaminating

plywood Petrel Station access hatches and Heligoland catch boxes were replaced with recycled plastic ones. The electric systems at the Farm and Lighthouse were tested, electrical equipment was PAT tested and a new inverter was fitted at the Lighthouse. The weather had been, in the most part, glorious, but a suboptimal forecast for the second week of April led to the early departure of Work Party volunteers on the 9th, thus two weeks of planned work were cut short to 12 days.



Spring Long-term Volunteers

Following the lifting of COVID-19 restrictions, it was fantastic to be able to fully re-open the Island and once again accommodate Long-term Volunteers. On 28th March we were joined by Lucy Williamson and Megan Gee, these our first spring Long-term Volunteers since 2019.



Megan was able to join us from her role as an ecological consultant thanks to a paid sabbatical; she had previously been accepted as a Long-term Volunteer for the 2020 season, though this fell through due to restrictions imposed during the pandemic. Lucy was a recent biology graduate with some

limited field assistant experience; she joined us to develop her ornithological skills and to broaden her conservation knowledge. Meg and Lucy made an excellent team and worked incredibly hard from the moment they arrived; they helped with building maintenance during the Work Party, assisted with the annual seabird monitoring with a particular emphasis on the Puffin, Fulmar and Manx Shearwater productivity plots, made sure the Wheelhouse and Kitchen were spotless on changeover days, assisted with the daily census, ran the moth trap and shared their experiences and knowledge with the guests. Their presence greatly enriched a spring visit to Skokholm.

Lighthouse Works and a June Work Party

It was decided in 2021 that we needed to bring in professional contractors to perform immediate and major works at the Lighthouse, this to stop the ingress of water and to preserve the stability of the building following a decade of thwarted attempts to resolve these issues (see the Introduction of the Annual Report 2021). For extended periods between 3rd April and 21st June, local builder Chris Ward and his team occupied the Lighthouse in order to carry out the works. The south elevation scrim was entirely removed and the remaining elevations were pressure washed to remove loose debris and paint. A large horizontal crack on the south elevation was cut back to stone, tied and filled. Vertical cracks were also cut out and repaired and all elevations were re-rendered where necessary, before the walls received a primer and two top coats of paint.



All 18 wooden windows (from the first two floors) were removed and replaced with new Accoya windows which were constructed and painted off-Island. Accoya is arguably the world's most stable wood; via a process known as acetylation, the soft wood of Monterey Pine is transformed to provide

the qualities of a hardwood (it does not absorb water and so does not warp, swell, shrink or rot). Accoya is thus a sustainable and extremely hardwearing choice, perfect for the extremes of weather experienced at the Lighthouse. A lead tray was fitted over the concrete sill below each window to redirect rain driven in during inclement weather. The flat roof and parapet were pressure washed to remove all loose debris and paint, cracks and voids were filled with an epoxy-based system, surfaces were chemically cleaned, chemically etched and then two coats of a new waterproof roofing system were applied. All waste was removed from the Island and disposed of at a licensed recycling facility, this concluding the works which cost a total of £74,213.52.

With all Lighthouse bedrooms occupied by the contractors during this period, the Wardens temporarily relocated to the Bullhouse bedroom at the Farm, thus taking it out of guest circulation until 27th June. After the works, an unseasonal June Work Party was called upon to assist with the clean-up. Teresa Donohue, Renate Thome, Steve Sutcliffe and Rob and Gail Smith came to the rescue, residing at the Lighthouse from 27th June to 1st July where they scrubbed, cleaned and painted, transforming the building into a habitable space once more.

Spring Migration Highlights

A second-winter **Glaucous Gull** on 20th March was just the eighth Skokholm record, whilst a **Hooded Crow** on the same date made this the 16th year with a sighting. A **Stock Dove** on the 21st was the only record this year and a female **Brambling** on the same date was the first in this month since 1995. What was perhaps the same **Hooded Crow** returned on the 24th and a **Hoopoe** was the first since 2017 (but approximately the 44th to be seen on Skokholm). A **Little Ringed Plover** on the 27th was the 15th spring individual to date and a male **Brambling** took the all-time spring bird-days total to 35. A male **House Sparrow** on the 28th was just the tenth to be seen in March. A **Blue Tit** present on 31st March and 1st April was the second spring bird in 11 years. A minimum of 62 **Willow Warbler** on 3rd April was the highest daycount of the spring. A **Mistle Thrush** present on the 4th and 5th became just the fourth to be ringed and was the first spring sighting in a decade. The first of three **Siberian Chiffchaff** to be ringed this April arrived on the 13th, as did 40 **Blackcap**, the latter the highest daycount of the spring. Another **Blue Tit** on 16th April became the latest spring sighting to date, whilst a male **Great Tit** on the 16th and 17th was the second spring bird in 11 years.



A male **House Sparrow** on the 18th made this the 22nd April with a sighting and a female **Lapland Bunting** present between the 20th and 26th was a seventh spring record. Two **Red Kite** on the 21st were the first of a record seven April bird-days. An **Alpine Swift** the following day was the fourth for Skokholm but the second in two years. A **Shore Lark** present on the 23rd and 24th was also a fourth

Island record. The 23rd also saw a minimum of 156 **Wheatear** and three **Ring Ouzel** (both 2022 daycount highs), along with the only **Cuckoo** of the year. A **Grey Plover** on the 24th was one of only three seen this year and took the all-time April bird-days total to 27, whilst a **Knot** on the 24th and 25th was one of only two this year and just the fifth to be seen in April. A **Red-throated Diver** heading north over the middle of the Island on the 28th was unusual and one of only seven logged this year. A **Little Ringed Plover** present between the 2nd and 4th May was the 16th to be seen in spring, whilst a **Sanderling** on the latter date made this the fourth of the last five springs with a sighting. A male **Eider** on the 7th was the 26th individual to be seen from the Island.



Two **Barnacle Goose** were mating at North Pond on the 8th, this the only sighting this year and the first such observation. A male **Black Redstart** on the 10th took the all-time May bird-days total to 72. A daycount of 33 **Whimbrel** the following day matched the fifth highest to be logged in May and a minimum of 15 **Spotted Flycatcher** on the 16th was the highest spring daycount since 1997. A **Hen Harrier** on the 17th was the first to be seen in this month. A male **Moltoni's Warbler** present between the 17th and 29th May was the first for Wales and 13th for Britain. A female **Serin** on the 20th was another fourth for Skokholm, whilst a female **Brambling** present between the 21st and 23rd was the first to be recorded in May. A **Yellowhammer** trapped on the 27th was the first Island record since October 2014 and took the 21st century bird-days total to just nine. An **Icterine Warbler** at North Pond on the 29th was the 28th to be found on Skokholm but just the fifth in spring.



A **Sanderling** present on the 29th and 30th May was the second of the year, with a third on 2nd June still only the 24th spring record for Skokholm, these totalling 36 bird-days. A **Pectoral Sandpiper** at

North Pond on the afternoon of 2nd June was the 25th individual to date and the tenth bird in 12 years. A stunning **Snow Bunting** on the 9th was the seventh spring bird for Skokholm and the first to be seen in this month.



The Breeding Season

Six pairs of **Moorhen** made this the second year running with a new high. There were record **Guillemot** and **Razorbill** counts and exceptional **Storm Petrel** productivity for a second straight year. The Wreck Cove **Buzzard** pair continue to do well since a change in nest site, however a single pair of **Peregrine** failed for a fifth consecutive year and a single **Raven** pair was the lowest total since 2006. Four **Chough** pairs matched the record set last year. A total of 13 **Skylark** territories was the lowest since 2015. **Stonechat** bred for just a fourth time following pairs in 1928, 1932 and 2021. **Water Rail**, **Shag**, **Short-eared Owl**, **Chiffchaff**, **Reed Warbler**, **Whitethroat** and **Dunnock** did not breed.

A summary of the status of seabirds breeding on Skokholm in 2022.

The lower limits given here, taken from the Skokholm Island Management Plan, have been established by the Wildlife Trust of South and West Wales and endorsed by the Seabird Subgroup of the Islands Conservation Advisory Committee. A green box is an attribute above its lower limit, a red box an attribute below the lower limit stipulated in the plan.

		Whole Island or Annual Plot Total (2021-2017 in parenthesis)	Productivity (2021-2017 in parenthesis)
Great Black-backed Gull		Whole Island population: not to drop below the 2017-2021 mean of 87	
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 1.10 chicks per breeding pair 78 nests (80, 83, 86, 93, 93)	1.30 (1.51, 1.40, 1.43, 1.40, 1.54)
Herring Gull		Whole Island population: not to drop below the 2017-2021 mean of 306	
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.70 chicks per breeding pair 309 nests (305, 301, 301, 320, 302)	0.69 (0.84, 0.33, 0.69, 0.73, 0.70)
Lesser Black-backed Gull		Whole Island population: 3 in any 5 consecutive years with less than 4600 pairs	
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.60 chicks per breeding pair 833 aia (935, 880, 1028, 1069, 1123)	0.53 (0.89, 0.12, 0.27, 0.63, 0.38)

Guillemot		Whole Island population: not to drop below the 2017-2021 mean of 4635
Population	Not set	Productivity: not monitored on Skokholm 5515 aol (5065, 5101, 4654, 4316, 4038) - (0.55-0.61 in 2013)
Razorbill		Whole Island population: not to drop below the 2017-2021 mean of 2941
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.80 chicks per breeding pair 3965 aol (3356, 3517, 2755, 2585, 2491) 0.64 (0.47, 0.56, 0.63, 0.69, 0.40)
Puffin		Whole Island population: not to drop below the 2017-2021 mean of 8758
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.74 chicks per breeding pair 10,611 adults (11245, 8534, 7447, 8762, 7800) 0.72 (0.80, 0.78, 0.76, 0.75, 0.80)
Storm Petrel		Study plot population: any measurable decrease in the population
Population	Not set	Productivity: limit not yet set due to a lack of data 102 transect responses (86, No census, 89, 83, 89) 0.85 (0.80, 0.45, 0.74, 0.55, 0.50)
Fulmar		Whole Island population: not to drop below the 2017-2021 mean of 212
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.50 chicks per breeding pair 224 aos (225, 207, 198, 217, 213) 0.52 (0.51, 0.51, 0.62, 0.49, 0.45)
Manx Shearwater		Study plot population: any measurable decrease in the population
Population	Productivity	Productivity: 3 in any 5 consecutive years with less than 0.69 chicks per breeding pair 710 sites in 8000m ² (670, 730, 655, 739, 584) 0.69 (0.79, 0.68, 0.72, 0.70, 0.80)

A summary of breeding birds on Skokholm in 2022. Productivity is the average number of fledglings produced by each breeding pair ('-' indicates insufficient data).

	Total (2021-2017 in parenthesis)	Productivity (2021-2017 in parenthesis)
Canada Goose	2 pairs (3, 3, 2, 4, 7)	0 (0, 0, 0, 0, 0)
Shelduck	0 pairs produced ducklings (0, 0, 3, 1, 2)	0 (0, 0, 0, 0, 0)
Shoveler	0 pairs produced ducklings (0, 0, 0, 1, 1)	0 (0, 0, 0, 0, 0)
Mallard	3 pairs produced ducklings (5, 1, 5, 6, 4)	0 (0, 0, 0, 0, 0)
Water Rail	0 territories (1, 0, 0, 1, 0)	0 (4, 0, 0, 0, 0)
Moorhen	6 pairs (5, 3, 3, 2, 3)	0.67 (2.80, 3.33, 2.00, 3.50, 2.67)
Oystercatcher	61 pairs (76, 54, 53, 52, 61)	1.00 (1.24, 0.70, 0.47, 1.62, 0.57)
Buzzard	1 pair (1, 1, 1, 1, 1)	3 (2, 2, 3, 1, 1)
Short-eared Owl	0 pairs (0, 0, 0, 0, 1)	0 (0, 0, 0, 0, 2+)
Peregrine	1 pair (1, 1, 1, 1, 2)	0 (0, 0, 0, 0, 0.5)
Chough	4 pairs (4, 3, 2, 2, 2)	2.25 (1.75, 2.00, 2.50, 1.00, 4.00)
Jackdaw	27 pairs (26, 25, 22, 22, 20)	- (-, -, -, -, -)
Crow	11 pairs (11, 9, 10, 10, 9)	1.73 (2.27, 1.33, 0.70, 0.60, 1.11)
Raven	1 pair (2, 2, 2, 2, 2)	3.00 (4.00, 2.50, 2.50, 4.00, 4.00)
Skylark	13 territorial males (16, 14, 14, 19, 21)	- (-, -, -, -, -)
Swallow	6 pairs (5, 5, 5, 4, 4)	4.50 (4.00, 2.40, 3.20, 4.00, 3.25)
Chiffchaff	0 territorial males (1, 1, 0, 2, 1)	0 (0, 0, 0, 0, 0)
Sedge Warbler	15 territorial males (14, 15, 15, 15, 13)	- (-, -, -, -, -)
Reed Warbler	0 territorial males (0, 0, 0, 0, 1)	0 (0, 0, 0, 0, 0)
Whitethroat	0 pairs (0, 0, 1, 0, 0)	0 (0, 0, 2, 0, 0)
Wren	68 territorial males (71, 72, 69, 63, 58)	- (-, -, -, -, -)
Blackbird	9 pairs (9, 7, 6, 6, 6)	2.44 (2.44, 3.57, 3.67, 3.33, 2.83)
Stonechat	1 pair (1, 0, 0, 0, 0)	5 (9, 0, 0, 0, 0)
Wheatear	30 pairs (29, 23, 23, 18, 25)	3.10 (2.90, 1.96, 3.70, 3.89, 2.12)
Dunnock	0 breeding females (2, 1, 0, 0, 0)	0 (2, 3, 0, 0, 0)
Pied Wagtail	6 pairs (7, 7, 5, 5, 5)	3.50 (2.29, 1.71, 5.20, 3.60, 3.60)
Meadow Pipit	42 territorial males (43, 38, 33, 40, 40)	- (-, -, -, -, -)
Rock Pipit	51 territorial males (45, 49, 49, 41, 61)	- (-, -, -, -, -)
Reed Bunting	2 pairs (4, 5, 3, 4, 7)	1.50 (0.00, 0.60, 0.67, 2.50, 1.86)

Autumn Migration Highlights

A **Great Skua** on 10th July was the first of 14 autumn bird-days, avian influenza no doubt responsible for this being less than half the 2013-2021 mean. Two **Balearic Shearwater** on the 24th were the first of nine autumn bird-days and a **Cory's Shearwater** the following day was just the second to be seen in July. A **Little Egret** on the 27th was still only the 36th Skokholm record and a juvenile **Marsh Harrier** the following day was the first of an unprecedented 34 autumn bird-days. A **Hen Harrier** on the 5th was the first to be seen in August and seven **House Martin** on the 7th were the first of a record 104 August bird-days. A **Little Ringed Plover** on the 10th made this just the second year with an autumn record and the first of 15 August **Tree Pipit** bird-days was logged on the 12th. The only **Sooty Shearwater** of the year was off the Lighthouse on the 18th and a **Cory's Shearwater** two days later was just the eighth to be seen from the Island. A **Red Kite** on the 27th and 28th was the first to be seen in August and a **Kingfisher** on the former date was only a 15th Skokholm record. A **Wryneck** on the 30th was likely the juvenile which lingered until 9th September, this taking the all-time bird-days total to 272, 113 of which have been this decade. A minimum of 11 **Spotted Flycatcher** on the last day of the month was the highest daycount this autumn and 227 **Willow Warbler** the following day was the highest autumn daycount this century. A juvenile **Icterine Warbler** also arrived on 1st September, this the second of the year but just the 23rd autumn record. It became the third straight year with a **Dotterel**, with one present between the 1st and 10th (this the third longest stay to date).



There were 78 **Arctic Tern** on 5th September, this the second highest daycount on record, whilst the following day saw the first **Little Gull** of the autumn, the first **Little Tern** since 1996 and a minimum of 376 **Sterna terns**, this the peak daycount in an autumn which saw the fifth highest total to date. Ten **Grey Wagtail** on the 10th matched the highest daycount since 2014 and a **Turtle Dove** on the 11th was the first of two September birds, these the first in this month since 2013. A juvenile **Pallid Harrier** on the 12th was an addition to the Skokholm list and just the third to be seen in Wales, with four **Pied Flycatcher** on the same date matching the highest September daycount since 1988. Two **Firecrest** on the 13th were the first of six autumn individuals, with three **Whinchat** two days later the highest daycount this autumn. A **Corncrake** on the 19th was the first 21st century sighting and a **Grey Plover** the same day took the all-time September bird-days total to 64. The 19th also saw counts of 144 **Sand Martin** and 4752 **Swallow**, these both the highest of the last four years. A juvenile **Kingfisher** present on the 19th and 20th made this the first year with two sightings (following the August bird). A group of 23 **Chough** together over Home Meadow on the 23rd matched the fifth highest September daycount. Counts of 14 **Chiffchaff** and 17 **Blackcap** on the 29th were the peaks during what was a poor autumn for some common migrants. An interesting **Yellow Wagtail** which lingered between the 30th and 10th October was not assigned to a subspecies (see the Systematic List below). A first-winter **Common Rosefinch** was present between the 1st and 3rd October; there have now been at least 30 individuals on Skokholm. There were 86 **Robin** on the 3rd, this the highest daycount since 2019, and the first of two autumn **Siberian Chiffchaff** arrived the following day.



There were 222 **Skylark** on 8th October, this the highest daycount since October 2018, and 220 **Meadow Pipit** on the 11th, this the highest daycount of the last two years. A first-winter **Tennessee Warbler** present on the 12th was a first for Wales and sixth for Britain. A count of 20 **Snipe** on the 13th matched the seventh highest to be logged in October and a **Yellow-browed Warbler** on the same date was approximately the 45th individual to be seen. A **Great Spotted Woodpecker** on the 18th was the ninth Skokholm record. An arrival of thrushes from the 19th saw counts peak at 289 **Fieldfare** and 134 **Redwing** on the 20th; the former was the second highest daycount on record and took the October bird-days total to an all-time high of 815, whilst there have been higher **Redwing** daycounts in nine Octobers. A **Siberian Lesser Whitethroat** present between the 23rd and 25th was confirmed as such via the DNA analysis of a dropped feather. A count of 138 **Mediterranean Gull** on 4th November was the peak during what was a poor year by recent standards. The second **Olive-**

backed Pipit for Skokholm was logged on the 13th, as were 900 **Starling**, the latter the highest daycount of the year. A **Richard's Pipit** on the 15th was perhaps that seen on the 29th, this becoming the 20th autumn with a record. A **Little Egret** on the 29th was just the third to be seen in November. A **Yellow-browed Warbler** on the 3rd was the first to be seen in December, as was a first-winter **Little Gull** the following day. Two **Whooper Swan** on the 5th was the 12th Island record and a daycount of 80 **Common Gull** on 8th December was the highest since 1968.

Autumn Long-term Volunteers

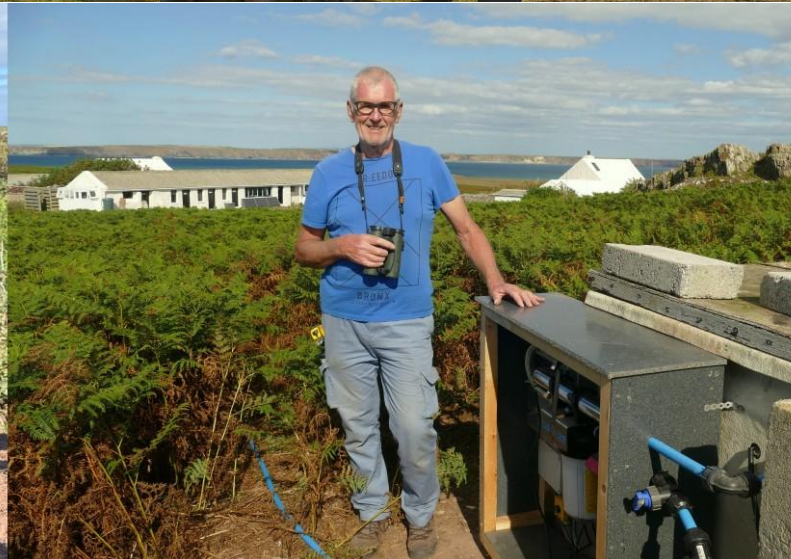
We welcomed Luke Marriner on 1st July; a birder and C permit ringer, Luke had previously found a Western Subalpine Warbler whilst he was a guest doing the dishes in the Wheelhouse Kitchen in 2021. Due to unforeseen circumstances, our second Autumn Long-term Volunteer had to cancel at short notice; thankfully Teresa Donohue, who assisted with the Lighthouse clean-up in June (and who volunteered on Skokholm in 2012), was able to stay on until 8th July, helping with the Storm Petrel playback survey and boat-day cleaning. Alys Perry, a previous Ramsey volunteer who assisted with the Skokholm whole Island Manx Shearwater survey in 2018, joined us between 26th July and 19th September, whilst Luke remained until 14th October to assist with late autumn migration monitoring and winter packing at the Farm. Luke and Alys became a tight and reliable team, assisting with the remaining seabird monitoring work, the daily census and the ringing of migrants, as well as providing some much needed enthusiastic muscle for transporting several tonnes of Crab Bay Hide materials. When not monitoring seabirds or pushing wheelbarrows full of sand, they trudged the Island for migrant birds, this culminating in the discovery of the first Pallid Harrier for Skokholm.



Autumn Work Party

We were joined by volunteers Rob Smith, Andrew Hughes, Richard Dobbins, Colin Baker, Brennig Hughes, Nick Ainger, John Walmsley and Mike Davies for an Autumn Work Party which ran from the 12th to 19th September. Volunteers Sam O'Shea and Shirley Matthews provided an extraordinary amount of amazing food throughout the week. It was a particularly exciting autumn Work Party as one of the primary jobs was to build a fourth Heligoland near the Garage (this made possible thanks to monies from the Bird Observatory account and a donation from Chris Payne). The new structure, named the Garage Heligoland Trap, filled a vacant area in the trapping loop between the Wheelhouse Mist Net and the Library Mist Net. As a change from the other three traps, which contain shrubs and small trees, it was decided to keep the majority of the Garage Heligoland interior

as short, grazed sward, this to attract species which prefer to forage on a more open plain. With such a big team, we were also able to paint the exterior metalwork at the Lighthouse, paint the Red Hut, install a grease trap on the waste pipe from the Wheelhouse Kitchen and move unused building materials from Crab Bay and East Bog to storage at the Farm.



Howard Driver once again volunteered two months of his time, skills and knowledge, spending four weeks in spring and four weeks in autumn on the Island. Along with an impressive number of smaller behind-the-scenes maintenance jobs, this year he also donated and installed bespoke bedroom door signs, replaced the Wheelhouse Pantry door with one which now self-closes, built and replaced 119 access hatches at the Petrel Station, built and installed four new Heligoland catch boxes, fixed the drying room, helped rebuild the housing for the Wheelhouse solar system, repaired the Common Room window, boxed in metal work and built a new window surround for the east facing stairwell window at the Lighthouse, crafted bespoke trap accessories and constructed new artificial nest boxes for the Wheatear project, stained the Ringing Hut four times, replaced the rotten bench at the top of Home Meadow, built new protective housing for the Top Tank water purification system and created innovative window latches for the new Crab Bay Hide where he also made rooftop nest boxes and frames for the Puffin portholes.

The Crab Bay Puffin Hide

In the September of 1989 an RAF Sea King helicopter flew a new hide into Crab Bay, this replacing a small wooden shelter which was relocated to Orchid Bog. The new hide, donated by Morgan Marine of Ammanford and made of glass reinforced plastic over a timber and metal frame, was of similar proportions to its predecessor and sat at the base of the slope which runs down Crab Bay's central arm. This small hide lasted well over 30 years, providing a shelter for guests and researchers alike. However the internal metal rusted and the plywood expanded over time, both splintering sections of the plastic frame. Unsurprisingly we had dreams of a new structure for Crab Bay.



Although the close proximity of both Puffin and Manx Shearwater burrows meant that there could be almost no expansion to the south and west, the access to the old hide was via some breeze block

steps to the north, this area and the easterly access path being unburrowed. Our design for a new hide switched the door to the easterly face, the northern hollow thus available to be incorporated into a larger structure (the last hide left much to be desired in terms of being able to move or sit comfortably). Nevertheless we wanted to see more burrows in this area too, so a plan was developed to incorporate nest boxes into an earthen roof and into the rear wall of the hide. The slope down into Crab Bay meant that nest boxes could form much of the northern wall, the roof reaching across to meet the bank down. These nest boxes were to be faced internally with one-way glass, whilst a dark room and light tubes would allow any occupants to be seen in the nest chambers without the birds seeing into the hide. Plans were made by the Wardens and turned into working drawings by Mike Penny, these used when seeking SSSI consent from Natural Resources Wales and planning permission from the Pembrokeshire Coast National Park Authority (which required a site visit by the planning team on 5th August).



Funding for the hide came from the Nature Networks Programme, delivered by the Heritage Fund on behalf of the Welsh Government and from ShareGift. With this and permissions in place, it was time to dismantle the old hide and chop it into pieces suitable for removal from the Island, this achieved with the invaluable assistance of Jeff Thomas and John Hayes on 22nd July. A Dale Sailing barge on 17th August delivered over ten tonnes of building materials and allowed for the removal of the old hide. It was a huge team effort getting all of the materials off the barge and up to a designated holding area at East Bog, a job which would not have been possible but for John Walmsley, Nick Ainger, Chris Jessop, Dr Steve Morrell, Jon Green, Lisa Morgan, Chris Morgan, Alan Chalwin, Wendy James and Andrew Hughes, along with the Dale Sailing crew and our Long-term Volunteers. Preparing the site was accomplished with another team of volunteers, with Holly Coombes, Carla Wagener, Alex Figueiredo and Marlene Knupfer of the Oxford House Mouse Team, Josie Hewitt and Katrina Siddiqi-Davies of the OxNav Manx Shearwater tracking team, guests David ‘jackhammer’

Jackman, Brian Jefferies and Nick Marriner, ex-volunteer Jodie Henderson and future volunteer Ellyn Baker all putting in many hours of hard work during an incredibly hot summer. It took six days for staff and volunteers to carry the materials into position, with Dr Will Hurt (sic), Ellyn Baker, Chris Thomas and Lucy Griffiths all proving indispensable. We were then joined intermittently by Chris Ward, Edd Tadman and Dave McPhail for the construction process, with the footings finished by the end of August and the walls up by 2nd September. A larger team spent the day assembling the roof on 9th September, the windows were in by the 14th, the roof was sealed and the walls rendered during the third week of the month and the building was finished by mid-October. We were then joined by Howard Driver who made surrounds for the one-way windows and Emyr Roberts who helped return the spoil and Sea Champion sods to the roof. Well over 500 hours of staff and volunteer time were invested in the project, this in addition to the remarkable efforts of Chris and his team. We now have something really special for visitors to Crab Bay.



Skokholm Bird Observatory

Ringing Projects

Colour ringing birds allows us to recognise individuals without the need to retrap them; these projects typically generate more regular insights into survival, behaviour and movements than those using only conventional metal rings. Skokholm Bird Observatory has focussed its attention on such worthwhile studies. The Great Black-backed Gull colour ringing project, established in 2014, operated for a ninth year and projects monitoring adult Herring Gull and Puffin survival also continued. Both gull species are fitted with a red darvic ring, inscribed with a unique four digit alpha numeric (for example W:001). An additional small red ring was also fitted above the BTO metal ring on Great Black-backed Gulls this year; this was added to the project as a means of identifying birds which have lost their darvic ring through wear or damage.

The Wheatear study, designed and implemented by visiting ringer Ian Beggs in 2017, continued for a fifth year (there was a COVID-19 enforced hiatus in 2020); this is now a Masters project with the University of South Wales. A note on Wheatear courtship behaviour was published in the Welsh Ornithological Society Journal in August 2022: Beggs, I., Lee, D. and Smith, J.A. (2022) Observations of behaviours in males of a socially monogamous migrant passerine, Northern Wheatear (*Oenanthe oenanthe*), when attempting to mate outside of their social pair bond. *Milvus* 1:1 21-25.



Breeding adult Wheatear and their offspring were again colour ringed in order to determine survival rates, pairings and movements (without the need to retrap returning birds). Study birds are fitted with a green darvic ring, inscribed with a unique white alpha-numeric code. A total of 20 breeding adults and 89 of their offspring were colour ringed this year, taking the colour ringing total to 111 adults and 338 offspring. Comparing the findings with those made by previous wardens Peter Conder between 1947 and 1952, work which was published as part of his seminal monograph 'The Wheatear' (1989), and Dr Michael Brooke in 1979 and 1980, is just one aspect of the project. Ian is in the application process for an exciting development in his studies; his plan is to fit adult birds with geologgers in 2023, these to explore the routes, stop-over points and timings used on migration to and from their wintering grounds.

Whilst handling birds for ringing, we sometimes observe parasitic Flat Flies. This year we continued to participate in the UK wide Flat Fly mapping project begun by UK Hippoboscidae Recorder Denise Wawman in 2021; specimens were collected and preserved for subsequent identification. Further information, including the 2022 results, can be found in the Invertebrates section of this report.

Visiting Ringers

Skokholm Bird Observatory continues to attract visiting ringers who assist with our monitoring work and provide additional coverage between April and September. During its first incarnation between 1933 and 1976, Skokholm Bird Observatory was famous as a site for visiting ringers to stay and contribute to ongoing research. It was a tradition we were keen to continue and between 2013 and 2021 we welcomed a total of 325 visiting ringers to the Island (there were none during the COVID-19 dictated closure in 2020). Despite restrictions followed as a response to the spread of avian influenza, we were pleased to be able to accommodate 61 ringers this year, taking the 2013-2022 total to 386. Aside from the thrill of ringing at a Bird Observatory during spring and autumn migration, two of the big draws for ringers are our long-term studies targeting Manx Shearwater and Storm Petrel. Although concerns over unusually low numbers of Storm Petrels attending the nets in South Haven led to staff suspending ringing at this site, a total of 388 birds were handled, of which 356 were new. A ban on the ringing of seabirds, implemented by NRW on 5th August, meant that the Manx Shearwater Transect could not be worked this autumn; however, efforts during spring and early summer resulted in a total of 835 adult birds being handled, of which 504 were new.



Birds Ringed in 2022

The following totals were influenced in part by attempts to minimise the spread of avian influenza; Storm Petrel ringing in South Haven was stopped by staff on 23rd July when atypically low numbers were encountered, whilst on 5th August NRW suspended the ringing and monitoring of all seabirds and the ringing of non-seabirds within seabird colonies. A week later Skokholm Bird Observatory was granted an exemption which allowed the trapping and ringing of passerines to resume, although for the period 6th to 12th August the trapping area was not in use. Further exemptions were granted to continue monitoring seabirds in study plots (see above), however general seabird ringing was suspended for the rest of the season; as a result, no fledgling Manx Shearwater were ringed on the Transect and no additional Storm Petrel chicks or fledglings were searched for.

A total of 5561 birds of 65 species were caught and processed or resighted this season; this was 26% down on last year and 16% down on the 2013-2021 mean (6627.11 ±sd 1507.99). Seabirds made up 37% of new birds ringed (the 2013-2021 mean is 51%, with a high of 60% in 2013 and a previous low

of 39% in 2020) and Manx Shearwater accounted for 54% of these and 20% of the overall total (the 2013-2021 mean is 32%, with a high of 45% in 2013 and a previous low of 23% in 2020). Seabirds made up 60% of the retrap total (birds caught or resighted which had previously been ringed on Skokholm) and Manx Shearwater accounted for 67% of seabird retraps and 40% of retraps overall (the 2013-2021 mean is 41%, with a high of 57% in 2014 and a low of 20% in 2021). Owing to reduced Storm Petrel trapping in South Haven, it proved the worst of the last ten years for controls (birds caught or resighted which had been ringed elsewhere), with 43 fewer than last year and 16 less than the nine year mean ($48.33 \pm sd 13.91$). Seabirds contributed 59% of the total number of controls, whilst Storm Petrel were responsible for 53% of these and 31% overall.

The total number of New Birds, Retraps and Controls processed between 2012 and 2022, along with the number of different species handled.

	Total Birds Processed	New Birds (full grown)	New Birds (pullus)	Retraps	Controls	Species processed
2022	5561	3451	324	1754	32	65
2021	7476	5379	340	1682	75	68
2020	4442	2994	229	1181	38	68
2019	7170	4964	298	1853	55	58
2018	8417	6123	325	1905	64	71
2017	6030	4285	295	1411	39	69
2016	5979	4263	274	1394	48	58
2015	7245	5367	270	1563	45	67
2014	8439	5785	313	2303	38	59
2013	4446	3436	297	680	33	65
2012	697	648	2	46	1	25
Total	65,902	46,695	2967	15,772	468	116



There were 11 passerines encountered wearing rings from elsewhere, this almost identical to a 2013-2021 mean of 10.3 (there were six in 2013, seven in 2014, ten in 2015, 14 in 2016, ten in 2017, 14 in 2018, ten in 2019 and 2020 and 12 last year). Although the ringing ban occurred during a period of peak autumn passage, a fine diversity of birds were once again handled; a total of 65 species matched the 2013-2021 mean ($64.78 \pm sd 5.09$), but also equalled the fourth lowest total of the last ten years (a high of 71 was recorded in 2018). **Raven**, **Moltoni's Warbler** and **Mistle Thrush** were exciting additions to the ringing list, taking the total number of species ringed since 2012 to 116; the **Moltoni's Warbler** was the first to be ringed in Wales.

Details of each control, of the more interesting retraps and of where Skokholm ringed birds have been found, are given within the Systematic List of Birds, as is the total number of each species ringed between 1928 and 1976 and between 2010 and 2022.



Catching Methods

There are now four Heligoland Traps on Skokholm (at the Well, in the Cottage Garden, alongside the Wheelhouse and to the east of the Garage), the first two of which are constructed on the footprints of those originally erected by Ronald Lockley in 1933 and 1935 and the latter of which was newly constructed in September this year. These provide an invaluable method of trapping birds when blustery weather prohibits the use of mist nets. The Heligolands were driven regularly on every day of the season and with increased frequency on good fall days. There are five permanent mist nets in the vicinity of the Well: the six metre 'Well 6', the nine metre 'Well 9' (extended with a six metre net in 2014), the nine metre 'Stream Net' (a new site in 2015) and the six metre 'Ram Net' (a new site in autumn 2020 situated just above the hydraulic ram in Billy's Dyke). The nine metre 'Reedbed Net' (a new site in 2018) is strictly an autumn net only erected when the Sedge Warblers have finished breeding. There are a further four permanent nets around the Farm: the six metre 'Courtyard Net', the nine metre 'Wheelhouse Net' and the nine metre 'Library Net' (the latter of which was extended with a nine metre net in the autumn of 2017). A six metre 'Pond Net', first erected to the east of North Pond in autumn 2020, has been used in both subsequent autumns. The nets were opened on most occasions when conditions were suitable. Additionally four potter traps, eight spring traps, two very large spring traps and a perch trap were used to target rails, gulls, chats and pipits. A purpose built Gull Trap on Home Meadow was baited and again used successfully on occasion; although not always effective, it provided 35 Herring Gulls for colour ringing this year. Further seabirds were caught using a variety of methods, although the majority were trapped by hand in the colony. Adult

and fledgling Manx Shearwater were trapped in study burrows and further adults were trapped after dark in the spring and early summer, all by hand along the Manx Shearwater Transect or around South Haven and the Farm. Storm Petrel were mist netted in South Haven using a MP3 lure to attract birds towards the net, although this was for a shorter period than in recent years (see above).



The Heligoland Traps produced 1435 new birds, this 60% of the new non-seabird total; an average of 1021 new birds were taken from Heligolands in each year between 2013 and 2021 (with a high of 1426 in 2014 and a low of 741 in 2020), which accounted for between 29% (in 2018) and 70% (in 2013) of the new non-seabird total (with a mean of 45%). There were 358 retraps, this virtually matching a 2013-2021 mean of 361; there was a high of 501 in 2018 and a low of 239 in 2020. Five controls matched the 2013-2021 mean; there were highs of seven in 2016 and 2018 and a low of one in 2015. The Well, for a tenth consecutive season, proved the most productive Heligoland for new birds, providing 44% of the total. Despite the fact that the Garage Heligoland was only operational from late on 21st September, the Cottage Heligoland once again caught the fewest, contributing 13% of the new birds total. The proportion of birds caught in each trap is unsurprisingly similar year on year, with the continuing success of the Well Heligoland no doubt due to the maturing corridor of vegetation which runs from South Haven and funnels migrants towards a trap where more extensive cover and standing water hold birds for longer. **Willow Warbler** was again the most commonly encountered species in the Heligolands, with 536 new birds from the three traps (none were taken from the Garage Heligoland); the 2013-2021 mean is 334, with a high of 616 in 2014 and a low of 181 in 2013. **Blackcap** was the second most regularly trapped species, with 172 new birds (there was a previous high of 171 in 2015 and a low of 65 in 2013, whilst the 2013-2021 mean is 113). There were 108 new **Chiffchaff** and 108 new **Meadow Pipit** taken from Heligolands, 104 of the latter from the new Garage Heligoland; the 2013-2021 Chiffchaff mean is 169, with a high of 234 in 2014 and a low of 85 in 2020, whilst there have never been more than 46 Meadow Pipit in a year. The three warblers have been the three most common species in the Heligolands since 2013, the order of abundance changing only in 2020 and this year when **Blackcap** outnumbered **Chiffchaff**.

Ringling highlights from the Well Heligoland included two **Mallard**, three **Water Rail**, a **Woodcock**, a **Siberian Chiffchaff**, six **Reed Warbler**, two **Grasshopper Warbler**, a **Garden Warbler**, a **Firecrest**, a

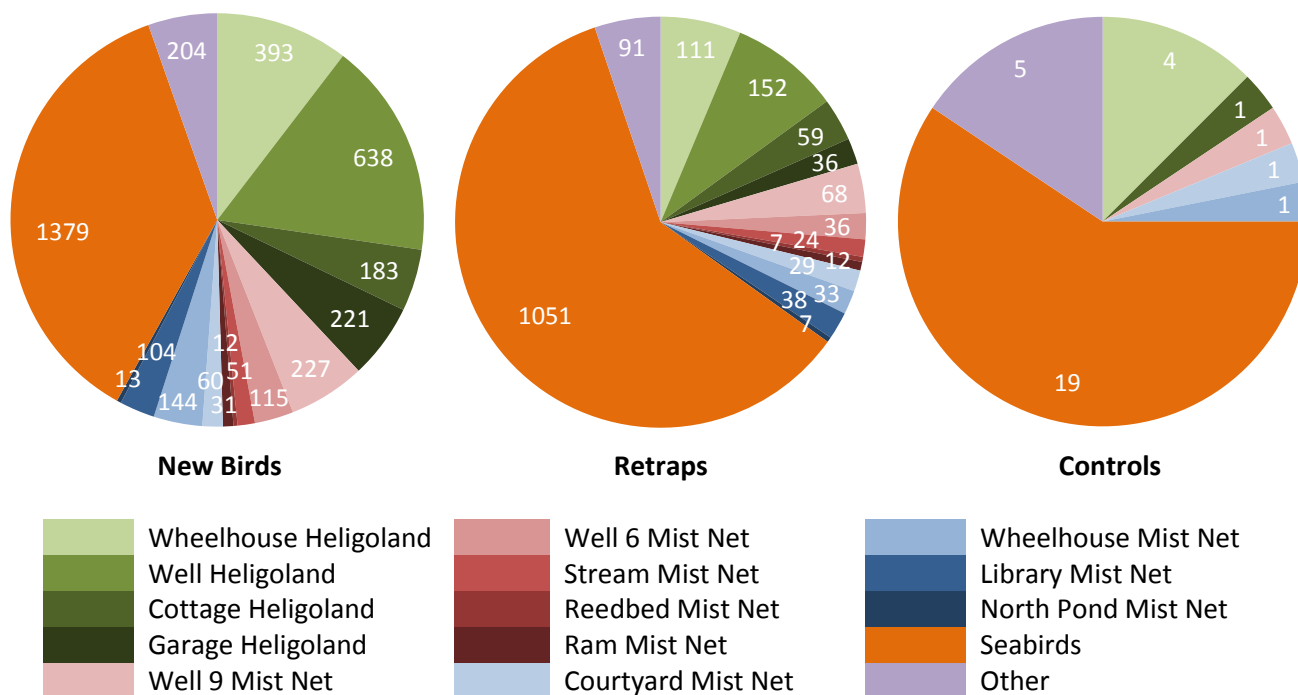
Fieldfare, a Mistle Thrush, eight Redwing, 14 Spotted Flycatcher, a Redstart, five Stonechat, a Brambling and a Yellowhammer. Highlights from the Wheelhouse Heligoland included a Sparrowhawk, a Blue Tit, two Siberian Chiffchaff, a Grasshopper Warbler, a Lesser Whitethroat, a Moltoni's Warbler, six Redwing, three Spotted Flycatcher, a Black Redstart, two Redstart, a House Sparrow and a Common Rosefinch. The Cottage Heligoland produced a Collared Dove, a Sparrowhawk, two Reed Warbler, a Lesser Whitethroat, two Firecrest, a Redwing, six Spotted Flycatcher, a Pied Flycatcher and a Redstart. Although only in use from 21st September, highlights from the new Garage Heligoland included two Carrion Crow, a Raven (above), 11 Starling, 13 Fieldfare, three Redwing, four Black Redstart, two Stonechat, a Yellow Wagtail, 104 Meadow Pipit, 52 Rock Pipit and five Linnet; this trap clearly has a lot of potential for attracting open plain species.

The number of Heligoland Trap pushes recorded during each month of 2022, the total number of new and retrap/control birds taken during these pushes and the mean number trapped per push.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Pushes	309	669	658	301	710	481	750	915	419	97	5309
New Birds	38	266	94	18	194	220	232	284	81	8	1435
Retrap/Control Birds	30	26	28	14	77	27	36	75	40	10	363
Avg. No. of Birds per Push	0.22	0.44	0.19	0.11	0.38	0.51	0.36	0.39	0.29	0.19	0.34

On 1st August 2019 we began recording the amount of effort put into pushing the Heligoland Traps, a practice which has since continued. A visit to a single trap is logged as one 'push', with a full circuit of the traps previously equating to three pushes. With the construction of a fourth Heligoland Trap in September, a full circuit of the traps now gives four pushes. A total of 5309 Heligoland Trap pushes were recorded this season (there were 5027 in 2021 and 4173 in 2020), with one push yielding an average of 0.34 birds (0.28 in 2021 and 0.24 in 2020).

The number of new birds, retraps and controls trapped during 2022 and the proportion made up of seabirds, birds trapped in each Heligoland and birds from each regular mist netting site.



The regular mist nets produced 757 new birds, this the second lowest total of the last decade; the 2013-2021 mean is 1279.0, with a high of 1925 in 2018 and a low of 556 in 2013. There were 254 mist netted retraps (the 2013-2021 mean is 334.3, with a high of 489 in 2018 and a low of 155 in

2013) and three controls (the 2013-2021 mean is 5.2, with highs of seven in 2015, 2016 and 2018 and a low of two in 2014). As has been the case for the past seven years, the nets around the Well provided the majority of birds, with the Well 9 and Well 6 nets catching 45% of new birds (the 2013-2021 mean contribution made by these nets is 51%, with a high of 88% in 2013 and a low of 33% in 2019). Well 9 proved the single most productive site for a second consecutive year (catching 30% of new netted birds), whilst the next most fruitful was the Wheelhouse Net (catching 19% of new birds). Excluding the non-permanent Reedbed and North Pond Nets, the least productive netting site was the Ram Net, catching just 4% (this net also caught the fewest birds in 2021 (3%), whilst in 2020 it was the Stream Net (3%) and in 2019 it was the Courtyard Net (6%)); as in 2021, the poor Ram Net total was likely due to it being opened less frequently, this due in part to its tendency to catch an easterly breeze and in part to a lack of cover which quickly leaves it in full sun on bright days (making it more visible to birds). **Willow Warbler** was the most commonly trapped species in the Well nets, with 179 new birds, whilst **Sedge Warbler** and **Blackcap** were the second and third most abundant, with 60 and 35 respectively. **Willow Warbler** was also the most commonly netted species around the Farm, with 99 new birds. **Meadow Pipit** and **Blackcap**, the former often attracted via the use of a tape lure, were the second and third most frequently encountered, with 31 and 26 respectively.



Highlights from the Well mist nets included a **Siberian Chiffchaff**, four **Reed Warbler**, two **Grasshopper Warbler**, two **Garden Warbler**, seven **Spotted Flycatcher**, two **Pied Flycatcher**, a **Whinchat** and five **Stonechat**. Around the Farm the mist nets produced a **Wryneck**, two **House Martin**, a **Yellow-browed Warbler**, an **Icterine Warbler**, a **Grasshopper Warbler**, a **Garden Warbler**, two **Lesser Whitethroat**, a **Spotted Flycatcher** and a **Black Redstart**.

Arrival and Departure Dates

The first arrival and latest departure dates of 2022 migrants, along with the extreme earliest and latest dates on which they have been recorded in the past, are documented at the beginning of each species account in the Systematic List of Birds. This year saw seven records of a species outside of its period of previous occurrence, this up on a 2013-2021 mean of 4.4 and matching the high logged in 2015 and 2019; additionally a **Little Ringed Plover** on 27th March arrived on the same date as one in 2012. This year they were of a **Hen Harrier** on 17th May (the previous latest was on 21st April 2019), a **Hen Harrier** on 5th August (the previous earliest was on 5th September 2012), a **Great Spotted Woodpecker** on 18th October (the previous latest was on 16th October 2021), a **Swallow** on 1st December (the previous latest was on 28th November 1932), a **Redstart** on 3rd November (the previous latest was on 2nd November 1968), a **Brambling** on 23rd May (the previous latest was on

27th April 1949) and a **Snow Bunting** on 9th June (the previous latest was on 25th April 1959). The following species were recorded close to their Skokholm limits: a juvenile **Arctic Skua** on 7th November (latest on 15th November 2020), a juvenile **Marsh Harrier** on 28th October (latest on 4th November 2018), a juvenile **Kingfisher** on 20th September (latest on 29th September 1975), a **Willow Warbler** on 24th March (earliest on 23rd March in 1972, 1997 and 2017), a **Willow Warbler** on 1st November (latest on 10th November 2020), a **Chiffchaff** on 8th December (latest on 14th December 2000), a **Grasshopper Warbler** on 13th April (earliest on 4th April 2003), two **Blackcap** on 30th November (latest on 2nd December 1996), a **Lesser Whitethroat** on 25th October (latest on 3rd November 1927), three **Redwing** on 29th September (earliest on 20th September 2001), a **Wheatear** on 10th March (earliest on 2nd March 2003), a **White Wagtail** on 17th March (earliest on 11th March 1997) and a **Common Rosefinch** on 3rd October (latest on 12th October 1995).

2021 Rarity Decisions and DNA Results

A first-summer female **Eastern Subalpine Warbler** trapped on 31st May was accepted by the British Birds Rarities Committee as the fifth Skokholm ‘Subalpine’ attributable to this species; the mitochondrial DNA analysis of a dropped feather revealed it to be a bird of the subspecies *C. c. albistriata* which breeds between northeast Italy and Turkey. The British Birds Rarities Committee also accepted a vocal **Western Bonelli’s Warbler** present on 2nd June, this the third Western and fourth Bonelli’s Warbler for Skokholm, but the first to be seen in spring; it was later confirmed via the DNA analysis of a dropped feather. A first-summer female **Western Subalpine Warbler** on 18th July was also confirmed via its DNA and accepted as such by BBRC, this the second for the Island following one on 8th May 2020; there had only been 24 British records by the end of 2020, the complexities of specific identification leaving a further 745 ‘Subalpine Warblers’ unidentified (13 of which were on Skokholm). An **Alpine Swift** which lingered on the afternoon of 1st April was accepted by the Welsh Birds Rarities Committee as the third for Skokholm, whilst a **Nightingale** on the 30th was also accepted, this our eighth spring record. A spectacular male **Common Rosefinch** ringed on 29th May was also accepted, this a bird which would go on to meet a sad end in 2022 (see the Common Rosefinch section in the Systematic List below). An adult male **Rose-coloured Starling** present between the 5th and 7th August was accepted as such prior to this species being dropped from the list assessed by the Welsh Birds Rarities Committee. A juvenile **Common Rosefinch** on the 17th and 18th September was accepted as the second of the year, this taking the bird-days total for the last 11 years to 30. A first-winter **Blyth’s Reed Warbler** trapped during the afternoon of 9th October was accepted as the second Island record and a first-winter **Red-flanked Bluetail** trapped two days later was accepted as the first for Skokholm and second for Pembrokeshire. A **Richard’s Pipit** on 1st October was accepted by the Pembrokeshire Records Committee, as were the three **Siberian Chiffchaff** present on 13th October; the committee are still requiring photographs of this ever more common subspecies for acceptance. There were thus 155 species in 2021, a tally up on a 2013-2020 mean of 152.5, but down on five previous years and highs of 166 in 2017 and 165 in 2020. The acceptance of **Red-flanked Bluetail** takes the Skokholm list to 301 species.



Research Projects

The Skokholm House Mouse Study

A team from Oxford University, led by Dr Sarah Knowles, re-established a longitudinal study of the Skokholm House Mouse in 2019, this building on the intensive works carried out by R.J. Berry in the 1960s and 1970s (see the introductions to the Annual Report 2019, 2020 and 2021 for further information). This, the final full year with fieldwork funding, saw a continuation of data collection, faecal sampling and assays to explore how variations in individual gut microbiome influence behaviour and responses; Alex Figueiredo continued to lead on the latter part of this study, whilst a cold tolerance assay, led by Holly Coombes and Carla Wagener, was added to the project. This year the team was joined by Dr Emily Dennis who runs a laboratory in Virginia, USA studying the predatory behaviours of the House Mouse; Skokholm offered the perfect opportunity to examine if hunting prey correlates with increased survival and differences in the gut microbiome. R.J. Berry published work in the 1960s indicating that hunted items made up a large part of the diet of cliff mice, and that those mice seem to be the animals which re-populate the Island each year following winter die-offs. The aims of Dr Dennis and her team were thus to replicate and update Berry's findings, by describing in detail the abundant botanical and invertebrate food sources used by mice in different areas of the Island, and to video the mice to see how they hunt for prey (the latter to investigate whether Skokholm mice exhibit any specific behavioural changes that may have developed in an island environment). The faecal samples gathered by the Oxford team over the last few years will also be used for DNA sequencing to find out what the mice had recently eaten. The Dennis Lab is particularly interested to know if individual mice have strong diet preferences, especially if these are for what is not the most abundant prey available. They collected 904 videos during their visit, of which 374 featured mice (312 of these were identifiable as those previously tagged by the Oxford team). They also collected 68 unique botanical and invertebrate samples, the majority of which will be used for DNA sequencing. Finally, they used thermal imaging to confirm that cliff dwelling mice were no longer in high densities on the Neck, but were instead concentrated at the Quarry and near the Lighthouse (additionally there were many inland mice near the Farm during early October).

Manx Shearwater Tracking

This summer a team of researchers led by Ollie Padget from the Oxford Navigation Group fitted 13 chick rearing adults (from 13 separate nests) in the Lighthouse Study Plot with Techno Smart Axy-Trek data loggers (these weighing about ten grams and designed to collect GPS and accelerometry data). The devices were fitted and subsequently retrieved between 22nd July and 8th August. Previous studies have shown that birds during this period regularly visit the waters earmarked for the Erebus wind farm and similar future projects (see the introduction to the Annual Report 2021). The tracking results will be reported upon in future reports.

Bird Observatory Fundraising and Donations

The Ticks Jar

The Ticks Jar is a Bird Observatory tradition which we brought to Skokholm in 2013; birders and ringers are encouraged to make a small donation if they see or ring a new species during their stay. An impressive £2214.94 was raised between 2013 and 2021 (this despite an 'empty jar year' during the 2020 Island closure and a reduced number of guests the following year). This year, the Ticks Jar contained a rather generous £1317.00, this including £290 taken during the Moltoni's Warbler twitch (photograph below) and taking the 2013-2022 total to £3531.94. The takings from the Ticks Jar have funded a wide range of items over the years, including the Storm Petrel sound system, an eco-fan for the wood burning stove, two-way radios, gardening equipment, bat detector accessories, local artwork, interior furnishing and framed photographs for the guest accommodation. This year we donated £100 of the takings to the Wildlife Genetics and Conservation Team at the University of

Aberdeen who, over the last decade, have kindly provided us with bird identifications based on the mitochondrial DNA held in dropped feathers. The remainder of the jar was spent on curtains, stools, interior paint and one-way glass for the new Crab Bay Hide, along with two replacement UHF radios.



Bird Observatory Merchandise

We have been selling quality Skokholm Bird Observatory merchandise on the Island since 2013, with 100% of the profits contributing towards the work of the Observatory. Whilst we began selling only polo shirts, the range has expanded over the years to include hoodies, fleeces, gilets, headwear, bumbags and mugs. This year we also stocked a range of original natural history artworks, sourced and framed by Richard Dobbins. The proceeds reside in the Skokholm Bird Observatory account and are used to purchase additional equipment, such as extra nets and rings, or materials, such as those used for building and maintaining Heligoland Traps.

Acknowledgements and Thanks

Over the last decade we have been incredibly lucky, and ever more grateful, for the support and generosity of those involved with Skokholm. Although we have sadly lost a few friends over the years, the network of supporters from near and far has increased massively since 2013. We are always blown away by the kindness of those who contribute so much to Dream Island.

First on the 2022 thank you list are this year's Long-term Volunteers Megan Gee, Lucy Williamson, Luke Marriner and Alys Perry; these amazing people contributed greatly to the smooth running of the Island, providing invaluable help with seabird monitoring, migration monitoring and cleaning the accommodation, whilst also adding to the general feeling of inclusivity which permeates life on Skokholm. Thank you also to Teresa Donohue, who provided an extra pair of hands for seabird monitoring and changeover days whilst we were short-staffed in July. A special mention has to go to Howard Driver (technically not a Long-term Volunteer, but someone who has volunteered more weeks on Skokholm than anyone else in recent history) who again proved to be worth more than his weight (and height) in gold. A large part of the Skokholm infrastructure is in such fine repair thanks to Howard and his amazing carpentry skills; he deals with everything from hide building to swollen fenestration and from delaminating plywood to leaking plumbing, all tackled tasks benefitting massively from his experience and expertise. This April he added a door to the Lighthouse Smoking Room to deter Jackdaws from accessing the Swallow and Pied Wagtail nests. He is a great companion to both ourselves and guests lucky enough to encounter him during their stay.

We would like to thank the skilled short-term volunteers who visited with a specific task in mind. Professor Chris and Mary Perrins again assisted with the annual Manx Shearwater playback surveys and Mike Alexander continued to work on the vegetation mapping following last year's drone survey (below photographs). Alan Wilkins and Nick Davison of the Wildlife Sound Recording Society continued to work on their project to recognise individual Manx Shearwater and Storm Petrel by

their calls, this year bringing out Dr Jamie Twycross, a Computer Scientist and Associate Professor from Nottingham University with whom they are collaborating. Chris Payne continued to develop the Petrel Station camera system, allowing us to share unique footage of these mysterious seabirds with our guests. Emyr Roberts assisted with the planting of the new Crab Bay Hide roof and repaired a collapsed wall at the Farm (below photograph). Sean Kehoe, who crafted the replica Alice Williams figurehead in 2013, took her back into his workshop for some much needed TLC; she was returned to her rightful place above South Haven this year (below photograph).



The Work Party Volunteers must also get a special mention; a great group of enthusiastic, knowledgeable and hard-working people, their assistance in April, June and September allowed for so much to be achieved (see above). We cannot thank each and every person involved enough. We would also like to thank everyone who contributed to the removal of the old Crab Bay Hide and the preparation of the site for the new hide; manual labour on a steep slope in blistering late-summer heat made for hard work, but it was almost enjoyable thanks to the superb bunch of people who helped (some of whom were supposed to be on holiday!). Another team of strong and willing volunteers helped with the materials delivered by barge, these weighing in at several tonnes. It would have been impossible to get the blocks, aggregate and roof beams from South Haven to East Bog, and then to Crab Bay, without them. Special mentions go to Ellyn Baker, David Jackman, Chris Thomas and Lucy Griffiths who put in some heroic effort during this time.

Visiting ringers pay for the pleasure of working on Skokholm, but also donate massively to the running of the Observatory; it is invariably a pleasure to work alongside them. We would specifically like to mention annual contributor Kenny Cramer and the Northants group for another fantastic week, for their effort, entertainment value and ringing hut donations (left photograph below). We would also like to thank Eric Wood and Robin King for an enjoyable week of baked goods and assistance with the Great Black-backed Gull and Herring Gull colour ringing projects. Thanks also to Ian Beggs for the enthusiasm he brings whilst conducting his Wheatear studies. Wendy James (Head

of Bird Observatory Merchandise) and Richard Dobbins (Chair of Skokholm Bird Observatory) also receive a standalone thank you; aside from their roles with the Observatory, they continue to provide excellent support to the Island and to ourselves. This season they again ran several ringing trips organised specifically to introduce new ringers to the Island, offering expert training in the ringing of Manx Shearwater, Storm Petrel and Puffin; they were assisted by a lovely group of Skokholm regulars well versed in ringing activities on the Island. Wendy again organised the ordering and delivery of Skokholm Bird Observatory merchandise and Richard stayed on at the end of the season to help with late autumn migration coverage; this year he was rewarded with the first Tennessee Warbler for Wales. A good proportion of the work carried out at the Observatory relies on researchers, birders and ringers, from all over Europe, northwest Africa and the east coast of South America, who observe and submit sightings of Skokholm ringed birds; we are hugely grateful.



We are always appreciative of the staff at Natural Resources Wales for their advice and consents, the Bird Observatories Council who continue to support and publicise Skokholm Bird Observatory as part of the UK Bird Observatory network and the Islands Conservation Advisory Committee (ICAC) and Seabird Subgroup who continue to provide support and advice on relevant issues. Milford Haven Coast Guard again provided an outstanding life-saving service this June. Thank you to Professor Martin Collinson and his team at the University of Aberdeen for carrying out DNA analyses on feather samples obtained from migrant birds. Pembrokeshire Moth Recorder Robin Taylor and 2014 Long-term Volunteer Billy Dykes again provided expert moth identification and Denise Wawman identified our collection of Flat Flies for a second year. Sandra Eagle spent hours shortening curtains, saving us hundreds of pounds. We were fortunate enough to be awarded several grants to spend during the 2022 season; funding for the new Crab Bay Hide came from the Nature Networks Programme, delivered by the Heritage Fund on behalf of the Welsh Government and from ShareGift. The Island once again received many generous donations, from outdoor stools to library books and from kitchen equipment to moth trap bulbs and motion censing cameras; we are so appreciative of these kind gestures. Amazingly Helen and Phil Mugridge donated a stunning DSLR Canon 7D Mark II.



We were again grateful for the support of the Friends of Skokholm and Skomer. The Friends have assisted the Island financially for many years, purchasing much needed equipment and supporting our Long-term Volunteers. We would specifically like to thank Mark Burton for receiving, packing and transporting our monthly fresh food supplies to the changeover boat at Martins Haven. Anna and Steve Sutcliffe were once again extremely kind and welcoming, opening up their home so that we could have a base at the beginning and end of the season; they are such generous and knowledgeable islanders who we are forever indebted to. We must thank the Trustees and our team at the Wildlife Trust of South and West Wales for helping the Island to run smoothly; thanks go especially to Mike Alexander, Chair of the WTSWW Trustees, for his continuing encouragement and genuine interest in our work, to the bookings team and to our line manager Lisa Morgan and our chief executive Sarah Kessell who work tirelessly behind the scenes, applying for and securing grants that have allowed us to pursue exciting new projects. We are grateful to Gareth Reynolds and the staff at Dale Sailing for providing a safe and reliable passage for guests, researchers, staff and building materials during the 2022 season. We would like to thank Chris Ward and his excellent team who were contracted to do the Lighthouse works and construct the Crab Bay Hide; they have an obvious appreciation for the wildlife that inhabits Dream Island and they were a pleasure to host.



Finally thank you to all of the guests who visited Skokholm this year; it was an amazing season full of brilliant people who provided exciting records, fun experiences and friendship. We are already looking forward to the 2023 season!

Richard and Giselle



Definitions and Terminology

The status summaries used in this report closely follow those established by Betts (1992) and used by Thompson (2007); they refer to the period prior to this season. Where the status has changed in the years subsequent to Betts' 'Birds of Skokholm', the current status is used but the change is noted. The definition of each status is as follows:

Status	Definition
Vagrant	1-10 records since 1927
Rare	11-50 records or breeding records
Scarce	1-5 birds, records or breeding pairs per year
Uncommon	6-50 birds or breeding pairs per year
Fairly Common	51-250 birds or breeding pairs per year
Common	251-1000 bird-days or breeding pairs per year
Abundant	1001-2500 bird-days or breeding pairs per year
Very Abundant	More than 2500 bird-days or breeding pairs per year

The systematic list below follows that of the British Ornithologists' Union (McInerney *et al.*, 2017) but includes updates published in BOURC reports up to and including November 2020.

The Systematic List of Birds

Canada Goose *Branta canadensis*

Gwydd Canada

Scarce Breeder and Common Visitor four in October 1952 were the first for Pembrokeshire

The majority of spring sightings were again of those which would attempt to breed on Skokholm, indeed only six March and seven April daycounts exceeded the four breeders; there were three March counts of between six and nine along with highs of 19 on the 29th, 34 on the 30th and 32 on the 31st, and four April counts of between five and nine along with highs of 29 on the 1st, 14 on the 2nd and 12 on the 3rd (the peak March daycount was the highest since 49 in 2012 and the April peak the highest since 37 in 2015). Two nesting pairs matched that recorded in 2019 as the lowest total since at least 2003 and probably since 2000; this species colonised in 1999 and the population had increased to seven pairs by 2004 (with egg control measures to protect rare aquatic vegetation taken under licence from 2002). One was incubating to the west of the Bog on 26th March, a nest which contained six eggs on 4th April; the 2015-2021 first egg mean is 1st April, with the earliest during this period found on 24th March 2019 and the latest on 26th April 2020. The same pair had a further five eggs on 8th May, whilst a pair to the northeast of the Bog had five eggs on 6th April and a further five on 26th April. Productivity remains very poor, with a single fledgling in 2012 and no fledglings at all in the last ten years (by contrast there were 38 fledglings in 2006 and a minimum of 40 in 2007). Up to two joined the breeders on ten May dates from the 10th, although they regularly departed for the mainland; very unusually one of these was stood on the Cottage Wall on the 28th. There were daily June sightings to the 12th (the same date on which spring birds were last seen in 2021), with five on the 1st and 2nd, 12 on the 4th (ten of which were only present for two hours in the early afternoon) and no more than a single from the 6th. A group of seven briefly alighted in the Bog on 21st July before heading north; these were the first to be seen in July since 2018, this a month in which there was almost certainly a presence in each year between 1999 and 2016.

The number of territorial pairs, with the peak coinciding with low disturbance during the renovation period.

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
36	41	23	16	18	11	10	7	7	4	2	3	3	2

The only August sightings were of five on the evening of the 12th, flyover singles on the mornings of the 29th and 30th and of one at South Pond for much of the morning of the 31st; an August bird-days total of eight was well down on a 2013-2021 mean of 44.3, albeit the second highest since the 74 of 2017 (there was a peak during this period of 119 in 2016 and an all-time high of 606 in 2010). A late, typically post-sunset, arrival to the autumn North Pond roost and an early departure inevitably lead to undercounting, although the fact that Skokholm's largest pond was empty throughout September and October may also have impacted numbers. The sole September record was of a minimum of 41 seen under a big moon on the night of the 8th (they had departed by 0655hrs the following day); this was the highest September daycount since 117 in 2015, indeed there have only been higher counts in seven Septembers, although bird-day totals in this month have been much higher (there were peaks of 865 in 2007, 1856 in 2012 and 809 in 2015). The only October record was of 30 on the evening of the 10th, this the fourth lowest peak this decade; the bird-days total was the third lowest this decade, down on a 2013-2021 mean of 188.9 and all-time highs of 743 in 2007 and 860 in 2015. Although water did not reach the banks of North Pond until the end of the third week of November, some water was present throughout the month, however the only Canada Goose sightings were of 35 on the 27th and two on the 29th; a bird-days total of 37 was the lowest since 28 in 2018, down on the 224 of 2019, the 315 of 2020 and the 698 of 2021. There were December counts of 33 on the 1st and two on the 7th; two on the 1st in both 2020 and 2021 are the only other sightings in this month.

Barnacle Goose *Branta leucopsis*

Gwydd Wyran

Rare Eight spring records of up to five birds and 15 autumn records of up to ten birds

Earliest 8th October 1987 **Latest** 17th June 2021 (8th May 2022)

Two displaying at North Pond on 8th May were later watched mating, this the first such observation on Skokholm; they were not seen again. As with the majority, if not all, of the previous Island records, a feral origin would seem very likely. There have now been annual sightings and ten records since 2015, this increase in occurrence mirroring an expanding feral population in both Ceredigion (the number of birds breeding on Cardigan Island has increased rapidly in the last decade (Dobbins, *pers. comm.*)) and in Britain as a whole (the 2007-11 Atlas estimated 900 naturalised pairs and documented an 88% increase in the number of occupied 10km squares since the 1988-1991 Atlas (Balmer *et al.*, 2013)). October continues to be the most likely month in which to encounter this species on the Island, with 12 sightings logged during the period.

Whooper Swan *Cygnus cygnus*

Alarch y Gogledd

Vagrant 11 previous records, three of which occurred in spring

Late on the morning of 5th December, two vocal birds headed south over the Neck before veering east and out towards St Ann's Head (RDB), these the first since an adult which spent the night of 23rd October 2020 on North Pond (the latter seemingly just the fourth to overnight on Skokholm following a group of three which lingered between the 17th and 19th May 1981). The majority of previous sightings have occurred in October, with two on the 25th in 1967, three on the 22nd and 29th in 1980, eight on the 5th in 1981, five on the 24th in 1987 and 18 on the 29th in 1988. The only other records are of 47 west on 19th February 1956, six on 1st November 1991, a single on 13th November 1992 and three on 12th May 1995; the former herd were originally identified as this species, later considered in a British Birds paper to be part of an eruption of Bewick's Swans and subsequently confirmed as Whooper Swans by the finder (leading to a correction in British Birds and the removal of the smaller species from Betts' 1992 Skokholm list).

Shelduck *Tadorna tadorna*

Hwyaden yr Eithin

Scarce Breeder recorded in 57 years, almost annually since 1956 and first seen with young in 2006

There were March sightings on all but one date from the 4th, with a pair seen on all but two occasions

and the majority of sightings coming from North Pond (although the pair were amongst Bracken in the Bog on three dates from the 14th and were more mobile on four dates). The pair were noted on every April date bar the 25th and 29th when only the male was logged, however the male was regularly alone from the 8th and was typically alone during the last ten days of the month. Likewise there were daily May sightings to the 20th, with the male alone on four dates and the female typically absent. None were seen on 21st May, one was in the Bog on the 22nd and none were found on the 23rd or 24th, this followed by sightings of the pair together on six dates to the end of the month; it would seem likely that a breeding attempt failed during this period, this becoming the third consecutive year, but just the third year since 2009 and the fourth year since breeding was first confirmed in 2006, in which no chicks were seen. Although it is possible that the adults which swam their young towards St Ann's Head in 2016 managed to protect them through to fledging, it was only in 2011 that any chicks definitely went on to fledge from Skokholm. Sightings on 26 June dates were all of two birds bar a single on the 3rd and four together on the morning of the 9th; the latter was the lowest spring maximum since 2004, down on a 2011 peak of 25 and a 2013-2021 mean of 12.2 (there was a high during this period of 20 in 2013 and a low of seven in 2021). A pair went northeast from North Pond on the evening of 1st July, one went over the Farm late on the morning of the 13th and three over on the 27th were the last of the year; there have only been July sightings in six previous years. This was thus the first year in ten without a sighting in either November or December.

Shoveler *Spatula clypeata*

Hwyaden Lydanbig

Rare Breeder and Uncommon Visitor bred in 1988, 1991-1996, 1999, 2015, 2017 and 2018

Following a male on the 3rd and a pair on the 4th, there were sightings on 16 April dates between the 12th and 29th, typically of a pair but with a lone male on four dates from the 25th. A pair were again seen on the 4th and 5th May, a male was logged on the 8th and a pair present on eight further dates from the 18th were joined by a second pair on the 29th; there have been higher May daycounts in five years, with peaks of seven in 1992, 11 in 1993 and eight in 1994. There were daily June sightings of up to two to the 12th, four were again present on the 14th, two males were logged on the 15th and sightings of a single on five dates from the 22nd were perhaps all of the same female. A mobile female noted on ten July dates to the 14th was the last of the year, a July bird-days total of ten being the third highest on record (there were 80 in 1991 and 34 in 1993). Breeding was confirmed in three years between 2015 and 2018 and strongly suspected in 2019, however there was no indication that an attempt occurred for a third consecutive year. Perhaps due in part to the dry conditions, this was the second year since 2013 without at least one record between August and November (the other being 2021).

Wigeon *Mareca penelope*

Chwiwell

Uncommon Winter Visitor

Earliest 22nd August 1986 **Latest** 29th May 2017 and 2018 (13th March 2022)

1964: 1 trapped

There were daily sightings from the return of staff on the 1st to 13th March, with four on the 1st and 2nd, six on the 3rd, seven on the 4th and 5th, six from the 6th to the 11th (three drakes and three ducks), a female on the 12th and a pair on the 13th; there were regular movements between North and South Ponds and birds certainly departed for the mainland on the 6th, 7th, 9th, 10th and 11th. There have been 19 higher March daycounts, most recently with ten in 2019 and with highs of 51 in 1948, 55 in 1973 and 32 in 2017, whilst a March bird-days total of 67 was down on 13 previous years including highs of 316 in 1948, 151 in 1994 and 143 in 1995. There have been April sightings in 20 previous years, most recently in 2011, and May sightings in six years, most recently in 2018. Perhaps due in part to a lack of water in North Pond during September and October, there were no autumn sightings prior to the departure of staff on 10th December, however water was present during November, this a month in which Wigeon were logged in all but one year between 2013 and 2021.

There have been autumn sightings in 51 previous years, with a 2013-2021 autumn bird-days mean of 35.1 and all-time highs of 120 in 1990, 149 in 1991 and 103 in 2016.



Mallard *Anas platyrhynchos*
Scarce Breeder and Fairly Common Visitor

Hwyaden Wylt

2 trapped

1936-1976: 10 trapped, 2018: 1 trapped

There were daily sightings between the return of staff on 1st March and 11th July, with March highs of 14 on the 1st and 19 on the 3rd, an April high of nine on the 16th and 21st, a May high of 11 on the 25th and a June high of nine on the 21st; the maximum spring daycount was only down on those logged in one post-War year (counts peaked at 22 in March and 31 in June 1993) and was well up on a 2013-2021 mean of 10.2 (there was a high during this period of 13 in 2013 and a low of eight in 2020). A ringed female at South Pond on 6th March was probably that trapped in 2018, whilst a pair were in the Well Heligoland on 17th April. Females accompanied nine ducklings at North Pond and four at the Well on 17th May, these 40 days later than the first of last year and eight days later than the 2013-2021 first chick mean (the earliest during this period were present on 7th April 2021 and the latest on 27th June 2014). The Well ducklings were not seen again, whilst six remained at North Pond on 24th May and two were last seen there on the 25th. A female at Orchid Bog had seven young on 18th May, although only two were seen on the 25th and there were no further sightings. There were thus at least three broods of ducklings this year, this two down on last year and three down on the 2018 record, but matching the peak count listed by Thompson (2007). It is seemingly over two decades since any young fledged on Skokholm; there were occasional fledglings between 1985 and 2000, with a peak of 25 in 1988 (surprisingly so given that this was a period when gull numbers were more than twice what they are today).

Encounters became more sporadic during the second half of July, with counts of up to four on ten dates from the 12th taking the July bird-days total to 55 (well down on highs of 145 in 1988 and 130 in 2019, but the eighth highest tally this century and close to a 2013-2021 mean of 53.1). There were no August Sightings for the first time since 2013; although prior to 1934 up to 200 Mallard a day were logged during August, numbers have since declined, with highs of 146 in 1988 and 127 in 2012 the only bird-day totals to reach three-figures and a 2013-2021 August bird-days mean of just 6.4. Orchid Bog provided the only standing water during September and it was from here that singles were logged on six dates between the 1st and 19th (two of these records were nocturnal); the September bird-days total was the lowest since 2014, down on a 2013-2021 mean of 17.9 (there was a high during this period of 32 last year and an all-time high of 185 in 1930). Although this species, as with other ducks in autumn, regularly exhibits a post-dusk arrival and pre-dawn departure from roost sites (which makes an accurate assessment of numbers challenging), it is likely that a lack of

water in North Pond throughout October also impacted the totals this year. The sole October sighting was of a flyover group of 27 on the 5th, a few of which dropped in at Orchid Bog; there have been higher October daycounts in 18 years, with peaks of 90 in 1991 and 72 in 2004, but higher totals in 34 years (the 2013-2021 October bird-days mean is 71.2, with a high of 134 in 2018 and a low of seven in 2016, whilst the all-time highs are 228 in 1987 and 187 in 1991). North Pond filled during November and Mallard counts increased; following a feather at South Pond on the 3rd, there were North Pond counts of 31 on the 21st, 33 on the 26th, 41 on the 27th and 26 on the 29th. The peak November daycount was up on a 2013-2021 mean of 35.0 however, despite a staff presence throughout the month, a bird-days total of 131 was down on a 2013-2021 mean of 172.0 (the all-time November highs are 274 in 1989, 261 in 2014, 223 in 2018 and 506 last year). Up to 17 were present on three December dates prior to the departure of staff on the 10th.



Teal *Anas crecca*

Corhwyaden

Common Visitor recorded in all months, but more regular in winter and possibly bred in 1936
 1936-1976: 15 trapped, 2014-2018: 3 trapped

Although numbers were up on last year, it again proved to be a quiet spring for this species. There were daily March counts of between five and 16 to the 5th, with three on the 9th, ten on the 10th and three on the 18th taking the bird-days total to 69; although up on the 51 of 2020 and the 13 of last year, the total was down on a 2013-2021 March mean of 155.4, a high during that period of 284 in 2018 and an all-time high of 874 in 1969. A lone male was present on the 4th, 5th, 13th, 14th and 30th April, this the first sighting in this month since 2019; there have been 3550 previous April bird-days, including 636 this century and 284 since 2013. What was probably the same male was noted on the 1st and 4th May, this taking the all-time May bird-days total to just 60 (there have now been records in 22 Mays). There were no further sightings until 2nd September, with a lone bird present at Orchid Bog from then until the 6th and two there on the 24th; a bird-days total of seven was down on a 2013-2021 mean of 32.4, although this period included two of the four highest September tallies to date (there were all-time highs of 101 in 1973 and 84 in 2014). Perhaps in part due to an empty North Pond, the only October sighting was of one at Orchid Bog on the 21st; this was the lowest October total of the last 13 years, down on a 2013-2021 mean of 44.7, a high during that period of 111 last year and all-time highs of 256 in 1971, 174 in 1976 and 305 in 1991 (the latter total including a daycount of 150, this only down on the 170 present in January 1968 and the 500 present in February 1940). Although North Pond was filling, numbers remained very low in November, indeed

North Pond counts of four on the 21st, one on the 24th, two on the 26th and 11 on the 29th were the only birds logged; a total of 18 November bird-days was the lowest since 2017, down on a 2013-2021 mean of 140.4 and all-time highs of 270 in 1967, 216 in 2016 and 547 in 2018. December counts of 14 on the 8th, nine on the 9th and one on the 10th were the last of the year.

Eider *Somateria mollissima*

Hwyaden Fwythblu

Rare logged in ten previous years, with 14 records of up to seven birds

A male was photographed as it drifted west off the Lighthouse at 1215hrs on 7th May (JA, MS). Of the 26 individuals now seen from the Island, one was in April (a female noted on three days of a five day stay in 1990), three were in May (a female on the 3rd in 1991, a male with Puffins on the 31st in 1992 and this year's bird), two were in June (a drake on the 14th in 1988 and a duck logged on four days of a five day stay in 1989), one was in July (a duck through Broad Sound on the 19th in 1966), four were in September (three north on the 20th in 1991 and a duck on the 21st in 2001), eight were in October (seven on the 1st and a male on the 9th in 1989) and seven were in November (four on the 30th in 1998, a female on the 24th in 2000 and different first-winter drakes on the 23rd and 24th last year).



Common Scoter *Melanitta nigra*

Môr-hwyaden Ddu

Common recorded offshore in all months, but particularly from June to September
1936-1976: 11 trapped (oiled birds following rehabilitation)

The only spring record was of four southeast on 24th March; there have been March sightings in 14 previous years, most recently with 19 in 2015. There were no June sightings for a third consecutive year but for only the third time since 2011. Nine on 7th July were thus the first of the autumn, these followed by 62 on the 10th, 21 on the 15th, 14 on the 26th, 22 on the 27th and 48 on the 31st; the peak July daycount was the highest since 249 were logged on the 6th in 2016, but a bird-days total of 176 was well down on a 2013-2021 mean of 258.0 and on all-time highs of 520 in 1994, 601 in 1995 and 621 in 2014. The only August records were of six on the 6th, four on the 7th and ten on the 28th; a bird-days total of 20 was the third lowest August tally since 2010, down on a 2013-2021 mean of 181.9 (although this mean was substantially inflated by the 2017 total of 1044 which included record August daycounts of 128, 247 and 392). Sightings on 16 dates, including highs of 30 on the 13th, 26 on the 19th, 56 on the 23rd and 96 on the 24th, took the September bird-days total to 278; the total was up on a 2013-2021 mean of 176.1, indeed there have only been four higher September tallies with 1411 in 1992, 297 in 1993, 409 in 2017 and 360 in 2020 (the former including a daycount of 271, this only down on the 420 logged on 29th May 1992 and the August 2017 peak). The only October sightings were of 66 on the 9th, 13 on the 15th and two on the 21st; an October bird-days total of 81 was down on that logged in eight previous years, including highs of 587 in 1991, 161 in 1992, 142 in 1993 and 134 in 2020. Following lone drakes on the 1st and 3rd, there were sightings on seven further November dates from the 12th, with highs of 29 on the 12th, 18 on the 14th and seven on the 19th which took the bird-days total to 70; the 32 and 42 logged in 1991 are the only higher November daycounts, with the 104 bird-days logged that year the only higher November total. A male on the morning of the 7th was just the fourth December record following daycounts of seven in

2000, 71 in 2019 and 23 in 2020. As is typically the case, the majority of birds seen during the autumn were heading southeast, presumably towards wintering grounds in Carmarthen Bay.

Alpine Swift *Tachymarptis melba*

Gwennol Ddu'r Alpau

Vagrant three previous records

Unlike last year's bird, one heading east along the North Coast cliffs at 1000hrs on 22nd April seemingly departed immediately for the mainland (GE, RDB). The only other Skokholm records are of one on 13th July 1972 and lingering singles on 24th March 2002 and 1st April 2021. The 2002 bird was considered at the time to be the same individual seen at Penberi Pool, St. Davids on the 25th and back on the Dale Peninsula (at Mullock Bridge) on the 26th, although there had been a significant influx into Britain during the period.



Swift *Apus apus*

Gwennol Ddu

Fairly Common Migrant common in some years and most regular in late spring

Earliest 15th April 1991 (3rd May 2022) **Latest** 28th October 1976 (14th September 2022)

1955-1967: 13 trapped

Two on 3rd May were seven days later than the first of last year and five days later than the 2013-2021 first bird mean; there have been 522 earlier bird-days, including 133 in 1960 and 362 in April, with April singles on the 15th in 1991, the 16th in 1961 and the 17th in 1970 the earliest. Records on nine further May dates included highs of eight on the 7th and 12th and seven on the 9th; a May bird-days total of 42 was down on five of the last nine years (with a high during this period of 114 in 2017), a 2013-2021 mean of 49.8 and highs of 247 in 1989, 222 in 1959 and 282 in 1948 (the latter remains the highest total in any month). Sightings on nine dates, including highs of nine on the 3rd and eight on the 23rd, took the June bird-days total to 41; the June total was the lowest since 2016 and well down on a 2013-2021 mean of 74.3, although this mean is inflated by a 2019 total of 175 (a June tally only bettered by the 224 of 1969) and the 139 of 2018 (the fifth highest June total). The July total was the third highest this century and up on a 2013-2021 mean of 42.2, with sightings on 17 dates and highs of eight on the 7th, 12 on the 10th and nine on the 11th taking the bird-days total to 69. August was again quiet, with one on the 1st, six on the 6th, two on the 9th and 11th and singles on the 30th and 31st; August totals peaked at 105 in 1967 and 157 in 1997, however they are typically much lower, with recent lows of two in 2013 and 2018, a 2013-2021 mean of 7.9 and this year's total of 13 matching the second highest this century. One west on the morning of the 14th was the only September record and the last of the year, this two days earlier than the last of 2021 but 23 days

later than the 2013-2021 last bird mean; there have now been 125 September bird-days, with just 13 this century and highs of ten in 1979, eight in 1987, 28 in 1990 and seven last year. There have been 37 bird-days later than the last of this year, including ten on 30th September 1979 and four in October (logged in four years between 1960 and 1976).

Cuckoo *Cuculus canorus*

Cog

Scarce Migrant has bred, most recently suspected of having done so in 2006

Earliest 6th April 1960 (23rd April 2022) **Latest** 8th September 1956

1934-1976: 77 trapped, 2015-2020: 6 trapped

The only 2022 record was of a mobile male on 23rd April; this was ten days earlier than the 2013-2021 first bird mean, indeed there have only been 23 earlier Skokholm bird-days, most recently with one on the 22nd in 2015 and with birds on the 6th and 8th in 1960, the 12th in 1934 and 1982 and the 15th in 1962 the earliest. Although spring counts are seldom high, a single spring bird-day matched that of 2017, 2020 and 2021 as the lowest tally since 2010; the peak spring bird-day totals are the 16 of 1951, the 19 of 1957 and the 17 of 1973 and 1976, with the most recent double-figure tally being the 13 of 1977 and the 2013-2021 bird-days mean being 3.0 (with a high during this period of eight in 2018). This becomes the fifth year this decade and the 16th year this century without an autumn sighting; autumn records in 59 years include bird-day highs of 34 in 1937, 23 in 1953 and 37 in 1966, whilst a total of 14 bird-days in 2018 is the only double-figure autumn tally since the 12 of 1987 and the 2013-2021 autumn bird-days mean is just 3.3.

Stock Dove *Columba oenas*

Colomen Wyllt

Scarce formerly Fairly Common with up to 62 pairs breeding between 1967 and 1983

1967-1976: 28 trapped

One, found above the Quarry on the morning of 21st March, soon headed east (RDB, GE). Singles on one October and one November date last year, on one September date in 2020, on one April date in 2019, on three October dates in 2018, on two October dates in 2016, on one March and one November date in 2015 and on one March date in 2012 are the only other records since sightings of singles in the October and November of 2003, indeed there have only been 36 bird-days since 1985. A higher 2003 total published in previous reports was an error which arose during the digitisation of the paper logs.

Woodpigeon *Columba palumbus*

Ysguthan

Uncommon Visitor has bred, most recently in a South Haven sea cave in 2007

1960: 1 trapped, 2017: 1 trapped

The only March sightings were of one at the Bluffs on the 11th and one which spent the 22nd in the vicinity of the Table, although a tail feather was found at East Bog on the 26th; a March bird-days total of two was the lowest of the last seven years (12 in 2020 was the highest March tally during this period, whilst the peak March total is the 82 of 1996, this a year when three pairs attempted to breed). Singles on the 11th and 14th April were followed by the discovery of another tail feather on the 18th (in the North Gully auk plot), singles on four dates between the 22nd and 26th, two together at Purple Cove on the 27th and singles on the 29th and 30th (there were also tail feathers at the Lighthouse on the latter date, another reminder that conspicuous Woodpigeons are vulnerable); an April bird-days total of ten was the highest since 24 in 2007 (albeit well down on a high of 88 recorded in 1996). The only May sightings were of singles on the 12th, 14th and 24th, a bird-days total of three matching that of 2015 as the second lowest since 2011; the 2013-2021 May bird-days mean is 6.7, whilst the May high is the 106 of 1995 (when there were again three breeding pairs). June saw one singing at the Hills on the 2nd and a group of eight on the 15th which included at least one juvenile; the latter was the highest daycount in any month since nine on 9th November 2001 and

matched that of 9th June 1996 as the highest daycount in this month (Skokholm daycounts have never been big, with peaks of 18 in May 1960, 12 in April 1978 and 11 in August 1987 and May 1989). One on the 4th, two on the 11th and one on the 24th made this the tenth July since 2007 with a sighting, the bird-days total matching that of 2019 as the highest since 2008. A flyover on the morning of the 22nd was just the 11th August bird-day since 2007 and the last of the year. A 2022 bird-days total of 29 was down on the 37 of last year but close to a 2013-2021 mean of 25.6.



Turtle Dove *Streptopelia turtur*

Turtur

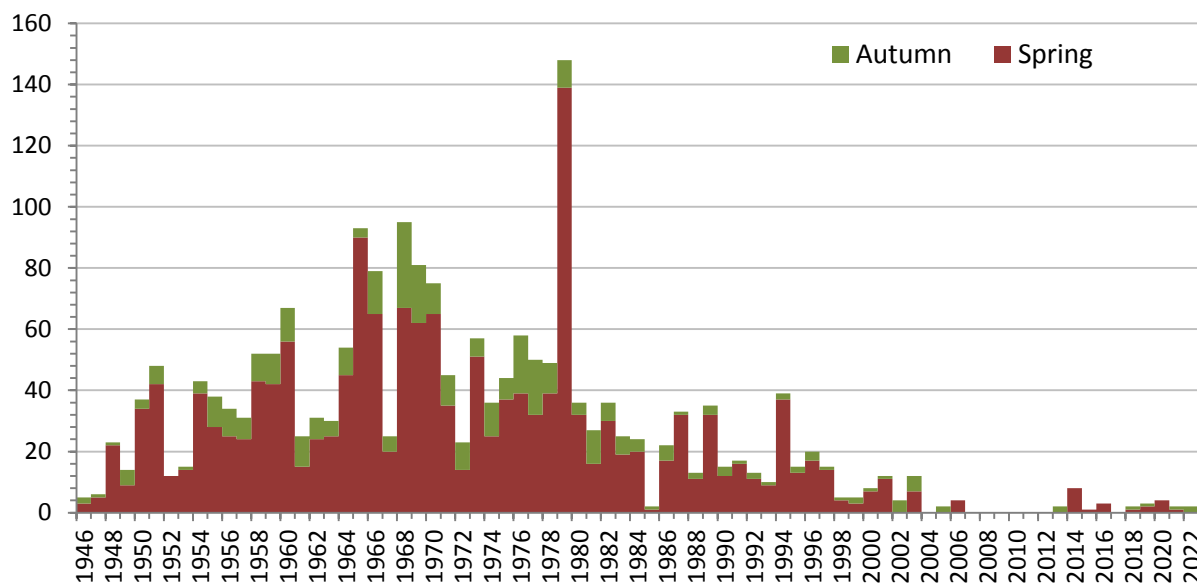
Scarce Migrant previously Uncommon

Earliest 1st April 1949 (11th September 2022) **Latest** 18th October 1995 (20th September 2022)

1934-1976: 37 trapped

There were no spring sightings for the first time since 2017 and for the 12th time this century. With the exception of the War years, there were annual spring records between 1936 and 2001, with bird-day highs of 90 in 1965, 67 in 1968 and 139 in 1979 (there were peak daycounts, all in May, of nine in 1958, ten in 1940 and 1965 and 14 in 1979). The highest spring bird-day totals this century are 11 in 2001 and eight in 2014, with peak daycounts during this period of two in four years.

The total number of Turtle Dove bird-days logged in each year since 1946.



One outside of the Cottage on the afternoon of 11th September was later seen over North Pond (GE *et al.*). Similarly one found at Orchid Bog on 20th September was later seen at various other locations around the Island (JPH *et al.*). These were the first September bird-days since 2013, taking the 21st century bird-days total for this month to 16 and the all-time September total to 206. The 2022 sightings take the post-2006 bird-days total to just 27 and the 21st century total to 69; alarmingly there were 407 bird-days recorded in the last two decades of the previous century and 1165 bird-days logged in the 20 years prior to that. Sadly this has become a truly scarce species in Wales, with a 96% drop in the breeding population observed between 1970 and 2010 (Bladwell *et al.*, 2018).

Collared Dove *Streptopelia decaocto*

Turtur Dorchog

Uncommon Visitor the majority of sightings coming in spring. First recorded 7th June 1962

1 trapped

1965-1976: 31 trapped, 2013-2020: 8 trapped, 2 retrapped

One singing at the Farm during the afternoon of 19th March was just the 18th bird-day to be logged in this month; the only earlier Skokholm sightings are of March singles on the 9th in 1993 and on the 15th in 1971. There were April singles on seven dates from the 15th, with a singing bird around the Farm on three dates between the 21st and 24th; an April bird-days total of seven was the highest since the 13 of 2003, albeit down on that logged in 20 previous years and highs of 28 in 1974 and 35 in 1976. Two were present on 9th May, this the only observation this year of more than a single, whilst birds on six further dates took the May bird-days total to eight; the 2013-2021 May bird-days mean is 11.7 (with a peak of 27 in 2018 which matched that of 2000 as the highest this century), whilst historically daycounts of up to 13 (in 1974) have produced bird-day totals of up to 60 (in 1977). A male at the Farm on the 7th and a juvenile on the 13th were the only June sightings, a bird-days total of two being the lowest in this month since 2011, down on a 2013-2021 mean of 9.7, a high during that period of 20 in 2015 and an all-time high of 31 in 1977 and 1981. One at the Lighthouse on the 17th (with perhaps the same bird at the Farm) was the only sighting during what was a typically quiet July; there have now been 156 July bird-days, with highs of 26 in 1985 and eight in 1989, but just 37 bird-days this century. There were no August sightings, with one in 2021 the last of 116 bird-days logged in this month, whilst a mobile bird on 19th September was the last of the year; there have now been 99 September bird-days, with 28 in 1985 the only annual total of more than seven. The most recent of 12 October bird-days was in 2003 and the only November bird was present on the 2nd in 1993. There were no records of birds being harassed by Meadow Pipits, an unnecessary display of awareness which often befalls visiting Collared Doves.

Water Rail *Rallus aquaticus*

Rhegen y Dŵr

Uncommon Winter Visitor and Irregular Rare Breeder confirmed in 1929, 1931, 2012 and 2021

3 trapped

1936-1976: 19 trapped, 2013-2021: 31 trapped, 6 retrapped

Following singles heard in the vicinity of South Pond on the 4th, 11th and 14th March, an eaten bird was found there on the 21st. One was calling along Well Stream on the latter date, one was at the Well on the 23rd, two below the Well 9 Mist Net on the 24th included at least one ringed bird and a single was still at the Well on the 30th; a March bird-days total of eight was up on the three of last year, but down on a 2013-2021 mean of 11.2 and highs of 24 in 2001 and 31 in 2018. Following one at the Well on 3rd April, there were no further records until the 26th when flank feathers were found there; a remote motion-sensor camera revealed that one Well bird was still alive at 0400hrs the following morning and on the 28th, whilst one heard on the 30th was the last of the month. There have now been April records in 26 years, including each of the last ten, with bird-day highs of 31 in 2013, 14 in 2015 and 11 in 2019. Perhaps surprisingly, particularly given last year's successful breeding attempt, there were no more records until July; singles at the Well on the 25th and 27th and near the Red Hut on the 29th took the all-time July bird-days total to 66, 23 of which have been

logged this decade. As is typically the case, numbers increased in August with records on 11 dates from the 2nd, all of singles bar two on the 13th and 31st and all at either the Well or Orchid Bog bar one in the Bog on the last day of the month; there have been records in 36 previous Augusts (including each of the last ten), with a 2022 bird-days total of 13 being down on the 30 of last year, on further highs of 27 in 2016 and 34 in 2018 and on a 2013-2021 August mean of 18.1.

Following two on the 2nd and one on the 4th, there were daily September counts from the 8th and highs of six on the 18th, seven on the 23rd and five on the 25th and 29th, with records coming from the Top Tank from the 2nd, Medicine Rock from the 8th, south of Home Meadow from the 9th, North Pond from the 12th, around the Cottage from the 13th, Crab Bay from the 14th, East Bog from the 15th, South Pond from the 17th and near the Hills from the 18th; there have been higher daycounts in five Septembers, with peaks of nine in 2014, 2018 and 2021, whilst a bird-days total of 69 was the seventh highest to be logged in September, albeit down on six of the last eight years, a 2013-2021 mean of 80.6 and all-time highs of 137 in 2014, 120 in 2018 and 113 last year. Counts on every October date bar the 29th and 31st included highs of seven on four dates, eight on the 12th, 14th and 23rd and nine on the 13th, the peak only down on highs of 20 in 1931, 15 in 2014, 2016 and 2021 and 14 in 2015 and 2018. A bird-days total of 121 was similarly the seventh highest to date, but down on six of the last eight Octobers, a 2013-2021 bird-days mean of 163.9 and highs of 222 in 2014, 281 in 2015 and 195 in 2018. Occupied sites additional to those previously noted were Hog Bay, Isthmian Heath, South Haven and Boundary Hill. Counts of up to three birds on 14 dates to the 22nd led to the second lowest November total this decade, with 22 bird-days being down on a 2013-2021 mean of 80.2 and highs of 112 in 2014, 123 in 2015 and 113 in 2021 (although there have only been 11 totals up on that of this year). There were December daycounts of up to two at South Pond on the 2nd, 8th, 9th and 10th and two at the Well on the 3rd.

Corncrake *Crex crex*

Rhegen yr Yd

Rare Migrant and Former Rare Breeder previously a Scarce or Uncommon Migrant

1940-1971: 12 trapped

A juvenile on 19th September, skulking around the spring which feeds Orchid Bog, was the first 21st century record and the first since a juvenile present at the Well between the 14th and 17th September 1999 (CB, RDB *et al.*). Observers were stationed in the Orchid Bog Hide for over four hours on the 20th, for 90 minutes on the 21st and for an hour on the 22nd, however there were no more sightings.



Unsurprisingly this was once a Skokholm breeding species, with the last confirmed breeding said to have occurred in 1930, but with singing males recorded regularly for two decades thereafter and bird-day totals of 18 logged between 2nd May and 3rd June 1949 (when one sang daily from nettles near the Wheelhouse between 24th May and 3rd June) and 68 between 29th April and 28th July 1951 (one with a damaged wing lingered and one was 'calling daily from the Bog in June'). Barring 1962, there were sightings in every post-War year to 1967 totalling 148 bird-days, with no more than seven a year after 1951 and with one on 14th March in 1948, 19 in April, 78 in May, 32 in June, six in July, two in August and ten in September. Two on 13th May 1967 was the last record of multiple birds. Post-1967 records were assessed for 'The Birds of Wales' (Pritchard *et al.*, 2021), although the Skokholm total of accepted records was wrongly given as five on the map accompanying the Corncrake section; there were approximately 16 records over ten years between 1967 and 2000, with singles on 8th October 1968, 4th May 1969, on 17th April, the 14th and 16th May and the 15th and 20th September 1970, on 30th April, 13th May, 19th September and the 5th and 14th October 1971, on 22nd April 1974, 27th September 1975, 30th September 1983, the 24th and 25th September 1984, the 2nd and 14th September 1987 and on 26th May and between the 14th and 17th September 1999.

Moorhen *Gallinula chloropus*

Iâr Ddŵr

Scarce Breeder did not breed in 1937, 1939 to 1953, 1955 to 1966, 1974 and 1976 to 1995

2 trapped

1936-1970: 10 trapped, 2013-2021: 26 trapped, 9 retrapped

With the exception of one at North Pond on the 6th and 19th, there were no sightings between the return of staff on the 1st and 24th March. One was to the north of Home Meadow on the 25th, this followed by daily March sightings, with one flying from the Well to the north side of the Neck on the 27th, two at North Pond from the 28th, one at Orchid Bog from the 29th and three on the 30th (the latter the highest ever daycount in this month); early spring is typically quiet on Skokholm (the 2013-2021 March bird-days mean is 8.4), a paucity of records which may reflect an absence of birds or just skulking non-breeding behaviour. Sightings on all but three April dates included highs of six on the 17th and 23rd, eight on the 29th (when there were five at North Pond) and seven on the 30th, whilst there were birds at South Pond from the 2nd and in the vicinity of East Bog from the 19th (one was singing over this area on the night of the 19th); the four highest daycounts were up on anything previously logged in April (there were highs of five in 2015, 2016 and 2021), whilst a bird-days total of 91 was up on previous April highs of 65 in 2015, 78 in 2016 and 53 in 2017. An egg stolen from the North Pond irises by a Crow on 27th April was the first indication of a breeding attempt, whilst a bird was again nest building here on 14th May, birds were incubating at Orchid Bog from the 15th and a motion-censor camera captured a pair mating at East Bog on the 21st. Three birds were seen at South Pond on 19th May, with two still present on the 26th despite the discovery of two dead birds in that area (a fresh bird on the 25th and two older legs on the 26th). Daycount highs of nine on the 15th and 19th was a May record, up on the eight logged in 1999 (which included five very early juveniles).

A nest at South Pond contained three eggs on 3rd June, with chicks heard in the eastern North Pond irises on the same date; the chicks were 21 days later than the first of last year, 11 days later than the 2013-2021 first chick mean and the latest since hatchlings found at the Well on 2nd July 2013. At least four chicks were seen adjacent to the North Pond Hide on 4th June, although the adults were regularly seen chasing Lesser Black-backed Gulls and no more than one chick was noted from the 13th; this youngster was seen regularly during June and early July and had fledged by 15th July. There was no indication that young hatched at South Pond where the third dead adult of the year was found on 15th June. A second North Pond pair had three chicks on 7th June and five were confirmed on the 14th, however no more than three were seen from the 16th, there were no more than two from the 18th and only a single logged from the 23rd fledged by 14th July. Two chicks were also first seen at Orchid Bog on 7th June where a third was confirmed on the 8th, however there were no further sightings until a fledgling joined the adults on 19th July. Two chicks were first seen at the Well

on 17th June and two were still alive on 1st July, although only one was noted on the 6th and 11th July; although there were no further sightings of young at the Well, this was quite possibly the fledgling which joined that at Orchid Bog on 13th August (a third adult also appeared at Orchid Bog from the 15th and sightings from the Well stopped). There was no sign of a successful breeding attempt at East Bog. The only indication of second broods came from the west side of North Pond, where a chick was seen on 7th July but not thereafter, and at Orchid Bog, where a chick was seen on 18th July but not thereafter. Six pairs thus fledged a minimum of four young, this equating to a productivity figure of 0.67 fledglings per pair. Six breeding pairs is a new Skokholm record, up on a 2013-2021 mean of 3.0, a high of five recorded last year and the four of 2007 and 2011, however productivity was the lowest this decade, down on a 2013-2021 mean of 2.37 \pm se 0.30 (there was a high during this period of 3.50 in 2018 and a low of 1.00 in 2013 and 2014).

A third juvenile arrived to Orchid Bog on 27th August and a fourth was there on 9th September; given how dry the rest of the Island was, it is possible that these were from North Pond as opposed to further afield. Indeed Moorhen were only seen at either the Well or Orchid Bog in September, with sightings on 26 dates to the 27th and evening roost highs of eight on the 9th and 23rd and 11 on the 19th and 20th which took the bird-days total to 99; the only higher September daycount is the 12 logged on the 30th last year, whilst the bird-days total was up on a 2013-2021 mean of 46.9 and the third highest to be logged in this month (only down on the 119 of 2001 and the 112 of last year). Sightings on nine October dates were all of singles bar a count of three juveniles at Orchid Bog on the 8th, whilst the sightings away from Orchid Bog were of one in the Bog on the 2nd, a juvenile under the Library Net on the 7th, one at South Pond on the 10th, an adult at the Well on the 20th and one in Well Stream on the 30th; a bird-days total of 11 matched that of 2013 as the second lowest since 2012, this down on a 2013-2021 October mean of 31.3 and highs of 53 in 2003, 45 in 2016 and 116 last year (the latter including the three highest daycounts to be logged in any month, with 13 on the 6th, 14 on the 7th and 15 on the 13th). Moorhen were seen on 17 November dates to the 30th, with a juvenile at North Pond and two frequenting the Wheelhouse Pond, a different juvenile trapped in the Wheelhouse Heligoland on the 8th and a juvenile eaten at the Farm on the 16th (no legs were found); a November bird-days total of 23 was the highest since the 30 of 2003, whilst 64 in 2001 and 25 in 2002 are the only higher totals. There were no December sightings prior to the departure of staff on the 10th.

Ringling recovery FS19715

Originally ringed as an adult male, WELL HELIGOLAND, SKOKHOLM 22nd April 2018

Recovered as an adult, SKOMER ISLAND, PEMBROKESHIRE 8th May 2022

Finding condition Metal ring read in field

Distance travelled 4km at 343 degrees (NNW)

Days since ringed 1477

Oystercatcher *Haematopus ostralegus*

Pioden y Môr

Fairly Common Breeder and Common Visitor previously an Uncommon Breeder

5 pulli trapped, 34 resightings

1939-1976: 1882 trapped, 2014-2021: 78 trapped (including 63 pulli), 124 resightings, 1 control

There were March lows of 46 on the 1st and 26th, 47 on the 2nd and 48 on the 28th, but 13 three-figure daycounts and highs of 153 on the 10th, 152 on the 13th and 155 on the 22nd; there were two counts of 300 in 1932 and one of 300 in 1933, with 160 in 1951 being the only other March daycount up on this year's peak (155 were also logged in 1988). The largest roosts again formed in the vicinity of the Anticline, with highs of 131 on the 9th and 11th and 152 on the 10th and 13th; these were the largest Anticline spring roosts this century, topping the 122 of 10th March 2013 and 16th March 2020 and the 124 of 12th March last year. Birds were slower to vacate coastal roosts this year, indeed there were peak counts from the Anticline of 138 on the 4th, 148 on the 6th and 136 on the 7th, with

122 still roosting there on the 11th; there were also 27 at North Pond on the 6th, a bird-days total of 175 being the third highest logged in April (there were 300 on the 9th in 1933 and 201 on the 13th in 1990). The majority were on territory by the end of April and a scrape on Middle Heath (to the south of North Pond Wall) contained two eggs on the 25th; this was two days earlier than the first lone egg of 2021 (produced by the same pair) and eight days earlier than three nests with eggs found in 2020. This pair were still incubating eggs on 19th May, however chicks had departed the scrape by the 22nd.



A whole Island census during May revealed 61 territories; although down on a remarkable 76 territories mapped last year, this matched the previous record set in 2017 and was 39.0% up on the 2002-2021 mean ($43.89 \pm \text{sd } 13.51$). Only three dead adults were found between 2nd March and 22nd April, these including colour ringed bird 1A; ringed as a breeding adult near Winter Pond in May 2016, it bred in the same area each year thereafter. Colour ringed bird 83 was not seen this year, although ten additional marked birds were still alive during the 2022 breeding season; a return rate of 83.3% was the second lowest of the last six years and down on a 2017-2021 mean of 94.4%. North Pond breeding season roosts were smaller than in most recent years; there were peak May counts of 40 on the 7th, 10th and 20th and 46 on the 18th (the May high was 61 in 2021, 47 in 2020, 55 in 2019 and 36 in 2018) and peaks in June of 26 on the 1st, 18th and 29th and 29 on the 9th and 19th (the June high was 63 in 2021, 58 in 2020, 61 in 2019 and 58 in 2018). A chick found near the old Middle Heath Rabbit Enclosure on 15th June had four feet (this not part of the early brood); an additional shortened right tarsus held a two toed foot and a damaged foot extended backwards from near the left 'knee' (above photographs). Although still alive the following day, it was not seen again.

As in the previous nine seasons, nests were selected for productivity monitoring during early May (22 in total). Of these, 13 successful pairs managed to fledge 22 young, with six pairs fledging a singleton, five pairs fledging two apiece and pairs on Green Heath and to the east of the Neck fledging three. A productivity figure of 1.00 fledgling per monitored pair was down on recent highs of 1.62 in 2018 and 1.55 in 2014, but was up on that logged in five years this decade (including lows of 0.47 in 2019 and 0.36 in 2015) and was close to the 2013-2021 mean ($0.93 \pm \text{se } 0.15$). The first three juveniles to be seen in flight were on North Plain on 21st June, these ten days earlier than the first of last year and one day earlier than the 2016-2021 mean (the earliest during this period were

logged on 16th June in 2017). Youngsters were again seen limping on occasion and uneaten dead chicks were encountered, whilst a Peregrine took a fledgling on 30th July. There were peak July North Pond roost counts of 52 on the 8th, 54 on the 9th and 46 on the 10th, 11th and 13th, but no more than 28 from the 21st (although a South Haven roost of 32 formed on the 30th, with 36 there the following day); there were July roost count highs of 51 in 2021, 64 in 2020 and 71 in both 2019 and 2018.



The maximum August daycount was of 77 on the 1st, 33 of which were on the Anticline; this was the highest August daycount since 89 were logged on the 15th and 100 were logged on the 21st in 1989, with 80 in 1947 being the only other higher count in this month (the 2013-2021 mean high is 57.3). However no more than 30 were present from 5th August, there were no sightings at all on the 16th and 17th and daily sightings from the 18th were of no more than nine from the 25th. September proved typically quiet, with sightings on all but one date and highs of 17 on the 9th and 12th, but no more than seven thereafter; the peak was down on a 2013-2021 mean of 26.3, whilst a bird-days total of 184 was the second lowest since 2012 and well down on a 2013-2021 mean of 373.9. Daily October sightings, including highs of 25 on the 16th and 22 on four dates, tallied 437 bird-days; the peak count was close to a 2013-2021 mean of 22.3, but the monthly total was the sixth highest to date (there were highs of 525 in 1967, 570 in 1973 and 625 in 1974, whilst the 2013-2021 mean is 301.3). Birds were noted on all but one November date, with seven single-figure daycounts and highs of 26 on the 14th and 27th and 29 on the 15th taking the bird-days total to 455; there have been higher daycounts in three of the last eight Novembers (with a peak of 35 in 2015), whilst a mean 15.2 birds per November day was the highest since the 15.6 of 2013. Sightings on all but two December dates prior to the departure of staff on the 10th peaked at 23 on the 1st; there were higher daycounts in nine of the 25 Decembers with a record (with 43 in 1992 the maximum).

Ringling recovery Left tarsus orange over FB46115, right tarsus orange with black 9A

Originally ringed as a breeding adult, EAST OF TWINLET, SKOKHOLM 28th May 2017

Previously recovered as an adult, SAINT-MAURICE, CÔTES-D'ARMOR, FRANCE 12th December 2017

Most recently resighted as a breeding adult, NORTH POND, SKOKHOLM 28th July 2022

Recovered as an adult, SAINT BRIEUC, BRITTANY, FRANCE 29th November 2022

Finding condition Colour ring read in field

Distance travelled 399km at 153 degrees (SSE)

Days since ringed 2011

This bird bred on Skokholm in each year between 2017 and 2022, always returning to the area between Twinlet and North Pond. This year it fledged two young. The November resighting came from within 5km of where it was found roosting in December 2017.

Lapwing *Vanellus vanellus*
Cornchwiglen
Scarce previously Common and an Uncommon Breeder, but last bred in 2000

1938-1976: 696 trapped

One which briefly alighted at North Pond on 29th June was the only record between the return of staff on 1st March and the end of June; there have now been sightings of up to five birds on just 25 dates during this period since 2004, a sobering statistic for a species which produced chicks on Skokholm as recently as 2000. One on 14th July was seen on North Plain and South Pond before being heard near Orchid Bog during the night; there have now been July sightings in 13 years this century, with birds in seven years since 2013, whilst historically daycounts of up to 200 (in 1946) contributed to July bird-day totals of up to 2070 (in 1958). There were no August sightings for the 20th time this century; there were two bird-days in 2002, six in 2015 and three last year, with the last three-figure August tally being the 256 of 1996 and the last four-figure tally the 1990 of 1958. Similarly there was no September sighting for the 19th time since 2000 and no October sighting for the 11th time (but for just the second time since 2014). November saw one on North Plain on the 4th and one at South Pond on the 28th, 29th and 30th, these taking the November bird-days total for this decade to 55; November daycounts peaked at 400 in 1927 and 1931 and 300 in 1939, although the last three-figure daycount was in 1977 and the monthly total has not exceeded 67 since 1981 and 12 since 2001. There were no December sightings.

Golden Plover *Pluvialis apricaria*
Cwtiad Aur
Uncommon or Fairly Common but only 29 bird-days between 2005 and 2012

1976: 1 trapped, 2018: 1 trapped

Two at Winter Pond on 25th March were the first of the year, this becoming just the fourth March in 19 years with a sighting; although cold weather can increase the number of spring birds, as in 2018 when the 'Beast from the East' produced March daycounts of up to 130 and a record monthly total of 234 (along with the emaciated corpses of 22 individuals), counts are typically much lower. There were April singles on the 17th, 23rd and 29th, this becoming just the seventh 21st century year with a sighting in this month (but the sixth of the last seven). There were likewise three May singles, with birds logged on the 11th, 21st and 31st; there have now been May sightings in 53 years, including annually since 2014 (a daycount of 46 took the 1967 total to a record 50, whilst the 2013-2021 bird-day mean is 4.7). June saw flyover singles on the 1st and 15th followed by two summer-plumaged individuals along the Lighthouse Track on the 23rd; the peak daycount was down on an all-time June high of three logged last year, whilst a total of four bird-days was only down on the six of 2017, the seven of 1973 and the nine of 1988 and 2021.

A summer-plumaged bird was on North Plain on 16th July and flyovers were logged on the 21st and 25th, this becoming the fifth year since 1999 and since 2013 with a July sighting; a record 23 bird-days were logged during July last year, the previous highs being four in 1970, six in 1983 and eight in 1986. Only singles were present in August, with birds on the 6th, 14th, 21st, 24th, 26th and 27th; the bird-days total was close to a 2013-2021 August mean of 8.6, this average inflated by an August record 26 bird-days in 2015 (which included a flock of 25 on the 30th) and further highs of 19 in 2020 and 21 last year (21 in 1967 is the only other August total of more than eight). The only September sightings were of flyovers on the 9th, 13th and 24th, a bird-days total of three being the second lowest this decade and well down on a 2013-2021 mean of 27.0; there have been September records in the majority of years, with all-time bird-day highs of 65 in 1950, 57 in 1992 and 108 last year (the latter the third highest total to be logged in any month, down on the 189 of March 1965 and the 234 of March 2018). There were October sightings on five dates, with flyover singles on the 2nd, 11th and 18th, six together on the 17th and 20 circling North Plain on the 22nd which did not seemingly land; the October peak matched that of 1939 as the second highest to date, only down on the 28 of 1988, whilst a bird-days total of 29 matched that of 1960 and was only down on the 32 of 1961, the 56 of

1966, the 49 of 1971 and the 33 of 1988. There were no further sightings; there have been November records in 21 previous years, including five of the last nine, with bird-day highs of eight in 1939 and 19 in 1968.

Grey Plover *Pluvialis squatarola*

Cwtiad Llwyd

Scarce records in 57 years since 1929, with only five singles 2004-2012 and 12 singles 2013-2015

One on 24th April, which arrived mid-morning to North Pond, was only the 23rd spring bird-day this century and the 27th April bird-day (11 of which have been this decade). A vocal flyover at 1000hrs on the 19th made this the 26th September with a sighting; there have now been 64 September bird-days, including eight logged over five years this decade. A mid-morning eastbound flyover on 26th October was the last of the year; there have now been 37 October bird-days, including four since 2016. An annual bird-days total of three matched that of last year, but was down on the 12 of 2020 and a 2013-2021 mean of 4.8; the 2020 tally was the second highest to date, only down on the 14 of 1993 (the latter including a record daycount of six on 14th September).

Ringed Plover *Charadrius hiaticula*

Cwtiad Torchog

Uncommon but Scarce between 2004 and 2011

1956-1970: 3 trapped

This is a scarce species in March, indeed one at North Pond on the 19th was just the tenth 21st century bird-day and the 59th to date. There were singles on four April dates from the 11th and four on the last day of the month; although the peak daycount matched the seventh highest to be logged in April (down on a high of ten in 1953), a bird-days total of eight matched the second lowest this decade and was down on a 2013-2021 mean of 12.3 (there have been 14 double-figure April tallies, including six in the last eight years and all-time highs of 21 in 1966 and 20 last year). Following seven together on North Plain on the 1st and six there on the 2nd, there were sightings of no more than three on seven further May dates; there have only been higher May daycounts in seven years, with highs of 14 in 2014 and 16 last year, however a bird-days total of 25 was down on a 2013-2021 mean of 32.2 and was down on five totals this decade (the three highest May totals to date have occurred in the last nine years, with 52 in 2014, 42 in 2019 and 50 in 2021). Three on the 2nd was the only June daycount, but matched the second highest to date (there were four on the same date in 1989). A spring bird-days total of 37 was down on the 72 of last year and further peaks of 59 in 1978, 62 in 2014 and 53 in 2019.

The total number of Ringed Plover bird-days logged each month (2021 to 2019 in parenthesis), along with the maximum monthly daycount (2021 to 2019 in parenthesis) and the date(s) on which the 2022 peak was recorded.

March	April	May	June	July	August	September	October	November
1	8	25	3	6	33	12	1	0
(0, 2, 1)	(20, 16, 8)	(50, 32, 42)	(2, 0, 2)	(1, 1, 2)	(26, 22, 11)	(9, 16, 14)	(0, 9, 1)	(0, 0, 0)
1	4	7	3	2	12	6	1	0
(0, 1, 1)	(3, 3, 2)	(16, 10, 5)	(1, 0, 1)	(1, 1, 1)	(9, 7, 1)	(2, 3, 2)	(0, 1, 1)	(0, 0, 0)
19 th	30 th	1 st	2 nd	24 th	13 th	14 th	20 th	

Autumn passage began with a westbound single on 11th July, this ten days earlier than the first of last year. There followed flyover singles on the 16th and 19th, two over on the 24th and another over on the 31st; there have now been 133 July bird-days, with seven in 1990 and 11 in 2016 the only totals up on that of this year. Given that North Pond was again empty throughout the month, that all bar four of the 33 August bird-days were flyovers was little surprise (up to two were on North Plain between the 12th and 14th); a high of 12 on the 13th was nevertheless a new August daycount record (up on the 11 of 1988 and 2016), whilst the total was only down on the 65 of 2016 (the 2013-2021

August mean is 20.1). September was similarly dry, with records on six dates all being of flyovers bar one on North Plain on the 14th (five flew past the Lighthouse on the same date); there have been higher September daycounts in six years, with a high of 13 in 1975, whilst a bird-days total of 12 was down on 20 previous years and a 2013-2021 mean of 23.8 (there were all-time highs of 41 in 1989, 39 in 2015 and 74 in 2016). One over on 20th October was the last of the year; there have now been 85 October bird-days logged over 31 years, with 25 this decade and a high of 14 in 1961. The most recent of 20 November bird-days was in 2016. An autumn bird-days total of 52 was only down on highs of 59 in 1989, 68 in 2015 and 158 in 2016.

Little Ringed Plover *Charadrius dubius*

Cwtiad Torchog Lleiaf

Rare 14 spring birds accounting for 23 bird-days and three autumn birds accounting for 11 bird-days
Earliest 27th March 2012 (**27th March 2022**) **Latest** 24th August 2016 (10th August 2022)

Although it could not be found at noon, what was presumably the same bird was present at North Pond on both the morning and afternoon of 27th March (RDB, GE); this matches one on the same date in 2012 as the earliest Skokholm record, these the only birds seen prior to 8th April. One found at North Pond on 2nd May was probably that present at South Pond on the 3rd and 4th; this was the second longest stay by a spring bird, with one lingering for eight days between the 12th and 19th May 2001. A vocal bird among four circling Ringed Plover on 10th August departed to the northeast (LM); this was only the third autumn record for Skokholm, with two present between the 15th and 18th August and another present between the 21st and 24th August 2016. Given the increase seen in the Welsh breeding population over the last few decades, it is of little surprise that 11 of the birds found on Skokholm have occurred since August 2016, with 16 since April 2011 and all 20 since May 1986.



Dotterel *Charadrius morinellus*

Hutan y Mynydd

Rare one spring daycount of five birds and 14 previous autumn records of up to two birds
Earliest 7th May 1960 (1st September 2022) **Latest** 16th October 1981 (10th September 2022)
1964: 1 trapped

A juvenile, seen briefly on North Plain and then in flight on 1st September, arrived eight days earlier than the first of last autumn (DDJ *et al.*). This was almost certainly the bird which spent most of the 2nd and 3rd on a dry North Pond, the morning of the 4th around Twinlet and each day between the 5th and 10th on either North Plain or North Pond; it had departed by the morning of the 11th. A ten day stay was the third longest on record; one present between the 2nd and 12th September 1964 was ringed on the 3rd (an 11 day stay), whilst one of two which arrived on 11th September 1974 lingered to the 21st (also 11 days). This becomes the third consecutive year with a sighting following a flyover on 1st October 2020, a juvenile between the 9th and 11th September 2021 and two different juveniles

present between the 13th and 15th September 2021. Of the 15 autumn records now recorded, one on the 25th and 26th in 1970 is the only August sighting, ten were in September (including sightings in each year between 1971 and 1974 and singles on the 6th in 2006 and the 21st in 2014 which are the only other 21st century records) and four were in October.



Whimbrel *Numenius phaeopus*

Coegylfinir

Common Visitor has seemingly overwintered on at least 22 occasions

1959-1974: 30 trapped, 2018: 2 trapped

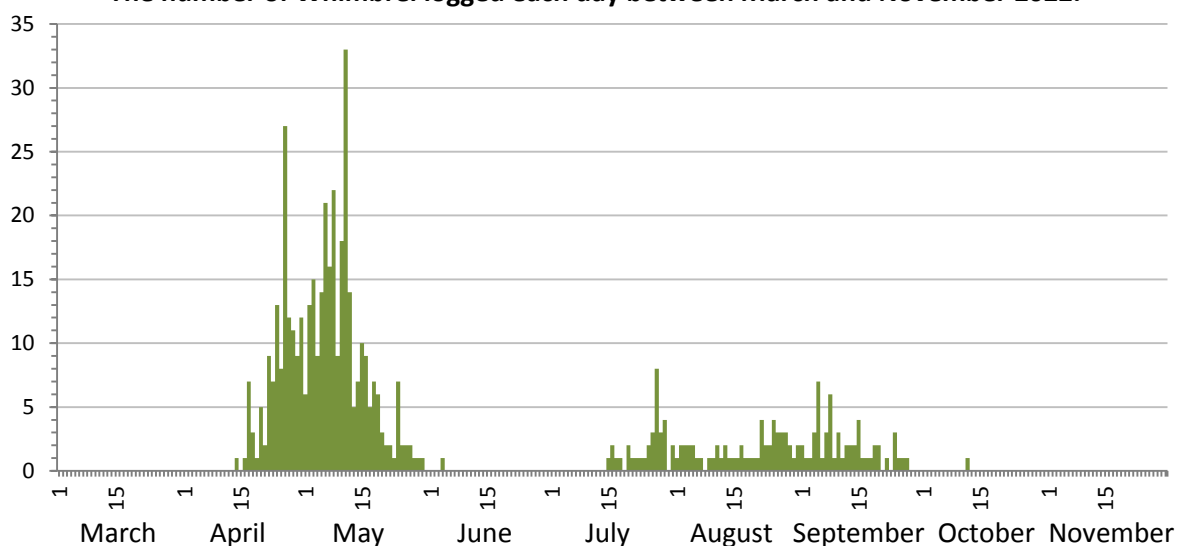
There were no March sightings for the first time in over a decade, with all previous overwintering individuals now seemingly lost; this was to be expected given that autumn 2021 saw no October record for the first time since 2009 and no November record for the first time since 2012. A flyover on 14th April was the first of the year, this two days later than the first three spring migrants of last year and three days later than the 2013-2021 mean (with the earliest during this period logged on 3rd April 2016 and the latest on 20th April 2013). There followed daily April records from the 16th, with peaks of 13 on the 24th, 27 on the 26th and 12 on the 27th and 30th which took the monthly total to 128; the peak daycount was down on that logged in ten previous Aprils, including highs of 47 in 1989, 64 in 2003 and 45 in both 2016 and 2019, whilst the bird-days total was down on eight previous years, a 2013-2021 mean of 146.3 and all-time April highs of 173 in 1989, 179 in 2016, 174 in 2020 and 249 last year. May also proved productive, with records on every date bar the 31st and highs of 21 on the 6th, 22 on the 8th and 33 on the 11th, but only single-figure daycounts from the 16th which took the bird-days total to 263; there have been four higher May daycounts (with 40 on the 9th in 1997 the most recent and 50 on the 1st in 1993 the peak) and four higher May totals (the 2013-2021 May mean is 223.1, with a high during this period of 326 in 2019, whilst the all-time high is the 423 of 1989). One seen at North Pond and along the North Coast on the 4th was perhaps the same bird and the only June sighting; there have now been records in 62 Junes, with bird-day highs of 45 in 1958, 36 in 1987 and 96 in 1988, but a 2013-2021 bird-days mean of only 8.4. A combined April,

May and June total of 392 was very close to a 2013-2021 mean of 377.9 (high of 504 and 508 during this period (in 2019 and 2021 respectively) were only down on the 615 of 1989).

The total number of Whimbrel bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2019 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	0	128	263	1	33	53	53	1	0
2021	3	249	252	7	39	42	4	0	0
2020	2	174	167	4	15	43	21	15	12
2019	9	159	326	19	48	57	27	12	15
2022	0	27	33	1	8	4	7	1	0
2021	1	40	27	1	6	3	2	0	0
2020	1	22	23	1	5	6	5	1	1
2019	1	45	25	4	5	5	2	1	1
		26 th	11 th	4 th	27 th	22 nd & 25 th	5 th	12 th	

The number of Whimbrel logged each day between March and November 2022.



As is invariably the case, autumn proved to be quieter than spring. Sightings on all but two July dates from the 15th totalled 33 bird-days and peaked at eight on the 27th and four on the 29th; the first was two days later than the first of last July and on the same date as the first three of 2020, whilst there have only been higher daycounts in five Julys (with peaks of 12 in 1938 and 1976 and 18 in 2017) and higher bird-day totals in 12 Julys (with peaks of 66 in 1967, 72 in 1976 and 48 in 1983 and 2019). Although there were sightings on all but one August date, daycount highs of just four on the 22nd and 25th led to a bird-days total of 53; there was a recent daycount high of 20 in 2013 and all-time highs of 110 in 1948, 28 in 1962 and 39 in 1984, whilst the total was down on a 2013-2021 mean of 72.7 and all-time highs of 169 in 1948, 172 in 1989 and 135 in 2015. Bar the 21st and 23rd, Whimbrel were logged on each September date to the 27th, with 53 bird-days including daycount highs of seven on the 5th and six on the 8th (but no more than four thereafter); there have been higher daycounts in 14 Septembers, with peaks of 35 in 1973 and 30 in 1985, and higher totals in 16 Septembers, with peaks of 160 in 1974, 110 in 1985 and 125 in 1989 (the 2013-2021 mean is 36.8). A vocal bird late on the afternoon of 12th October was the last of the year; there have been October sightings in 53 previous years, although many of these birds may have attempted to overwinter.

Curlew *Numenius arquata*

Gylfinir

Common Visitor previously Abundant and usually present throughout the year, but has never bred
1 control

1960-1976: 141 trapped, 2016-2019: 5 trapped, 2 controls

The drop in the number of Curlew visiting Skokholm has been alarming, with recent seasons proving the worst on record for this charismatic red-listed wader, a species which between 1994 and 2010 declined in the United Kingdom by 46% and in Wales by over 50% (BTO, 2016). Following one on the 1st and five on the 2nd, there were March singles on eight dates from the 11th, two on the 22nd and 30th, three on the 26th and an eaten first-winter found along the Lighthouse Track on the 16th; the peak March daycount was down on a 2013-2021 mean of 10.2 and all-time highs of 200 in 1965, 1967 and 1971 and 150 in 1975 (the latter the last three-figure March daycount). A March bird-days total of 21 was down on a 2013-2021 mean of 71.4, recent highs of 271 in 2013 and 147 in 2018 and all-time March highs of 1158 in 1965 and 1058 in 1967.

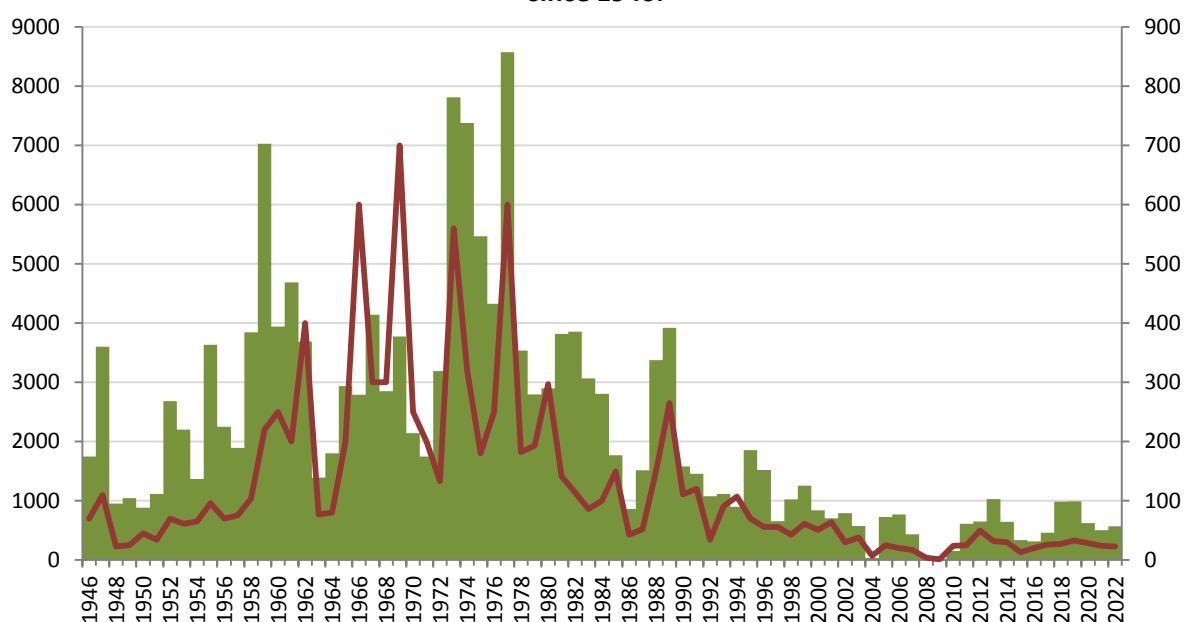
The total number of Curlew bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2021 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	21	32	9	31	81	224	85	58	14
2021	19	26	30	38	118	90	110	28	26
2020	25	49	13	35	120	146	65	65	73
2019	27	26	36	76	191	377	155	81	20
2018	147	29	12	61	252	240	159	66	16
2022	5	4	1	8	13	23	21	23	1
2021	5	3	3	6	24	11	8	3	3
2020	4	6	1	4	27	28	4	28	5
2019	3	3	3	6	14	33	19	5	4
2018	24	7	3	6	27	27	18	8	5
	2 nd	13 th	9 dates	24 th	23 rd	5 th	11 th	4 th	14 dates

There were 32 bird-days noted over 21 dates in April, with a high of four on the 13th the only daycount of more than two; although April has always proven to be a quieter month, with daycount highs of 60 in 1970, 50 in 1978 and 45 in 1981 and bird-day highs of 269 in 1977, 203 in 1978 and 206 in 1996, the 2022 totals were again disappointing, the peak daycount being close to a 2013-2021 mean of 4.6 and the bird-days total being close to a 2013-2021 mean of 34.3. The maximum May

daycount, which reached 32 in 1967 and averaged 15.6 between 1966 and 1983, has recently been much lower, however just one on nine dates this year matched that of 1962, 2017 and 2020 as the lowest to date. There were sightings on only 18 June dates totalling 31 bird-days, with eight together on the 24th being the only daycount of more than two; although the peak was the third highest since 2002, June daycounts reached 100 in 1959 and were still as high as 19 in 2000, whilst the 2022 total was close to a 2013-2021 mean of 33.6 and well down on all-time June highs of 412 in 1947, 464 in 1957 and 898 in 1959. Curlews seen during this period are not necessarily local; birds in June may have already departed their mainland Europe breeding grounds and reached coastal wintering quarters, as exemplified by the failed German breeder observed at North Pond on 16th June 2016.

The total number of Curlew bird-days (green) and the maximum daycount logged in each year since 1946.



The majority of autumn records were again of birds which returned to Skokholm to roost but which were feeding elsewhere. Daycounts on all but six July dates were of three or less on 19 occasions, however highs of 13 on the 23rd, ten on the 24th and nine on the 29th took the bird-days total to 81; the peak July daycount was the lowest since 11 in 2017 and down on a 2013-2021 mean of 17.0, whilst the total was the lowest since 38 in 2016 and down on a 2013-2021 mean of 123.8 (July daycounts of up to 149 (in 1985) and bird-day totals of up to 1741 (in 1959) have been logged). There were August sightings on every date bar the 7th and 25th, with highs of 22 on the 2nd and 24th, 23 on the 5th and 15 on the 27th and 30th; the peak was up on the 11 of last year, but matched a 2013-2021 mean of 22.8 (there were highs of 297 in 1980 and 265 in 1989, with 107 in 1994 being the last three-figure daycount in any month). An August bird-days total of 224 was the seventh highest this century and up on a 2013-2021 mean of 170.7; although there were perhaps even higher August tallies in the 1960s and 1970s, when Curlew were routinely logged as being ‘present’ rather than being counted, totals of 2175 in 1959, 1521 in 1960 and 1897 in 1978 eclipsed that of this year. September daycounts peaked at ten on the 3rd and 21 on the 11th, with no more than five on 26 further dates taking the total to 85; the peak daycount was the second highest since 2002 and up on a 2013-2021 mean of 12.8 (the all-time highs are 700 in 1969, 240 in 1973 and 200 in 1977), whilst the bird-days tally was down on 12 years this century (the September total has reached four-figures on nine previous occasions, including a peak of 2069 in 1977). Daily October counts to the 13th peaked at 23 on the 4th and six on the 7th; although the daycount maximum was massively down on 1966 and 1977 highs of 600 and was down on the 28 of 2020, it was otherwise the highest since 1996 (200 in 1989 was the last three-figure October daycount). Given how similar the peak August, September and October daycounts were, it is tempting to conclude that many of the same

individuals were involved. Despite a peak daycount up on most recent years, a further three October singles took the bird-days total to only 58, this down on a 2013-2021 mean of 62.4 and incredible October highs of 4305 in 1973, 3468 in 1974 and 3131 in 1977 (these totals including days when no count was entered into the Log). Only one Curlew was seen on 14 November dates; that 45 years ago a herd of at least 600 were present on one November date is a sad reflection of the Curlew's plight. Up to four were noted on seven December dates prior to a staff departure on the 10th; December daycounts peaked in 1979 when a group of 193 were present.

Ringed recovery Right above knee black with white 20, right below FJ06171, left above knee orange
Originally ringed as a juvenile, GANN ESTUARY, DALE, PEMBROKESHIRE 4th September 2018
Recovered as a fresh leg and ring only, HOWARD'S END, SKOKHOLM 17th May 2022
Distance travelled 9km at 258 degrees (WSW)
Days since ringed 1351

Bar-tailed Godwit *Limosa lapponica*

Rhostog Gynffonfrith

Uncommon Visitor although occasionally Scarce or Fairly Common
1964-1974: 8 trapped

Two summer-plumaged birds on 30th April were the first of the year; although the 2018 'Beast from the East' led to an influx into Pembrokeshire which included seven of the 17 bird-days ever logged in March, the first of spring typically arrives in April (the 2013-2021 first bird mean is 15th April). A winter-plumaged bird present between the 2nd and 5th May spent the majority of its stay on South Pond, whilst a flyover on the 17th was the last of spring. A spring bird-days total of seven was down on a 2013-2021 mean of 11.4, highs during that period of 21 in 2016 and 31 in 2019 and on all-time highs of 108 in 1966, 50 in 1992 and 38 in 2000 (1966 seeing eight or nine logged on ten dates).



Flyovers on the 4th and 21st August made this the 25th year with a sighting in this month, now with a bird-days total of 72 which includes 17 logged over six years this century. One was on the Neck on 5th September, with perhaps the same bird seen at the Lighthouse, the Neck and on North Plain the following day. A total of four autumn bird-days was down on a 2013-2021 mean of 9.9; the highest autumn bird-days total of the 21st century is the 47 of 2016, whilst there have been five higher post-1927 tallies, peaking at 72 in 1950, 76 in 1979 and 257 in 1988 (the latter the product of an

unprecedented September which saw 11 double-figure daycounts, including flocks of 43 and 21). Although traditionally this was thought of as the commoner of the two godwit species encountered on Skokholm, since 2010 this has only proven to be the case in 2016 and 2021.

Black-tailed Godwit *Limosa limosa*

Rhostog Gynffonddu

Scarce or Uncommon Visitor but Fairly Common in 2012, 2013, 2015, 2017 and 2019

1971: 1 trapped

A summer-plumaged bird frequented North Pond with a Ruff on 24th March, with another there on the 29th taking the all-time March bird-days total to 90 (this including a high of 23 in 1971 and 26 since 2012). Following one on the 12th, one was present at North Pond on all but one April date between the 14th and 28th; a bird-days total of 15 matched that of 2017 and was only down on the 25 of 1957, although in both these Aprils there were daycounts of up to seven. There were May birds for the first time in three years, with singles on the 19th, 21st, 25th and 27th and two on the 28th which took the bird-days total to six; there have been higher totals in seven Mays, including all-time highs of 23 in 2015, 31 in 2016 and 35 in 2017. One which briefly landed at North Pond on the 23rd was the only June sighting and made this the 25th June with a record; sightings in all but two Junes since 2012 have totalled 73 bird-days, the post-War total being 127. Singles present at North Pond for short periods on each day between the 2nd and 5th July were perhaps the same individual, a group of eight alighted only briefly before heading north on the 9th and four went over on the 14th; the only higher July daycounts are of 12 in 2003, nine in 2015 and 26 in 2017, whilst 36 in 2012, 41 in 2017 and 27 in 2019 are the only higher July totals. Two with Oystercatchers on the 22nd and two north on the 27th made this the 22nd August with a sighting; there have now been 202 August bird-days, including 142 since 2012. Five heading east off the Lighthouse on 8th September matched the third highest daycount to be logged in this month and took the all-time September total to 46, 26 of which have been since 2013. A flyover on 3rd October was the last of the year, this just the fourth in this month following singles in 2013, 2017 and 2021. One on the 22nd in 1927 and five on the 4th in 2013 are the only November records. An annual total of 50 bird-days was down on five of the last ten years, but was the sixth highest to date; in contrast to the Bar-tailed Godwit, the seven most productive years for this species have occurred since 2012 (including a 2017 high of 149 bird-days).

Turnstone *Arenaria interpres*

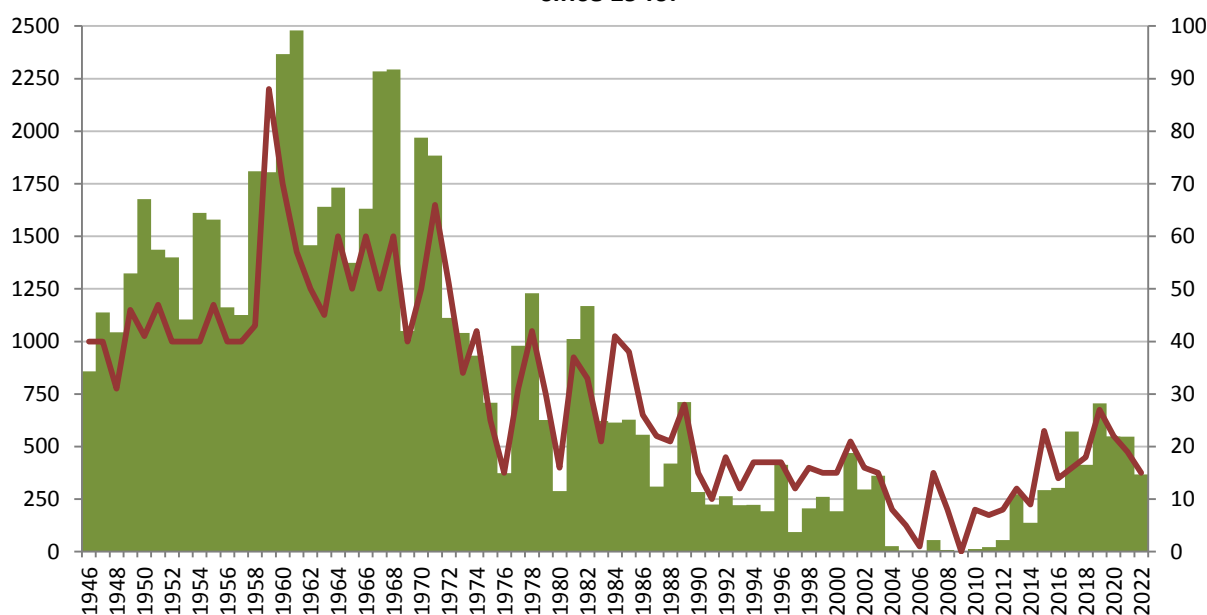
Cwtiad y Traeth

Common Visitor once Abundant and sometimes only Fairly Common in recent years

1956-1970: 12 trapped

Although Turnstone are no doubt under-recorded, due to their preference for spending the majority of time below cliffs and their sporadic use of visible high tide roosts, off-path coverage was similar to recent years (observations should thus be comparable). Sightings on six March dates tallied 17 bird-days and peaked at six on the 19th and five on the 30th; the peak matched that logged in three of the last nine years and was up on a 2013-2021 mean of 3.6, whilst the total matched the fifth highest this century (the 21st century March high is the 61 of 2001, this well down on peaks of 201 in 1961, 215 in 1964 and 293 in 1967). Following three together at the Long Nose on the 1st, there were April singles on the 6th, 8th and 9th and two on the 20th which took the bird-days total to eight; the 2013-2021 April bird-days mean is 7.2, however a total in excess of 400 was not uncommon between 1947 and 1961 (137 in 1982 is the most recent three-figure April tally). A flock of 15 briefly alighted at North Pond on 7th May; although down on the peak daycount logged in 21 previous Mays, including a recent high of 23 in 2015 and an all-time high of 50 in 1966, this was a very unusual location for such a high daycount. Surprisingly six were also at North Pond on the 17th, as were two of three singles logged between the 18th and 24th, whilst two in Crab Bay on the 27th took the May total to 26; the total was up on a 2013-2021 May mean of 21.7, but well down on a 1958-1974 mean of 177.6 and a high of 334 in 1967. There were no June birds for the fifth time this decade; there were annual June sightings between 1958 and 1976, with highs of 109 in 1958, 74 in 1960 and 79 in 1961.

The total number of Turnstone bird-days (green) and the maximum daycount logged in each year since 1946.



A flyover on the 24th was 12 days later than the first of last July, this followed by daycounts of five on the 25th, three on the 26th and six on the 31st; the peak matched that of last year as the highest since 2008, whilst a bird-days total of 15 was the second highest in this month since 1992; there have been 42 higher July totals, with peaks of 124 in 1950 and 1978, 203 in 1958 and 1970 and 228 in 1960. Sightings on eight August dates were of two or less bar seven on the 24th and six on the 26th; the peak daycount was down on a 2013-2021 mean of 12.7 and well down on highs of 88 in 1959 and 70 in 1960, whilst a bird-days total of 20 was down on a 2013-2021 mean of 73.4 and a high during that period of 136 in 2019 (the August total between 1946 and 1989 averaged 353.2 bird-days, with highs of 683 in 1951, 765 in 1960 and 781 in 1971). September also proved disappointing, with birds noted on 19 dates, highs of seven on six dates, nine on the 8th and eight on the 28th and 95 bird-days logged; the peak daycount was down on a 2013-2021 mean of 15.7, whilst the total was the lowest of the last eight years, down on a 2013-2021 mean of 169.3, a recent high of 299 in 2019 and an all-time September bird-days high of 637 in 1950. Very unusually, one was exploring the southern end of Little Bay Wall on 11th September.

The total number of Turnstone bird-days logged each month (2021 to 2019 in parenthesis), along with the maximum monthly daycount (2021 to 2019 in parenthesis) and the date(s) on which the 2022 peak was recorded.

March	April	May	June	July	August	September	October	November
17	8	26	0	15	20	95	156	29
(25, 0, 13)	(1, 0, 6)	(41, 12, 8)	(9, 0, 2)	(14, 1, 2)	(109, 111, 136)	(107, 227, 299)	(151, 146, 203)	(85, 50, 34)
6	3	15	0	6	7	9	12	8
(4, 0, 9)	(1, 0, 4)	(19, 6, 3)	(3, 0, 2)	(6, 1, 2)	(15, 21, 22)	(18, 22, 27)	(14, 19, 24)	(11, 14, 10)
19 th	1 st	7 th		31 st	24 th	8 th	1 st & 8 th	10 th

There were daily October sightings between the 1st and 18th, peaking at 12 on the 1st and 8th, daily sightings between the 23rd and 28th, peaking at six on the 25th, and one on the 31st which took the total for the month to 156; the peak was the lowest October high in seven years, however the bird-days tally was the third highest since 1974 (there were 13 higher totals between 1954 and 1974, peaking at 442 in 1954, 389 in 1967 and 378 in 1968). All November birds were seen on the Anticline, with sightings on 11 dates and a high of eight on the 10th which was the only daycount of more than four; the peak daycount matched a 2013-2021 mean of 8.3 and a total of 29 was close to

a mean of 31.2 logged during the same period. The only sighting during the first ten days of December was of one on the 1st. An autumn total of 316 bird-days over 68 dates was down on a 2013-2021 mean of 380.7 over 64.3 dates and was down on five of the years during that period (there were highs of 555 in 2017, 676 in 2019 and 536 in 2020); the 2019 autumn total was the highest since 1982 when 871 birds were counted across 72 dates. Totals were considerably down on historical levels which exceeded 636 birds a month on six occasions between 1950 and 1971. Given that the majority of monthly totals doubtless consist of counts of the same individuals over multiple dates, the highest daycount made each year is telling; the maximum Skokholm daycount of 88, logged on 26th August 1959, was nearly six times the 2022 maximum, this another reminder of how severely the number of Turnstone visiting the Island has declined since the 1950s, 1960s and 1970s.

Knot *Calidris canutus*

Pibydd yr Aber

Scarce usually singles, although occasionally more with 67 on 29th September 1958 the maximum 1956-1970: 8 trapped

One on 24th April, still moulting into its breeding finery, was also present the following day; there have only been sightings in four previous Aprils, all between the 22nd and 25th, with one-day singles in 1967, 1988 and 1992 and one present for two days in 2001. One on 4th September headed southeast off the Lighthouse with a group of five Dunlin, this six days earlier than the first of four logged last year. An annual bird-days total of three was down on a 2013-2021 mean of 4.2; there were highs during this period of ten in 2015 and 13 in 2018, whilst the all-time highs are of 85 in 1958, 18 in 1962 and 31 in 1978. This becomes the 43rd of 91 recording years with a sighting, with birds in every month bar December and 170 of 302 all-time bird-days logged in September.

Ruff *Calidris pugnax*

Pibydd Torchog

Scarce usually singles or pairs, but with a high of 12 on the 17th and 18th April 1987
Earliest 3rd March 1964 (19th March 2022) **Latest** 26th October 1971 (9th May 2022)
1955-1970: 7 trapped

One at North Pond on 19th March was thought to be the same bird present at South Pond between the 21st and 23rd and at North Pond on the 24th (below photograph); there have been ten earlier bird-days. Two males were together at North Pond on the 25th, whilst singles on the 27th and 29th took the March total to nine; records in eight previous Marches totalled 25 bird-days (with highs of six in 1948 and 1967), whilst this becomes the first March with a daycount of more than one.



Two males were to the west of Winter Pond on 29th April, one of which was probably that present at South Pond the following day (inset above); there have now been sightings in 15 Aprils totalling 98 bird-days, including records in each of the last three years totalling 11 bird-days, whilst this becomes only the fourth April with a daycount of more than one (the all-time daycount high was logged in this month in 1987). The same male was at South Pond on 1st May, with a different bird at North Pond on the 2nd and 3rd which may have been that logged on the 5th, 6th, 8th and 9th; a May bird-days total of seven matched that of 1982 and was only down on the ten of 1994. Given that 345 of the 546 bird-days logged on Skokholm have occurred in autumn and that there have been 82 autumn bird-days this century (with highs of 40 in 2015 and 26 in 2016), it is disappointing that there have now been five consecutive autumns without a record (perhaps due to a regular lack of water).

Sanderling *Calidris alba*

Pibydd y Tywod

Rare only 41 previous records, with 12 records totalling 16 individuals this century
1948-1968: 2 trapped

One progressing its spring moult on 4th May was the first since 12th September 2020 and made this the fourth of the last five springs with a record (below photograph). Another at North Pond on 29th May was still present the following morning, whilst one found at North Pond on the morning of 2nd June was later on Winter Pond; there have now been 24 spring records accounting for 36 bird-days, including ten records and 16 bird-days since 2013. Although Sanderling have been logged in every month between March and November inclusive (now with a total of 79 bird-days), the most productive month is May, with a total of 25 bird-days, whilst there have been 21 bird-days logged over six Augusts and 13 bird-days logged over eight Septembers. All but six sightings have been of singles, with five on 4th September 1979 and 11 on 7th August 1994 being the maximum daycounts.



Dunlin *Calidris alpina*

Pibydd y Mawn

Common Visitor recorded in all months, but only Fairly Common in some years
1937-1976: 185 trapped, 2014-2019: 18 trapped

Singles at North Pond on the 2nd and 14th made this the 11th year this century with a March record, with all but three of 26 bird-days logged during this period occurring since 2011. Sightings on nine April dates included daily counts of up to three between the 22nd and 27th which took the total for the month to only 18; the daycount maximum was down on a 2013-2021 mean of 9.8, whilst the

bird-days total was the lowest of the last nine Aprils, down on a 2013-2021 mean of 36.3 and a high during that period of 67 in 2021 (the latter was the sixth highest to date, down on April peaks of 82 in 1953 and 1955, 115 in 1960, 111 in 1966 and 77 in 1978). Dunlin were noted on 19 May dates, with highs of eight on the 2nd and 15th, 24 on the 7th and 11 on the 30th and no more than four logged on 12 dates; although there have only been higher daycounts in nine previous Mays (including five of the last nine and with a peak of 41 in 1995), a bird-days total of 97 was the third lowest since 2012, down on a 2013-2021 mean of 128.0 and highs of 193 in 1967, 167 in 2016 and 204 in 2020. Daily sightings during the first six days of June included five on the 1st and 2nd and tallied 19 bird-days; perhaps surprisingly the peaks were only down on three daycounts of up to seven in 1963 and ten counts of up to 21 in 2018, whilst the total was only down on the 30 of 1963 and the 133 of 2018.

The total number of Dunlin bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2019 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	2	18	97	19	7	5	19	1	0
2021	0	67	129	11	8	15	14	3	2
2020	1	42	204	8	2	9	24	13	5
2019	0	23	155	17	73	87	6	3	2
2022	1	3	24	5	2	1	8	1	0
2021	0	22	25	3	2	8	2	2	1
2020	1	7	26	3	1	3	3	6	1
2019	0	4	16	4	9	21	3	2	1
	2 nd & 14 th	3 dates	7 th	1 st & 2 nd	16 th	5 dates	4 th	14 th	

Although North Pond only contained water during the first two weeks of July, a period during which a lone adult was logged on the 5th, the damp mud still held up to two adults on each date between the 14th and 18th, this taking the July total to seven; there have been 21 higher July totals, with five of the eight highest occurring between 2015 and 2019 (including all-time highs of 134 in 2017 and 73 in 2019). No doubt due at least in part to the fact that North, South and Winter Ponds were empty throughout the month, four of the five singles logged during August were flyovers, whilst a juvenile was at Orchid Bog on the 29th; a bird-days total of five was down on a 2013-2021 August mean of 59.0, this a period which included August records of 139 in 2015 and 192 in 2017. September saw a juvenile again at Orchid Bog on the 2nd, eight southeast off the Lighthouse on the 4th, up to four off South Haven on the 7th and 8th, flyover singles on the 12th, 16th and 18th and one on Crab Bay Rocks on the 24th; there have been higher September daycounts in 11 years, with a peak of 23 in 1981, whilst a bird-days total of 19 was down on 24 previous years, a 2013-2021 mean of 25.7 and highs of 68 in 1958, 127 in 1981 and 69 in 2015. Although autumn passage would be tailing off regardless, a continued lack of standing water during October probably led to a flyover on the 14th being the only Dunlin logged; despite there being sightings in every year, the 2013-2021 October bird-days mean is only 5.6, whilst the all-time highs are of 35 in 1958, 38 in 1960 and 48 in 1974. There were no November birds for the first time since 2018 and for the fourth time this decade.

Purple Sandpiper *Calidris maritima*

Pibydd Du

Uncommon Visitor previously Fairly Common, but occasionally Scarce in recent years
1967-1976: 8 trapped

Given that the only spring records since 2003 were logged in May 2010, March 2019 and March and May 2021, that there were no sightings during the first half of this year was sadly not surprising; this species was previously much more regular between March and June, with daycount highs of 30 in March 1966, 22 in March 1967 and 32 in March 1968, sightings in every year between 1947 and 1989 and peak monthly totals of 101 in March 1967, 88 in March 1968, 92 in April 1974 and 80 in

April 1977. One on the Stack with Turnstones on 1st October was the first of the year, this perhaps the same individual seen in South Haven on the 3rd and on the Devil's Teeth on the 8th; unsurprisingly an October bird-days total of three is massively down on all-time highs of 55 in 1970, 61 in 1973 and 96 in 1974 (there have only now been 69 October bird-days this century, including 40 since 2014 and highs of 18 in 2003 and 2020). The only November sighting was of a group of 12 on the 29th, which looped up from below Howard's End before heading low and west; this was the second highest November daycount, only down on the 16 logged on the 3rd in 1970, indeed this matched an August 1982 daycount as the highest in any month since 50 on 10th September 1981. A 2022 bird-days total of 15 was close to a 2013-2021 mean of 13.7, albeit down on totals during that period of 32 in 2014, 20 in 2019, 28 in 2020 and 18 last year. Prior to 1983 three-figure annual totals were the norm, with record monthly tallies of 279 in August 1971, 234 in August 1978 and 229 in August 1979. As noted for Turnstone, it is likely that birds go under-recorded as they inhabit the spray zone at cliff bases, however the decline in records suggests a genuine lack of birds, this a sad reflection of the situation nationally and their red listing as a species of UK conservation concern.

Pectoral Sandpiper *Calidris melanotos*

Pibydd Cain

Rare there are 20 accepted records of 24 birds, including the first for Wales in 1958

1958-1970: 5 trapped, 1 retrapped

One at North Pond on the afternoon of the 2nd was just the fourth June record for Skokholm following one on the 1st and 2nd in 1962, one on the 6th in 1971 and one on the 10th in 1988 (RDB *et al.*). The only other spring records are of two on the 13th and 14th May 2011, one of which was still present on the 15th, one on 15th May 2013 and one on 31st May 2020. The only other records this century, all from North Pond, are of a single on the 7th and 8th September 2012, two between the 16th and 18th September 2012 (one of which remained for a further three days), one on 30th August 2017 and one on 15th September 2020. Earlier autumn birds, all present between 23rd August (1994) and 11th October (1958), were predominantly logged in September (including three together on the 27th in 1970 which remains the highest daycount). The exact number of previous records is somewhat confused by what may have been long-staying individuals going absent for short periods; some are known to have lingered for up to 19 days.



Woodcock *Scolopax rusticola*

Cyffyllog

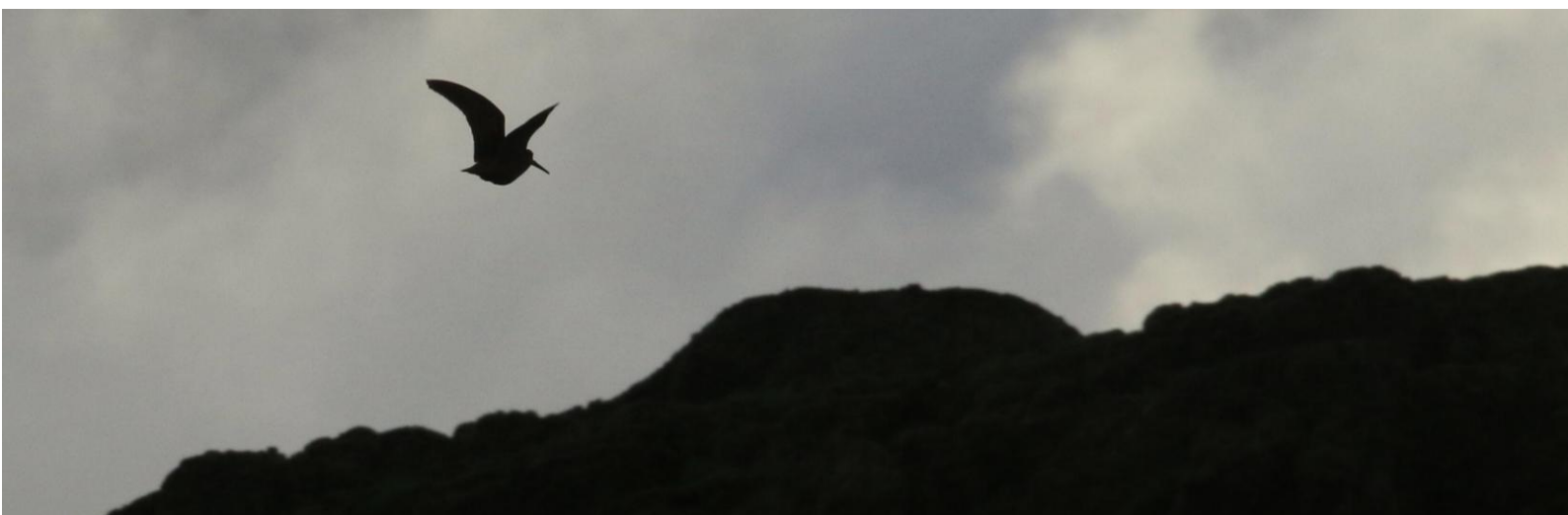
Scarce Winter Visitor not recorded every year, but over 200 corpses found in February 1963

Earliest 15th July 1962 (4th November 2022) **Latest** 23rd April 1956

1 trapped

1956-1963: 3 trapped, 2018: 1 trapped

As is so often the case, there were no spring birds this year; there have been records between 3rd March and 23rd April in only 22 previous years, including four of the last 11. One at the Well on 4th November was thus the first of the year, this 12 days earlier than the first of last year but four days later than the 2014-2021 first of autumn mean (the earliest during this period was in the Well Heligoland on 23rd October 2018). There followed November singles at the Hills on the 14th, along Well Stream on the 15th and at the Farm on the 16th, whilst one of the two found near East Bog on the 22nd was perhaps that later trapped in the Well Heligoland; a November bird-days total of six was only down on the ten of 1968 and the eight of 1991 and 2018. A winter presence would no doubt increase the number of records; there were 93 bird-days in January 1982, including 47 on the 15th which is the highest daycount of live birds.



Jack Snipe *Lymnocyptes minimus*

Gïach Bach

Scarce Winter Visitor although not recorded every year

Earliest 18th August 1938 (30th September 2022) **Latest** 22nd May 1995 (30th March 2022)

1964-1976: 8 trapped

One flushed from near South Pond on 21st March was perhaps the same individual found in a very similar location on the 30th; there have now been 69 March bird-days, including eight logged over five years since 2013. One at Orchid Bog on 30th September was 12 days earlier than one at the same site last year and 11 days earlier than the 2013-2021 first of autumn mean. One along the Lighthouse Track on the evening of 21st October was the only other record this year. A 2022 total of two autumn bird-days matched the lowest since 2018 and was fractionally down on a 2013-2021 mean of 2.8; although Lockley described Jack Snipe as 'common from 7th October to 24th March', the all-time autumn bird-day highs recorded in the census logs are of only nine in 1957 and 1968 and 11 in 2013.

Snipe *Gallinago gallinago*

Gïach Cyffredin

Common Winter Visitor and Passage Migrant breeding suspected in 1927 and 1965

1936-1976: 55 trapped, 2018-2019: 14 trapped, 3 retrapped

Counts on 18 March dates were, bar four on the 2nd, five on the 3rd and 14th and six on the 21st and 22nd, all of three or less and totalled 44 bird-days; there have been higher March daycounts in seven

years this decade, with a 2013-2021 mean of 23.7 and highs of 38 in 2013 and 72 in 2019, whilst the total was down on six logged during the same period, a 2013-2021 mean of 99.2 and all-time highs of 314 in 1971, 331 in 1973 and 313 in 2019. Following three on the 1st and 2nd, lone Snipe were logged on ten April dates to the 24th; there have been higher daycounts in 39 Aprils, with peaks of 20 in 1955, 1971 and 1995, and higher totals in 41 Aprils, with peaks of 105 in 1955, 139 in 1973 and 95 in 1977 (the 2013-2021 April bird-days mean is 26.4, with a high of 61 in 2019). There were no May sightings for the fifth time this decade; the all-time May bird-day highs are the 17 of 1962 and the 31 of 1967, whilst the 2013-2021 mean is 1.3. The last of 36 June bird-days occurred in 1999.

The total number of Snipe bird-days logged each month (2021 to 2019 in parenthesis), along with the maximum monthly daycount (2021 to 2019 in parenthesis) and the date(s) on which the 2022 peak was recorded.

March	April	May	June	July	August	September	October	November
44 (72, 76, 313)	16 (44, 19, 61)	0 (5, 0, 0)	0 (0, 0, 0)	7 (2, 0, 1)	13 (5, 19, 25)	50 (33, 85, 64)	67 (79, 131, 113)	36 (124, 89, 149)
6 (15, 22, 72)	3 (6, 5, 16)	0 (1, 0, 0)	0 (0, 0, 0)	1 (1, 0, 1)	2 (1, 5, 6)	7 (4, 14, 7)	20 (9, 10, 13)	8 (10, 15, 18)
21 st & 22 nd	1 st & 2 nd			7 dates	3 dates	28 th	13 th	12 th

One at the Well on the 11th was five days later than the first of last July; there have been 39 earlier July bird-days. One at Orchid Bog on each date between the 21st and 24th and on the 28th, along with one along the Lighthouse Track on the 26th, took the July total to seven; there have been nine higher July totals, with ten in 2018 the only higher tally since eight in 1978. Sightings on ten August dates from the 9th were all of singles bar two on the 23rd, 27th and 30th, a bird-days total of 13 being down on a 2013-2021 mean of 20.8, down on a 21st century high of 42 in 2017 and well down on all-time highs of 86 in 1947 and 1958 and 77 in 1982. September saw counts of up to seven on 21 dates tally 50 bird-days; the maximum daycount was down on that logged in 19 previous Septembers (including five of the last nine) and on all-time highs of 15 in 1934 and 2018, whilst the total was down on that of only nine Septembers, including peaks of 145 in 1972, 83 in 2018 and 85 in 2020. Counts barely increased in October, with 67 bird-days noted over 24 dates and highs of 13 on the 12th and 20 on the 13th the only daycounts of more than four; although the peak was the second highest this century and matched the seventh highest to be logged in October (there were highs of 32 and 40 in 1994), the total was down on all-time highs of 273 in 1973 and 259 in 1975 and on a 2013-2021 mean of 86.4 (this a period which included peaks of 174 in 2018, 113 in 2019 and 131 in 2020). Snipe were encountered on 18 November dates, with highs of eight together on the 12th and four on the 17th taking the total to only 36; although differing staff departure dates mean that November tallies are not directly comparable, the total was down on that logged in five of the last six years, a 2013-2021 mean of 77.4 and peaks of 126 in 1927, 184 in 2018 and 149 in 2019. There were daily December records until the departure of staff on the 10th, with highs of eight on the 1st and 7th, ten on the 4th and 15 on the 9th which included a wisp of ten; December counts peaked at 20 last year, whilst the seven highest daycounts of between 40 and 100 were all logged between 1927 and 1930.

Common Sandpiper *Actitis hypoleucos*

Pibydd y Dorlan

Uncommon more regular in autumn

Earliest 21st March 1948 (22nd April 2022) **Latest** 29th October 1975 (19th September 2022)

1938-1976: 22 trapped, 2018: 1 trapped

There were two on 22nd April, with one at North Pond and one in South Haven, these eight days later than the first of last year; there have been 148 earlier bird-days, including four in March. Two were in Crab Bay the following day and one was at North Pond on the 26th, whilst one in North Haven on the 3rd and 4th May was the last of the spring; this has never proven a common species in the first half of the year, indeed the seven bird-days logged this spring was close to a 1946-2021 spring bird-

days mean of 9.5 and was up on a 21st century mean of 4.3 (the 21st century high is 17 in 2016 and the all-time highs are 27 in 1950 and 1953). The first returning bird was in South Haven on 6th July, this two days later than the first two of last autumn and one day earlier than the first of 2020. There followed July sightings of up to two birds on six dates between the 10th and 22nd (the highs on the 10th and 14th), this taking the total for the month to nine (the 2013-2021 July bird-days mean is 9.2). Sightings on 16 August dates were all of two or less bar three on the 14th (when birds were at the Quarry, Crab Bay and South Haven); a bird-days tally of 22 was the tenth highest to be logged in August, down on peaks of 34 in 1947, 38 in 1984 and 41 in 2013 (there was an all-time daycount high of 14 on 6th August 2013). Common Sandpiper were noted on six September dates between the 11th and 19th, including highs of two on the 11th, 12th, 16th and 19th, the latter matching that of last year as the latest autumn record since one on the 26th in 2014 (there have only been 56 later bird-days, including 20 in October); a September bird-days total of ten was the fifth highest to date, down on the 11 of 1948 and 2021, the 13 of 1958 and the 20 of 2002. An autumn total of 41 bird-days was 13 up on last year and up on a 1946-2021 mean of 20.4, indeed it was only down on five previous autumns including all-time highs of 70 in 1947, 64 in 1948 and 58 in 2013.

Green Sandpiper *Tringa ochropus*

Pibydd Gwyrdd

Scarce not recorded every year, only seven records 1998-2013 and only 17 spring records

Earliest 2nd April 1997 (21st July 2022) **Latest** 21st October 1967 (8th September 2022)

There was no spring sighting for a third consecutive year; although spring birds have only been encountered in 15 previous years, this has included five of the last 12. One seen in flight over the Well on 21st July was briefly present at Orchid Bog; there have been ten earlier July bird-days, including singles on the 16th and 17th in 2019, on the 19th in 2014 and on the 20th in 2017 and 2020. Two over together on the afternoon of the 28th took the July bird-days total to three; there have been 39 previous July bird-days, with highs of five in 1968 and four in 1989. August saw one at Orchid Bog on the 5th and 6th, singles over North Plain on the 8th and 11th, a vocal flyover at 2330hrs on the 12th, mobile singles on the 14th and 15th, two together at Orchid Bog on the 16th and one at the Well on the 21st which took the bird-days total to ten; August records in 34 previous years have accounted for 113 bird-days, including 29 since 2013, whilst 30 bird-days in August 1997 was the only double-figure tally in any month prior to that of this August (the 1997 total included a record daycount of five on the 11th which was linked to flooding). Two at Orchid Bog on 8th September were the last of the year; there have been 27 previous September bird-days, with highs of three in 1958 and 2015. Although down on the 31 logged in 1997, a total of 15 autumn bird-days was the second highest to date, up on a 2013-2021 mean of 5.3 and previous highs of 13 in 2015 and ten in 2017.



Redshank *Tringa totanus*
Pibydd Coesgoch
Uncommon most regular in July and August

1 control

1957-1974: 4 trapped, 2018-2020: 4 controls

One at North Pond on 2nd March was the first of the year, whilst a colour ringed bird there on the 10th (see below) was probably that noted at the same site the following day (although its legs were not seen); there have been Redshank records in 24 previous Marches, including eight of the last ten, with bird-day highs of 35 in 2018 and 30 in 2019 (the 2022 March total matches the fourth highest to date). There was no April sighting for a third time this decade and no May sighting for the first time this decade; there have been 94 previous April bird-days logged over 39 years, with a 2013-2021 mean of 2.7 and highs of 12 in 1956, ten in 1962 and nine in 2018, whilst records in 36 previous Mays have tallied 102 bird-days, with a 2013-2021 mean of 3.3 and highs of 14 in 2000, 12 in 2014 and six in 2017. There was also no June record, this for the third time this decade; sightings in 35 previous Junes tally 70 bird-days, with a 2013-2021 mean of 2.8 and all-time highs of eight in 2014 and seven in 2018. One around the Neck on 7th July was thus the first since March, this followed by singles on four dates between the 11th and 16th, two together on the 17th and further lone birds on the 26th and 29th which took the total to nine; there have been records in 72 previous Julys tallying 309 bird-days, including annual sightings since 2012, a 2013-2021 bird-days mean of 7.9 and totals of 22 in 2015 and 13 in 2017 which are the highest to date.



No doubt due in part to a lack of standing water, sightings on 14 August dates were either coastal or flyovers, with highs of four on the 1st and two on the 31st taking the total to 18; there were records in each August between 2013 and 2021, averaging 13.4 bird-days, whilst the only August totals up on that of this year are the 30 of 1966, the 21 of 1970 and the 34 of 2017. A single on the 1st was the only September record; although noted in each of the last 11 Septembers, this is typically a quiet month for sightings, indeed the 2013-2021 mean is only 3.6 and the bird-days record is the 17 of 1973. There were no October birds for the second time in seven years; records in 18 Octobers, including six since 2012, total 33 bird-days (with a high of three in five years). Similarly there was no November bird for the first time since 2016; there have been 33 November bird-days over ten years, including 25 in six years since 2014. The only December sightings were in 1927, 2019 and 2020.

Ringing recovery Left tibia: Orange, Right tibia: White 58 on Black, Right tarsus: DT23633

Originally ringed as an adult, THE GANN, DALE, PEMBROKESHIRE 21st February 2018

Previously retrapped as an adult, THE GANN, DALE, PEMBROKESHIRE 10th December 2018

Previously resighted as an adult, NORTH POND, SKOKHOLM 5th, 23rd and 25th March 2019

Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 28th November 2019

Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 16th March 2020

Previously resighted as an adult, NORTH POND, SKOKHOLM 22nd November 2020

Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 3rd and 6th December 2020

Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 15th and 25th March 2021

Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 5th January 2022

Resighted as an adult, NORTH POND, SKOKHOLM 10th March 2022

Finding condition Colour rings read in field

Distance travelled 9km at 258 degrees (WSW)

Days since ringed 1478

This is one of two Gann ringed Redshank to have been seen on Skokholm, both of which have returned to the Island in more than one winter. The other returning bird, DT23625 (number 26), joined this individual at North Pond on 5th March 2019 (it had previously been seen there in March, April and November 2018, was there on four further dates in March 2019 and again returned on 13th March 2021).

Greenshank *Tringa nebularia*

Pibydd Coeswerdd

Uncommon but sometimes Scarce and not recorded every year

Earliest 30th March 2019 (16th April 2022) **Latest** 9th November 1958 (23rd April 2022)

The first of the year was seen at both North Pond and South Pond on 16th April; there have been seven earlier bird-days, including just one in March, with four of these logged since 2015. A flyover on 23rd April was the last of what became the 37th spring with a sighting; a maximum spring daycount of three in April 1966 took the total for that month to a spring record 13, however the majority of the 87 previous spring bird-days have been logged in May. There were no autumn records for only the second time since 2009; the 2013-2021 autumn bird-days mean is 4.3, with a high of 11 in 2016, whilst an all-time autumn bird-days total of 418 logged over 64 years includes 277 in August, 103 in September and all-time peak totals of 23 in 1955, 20 in 1964 and 22 in 1983.

Kittiwake *Rissa tridactyla*

Gwylan Goesddu

Very Abundant a single pair attempted to breed in 1959

2018-2020: 5 controls

Although present offshore in all months, Kittiwake were again logged in smaller numbers than might be expected given the presence of 1544 breeding pairs on nearby Skomer. There were sightings on 21 March dates, however 174 in Broad Sound on the 28th was the only daycount of more than 47; the peak was down on a 2013-2021 mean of 244.7 and well down on a 1980 high of 1500. An April daycount high of 83 on the 7th was similarly close to a 2013-2021 mean of 122.9, but was well down on the 1981 record of 1000. Two Kittiwake were high over Skokholm on 30th April, this an unusual sighting which led to concerns over the impact of avian influenza; there was also an increase in the number of overhead Gannets, the latter species heavily impacted by an unprecedented outbreak of the H5N1 subtype. The number of birds feeding close to Skokholm again increased in May, with five three-figure daycounts and highs of 214 on the 10th, 197 on the 11th and 166 on the 25th, these all well down on four-figure counts in the 1980s. June daycounts were similar, with four in three-figures and highs of 203 on the 11th and 190 on the 24th; there have been higher counts in five Junes this decade, with a peak of 640 in 2019. An adult went low over the Top Tank on 2nd June and one went over the Courtyard on the 27th. That spring counts were all down on 20th century totals is unsurprising; the Skomer population has steadily declined since the early 1990s, dropping by 32% between 2000 and 2015 and by over 14% between 2020 and 2021. July saw highs of 229 on the 10th, 863 on the 24th and 273 on the 26th, the peak up on a 2013-2021 mean of 296.8 and a high during that period of 457 in 2020. There were again summer records of Kittiwakes feeding amongst fishing Razorbills, the diving auks seemingly pushing fish up to where they could be reached by the gulls; this perhaps offers some hope for a declining gull reliant on other predators making food available (increasing auk numbers perhaps surrogates for declining populations of larger predatory fish).

The total number of Kittiwake bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2021 to 2017 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	344	126	1313	1035	2451	3677	6381	1064	4884
2021	298	172	866	939	1217	368	461	2548	2650
2020	920	150	462	619	1656	4989	5455	7978	5530
2019	2152	361	597	2627	2136	1928	786	10414	3715
2018	115	71	1053	954	1587	3876	3221	600	4539
2017	37	688	779	1422	1820	472	3847	3070	2263
2022	174	83	214	203	863	681	1381	241	623
2021	81	63	91	254	244	51	258	531	437
2020	422	38	52	121	457	1170	1481	1542	1154
2019	919	65	171	640	262	332	388	3032	860
2018	89	22	187	113	443	427	678	127	1102
2017	9	259	323	390	440	78	1049	585	800
	28 th	7 th	10 th	11 th	24 th	11 th	27 th	4 th	20 th

There were 133 Kittiwake seen ashore over five June dates, with highs of 34 on the Stack on the 2nd and 50 on the 24th (20 were on the Devil's Teeth and 30 in South Haven), 131 seen ashore over nine July dates, with highs of 43 on the 1st (42 were on the Stack and one in South Haven) and 24 on Crab Bay Rocks on the 13th, 723 seen ashore over 16 August dates, with highs of 25 at the Bluffs on the 7th, 490 flushed from the back of the Stack by a Buzzard on the 11th and 103 seen on the back of the Stack from a boat on the 12th, and September counts of 115 on Crab Bay Rocks on the 2nd and one there on the 17th. A 2022 total of 1103 loafing birds over 32 dates was up on 111 over 11 dates last year and a 2013-2021 mean of 369.9 over 8.0 dates, but was down on highs of 1235 over 13 dates in 2018 and 1388 over 20 dates in 2020. This year's 11th August total was only down on a post-2013 high of 492 birds north of the Quarry on 30th August 2020, with the next highest daycount being 287 on 17th August 2020. Despite large numbers of birds ashore, no colour rings were seen this year.

Seawatching effort increases in August and September as autumn passage attracts regular and prolonged observations, the dip in numbers sometimes logged at this time of year thus no doubt reflecting a genuine absence (which coincides with the period of post-breeding moult). However daycounts remained high this August, with nine in three-figures and peaks of 349 on the 3rd, 360 on the 6th and 681 on the 11th; such high August daycounts were most recently logged in 2018 and 2020, these the only two years this decade which have seen more Kittiwake ashore on Skokholm (in both years colour rings confirmed that at least some of the birds present were from French breeding colonies). There were 16 September daycounts in at least three-figures, with highs of 480 on the 24th, 860 on the 26th and 1381 on the 27th; the peak was up on a 2013-2021 mean of 489.4 and only down on a daycount during that period of 1481 in 2020, however it was well down on a high of 5000 logged in 1978. Surprisingly the larger Broad Sound flocks which have formed in recent Octobers were generally absent, with highs of 241 on the 4th and 113 on the 9th the only daycounts of more than 95 (indeed the peak October count after the 9th was of just 59); both the peak October daycount and a bird-days total of 1064 were the lowest since 2018, the former down on a 2013-2021 mean of 938.7 and a recent high of 3032 in 2019, the latter down on a 2013-2021 mean of 3452.8 and a recent high of 10,414 in 2019. A sporadic Broad Sound presence continued into November, although 13 three-figure daycounts included highs of 623 on the 20th, 410 on the 21st and 470 on the 22nd; the peak was down on a 2013-2021 mean of 1151.0 and recent highs of 2820 in 2015, 2548 in 2016 and 1154 in 2020 (a Skokholm daycount record of 8000 was logged in November 1968). An adult present at North Pond on 17th November was later seen over the Farm, whilst an adult was also at North Pond on 1st December. Numbers remained similar during the first ten days of December, with highs of 341 on the 2nd, 356 on the 4th and 500 on the 7th. Kittiwake were again

often absent on days when other small gulls remained, for example only two joined 536 Black-headed Gull and 34 Mediterranean Gull on 9th December. Dead adults along the North Coast on 1st October and in South Haven on 2nd December were not accessible for bird flu testing.

Black-headed Gull *Chroicocephalus ridibundus*

Gwylan Benddu

Very Abundant during autumn and winter. Two pairs defended North Pond territories in 1968

Given the size of the Broad Sound flocks which gather each autumn and winter, it was again surprising that there were very few spring records, this probably suggesting that Black-headed Gulls have already dispersed towards their breeding grounds by the time that staff return to Skokholm. There was no March sighting for the second time in five years; there have been 659 previous March bird-days logged over 32 years, with 44 in 1968 and 455 in 2013 being the highest tallies. There was no April sighting for just the second time in ten years; records in 55 previous Aprils total 544 bird-days, with the 2013-2021 mean being 3.1 and the 1966-1976 mean being 31.3 (the latter period including a record high of 65 in 1971). Two summer-plumaged birds high over the middle of the Island on 3rd May were thus the first of the year, however there were no further sightings during the month; of the 389 previous May bird-days, 38 have been logged this century, with a 2013-2021 bird-days mean of 2.4 and all-time highs of 23 in 1967, 30 in 1970 and 22 in 1971. June saw an adult off North Gully on the 12th, a first-summer at North Pond on the 17th, two eastbound adults over the Lighthouse on the 29th and a first-summer again at North Pond on the 30th; annual June sightings between 2013 and 2021 averaged 6.6 bird-days, whilst the all-time highs are the 26 of 1966 and the 28 of 1969. July sightings on ten dates from the 9th were all of two or less bar the seven adults which were over North Pond on the 12th, whilst the first juvenile of the year accompanied an adult along the North Coast on the 16th; the first juvenile of the year was three days later than the first of last year and 12 days later than the 2013-2021 first definite juvenile mean (the earliest during this period arrived on 22nd June 2018, whilst the only later first arrived on 19th July 2020). A total of 20 bird-days was the fourth highest July tally this century and was close to a 2013-2021 mean of 21.2 (this period includes an all-time July high of 102 in 2018).

August counts of up to 38 on 11 dates between the 6th and 19th were followed by daily sightings between the 26th and 31st which included unprecedented counts of 224 on the 26th, 292 on the 27th and 283 on the 31st, this taking the bird-days total to 1108; a daycount of 97 in 2019 was the previous August high, whilst the 2013-2021 bird-days mean is 55.0 (this period including previous all-time highs of 224 in 2019 and 124 in 2020). Birds were ashore on seven August dates, with highs of 44 on the 26th, 70 on the 27th and 38 on the 28th, all of which were between Peter's Bay and Crab Bay. Unparalleled counts continued into September, with sightings on 25 dates and highs of 415 on the 1st, 91 on the 3rd, 174 on the 16th and 95 on the 17th which took the bird-days total to 1225; daycounts of 200 in 1969 and 199 in 2015 were the previous highs, whilst the 2013-2021 bird-days mean is 100.2 (this period including 269 in 2013 and 270 in 2015 which were the highest totals in this month). Birds were ashore on five September dates, with highs of 57 on the 1st, 26 on the 17th and 12 on the 19th; all of the loafing birds were on rocks between the Devil's Teeth and Crab Bay. Given that October typically sees a spike in Black-headed Gull numbers and that the early autumn had proven to be record-breaking, it was a surprise that there were October sightings on only 14 dates, with highs of 21 on the 2nd, 16 on the 11th and 19 on the 23rd taking the bird-days total to 119; both the peak daycount and bird-days total were the lowest this decade, down on respective 2013-2021 means of 692.0 and 3472.3 (the largest daycount during this period was the 1735 of 2017, the highest total the 10,147 of 2018, whilst earlier daycounts peaked at 2500 in 1992). Differing staff departure dates mean that November bird-day totals are not directly comparable, however peak 2022 daycounts of 286 on the 4th, 275 on the 18th and 191 on the 19th were disappointing; the 2013-2021 peak November daycount mean is 1005.9, with highs of 2400 in 2017 and 1466 in 2018. Daily December counts to the 9th included five daycounts of over 500 from the 5th and highs of 590 on the 5th, 687 on the 8th and 536 on the 9th; a 2021 peak of 1375 was double that of this year.

Little Gull *Hydrocoloeus minutus*
Gwylan Fechan
Scarce offshore mid-July to November, primarily from mid-October and with one spring record

A first-winter off South Haven on the evening of 6th September was an early autumn record (RD); a first-summer which fed off South Bay on the 10th and 11th July 2001, singles on the 14th and 27th July 1990, two on the 15th and one on 19th August 1990, one on 20th August 1981 and one on 3rd September 1995 are the only earlier records. A first-winter off the Lighthouse on the evening of the 26th was the 17th September bird-day to date. An adult and a first-winter were in Broad Sound on 6th November and a first-winter was there on the 24th, these taking the all-time bird-days total for this month to 61. A first-winter in Broad Sound on the 4th was the first December record for Skokholm. A 2022 bird-days total of six was up on a 2013-2021 mean of 2.7, this a period which saw a high of seven in 2020 but no sightings at all in 2013 and 2014. The 2020 total was only down on the 12 of 1967, the nine of 1968, the 14 of 1980, the ten of 1990 and the 13 of 1996; the 1967 tally included a record daycount of seven, whilst a daycount of six was logged in both 1980 and 1996.

Mediterranean Gull *Ichthyaetus melanocephalus*
Gwylan Môr y Canoldir
Abundant offshore during the autumn, but Rare prior to 2000 and first logged in 1968

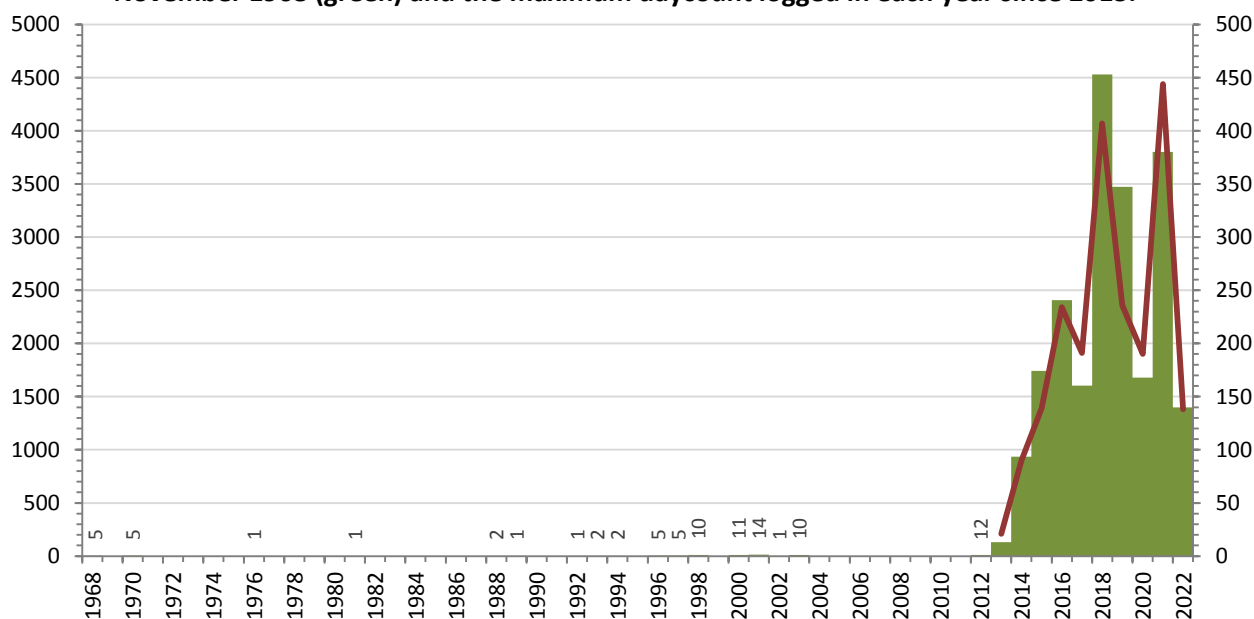
Considering that there had only been a total of 76 bird-days up until the end of 2003, that there were no birds observed at all between 2004 and 2011 inclusive and that there were only four records in 2012, the 21 records totalling 130 bird-days logged in 2013 was exceptional. However there has followed a remarkable increase, primarily due to a rise in the number of birds feeding in Broad Sound during October and November; there were 934 bird-days logged in 2014, 1743 in 2015, 2407 in 2016, 1602 in 2017, an incredible 4528 in 2018, 3473 in 2019, 1680 in 2020 and 3800 last year. Despite this huge increase, spring records are still rare, indeed there have only been 11 bird-days in February or March (nine of which were in 2019) and there is yet to be an April or May sighting. Two adults off the Lighthouse on the morning of 7th July were the first of this year, these nine days earlier than the first of 2021 and making this only the sixth year with a July record. There were sightings on four further July dates, with four on the 10th (which included the first two juveniles of the year) and an adult stood on Crab Bay Rocks on the 13th (this seemingly the first ever seen ashore on Skokholm); a bird-days total of 12 was a July record, up on a previous high of five in 2017.



It also proved by far the most productive August to date, with sightings on 17 dates from the 5th, including no more than eight a day to the 25th but then record daycounts of 52 on the 26th, 44 on the

27th and 13 on the 28th which took the bird-days total to 153; there had only been 39 previous August bird-days logged over ten years, with a daycount high of six in 2019 and a peak total of 11 in 2018. A second-summer was ashore at Twinlet on 18th August, this followed by 11 on the 26th (four juveniles were in South Haven and six, along with a white colour ringed adult, were in Peter's Bay), five on the 27th (four in Crab Bay and one in South Haven), one in South Haven on the 28th, three on the 29th (one in Crab Bay and two in South Haven) and one in Peter's Bay on the 30th; white colour rings were seen on birds in flight in 2013 and 2016 (and again on 28th August this year), although unique codes could not be read (86 white ring reads at the Gann, Dale have all identified birds ringed in either Belgium or the Netherlands (Dave Astins, *pers. comm.*), although white rings have also been used in Denmark and Poland). As was also the case for Black-headed Gull, unparalleled counts continued from August into September. Sightings on 16 September dates included highs of 25 on the 3rd, 16 on the 17th, 13 on the 24th and 29 on the 25th which took the bird-days total to 145; there were 122 bird-days recorded over 12 previous Septembers, with highs of 27 in 2013 and 2017 and a peak daycount of 13 in 2013. An adult was ashore at the Devil's Teeth on 1st September, one was on at Crab Bay on the 2nd and six were ashore in South Haven on the 17th; these took the all-time count of birds ashore to 31 (all of which were this year). Recent years have seen numbers increase substantially in October, however this year's observations mirrored those of the other small gull species. Sightings on just 14 October dates included a first-winter east over the Courtyard on the 13th and highs of 23 on the 9th, 19 on the 12th and 22 on the 25th which were the only daycounts of more than ten and took the bird-days total to 104; although the peak daycount matched that of last October, it was down on a 2013-2021 mean of 111.3 (there were highs of 191 in 2017 and 227, 202 and 243 in 2018), whilst the bird-days total was the lowest since 2013, down on a 2013-2021 mean of 816.0 (this a period which included highs of 1171 in 2016, 1186 in 2017 and 1961 in 2018).

The total number of Mediterranean Gull bird-days noted in each year since the first five logged in November 1968 (green) and the maximum daycount logged in each year since 2013.



Numbers remained low in November, with birds logged on only 18 dates, daycounts of ten or less on 13 dates, three counts of between 22 and 42 and highs of 138 on the 4th and 111 on the 18th which were the only three-figure daycounts; although differing staff departure dates mean that November counts are not directly comparable, both the peak daycount and a bird-days total of 399 were down on those noted in six of the last seven Novembers (a November bird-days maximum of 2547 was logged in 2018). Daily sightings during the first nine days of December peaked at 80 on the 3rd, 88 on the 5th and 117 on the 7th; the peak was down on the 444 logged on the 1st last year which remains the highest ever Skokholm daycount (361 on the 3rd and 407 on 4th November 2018 are the next

highest counts). Given the substantial number of Mediterranean Gulls being recorded in Skokholm waters, it is surprising how few are first-winters, for example there were no first-winters logged during the record 1st December 2021 count; this year saw a peak of 17 on 4th November (there were highs of 12 in 2016, ten in 2017, 33 in 2018, 11 in 2019, ten in 2020 and six in 2021). The most recently published estimate of the British overwintering population is 4000 individuals (Frost *et al.*, 2019); the Broad Sound feeding grounds are thus of significant importance to this species, with up to 5% of the published total being regularly present and up to 10% being there on occasion.

Common Gull *Larus canus*

Gwylan y Gweunydd

Uncommon offshore during the late autumn and with only 34 bird-days between April and July
 1956: 12 trapped

There were no spring records this year; Common Gulls have been noted in 26 previous springs, with 20 of the 71 bird-days logged between 2013 and 2021 and highs of ten in 1974 and eight in 2013. An adult on rocks in Peter's Bay on 26th August was a rare sighting of a bird ashore and the earliest autumn bird this decade, 30 days earlier than the 2013-2021 first of autumn mean. One was off the Lighthouse on the 29th and a first-winter on the 31st took the all-time August bird-days total to just 34, 12 of which were in 1946 and seven of which have been since 2013. One on the 1st, a first-winter over Twinlet on the 13th and a first-winter on the 26th took the all-time September total to 96; there was an unprecedented southeasterly movement of 26 on the 28th in 2013, whilst five in 1998 and 2013 are the next highest daycounts. As was noted for the other species of small gull, October counts were low, indeed the only sightings were of a first-winter on the 25th and of three adults and five first-winters the following day; although the peak daycount was up on three logged this decade, it was down on a 2013-2021 mean of 15.1, a high during that period of 26 in 2014 and on all-time highs of 50 in 1966 and 60 in 1992, whilst a bird-days total of nine was the lowest this decade, down on a 2013-2021 mean of 50.4, a high during that period of 93 in 2018 and all-time highs of 121 in 1966, 130 in 1991 and 182 in 1992. November counts were more disappointing, with lone adults on the 4th and 9th, first-winters on the 15th and 18th, an adult and a first-winter on the 19th and two adults on the 30th the only birds logged; despite a staff presence throughout the month, the peak daycount was down on a 2013-2021 mean of 22.6 and a high during that period of 44 in 2018, whilst a bird-days total of eight was down on a 2013-2021 mean of 102.6 and highs of 247 in 2018, 169 in 2019 and 162 in 2021 (there was a record total of 823 in 1968). However numbers increased dramatically in December, this a period which seldom sees a staff presence. There were daily December sightings between the 2nd and 9th, with daycount highs of 30 on the 4th, 54 on the 6th, 44 on the 7th and 80 on the 8th and peak counts of 72 adults on the 8th, three second-winters on the 4th and eight first-winters on the 8th; four November 1967 daycounts of between 100 and 120 and five November 1968 daycounts of between 100 and 150 are the only ones up on this December's peak.

Great Black-backed Gull *Larus marinus*

Gwylan Gefnddu Fwyaf

Fairly Common Breeder and Common Visitor

26 trapped (including 20 pulli), 47 resighted, 2 controls

1936-1976: 231 trapped, 2012-2021: 509 trapped, 15 retrapped, 266 resighted, 6 controls

Many birds were again absent during March, with daycounts peaking at 86 on the 8th and 98 on the 9th; March daycounts reached between 117 and 132 in the years between 2015 and 2019, with lower highs in more recent years mirroring the declining breeding population. The majority of the birds present were on territory, with maximum roost counts of 29 on the 8th and 26 on the 13th; the peak March roost between 2014 and 2019 averaged 40.3 birds, with highs of 48 in 2016 and 2017, however there were highs of only 20 in 2020 and 22 last year. A peak daycount of 98 on the 16th was the lowest April high of the last decade, down on a 2013-2021 mean high of 145.9. Despite the low daycounts, communal roosts were larger than of late, with highs from the Bog of 42 on the 4th, 54 on the 7th and 11th and 48 on the 16th; the peak was well up on the 16 of last year and was the largest

April roost since 2017, however it was down on a 2013-2021 mean of 66.4 and highs of 213 in 2013, 63 in 2015 and 58 in 2016 and 2017. A whole Island census between 25th April and 17th May located 78 apparently incubating birds (the only nests not visited to confirm the presence of eggs were adjacent to the Bog Lesser Black-backed Gull colony and on offshore stacks); although the total was the 11th highest on record, it was down on the 80 mapped last year, highs of 93 in 2016, 2017 and 2018 and a 2013-2021 mean of 85.4 ±sd 6.6. Indeed this proved the fourth year in succession in which the total number of breeding pairs has fallen below the lower limit stipulated in the Skokholm Management Plan. A drop in adult survival is seemingly, at least in part, to blame for the decline in the size of the Skokholm breeding population (see below). A decline in the size of the spring roosts is perhaps indicative of a drop in the number of birds available to recruit to the breeding population.

The number of Great Black-backed Gull breeding pairs 1928-2022 (where data exists). Control of numbers started in 1949 (destruction of both nests and adults) and stopped in 1985.



A colour ringing project, begun eight years ago, is providing an insight into how adult return rates influence the number of breeding pairs. Of 23 adults wearing rings in 2014, 19 (82.6%) returned for the 2015 breeding season; the number of nesting pairs dropped from 84 in 2014 to 83 in 2015. There followed an apparent increase in adult survival, during which time the breeding population increased to, and then stabilised at, 93 pairs; of 21 adults wearing colour rings in 2015, 19 returned

in 2016 (90.5%), whilst 32 of 33 returned in 2017 (97.0%) and 32 of 36 returned in 2018 (88.9%). Of 43 adults wearing rings in 2018, only 34 (79.1%) returned in 2019, the breeding population dropping by seven pairs during the same period, whilst 37 of 43 birds (86.1%) returned in 2020 (the nest count dropping by three) and 29 of 37 birds (78.4%) returned last year (the breeding population declined by a further three pairs). This year saw 24 of 29 adults return (82.8%), whilst there were two fewer breeding pairs; this suggests that approximately 28 established adults did not return to breed in 2022 and that 24 new birds recruited in their place. Since this study began, the population has only increased or remained stable with adult survival of 88.9% or better. One potential issue is that the ringing of adults on the nest could deter them from returning (thus making survival appear lower than it is in reality), however if we exclude the data collected in the year after ringing (when any disturbance should take effect), the return rates remain at a similar 89.5% in 2016, 100% in 2017, 90.6% in 2018, 74.2% in 2019, 81.8% in 2020, 78.4% in 2021 and 82.8% this year; it thus seems likely that disturbance during ringing is not responsible for the recent decline in return rates.

The 2018 and 2019 return rates were previously reported as being lower than listed above. However a chance close encounter with a metal only ringed bird in 2020 revealed it to be an adult colour ringed in 2014 (which lost its colour mark between the 2017 and 2018 seasons). A close inspection of birds occupying territories from which colour ringed individuals had previously gone missing revealed a further darvic loss, this from another 2014 ringed adult (which had lost its ring between the 2018 and 2019 breeding seasons). Additionally W:142, ringed as an adult in 2016, lost its colour ring between the 5th and 6th June 2020; the dropped ring was found in the Puffin study plot, allowing the loss to be attributed to snapping rather than glue failure. Although the rate of ring loss is seemingly low, it will perhaps increase as the rings age; a careful check for metal rings is thus important, although reading the inscribed digits demands good views and significant patience (at least two of the three adults which lost their plastic rings were breeding this year, their metal rings again being read (these do not form part of the adult survival statistics)). In an effort to better understand ring loss, an additional red ring was fitted above the metal ring on every bird ringed this year (as will be the case in future years); it is hoped that this ring will outlast the taller numbered darvic and thus draw attention to any birds with missing rings (below photograph).



It is not clear what may have caused such seemingly high adult mortality since 2018, although interactions with the fishing industry and poisoning have been raised as areas for concern (the H5N1 strain of HPAI can also now be added to this list, see below). Major leg injuries (including missing feet and snapped bones) and punctured torsos have occurred, wounds seemingly too severe to have been caused by anything other than anthropogenic means. Aggressive encounters with other gulls

and extreme weather events have previously resulted in broken wings and apparent internal injuries, whilst it seems likely that undamaged corpses are the result of toxins (including those produced by *Clostridium botulinum*). A full record of the injuries recorded in previous years can be found in the Skokholm Seabird Reports. A juvenile with severe chest lacerations, present at Orchid Bog on 2nd October, was the only injured Great Black-backed Gull encountered this year. Dead adults were found on the 3rd and 9th September and five dead juveniles were logged between 24th July and 15th September. This species was again regularly observed behind fishing vessels, although some boats were clearly more attractive than others; the peak count was of 12 adults behind the potting vessel Boy's Pride on 22nd March (this down on a 2021 high of 21 and a 2020 high of 32). An important step in understanding the Skokholm population will be to discover if such anthropogenic food sources are regularly exploited; additional food will increase survival, particularly during the winter or periods of low seabird and Rabbit numbers, however foraging around boats or mainland food sources also has the potential to seriously impact health.

The H5N1 strain of highly pathogenic avian influenza (HPAI), which was first identified in wild British birds in October 2021, was not confirmed in Pembrokeshire until 2nd August this year when dead Gannets collected from Grassholm proved positive. Although none of the dead birds collected from Skokholm tested positive for HPAI this year, a juvenile Great Black-backed Gull found on the North Haven beach on 9th September was perhaps infected (below photograph); having shown a lack of coordination, it became stuck on its back, this the position in which it was soon found dead. Adult W:028 (ringed as an adult in 2014) was, perhaps coincidentally, found dead on the same date and W:247, a fourth-summer bird found on Ramsey Island on 22nd August, later tested negative for HPAI. Given that the Great Black-backed Gull colour ringing project has shown regular visits to Grassholm, it would seem inevitable that the disease will impact this species; unsurprisingly it has been proposed that gulls will prove a vector for transmission both between colonies and between seasons. It is hoped that colour ringing will highlight any significant drop in survival.



Checks of any accessible and seemingly complete nests from 10th April failed to find any eggs until the morning of the 11th; a search of the area to the southwest of North Pond located a nest with two eggs, although the other pairs in this area were either yet to build or were lingering near empty nests. The first eggs encountered in 2020 and 2021, a full complement of three in both years, were found on the 16th, this also the date of the 2013-2021 first egg mean (with the earliest found on the 10th in 2014 (a single egg) and 2018 (a clutch of three) and the latest on the 25th in 2013). The first chicks to be seen in 2022 were along Medicine Wall on 17th May (two chicks were alongside a

hatching egg); the first of last year were found on the 15th, the first of 2020 on the 17th and the first of 2019 on the 16th. Of 40 monitored nests, 14 pairs failed, six pairs fledged a singleton, 14 pairs fledged two and six pairs fledged three. There were thus 52 young fledged, resulting in a productivity figure of 1.30 fledglings per monitored pair; productivity was 13.9% down on that of 2021 and 10.3% down on a 2013-2021 mean of 1.45 (\pm se 0.08), but 19.3% up on the 1989-2004 mean of 1.09.

Productivity estimates 2002-2022 (average number of fledglings per monitored pair).

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1.09	0.91	-	0.76	1.07	1.02	1.02	-	0.71	0.89	-
2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
1.80	0.93	1.66	1.38	1.54	1.40	1.43	1.40	1.51	1.30	



The Great Black-backed Gulls are spectacular apex predators and an exciting component of the Skokholm seabird assemblage, however it is important we monitor the impact of higher breeding numbers on the Manx Shearwater population. Dead shearwaters were counted for a ninth consecutive year, the vast majority of which had been eaten by Great Black-backed Gulls (see the Manx Shearwater section for further details); a total of 2832 corpses, comprising 2104 adults and 728 youngsters, were marked this year. The number of adults marked was the third lowest of the last nine years, down on a record 3008 logged in 2020 and 11.4% down on a 2014-2021 mean of 2373.6 \pm sd 473.4. The number of youngsters marked was the lowest to date, 37.0% down on a 2014-2021 mean of 1156.1 \pm sd 184.8 (a high of 1398 was recorded in 2016 and a low of 967 last year). The total number of marked corpses was the second lowest to date, only up on the 2661 of 2019 and 19.8% down on a 2014-2021 mean of 3529.8 \pm sd 538.2. There are many factors influencing the number of corpses found; observer effort has been rather consistent, but possible or certain differences between years have included the number of Great Black-backed Gulls present (which may include differences in the number of shearwater specialists (Westerberg *et al.*, 2018)), the number of shearwaters available (including differences in the number of prospecting individuals likely to spend longer on the surface), the prevalence of suitable hunting conditions (governed primarily by the moon cycle and weather), the size of the Rabbit population (which may provide an alternative food source) and the prevalence of puffinosis (which may make young birds easier to catch). Although the number of dead birds currently being found represents a relatively small proportion of the Skokholm shearwater population, there is clearly a benefit to understanding these relationships in greater detail. Ad hoc observations suggested that shearwaters were regularly being

dug out from their burrows this year (as opposed to being taken from the entrance or from above ground), indeed birds in four of 185 active study burrows were seemingly accessed via an excavated hole; this form of hunting has the potential to impact more than just the eaten individual, as it reduces the suitability of nest sites and the stability of the colony.



The percentage of Great Black-backed Gulls colour ringed as fledglings to be encountered in each subsequent year.

Ringed in	2014	2015	2016	2017	2018	2019	2020	2021	Mean
% not seen again	25.58	46.15	53.13	63.89	42.11	22.73	48.72	54.29	44.57
% seen again	74.42	53.85	46.88	36.11	57.89	77.27	51.28	45.71	55.43
% seen 1+ year	48.84	36.54	31.25	27.78	39.47	36.36	30.77	17.14	33.52
% seen 2+ years	37.21	30.77	18.75	22.22	39.47	27.27	17.95		27.66
% seen 3+ years	32.56	26.92	18.75	22.22	28.95	15.91			24.22
% seen 4+ years	30.23	25.00	15.63	16.67	18.42				21.19
% seen 5+ years	18.60	19.23	15.63	8.33					15.45
% seen 6+ years	16.28	13.46	12.50						14.08
% seen 7+ years	13.95	13.46							13.71
% seen 8+ years	9.30								9.30
% found dead	9.30	1.92	9.38	2.78	2.63	6.82	2.56	5.71	5.14

The colour ringing project initiated in 2014 is also providing information on juvenile survival and recruitment. Of 43 fledglings ringed in 2014, 32 (74.42%) have been resighted subsequently, including four which have been found dead. At least 21 birds (48.84%) definitely survived their first full year, 16 (37.21%) survived two years, 14 (32.56%) survived three years, 13 (30.23%) survived four years, eight (18.60%) survived five years, seven (16.28%) survived six years, six (13.95%) survived seven years and four (9.30%) have survived at least eight years (one of which was seen on Skokholm but did not breed). The birds ringed as fledglings in 2015 have provided similar results (see table above). Although these figures do not give an exact measure of juvenile survival, the birds ringed longer ago (of which more have returned to Skokholm and for which there has been longer for them to be encountered on the mainland), suggest that at least 25% of fledglings are surviving to four years of age. Two ringed as fledglings in 2015 and one ringed at the same age in 2017 all bred on Skokholm this year, these the first ringed as youngsters to be found breeding here. Two 2014 ringed fledglings were found breeding on Skomer in 2020, although they were not reported as doing so since (at least one is still alive), whilst a 2016 ringed bird bred there for the first time this year. Only time will tell whether this study provides a sound estimate of recruitment to the breeding population, something which may well be dependent on how many establish territories on Skokholm

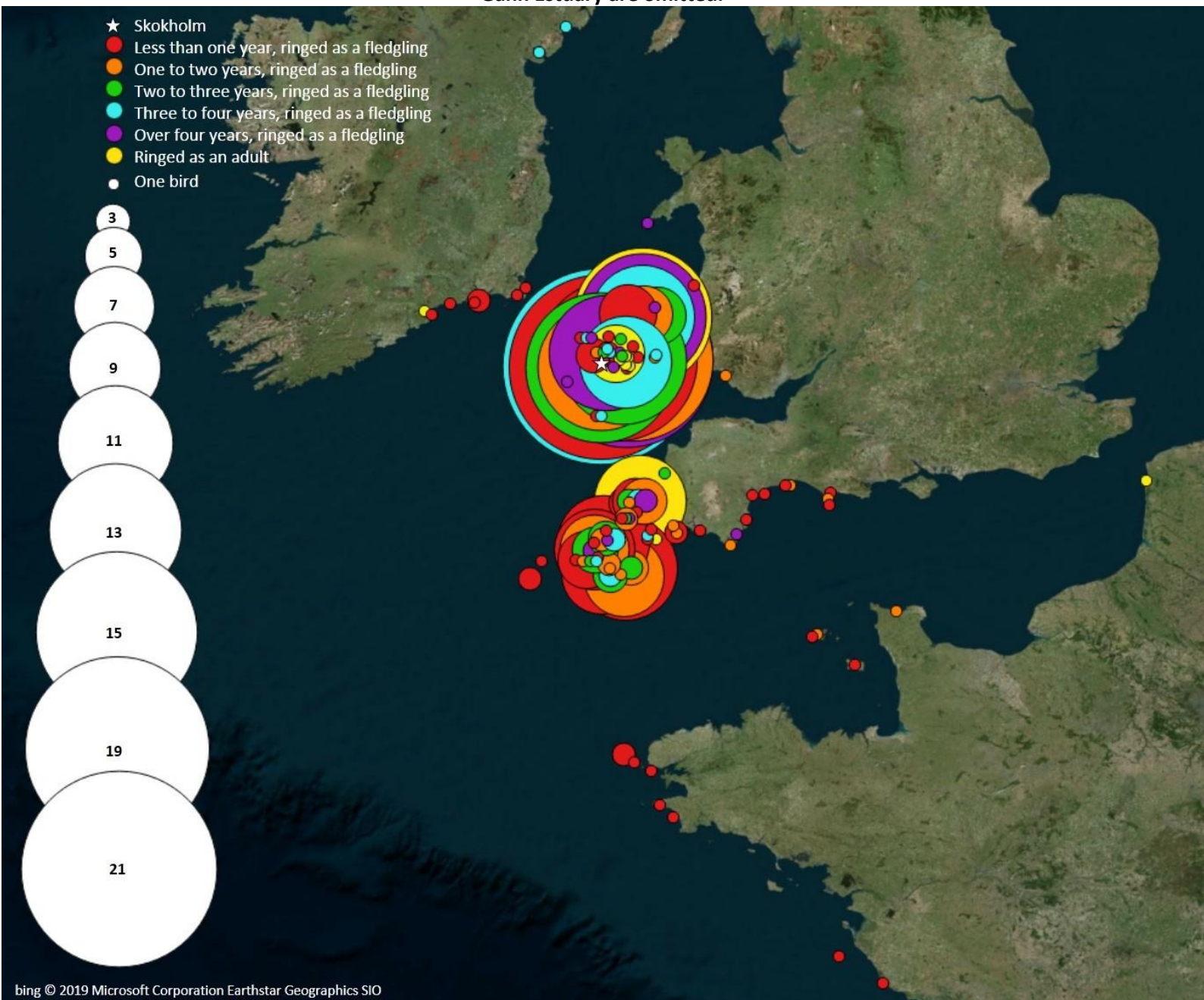
or Skomer (where they should be seen) as opposed to other less studied breeding sites. Of 49 youngsters which have so far returned to Skokholm at some point, 13 were first back as first-summers, seven as second-summers, 17 as third-summers, ten as fourth-summers, one as a fifth-summer and one as a sixth-summer; it would appear that birds are most likely to first return in their third summer, with 6.94% of all youngsters ringed between 2014 and 2019 having first returned to the Island at this age (8.98% returned at this age, this including birds first back in earlier years).

Although resightings away from Skokholm will be somewhat biased by a preponderance of birders at the main roost sites in Cornwall, it seems likely that the typical southerly movements observed in young Great Black-backed Gulls reflect their genuine post-fledging distribution (see map below). Birds gravitate back towards Pembrokeshire as they get closer to breeding age (see both the table and map below). In addition to those sightings listed below, there were 12 individuals ringed as breeding adults and found 7.5km away on the Gann Estuary (birds captured on their Skokholm nests between 2014 and 2022). The ages given in the following table are known for birds ringed as near-fledglings, whereas 'adult' denotes a bird ringed at a minimum of four years which is thus of unknown age. All of these records were received since a similar table was published in the 2021 Seabird Report.

Darvic	Ring	Location	County/COUNTRY	Age	Date
W:039	HT94878	Kete	Pembrokeshire	Eighth-summer	04/09/22
W:055	HT94917	Nevern Estuary	Pembrokeshire	Eighth-winter	16/02/22
W:057	HT94918	Gann Estuary	Pembrokeshire	Ninth-winter	15/10/22
W:064	HT94925	Skomer Island	Pembrokeshire	Eighth-summer	20/04/22
W:064	HT94925	Gann Estuary	Pembrokeshire	Ninth-winter	26/12/22
W:077	HT94934	Skokholm	Pembrokeshire	Eighth-summer	08/05/22
W:083	HT94940	Skokholm	Pembrokeshire	Seventh-summer	28/08/22
W:085	HT94942	Gannel River, Newquay	Cornwall	Seventh-summer	08/09/22
W:108	HT94971	Skokholm	Pembrokeshire	Seventh-summer	10/08/22
W:108	HT94971	Gann Estuary	Pembrokeshire	Eighth-winter	09/12/22
W:114	HT94943	Skomer Island	Pembrokeshire	Seventh-summer	15/06/22
W:119	HT94979	Skokholm	Pembrokeshire	Seventh-summer	30/04/22, 28/08/22
W:121	HT94981	Skokholm	Pembrokeshire	Seventh-summer	09/08/22 (breeding)
W:124	HT94955	Skokholm	Pembrokeshire	Seventh-summer	07/06/22 (breeding)
W:154	MA37811	Skokholm	Pembrokeshire	Sixth-summer	07/05/22
W:158	MA37815	Bardsey Island	Gwynedd	Sixth-summer	21/08/22
W:162	MA37820	Skomer Island	Pembrokeshire	Sixth-summer	28/07/22 (breeding)
W:168	MA37826	Skokholm	Pembrokeshire	Sixth-summer	08/05/22
W:195	MA37862	Gothian Sands, Gwithian	Cornwall	Fifth-winter	28/12/21 (sic)
W:195	MA37862	Skokholm	Pembrokeshire	Fifth-summer	05/04/22 (breeding)
W:219	MA37884	Ballyteige NNR, Wexford	IRELAND	Fifth-winter	16/11/21 (sic)
W:219	MA37884	Skokholm	Pembrokeshire	Fifth-winter	20/03/22
W:219	MA37884	Gann Estuary	Pembrokeshire	Sixth-winter	25/11/22
W:221	MA37886	Gann Estuary	Pembrokeshire	Sixth-winter	26/12/22
W:230	MA37844	Dale Airfield	Pembrokeshire	Adult	29/08/22
W:246	MA37915	Skokholm	Pembrokeshire	Fourth-summer	01/05/22, 27/06/22
W:247	MA37916	Skokholm	Pembrokeshire	Fourth-summer	10/05/22
W:247	MA37916	Ramsey Island	Pembrokeshire	Fourth-summer	22/08/22 (dead)
W:254	MA37919	Amroth	Pembrokeshire	Fourth-winter	19/02/22
W:254	MA37919	Gann Estuary	Pembrokeshire	Fourth-summer	08/03/22
W:254	MA37919	Skokholm	Pembrokeshire	Fourth-summer	27/04/22
W:267	MA37924	Gann Estuary	Pembrokeshire	Fifth-winter	03/12/22

W:271	MA37928	Celtic Sea, 41km SW of Skokholm		Fifth-winter	16/10/22
W:272	MA37929	Slapton Sands	Devon	Fourth-summer	18/06/22, 05/08/22
W:274	MA37931	Camel Estuary	Cornwall	Fifth-winter	17/12/22

The movements of Skokholm ringed Great Black-backed Gulls 2014-2022. The different colours represent the different ages at which the birds were resighted. 38 birds ringed as fledglings and resighted on Skokholm over four years later and 46 birds ringed as adults and resighted on the Gann Estuary are omitted.



Darvic	Ring	Location	County/COUNTRY	Age	Date
W:277	MA37934	Skomer Island	Pembrokeshire	Fourth-summer	12/09/22
W:294	MA37962	Skokholm	Pembrokeshire	Third-summer	23/04/22, 27/04/22
W:294	MA37962	Skomer Island	Pembrokeshire	Third-summer	12/09/22
W:296	MA37964	Gann Estuary	Pembrokeshire	Third-winter	15/03/22
W:304	MA37979	Newquay Harbour	Cornwall	Third-summer	23/04/22

W:304	MA37979	Newlyn Harbour	Cornwall	Third-summer	20/05/22
W:304	MA37979	Gothian Sands, Gwithian	Cornwall	Fourth-winter	09/10/22, 24/10/22
W:305	MA37980	Skokholm	Pembrokeshire	Third-summer	07/09/22
W:315	MA37989	Skokholm	Pembrokeshire	Third-summer	17/04/22, 28/08/22
W:317	MA37991	Skokholm	Pembrokeshire	Third-summer	25/07/22
W:318	MA37992	Sandy Haven	Pembrokeshire	Third-winter	24/12/21 (sic)
W:320	MA37994	Skokholm	Pembrokeshire	Third-summer	28/08/22
W:325	MA37999	Skokholm	Pembrokeshire	Third-summer	28/08/22
W:325	MA37999	Gann Estuary	Pembrokeshire	Fourth-winter	09/12/22
W:332	MA46913	Skokholm	Pembrokeshire	Second-summer	07/09/22
W:339	MA46920	Sandy Haven	Pembrokeshire	Second-winter	24/12/21 (sic)
W:343	MA46924	Newlyn Harbour	Cornwall	Third-winter	09/10/22
W:346	MA46927	Gannel River, Newquay	Cornwall	Second-winter	18/02/22
W:346	MA46927	Camel Estuary	Cornwall	Third-winter	15/10/22
W:347	MA46928	Gothian Sands, Gwithian	Cornwall	Second-summer	07/05/22
W:348	MA46929	Gann Estuary	Pembrokeshire	Second-winter	27/12/21 (sic)
W:358	MA46942	Gann Estuary	Pembrokeshire	Third-winter	23/11/22, 24/12/22
W:361	MA46946	Dale Airfield	Pembrokeshire	Second-summer	10/09/22
W:365	MA46949	Hayle Estuary	Cornwall	Second-winter	03/03/22
W:365	MA46949	Skokholm	Pembrokeshire	Second-summer	06/09/22
W:370	MA46956	Gann Estuary	Pembrokeshire	Second-winter	09/12/22
W:376	MA46963	Dale Airfield	Pembrokeshire	First-summer	02/09/22, 03/09/22
W:376	MA46963	Gann Estuary	Pembrokeshire	First-summer	21/09/22
W:379	MA46966	Skokholm	Pembrokeshire	First-summer	26/08/22
W:382	MA46969	Newlyn Harbour	Cornwall	First-winter	18/12/21 (sic)
W:384	MA46971	Gann Estuary	Pembrokeshire	Second-winter	09/12/22
W:386	MA46975	Camel Estuary	Cornwall	First-summer	16/08/22
W:388	MA46977	Île d'Yeu, Vendée	FRANCE	First-winter	12/02/22
W:391	MA46980	Anse du Loc'h, Plogoff	FRANCE	First-winter	16/02/22
W:392	MA46981	Gothian Sands, Gwithian	Cornwall	First-winter	18/12/21 (sic)
W:400	MA46974	Skokholm	Pembrokeshire	First-summer	09/09/22
W:419	MA55411	Gann Estuary	Pembrokeshire	First-winter	23/12/22

Breeding season roosts again formed regularly in the Bog and were often larger than in recent years; whereas there were 11 roosts of 25 birds or more between 15th April and 15th June in 2020 and only two during the same period in 2021, there were 21 this year including peaks of 48 on 16th April, 54 on 13th May and 49 on 8th June. The first two flying fledglings were noted on 29th June, these the earliest to have been encountered this decade and four days earlier than the 2014-2021 mean (the earliest during this period were recorded on 30th June in 2016 and 2019 and the latest on 11th July 2021). The largest July roosts were of only 30 on the 5th and 29 on the 19th, indeed it was not until mid-August that the larger post-breeding roosts began to develop, with the largest gatherings being of 68 on the 16th and 43 on the 18th, 25th and 26th (there were three August peaks of between 68 and 86 during the same period last year). The largest September roost counts were up on a 2021 high of 48, albeit down on those logged in most recent years; peak counts of 63 on the 5th, 69 on the 11th and 95 on the 13th were down on September highs of 130 in 2020, 113 in 2019, 135 in 2018, 183 in 2017, 193 in 2016, 179 in 2015 and 355 in 2013 (the September 2014 maximum was only 52). Numbers were also down in October, with single-figure daycounts on 19 dates; there were 12 such counts in 2015 and 13 in 2018, with the remaining years this decade seeing between one and 11. Peak October daycounts of 39 on the 6th and 46 on the 7th were well down on a 2021 high of 152 and a 2013-2021 mean October high of 152.3 (there was a low of 91 in 2020 and a high of 264 in 2013). The only November daycounts in excess of ten were of 12 on the 24th, 15 on the 25th and 17 on the

27th, these also the lowest highs this decade (the 2013-2021 mean November high is 82.0). Counts during the first ten days of December peaked at 18 on the 7th. The first fledgling to be seen away from the Island was at the Gann on 23rd December; this was the first year since the colour ringing project began in which a youngster was not seen in southwest England before the end of the year (the 2014-2021 mean first southwest resighting date is 29th September, with a bird at Newquay Harbour, Cornwall on 10th August 2019 the earliest and different birds at Gothian Sands and Newlyn Harbour (both Cornwall) on 5th December 2021 the latest).

Ringing recovery MA34201 (white darvic with red L:CD7)

Originally ringed as a chick, ST GEORGE'S (LOOE) ISLAND, LOOE, CORNWALL 18th June 2015

Previously recovered as a first-winter, ILE DE SEIN, FINISTÈRE, FRANCE 8th October 2015

Previously recovered as a second-winter, PORT DU LOCH, BRITTANY, FRANCE 14th January 2017

Recovered as an adult, THE HEAD, SKOKHOLM 20th March 2022

Finding condition Colour ring read in field

Distance travelled 163km at 340 degrees (NNW)

Days since ringed 2467

This is only the second Looe Island ringed bird to be seen on Skokholm following L:AU8, a bird ringed as a chick in 2011 and resighted here in September 2013 after 807 days. L:CD7 was associating with W:219, a Skokholm bird ringed as a chick in 2017 which was first seen back on the Island in May 2021 and which was in County Wexford in November 2021. Neither W:219 or L:CD7 were seen on Skokholm again (although the former was on the Gann Estuary in November 2022).



Ringing recovery MA56048 (green darvic with white B:191)

Originally ringed as a chick, YNYS GWYLAN-FAWR, GWYNEDD 15th June 2022

Recovered as a first-winter, NORTH PLAIN, SKOKHOLM 29th September 2022

Finding condition Colour ring read in field

Distance travelled 127km at 199 degrees (SSW)

Days since ringed 106

This is the second bird colour ringed on the Gwylans to be resighted on Skokholm. Given that the majority of Skokholm ringed youngsters disperse to the south, it is perhaps unsurprising that birds ringed in north Wales are following a similar pattern.

Glaucous Gull *Larus hyperboreus*

Gwylan y Gogledd

Vagrant only seven previous records

A seemingly small second-winter headed southeast over North Plain, the Wheelhouse and then South Haven, early in the afternoon of 20th March (RDB, GE). Surprisingly this becomes the third

consecutive year with a record following first-winters present in Broad Sound on the 18th and at North Pond on 20th November 2020 (presumed to be the same individual) and in Broad Sound on 2nd December 2021. The only other Skokholm records are of ‘immatures’ on 6th April 1969 and 1st November 1981, a second-winter on 31st March 1991, a second calendar-year bird at North Pond on 17th April and 14th May 1995 (presumed to be the same individual) and a first-winter seen briefly on the roof of the Wheelhouse on 12th March 2004.



Herring Gull *Larus argentatus*

Gwylan y Penwaig

Common Breeder Abundant Breeder in the 1970s

36 trapped (including 2 pulli), 3 retrapped, 36 resighted

1934-1976: 13,265 trapped, 2013-2021: 142 trapped, 28 retrapped, 59 resighted, 1 control

March daycounts again fluctuated widely, with 80 or less logged on ten dates, including lows of 32 on the 7th, 41 on the 8th and 42 on the 20th when birds fed and roosted away from Skokholm, but highs of 293 on the 3rd and 278 on the 23rd when many were back on territory. Roosts again included a reasonable number of young birds (for example a group of 13 subadults at North Pond on 29th March), this in contrast with observations made of Lesser Black-backed Gulls during the same period. A 15th April check of early nests around the Neck found them all to be empty, the first lone egg being present in Peter’s Bay on the 17th (neighbouring nests were all empty or still under construction); this was two days later than the first of last year (also found in Peter’s Bay), but one day earlier than the 2013-2021 first egg mean (see table below). It was not until the 23rd that two eggs were seen in Dumbbell Bay. Whole Island counts between the 15th and 17th May located 302 active nests, whilst an additional seven were present on the east side of the Stack on 1st June; a total of 309 nests was four more than recorded last year and 3.8% up on the 2012-2021 mean (297.7 ±sd 18.3), but was 1.9% down on the 1984-2021 mean (315.0 ±sd 45.5). This was the first year in four in which the total has risen above the lower limit set in the Skokholm Management Plan. The number of breeding pairs has apparently stabilised at a level close to that seen in the 1930s (the 1928-1937 mean was 269.70 ±sd 17.47), counts well down on the artificial peak of the 1970s (see chart below).

When in April the first egg was located in each year 2013-2022, along with the 2013-2021 mean.

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Mean
18 th	14 th	25 th	17 th	18 th	19 th	18 th	22 nd	15 th	17 th	18 th April

The number of breeding pairs 1928-2022 (where data exists). The 1970s peak was attributed to the exploitation of local fish waste and the decline to botulism (Thompson, 2007).



The number of breeding pairs and productivity estimates (average number of fledglings per sample pair) 2008-2022.

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
287	353	312	257	274	263	300	289	322	302	320	301	301	305	309
-	-	0.82	0.67	1.15	0.72	0.70	0.66	0.86	0.70	0.73	0.69	0.33	0.84	0.69



The monitoring of adult survival in Herring Gulls has been undertaken on Skomer for many years, however recent struggles with trapping sufficient adult birds to produce a reliable estimate led to the Islands Conservation Advisory Committee recommending that a project be established on Skokholm in 2017. There were 13 adults colour ringed in 2017 (all trapped on the nest), 17 in 2018 (11 on the nest and six in the Gull Trap), ten in 2019 (nine on the nest and one in a Spring Trap) and four in 2021 (all in the Gull Trap); a COVID-19 dictated staffing shortage meant that there were no adults trapped in 2020. Each bird is ringed with a red darvic inscribed W:9** or W:8** in white, the latter two digits identifying the individual. Birds trapped away from the nest are only included in the adult survival sample in the year after they have been found at a nest; seven of the 11 trapped in

this way were found at a nest prior to this season and one of the 2021 birds was found this year (and will be included in the 2023 estimate). Of the 13 birds marked in 2017, 11 bred in 2018 (84.6%). Of 26 with rings in 2018, 17 (65.4%) were still alive during the 2019 breeding season, four of these Gull Trap birds (100% survival) and 13 nest trapped birds (59.1%); two of the nest trapped birds were only seen elsewhere and were seemingly not breeding, whilst two had changed nest site (one moved 370m and one moved 837m). Of 27 with rings in 2019, 19 (70.4%) were alive in 2020, five of these Gull Trap birds (100%) and 14 nest trapped birds (63.6%); five of the nest trapped birds and two of the Gull Trap birds were not seen at a nest. All 20 alive in 2020 were resighted in 2021; four nest trapped birds and one Gull Trap bird were not found breeding (four were only seen on the mainland). Of the 21 alive in 2021, 18 (85.7%) were logged this year, seven of these Gull Trap birds (100%) and 11 nest trapped birds (78.6%); four of these were not seen at a nest, including two only seen on the mainland. A further 36 adults were colour ringed this year, 35 of these taken in the Gull Trap (19 were subsequently linked to a breeding territory).

For a fifth successive year, the only colour ring resightings away from Skokholm came from mainland Pembrokeshire.

Darvic	Ring	Location	County	Age	Date
W:998	GV22352	Freshwater West	Pembrokeshire	Adult	24/07/22 (dead)
W:984	GV22423	Gann Estuary	Pembrokeshire	Adult	25/11/22, 29/11/22
W:978	GV22428	Gann Estuary	Pembrokeshire	Adult	05/10/22, 04/12/22
W:976	GV22420	Gann Estuary	Pembrokeshire	Adult	06/10/22
W:974	GV22432	Johnston	Pembrokeshire	Adult	14/01/22
W:972	GR87973	Gann Estuary	Pembrokeshire	Adult	05/10/22
W:971	GV22440	Gann Estuary	Pembrokeshire	Adult	26/08/22
W:970	GV22457	Gann Estuary	Pembrokeshire	Adult	01/01/22, 05/10/22
W:965	GV83063	Gann Estuary	Pembrokeshire	Adult	06/10/22
W:964	GV83064	Gann Estuary	Pembrokeshire	Adult	01/01/22, 06/10/22
W:961	GV83058	Gann Estuary	Pembrokeshire	Adult	26/02/22
W:958	GY02321	Pembroke Dock	Pembrokeshire	Adult	12/08/22
W:958	GY02321	Gann Estuary	Pembrokeshire	Adult	30/08/22, 06/10/22, 28/12/22
W:957	GY02323	Frainslake Beach	Pembrokeshire	Adult	23/08/22 (dead)
W:899	GY02325	Gann Estuary	Pembrokeshire	Adult	05/10/22
W:898	GY02304	Gann Estuary	Pembrokeshire	Adult	30/08/22
W:897	GR87920	Gann Estuary	Pembrokeshire	Adult	29/08/22
W:893	GY02309	Gann Estuary	Pembrokeshire	Adult	21/09/22
W:889	GY02327	Gann Estuary	Pembrokeshire	Adult	05/10/22, 24/12/22
W:888	GY02328	Dale Airfield	Pembrokeshire	Adult	08/09/22
W:888	GY02328	Gann Estuary	Pembrokeshire	Adult	05/10/22, 18/11/22, 25/11/22
W:883	GY02334	Gann Estuary	Pembrokeshire	Adult	05/10/22
W:881	GY02335	Dale Airfield	Pembrokeshire	Adult	08/09/22
W:878	GY02337	Gann Estuary	Pembrokeshire	Adult	28/12/22
W:872	GY02368	Gann Estuary	Pembrokeshire	Adult	05/10/22

Five of the colour ringed birds have been found dead, including three this year; in addition to the two found on Pembrokeshire beaches (see table above), W:955 (ringed on 15th July 2022) was found dead in South Haven on 24th August. The latter was tested for HPAI by the Animal and Plant Health Agency but proved negative; although the cause of death was not determined, the necropsy found 'scant gastro-intestinal contents ... suggestive of little recent feeding, [with] poor body condition and malnutrition ... likely to have contributed to its demise'. An additional eight unringed dead adults were recorded this year, seven of which were found seemingly uninjured (including two on 29th May which were dead at their nests in the west arm of North Haven). The eighth was a bird found

wounded at Orchid Bog on 21st July which perished on the 24th. A lethargic and uncoordinated adult present at the Sugarloaf on 25th July was still alive two days later; it was not seen again. A total of nine dead adults was up on the two of 2020 and the three of 2021, however there was no evidence to suggest that this was linked to the H5N1 strain of highly pathogenic avian influenza. Injured Herring Gull are encountered most years (broken limbs and puncture wounds are most common, see previous Skokholm Seabird Reports); it would seem likely that interactions with fishing gear are responsible for some of these injuries, unsurprisingly so given how this species searches around boats for food (additionally a dead bird found in 2021 was strangled by fishing line). Following four impacted birds in 2019, no incidences of oiling have been recorded for three years.



The first chicks were seen in Little Bay on 16th May, these one day later than the first of last year but one day earlier than the 2017-2021 mean; they were destroyed during an eight metre swell on the night of the 17th. The first two flying fledglings were to the south of Winter Pond on 7th July, this seven days later than the first of last year and four days later than the 2013-2021 mean; although the first were also on the 7th in 2013 and 2017, the only later first fledgling noted during this period was aloft on 10th July in 2015 (the earliest were on 30th June in 2016 and 2021). Checks of the Neck productivity plot during July, where 134 pairs had established nests (seven fewer than last year), located a maximum of 90 fledging-sized young (along with 26 smaller chicks, three of which had fledged by 13th August (these late attempts were the result of first brood egg loss which occurred during the same rough weather which took the first chicks)). The resulting 2022 productivity figure of 0.69 fledged young per pair was 17.9% down on the 0.84 of last year, but matched the 2013-2021 mean (0.69 \pm sd 0.15); there was a high during this period of 0.86 in 2016 and a low of 0.33 in 2020, with the remaining years all seeing productivity of at least 0.66 fledglings per pair. Disappointing 2020 productivity was linked to a period of rough May weather which resulted in low nests being destroyed by unseasonable 11 metre waves. The weather last May was even more unusual, with southwesterly winds gusting at up to 69mph and the Mid Channel Rock Lighthouse Beacon off St Ann's Head registering an average wave height of 11 metres and multiple waves of at least 16 metres; nevertheless overall productivity was high, with the pairs around the Neck which were not impacted by the storm doing particularly well. This May was thus the third in a row in which nests were destroyed by large seas.

August saw the customary post-breeding departure of both adults and fledglings, however a mean daycount of 120.3 was the highest of the last decade and up on a 2013-2021 mean of 74.7; although there were lows of 40 on the 20th, 45 on the 21st and 30 on the 22nd, there were six daycounts of 210 or more and highs of 320 on the 6th, 290 on the 7th and 238 on the 25th (primarily made up of large feeding flocks off the Bluffs (peaking at 220 on the 7th), off Crab Bay (peaking at 168 on the 25th) and taking ants on North Plain (peaking at 210 on the 11th)). As is typically the case, fewer Herring Gulls visited Skokholm in September; there were four single-figure daycounts and ten counts of 20 or less, although highs of 177 on the 3rd (157 of which roosted on the Island) and 242 on the 25th (the vast majority of which were feeding offshore) contributed to the highest September bird-days total of the last decade (1502 being well up on the previous high of 1150 logged in 2015). Given the busy late summer, it was perhaps surprising that October daycounts were so low, indeed there were no birds seen at all on four dates, a further 21 dates with only single-figure counts and highs of just 25 on the 2nd and 73 on the 23rd (63 of which headed southwest through Broad Sound); an October bird-days total of 221 was the lowest this decade, down on a 2013-2021 mean of 1046.2. Numbers again increased in November, albeit not to the extent seen in recent years; although there were still 19 daycounts of less than 30, there were highs of 132 on the 11th, 75 on the 25th and 83 on the 27th when evening roosts formed. A November bird-days total of 961 was down on a 2013-2021 mean of 2945.9 and the peak daycount was down on a mean of 362.9 logged during the same period (there were daycount highs of 585 in 2015, 588 in 2016 and 612 in 2017, the majority of which were feeding with the smaller gulls in Broad Sound). The first ten days of December saw highs of 59 on the 1st, 51 on the 2nd and 32 on the 5th, this quite the contrast to last year when large numbers feeding in Broad Sound led to record daycounts of 465 on the 1st, 838 on the 2nd and 425 on the 3rd.

Larus hybrid *Larus argentatus* x *L. fuscus* (one possible record of *L. argentatus* x *L. michahellis*)
Scarce Breeder

Although Herring x Lesser Black-backed Gull hybrids occasionally establish territories on Skokholm (photographs and further details are in the 2014 and 2015 Annual Reports), a metal ringed bird present around South Haven in 2020 appeared more similar to a Yellow-legged Gull (see the 2020 and 2021 Annual Reports for photographs). Indeed correspondence with authorities on the Continent suggested that all of the observable features fell within the range exhibited by *L. michahellis*. However further communications with experienced gull watchers in southeast England led to the conclusion that both the washed-out leg colour and primary pattern, with the grey primary bases extending into what would typically be an extensive black outer wing, were too far removed from what is usual in this species. This ringed hybrid was again present in 2021 and on 9th July was found at a nest above Hog Bay, paired with a Herring Gull and with two near-fledglings. The same ringed bird was in the vicinity of its 2021 nest and seemingly paired with a Herring Gull on five March dates this year and on the 16th it was stood on the Haven Rock loaf favoured in previous years; surprisingly it was not seen again. A more typical Herring x Lesser Black-backed Gull hybrid was found paired with a Lesser Black-backed Gull in Calf Bay on 28th April; this attempt had produced one chick by 31st May, but there were no further sightings.

Lesser Black-backed Gull *Larus fuscus*

Gwylan Gefnddu Leiaf

Abundant Breeder previously a Very Abundant Breeder

51 trapped (including 18 pulli), 3 retrapped, 7 resighted, 2 controls

1938-1976: 11,912 trapped, 2013-2021: 620 trapped, 29 retrapped, 107 resighted, 17 controls

A mean March daycount of 419.9 was the lowest this decade, down on a 2013-2021 mean of 603.8, a high during that period of 827.0 in 2014 and a low of 473.4 last year (the four lowest mean March daycounts have occurred in the last four years). The number of birds within the colonies again fluctuated considerably during the day; for example the Middle Heath colony contained 43 birds on the morning of 5th March but only one that afternoon, whilst the Frank's Point colony contained 12

birds on the morning of the 20th but 73 in the evening and 31 on the morning of the 25th but 89 in the evening. The larger communal roosts recorded in previous years were again generally absent; the majority of March counts were of birds on territory, with the largest roosts forming in the Bog where there were at least 120 on the 1st, 3rd and 21st. A more detailed description of how the gulls prepare for the breeding season was available in 2015 and 2016 due to the GPS trackers fitted by the British Trust for Ornithology in 2014 (funded by the Department of Energy and Climate Change) which gave some idea as to when birds first returned to Skokholm (see the relevant Skokholm Seabird Reports for details of return dates and the range of over-wintering strategies used); the last of the functioning trackers and the base station were removed in 2017. A daycount of 750 on the 11th was the lowest April maximum this decade, down on a 2013-2021 mean high of 1274.1; there were highs of 2109 in 2014 and 1703 in 2016, whilst the four lowest peaks have occurred in the last four years (including previous lows of 759 in 2019 and 796 last year). April nest checks at Middle Heath, Green Heath and the Neck located two eggs at the former site on the 24th (in the same nest); these were found on the same day as the first of 2021 but were three days earlier than the 2013-2021 mean.

When the first egg was located in each year 2014-2022, along with the 2013-2021 first egg mean.

2014	2015	2016	2017	2018	2019	2020	2021	2022	Mean
24 th April	4 th May	25 th April	1 st May	26 th April	28 th April	25 th April	24 th April	24 th April	27 th April



Vantage point counts of the inland breeding subcolonies and a full census of the coast nesting pairs were made between the 15th and 19th May, during which 750 apparently incubating adults were located; this was the lowest count in over 50 years, a total down on the 795 of 2020, the 842 of last year and 29.1% down on the 2014-2021 mean (1057.9 ±sd 248.3). In an effort to reduce disturbance in the colony, the Islands Conservation Advisory Committee has suggested that the walkthrough surveys, which have traditionally been used to check the accuracy of the point counts, are no longer performed annually; there was thus no walkthrough for a third year (the lack of a walkthrough in 2020 was due to a COVID-19 dictated lack of personnel). The number of apparently incubating adults (as assessed using the vantage point counts) and the number of nests containing eggs (as located during walkthrough surveys) invariably differ, primarily due to incubating birds being hidden by

vegetation (particularly in areas where there are no raised vantage points). Between 2013 and 2019 there were on average 12.83% more nests containing eggs than apparently incubating adults (although this was as low as 0.82% in a year with a particularly short breeding season sward height and as high as 27.32% when vegetation was taller (see table below)). The walkthrough surveys also reveal a variable number of empty nests; over the period 1991-2002 the count of empty nests varied from 11-44% of the total number of nests (with a mean of 22.7% (Thompson, 2007)), although between 2013 and 2019 this dropped to between 4.98% and 17.62% (with a mean of 14.03%). It is unclear whether empty nests are second nests made by the pairs present, nests robbed of eggs or nests where adults are yet to lay. The breeding season is certainly a protracted one, with the first 2022 chick located on 22nd May (the 2013-2021 mean is 24th May, with one on the 18th last year the earliest and one on 6th June 2015 the latest), but a nest near the Top Tank containing recently hatched young on 14th July, the latter five days after the first fledgling was seen near the Top Tank (the 2016-2021 first fledgling mean is 4th July, with the earliest on 30th June 2020). It would thus seem likely that some (but given their extremely close proximity to each other, not all), empty nests belong to additional pairs. Between 2013 and 2019 the total number of nests (including empty nests) was between 20.68% and 43.45% higher than the vantage point total (with a mean of 31.36%, see table below).

A comparison of vantage point counts (of apparently incubating adults) and the number of nests (both empty and with eggs) located during walkthrough surveys of the same areas. The difference each year provided a correction factor to predict the number of nests (both empty and with eggs) which were actually present. The 2013-2019 means may be useful in years when walkthrough surveys are not possible/desirable.

Year	Vantage point count	Walk through count	Empty/ With egg(s)	Percentage of empty nests	Difference between counts (%)*	Correction (no empty nests)	Difference between counts (%)**	Correction (including empty nests)
2019	194aia	251	39 212	15.54	9.28	1.09	29.38	1.29
2018	266aia	321	16 305	4.98	14.66	1.15	20.68	1.21
2017	366aia	517	51 466	9.86	27.32	1.27	41.26	1.41
2016	550aia	789	139 650	17.62	18.18	1.18	43.45	1.43
2015	493aia	636	110 526	17.30	6.69	1.07	29.01	1.29
2014	613aia	827	135 692	16.32	12.89	1.13	34.91	1.35
2013	245aia	296	49 247	16.55	0.82	1.01	20.82	1.21
Mean				14.03	12.83	1.13	31.36	1.31

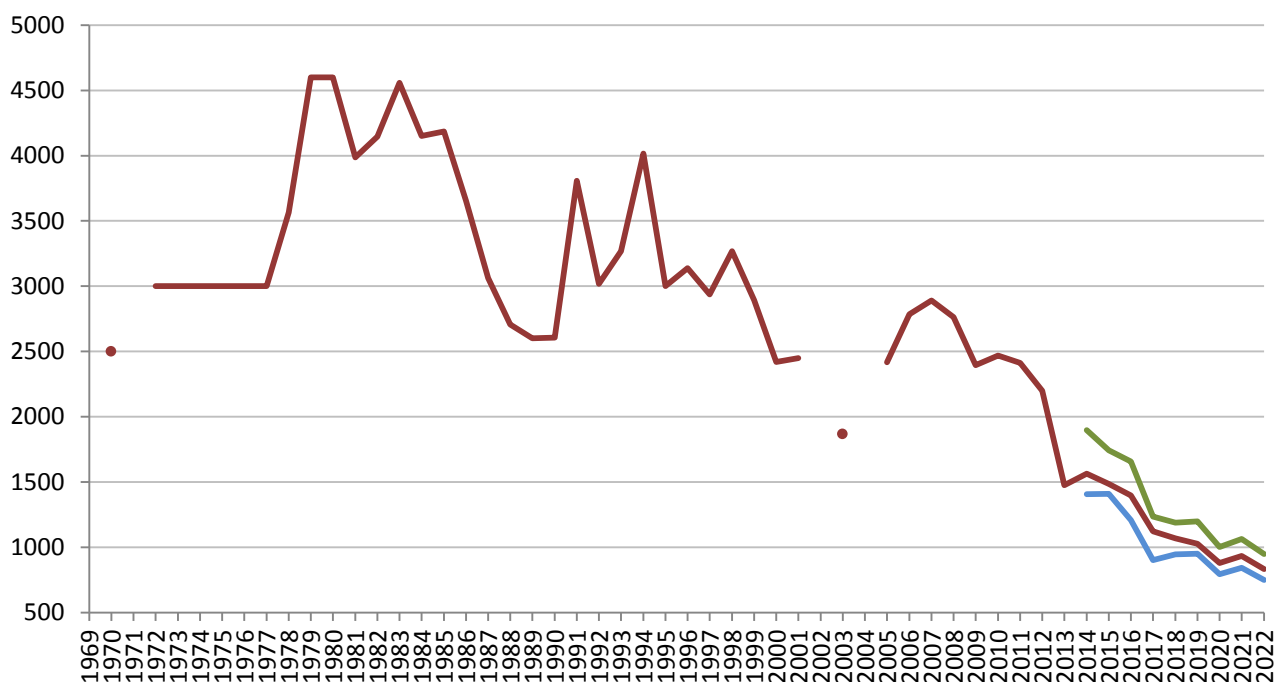
* How many more nests (containing eggs) were present than the number of apparently incubating birds seen (as a percentage).

** How many more nests (including empty nests) were present than the number of apparently incubating birds seen (as a percentage).

Of the 750 apparently incubating adults counted this year, 113 were in open (primarily coastal) areas where it was apparent that additional pairs were not present. A mean 2013-2019 correction factor of 1.13 (see table above) would suggest that the remaining 637 apparently incubating birds actually represented a total of 720 nests with eggs (giving a 2022 breeding population estimate of 833); this is the lowest estimate of the post-War era, down on the previous low of 880 recorded in 2020 and 29.7% down on the 2014-2021 mean (1185.4 \pm sd 261.2). A mean 2013-2019 correction factor of 1.31 would suggest that the remaining 637 apparently incubating birds actually represented a total of 834 nests (including empty nests); this gives a 2022 breeding population estimate of 947, a total down on the 2014-2021 mean (1373.6 \pm sd 340.1) and the first estimate of less than four-figures. The actual number of breeding pairs probably lies somewhere between these two estimates (833-947). It was clear during the vantage point surveys that the vegetation was taller and thicker than usual this year; it is thus likely that the estimate of inland pairs (using the 2013-2019 mean correction factor)

will be lower than what was actually present. However, even if we use the 2017 correction factor (that generated in a year with similar high vegetation), the 2022 whole Island estimate would only be 922 (which is still down on the 935 predicted using the mean correction factor last year).

The total number of Lesser Black-backed Gull breeding pairs 1970-2022. Control measures started in 1984 (destruction of nests) and stopped in 1998. The green line is the population estimate if all empty nests are assumed to belong to additional pairs. The maroon line is the corrected population estimate based on a comparison of vantage point counts and the number of nests which contained eggs. The blue line is the uncorrected vantage point count total (of apparently incubating adults). A lack of walkthrough surveys means that the corrected 2020-2022 totals are based on the 2013-2019 means.



Lesser Black-backed Gull productivity is typically assessed by entering various subcolonies to ring as many near-fledglings as possible, the BTO rings becoming marks for a mark/resighting population estimate. However it has lately proven difficult to resight sufficient ringed fledglings to allow for a meaningful evaluation. In an attempt to increase the number of resightings, recent years have seen staff and volunteers re-enter the subcolonies (rather than observing fledglings at a distance with a telescope). A simple calculation, '(number ringed on first visit x number checked for rings on second visit) / number of birds found to have rings on second visit', predicts the number of near-fledglings within an area (which can then be compared with the number of pairs thought to have been present there). Whereas the walkthrough surveys allowed for an accurate assessment of how many nests were in an area, a lack of walkthroughs from 2020 onwards means that productivity estimates are less accurate (as they are based on corrected vantage point counts); given that the vegetation was particularly tall this year, productivity at the inland site may have been lower than that given below (as there may have been more pairs present than predicted using the mean correction). Visits to the Middle Heath and Green Rocks area during early July suggested that 32 near-fledglings had been produced by 61 pairs (the uncorrected vantage point count for this area was 54 pairs); the resulting productivity figure of 0.52 fledglings per pair was the third highest inland estimate of the last ten years. The coastal slopes of Purple Cove were investigated for a sixth year as this discreet subcolony, with very short sward or rocky substrate, is seemingly suitable for an accurate fledgling count using only a telescope; here 39 pairs produced a minimum of 21 fledglings, giving a productivity figure of 0.54 fledglings per pair (the 2017-2021 Purple Cove mean is $0.89 \pm se 0.13$, with a high of 1.21 in 2018 and a previous low of 0.55 in 2020). Between 2017 and 2020, Purple Cove productivity proved

to be consistently higher than that observed inland, this fitting ad hoc observations made in recent years and perhaps supporting the theory that birds in larger subcolonies are struggling in part due to the intraspecific depredation of small chicks. However the productivity observed at both coastal and inland subcolonies has been very similar for the last two years, this perhaps due in part to declining numbers inland.

Combining data from Purple Cove and Middle Heath suggests that 100 pairs fledged 53 young; a combined productivity figure of 0.53 is the third highest estimate of the last decade, this 51.4% up on the 2013-2021 mean of $0.35 \pm se 0.09$ (there was a high during this period of 0.89 in 2021 and a low of 0.12 in 2020). It is unclear why productivity was above average this year. Ad hoc observations did not mirror the estimate; although fledglings across North Pond and North Plain could potentially have come from anywhere on Skokholm (and possibly elsewhere), a maximum of 56 on 31st July was the lowest July or early August count this decade, down on lows of 65 in 2018 and 66 in 2020 (although it should be remembered that the breeding population has fallen considerably during the same period, the 2014-2021 mean maximum is 108.6, with highs of 141 in 2014 and 136 in 2021 (the latter reflecting the high productivity estimate of that year)).

Lesser Black-backed Gull productivity estimates 2005-2022 (where data exists).

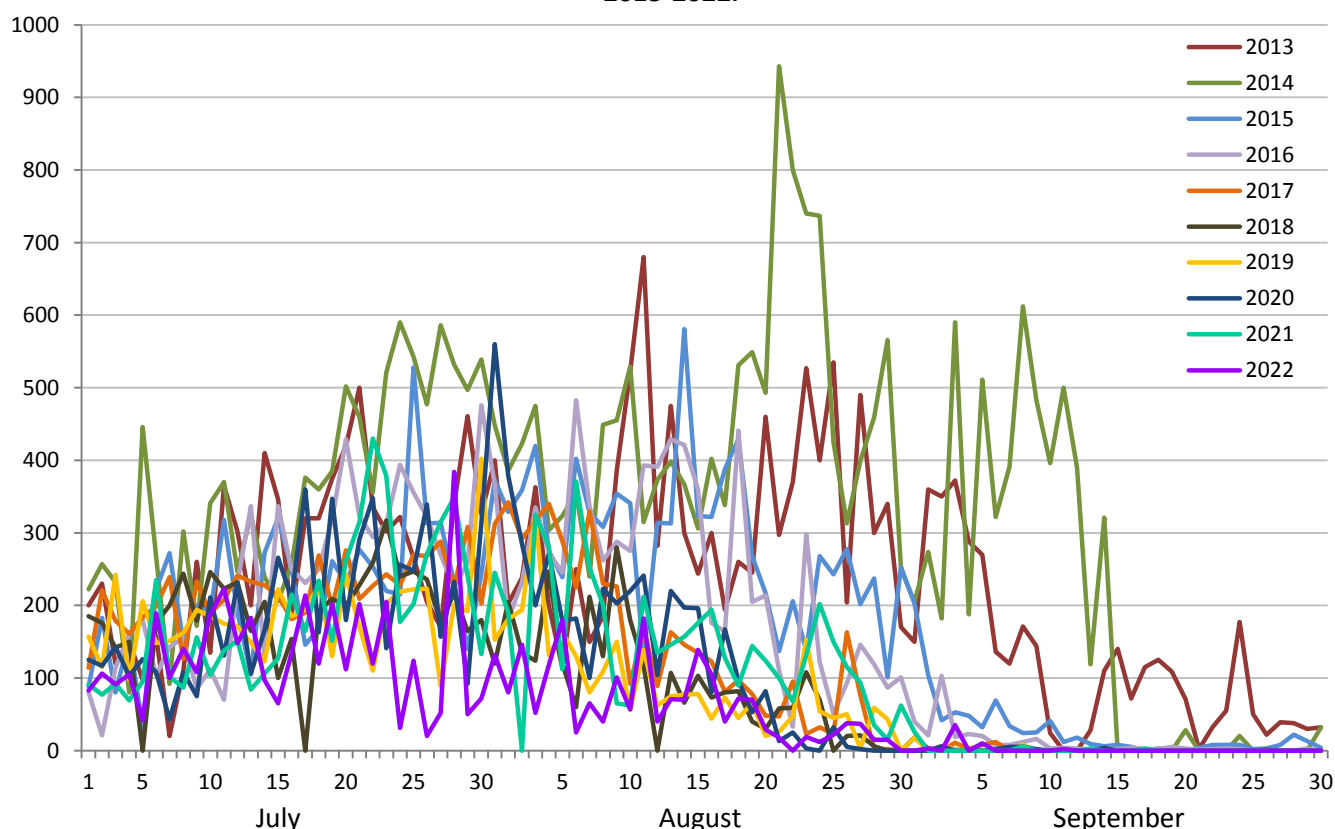
2005	2008	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
0.27	0.27	0.03	0.16	0.16	0.30	0.15	0.23	0.38	0.63	0.27	0.12	0.89	0.53



Although poor productivity is seemingly driving the decline in the Skokholm breeding population, it also seems possible that disease may be taking its toll in some years. There were 21 dead adults found in 2016 which were thought to be diseased or poisoned, with the period before death characterised by very lethargic behaviour, fine shaking and an eventual loss of limb control. There were three dead adults in 2017, 15 adults in 2018 (including a bird with a particularly dirty vent and a bird handed in live from a passing boat which exhibited the same symptoms prevalent in 2016), two adults in 2019, 11 adults in 2020 (including an uncoordinated bird (with a clean vent) found dead two days later, but not including two live birds with broken wings, one with a broken leg and one with a missing foot) and 14 adults last year (along with one which had recently lost a leg and one which exhibited the symptoms noted in 2016). This year saw six adults found dead between 16th March and 25th July, a second-summer found dead on 4th July, uncoordinated adults on the 18th and

22nd May (which were not seen again), an adult severely injured by a Great Black-backed Gull on 4th June (not seen again) and a sick adult with poor limb control found on 8th July which was dead by the 10th. Additionally a lethargic adult found at North Pond on 4th August was dead within two hours of its discovery; the body, tested by the Animal & Plant Health Agency, was not carrying HPAI, the cause of death instead being quite unexpected. A necropsy revealed '[a] 1cm diameter circular scab on the ... right hind limb [and] a deficit in the musculature ... extending from the scabbed area, through the soft tissues, into the abdominal cavity. This was a roughly circular 'tunnel' through the tissue, and there were blood-soaked feathers within this soft tissue deficit. There was an approximately 0.8cm circular hole in the wall of the proventriculus just proximal to the junction with the gizzard. Present within the gizzard was a metal pellet. There was a large volume of free blood and multiple blood clots in the thoracic cavity.' The pellet was considered typical of that fired using an air gun, this a tragic reminder of what faces gulls away from Skokholm. There were thus nine non-juveniles found dead this year; although it is possible that aggressive interactions with other birds may have caused some deaths (indeed a corpse on 25th July was inverted in much the same way as that of a Manx Shearwater), disease or poisoning again seems likely in the majority of cases.

The number of Lesser Black-backed Gulls roosting on North Plain and in the vicinity of North Pond 2013-2022.



As is typically the case, the number of birds using traditional roost sites increased during July; North Plain and the area around North Pond again proved to be the usual site for the largest post-breeding roost, with smaller numbers congregating around the coast and at South Pond. This year saw the July roost peak at 384 on the 28th (birds first attracted to flying ants); this was the third lowest July peak this decade, down on a 2013-2021 mean of 456.8 and a high during that period of 590 in 2014. A cumulative July total of 4041 roosting birds was the lowest to be logged since roost recording began in 2013, this down on a previous low of 5660 noted in 2019 and well down on highs of 8353 in 2013 and 11,226 in 2014. Whereas roost counts between 2013 and 2017 peaked in August, the last five years have seen a more rapid departure of birds from the Island. This year saw an August peak of just 182 on the 11th, this the lowest August high this decade (the 2013-2021 mean high is 487.0,

with a low of 280 in 2018 and a peak of 943 in 2014). An August total of 1858 roosting birds was also the lowest this decade, down on a 2013-2021 mean of 6414.9 and a previous low of 2695 in 2019 (between 2013 and 2015 the August total ranged between 8903 and 13,849). The last three-figure roost count of the year was the 105 present on 16th August; this was the earliest such count this decade, ten days earlier than the last of 2021 (between 2013 and 2016 the last three-figure roost counts were logged in September). September again proved to be quiet, with only 50 roosting birds noted during the month; although up on totals of between eight and 41 logged in each year between 2017 and 2021, the September roost total was in three-figures in 2015 and 2016, whilst in 2013 and 2014 it was in four (with a high of 5359 in 2014). A peak daycount of five on the 18th was the lowest October high this decade, whilst only six further bird-days during the entire month led to a total down on a 2013-2021 mean of 161.2 and a previous low of 44 logged in 2017. There were only four November daycounts, all of four or less, prior to the 25th, although daily counts of between ten and 27 on each of the last six days of the month took the bird-days total to 101; the peak daycount was down on a 2013-2021 mean November high of 45.8 (there was a maximum of 98 in 2015), whilst the total was down on a mean of 162.9 logged during the same period. Sightings on all but two December dates to the 10th peaked at five on the 1st and ten on the 2nd.

Ringing recovery Left leg D7734, Right leg black darvic with white 5AW8

Originally ringed as a subadult male, CHOUET LANDFILL, GUERNSEY 24th May 2013

Previously recovered as a subadult, FIGUEIRA DA FOZ, COIMBRA, PORTUGAL 8th November 2013

Previously recovered as a subadult, VIL DE MATOS LANDFILL, PORTUGAL 8th November 2013

Previously recovered as an adult, DUMBELL BAY, SKOKHOLM 13th May and 29th June 2016

Previously recovered as an adult, GANN ESTUARY, PEMBROKESHIRE 9th March 2020

Previously recovered as an adult, PETER'S BAY, SKOKHOLM 14th June 2021

Recovered as an adult, SOUTH HAVEN, SKOKHOLM 15th and 27th April 2022

Recovered as an adult with chick, NORTHEAST OF SOUTH HAVEN, SKOKHOLM 21st and 30th July 2022

Finding condition Darvic ring read in field

Distance travelled 311km at 320 degrees (NW)

Days since ringed 3354



Ringing recovery Left leg green darvic with black 3NF, Right leg FH07803

Originally ringed as a juvenile, FLAT HOLM ISLAND, CARDIFF 2nd July 2006

Previously recovered as a juvenile, GLOUCESTER LANDFILL, GLOUCESTERSHIRE 17th July 2006

Previously recovered as an adult, GLOUCESTER LANDFILL, GLOUCESTERSHIRE 30th June 2010

Previously recovered as an adult, QUARTEIRA, FARO, PORTUGAL 6th and 8th October 2010

Previously recovered as an adult, FIGUEIRA DA FOZ, COIMBRA, PORTUGAL 10th November 2011

Recovered as an adult, EAST BOG, SKOKHOLM 31st July 2022

Finding condition Darvic ring read in field

Distance travelled 154km at 283 degrees (WNW)

Days since ringed 5873

Perhaps surprisingly this is the first Flat Holm ringed bird to have been encountered on Skokholm.

Ringing recovery GR98280

Originally ringed as an adult, HOME MEADOW GULL TRAP, SKOKHOLM 16th June 2014

Previously recovered as an adult, HOME MEADOW GULL TRAP, SKOKHOLM 7th June 2018

Recovered as an adult, PRAIA DE MIRA, AVEIRO, COIMBRA, PORTUGAL 30th October 2022

Finding condition Metal ring read in field

Distance travelled 1279km at 193 degrees (SSW)

Days since ringed 3058

The birds previously carrying GPS tags, along with an additional 48 non-tagged controls, were all fitted with yellow darvic rings with a black alpha-numeric code (number/letter:W e.g. 5A:W) in 2014. The colour ring is on the left leg and a BTO metal ring on the right. Although the number of encounters logged each year is unsurprisingly declining, the darvic rings have yielded a fantastic number of field resightings; the 73 ringed birds have produced 182 separate resightings of 38 different individuals away from Skokholm. The following table summarises resightings received since similar tables were published in the 2014-2021 Seabird Reports. As has been shown by the British Trust for Ornithology GPS tracking project on Skokholm, and at other British Trust for Ornithology tracking sites (Ross-Smith, *pers. comm.*), Lesser Black-backed Gulls show a high degree of wintering site fidelity; this is reflected in the colour ringing data, with 19 birds having been resighted at the same location in more than one winter. Records of returning birds have come from several sites in Portugal and Spain, along with two in France, one in the Channel Islands and one in Morocco. This year saw 9J:W at a landfill near the harbour it has frequented in the past and at a marsh near a river mouth it has been seen at previously. Seven different individuals were seen on Skokholm this year.

Darvic	Ring	Location	Country	Date
8C:W	GR98248	Eirol Landfill, Aveiro	Portugal	05/11/21 (sic)
9J:W	GR98265	Los Ruices Landfill, Malaga	Spain	28/01/22
9J:W	GR98265	Marismas de Barbate	Spain	30/09/22

Sandwich Tern *Thalasseus sandvicensis*

Môr-wennol Bigddu

Uncommon although Scarce in all but one year between 2006 and 2012

Earliest 29th March 1984 (10th July 2022) **Latest** 25th October 1967 (28th September 2022)

There were again no spring sightings this year; there have been 172 previous bird-days logged in March, April or May, including 36 between 2014 and 2019 and highs of 20 in both 1980 and 2016. As is often the case, there were no June records either; there have been 113 June bird-days, with highs of 11 in 1982 and 2016, 12 in 2002 and 24 in 1989. One east off the Lighthouse on 10th July was thus the first of the year, this followed by singles on the 16th and 25th, two off the Lighthouse on the 26th and three off Crab Bay on the 30th; a July bird-days total of eight matched that of 2018 as the fifth highest to date, this down on peaks of 16 in 1988 and 22 in 1991. The only August records were of one on the 20th and five on the 25th; sightings in 40 previous Augusts peaked at 65 in 1983, 32 in 1992 and 34 in 1993, although the 2013-2021 bird-days mean is just 5.9. Two were noted on both the 3rd and 6th September, these followed by six on the 7th, 13 on the 8th, two on both the 20th and 26th and one on the 28th which took the bird-days total to 28; the 1031 bird-days now logged in September is considerably more than in any other month (402 in August is the next highest tally), with peaks of 103 in 1966, 82 in 1994 and 60 in 2011 being well up on a 2013-2021 mean of 12.6.

Little Tern *Sternula albifrons*
Môr-wennol Fach
Rare recorded in 17 previous years

A group of *Sterna* terns passing South Haven on the evening of 6th September held a diminutive Little Tern, this the first to be seen from Skokholm since one in Broad Sound on 27th September 1996 (RD). Bar one on 24th June 1936 and surprisingly late counts of up to four on six dates between 28th October and 6th November 1980, all previous sightings have fallen between 13th August (1990) and 27th September, with 44 bird-days in the former month and 19 in the latter. There were record daycounts of 11 on 31st August 1992 and six on the 22nd, 23rd and 26th August 1993.

Common Tern *Sterna hirundo*
Môr-wennol Gyffredin

Uncommon but 'commic' terns Common in some years. Bred at the Stack in 1894 but gone by 1916
 1936-1976: 1 trapped

Although it proved the third best year to date for counts of passage *Sterna* terns, the number of birds positively identified as Common Terns was down on four years this decade, a 2013-2021 bird-days mean of 14.6 and all-time highs of 66 in 1993, 47 in 2003 and 77 in 2015; all of the 2022 records fell in September, with two off South Haven on the 6th, four on the 8th, six off the Stack on the 14th and one on the Devil's Teeth on the 17th (the latter the first to be seen ashore since a juvenile on the Stack on 2nd September 2018). The peak daycount was down on that logged in 15 previous years, including highs of 23 in 1992, 21 in 2003 and 71 in 2015. Additional records of *Sterna* terns too distant to identify are listed below under Arctic Tern.

Arctic Tern *Sterna paradisaea*
Môr-wennol y Gogledd

Uncommon sometimes Fairly Common or Scarce, with unidentified 'commics' Common on occasion
Earliest 18th April 2018 (5th September 2022) **Latest** 27th October 2017 (8th September 2022)
 1963-1967: 3 trapped

There were no spring records; a total of 35 bird-days have been logged between April and June, including six this century (with one in 2001, four in 2016 and one in 2018). Indeed there were no sightings until 5th September when one was close in off South Haven and 77, including a flock of 41, headed southeast off the Lighthouse; these were followed by 11 on the 6th, 14 on the 7th and 25 on the 8th, the majority of which were also heading southeast. The peak daycount was only down on the 130 of 1st September 1997 (71 on 13th September 2016 is the next highest), whilst an autumn bird-days total of 128 was up on a 2013-2021 mean of 52.6 and only down on the 149 of 1997 and the 229 of 2020. Additionally there were unidentified 'commic' terns logged on 11 dates between 19th June and 9th October, including a vocal bird briefly over North Pond on 19th June which was probably an Arctic Tern, one over Crab Bay on 22nd June and peak daycounts, all in September, of 111 southeast on the 5th, 376 southeast on the 6th, 27 on the 7th and 18 on the 8th (the next highest daycount was of just two); a bird-days total of 542 was up on a 2013-2021 mean of 107.0 and only down on the 582 of 1957, the 1400 of 1958, the 578 of 1977 and the 713 of 2011.

Great Skua *Stercorarius skua*
Sgiwen Fawr

Uncommon sometimes Scarce and much more regular in autumn
Earliest 4th April 2015 (10th July 2022) **Latest** 15th November 2015 (30th September 2022)
 2015-2020: 1 trapped, 1 control

This species was decimated by avian influenza in 2022, with 2600 individuals found dead (this approximately 13% of the British breeding population and over 8% of the World population (Pearce-Higgins *et al.*, 2023)); in reality the number of dead birds will have been much higher. Unsurprisingly Skokholm counts were down on recent years, although not to the extent which might have been expected. Nevertheless, following records of up to three birds in each of the springs between 2014

and 2017, this became the fifth consecutive year without a spring sighting. The first of the year was off the Lighthouse on the afternoon of 10th July, this 20 days earlier than the 2013-2021 first of autumn mean; the only earlier record during this period was on 7th July 2016, indeed there have only been three earlier July sightings. Two were off the Lighthouse on the 25th and one on the 31st took the all-time July bird-days total to 39, nine of which have been since 2015 (five in 1995 is the only July bird-days total up on that of this year). The only August records were of singles on the 14th, 22nd and 28th, the bird-days total being close to a 2013-2021 mean of 5.3; there have now been 126 August bird-days, 51 of which have been since 2013 including all-time highs of 12 in 2019 and 2020. Numbers increased in September, albeit not to the extent seen in recent years; a bird-days total of seven, with singles on the 6th, 7th, 9th, 20th, 25th, 28th and 30th, was down on a 2013-2021 mean of 18.9 and all-time highs of 30 in 2018 and 2021 and 42 in 2019 (the daycount high is the 14 logged on the 28th in 1978). Of 347 all-time September bird-days, 177 have been recorded since 2013. There was no October sighting for the first time in a decade; there have been 81 October bird-days, 52 of which have been logged since 2013. Four November bird-days were all in 2015 and 2016. Although up on the 11 of 2014, a 2022 bird-days total of 14 was the second lowest this decade, down on a 2013-2021 mean of 31.9 and on all-time highs of 38 in 2018 and 2020, 43 in 2021 and 81 in 2019.

Arctic Skua *Stercorarius parasiticus*

Sgiwen y Gogledd

Uncommon sometimes Scarce

Earliest 9th April 1996 (28th August 2022) **Latest** 15th November 2020 (7th November 2022)

There were no spring sightings this year; there have been 54 bird-days logged in April, May or June, with six this decade and highs of eight in 1982, seven in 1993 and six in 2002. An all-time July bird-days total of 31, the most recent of which was in 2020, was not added to. Two off the Lighthouse on 28th August were the first of the year and one was watched chasing a Mediterranean Gull the following day; there have now been 113 August bird-days, with 27 since 2015 and highs of 15 in 1957 and nine in 2015. September saw two on the 6th, two different birds on the 7th, three on the 8th, singles on the 13th and 17th, seven on the 23rd, two on the 26th, three on the 27th and one on the 28th and 30th; the peak daycount was the eighth highest to be logged in any month, down on peaks of ten in September 1993 and October 2019 and on an astonishing 63 on 5th September 2004, whilst a bird-days total of 23 was up on a 2013-2021 mean of 4.9 and was the fourth highest ever logged in September (down on the 50 of 1980, the 27 of 1993 and the 67 of 2004). There were no October sightings; there have been 74 previous October bird-days logged over 20 years, with a high of 19 in 2019. A juvenile briefly chased Kittiwakes in Broad Sound on 7th November, this one of only two sightings in this month following a dark adult on the 15th in 2020 (although a dark skua probably of this species was in Broad Sound on the 12th this year). An annual bird-days total of 27 was up on a 2013-2021 mean of 12.2 and only down on highs of 51 in 1980, 36 in 1993, 67 in 2004 (courtesy of that remarkable daycount) and 30 in 2017.

Guillemot *Uria aalge*

Gwylog

Very Abundant Breeder Common during the period 1928-1996, numbers then increasing rapidly

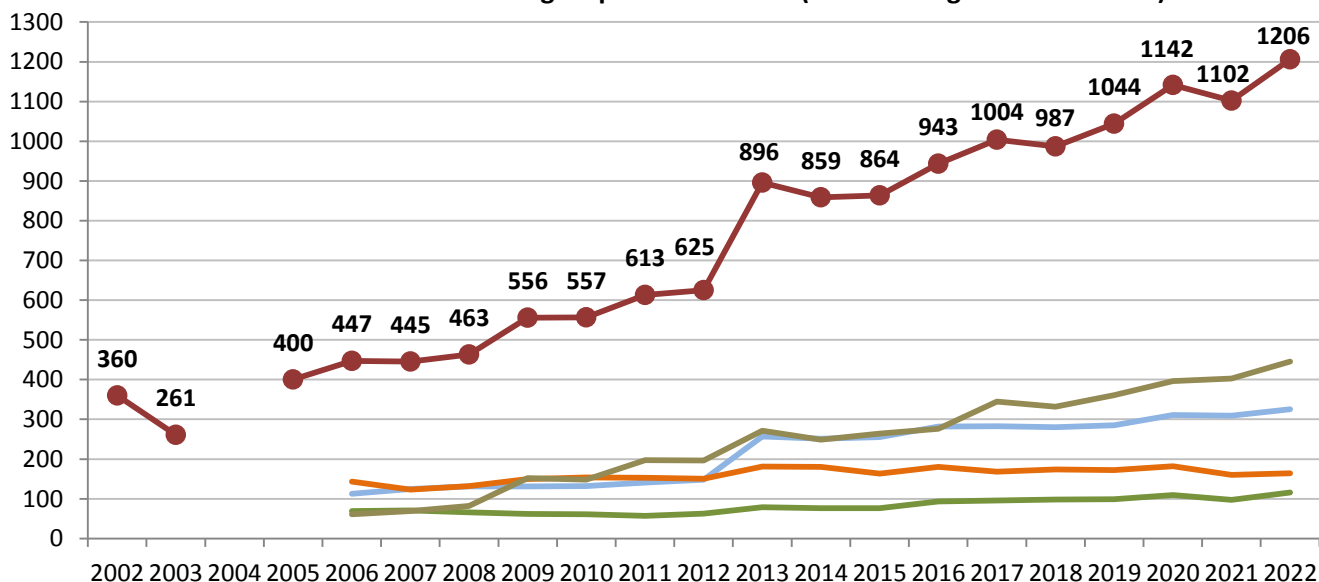
1 pullus trapped, 1 control

1936-1976: 1021 trapped, 2014-2021: 6 pulli trapped, 23 controls

The mean March daycount was 1159.6, this a new high and well up on a 2013-2021 mean of 549.1; although there were ten dates without a sighting and a further five dates when between two and five were encountered, there were highs of 3636 on the 3rd, 4306 on the 5th and 3999 on the 15th. Customary departures for the sea continued in April, with 16 dates when counts of less than 600 were logged (including five dates without a sighting and five dates with between one and 26 birds present); there were 11 similar mass April departures last year, nine during an unprecedentedly early 2019 breeding season and an average of 15.0 between 2013 and 2021 (with a high of 25 in 2013). A minimum of 3500 on the 25th was the third highest April peak to date, a tally down on the

3971 of 2020 and the 3725 of last year. The first two eggs to be found were at Middlerock on 27th April, these four days earlier than a 2013-2021 first egg mean of 1st May; although nine days later than the first 2019 egg (which was believed to be the earliest yet recorded in Wales (Birkhead, *pers. comm.*) and perhaps the result of unusually high sea surface temperatures (Burton, M., 2019)), the first of 2022 matched those of 2020 and 2021 as the second earliest of the last decade (the latest egg during this period, found on 15th May 2014, followed a winter of prolonged storms and significant auk wrecks). Early eggs are likely to be at risk during spring storms, as was the case on the night of 26th April 2019 when Storm Hannah encouraged the majority of auks back to sea (leaving those incubating birds which managed to protect their early eggs from the storm more exposed to predators). Exceptional 16 metre seas during the 20th and 21st May 2021 led to the loss of many eggs from the more exposed ledges, an unseasonable disruption which probably altered the number of adults present on at least some areas of cliff during the 2021 survey period. May weather was more clement this year, although an eight metre sea on the night of 17th May, which destroyed both Razorbill and Herring Gull eggs, may also have impacted Guillemots in some areas.

The total number of adult Guillemot in all six study plots 2002-2022 (as an average from ten visits) and the totals from the four largest plots since 2006 (as an average from ten visits).



The whole Island totals (adults on ledges suitable for breeding), mean plot totals, the range of totals over ten study plot visits, the standard deviation observed over the ten visits and the percentage of the Island total made up of study plot birds 2013-2022.

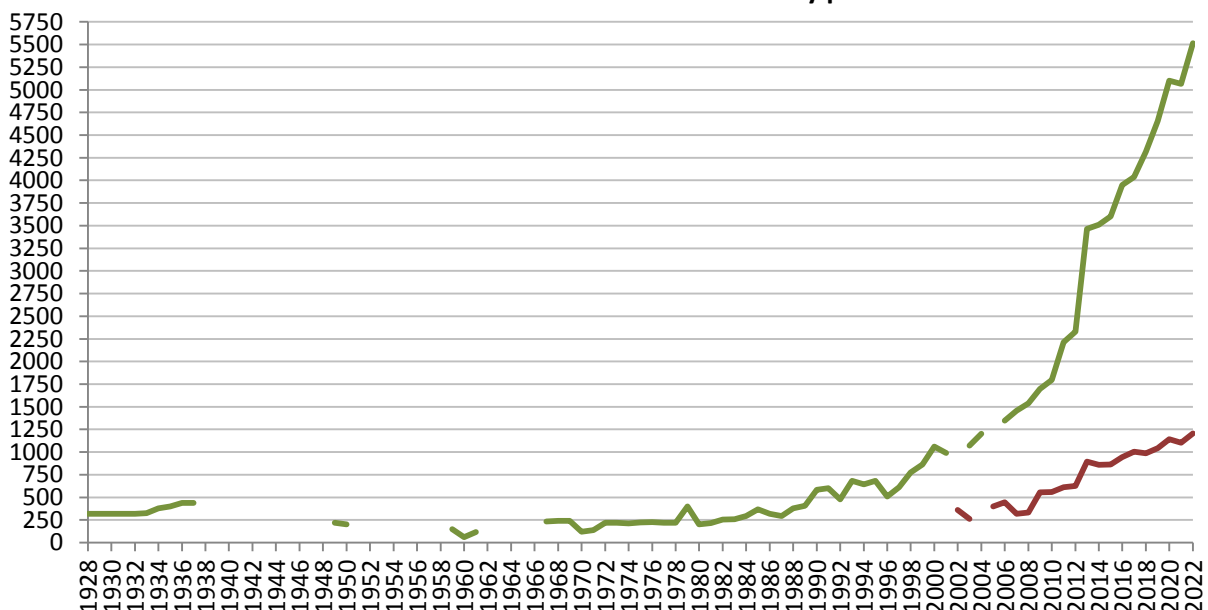
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Island	3466	3512	3603	3949	4038	4316	4654	5101	5065	5515
Plots	896	859	864	943	1004	987	1044	1142	1102	1206
Range	824-949	797-947	756-939	887-1003	939-1144	937-1060	982-1140	1069-1213	1012-1209	1144-1318
±SD	39.20	54.25	58.30	40.25	57.45	37.38	54.40	50.57	68.55	55.19
Plot %	25.9	24.5	24.0	23.9	24.9	22.9	22.4	22.4	21.8	21.9

The six study plots were counted on ten dates between 27th May and 9th June. The mean total from all plots was 1206 adults on ledges; this was 9.4% up on that recorded last year, 27.4% up on the 2012-2021 mean (946.6 ±sd 148.0) and the highest total yet recorded. The mean increased in all six plots, however in two areas this was down on previous highs; a mean of 52 at Middlerock was down on a 2013-2021 average of 58.6, on all but one total recorded during that period and on a high of 64 logged in 2015 and 2016, whilst a mean of 164 at Guillemot Cliff was down on a 2013-2021 average of 173.4, on all but two totals recorded during that period and on a high of 182 logged in 2020. A Little Bay mean of 325 was up on a previous high of 311 recorded in 2020 and a 2013-2021 mean of

279.3. A Steep Bay mean of 116 was up on a previous high of 109 recorded in 2020 and a 2013-2021 mean of 91.5. A North Gully mean of 445 was up on a previous high of 403 recorded last year and a 2013-2021 mean of 321.8. A slope to Purple Cove mean of 104 was up on a previous high of 85 recorded in 2020 and 2021 and a 2013-2021 mean of 57.5. A possible explanation for the lower numbers seen in the Middlerock and Guillemot Cliff plots of Twinlet is an increasing Fulmar presence; the number of Fulmar in the Middlerock plot has more than doubled in the last decade and the number in the Guillemot Cliff plot remained at an all-time high, the petrels perhaps excluding auks from previously occupied areas and halting any further expansion of auks along their current ledges. Although Fulmar-free ledges apparently suitable for colonisation by cliff nesting auks are present within the study plot boundaries, these new areas were not utilised this year. The only other plot which contains Fulmar is at Little Bay, however numbers here have declined from a high of 19 in 2013 to only 12 in 2022, this no doubt reducing any impact on the auks. The remaining three plots, where Guillemot numbers continue to rise, did not contain Fulmar this year. The Twinlet counts will also have been impacted by a pair of Crows which nested in the top east corner of Guillemot Cliff this year; this pair specialised in taking the eggs and young of Guillemots, with one Crow grabbing an auk until they tumbled towards the sea, this allowing the second bird to snatch unattended ledge contents.



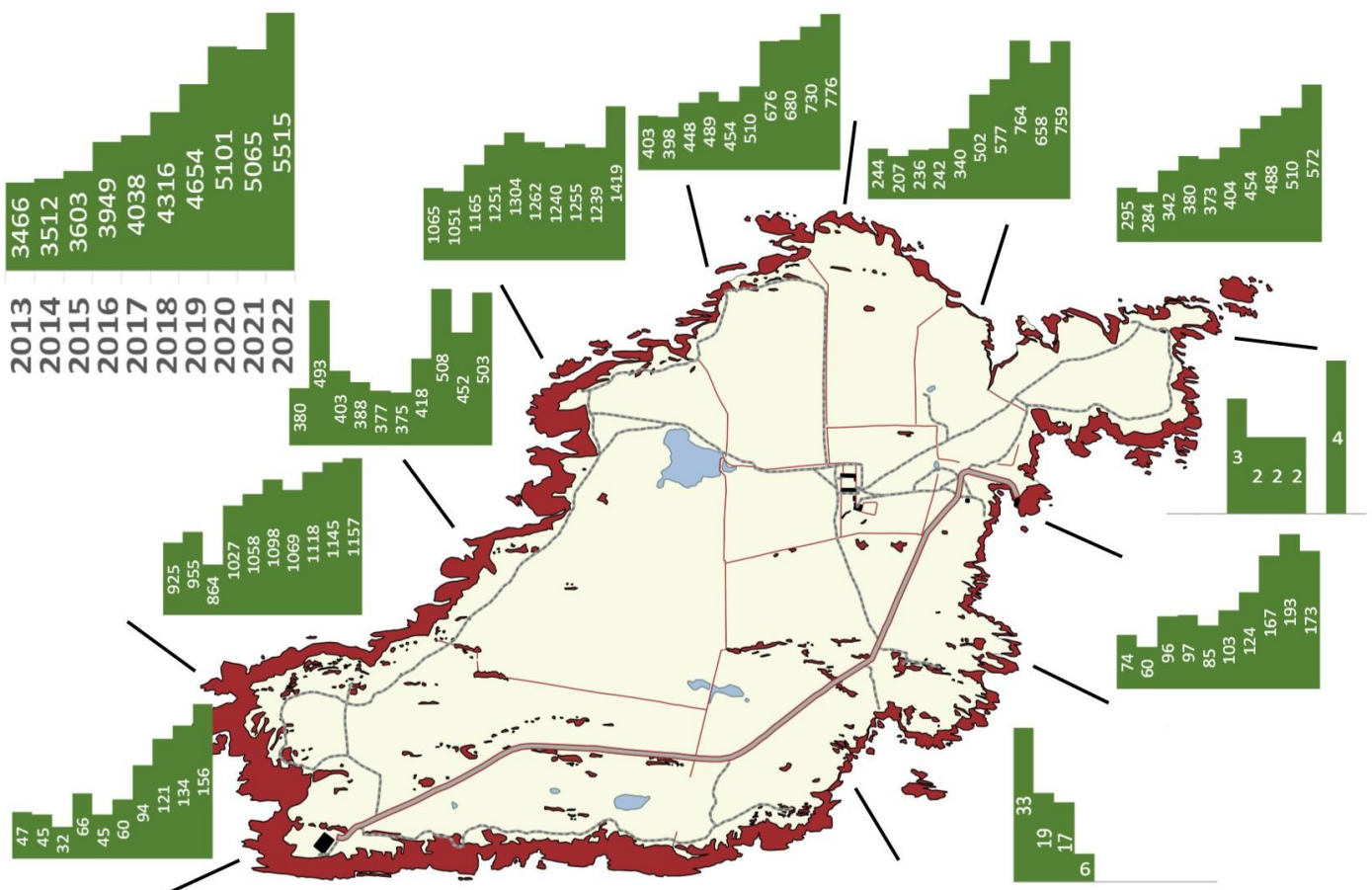
The total number of Guillemots (adults on ledges suitable for breeding) recorded on Skokholm since 1928 and the number of birds within the study plots since 2002.



The plots now contain more birds than were present on all of the Skokholm cliffs prior to 2006 and nearly twice the number present in the plots during 2011, whilst the lowest of the ten 2022 plot counts was up on the highest 2019 plot count. A distinctive adult with a yellow bill and feet was again present in the North Gully plot (above photograph); similar aberrants have been seen on the Isle of Man, Bass Rock, the Farne Islands and Lambay.

Whole Island counts were made from the land between 27th May and 7th June and calm seas allowed for a boat-based survey on 1st June. Boat-based surveys allow some areas to be monitored which cannot be viewed from on the Island and enable closer access to some areas which can normally only be viewed at a distance; they have not always been available, with 2012 the last year without at least one visit. A mean total of 5515 adults in suitable breeding habitat was 8.9% up on the 2021 count and the highest tally yet recorded on Skokholm. Although down on the 9.6% growth seen between 2015 and 2016 and between 2019 and 2020, this was otherwise the largest change since that observed between 2012 and 2013; this was perhaps due in part to the fact that the 2021 total was 0.7% down on that of 2020 (the first time since 2001 in which the mean whole Island total had declined and perhaps due to extreme weather prior to the counts). The proportion of the whole Island total made up of study plot birds (21.9%) was down on the 2006-2021 mean of 25.5% and was the third lowest on record, perhaps suggesting that some of the factors limiting the more intensively studied plots are not impacting the entire Island population in the same way.

The distribution of Guillemots on suitable breeding ledges 2013-2022.



As can be seen from the above map, the only numerical declines occurred in Peter's Bay (four fewer birds leading to extinction from this area) and between South Haven and Wreck Cove (20 fewer birds). There was an average of 22 more birds around the Quarry, 12 more between Wardens' Rest and Fossil Bay, 51 more between Purple Cove and Twinlet, 180 more between the Jogs and the

Dents, 46 more around Little Bay and Little Bay Point, 101 more between Far and Smith's Bays and 62 more along the north coast of the Neck. There were no birds occupying the ledges around Crab Bay for a sixth year. These counts of individuals on ledges potentially include incubating adults, some of their partners, failed breeders, non-breeding adults and younger birds yet to pair; a correction factor is thus sometimes adopted to convert the count to an estimate of breeding pairs (Harris *et al.*, 2015). A 2015 survey on Skokholm found the correction factor to be 0.64, a figure close to the 0.67 widely adopted in previous studies (see the Skokholm Seabird Report 2015); the latter correction factor predicts the Skokholm breeding population to be in the region of 3695 pairs, this a new high.

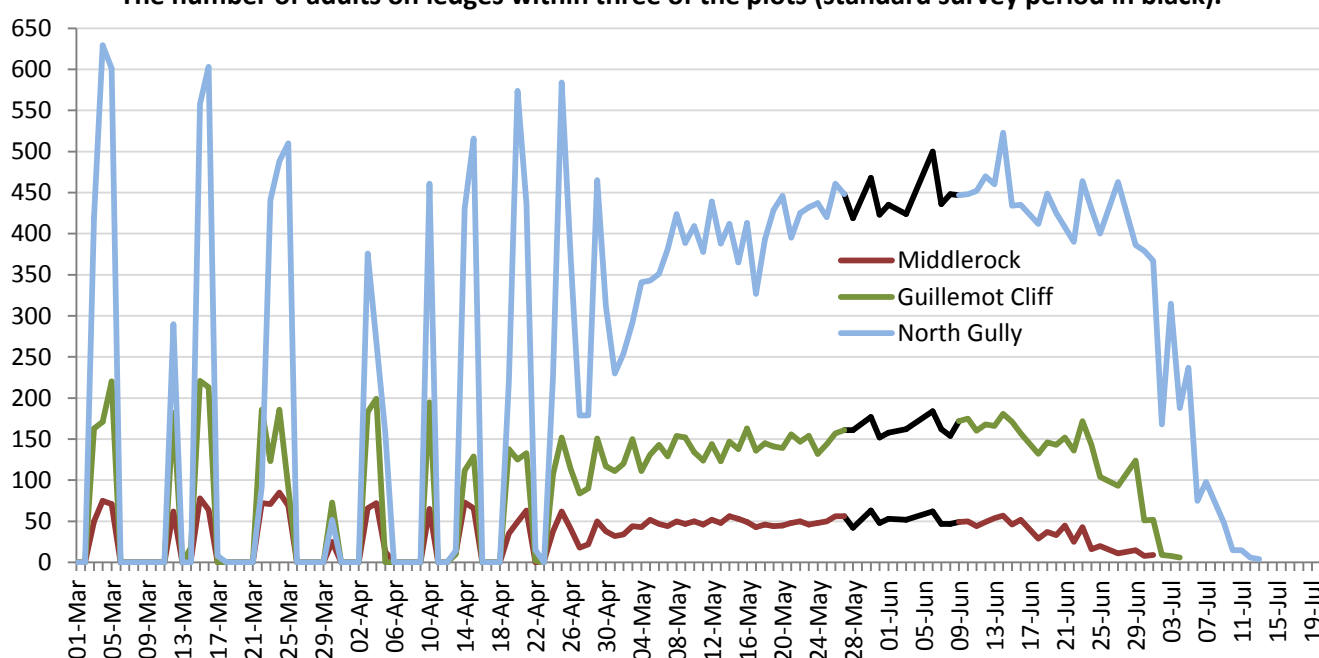


The first chick to be seen this year was at Middlerock on 31st May; this was two days later than the first to be seen last year (which was also at Middlerock), but three days earlier than the 2013-2021 mean (the earliest chick during this period was logged on the 23rd in 2019, whilst the first chick of 2014, the year following the severe winter auk wrecks, was on 13th June). Productivity, calculated at between 0.55 and 0.61 jumplings per pair in 2013 and at 0.6 in 2007, was not assessed in 2022 following recommendations from the Islands Conservation Advisory Committee. Although no counts were made, it was felt that the number of visible large chicks present in the North Gully plot on 21st June was unusually high. Chicks were watched jumping from the third week of June and the number of adults recorded in the three regularly monitored plots dropped from 679 on the 23rd to 524 on the 25th, 428 on 1st July and 177 on the 2nd (see chart below). There was only one late spike in the number of birds occupying the plots this year, with the total on the 3rd increasing to 323; similar late season returns occur each July.

Between the 1st and 2nd July, the number of adults in the Middlerock plot dropped from nine to zero, this the earliest departure from this plot in nine years of monitoring; between 2014 and 2021, the last day with birds in the Middlerock plot averaged 11th July, with the latest still present on the 17th in 2021 and the earliest last seen on the 5th in 2019. The six birds present at Guillemot Cliff on 4th July were the last to be seen in this plot, this four days earlier than the 2014-2021 mean; the only earlier last birds were logged on the 2nd in 2019, whilst one was still present on the 16th in 2014. Counts at North Gully dropped from 48 on the 9th to 15 on the 10th and from six on the 12th to four on the 13th, these the last to be seen in the plots this year; between 2014 and 2021, the last day with

birds in the North Gully plot averaged 17th July, with the latest still present on the 22nd in 2014 and the earliest last seen on the 14th in 2020. This was thus the eighth year of the last nine in which birds have remained for longer at North Gully, this probably explained by the larger breeding population at this site. Whole Island counts mirrored those made at the plots, with Steep Bay and Hump Bay the only sites to see breeding birds ashore after the 13th; there were three at the former site and five at the latter on the 15th, two still with a chick at Steep Bay on the 17th and singles at both sites on the 19th. One in Hog Bay on 20th July was the last to be seen ashore, although there had seemingly not been a bird at this site for over a week. Between 2013 and 2021 the date of the last bird ashore averaged 22nd July, with the earliest last seen on the 16th in 2019 and the latest on the 27th in 2013 and 2021. Birds were seen at sea on all but one date to the end of the month, with highs of 100 on the 24th and 143 on the 26th. There were sightings on 26 August dates (16 more than last year), with 14 single-figure daycounts but highs of 205 on the 2nd, 71 on the 5th and 95 on the 29th; an August bird-days total of 640 was only down on the 3841 of 2018, the 1129 of 2019 and the 1138 of 2020. A seemingly healthy bird ashore below the Dip on 27th August was unusual.

The number of adults on ledges within three of the plots (standard survey period in black).



Sightings on 16 September dates included ten daycounts of ten or less but highs of 21 on the 6th, 160 on the 23rd and 18 on the 26th which took the bird-days total to 277; there have only been higher September daycounts in three years (with a peak of 362 in 2014), whilst the only higher totals are the 287 of 2012, the 563 of 2014 and the 1419 of 2018. Moribund singles were on the Great Jog on 21st September and in North Haven five days later, neither of which was accessible for HPAI testing. There were an additional 2814 distant, unidentified auks logged during September, this the highest total in this month (up on a previous high of 2613 in 2018). Sightings of up to 77 Guillemots on 11 October dates totalled 178 bird-days, this the second highest October tally to date (only down on the 519 of last year when there was an unprecedentedly early return to the cliffs). A Moribund bird was on the Anticline on 8th October and a dead bird was floating in South Haven 13 days later; again neither were accessible for HPAI testing. An additional 781 unidentified auks were logged during October, this down on a 2013-2021 mean of 1845.0 and on five of the years during that period (there was an all-time high of 7951 last year). There was again a staff presence throughout November, with sightings on 16 dates and highs of 66 on the 4th, 99 on the 10th and 68 on the 14th taking the bird-days total to 391; the peak November daycount was down on a 2013-2021 mean of 335.0 (there was a high of 790 in 2015) and the total was down on a mean of 1325.3 logged during the same period (a high of 3441 was tallied in 2019). An additional 4674 distant auks were noted

during the month, this up on the 3985 of 2019 and a new November high. Birds were logged on seven of the first ten days of December, with highs of 61 on the 1st, 77 on the 4th, 173 on the 5th and 12 on the 8th. Given the increase in the Pembrokeshire breeding population, it is perhaps unsurprising that autumn counts during the last few years have proven to be the highest on record.

Although a return of Guillemots to the breeding ledges in early winter is to be expected, there was no record of this behaviour on Skokholm between 2000 and 2014, despite the fact that staff did not depart until 16th November in 2013 and 24th November in 2014. However birds have been seen ashore in seven of eight subsequent Novembers, with 2017 the only year without a record (when staff departed on the 9th). Two at Twinlet and six above the Jogs on 6th November were the first to be seen ashore this year (there was additional guano at North Gully and on further ledges above the Jogs); the only earlier landfalls were on 27th October 1999, 3rd November 2016, the 1st and 4th November 2019, 5th November 2020 and on six dates between 23rd October and 4th November last year. Birds were ashore on five further dates between the 10th and 19th November, with highs of 91 on the 10th and 68 on the 14th, and on 1st December when 47 were logged; all of the birds seen ashore after the 6th November landfall were above the Jogs. Such a return to the colony outside of the breeding season, with the risk of being attacked, must have a substantial benefit; it has been suggested that the return may be to secure the best ledge and thus attract the best mate (Harris *et al.*, 2006), but birds ashore may also use less energy than those at sea (Humphreys *et al.*, 2007). The majority of early winter sightings of birds ashore come from the ledges above the Jogs; this site holds the largest breeding season aggregation, perhaps suggesting that the need to come to land is greater in birds which occupy areas with more neighbours.

Ringing recovery Left leg white darvic with black 48T, Right leg N01129

Originally ringed as a pullus, THE AMOS, SKOMER ISLAND, PEMBROKESHIRE 2nd July 2006

Recovered as an adult, NORTH GULLY, SKOKHOLM 11th July 2021 (sic)

Finding condition Colour ring read in field

Distance travelled 4km at 129 degrees (SE)

Days since ringed 5488

Ringing recovery Left leg white darvic with black 24A, Right leg N03025

Originally ringed as a pullus, THE AMOS, SKOMER ISLAND, PEMBROKESHIRE 3rd July 2006

Recovered as an adult, NORTH GULLY, SKOKHOLM 15th April 2022

Finding condition Colour ring read in field

Distance travelled 4km at 129 degrees (SE)

Days since ringed 5765

Ringing recovery Left leg white darvic with black 1019, Right leg N09846

Originally ringed as a pullus, THE AMOS, SKOMER ISLAND, PEMBROKESHIRE 3rd July 2019

Recovered as an adult, NORTH GULLY, SKOKHOLM 17th June 2021 (sic)

Finding condition Colour ring read in field

Distance travelled 4km at 129 degrees (SE)

Days since ringed 715

Razorbill *Alca torda*

Llurs

Very Abundant Breeder Common or Abundant until 2007, numbers then increasing rapidly

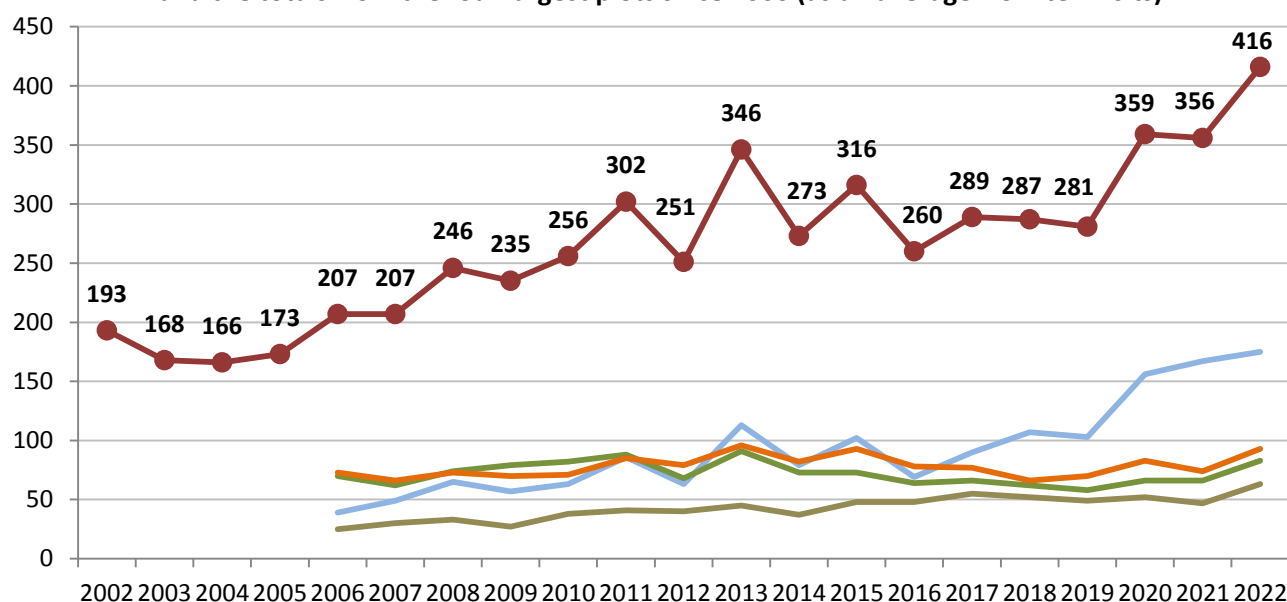
43 trapped (including 39 pulli), 1 retrapped

1931-1976: 9705 trapped, 2013-2021: 321 trapped, 8 retrapped, 4 controls

There were sightings on all but seven March dates, with highs of 2866 on the 3rd, 2307 on the 12th and 2221 on the 22nd, but five further dates when fewer than 18 were noted; the majority were at sea, with 947 on the 5th, 1351 on the 16th and 1073 on the 25th the highest counts of birds ashore.

There was again a date in March when the only Razorbills ashore were those occupying crevices in the Anticline, the Oystercatcher roost perhaps offering sufficient safety in numbers to allow for a landfall. Daycounts continued to fluctuate during early April, with highs of 1480 on the 3rd (1193 of which were at sea) and 2200 on the 10th (1766 at sea), but lows of between zero and 25 on five dates to the 13th. There were 2200 logged on the 14th and only 740 the following day, although the latter included a bird on an egg at North Gully; this was nine days earlier than the first to be seen last year (which was also at North Gully), 13 days earlier than the 2013-2021 first egg mean and the earliest to have been recorded on Skokholm (the latest first egg this decade was found on 13th May 2014, this no doubt a consequence of the winter storms preceding that breeding season, whilst the earliest prior to this year was on 19th April 2019). Only six were seen ashore the following day, these including the incubating bird at North Gully and birds apparently incubating on both Middlerock and Guillemot Cliff. The majority of eggs were produced during early May, with 92% of Bluffs plot pairs having eggs by the 5th and at least 63% of Neck plot pairs having eggs by the 8th.

The total number of adult Razorbill in all six study plots 2002-2022 (as an average from ten visits) and the totals from the four largest plots since 2006 (as an average from ten visits).



The whole Island totals (adults on ledges suitable for breeding), mean plot totals, the range of totals over ten study plot visits, the standard deviation observed over the ten visits and the percentage of the Island total made up of study plot birds 2013-2022.

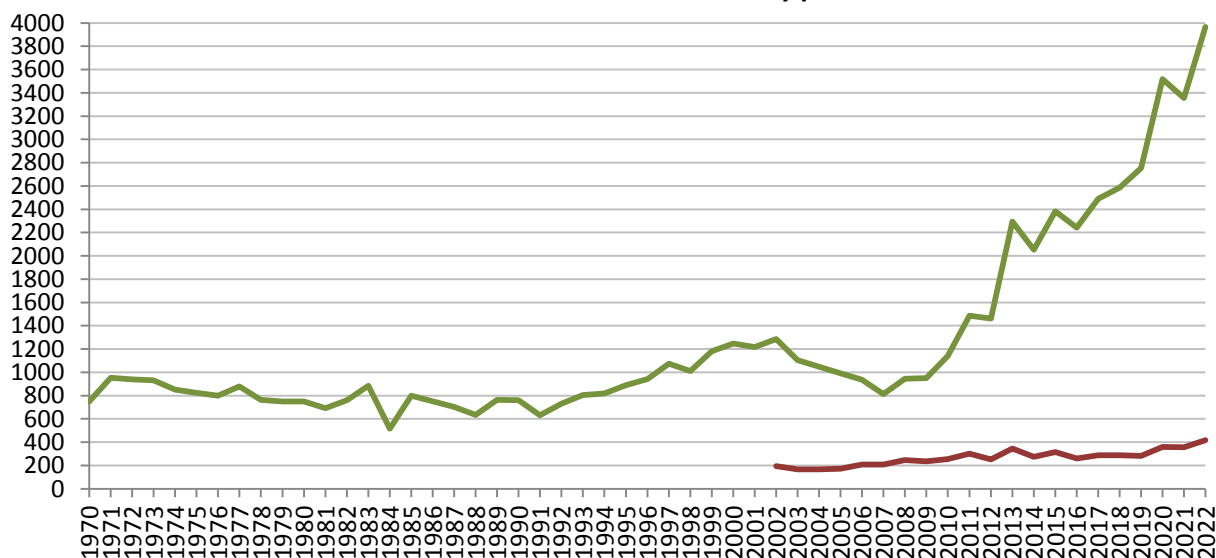
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Island	2294	2052	2382	2242	2491	2585	2755	3517	3356	3965
Plots	346	273	316	260	289	287	281	359	356	416
Range	301-397	254-315	291-346	236-324	253-334	263-309	230-351	312-395	312-411	376-446
±SD	30.54	19.96	15.78	26.58	25.61	13.25	40.82	30.72	34.06	23.15
Plot %	15.1	13.4	13.3	11.6	11.6	11.1	10.2	10.2	10.6	10.5

Both 2020 and 2021 saw severe May weather impact the Razorbills nesting in the productivity plots (and no doubt elsewhere); a 2020 storm, with multiple waves of at least 11 metres, resulted in 60% of Neck pairs losing their eggs (but just one or possibly two of the North Gully eggs being lost), whilst a 2021 storm, with winds gusting at up to 69mph and several waves of at least 16 metres, led to 59% of Neck pairs and 7% of North Gully pairs losing their eggs. May seas peaked at eight metres this year (as measured by the Mid Channel Rock Lighthouse Beacon off St Ann's Head), with rough weather on the night of 17th May probably being responsible for one egg loss at the Neck (elsewhere there was a loss of Herring Gull eggs and chicks and some low nesting Razorbills lost eggs along the

North Coast). There were four Neck plot egg losses between the 21st and 24th May, these perhaps linked to heavy showers on the evening of the 23rd. Extreme May weather inevitably impacts the number of adults on ledges during the usual whole Island and study plot count period; in the unsettled June of 2012, plot counts fluctuated between 164 and 338 birds, whereas the 2018 counts, made during a prolonged period of high pressure, fluctuated between 263 and 309 (with the lowest standard deviation of the last decade (see table above)). Given that far fewer plot birds were impacted by the weather this year, it might be expected that the range in study plot counts (and the standard deviation given in the table above) might be lower than in 2020 and 2021; this was indeed the case, with both values down on those logged in all but three years this decade.



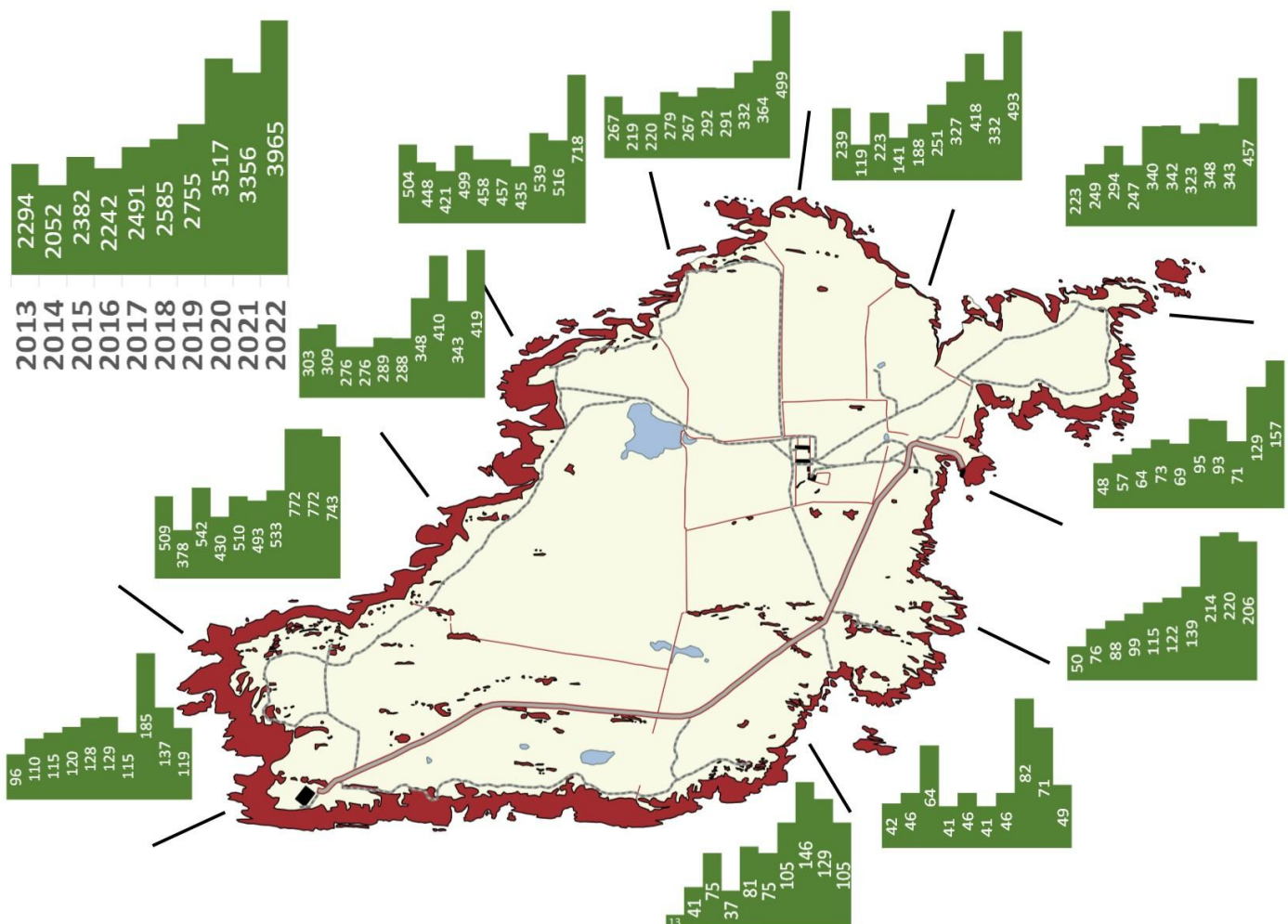
The total number of Razorbills (adults on ledges suitable for breeding) recorded on Skokholm since 1970 and the number of birds within the study plots since 2002.



The six study plots, established in 2002, were visited on ten dates between 27th May and 9th June when every adult in suitable breeding habitat was counted. The mean single visit total of 416 adults on ledges was 60 (16.9%) up on that logged last year and the highest total to date, 37.8% up on the 2012-2021 mean (301.9 ±sd 39.8). The largest numerical increase was at Guillemot Cliff where the mean rose by 25.7% from 74 to 93; this matched the 2015 mean and was only down on the 96 of 2013. An average of 17 (25.8%) more birds at Middlerock led to a total only down on the 91 of 2013.

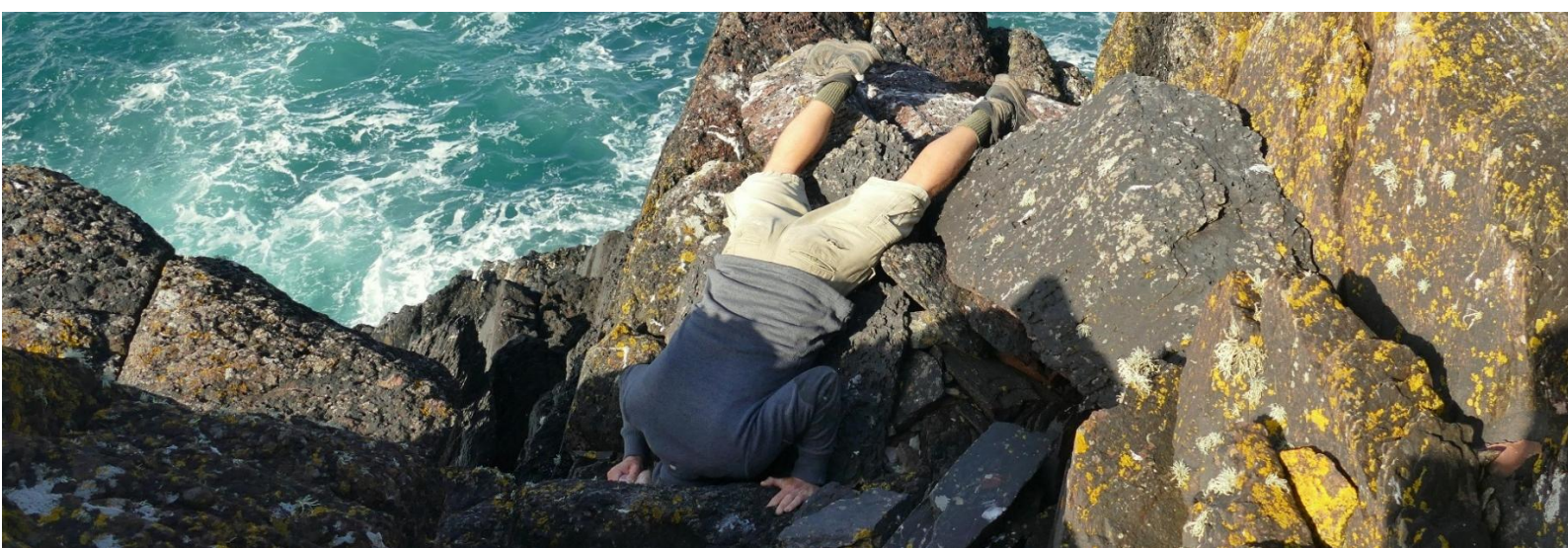
Recent years have seen a decline in the number of Razorbill occupying these two Twinlet plots, drops tentatively linked to an increasing Fulmar population (which has no doubt led to competition for space within the confines of the plot boundaries); quite why there was a steep increase in both areas this year is thus unclear, although it would seem that small ledges are still available for a species apparently at ease with nesting some distance from its neighbours. There was a mean of 16 more birds at North Gully, this a 34.0% increase on the 2021 total; a mean of 63 was a new high for this site, up on the 55 logged in 2017. Eight more birds at Little Bay also led to a new high; this site (the blue line on the above graph) has driven the jump in the number of Razorbill recorded in the plots, with a 2022 mean of 175 being 348.7% up on the 39 present when the plots were established in 2006. It should be noted that the birds occupying the boulders in Little Bay are closer to sea level than most of those in the other plots; they are likely to be impacted more by rough weather events. A mean of two birds joined the Guillemot ledge on the slope to Purple Cove; although up to two have been seen at this site on at least one date in each year since 2013, only singles in 2013, 2014 and 2021 and two in 2020 have been present regularly enough to register on the ten visit mean. This became the fourth year of the last ten in which birds were present at Steep Bay on enough occasions to register; there was a mean of two in 2014 and 2021 and one in 2016 and this year.

The distribution of Razorbills on suitable breeding ledges 2013-2022.



Whole Island counts were made from the land between 27th May and 7th June, whilst a boat-based count was possible on 1st June. This was the tenth year running in which access to a boat had been available, inevitably leading to higher but more accurate whole Island counts; in 2012 rough seas meant that there was no opportunity for a boat-based count and it was concluded that 'there remains a section of North Coast that was missed, while other parts of the North Coast and Bluffs

were counted less accurately at a distance' (Gillham and Yates, 2012). A 2022 whole Island mean of 3965 adults in suitable breeding habitat was 18.1% up on the 3356 logged in 2021 and the highest total yet recorded on Skokholm (57.7% up on the 2012-2021 mean of $2513.7 \pm \text{sd } 599.7$). Given that the ten visit study plot mean also increased (albeit only by 16.9%), the large increase in overall numbers seen this year was likely genuine and not due to the fact that the whole Island count is based on fewer visits. As can be seen from the map above, the number of adults present did not increase in all areas; there were 18 fewer in the vicinity of the Quarry (there have been higher means in five years at this site), 29 fewer between Wardens' Rest and Fossil Bay (there have been higher means in two years), 14 fewer between South Haven and Hog Bay (there have been higher means in two years), 22 fewer between Wreck Cove and Crab Bay (there have been higher means in three years) and 24 fewer along the South Coast (there have been higher means in two years). Perhaps coincidentally these declines all occurred in the southerly half of Skokholm. Increases in the six northerly sectors all led to new highs; there was a mean of 76 more birds between Purple Cove and Twinlet, 202 more between the Jogs and the Dents, 135 more in the vicinity of Little Bay and Little Bay Point, 161 more between Far and Smith's Bays, 114 more to the north of the Neck and 28 more around the southerly portion of the Neck.



Productivity monitoring was undertaken for a tenth consecutive year. There are some concerns among ICAC members that recent Pembrokeshire productivity estimates have been quite low (on Skokholm ranging between 0.23 in 2015 and 0.69 in 2018), perhaps lower than what actually occurred given the continued growth of the population and certainly too low to maintain the expansion; one explanation for continued population growth despite low productivity estimates could be that the plots do not represent the Island as a whole. This is potentially the case at the exposed Neck plot where predation levels are often quite high and where, in recent years, extreme weather events have had a greater impact; although Razorbills nest in similarly exposed places elsewhere on Skokholm, an additional plot looking at cliff nesting pairs was established at North Gully in 2017 in an attempt to study birds in a somewhat more sheltered setting. There were thus three survey areas this year, one a cliff below the Neck Razorbill Hide where 30 incubating pairs were mapped between the 3rd and 20th May, one the ledges around North Gully where 36 pairs were mapped between 15th April and 14th May and one an area among the Bluffs boulders where 51 egg sites were marked from 5th May.

The first two chicks to be encountered anywhere on Skokholm were at Middlerock on 27th May (one of which was only seen as it was eaten by a Crow); this was on the same date as the first of last year, but five days earlier than the 2013-2021 mean (which is 1st June, with the earliest on 18th May 2019 and the latest on 15th June 2013). At the Neck there were seven egg stage failures, two failures at

either egg or small chick stage (ledges were found empty, with no indication as to what had happened), one large chick failure and 20 pairs produced jumping age chicks at the first attempt; of the pairs which failed with their first egg, three re-laid, two of which again failed at egg stage and one of which failed at small chick stage. The resulting productivity figure of 0.67 was well up on the 0.21 of 2020 and the 0.24 of 2021 (both values heavily impacted by May storms) and was 76.3% up on a 2013-2021 mean of $0.38 \pm se 0.10$ (productivity at this site is very variable, with highs of 0.77 in 2013 and 0.86 in 2018, but lows of 0.03 in 2016 and 0.14 in 2017). The North Gully plot saw 22 pairs successful at the first attempt, eight egg stage failures (of which two pairs re-laid (including the pair which had the earliest ever Skokholm egg), both producing jumping age chicks at the second attempt), three failures at egg or very small chick stage and three chick stage failures. One of the chick stage failures was brought about when an aggressive encounter between the incubating adult and another bird led to both falling from the ledge; a third adult picked the isolated chick up by its head and walked it over a metre, before throwing it from the cliff. A similar case of infanticide was photographed at the Neck plot in 2019 (see the Skokholm Seabird Report 2019). The resulting North Gully productivity value of 0.67 jumplings per pair was exceptionally close to both the 0.65 of last year and a 2017-2021 mean of $0.66 \pm se 0.03$ (there was a high of 0.76 in 2020 and a low of 0.58 in 2017). The combined productivity estimate for cliff nesting pairs was 0.67; this was up on a 2017-2021 mean of $0.54 \pm se 0.07$ and matched that of 2019 as the second highest estimate in this period.



Among the Bluffs boulders, seven pairs failed at egg stage (six eggs went missing and one was buried in mud), eight pairs failed with eggs or small chicks (crevices were found empty, with no indication as to what had happened) and seven pairs failed with chicks (six of which went missing and one of which was found dead). Only one pair produced a second egg, an attempt which again failed at egg stage. Thus 29 pairs produced a jumpling, this equating to a productivity value of 0.57 per pair. The 2022 productivity estimate was very close to both the 0.54 of 2021 and a 2013-2021 mean of $0.54 \pm se 0.05$ (lows during the period were of 0.44 in 2014 and 0.29 in 2015, whilst the 0.74 of 2016, the 0.60 of 2018 and the 0.71 of 2020 are the only values up on that of this year). For a tenth year running, the last of the breeding attempts within the boulders were concluded before the last of the attempts on the cliffs. Of 13 chicks examined at the Bluffs, four had 'winter-plumage' white throats (above photograph) and nine had 'summer-plumage' black throats.

Combining the productivity figures for the cliff plots and the boulder plot to give an indication of overall productivity on Skokholm can be achieved in two ways, either by averaging the final values obtained for the three sites, as recommended in the Seabird Monitoring Handbook (Walsh *et al.*,

1995), or by combining all the data from the three plots (that is to say by dividing the total number of jumplings at all sites by the total number of monitored sites). The former, preferred, technique produces a productivity estimate of 0.64 jumplings per pair and the latter 0.62. Primarily as a result of calmer May weather and improved Neck plot productivity, the 2022 estimate was up on that seen in each of the last three years and was up on a 2013-2021 mean of $0.49 \pm se 0.05$ (lows during this period were of 0.23 in 2015 and 0.39 in 2016, both these calculated prior to the establishment of the less variable and more sheltered North Gully plot, whilst the only values up on that of this year are the 0.66 of 2013 and the 0.69 of 2018).

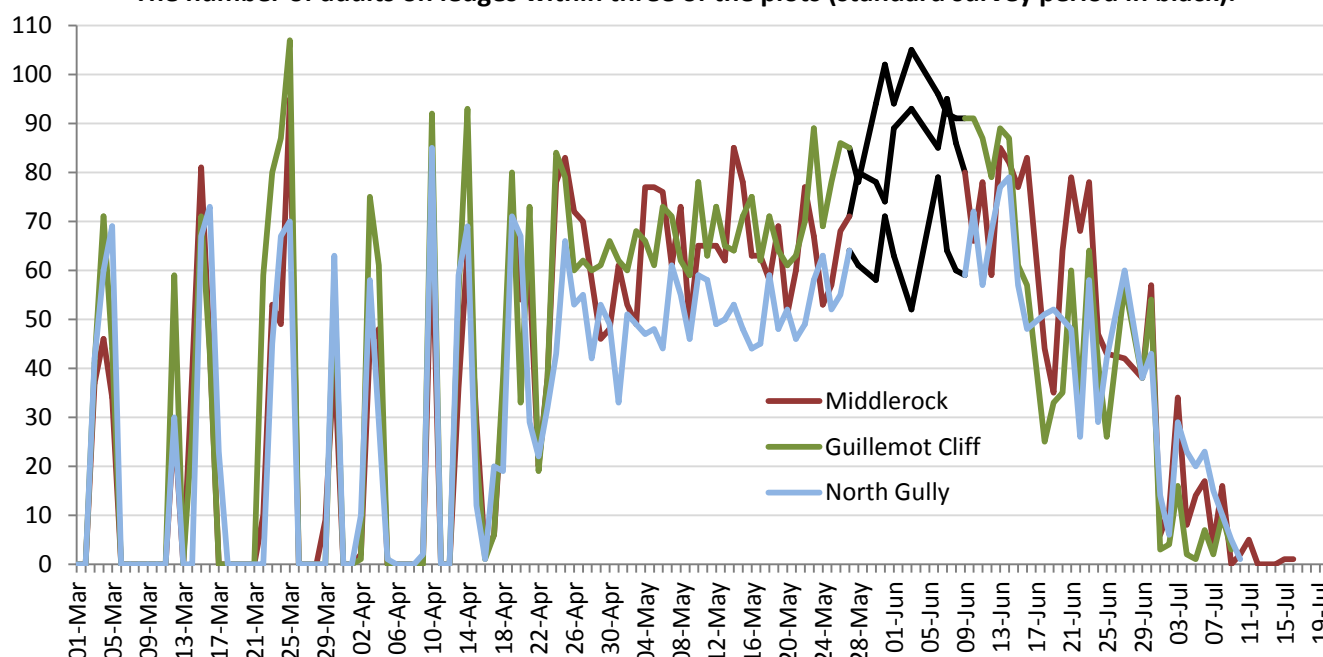
In an effort to ascertain the pattern of colony attendance, near daily counts were made at three of the plots throughout the breeding season (see chart below). There were again fluctuating numbers in all three subcolonies following the usual count period and regular peaks when the totals were augmented by the return of partners, failed adults, successful females or non-breeding birds; interestingly these peaks were again broadly consistent between subcolonies, and to a lesser extent coincided with Guillemot arrivals, suggesting that returning auks respond to the same environmental cues. The first jumpling had departed the productivity plots by 12th June; this was five days earlier than the 2015-2021 mean and two days earlier than the first of last year, but four days later than the first of 2020 (between 2015 and 2021 the first productivity plot chick jumped between the 8th and 26th June). The number of adults within the three plots declined during June, with only double-figure totals logged from 1st July (the 2014-2021 mean is 8th July, ranging between 30th June in 2019 and 17th July in 2014) and single-figure counts from 9th July (the 2014-2021 mean is 18th July, ranging between 9th July in 2019 and 27th July in 2014). Whereas all of the Bluffs study chicks had departed by 27th June, three of 30 attempts at the Neck plot and two of 36 attempts at the North Gully plot were still active on 1st July (these all second attempts following early egg stage failures). The last North Gully chick jumped between the 9th and 11th July and the last two Neck plot attempts failed by 18th July. Despite the early start to the 2022 breeding season, there were 22 adults ashore on 19th July and single-figure counts each day from the 20th until 27th July, with one to the north of the Neck on the latter date the last to be seen; the 2013-2021 mean last adult ashore date is 28th July, with the earliest last date being 24th July in 2015, 2016 and 2017 and the latest being 2nd August in 2018.



There were sightings of Razorbill at sea on 20 August dates, with highs of 25 on the 2nd and 50 on the 22nd taking the bird-days total to 164; the only higher August daycounts were logged in 2018 and 2020, with a peak of 159 in the latter year, whilst the only higher totals are the 392 of 2018 and the 575 of 2020. Counts on 19 September dates, with highs of 42 on the 26th, 174 on the 27th and 96 on the 28th, led to a bird-days total of 618, this the third highest September tally to date; four of the five

highest September bird-day totals have been recorded in the last six years, with a peak of 1708 logged in 2017. Although October Guillemot counts were higher than usual, Razorbill were only noted on 11 dates, with a high of 28 on the 4th and a bird-days total of just 56; the peak October daycount was the second lowest this decade, whilst the total was the lowest in 11 years (the 2013-2021 October bird-days mean is 404.1, with a high of 1224 in 2019 and a low of 109 in 2016). November was quieter still, with sightings of up to seven birds on three dates totalling ten bird-days; the 2013-2021 peak November daycount mean is 44.3 and the mean bird-days total for the same period is 108.0. Up to five birds were logged on four of the first ten days of December. There were no Razorbill seen ashore for a tenth successive November, this seemingly an auk behaviour confined to Guillemot during the early winter period. Further large auks were present at sea during the autumn, but they remained unidentified due to their distance from the Island; there were 2814 in September (a new high), 781 in October (57.7% down on the 2013-2021 mean), 4674 in November (also a new high) and 2278 in the first ten days of December.

The number of adults on ledges within three of the plots (standard survey period in black).



Ringling recovery K41996

Originally ringed as a pullus, THE BLUFFS, SKOKHOLM 8th June 2021

Recovered as an adult, PRAIA DO BALEAL, LEIRIA, PORTUGAL 4th February 2022

Finding condition Freshly dead on beach (unknown species)

Distance travelled 1406km at 193 degrees (SSW)

Days since ringed 241

There have been 177 Razorbill ringed in Britain or Ireland and recovered in Portugal, this more than in any other country bar France (700) and Spain (404).

Puffin *Fratercula arctica*

Pâl

Very Abundant Breeder

94 trapped, 4 retrapped, 224 resighted

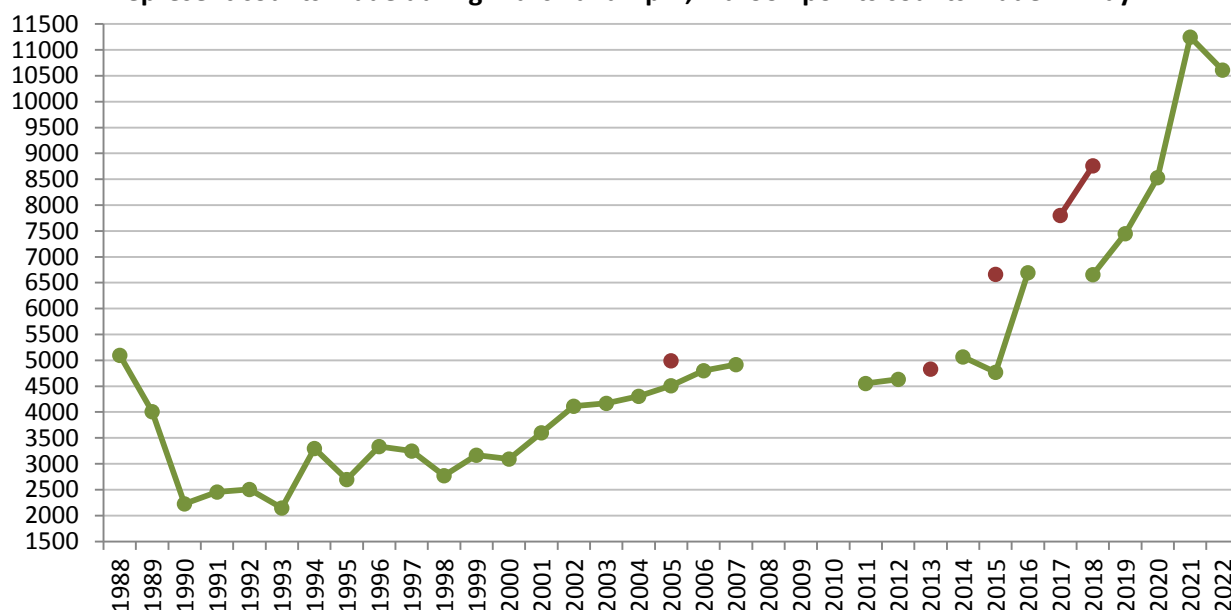
1936-1976: 5412 trapped, 2011-2021: 672 trapped, 29 retrapped, 1842 resighted, 1 control

One off North Haven on the afternoon of 10th March was the first of the year; although just three days earlier than the mean 2013-2021 first arrival, the only earlier records are of up to 23 birds over three dates from the 1st in 2019 and of up to 204 over three dates from the 7th in 2021. There were no Puffin on the 11th (this a date on which there has never been a record), but 197 on the 12th and

241 on the 14th, the latter the highest daycount to have been logged by this date. Likewise the 1741 recorded on the 15th (which included the first five to be seen ashore), was the earliest ever four-figure daycount, two days earlier than the 5217 logged on the 17th in 2020; the landfall was the earliest on record, two days earlier than that of 2020 and 11 days earlier than the 2013-2021 mean (the latest first landfall during this period was on 6th April 2013). There followed sightings on every March date bar the 19th, with highs of 9785 on the 22nd, 10,611 on the 23rd and 6486 on the 30th which took the March bird-days total to 43,349; the four highest March bird-day totals have occurred in the last four years, with this year's tally eclipsing last year's all-time record of 29,098. Between 2013 and 2019, daily counts were made from around the Neck each spring evening to record the pattern of colony attendance and to help select the most productive times for a whole Island count (see the 2013-2019 Seabird Reports for charts showing spring attendance around the Neck). The impetus for 2022 whole Island counts on the 22nd and 23rd March was an assessment of the (remarkable) number of birds rafting in and around South Haven.



The maximum Puffin daycount recorded each spring during the period 1988-2022. Green points represent counts made during March and April, maroon points counts made in May.



The 23rd March survey produced a total of 10,611 birds (to the north there were 2327 on the sea and nine in the air, to the south 4730 on the sea and 113 in the air and around the Neck there were 3393

on the sea and 39 in the air); although numbers are still well down on Lockley's spring estimates of approximately 40,000, this was the second highest post-War spring count, up on the 10,000 logged on nine occasions between 6th April 1950 and 22nd April 1953 and only down on the 11,245 counted on 22nd March last year. The Neck total was 226 up on that of 2021 and a new high, whilst to the south the total was 311 down on that of last year and to the north the total was 549 down; although no comparable count was made, ad hoc observations suggested that the number of birds rafting to the north peaked later in the spring. The whole Island counts provide a relatively consistent long-term method for monitoring the trend in numbers, however it is difficult to ascertain how the totals reflect the actual size of the Skokholm breeding population. Monitoring work at the Crab Bay study plot revealed 75 active burrows in an area which comprises approximately 10% of the colony and where less than half of occupied burrows were study burrows; we might thus predict a very rough minimum of 1500 pairs for Crab Bay (as active burrow distribution is apparently quite even), 3000 individuals being up on the 2635 seen there during the 23rd March whole Island count.

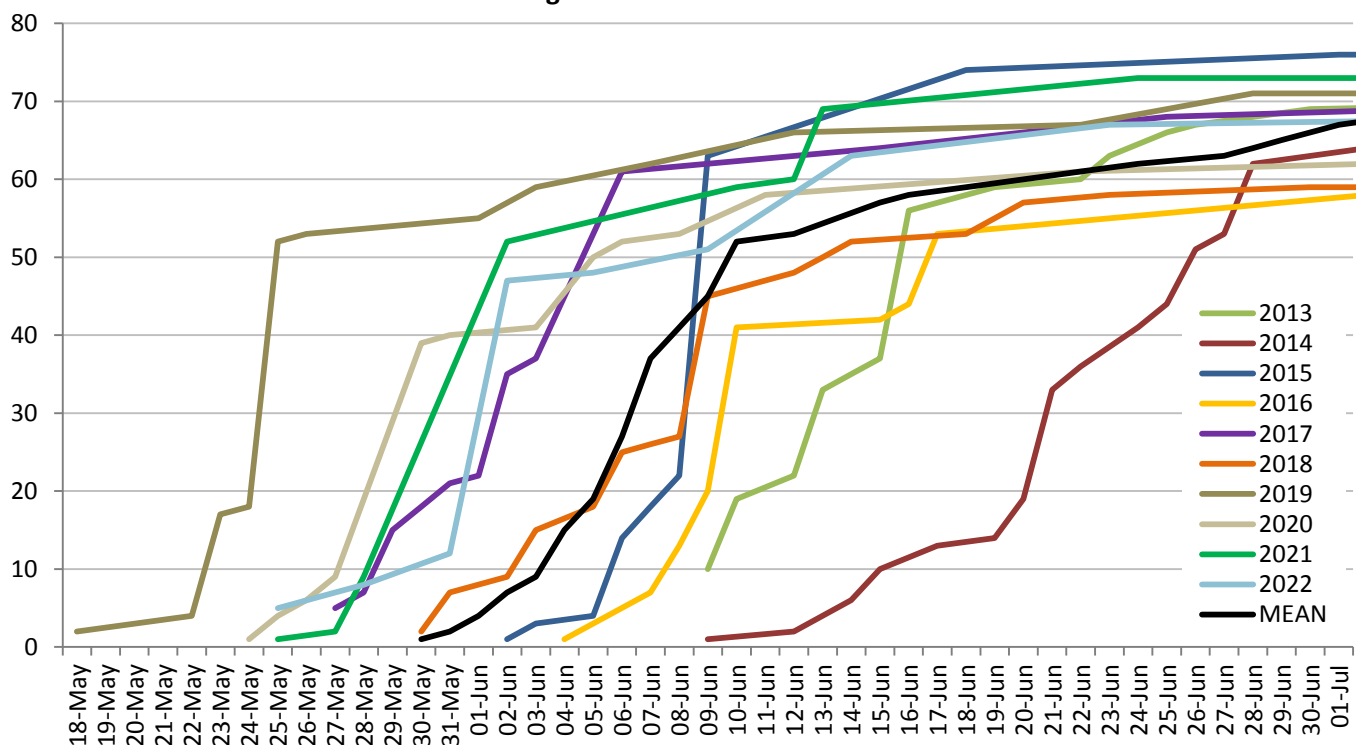


A productivity plot established at Crab Bay in 2013 was used for a tenth season, although all of the timber marker posts were replaced with longer recycled plastic posts in an effort to reduce the number breaking or becoming dislodged between seasons (all of the burrows were checked at the same time to ensure that they did not bifurcate). Of these, 68 were seen to be occupied and were visible throughout the season (71 in 2021); productivity estimates are based on observations of these burrows. Chick provisioning was first witnessed on 18th May, with deliveries made to two different burrows above North Haven; these were three days earlier than the first of last year and seven days earlier than the 2013-2021 mean (the earliest in this period was logged on 14th May in 2019 and the latest on 3rd June in a post-wreck 2014). The mean 2013-2021 first fish delivery to the Crab Bay plot is 30th May, this five days after the whole Island mean (in 2020 the first plot delivery was on the same date as the first delivery anywhere, whereas in 2013 it was ten days later); this year saw fish deliveries to five plot burrows on 25th May, these on the same date as the first of last year and five days earlier than the mean (see the graph below for the first plot delivery dates logged in previous years). The cumulative total of provisioned burrows again increased rapidly; over 69% of burrows had been provisioned within eight days of the first fish arriving, these with chicks eight days earlier than the 2013-2021 mean. The 2022 chick feeding period was two to three weeks earlier than in 2014 (the breeding season which followed the most severe winter storms recorded during this study). The breeding season is seemingly getting earlier; the four earliest chick provisioning periods

between 2013 and 2022 have occurred in the last four years. Ten active burrows (14.71%) were not seen to be provisioned with fish and it is assumed that these failed at egg stage (the 2013-2021 mean is 5.74%, with a high of 7.79% in 2013 and a low of 2.82% last year).



The number of study burrows which had been provisioned with fish by a particular date each year, along with the 2013-2021 mean.



Although the study plot was visited regularly following the first recorded fish delivery, it certainly cannot be assumed that the first and last fish provisioning was seen for each burrow. Indeed the daylight hours Puffin watches highlight how some burrows are provisioned infrequently (see table below). Additionally it proves difficult to standardise ad hoc recording effort between years. It was thus decided in 2016 that a three visit method would be used to calculate productivity on Skokholm, but that five visits and ad hoc records would still be amassed to allow further comparisons to be

made in the future (see the 2016 Seabird Report for more details). This is more in line with the Seabird Monitoring Handbook (Walsh *et al.*, 1995) which states that, when monitoring Puffin productivity in colonies where the nest is inaccessible and the colony is shared with Manx Shearwaters, the most appropriate technique is ‘When birds are feeding large chicks, make a few watches to determine which burrows/crevices have fish taken down them’. Establishing when burrows contain large chicks is inevitably the main issue with this technique, necessitating earlier watches to detect chick hatching dates (which since 2013 have varied by as much as a month). Whereas five daylight hours watches were performed in each year between 2014 and 2019 and in 2021, a COVID-19 dictated staffing shortage meant that the five 2020 watches each lasted from 0430-1700hrs only (approximately five fewer hours than usual); this year the watches again lasted all of the hours of daylight.

The number of fish deliveries to known active burrows during five daylight watches.

No. of deliveries	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No. of burrows 2 June		7	7	11	9	4	3	2	1	2						
No. of burrows 14 June	1	4	9	6	7	1	4	5	10	3	4		1	1	1	1
No. of burrows 23 June		3	4	5	2	9	7	12	8	6		2	2			
No. of burrows 5 July	1	12	6	13	5	5	4	1	1		2					
No. of burrows 13 July		10	1	6	1		1		1	2			1			

Calculating productivity using only three daylight watches. The first watch was between 25th May and 28th June (dependent on the date of first fish delivery that year), the second between 11th June and 8th July and the third between 28th June and 24th July. Chicks are assumed to have fledged if fed on a minimum of two watches. Ad hoc productivity is based on a chick reaching 31 days.

	First fish in plot	Last fish in plot	Fed watch 1 & 2	Min. chick age	Fed watch 2 & 3	Min. chick age	Fed all 3 watches	Min. chick age	Prod. based on 3 watches	Ad hoc prod.
2022	25 May	25 Jul	31	22 (2/6 - 23/6)	7	21 (23/6 - 13/7)	11	42 (2/6 - 13/7)	0.72 (49 of 68)	0.53
2021	25 May	24 Jul	38	23 (2/6 - 24/6)	11	20 (24/6 - 13/7)	8	42 (2/6 - 13/7)	0.80 (57 of 71)	0.62
2020	24 May	14 Jul	3	13 (30/5 - 11/6)	16	22 (11/6 - 2/7)	33	34 (30/5 - 2/7)	0.78 (52 of 67)	0.64
2019	18 May	24 Jul	19	19 (25/5 - 12/6)	9	17 (12/6 - 28/6)	29	35 (25/5 - 28/6)	0.76 (57 of 75)	0.55
2018	30 May	30 Jul	20	22 (9/6 - 30/6)	11	18 (30/6 - 17/7)	15	39 (9/6 - 17/7)	0.75 (46 of 61)	0.56
2017	27 May	30 Jul	33	20 (6/6 - 25/6)	6	18 (25/6 - 12/7)	16	37 (6/6 - 12/7)	0.80 (55 of 69)	0.57
2016	04 Jun	13 Aug	7	16 (17/6 - 2/7)	3	13 (2/7 - 14/7)	38	28 (17/6 - 14/7)	0.73 (48 of 66)	0.64
2015	02 Jun	05 Aug	16	14 (18/6 - 1/7)	2	12 (1/7 - 12/7)	42	25 (18/6 - 12/7)	0.75 (60 of 80)	0.55
2014	09 Jun	06 Aug	14	11 (28/6 - 8/7)	4	17 (8/7 - 24/7)	38	27 (28/6 - 24/7)	0.74 (56 of 76)	0.50
2013	09 Jun	14 Aug	11	15 (16/6 - 30/6)	6	14 (30/6 - 13/7)	39	28 (16/6 - 13/7)	0.73 (56 of 77)	0.49

Puffins can fledge having spent a minimum of 34 days as a burrow-bound chick, although this is more typically 38 days and can be anything up to 60 days (Ferguson-Lees *et al.*, 2011). A flaw with the three visit technique is that some chicks were counted as fledged when they had reached as little as 21 days old (see table above). However it would be incorrect to assume that only those

provisioned on all three watches went on to fledge; early hatchers could potentially have departed by the third watch, whilst others may have hatched after the first watch. Although this three visit technique is more standardised than ad hoc recording, the 2013 to 2022 productivity estimates of between 0.72 and 0.80 fledglings per pair certainly include birds which did not fledge; there have been examples each year of chicks already counted as having fledged which were eaten or found dead. This technique also misses fledglings in some years, with apparently successful chicks known to hatch after the second watch (which were thus recorded on only one of three watches and assumed to have failed). Nevertheless this more standardised monitoring suggests that a 2022 productivity figure of 0.72 was similar to that of recent years, albeit being down on that logged in each of the last nine (the 2013-2021 mean is 0.76 \pm se 0.01). If the ad hoc records are included and it is assumed that a chick seen to be provisioned for 31 days or more was of fledging size, then the 2022 data suggests that, of the 68 monitored attempts, perhaps as few as 36 (52.94%) were potentially successful (which equates to a productivity figure of 0.53 fledglings per pair); the 2013-2021 mean ad hoc productivity figure is 0.57 \pm se 0.02, with a high of 0.64 in 2016 and 2020 and a low of 0.49 in 2013. At least 44 attempts saw a chick reach a minimum of 26 days (64.7% or 0.65 chicks per pair, see table below); this figure was very close to the 0.66 of last year.

The number of days between first and last observed chick feeding based on ad hoc recording and five daylight watches.

Days	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50
No. of burrows	6				8	8	20	3	13	

The number of fish deliveries made to the study plot during each daylight hours watch, the number of Puffins which lost fish over the plot and the percentage which lost fish.

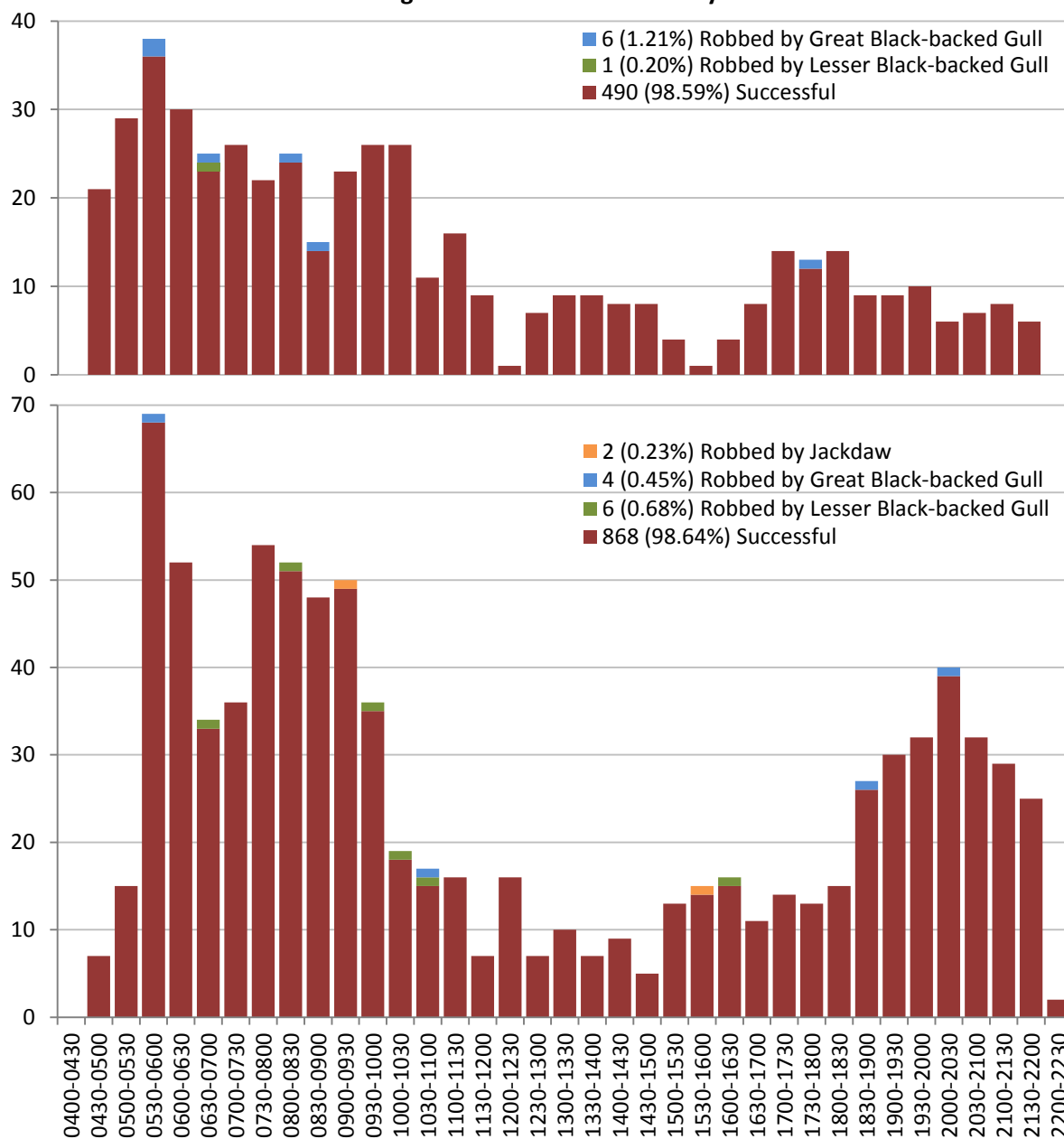
		Watch 1	Watch 2	Watch 3	Watch 4	Watch 5	Total
2022	Number of deliveries	497	880	1131	541	243	3292
	Number parasitised	7	12	13	15	10	57
	Percentage parasitised	1.41	1.36	1.15	2.77	4.12	1.73
2021	Number of deliveries	464	891	1262	813	394	3824
	Number parasitised	13	11	9	11	5	49
	Percentage parasitised	2.80	1.23	0.71	1.35	1.27	1.28
2020*	Number of deliveries	357	553	600	659	170	2339
	Number parasitised	22	37	3	10	5	77
	Percentage parasitised	6.16	6.69	0.50	1.52	2.94	3.29
2019	Number of deliveries	579	929	504	429	228	2669
	Number parasitised	25	18	14	18	5	80
	Percentage parasitised	4.32	1.94	2.78	4.20	2.19	3.00
2018	Number of deliveries	701	852	527	511	359	2950
	Number parasitised	19	12	8	8	33	80
	Percentage parasitised	2.71	1.41	1.52	1.57	9.19	2.71
2017	Number of deliveries	844	991	1100	527	177	3639
	Number parasitised	30	11	3	7	5	56
	Percentage parasitised	3.55	1.11	0.27	1.33	2.82	1.54
2016	Number of deliveries	421	733	889	489	525	3057
	Number parasitised	20	45	35	10	28	138
	Percentage parasitised	4.75	6.14	3.94	2.04	5.33	4.51

*watches stopped at 1700hrs.

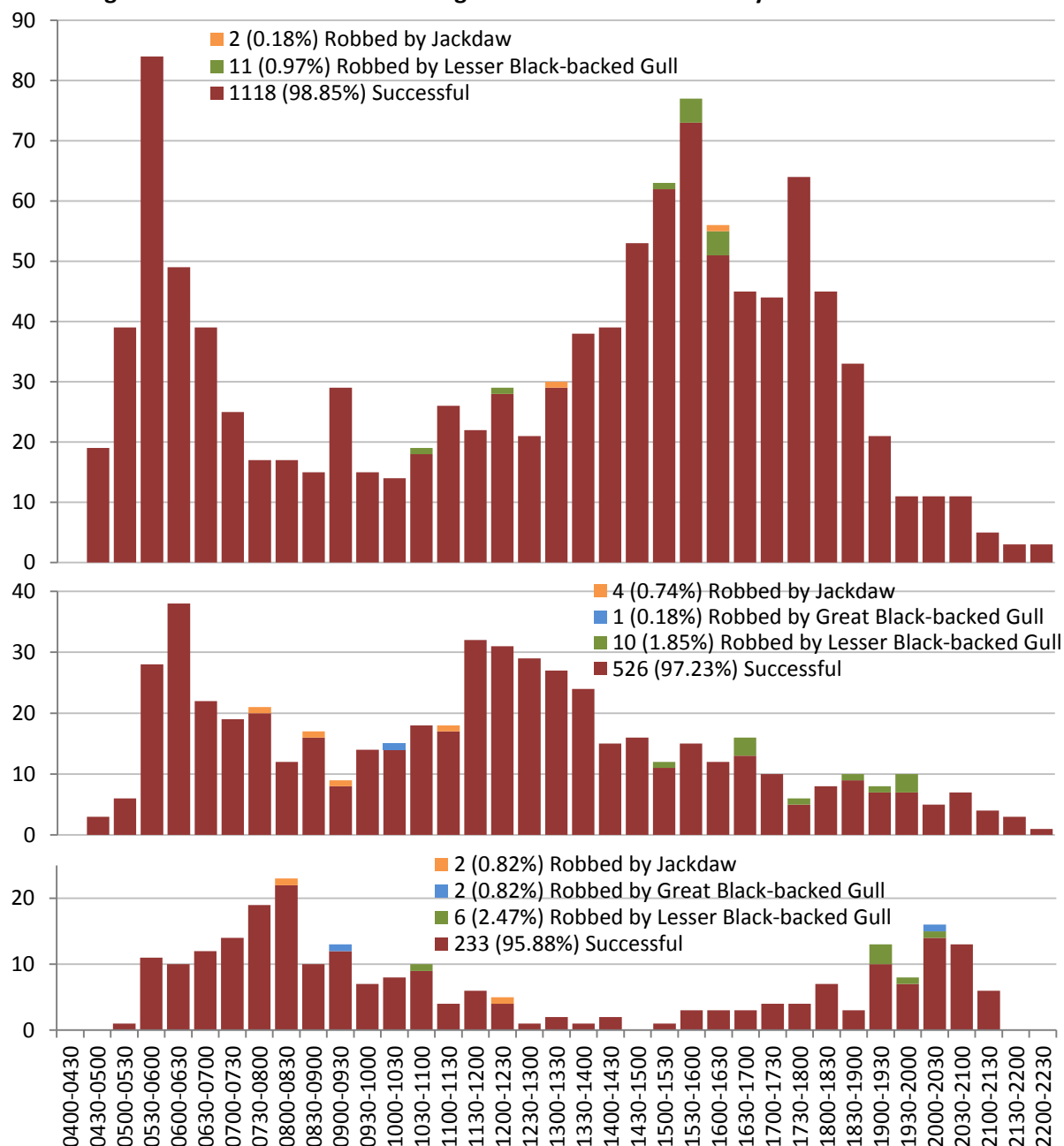
The five daylight watches were also used to monitor kleptoparasitism. The study plot was confined to the area of the 90 numbered burrow stakes at Crab Bay. On 2nd June 497 Puffins arrived to the study area with fish and of these seven (1.41%) were successfully robbed. On 14th June 880 arrived and 12 (1.36%) were robbed. On 23rd June 1131 arrived and 13 (1.15%) were robbed. On 5th July 541

arrived and 15 (2.77%) were robbed. On 13th July 243 arrived and ten (4.12%) were robbed. These figures do not take into account the number of fish lost to gulls at sea or on the approach to the colony. In terms of the percentage of deliveries lost over the study plot, a five visit mean of 1.73% was the third lowest of the last ten years, down on a 2013-2021 mean of 3.67%. The last six years have seen the lowest levels of monitored kleptoparasitism, whilst the highest level to be recorded so far occurred in 2013 (when 8.77% of deliveries were lost during four daylight hours watches). A general decline in kleptoparasitism is perhaps in part due to a reduced Lesser Black-backed Gull population (which has declined by 40.4% in the last six years), although higher Great Black-backed Gull numbers in the vicinity of Crab Bay may at the same time be having an effect, with the more aggressive large gulls keeping the Herring and Lesser Black-backed Gulls from the study area. There has been an increase in corvids kleptoparasitising Puffins in the plot; there were no records between 2013 and 2016, a Crow stole one delivery in 2017, Jackdaws stole single deliveries in 2018 and 2019, a Raven stole a delivery in 2019 and Jackdaws successfully robbed fish twice in both 2020 and 2021. This year saw Jackdaws successfully steal fish on ten occasions during the five watches.

The number of chick provisioning attempts during daylight on the 2nd and 14th June 2022, along with the number of times that gulls and corvids successfully robbed the fish.



The number of chick provisioning attempts during daylight on 23rd June and the 5th and 13th July 2022, along with the number of times that gulls and corvids successfully robbed the fish.



A colour ringing project was begun at Crab Bay in 2011 to allow an estimate of adult survival to be made each year. There were 128 ringed in the first year, 166 between 2012 and 2014, 106 between 2016 and 2019 and 40 last year; a further 30 adults were colour marked this year. The table below summarises the resighting data collected so far. What is apparent is that some birds are not seen every year, perhaps because they have not returned to the plot or perhaps because their rings have not been seen. Indeed 18 were not seen for two years (including two which went missing for two years twice), 11 were not seen for three years, two were not seen for four years (including one found this year) and one was not confirmed for five years. We now know that when 217 were seen last year, at least 236 were alive; between 2013 and 2021 a mean of 91.18% of known live birds were seen each year. A 2021-2022 survival figure of 80.80% is thus likely to increase in the future. With 11 years of resighting data now available, we can start to look at fluctuations in survival over time. The percentage of birds surviving the winter during the period 2011 to 2021 has varied between 79.72% (2013-2014) and 96.51% (2012-2013), with only the 2014 return rate being below

89% and a 2012-2021 mean of 92.39% \pm sd 4.91. A flaw with this survival estimate is that colour marks were added to Puffins caught in flight, birds potentially resident in areas not visible to researchers; a better estimation of survival may therefore come from looking for birds previously seen in the field (thus discounting individuals in the year after ringing). The resulting survival estimates range from 80.12% (2013-2014) to 97.37% (2012-2013), with a 2013-2021 mean of 92.99% \pm sd 5.09. The most striking feature of these estimates is the substantial drop in survival noted after the severe 2013 to 2014 winter wrecks; it remains to be seen how often such drops in survival can occur before the spring raft counts show a decline.

Survival in adult Puffins. An average survival figure for each year is based on the number of birds ringed in the preceding year plus the number of previously ringed birds known to be still alive, for example 216 birds (93.91%) are now known to have been alive in 2015, of a 2014 total of 230 (57 ringed in 2014 plus 173 (93+40+40) ringed previously and known to be alive). Survival after a one year establishment period means that birds have been seen within the study area before (and are therefore assumed to be located in visible positions); birds ringed in the preceding year are therefore excluded from the calculations as they may be occupying hidden areas of the colony.

	2011	2012	2013	2014	2016	2017	2018	2019	2021	Total	Survival after one year
Total Ringed	128	58	51	57	23	24	31	28	40	440	
Seen in 2012	72									72	
Alive in 2012	114									114	
% survival	89.06									89.06	-
Seen in 2013	102	52								154	
Alive in 2013	111	55								166	
% survival	97.37	94.83								96.51	97.37
Seen in 2014	86	36	37							159	
Alive in 2014	93	40	40							173	
% survival	83.78	72.73	78.43							79.72	80.12
Seen in 2015	78	37	35	50						200	
Alive in 2015	86	39	37	54						216	
% survival	92.47	97.50	92.50	94.74						93.91	93.64
Seen in 2016	67	34	32	43						176	
Alive in 2016	79	38	35	48						200	
% survival	91.86	97.44	94.59	88.89						92.59	92.59
Seen in 2017	71	35	31	44	19					200	
Alive in 2017	79	38	32	45	20					214	
% survival	100.00	100.00	91.43	93.75	86.96					95.96	97.00
Seen in 2018	69	34	28	40	19	20				210	
Alive in 2018	75	37	30	41	20	23				226	
% survival	94.94	97.37	93.75	91.11	100.00	95.83				94.96	94.86
Seen in 2019	65	33	27	36	17	20	21			219	
Alive in 2019	68	36	28	39	19	23	30			243	
% survival	90.67	97.30	93.33	95.12	95.00	100.00	96.77			94.55	94.25
Seen in 2020	60	31	23	33	15	18	22	17		219	
Alive in 2020	63	34	25	38	17	22	28	25		252	
% survival	92.65	94.44	89.29	97.44	89.47	95.65	93.33	89.29		92.99	93.42
Seen in 2021	57	30	23	28	16	16	25	22		217	
Alive in 2021	58	32	24	33	17	20	27	25		236	
% survival	92.06	94.12	96.00	86.84	100.00	90.91	96.43	100.00		93.65	93.65
Seen in 2022	47	29	21	29	13	19	21	18	26	223	
% survival	81.03	90.63	87.50	87.88	76.47	95.00	77.78	72.00	65.0	80.80	83.47

Puffins were again regularly taken by Great Black-backed Gulls during the breeding season. Such observations typically become rarer during the Puffling feeding period, dropped fish seemingly a sufficient deterrent; ten dead adults found to the east of the Neck between the 10th and 29th June were thus unusual. Ad hoc records again mirrored recent whole Island counts in suggesting that the number of birds on Skokholm is increasing; there was seemingly an inland expansion of occupied burrows above Hog Bay, above Purple Cove and on the Neck. Crab Bay was regularly quiet from 8th July and was almost devoid of surface birds on the evening of the 19th, however the North Coast and Neck remained busy (this mirroring the whole Island count which suggested that birds to the north were breeding a little later than those to the south). The last four-figure daycount was logged on 24th July, one day earlier than the last of 2021, and raft counts remained in the hundreds until 31st July (between 2013 and 2021 the last three-figure daycount averaged 3rd August, with the earliest on 29th July 2020 and the latest on 6th August 2014). Daily August sightings to the 12th peaked at 64 on the 2nd and 15 on the 3rd. The last two fish deliveries to be seen this year were made to burrows to the north of the Neck on 11th August, these on the same date as the last of 2021 and one day earlier than the 2013-2021 mean; the latest last delivery recorded during this period was on 23rd August 2014, whilst one on 4th August 2019 was the earliest. One heading west off South Haven on the 2nd was the first October sighting since 2012. A recently deceased adult was floating in South Haven on 12th November; the body was not recoverable for HPAI testing.



Red-throated Diver *Gavia stellata*

Trochydd Gyddfgoch

Scarce passing at sea from September to May, not recorded every year but occasionally Uncommon

Sightings of divers over Skokholm are unusual and overhead Red-throated Divers are exceptional, however one went north over the Top Tank on 28th April (IMB); there have been 36 previous April bird-days logged over 11 years, including two last year and a high of ten in 2016. There were no further sightings until the morning of 12th November when one was off the Lighthouse, this followed by two together heading southeast off the Lighthouse on the 25th and one doing likewise on the 29th; there have now been 44 November bird-days, with highs of 11 in 1990 and ten last year. Further southeast bound singles were logged on the 7th and 9th December, these taking the annual bird-days total to seven; although down on highs of 12 in 1967 and 2021, 14 in 2016, 15 in 1992 and 19 in 1990, the 2022 total was up on a 2013-2021 mean of 5.3. The number of bird-days logged is inevitably impacted by how long staff remain on the Island towards the end of the year; although there have been birds in every month bar July, 86 of 192 bird-days have now been noted during the last three months of the year and a further 18 have been in January or February.

Great Northern Diver *Gavia immer*

Trochydd Mawr

Scarce passing at sea from August to May, not recorded every year but occasionally Uncommon**Earliest** 3rd August 2019 (2nd November 2022) **Latest** 30th May 1983

There were no spring records for the fourth time this decade; there have been March, April or May sightings in 17 previous years tallying 25 bird-days, with eight since 2014 and highs of three in 1980 and 1994. There were no autumn records until November; the all-time August bird-days total thus remains at four (with two in 2019 and one in 2020), the September bird-days total at 19 (with five since 2016 and a high of four in 1930) and the October total at 17 (including five since 2014). A close in bird headed northeast through Broad Sound on 2nd November, one did likewise on the 17th, one went east off Crab Bay on the 19th and one west through Broad Sound on the 24th was the last of the year, taking the all-time November bird-days total to 29 (including 19 since 2015). A 2022 bird-days total of four was down on a 2013-2021 mean of 6.1, this a period which saw all-time highs of 24 in 2019 and nine in 2020 (the former tally including a remarkable daycount of 18 on 2nd December).

Storm Petrel *Hydrobates pelagicus*

Pedryn Drycin

Abundant Breeder a 2016 whole Island survey predicted 2383 occupied sites

389 trapped (including 32 pulli), 23 retrapped, 10 controls

1933-1976: 18,473 trapped, 2011-2021: 6358 trapped, 639 retrapped, 268 controls

Despite the sizable Skokholm breeding population and the significant amount of time dedicated to seawatching, Storm Petrels typically prove a rare sight at sea. Indeed the only at sea sightings this year were of six birds during a moderate westnorthwester on 25th July, one off the Lighthouse on the morning of 20th August, one feeding close to a dead Gannet on 5th September and a juvenile feeding around a Grey Seal with a fish on 24th November. The eyes of a bird found near the Farm on 23rd July were closed and seemingly full of soil; one eye was in a much better condition following irrigation and the bird flew strongly when released the following night. With the exception of a small number of incubating adults visible in shallow crevices or in nest boxes, all other 2022 sightings came at night, although birds occasionally called from holes during the day and vocal responses were elicited for monitoring purposes. Birds were heard at sites traditionally used for productivity monitoring from 25th April and cameras installed in four Petrel Station boxes revealed that two were present on the night of the 28th. However the latter were not in the Petrel Station the following day, indeed it was not until 5th May that birds were first heard calling diurnally; this was 12 days earlier than the first of last year but on the same date as the 2013-2021 mean (the earliest during this period was heard on 23rd April 2017 and the latest on 25th May 2013). A bird heard calling from a rock pile above the Neck Razorbill productivity plot on 14th June was notable; there were no records included for this area during the 2016 whole Island survey. The infrared viewing equipment again proved popular, producing peak counts from the Quarry of at least 160 on the night of 19th May (when there were no birds seen on the Petrel Station cameras), 163 on the night of 23rd June and of at least 180 on the night of 3rd July.

Four playback transects established at the Quarry in 2010, along with plots in North Haven Gully and along two of the walls which radiate from the Farm, potentially provide a sound method for monitoring changes in the Skokholm population (see the 2013-2019 and 2021 Seabird Reports for full details). Unfortunately the COVID-19 dictated Island closure meant that there were insufficient staff to safely survey the boulder areas in 2020, however a check of the accessible crevices used for productivity monitoring revealed incubating adults in the vast majority of usual sites. We were again joined by two Long-term Volunteers this year, this allowing the survey work to be completed in the usual period; ten visits were made to the study areas between 21st June and 15th July. An MP3 recording of male song was played into every crevice encountered along the transects, both numbered (and therefore used previously) and unmarked, with each active crevice being recorded and marked if new. It was first noted in 2013 how some marked crevices no longer fell within the

two metre wide transects, an observation which prompted regular checks to assess the drift caused by (typically) small scale rock movements (and almost certainly in a small number of cases by erroneous measurements early in the project); it should be noted in future surveys that marked crevices which were once within the two metre transects now lie outside of the survey area. The playback census this year again focused on the area delineated by marked burrows, although the results were then divided into those which fell within the two metre transects and those which fell just outside (see table below).

The total number of apparently occupied crevices (located over ten visits) responding to a recording of male song at each of the seven study sites. Numbers in parenthesis are the totals from the 2m wide Quarry transects (as stipulated in the project guidelines) as opposed to the more wayward crevices monitored since the project's inception. There was no 2020 survey, the mean that for the period 2010-2019 and 2021.

Year	North Pond Wall	Little Bay Wall	North Haven Gully	Quarry transect 1	Quarry transect 2	Quarry transect 3	Quarry transect 4	Quarry total	Total						
2022	9	18	19	16 (5)	18 ⁺ (9) ⁺	17 (10)	57 (32)	108 (56)	154 (102)						
2021	9	17	16	17 (5)	15 ⁺ (7) ⁺	14 (10)	43 (22)	89 (44)	131 (86)						
2019	10	23	12	18 (7)	18 ⁺ (9) ⁺	13 (8)	44 (20)	93 (44)	138 (89)						
2018	6	13	11 [‡]	15 (5)	15 ⁺ (10) ⁺	12 (8)	49 (30)	91 (53)	121 (83)						
2017	7	20	14 [‡]	15 (5)	13 ⁺ (7) ⁺	10 (9)	47 (27)	85 (48)	126 (89)						
2016	6	15	17	9* (4)*	**	**	11 (8)	41 (26)	61 (38)						
2015	7	17	17	14 (5)	21 (9)	12 (7)	42 (25)	89 (46)	130 (87)						
2014	9	12	13 [‡]	14 (5)	18 (9)	18 (12)	37 (22)	87 (48)	121 (82)						
2013	8	15	22	14 (4)	15 (8)	10 (7)	46 (27)	85 (46)	130 (91)						
2012	5	9	21	12 (5)	8 (4)	10 (5)	33 (17)	63 (31)	98 (66)						
2011	7	5	19	11 (5)	13 (8)	10 (7)	25 (14)	59 (34)	90 (65)						
2010	4	9	18	8 (5)	15 (12)	11 (8)	30 (17)	64 (42)	95 (73)						
Mean	7.1	14.1	16.4	13.4	5.0	15.1	8.3	11.9	8.1	39.7	22.5	78.7	43.1	116.3	80.6

* Transect 1 was only visited on four occasions in 2016 due to safety concerns.

** Transect 2 was not visited in 2016 due to a rock fall.

† Transect 2 was shortened in 2017 due to the 2016 rock fall.

‡ There was substantial scouring in the winters of 2013-14 and 2016-17 and in October 2017.

Between 31 and 53 responses were elicited on the Quarry transects using MP3 playback in each of the years between 2010 and 2019 and in 2021, although a substantial rock slide in 2016 significantly reduced the area which could be surveyed that year; Quarry transect two, which held between four and 12 responding birds, was almost entirely destroyed in 2016 and Quarry transect one was undercut on its southern edge, rendering both transects too dangerous to survey (see the 2016 Seabird Report for photographs and further details). It would seem from the records that the 2016 Quarry rock fall was by far the largest such event for over 35 years. Visits to the Quarry in 2017 established that there had been no further significant slides on any of the transects; the decision was made to reinstate transect one entirely and to use the upper section of transect two, a situation which has remained the same since. It was decided in 2017 that all of the data previously collected for transects one and two would be compared directly with future years; no adjustments have thus been made for the fact that transect two was shorter from 2017 onwards and that transects one and two were missed in 2016. Although it was again apparent that there had been some small winter rock slides, particularly in the lower third of transect four, there were no safety concerns this year.

There is a general consensus that the number of pairs utilising the 18th century herringbone walls on Skokholm has declined (Vaughan and Gibbons, 1996; Vaughan, 2001; Thompson, 2003; Sutcliffe, 2010), perhaps due to a loss of suitable nest sites as vegetation and soil fills gaps in the collapsing

walls. However standardised survey work over the last 13 years suggests that there have been no further declines, although clearly there is some variation in the number of responses elicited each year (perhaps in part due to fluctuations in the number of transient, non-breeding birds, rather than to changes in the number of breeding pairs (Brown and Eagle, 2017)). This year saw 18.2% fewer wall responses than in a record 2019, however a combined North Pond Wall and Little Bay Wall total of 27 matched that of 2017 as the second highest to date (this 27.4% up on a 2010-2021 mean of $21.2 \pm \text{sd } 6.4$). It would seem that the Walls population can still be cautiously regarded as stable. A trial crevice excavated in North Pond Wall in 2021 was not used in 2022 (it was occupied by a successful Wheatear pair), however a further five sites were excavated by hand this year (all in North Pond Wall).



The huge swell generated by Storm Ophelia in October 2017, the remnants of the easternmost major Atlantic hurricane on record, caused yet another scouring event in North Haven Gully. Nest boxes installed in 2014, the access ladder to the lower portion of the slope and the central section of boulder scree which traditionally held many active crevices were all destroyed, whilst the painted marker stones were again moved from their original locations. This was the third major change to the North Haven landscape in five years, a series of events which almost certainly contributed to a 38.9% decline in the number of occupied crevices located between 2010 and 2018. No further significant changes to the North Haven landscape have been observed since, although a small rock fall above the upper east portion of the gully has created additional sites. Nevertheless, recent weather events releasing soil from further up the gully have seemingly reduced the overall number of open fissures suitable for nesting. How such a loss of available nest sites effects the Skokholm population as a whole is unclear; it would seem likely that nest sites are available away from North Haven and that the birds were not impacted directly (as they were predominantly absent during the scouring events), however the impact of looking for new nest sites on adult survival and productivity is something of an unknown. There were 19 active sites discovered in North Haven Gully this year, this up on a 2010-2021 mean of $16.4 \pm \text{sd } 3.6$, three more than last year and the highest total since the 22 of 2013 (the first big scouring event during this study was in the winter of 2013-2014).

The ephemeral nature of Storm Petrel nest sites was also evident at the Quarry where there were further small scale movements, particularly along transect four. The transect one total matched both that of last year and the 2010-2021 mean (there have been five transect responses in nine of 12

years). A transect two total of nine was two up on that of 2021 and close to the mean ($8.3 \pm \text{sd } 2.1$), this despite the fact that the transect was shortened in 2017. The transect three total matched the ten of last year as the second highest on record, this up on a 2010-2021 mean of $8.1 \pm \text{sd } 1.8$. The transect four total was a surprise, with 32 responses elicited within the two metre wide transect over ten visits; this was a new site record, ten up on last year, two up on the 2018 high and well up on a 2010-2021 mean of $22.5 \pm \text{sd } 5.0$. The overall Quarry total of 56 was also a new high, three up on the previous record, 12 up on that of 2021 and 29.9% up on the mean ($43.1 \pm \text{sd } 6.5$).

The number of crevices which have at some point been occupied over the 12 study years (a total of 378), subdivided to show how many years the crevices have been apparently occupied for and the percentage of crevices occupied for a particular number of years. Crevices in the lower half of transect two, not visited after the 2016 rock fall, are not included in this table.

	Quarry Transects	The Walls	North Haven Gully	Total	% of total
1 year of apparent occupancy	50	40	24	114	30.16
2 years of apparent occupancy	36	10	25	71	18.78
3 years of apparent occupancy	25	7	6	38	10.05
4 years of apparent occupancy	21	6	12	39	10.32
5 years of apparent occupancy	19	4	2	25	6.61
6 years of apparent occupancy	12	9	5	26	6.88
7 years of apparent occupancy	14	3		17	4.50
8 years of apparent occupancy	15	1	1	17	4.50
9 years of apparent occupancy	8			8	2.12
10 years of apparent occupancy	8	4		12	3.17
11 years of apparent occupancy	5			5	1.32
12 years of apparent occupancy	4	1	1	6	1.59
Total	217	85	76	378	



Overall there were 102 responses elicited this year, this a new record and 16 more than in 2021 (there were three more active sites in North Haven, one more in Little Bay Wall and 12 more in the Quarry); the total was up on a previous high of 91 logged in 2013 and a 2010-2021 mean of $80.6 \pm \text{sd}$

9.3. It still seems likely that, over the last decade at least, the Skokholm study population has been stable at worst, a conclusion which is probably applicable to the Island population as a whole. This is positive news following what may have been a significant population decline between 1996 and 2010 (Sutcliffe and Vaughan, 2011; Wood *et al.*, 2017). One of the most important variables highlighted in recent years is nest site availability within the study areas; birds can only react to the changing landscape and maintain a stable population if further nest sites open up as others are lost. It is clear that some Storm Petrel nest crevices are short lived (as shown in the table above, just under a third of those found over the course of this study have only been occupied during a single year), however stable sites are also in existence; over 24% of the active crevices located during 12 years of study have shown signs of occupancy in six or more years and 6.08% of crevices have contained a calling bird in ten or more years. Although changes in the positioning of rocks will mean that some crevices were only available for a single year, it is tempting to suggest that some of the crevices occupied only once are perhaps unsuitable nest sites (although they contained a calling bird, such sites may have never actually supported a breeding attempt).

The percentage of known active crevices which responded to male song during any single visit, averaged across all ten visits, and the 2014-2022 mean (the resulting correction factors are given in parenthesis).

Year	The Walls	North Haven	Quarry	Rock fall	Average
2022	29.6 (3.38)	40.0 (2.50)	37.9 (2.64)	38.2 (2.62)	36.7 (2.73)
2021	34.2 (2.92)	36.9 (2.71)	32.1 (3.11)	32.9 (3.04)	33.1 (3.02)
2019	31.2 (3.20)	35.8 (2.79)	30.1 (3.23)	30.8 (3.24)	30.9 (3.24)
2018	22.6 (4.42)	31.8 (3.14)	32.6 (3.06)	32.5 (3.07)	31.0 (3.23)
2017	21.9 (4.58)	30.9 (3.23)	28.1 (3.55)	28.5 (3.51)	27.1 (3.69)
2016	40.0 (2.50)	25.9 (3.86)	23.3 (4.30)	23.9 (4.18)	27.7 (3.61)
2015	28.7 (3.48)	37.4 (2.68)	28.9 (3.46)	30.4 (3.29)	30.1 (3.33)
2014	36.2 (2.76)	40.0 (2.50)	26.2 (3.82)	26.4 (3.79)	28.1 (3.56)
Mean	30.6 (3.27)	34.8 (2.87)	29.9 (3.34)	30.5 (3.28)	30.6 (3.27)

The proportion of known active crevices which respond to a recording of male song during any single visit unsurprisingly fluctuates; there are several reasons for this, including the chance presence of birds of different sexes, individual variation in response rate, nest site positioning (which will influence how occupants hear the stimulus) and breeding status (non-breeders are perhaps more likely to leave a crevice unattended, to occupy multiple crevices during the study period or to respond at a different rate to breeding birds, whilst breeding status could also change during the survey period). The Walls saw an average of 8.0 (29.6%) of the 27 active sites respond per visit, although between two and 12 responded on a single visit. At North Haven a mean of 7.6 (40.0%) of 19 active sites responded, although between five and 12 responded on a single visit. At the Quarry a mean of 40.9 (37.9%) of 108 active sites responded, but this was between 30 and 53 on any particular date. Despite this significant variation between dates, the mean response rate at the Walls and North Haven fell within the ranges observed between 2014 and 2021 (see table above). The mean response rate at the Quarry was higher than anything seen before (the previous high was 32.6% in 2018), this in a year which saw more active sites than at any point during the same period. An average response rate for all sites of 36.7% was the highest to be observed in eight years, up on a range of between 27.1% and 33.1% recorded between 2014 and 2021. The use of these response rates to produce a correction factor remains the best way to predict the number of birds present in a large area when ten visits are not logistically feasible (for example during the whole Island census). Based on the data collected over eight of the last nine years, the number of active sites present in an area is likely to be in the region of 3.27 times more than the number encountered on a single visit. However the variation seen in this year's figures is a reminder of how difficult it is to assess the population of a species which usually cannot be seen.

There is a clear need to discover what the birds which respond to playback during the annual monitoring are actually doing; due to the fact that the vast majority of responding birds are hidden, it is unclear how many of these (and indeed how many of the 2383 occupied sites predicted during the 2016 whole Island census (Wood *et al.*, 2022)) are actually breeding (as opposed to non-breeders moving around potential nest sites or diurnal refuges unsuitable for nesting). Previous attempts to use an endoscope in natural sites have failed to locate a sufficiently large sample size for monitoring purposes. One way to improve our knowledge is to encourage petrels to occupy accessible artificial sites. With this in mind a study wall containing 119 nest holes was created during the 2016 season (with the final inspection hatches and endoscope holes added in April 2017). The plywood inspection hatches were replaced with recycled plastic in early April this year, this the last stage in producing a wall which should last for decades to come (below photo).



A summary of Petrel Station contents 2018-2022

	2018	2019	2020	2021	2022
Number of pairs that produced eggs	4	9	8	5	6
Number of pairs that fledged young	0	2	2	3	4
Productivity	0.00	0.22	0.25	0.60	0.67
Boxes with signs of occupancy	8	13	12	19	58

Ten visits were made to the ‘Petrel Station’ between 26th June and 11th July 2020 when an MP3 playback census was conducted (this within the standard period used for the transect survey). The ten visits elicited calls from just three boxes, with a mean of 1.1 responses per visit and a mean apparent response rate of 36.67%. Confirmatory checks during the chick provisioning period revealed discrepancies between the playback results and the box contents; one of the boxes found to be active during the survey only contained a nest scrape, a further three boxes from which responses were not elicited contained nest scrapes and six additional boxes contained egg stage failures by silent pairs. This has obvious implications for the whole Island census as evidently some active sites were not detected over ten visits (which would perhaps suggest that the Skokholm population is larger than estimated in 2016). It should however be remembered that the Petrel Station is probably not yet representative of the Island as a whole, primarily as the majority of occupants are likely to be younger, inexperienced birds. This theory is supported by the 2018-2020 productivity estimates (see table above), these figures well down on those seen elsewhere on the Island. Given the poor productivity witnessed early in this project, it was decided that there would be no Petrel Station playback census in 2021 and 2022 (to allow for productivity checks in years without a potentially disturbing survey).

Visits to the Petrel Station during the 2022 chick provisioning period revealed that a remarkable 58 boxes had contained a Storm Petrel at some point this year. Only nest scrapes were present in 52 of these boxes, with six pairs having produced eggs. An egg in box 106 was abandoned (this the first time in four years that this box has been occupied), whilst a chick died during the hatching process in box 104 (this also a new site). Chicks fledged from boxes 11 and 64 for a fourth consecutive year, a chick fledged from box 12 for a second consecutive year (a response was elicited from box 12 during the 2020 playback survey, however it was later found to contain an empty scrape) and a late chick fledged from box 84 shortly after 17th October (there was an egg stage failure at this site in both 2019 and 2020, however it was not seemingly occupied last year). Assuming that no eggs had been removed from the Petrel Station by the petrels or scavengers (a difficult task as there is a lip between the nest chamber and the access tunnel to each box), then productivity was 0.67 fledglings per pair, this a new high for this site and more consistent with that previously observed elsewhere. It is unclear whether the improved productivity seen in 2021 and 2022 was due to reduced disturbance or the fact that this site may now contain older, more experienced birds. Four cameras were installed in the Petrel Station this year, three of these in boxes 11, 12 and 64. The cameras captured courtship and mating, egg laying, incubation and chick feeding, along with some fascinating pebble tossing behaviour (the latter seen in both adults and chicks).



There were 20 sites discovered this season where an incubating bird was evident early enough in the nesting period to allow for a productivity estimate (this matching that of 2015, 2018, 2020 and 2021 as the largest post-2012 sample, up on a mean of 17.3); the Petrel Station birds were again excluded as it was felt that the sample could be biased towards younger, less experienced individuals. Although some early egg stage failures may have been missed, the study is biased towards birds in shallow crevices or boxes and the sample size is far from great, these visible birds provide a rare opportunity to estimate productivity on Skokholm. The first eggshell fragments indicative of hatched chicks were discovered at three Quarry sites on 2nd July, this six days earlier than the 2015-2021 mean (the earliest during this period was discovered on 29th June 2019 and the latest on 26th July 2021). Remarkably, only three of the 20 monitored nest attempts failed; attempts in the Gantry and the Cottage Wall failed at either egg or very small chick stage, whilst an attempt along Quarry transect four failed when the chick was at least 17 days old. The 17 remaining chicks were all more than half grown when H5N1 HPAI restrictions stopped access to the sites; a late season check of these areas did not locate any dead young, although there is a chance that bodies may have been scavenged. Assuming that all of the large chicks went on to fledge, the 2022 productivity estimate is

0.85 fledglings per pair; this is the highest estimate of the last nine years (the 2014-2021 mean is $0.61 \pm se 0.04$, with a high of 0.80 in 2021 and a low of 0.45 in 2020). It is unclear why productivity was so high this year, although predominantly dry conditions for a second year no doubt benefitted small chicks left alone in relatively exposed sites.



Although only small numbers of accessible chicks are ringed each year on Skokholm, the tape luring of adult birds in South Haven is giving some indication as to their post-fledging survival (this coupled with a small number of controls from elsewhere). Of four birds ringed as chicks in 2013, one has been found subsequently (25.0%), whilst three of 11 2014 chicks (27.3%), four of 17 2015 chicks (23.5%), one of six 2016 chicks (16.7%), one of seven 2017 chicks (14.3%), one of ten 2018 chicks (10.0%), four of 23 2019 chicks (17.4%) and one of 14 2020 chicks (7.1%) have been encountered again (the controls being a 2015 ringed chick retrapped in Cornwall in 2018 and again in France in 2021, a 2016 chick retrapped on the nearby mainland in 2019 and a 2018 chick retrapped in Cornwall and then Wexford in 2021). Ten of the retrapped chicks were first encountered two summers after ringing (including one also seen three summers after) and six were first encountered three summers after ringing (including one also seen six summers after ringing and one seen four and seven summers after). One of the 16 birds ringed as pulli and reencountered subsequently was ringed in the Petrel Station (this in 2019 and the first chick to fledge from these boxes).

In 2013 a thermal imaging camera recorded a Short-eared Owl hunting Storm Petrels in the Quarry, an event which has subsequently been shown to be quite regular. The remains of six petrels were found that year, with 16 in 2014, 18 in 2015, 51 in 2016, 98 in 2017 (the only year on record in which Short-eared Owls have been proven to breed), 31 in 2018, five in 2019, three in 2020 and 39 last year; the majority of these were thought to be the victims of Short-eared Owls, usually due to the presence of feathers or pellets. There were only 17 Short-eared Owl bird-days logged this season, this the second lowest total this decade and down on a 2013-2021 mean of 35.6 (there was a high of 76 in 2017 and a low of 16 in 2020). The remains of five adult Storm Petrels were located this year, all between 12th August and 11th September and including one found near the Knoll which had been ringed as a chick in 2020. There were again no Little Owl records (the last was seen on 17th March 2018); this introduced species is a well-documented Storm Petrel predator, for example the 1936 Skokholm Bird Observatory Report includes details of a Little Owl nest containing the remains of

nearly 200 petrels. In 2019 a House Mouse was watched via a live infrared camera feed as it entered Petrel Station burrow 64; it was seen to walk to the end of the entrance tunnel but did not drop down into the chamber or interact with the resident Storm Petrel chick, indeed neither seemingly reacted to the other's presence. The six eggs abandoned in the Petrel Station in 2020 and the two there in 2021 were left in situ to see if they would be found by mice; all eight were still present in the winter of the year in which they were deserted.



Adult Storm Petrels were lured to the traditional South Haven netting site on seven nights between the 11th and 23rd July; this was five fewer nights than last year and four fewer nights than the 2013-2021 mean. The largest catch was of 164 birds on the night of 11th July; this was 103 fewer than trapped on the night of 16th July last year (the largest single catch of the last nine years), and down on a 2013-2021 mean high of 193.1. Subsequent catches were considerably smaller, indeed only 17 birds were handled over two nights between the 14th and 17th (this over the full moon); despite the conditions, it was felt that the catches were smaller than is typical. Although these dates preceded the confirmation that the H5N1 strain of highly pathogenic avian influenza had reached Pembrokeshire, it was felt that there was at least the possibility that a reduction in numbers may have been connected; Storm Petrel ringing was thus suspended to ensure that activities did not exacerbate the situation. Of 388 adults handled in South Haven this year, 8.2% were already wearing a ring (the mean during the period 2013-2021 was 11.4%, with a high of 21.3% in 2021 and a low of 5.4% in 2014); these included one ringed in 2014 (and not seen since), one ringed in 2018 (and not seen since) and 11 ringed last year, whilst ten (2.58%) had been ringed elsewhere (the mean during the same period was 4.23%, with a high of 5.68% in 2013 and a low of 3.21% in 2020). Additional to those listed below, we received news of two birds ringed on Skomer Island (4km to the NNW) and retrapped on Skokholm (after one and four days) and 12 birds ringed on Skokholm and retrapped on Skomer (with three retrapped after between four and six days, singles retrapped after 356, 364, 370, 1441, 1458, 2185 and 2551 days and two birds retrapped twice (one after 360 and 361 days and one after 2185 and 2186 days)). Since ringing fully recommenced in 2013 we have now received news of 479 Storm Petrels either ringed on Skokholm and found elsewhere or ringed elsewhere and controlled on Skokholm; of these 301 have been exchanged with sites more than 10km away from the Island (see map below). Unless stated otherwise, all of the following recoveries were of birds deliberately mist netted.

Ringing recovery 2547856

Originally ringed as an adult, LITTLE SALTEE, WEXFORD, IRELAND 3rd July 2022

Recovered as an adult, SOUTH HAVEN, SKOKHOLM 20th July 2022

Distance travelled 102km at 119 degrees (ESE)

Days since ringed 17

2746476 and 2758196 made the reverse journey, both reaching Little Saltee on 30th June 2022 after 1062 and 332 days respectively.

Ringing recovery 2593638

Originally ringed as an adult, POINT LYNAS, ANGLESEY 19th July 2020

Recovered as an adult, SOUTH HAVEN, SKOKHOLM 12th July 2022

Distance travelled 203km at 200 degrees (SSW)

Days since ringed 723

Ringing recovery 2639034

Originally ringed as an adult, SHEEPLAND HARBOUR, DOWN, NORTHERN IRELAND 22nd August 2009

Recovered as an adult, SOUTH HAVEN, SKOKHOLM 20th July 2022

Distance travelled 288km at 177 degrees (S)

Days since ringed 4715

Ringing recovery 2706016

Originally ringed as a pullus, SKOKHOLM 2nd October 2015

Previously recovered as an adult, GWENNAP HEAD, PORTHWARRA, CORNWALL 15th July 2018

Recovered as an adult, ILE DE BANNEG, LE CONQUET, FINISTÈRE, FRANCE 3rd August 2021 (sic)

Distance travelled 364km at 178 degrees (S)

Days since ringed 2132

The commune of Le Conquet is home to Banneg, the largest Storm Petrel colony in France, an island believed to support just under a thousand pairs which primarily nest in abandoned Rabbit burrows. Interestingly this nesting habitat was not found to be in use on Skokholm during the 2016 whole Island census (although in 2019 birds were found calling from a small area of burrows to the west of Dip Gully). Although there have been eight individuals ringed on Banneg and found on Skokholm since 2013, this is just the third Skokholm ringed bird to be found there.

Ringing recovery 2722547

Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 5th August 2017

Recovered as an adult, BARDSEY ISLAND, GWYNEDD 29th July 2022

Distance travelled 123km at 16 degrees (NNE)

Days since ringed 1819

Additionally 2722637, 2746579, 2746703 and 2774084, ringed as adults in South Haven on 8th August 2017, 24th August 2019, 12th July 2020 and 11th August 2021 were controlled at Bardsey on the 17th, 29th, 28th and 29th July 2022 after 1804, 1070, 746 and 352 days respectively. 2773148, ringed as an adult at 2345hrs on 20th July, made the reverse journey, reaching South Haven at 2305hrs on 22nd July 2022 after two days. Whilst the majority of Storm Petrels controlled on Skokholm have been ringed to our south, primarily in Cornwall and Dorset, the majority of birds ringed on Skokholm are controlled to our north. Skokholm ringed birds have now been controlled at Bardsey Island on 38 occasions since 2013, with ten at Little Saltee, nine at Porth Iago and Gwennap Head and eight at Lundy and the Calf of Man the next highest tallies.

Ringing recovery 2746631

Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 11th July 2020

Recovered as an adult, LUNDY ISLAND, DEVON 31st July 2022

Distance travelled 72km at 144 degrees (SE)

Days since ringed 750

Somewhat surprisingly this is only the eighth Skokholm ringed bird to be controlled on Lundy, whilst

a Lundy ringed bird is yet to be found on Skokholm.

Ringing recovery 2758199

Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 3rd August 2021

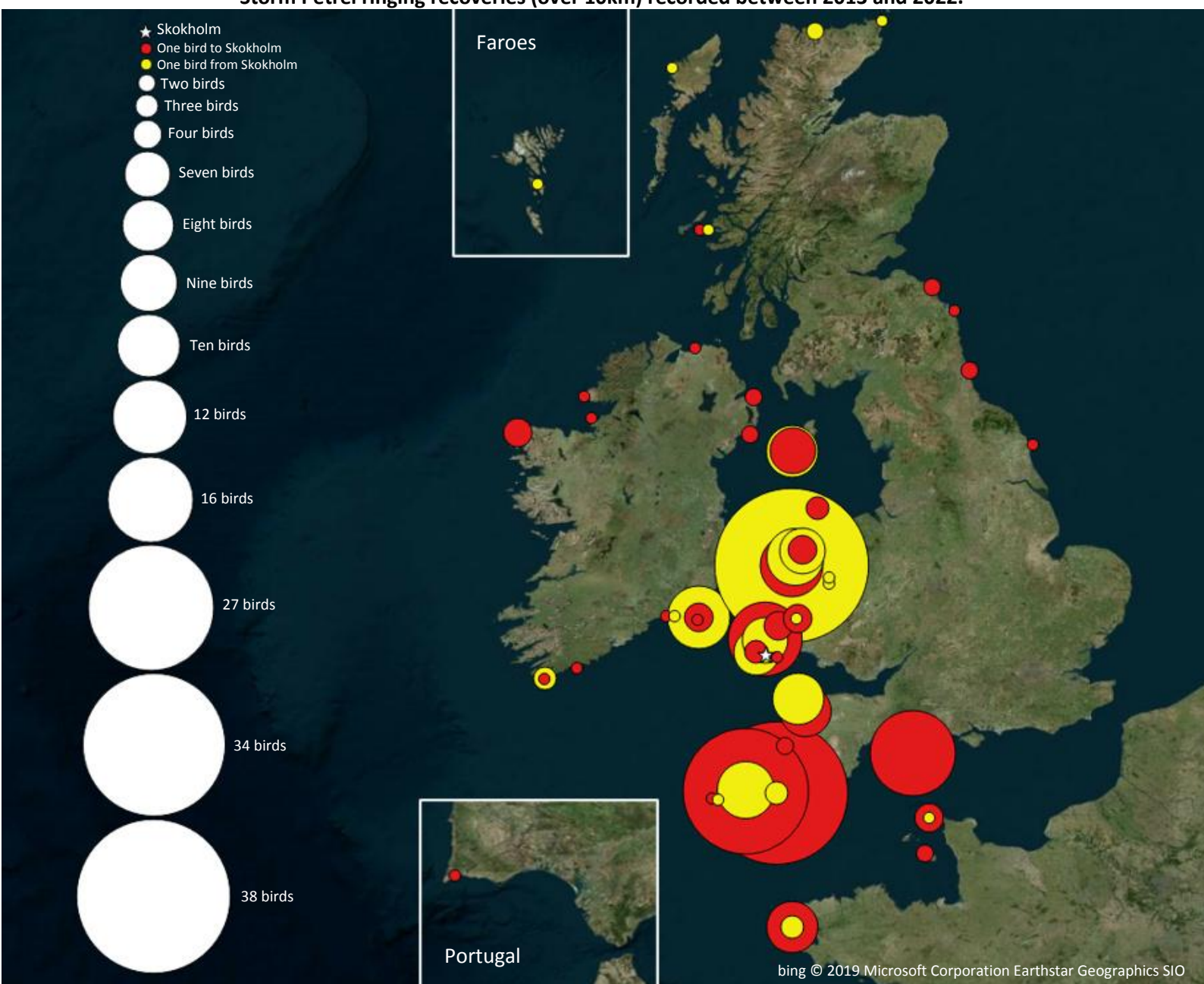
Recovered as an adult, GWENNAP HEAD, PORTHWARRA, CORNWALL 4th July 2022

Distance travelled 188km at 189 degrees (S)

Days since ringed 335

2761157, 2761400, 2780523, 2780616 and 2780618 made the reverse journey, reaching Skokholm on 12th July 2022, 17th July 2021 (sic) and the 23rd, 20th and 23rd July 2022 after 696, seven, 346, 16 and 19 days respectively.

Storm Petrel ringing recoveries (over 10km) recorded between 2013 and 2022.



Ringing recovery 2758280

Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 14th July 2021

Recovered as an adult, ST JUSTINIAN, ST DAVID'S, PEMBROKESHIRE 19th July 2021 (sic)

Distance travelled 21km at 354 degrees (N)
Days since ringed 5

Ringing recovery 2758582

Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 17th July 2021

Recovered as an adult, MWNT, CEREDIGION 17th July 2022

Distance travelled 65km at 43 degrees (NE)

Days since ringed 365

Fulmar *Fulmarus glacialis*

Aderyn-drycin y Graig

Fairly Common Breeder first bred in 1967

1968-1976: 19 trapped, 2017-2021: 6 pulli trapped

Birds were absent from the cliffs on both the 1st and 2nd March, indeed there were six March dates to the 20th when Fulmar were only seen at sea; birds were ashore on every day of March last year, whilst between 2016 and 2021 they were absent for an average of two days (with a high of four in 2020). A 16th to 31st March daycount mean of 54.8 was the second lowest of the last eight years, down on a 2013-2021 mean of 60.9 (there was a high of 85.0 in 2018 and a low of 34.5 in 2013), whilst a peak daycount of 158 on the 10th was down on a record 264 logged last year. Although there were 11 April daycounts of 67 or less, including lows of 19 on the 1st, 32 on the 2nd and 42 on the 11th, 12 three-figure daycounts took the April bird-days total to 2841 (this up on a 2013-2021 mean of 2482.0). With the exception of 94 on the 13th, no more than 79 were logged each day between the 5th and 14th May (there was a low of 28 on the 8th and 143 were present by the 16th), this pre-laying exodus mirroring that seen in recent years. The first egg to be seen was at Rat Bay on 14th May, this two days earlier than that of 2019, 2020 and 2021 and the earliest this decade; the 2013-2021 first egg mean is 19th May, with the latest during this period logged on the 28th in 2014 (following prolonged and severe storms during the preceding winter). Birds at both Twinlet and North Gully were probably also incubating from the 14th.

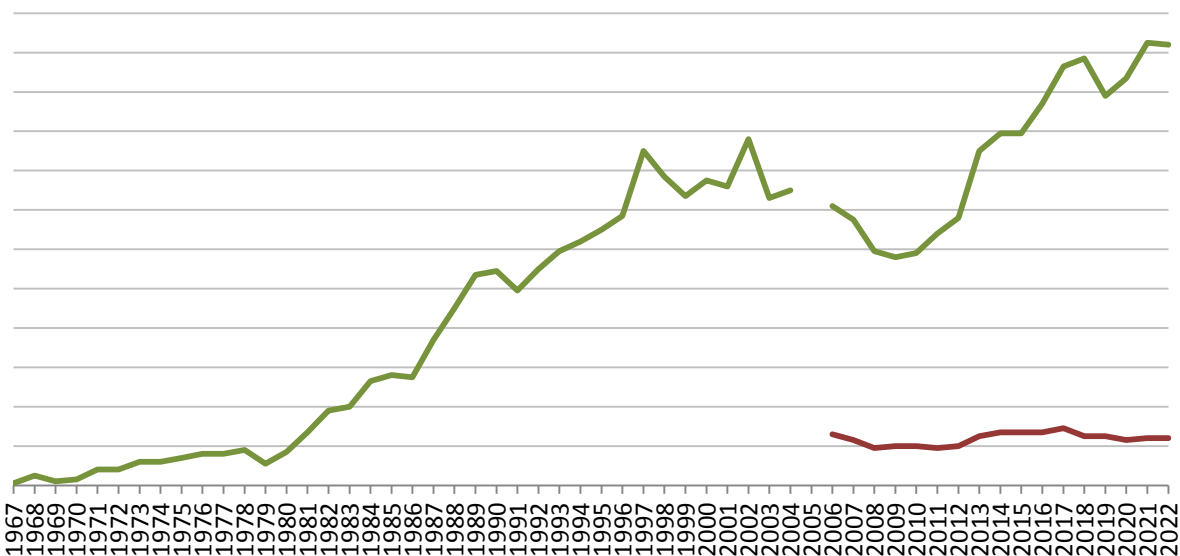
The whole Island totals (apparently occupied sites), mean plot totals, the range of totals over ten study plot visits, the standard deviation observed over the ten visits and the percentage of the Island total made up of study plot birds 2013-2022.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Island	170	179	179	194	213	217	198	207	225	224
Plots	25	27	27	27	29	25	25	23	24	24
Range	22-28	23-29	26-29	25-29	26-31	23-27	23-27	19-27	21-27	20-27
±SD	2.07	1.79	1.14	1.26	2.00	1.26	1.35	2.27	1.90	2.10
Plot %	14.7	15.1	15.1	13.9	13.6	11.5	12.6	11.1	10.7	10.7

The six study plots counted annually since 2006 were visited on ten dates between 27th May and 9th June. This was a period dominated by gentle winds from the northerly quarter, with rougher southwesterlies experienced during the last few days. Although the southerly winds were far from exceptional, a sea in excess of eight metres between the 17th and 18th May impacted some breeding auks and gulls (there was no indication that Fulmars had been affected); this was an improvement on the 2020 and 2021 seasons when May storms and huge seas had a much greater impact and probably changed Fulmar ledge attendance. The rough conditions were thought to have contributed to the higher than average standard deviation observed in 2020 and 2021, however it was again high this year (only 2020 has seen a larger range in study plot counts and a higher standard deviation). A 2022 average of 24 apparently occupied sites matched last year and a 2006-2021 mean of 23.69 ±sd 3.24, but was five down on the 2017 record and down on the 2013-2021 mean (25.78 ±sd 1.86). The mean total at Little Bay was 12, this a plot where the number of occupied ledges has declined from a high of 19 in 2013 to 18 in 2014 and 2017, 17 in 2015, 16 in 2016, 14 between 2018 and 2020 and 13

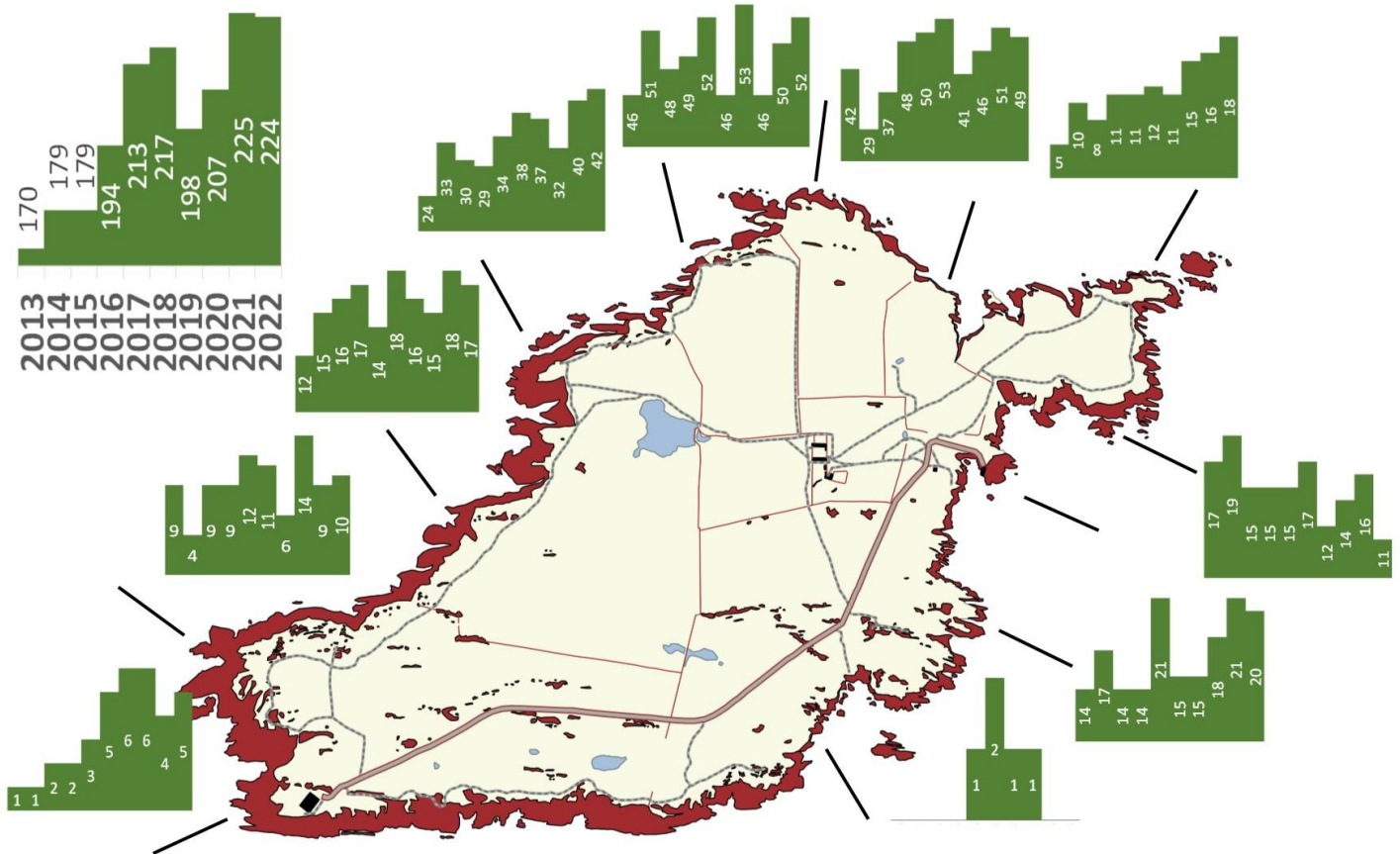
last year; quite why the total declined here is unclear, particularly given that the number of apparently occupied sites in the area which includes this plot increased by two to a total one down on a 2019 high (see map below). The Middlerock mean remained at seven, this matching last year's record, and the Guillemot Cliff mean remained at five, this matching that logged in all but one year between 2014 and 2021. Up until the 2017 season, only these three plots had contained Fulmars, however a hollow in the top third of the North Gully auk colony was occasionally occupied in three of the years between 2017 and 2020 (the overall mean was only changed in 2017); there were no Fulmars seen in the North Gully plot this year.

The total number of apparently occupied Fulmar sites recorded on Skokholm since breeding began in 1967 and the number within the study plots since 2006.



The whole Island counts undertaken between 27th May and 5th June yielded an average of 224 apparently occupied sites, this almost matching the 225 of last year and the second highest tally to date (a total 16.8% up on a 2012-2021 mean of 191.80 ±sd 26.62). Nevertheless there was a decline in numbers in four of the coastal sections, with one fewer site noted between Purple Cove and Twinlet, one fewer site in Hog Bay and two fewer sites between Far and Smith's Bays. There was an average of five fewer sites at Peter's Bay, the total being the lowest for over a decade and perhaps in some way connected to the poor productivity regularly recorded in this area (see below). Counts in the vicinity of the Quarry and Head Bay, between Wardens' Rest and the Bluffs and between Little Bay and Little Bay Point were all up, but down on those logged previously. There were two more sites both to the north of the Neck and between the Dents and the Jogs, this leading to new highs for these areas (for a third consecutive year at the former site and for a second consecutive year at the latter). The 2022 whole Island count includes approximately 40 pairs which would be difficult or impossible to see from the Island itself (birds seen from a boat to the west of North Gully, in Little Bay, on the Little Neck and in hidden crevices between Smith's Bay and Little Bay Point); the drop in numbers observed between 2006 and 2012 may perhaps thus be linked to a lack of boat access, although the study plots broadly mirrored the dip in the Island total. The proportion of the Island total made up of study plot birds remained at 10.7% this year; this is 19.5% down on the 2012-2021 mean (13.3% ±sd 1.7), matched the lowest recorded since the plots were begun and is probably an indication that the plots are not representative of the Island as a whole (perhaps due to a lack of space for expansion, although up to seven more pairs have been resident in Little Bay previously). The study plots are nevertheless still useful as they give an indication as to how the number of occupied ledges varies during the whole Island count period; they thus serve as a reminder that the population could be somewhat different to that predicted during a comparatively low number of visits, particularly this year when the range of plot counts was the second highest this decade.

The distribution of apparently occupied Fulmar sites 2013-2022.

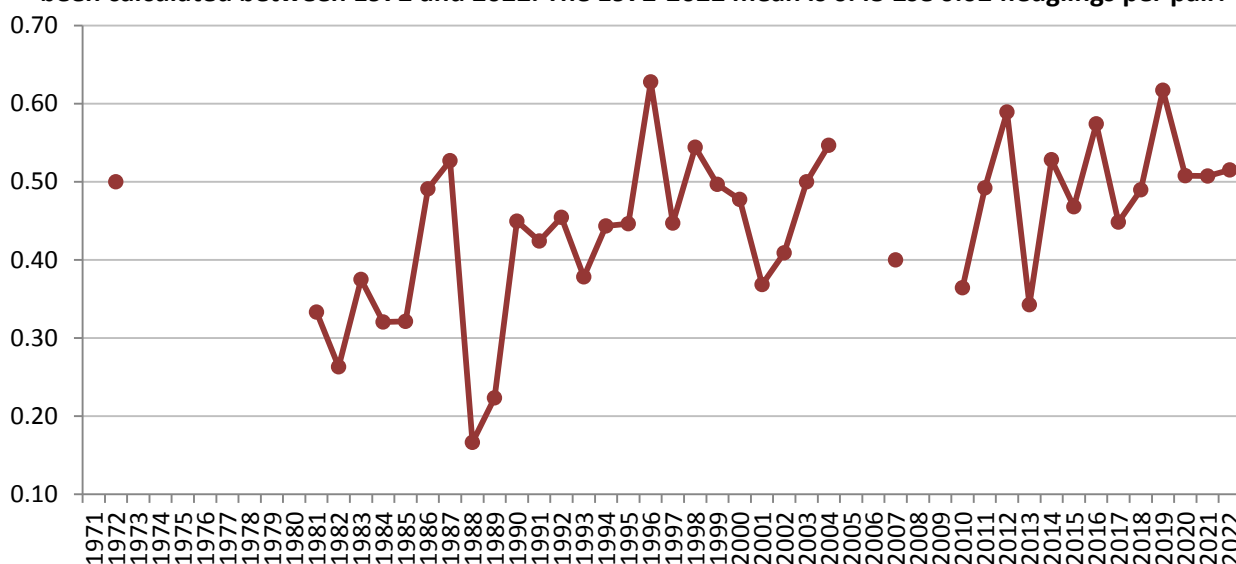


From 14th May, 66 incubating adults were selected for productivity monitoring (ten at Twinlet, 11 at North Gully and the Dents, 15 in Little Bay, 14 on Little Bay Point, seven at Rat Bay and nine at Peter’s Bay); birds seen with eggs or those apparently incubating for ten consecutive days were included in the sample (thus more birds were initially monitored but were soon discovered not to be incubating). An egg at Little Bay Point was abandoned within 24 hours of it being laid, one at Peter’s Bay went missing after approximately 11 days and six attempts failed after between 14 and 22 days (all ledges were found to be empty with the exception of an abandoned egg at the Dents). There were further egg stage failures after 32 and 34 days at Little Bay and five further failures at late egg stage. An additional 13 failures became apparent at the time when the eggs of neighbouring pairs were hatching, however the nest sites were found to be empty; none of these sites were seen to contain abandoned eggs, hatched eggshell or dead chicks (the contents were thus removed by either the parents, by other Fulmars visiting abandoned ledges, by predators or by scavengers). Although a chick was not seen, a ledge at Little Bay Point contained sufficient down to suggest that a bird had hatched successfully, another chick went missing within a week of hatching and one at Little Bay Point went missing at under ten days (three adults were present on the ledge when the absence was discovered). The only larger chick stage failure recorded this year occurred at Little Bay where a bird disappeared at between 26 and 31 days old.

Of the 66 monitored breeding attempts, 34 (51.52%) were successful; a productivity estimate of 0.52 fledglings per pair is 15.6% up on the post-1972 average of 0.45 ±se 0.02 and fractionally up on a 2012-2021 average of 0.51 ±se 0.02 (although it is down on four of the last ten years). The last nine years have seen productivity above the long-term average, with a 2013 estimate of 0.34 fledglings per pair the last to fall below the mean. An above average productivity estimate, coupled with the second highest number of apparently occupied sites on record, leads to a predicted 115 Skokholm fledglings in 2022; this is the second highest predicted total to date, only down on the 122 of 2019

(when there were only 198 apparently occupied sites but monitored productivity was 0.62 fledglings per pair). Poor productivity at Peter’s Bay in seven of the years between 2013 and 2021 influenced the overall estimates; Peter’s Bay productivity in 2013 was 0.06 (compared with an overall figure of 0.34), in 2014 it was 0.33 (0.53 overall), in 2015 it was 0.18 (0.47 overall), in 2017 it was 0.31 (0.45 overall), in 2018 it was 0.36 (0.49 overall), in 2020 it was 0.33 (0.51 overall) and in 2021 it was 0.30 (0.51 overall). The 2016 season saw 0.54 fledglings per pair, a total virtually identical to the overall value of 0.57 and 2019 saw 0.60 fledglings per pair, a total virtually identical to the overall value of 0.62. The reason for this near annual discrepancy is still unclear, as is what linked the more successful 2016 and 2019 seasons; neither environmental factors, predation pressure nor the behaviour of the birds themselves have been obviously different at this site. Five of the nine pairs monitored at Peter’s Bay failed this year; a productivity value of 0.44 fledglings per pair was again down on the mean, but was the third highest observed at Peter’s Bay this decade and was better than that witnessed at North Gully and the Dents (where 11 pairs fledged four (0.36)).

Fulmar productivity (total number of fledged chicks per monitored pair) in each year that it has been calculated between 1972 and 2022. The 1972-2022 mean is 0.45 ±se 0.02 fledglings per pair.



It is likely that the larger Fulmar population of recent years will have affected other species; observations during the last few years have included both adult and young Herring Gulls oiled by nesting Fulmars, adult Fulmars sat on Herring Gull nests, Razorbill adults and chicks evicted from ledges by prospecting birds, an oiled juvenile Peregrine and what was probably a Raven oiled so extensively that it led to the failure of a nest attempt. Intraspecific interactions have also been witnessed; heavily oiled adults are noted on occasion, whilst two chick stage failures and at least two egg stage failures have been attributed to aggressive neighbours (the eggs were lost prior to the whole Island census). There were no similar observations this year.

The first two fledglings of the year had departed natal ledges at the Bluffs and Twinlet by 20th August, this two days earlier than the first of last year and one day earlier than the 2013-2021 first fledgling mean (the earliest during this period had departed on the 18th in 2019 and the latest on the 25th in 2013). The first two study plot fledglings left ledges at Little Bay and Little Bay Point on 22nd August, this on the same date as the first of last year and one day later than the 2014-2021 mean. All of the remaining 32 productivity plot fledglings departed over the following 15 days; the first 25% had fledged by 26th August (the same date as the 2014-2021 mean), 50% had departed by 29th August (the same date as the 2014-2021 mean) and 75% had departed by 3rd September (two days later than the 2014-2021 mean). The last had left Little Bay Point by 6th September, this two days earlier than the 2014-2021 mean (the earliest last fledgling during this period had departed by 3rd September in 2017, the latest by 22nd September last year); interestingly the late 2021 fledgling was not wholly the result of a late hatching, indeed it had first been seen as a hatchling on 20th July meaning that it was on its natal ledge for 64 days (this a period typically closer to 51 days). The number of birds around the cliffs again dropped rapidly as the fledglings departed, with September highs of 37 on the 5th and 55 on the 8th. The last youngster to be seen ashore was present on 6th September, this matching a bird in 2017 as the earliest last bird of the last nine years; the latest bird to be seen ashore between 2014 and 2021 was present on the 21st last year, with the 2014-2021 mean being 12th September. There were September sightings of birds at sea on 13 further dates from the 9th, with a high of 11 on the 10th and no more than two on six dates from the 17th.



Seawatching during October produced only a single on the 22nd, two on the 25th and four on the 28th and 30th; a bird-days total of 11 was down on that logged in each October between 2013 and 2017

(including a record 185 in the former year) and the 79 of 2020, but was close to the totals logged in 2018, 2019 and 2021. There were November records on all but six dates, although numbers varied; there were only two three-figure daycounts during the month (well down on a record 12 logged last year), with 109 on the 16th and 138 on the 20th (this the third lowest November peak of the last decade and down on a record 283 in 2019), whilst lows of between one and 26 were noted on 13 dates. A November bird-days total of 927 was the lowest of the last four years (staff were present throughout the month in every year, with 2006 bird-days noted in 2019, 2222 in 2020 and a record 2683 last year). Seven birds returned to the cliffs above the Jogs on 6th November, these three days later than the first of last year but one day earlier than the 2013-2021 mean; three ashore on the 3rd in 2021 was the earliest landfall during this period, with one on the 11th in 2015 the latest. There were birds ashore on 12 further November dates (11 fewer than last year), including highs of 26 on the 16th, 25 on the 19th and 30 on the 22nd (the peak was well down on a 2021 high of 180 on the 19th and a record 189 on the 28th in 2019). Although staff did not depart until the 10th, the only December records were of ten on the 1st, two on the 2nd, one on the 7th and nine on the 9th (all 22 of which were at sea); a peak December daycount of 173 was logged in 2019 and a high of 657 bird-days were amassed by the 7th in 2020.

Cory's Shearwater *Calonectris borealis*
Vagrant six previous records

Aderyn Drycin Cory

One present off the Lighthouse between 0831hrs and 0837hrs on 25th July landed on the sea twice before heading west (RDB, GE); the only other July record was on the evening of the 10th in 2001. One west at 1750hrs on 20th August made this the third year with two sightings (LM). The only other Island records are of singles on the 6th and 15th August 1989, singles on the 17th and 25th September 1995 and one on 1st August 2014. One reported on 17th August 1979 was not accepted during the 2020 Welsh Birds Rarities Committee review as it was seemingly not submitted at the time, a bird included in the 1989 Annual Report for 10th September was not accepted with the other two records in that year and a second bird on 17th September 1995 was considered no longer acceptable in 1999.

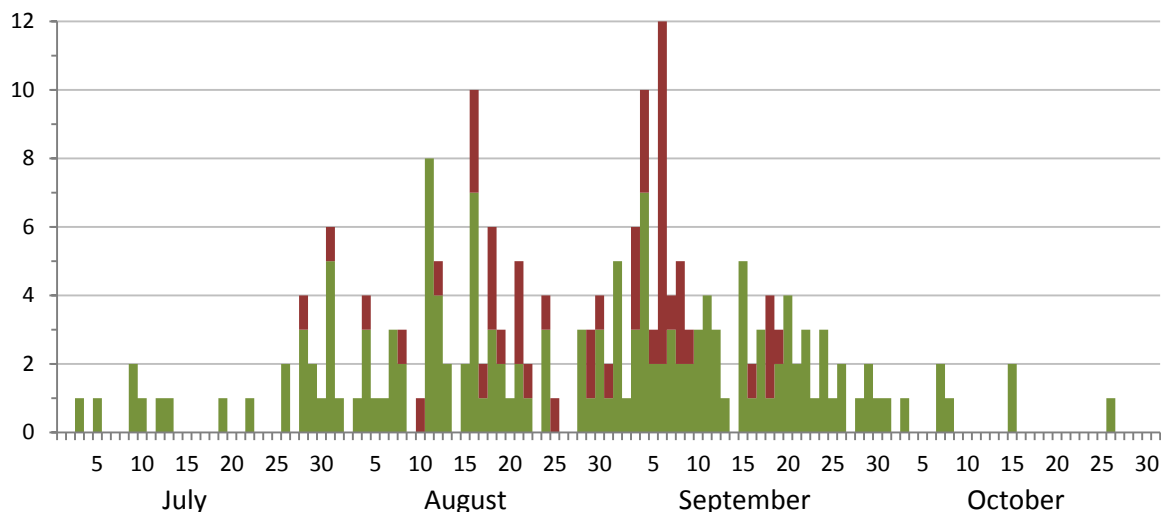
Sooty Shearwater *Ardenna grisea*

Aderyn Drycin Du

Scarce recorded most autumns from July onwards and occasionally Uncommon
Earliest 3rd July 1968 (18th August 2022) **Latest** 26th October 1994

One west at 1940hrs on 18th August was the only record this year, this ten days later than the only 2021 bird and making 2022 the eighth consecutive year and 43rd year with a sighting (RDB, GE).

The total number of Sooty Shearwater bird-days to have been logged on each autumn date. Records shaded maroon have been made since 2010.



A lone bird-day was down on a 2013-2021 mean of 3.0, this a period which saw highs of five in 2016, 2018 and 2020 and of seven in 2019 (the all-time bird-day highs are the 19 of 1987, the 16 of 1989 and the 22 of 2011). Indeed this southern hemisphere breeder remains a surprisingly scarce Skokholm species, now with 24 bird-days logged in July, 78 in August, 97 in September (including a record daycount of ten on the 6th in 2011) and eight in October.

Manx Shearwater *Puffinus puffinus*

Aderyn Drycin Manaw

Very Abundant Breeder a 2018 census estimated 88,945 pairs (95% CI: 21,892). 2012-13 est. 63,980 743 trapped (including 128 pulli), 703 retrapped, 3 controls
1928-1976: 171,509 trapped, 2012-2021: 14,682 trapped, 6149 retrapped, 28 controls

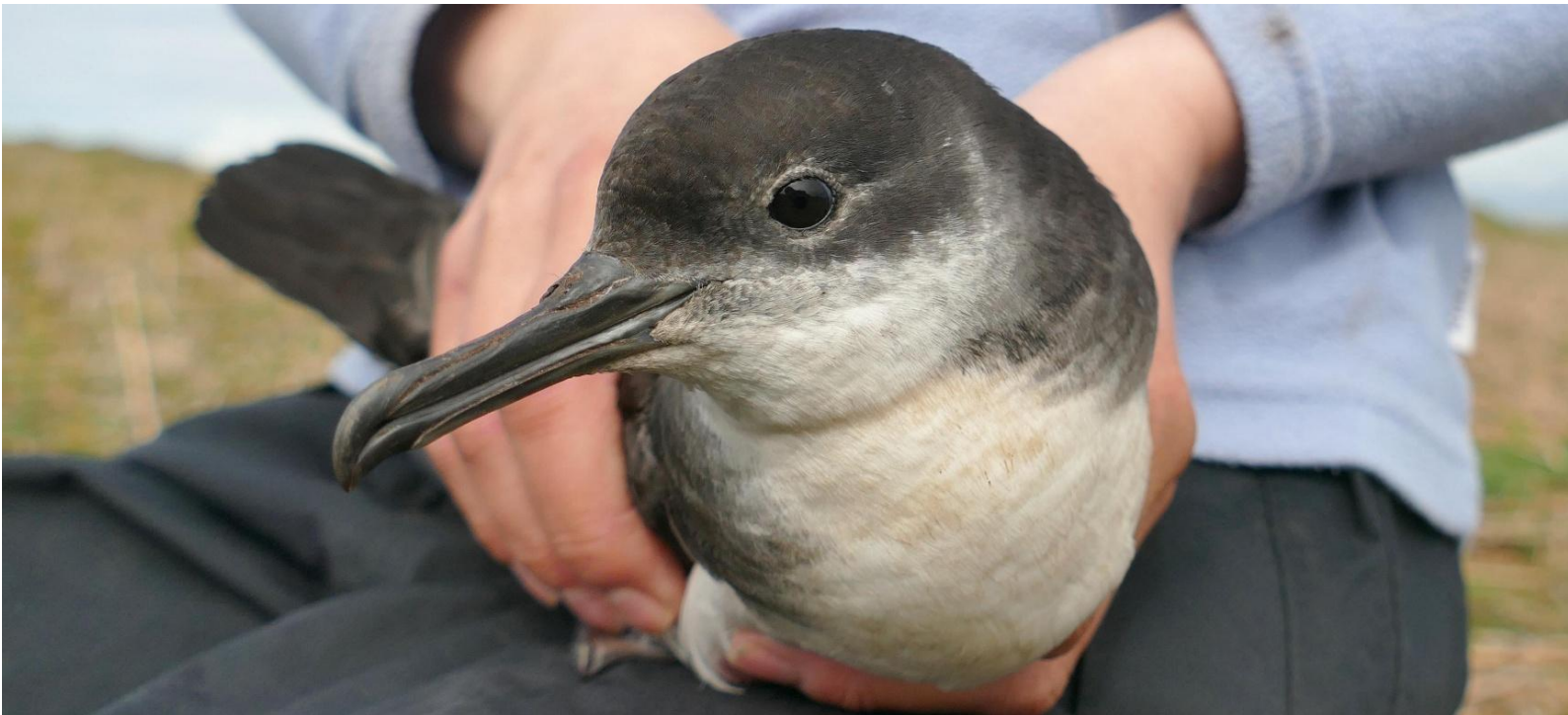
A minimum of two calling after dark on 6th March was the earliest record of birds over the Island since singles on 27th February and 4th March 2000 (the only other earlier record this century is of one off the Lighthouse on 3rd March 2019). One eaten on the night of the 9th was the earliest Great Black-backed Gull casualty on record. Although nocturnal counts increased as the month progressed, it was not until 22nd March that birds were heard calling from burrows during the day (two days earlier than the first of last year) and it was on 25th March that the first 20 were seen from the Lighthouse (two weeks later than the first 150 of last year). Heavy rain during mid-April resulted in several birds diurnally departing flooding burrows and a 2013 ringed adult emerged into the Courtyard. As in the majority of previous years, seawatching during April resulted in some surprisingly small counts; there were highs of 5200 on the 18th and 980 on the 21st, the peak down on a 2013-2021 mean of 6977 (a daycount of 21,600, recorded during Storm Hannah in 2019, is the highest to date in April). Peak May daycounts of 10,000 on the 17th and 12,550 on the 18th were made during a period of calm to moderate winds, although a large swell suggested rough pelagic conditions; the 2013-2021 mean May peak is 13,695, with a high of 28,200 counted during a southwesterly gale in 2018. June daycounts were all of 5000 or less, these the lowest since 2018 and well down on a mean 2013-2021 maximum of 19,602 (there were highs during this period of 24,750 in 2020 and 72,000 during heavy rain and a near gale in 2019). Although seawatching effort increases in July, highs of 10,500 during gentle southwesterlies on the 19th, 22,000 during moderate southerlies on the 24th and 8500 on a calm 29th reflected a definite increase in the number of birds lingering offshore; the 2013-2021 peak July daycount mean is 21,978, with a record 45,016 logged in 2018. A very light easterly on 14th August saw a minimum of 27,500 over a flat sea, this the highest daycount of the year but down on a 2013-2021 mean August high of 41,327 and the all-time high of 87,520 logged in August 2020.

The number of Manx Shearwaters breeding in the study plots encountered the following year and the number to have been found by 2022 (which were actually alive the following year).

	Birds found the next year		Birds found by 2022	
Birds breeding in 2021	283 of 316	89.56%	283 of 316	89.56%
Birds breeding in 2020	253 of 328	77.13%	272 of 328	82.93%
Birds breeding in 2019	245 of 308	79.55%	255 of 308	82.79%
Birds breeding in 2018	247 of 296	83.45%	268 of 296	90.54%
Birds breeding in 2017	236 of 309	76.38%	253 of 309	81.88%
Birds breeding in 2016	238 of 287	82.93%	268 of 287	93.38%
Birds breeding in 2015	230 of 283	81.27%	248 of 283	87.63%
Birds breeding in 2014	215 of 278	77.34%	239 of 278	85.97%
Birds breeding in 2013	116 of 141	82.27%	126 of 141	89.36%

Three areas of study burrows, that is to say natural burrows where a paving slab covers a manmade access point to the nest chamber, were established in 2012 and 2013 (see map in introduction); all birds found within the burrows are ringed. Of 316 breeding adults bearing rings in 2021, 283 were found this year (89.56%); this was the highest next-year return rate of the last nine years, up on a 2014-2021 mean of 80.04% (only 76.38% of 2017 birds were encountered in 2018, this following the

ravages of Storm Ophelia which destroyed several study burrows). The next-year return rate is not an accurate estimate of survival as there is no searching for marked birds in neighbouring, non-study burrows; the number of birds known to be alive will thus be revised upwards as they are discovered in future years. For example 82.27% of 2013 adults were encountered in 2014, but we now know that at least 89.36% of birds were alive (see table above). This year saw 19 2020 breeders encountered which were not logged last year, two which had not been seen since 2019, three which had not been seen since 2018 and singles which had not been seen since 2017, 2016, 2015 and 2014. Given that we are still encountering birds not logged for over seven years, it is likely that many of the figures given below will again be revised upwards in the future; nevertheless a 2014-2019 mean return rate of 88.13% is already higher than that reported on Skomer Island.



There is typically a discrepancy in return rates dependent on the breeding success of the previous year; of 253 birds successful with their 2021 breeding attempt, 232 were found in 2022 (91.70%), whereas only 51 of 63 unsuccessful birds returned (80.95%). Of 33 birds which went missing in 2022, 12 (36.36%) had failed with their 2021 breeding attempt. Assuming that not all of the failures were due to the death of a bird, it could be concluded that some of the missing birds have rather opted for more suitable nesting sites. It was noted in 2017 that Storm Ophelia had caused considerable damage to the Lighthouse Study Plot, a destruction of burrows which no doubt led, at least in part, to the reduced number of recaptures in 2018; although 17 of the missing birds have been found subsequently, the return rate of 2017 breeders remains the lowest of the last seven years (81.88%). Ultimately the study burrows give a better insight into burrow fidelity and show an interesting correlation with the stability of the colony; in the fragile Lighthouse colony 15 of 82 marked birds were in the same burrow this year as that in which they bred in 2013 (18.3%), whereas in the more stable Quarry Track and Crab Bay colonies four of 18 birds (22.2%) and 18 of 41 birds (43.9%) were still in their 2013 burrows respectively. The fragile nature of the Lighthouse colony, along with the high density of burrowing birds and occasional storm events, sees the structure of many breeding tunnels change annually; clearly some lose their suitability as nest sites. Of the 28 birds encountered in all ten years between 2013 and 2022, five have fledged a chick in every year (EY41695 and EY41711 in Crab Bay burrow 8, EY41685 and EY41754 in Quarry Track burrow 6 and EY41636 in Lighthouse burrow 1). Of the remaining 23 birds, two have fledged young on 70% of occasions, ten have fledged young on 80% of occasions and 11 have fledged young on 90% of occasions; that the

vast majority of these birds are exhibiting above average productivity is no doubt reflected in their continued use of the same stable burrows.

There were six adults encountered in the Lighthouse Plot which had been ringed as chicks, this taking the total number of individuals ringed as plot chicks and subsequently found in the plots to 12. The only addition to this list was FB42950 which was ringed as a chick in 2015 and bred successfully this year, whilst FB46001, ringed as a chick in the same year, bred unsuccessfully having previously been found as a non-breeder in 2020 (it was not encountered in 2021). Of these 12 birds, five were first found to be breeding after seven years, three were first found breeding after six years, three were first found breeding after five years and FB46145 bred successfully in 2021 at just four years of age (just two metres from its natal burrow); the latter was not seen this year.

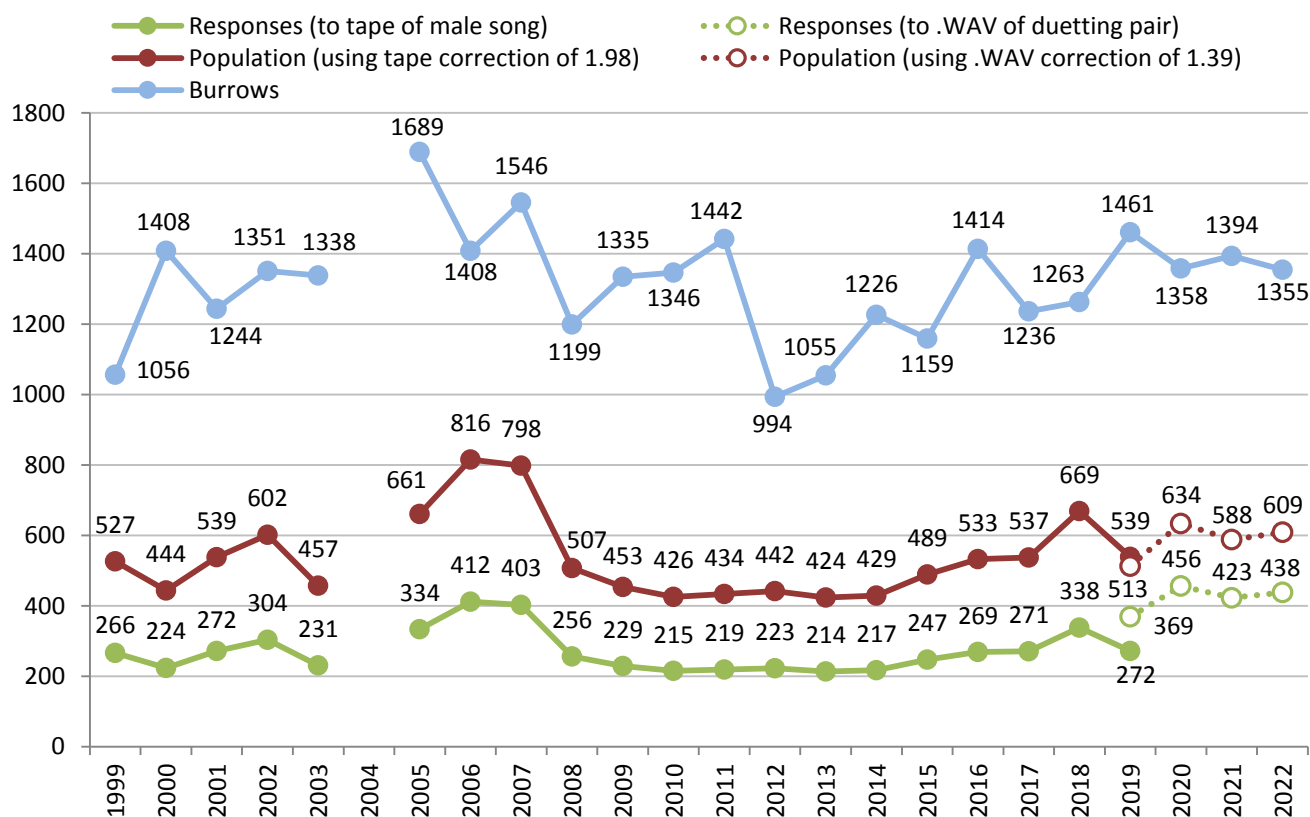


The study burrows facilitate an accurate assessment of breeding success on Skokholm. There were 149 burrows at the Lighthouse occupied by a pair which produced an egg, 11 burrows contained an egg along the Quarry Track and 25 pairs produced an egg inland of Crab Bay. There were thus 185 burrows this year from which productivity could be assessed (this was a new high, up on a 2014-2021 mean of 156.5). At the Lighthouse 20 definitely failed at egg stage; three eggs were found alone in burrows where birds incubating different eggs were resident (two of these attempts also failed at egg stage, perhaps due to aggressive encounters when birds attempted to return to usurped eggs), four abandoned eggs were not found to be incubated and a further 11 eggs were abandoned by known pairs (six of which had been damaged during the incubation period). An additional 24 pairs failed at egg or very small chick stage (but neither eggs nor dead chicks were found). A chick with a 19mm wing chord was found dead, a tiny chick yet to be measured went missing and two chicks were dug out by Great Black-backed Gulls (one of which had a wing chord in excess of 76mm). There were four egg stage failures along the Quarry Track, three of which were damaged during the incubation period and one of which was deposited in a burrow already occupied by a pair which went on to fledge a chick. Near Crab Bay an egg went missing and one was damaged during incubation, three pairs failed at egg or very small chick stage (but neither eggs nor dead chicks were found) and a chick seemingly starved (it died with a wing of 135mm). A chick is typically assumed to be of fledging size when its wing length is in excess of 200mm; although not ready to fledge, we have shown that chicks larger than this may swap to a different burrow and therefore go undetected. However restrictions imposed due to this year's highly pathogenic avian influenza outbreak meant that some young were assumed to be fledged when wing chords had reached as little as 133mm (although a check of 50 chicks allowed under an exemption to the restrictions revealed that all had reached fledging size). In total 127 were believed to have attained fledging size.

Productivity was thus 0.69 fledging-sized chicks per breeding pair (68.65% of pairs produced a fledging-sized chick); productivity at the Lighthouse was 0.68 fledglings per pair, along the Quarry Track it was 0.64 and near Crab Bay it was 0.76. The combined 2022 productivity estimate was down on the 0.79 of last year and on a 2013-2021 mean of 0.71 ±se 0.02; there have been higher estimates in five of these nine years, with a peak of 0.80 in 2017, whilst the low is the 0.63 recorded in 2014. It should be noted that this is the number of chicks which attained fledging size and does not reflect the number of fledglings which are lost to Great Black-backed Gulls (and to a lesser extent corvids) as they exercise their flight muscles and make their first flights. Having said that, none of the 127 fledglings ringed in the study plots were found eaten this year (none of 127 were found last year, one of 115 was found in both 2020 and 2019, none of 114 were found in 2018 and two of 135 were found eaten in 2017).

Crab Bay burrow 19 was found to be empty on 4th May and on 12th May contained EZ53220 and EZ86306 but no egg (the two birds which bred successfully in this burrow in each year between 2018 and 2021, 2017 being the last year in which an individual other than these two was encountered here). On 15th May EZ86306 was found with a damaged egg attached to the feathers surrounding its brood patch. The burrow was empty on the 19th, 23rd, 26th and 30th May, but on 3rd June both adults were present, as was a warm egg. Although it is possible that the original egg was produced by an additional adult, it appeared certain that the broken egg was being incubated after it was damaged. It would seem much more plausible that the second egg was a re-lay, something rarely reported and never proven conclusively in this species. The second egg went on to hatch, on 4th August the chick had attained a wing chord of 36mm and on 2nd September it had reached 149mm.

The total number of burrows, responses (to tape 1999-2019 and to .WAV 2019-2022) and the corrected population estimates for the 7000m² sampled annually since 1999.



A Manx Shearwater ringing transect was established in 2013. It was defined as the track between the Observatory and the Lighthouse and the length of a landing net to either side; ringers were not to deviate from the track. The aim was to see whether, by ringing birds on the surface in this defined

area, the retrap data could be interpreted to provide large sample size estimates of adult survival and the recruitment of juveniles to the breeding population. This is still a project in its infancy which is producing a substantial amount of data, data which is currently difficult to examine in any detail as the British Trust for Ornithology changes its recording system from IPMR to DemOn (the latter of which still lacks the reporting capabilities of the former). Of the 10,561 birds ringed along the transect between 2013 and 2022 (4263 of which were ringed as fledglings), 2564 have been retrapped or found dead on Skokholm subsequently (with these recaptured individuals accounting for 4261 separate handlings).

In 1999 nine study areas, each a circle of 1000 square metres, were established to allow a reasonable subset of the Skokholm Manx Shearwater population to be monitored from year to year. Two of these plots were discontinued, one in 2006 and one in 2007, as the survey work was disturbing the Lesser Black-backed Gull colonies. New plots were established in 2006 and 2015 to maintain a good sample size, however only seven plots have been studied for a full 23 years. On each annual visit the number of burrows within each area is counted, as is the number of burrows from which a response is elicited when a recording is played down them. Between 1999 and 2019 the recording was of a singing male made on a cassette tape, the standard correction factor of 1.98 then being used to estimate the population within an area (see the 2013 and 2014 Seabird Reports for checking of the correction factor). The latest whole Island census utilised a .WAV recording of a duetting pair (as opposed to the male only cassette) as it has been shown that a dual-sex recording achieves a higher and less variable response rate, the correction factor thus dropping to 1.39 (Brown and Eagle, 2018; Perkins *et al.*, 2017). Bearing this in mind, along with the fact that the cassettes and playback devices are becoming harder to maintain and replace, it was decided in 2019 that it was time to begin the process of changing the annual plot methodology from the use of cassettes to the use of .WAV playback. This changeover will occur over the course of several years to ensure that the data collected over the previous 20 years remains comparable with that collected in the future.



This year saw each of the nine plots visited between the 1st and 11th June, a period lengthened by regular rain and occasional strong winds. The 7000m² (seven plots) monitored since 1999 contained 39 fewer burrows than last year, the total being the fifth highest of the last ten years and 3.1% up on

the 1999-2021 mean (1314.64 ±sd 164.24). It is likely that this reflects a genuine change in numbers as opposed to counting inaccuracies; two separate visits to all nine plots in 2019 produced exceedingly similar burrow counts each time, with the mean difference between visits being 4.56 burrows, the largest difference between visits being 11 burrows and the overall totals differing by just nine (1992 burrows on one visit and 2001 on the next). A decline in the number of burrows present was also seen at the plot started in 2006, where there were 22 fewer, however there were 12 more at the plot started in 2015. It is not only digging by Manx Shearwaters which alters the number of burrows present; the weather may both close burrows and cause additional entrance holes to open (with both very dry and very wet periods shaping the landscape), whilst digging by Rabbits, Great Black-backed Gulls and in some areas by Puffins will also affect burrow counts.

There were 438 responses elicited in the original 7000m² using the .WAV recording, this 15 (3.5%) more than the 2021 total. However there were declines in six of the areas, with between one and five fewer responses from North Plain, the Neck and to the south of North Pond, ten fewer at Gull Field, 12 fewer to the north of Spy Rock and 19 fewer to the east of the Dip. These were offset by a significant increase of 66 responses along the Quarry Track. Using the Skokholm specific .WAV correction of 1.39 predicts that there were 609 occupied burrows across the seven plots (see chart above). Any comparison with the numbers predicted using the male only tape playback should clearly be a cautious one, although given that the 2019 .WAV population estimate was below the 2019 tape estimate, it could perhaps be concluded that we are not overestimating the population when using the .WAV correction any more than when using the tape correction. It would appear that the population in this area remains similar to, or above, that seen in most previous years. The 1000m² plot visited since 2006 produced 14 more responses than last year. The 710 occupied burrows predicted across the 8000m² using the .WAV recording was up on the 670 of last year and the 2006-2019 tape playback mean of 611.36 ±sd 147.22, indeed it was a total only down on those of 2006, 2007, 2018 and 2020 (although this again relies on a cautious comparison of .WAV and tape playback results). There were 11 more responses to the .WAV recording at the Table plot first visited in 2015, a predicted population of 61 being down on the 2015-2019 tape playback mean of 69.40 ±sd 12.52 but up on the 2019-2021 .WAV mean of 57.33 ±sd 12.06. It would appear that the population can still be cautiously regarded as stable, although the observed variance in the percentage of birds which respond to the playback on any given date highlights the degree of error in these numbers (see Brown and Eagle, 2013, 2014 and 2019); that the number of pairs producing eggs in the accessible study burrows is stable or increasing supports this conclusion (see above).

The estimated number of pairs in the 8000 square metres sampled 2006-2022.

2006	2007	2008	2009	2010	2011	2012	2013	2014
869	954	620	525	499	495	501	521	476
2015	2016	2017	2018	2019	2020	2021	2022	
533	588	584	739	655	730	670	710	

In the period between 1957 and 1997 the number of dead Manx Shearwaters located on Skokholm was recorded in the daily census log. The corpses were either stored or thrown into the sea to ensure that birds were not counted more than once. The practice was stopped in 1997 as it was felt that the removal of carcasses would be impacting the species reliant on this food source. However, with a Great Black-backed Gull population more than twice the size it was when the counting was stopped, the study was begun again in 2014. The corpses are marked by neatly slicing the flight feathers of both wings with a pair of scissors (using scissors has the added advantage that it makes it easier to check for rings in tightly inverted bodies). Although the vast majority of Manx Shearwater kills are made by Great Black-backed Gulls, a small number are also taken by Peregrines and Ravens (Sparrowhawks eating puffinosised youngsters in both 2019 and this year had perhaps also made the kills, whilst three Crow were seen tackling a live bird on 19th May this year).

The number of Manx Shearwater corpses found between 1957 and 1983 from Gynn (1984) plus data from 1984 to 1991 and 2014 to 2022. The number of Great Black-backed Gull breeding pairs is also included for each year.

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Corpses	2465	1886	924	1354	1089	640	688	1059	857	946	816
GBBGU	27	30	30	10	12	5	7	12	8	10	10
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Corpses	841	829	304	606	1350	1082	869	1051	1266	1913	1820
GBBGU	3	14	11	16	12	12	7	7	7	6	10
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Corpses	1153	1024	1080	1479	1373	1316	1571	1068	1759	1760	1694
GBBGU	10	10	11	16	11	14	11	10	11	12	15
	1990	1991	2014	2015	2016	2017	2018	2019	2020	2021	2022
Corpses	1915	2703	4271	4123	3782	3449	3270	2707	4091	3237	2902
GBBGU	16	20	84	83	93	93	93	86	83	80	78



As might be expected with a larger Great Black-backed Gull breeding population, the number of corpses marked over the last nine years has been the most ever. However the average number of corpses per Great Black-backed Gull pair was only 37.2 in 2022; this has only been lower in six previous years (including three of the last six), with all-time lows of 30.8 in 1959 and 27.6 in 1970 (there were highs of 280.3 in 1968, 318.8 in 1977 and 182.0 in 1978). One possible explanation for this reduction in kills per pair is that the gulls were routinely disturbed between 1949 and 1985 which, whilst reducing the number of breeding pairs, probably inflated the non-breeding flock (which would still be taking shearwaters). The number of adults found dead was very similar to last year, with a total of 2104 being 1.3% down on that of 2021 and 11.4% down on the 2014-2021 mean (2373.63 \pm sd 473.38). Factors which may impact predation rates are the number of Great Black-backed Gulls present (and the number specialising in shearwaters (Westerberg *et al.*, 2018)), vegetation heights, the complexities of the weather and moon cycle influencing hunting, the availability of food away from the Island and perhaps the size of the Rabbit population (Rabbits being the other main prey item on the Island). The prevalence of puffinosis may well be affecting juvenile losses (see recent Skokholm Seabird Reports). It is often suggested that the majority of eaten shearwaters are younger, less experienced non-breeders, those which spend longer on the surface as they prospect for burrows and mates. However the 49 ringed birds found predated in

2022 again do little to support this theory (see below table and the 2018-2021 Seabird Reports); although several more years of ringing data would be helpful and there is no information on the breeding status of those eaten (so they could perhaps still have been unpaired or burrowless birds spending longer on the surface), there is little evidence that most eaten birds are younger.

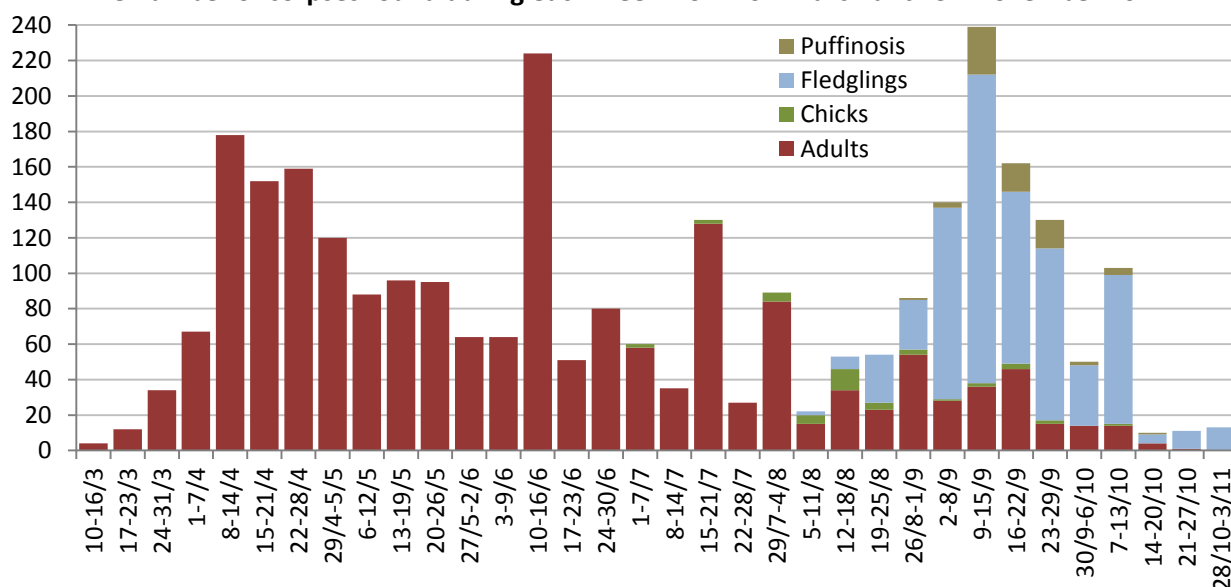
The number of adult and juvenile Manx Shearwater corpses found each year since 2014, along with the number of untouched puffinosised bodies.

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Adults	2931	2702	2299	2071	2228	1618	3008	2132	2104
Juveniles	1287	1324	1398	1289	971	1043	970	967	728
Puffinosis	53	97	85	89	71	46	113	138	70
Total	4271	4123	3782	3449	3270	2707	4091	3237	2902

When the 49 ringed shearwaters found eaten in 2022 were marked. Note that the pre-2011 birds were controls ringed elsewhere and that intensive ringing on Skokholm recommenced in 2013.

Adult 2003	Adult 2009	Adult 2011	Adult 2013	Adult 2014	Adult 2015	Fledged 2015	Adult 2016
1	1	1	6	5	5	1	2
Adult 2017	Pullus 2017	Adult 2018	Fledged 2018	Adult 2019	Fledged 2019	Pullus 2020	Adult 2021
3	1	2	1	10	2	1	7

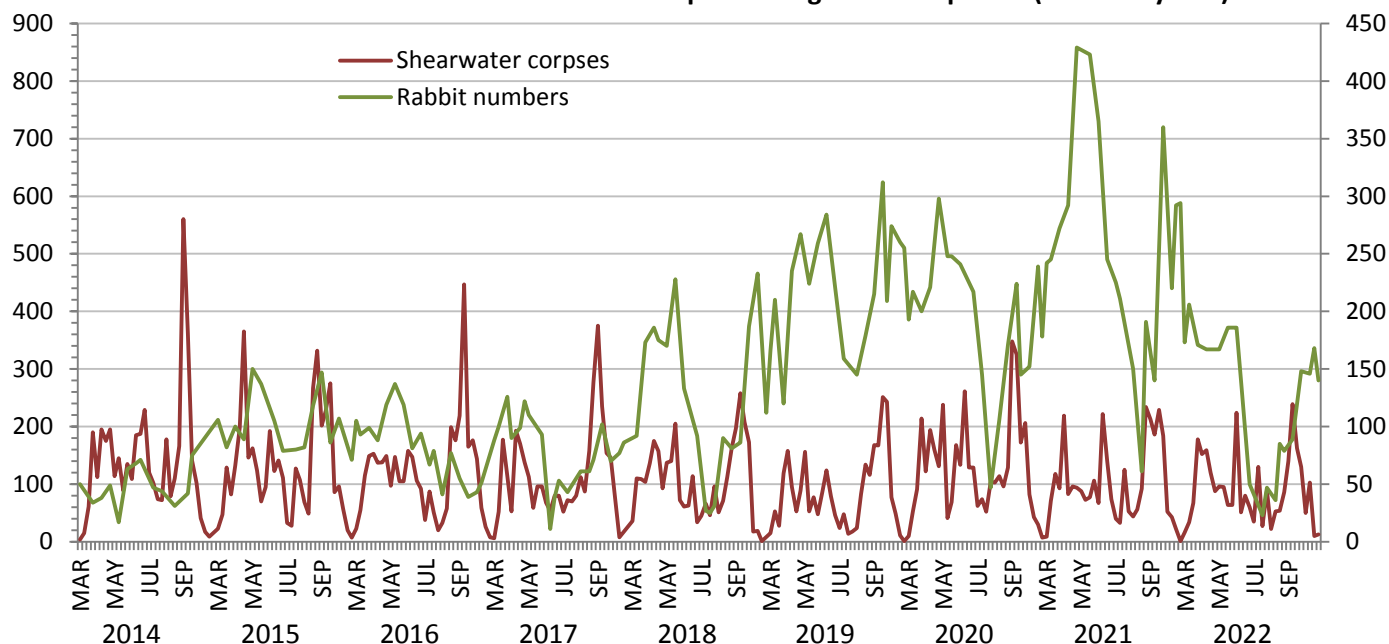
The number of corpses found during each week from 10th March until 3rd November 2022.



The data from the last nine years lends some support to the theory that Rabbit numbers influence Manx Shearwater predation (by providing an alternative food source for the gulls). The North Plain Rabbit count was lowest in 2014, when shearwater mortality and the number of corpses per pair were at their highest. The Rabbit counts were at their highest in 2019 and 2021, the former the year with the fewest shearwater corpses and the lowest number of corpses per pair, the latter the year with the third fewest corpses found. This year saw the fourth highest Rabbit counts and the fourth lowest number of corpses per Great Black-backed Gull pair (albeit the second lowest corpse total of the last nine years). The 2020 data did not fit this pattern, with the highest number of adult Manx Shearwater corpses being found in a year with a high Rabbit population (although a COVID-19 dictated reduction in disturbance may have given the gulls longer to hunt). One potential issue with this comparison is that North Plain Rabbit counts are probably not representative of the whole Island, with the effects of Viral Haemorrhagic Disease seemingly differing in different parts of the

Island at the same time. It will be interesting to see if the next crash in Rabbit numbers coincides with an increase in Manx Shearwater carcasses.

The total number of Manx Shearwater carcasses found each week 2014-2022 and the number of Rabbits counted in the North Plain census plot during the same period (secondary axis).



There were 13 chick rearing adults in the Lighthouse Study Plot fitted with Techno Smart Axy-Trek data loggers (these weigh about ten grams and collect GPS and accelerometry data), with Oliver Padgett and his team from the Oxford Navigation Group fitting and retrieving devices from 22nd July to 8th August. The birds were from 13 separate nests, with the chicks at these sites and 11 control sites monitored to assess for any impacts caused by the tags. Previous studies have shown that birds during this period regularly visit the waters earmarked for the Erebus wind farm and similar future projects. The tracking results will be reported upon in due course.

The first fledgling to be encountered was along the Lighthouse Track on 19th August, this two days later than the first of last year but two days earlier than the 2013-2021 mean; the 2021 fledgling was the earliest recorded during this period, whilst two on the 27th in 2018 were the latest. The first fledgling showing signs of puffinosis was along the Lighthouse Track on the 25th, this five days earlier than the first of last year and four days earlier than the first of 2020. Puffinosis is a mysterious affliction which has been linked to the actions of a coronavirus, this leading to the development of conjunctivitis and blistered feet, further bacterial infection and problems with limb control (Nuttall and Harrap, 1982); it is typically fatal. A paper published on 7th December this year concludes that, rather than being the result of a virus, the bacterial infection may actually occur following prolonged exposure to caustic faecal ammonia which causes foot dermatitis, this similar to the Foot Pad Dermatitis seen in chickens (Esmonde *et al.*, 2022). Foot Pad Dermatitis occurs in chickens kept in poorly ventilated conditions, where respiration and excretion lead to high moisture levels which exacerbate the impact of faecal ammonia burns (Esmonde *et al.*, 2022). Puffinosis has long been associated with the damper areas of Skokholm, conditions which would lead to a similar build-up of moist ammonia. In an attempt to achieve a better understanding of how puffinosis is distributed across the Island during the course of the autumn and of how the number of infected individuals changes from year to year, a transect walked by Island staff over eight September nights was established in 2015 (the 2015 Seabird Report gives details of the route). The position of each fledgling is recorded using a GPS unit before they are inspected for signs of puffinosis. Restrictions put in place to limit the spread of any potential HPAI outbreak this year meant that birds could not

be adequately inspected, the puffinosis survey thus being suspended for 2022 (see the 2016-2021 Seabird Reports for the proportion of youngsters found showing signs each year and maps showing the distribution of both healthy and puffinosised fledglings). Although the vast majority of puffinosised birds on Skokholm are youngsters, on rare occasions adults also show symptoms (for example the bird found on 26th May this year (below photograph)).



The restrictions put in place in response to nearby HPAI outbreaks meant that the study burrows were not visited towards the end of the breeding season; the fledging dates given in recent reports were thus not available this year. Likewise birds were not handled on the surface, meaning that there were no late season records of confirmed adults (birds were not heard calling after 20th September). The 147 counted at sea on 28th September was the highest daycount ever logged this late in the year (423 on the 26th in 2021 is the latest higher count). There were seawatching records on all but two October dates to the 9th, with a high of nine in an hour on the 7th, whilst three juveniles were recorded after dark on the 11th and a partially downy youngster on the night of the 13th was the last to be seen ashore (a very freshly eaten, still partially downy, fledgling at Migration Rocks on 22nd November 2021 remains the latest youngster to date, eight days later than a live fledgling encountered in 2014). Up to six were logged at sea on three further October dates, whilst seawatching in November resulted in singles on four dates to the 9th, four on the 13th and seven on the 15th, the latter the highest daycount to be made so late in the season (a count of 11 on 3rd November 2015 is the latest higher count); there have been 21 later bird-days, including one on 1st December last year which is the latest.

Ringing recovery EA72648

Originally ringed as an adult, SHEARWATER TRANSECT, SKOKHOLM 16th July 2021

Recovered as an adult, NANT, BARDSEY ISLAND, GWYNEDD 30th June 2022

Finding condition Intentionally captured

Distance travelled 124km at 17 degrees (NNE)

Days since ringed 349

Ringing recovery EA73169

Originally ringed as a juvenile, SHEARWATER TRANSECT, SKOKHOLM 3rd September 2021

Recovered as an adult, PRAIA DO GUAECÁ, SÃO SEBASTIÃO, BRAZIL 13th September 2022

Finding condition Fresh but headless on beach (unknown *Procellariidae* sp.)

Distance travelled 9277km at 206 degrees (SSW)
Days since ringed 375

Ringing recovery EA73386

Originally ringed as a juvenile, SKOKHOLM 4th September 2021

Recovered as a juvenile, SAUCE GRANDE, BUENOS AIRES PROVINCE, ARGENTINA 22nd February 2022

Finding condition Fresh dead on beach following violent weather (unknown species)

Distance travelled 11,464km at 209 degrees (SSW)

Days since ringed 171

This is the farthest south a Skokholm ringed bird has been encountered since ringing recommenced. Perhaps surprisingly there have only been 31 Manx Shearwater ringed in Britain or Ireland and recovered in Argentina, this far fewer than in Brazil (283) but more than in Uruguay (26).



Ringing recovery EA73442

Originally ringed as a juvenile, SKOKHOLM 5th September 2021

Recovered as an adult, BARRA DOS COQUEIROS, STATE OF SERGIPE, BRAZIL 16th August 2022

Finding condition Moribund on beach, died in Sergipe Rehabilitation Centre

Distance travelled 7607km at 204 degrees (SSW)

Days since ringed 345

Additional to the three listed here, there have been 14 Skokholm ringed Manx Shearwaters found dead or moribund in South America since 2013; there was one in September 2014, two in November 2015, two in September and one in October 2016, one in September and one in October 2017, one in November 2018, one in March and one in November 2019, two in September 2020 and one in September 2021. They have all been found in Brazil, bar the November 2018 casualty found in Uruguay. Three have been found in their first winter, one in its second winter, one in at least its third winter, four in at least their fourth winter, one in at least its fifth winter, three in at least their sixth winter and one in at least its tenth winter.

Ringing recovery EZ17972

Originally ringed as a pullus, LIGHTHOUSE PLOT, SKOKHOLM 13th August 2016

Recovered as an adult, SKOMER ISLAND, PEMBROKESHIRE 30th April 2022

Finding condition Intentionally captured

Distance travelled 4km at 343 degrees (NNW)
Days since ringed 2086

Ringing recovery FB10691

Originally ringed as an adult, BARDSEY ISLAND, GWYNEDD 29th April 2003

Recovered as an adult, SKOKHOLM 28th August 2022

Finding condition Fresh dead, eaten by Great Black-backed Gull

Distance travelled 123km at 197 degrees (SSW)

Days since ringed 7061

Ringing recovery FB34015

Originally ringed as an adult, BARDSEY ISLAND, GWYNEDD 23rd June 2009

Recovered as an adult, SKOKHOLM 16th June 2022

Finding condition Fresh dead, eaten by Great Black-backed Gull

Distance travelled 123km at 197 degrees (SSW)

Days since ringed 4741

On overcast nights, prior to its conversion from white to red light, Bardsey Lighthouse attracted thousands of disorientated shearwaters towards its shores.

Ringing recovery FB39280

Originally ringed as an adult, PORTH IAGO, LLANGWNNADL, GWYNEDD 25th June 2020

Recovered as an adult, SKOKHOLM 1st October 2021 (sic)

Finding condition Dead (not fresh), eaten by Great Black-backed Gull

Distance travelled 134km at 197 degrees (SSW)

Days since ringed 463

Balearic Shearwater *Puffinus mauretanicus*

Aderyn Drycin y Baleares

Scarce or Uncommon first recorded in 1960

Earliest 15th May 1997 (24th July 2022) **Latest** 14th November 2019 (8th September 2022)

Two heading west together on the morning of 24th July were 15 days earlier than the first two of last year and 23 days earlier than the 2013-2021 first bird mean; one in May 1997 and July singles on the 14th in 1995, the 17th in 2015 and the 22nd in 1990 are the only earlier records, whilst the all-time July bird-days total now stands at 18. One went west on the evening of 16th August, two did likewise on the morning of the 20th and another westbound single on the evening of the 22nd took the all-time August bird-days total to 91, 23 of which have been since 2013. One was off South Haven on the morning of 7th September and two off the Lighthouse the following evening, including one which spent some time sat on the sea, took the all-time total for the month to 115, 27 of which have been since 2015 (a September 2011 total of 28 bird-days included an all-time record daycount of ten on the 14th). An October bird-days total of 40 and a lone November record were not added to. There were thus nine Balearic Shearwater bird-days this year, a total up on a 2013-2021 mean of 6.3 but down on highs of 15 in 1994 and 2016, 21 in 1990 and 29 in 2011.

Gannet *Morus bassanus*

Hugan

Very Abundant but Uncommon between November and March

Considering that summer 2022 saw 34,491 pairs counted on Grassholm, this an island only 14km to our west and the third largest east Atlantic gannetry, it is perhaps a surprise that the number seen from Skokholm is so small. However studies using GPS tracking devices on Grassholm birds have shown that the majority head west and south from the gannetry before returning by a similar route (Morgan, 2013). Counts during the first four months of the season were generally down but comparable with recent years, the March bird-days total being slightly up on a 2013-2021 mean of

116.9, the April total slightly down on a mean of 463.1 and both the May and June totals being the second lowest this decade (the 2013-2021 May bird-days mean is 1015.8 and the June mean for the same period is 1075.6). The presence of the H5N1 subtype of avian influenza was confirmed in dead Bass Rock birds in mid-June, this followed by a substantial mortality event which saw the death of thousands of Gannets here and at other northern gannetries. The early dispersal of failed breeders from more northern areas must have been substantial, a movement of birds which was perhaps responsible for record July counts from Skokholm; there were eight four-figure July daycounts and peaks of 1645 on the 6th, 5838 on the 24th, 5227 on the 25th, 1460 on the 26th and 1521 on the 31st, these all up on the previous July daycount maximum of 830 and with the two peaks well up on previous all-time highs of 1500 on 16th August 1960 and 17th August 2013, 1800 on 15th August 2013, 2000 on 14th September 2011 and 2144 on 16th August 2013. Recent years have seen an increase in the number of birds either resting on the cliffs or flying over the Island, with a record 2019 season seeing four birds ashore and five flyovers; unsurprisingly there were more flyovers this year, with one over the Neck on 26th April, one south over the middle of the Island on 12th June, four over the Farm on 9th July and one over the Neck on 26th July, whilst two further flyovers preceded death (see below) and several sick birds arrived to the coast (see below).

The total number of Gannet bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2018 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	137	378	649	637	22,219	5611	4081	701	253
2021	208	451	685	639	1452	3340	2684	1780	211
2020	99	416	445	665	1387	3584	2662	670	182
2019	207	505	1048	1084	1687	6002	3911	865	159
2018	68	360	1203	1777	3340	5395	7830	478	107
2022	12	45	122	62	5838	940	458	204	35
2021	36	46	161	198	468	549	662	236	36
2020	27	92	83	195	177	456	330	128	49
2019	31	69	150	145	212	704	633	207	41
2018	21	58	144	230	620	479	641	122	55
	14 th	9 th	18 th	20 th	24 th	20 th	5 th	3 rd	7 th



Dead birds were off Peter’s Bay on 16th May and off the Devil’s Teeth on 28th July, although such observations would be typical in any year. However August saw an unprecedented increase in the number of dead and sick birds present offshore, this coinciding with the inevitable news on 2nd August that bird flu had been confirmed on Grassholm; given that Grassholm probably attracts more birds from other colonies than any other gannetry, it was only a matter of time (Morgan, *pers. comm.*). Although there is the potential for some overlap between days, there were 32 dead Gannet seen offshore in August, including two being eaten by Herring Gulls and one watched dying; on 27th

August a bird with black irises (this now known to be linked to bird flu and perhaps the result of haemorrhaging), was watched circling Twinlet for 15 minutes (during which time it was occasionally struck by an adult Great Black-backed Gull), this followed by a convulsive throwing back of the head, curling of the feet, extension of the legs and a spiralling descent into the sea where it was found dead (above photographs). There were a further 16 dead birds offshore in September and one on 26th October. Apparently sick singles were offshore on three August dates to the 22nd, one was ashore in Peter's Bay on the 23rd (attracting the attentions of a juvenile Herring Gull) and one was in North Haven on the 25th and 26th, whilst September saw five sick birds around the Island on the 7th and two in Broad Sound on the 11th. A bird watched in low flight over Winter Pond and the Sugarloaf on 6th October was thought to have gone down near the Bluffs, however it was not until 5th December that a body was found amongst Manx Shearwater burrows (below photograph). Although this exceptional increase in dead birds was due to avian influenza, it should be noted that at least one bird found on the nearby mainland (in Martin's Haven) tested negative (Morgan, *pers. comm.*).



The number of offshore birds remained high in August, with daycount peaks of 879 on the 1st, 450 on the 2nd and 940 on the 20th, the high up on a 2013-2021 mean of 718.9 and only down on the 1960 and 2013 August peaks listed above. Subsequent counts were down on most recent years, with September highs of 458 on the 5th, 405 on the 7th and 418 on the 27th being down on a 2013-2021 mean maximum of 662.2 and on all but two peaks during that period (there was a high of 1003 on the 26th in 2016). A peak October daycount of 204 on the 3rd was down on that logged in two of the last three years and a November high of 35 was typically low (the 2013-2021 mean is 31.9).

Shag *Phalacrocorax aristotelis*

Mulfran Werdd

Common Resident and Irregular Scarce Breeder last attempted to breed in 2013

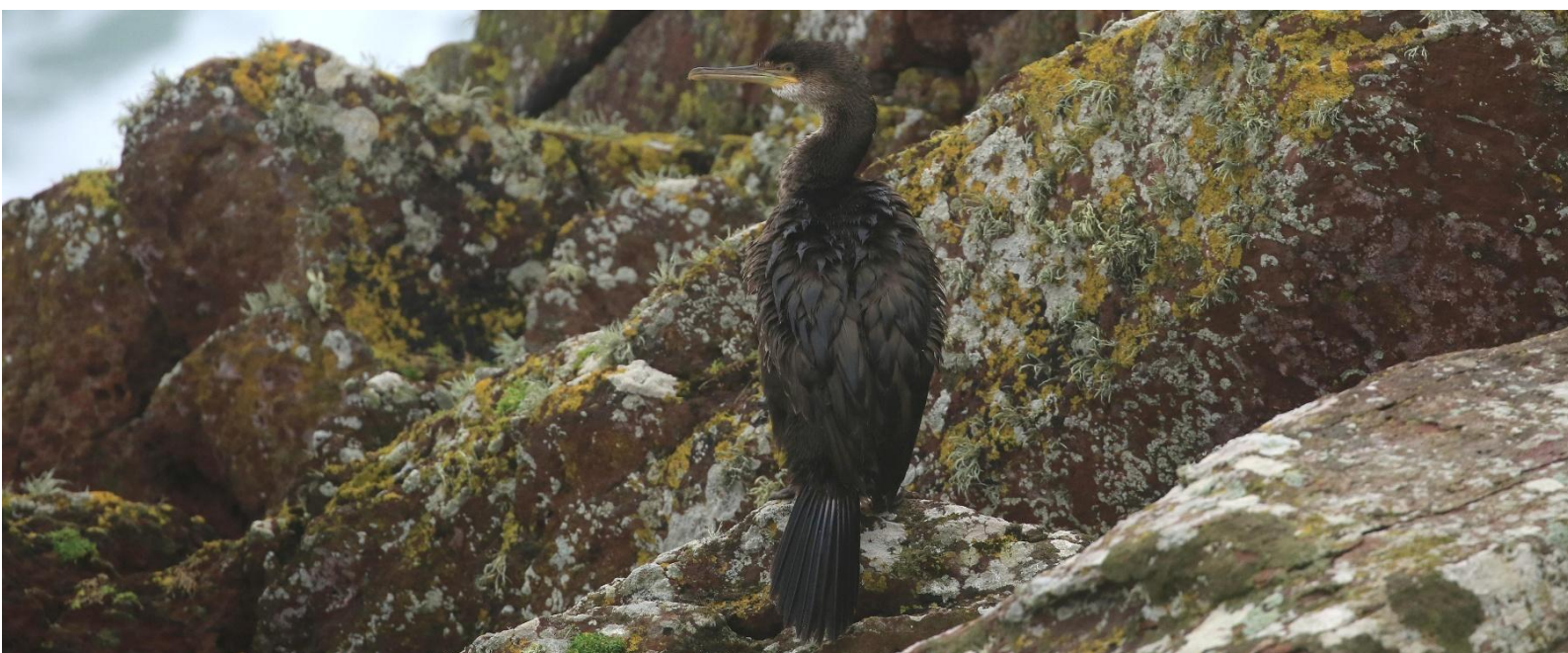
2018: 1 control

Shag numbers were heavily impacted by prolonged and severe storms in the winter of 2013-2014, with the 2014 bird-days total being 67.3% down on an all-time record of 929 set the previous year. A better than average breeding season at the Middleholm colony in 2015 was probably responsible for a peak count that autumn of 15, however daycounts have not exceeded this subsequently, with highs of ten or 11 in each year between 2016 and 2018, 15 in both 2019 and 2020 and 13 last year (the maximum 2013 daycount was 24 on 24th September, this matching a count in September 1979 and only down on 25 in December 1932 and 27 in August 2003). The peak daycount was down this

year for a second time in succession, this despite a full complement of observers following the lifting of the COVID-19 dictated restrictions imposed in 2020 and early 2021 (increased observer coverage means more regular visits to the area of the Neck which overlooks the Stack, this a site which often holds the majority of loafing *Phalacrocorax*). A typical early spring saw a March bird-days total which almost matched the 2013-2021 mean of 26.9 and an April tally fractionally up on a mean of 54.1 logged during the same period. A May tally of 69 was only down on that logged in four years this decade, although those four years take the mean for the period to 76.0, whilst a peak daycount of eight on the 12th was the highest to be logged during the first four months of the season since the nine of April and May 2019. Counts invariably dip in June, with this year seeing no sightings at all on 20 dates, a high of six on the 14th (which was up on a 2013-2021 mean peak of 4.7) and a bird-days total of 24 which matched the second lowest this decade (the 2013-2021 June bird-days mean is 33.2, with a high of 63 in 2013). There was again no indication of a breeding attempt this season, with the Smith’s Bay site last used unsuccessfully in 2013 showing no signs of occupation; Shags last bred successfully in 1987 when a pair fledged two young.

The total number of Shag bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2018 to 2021 are included for comparison.

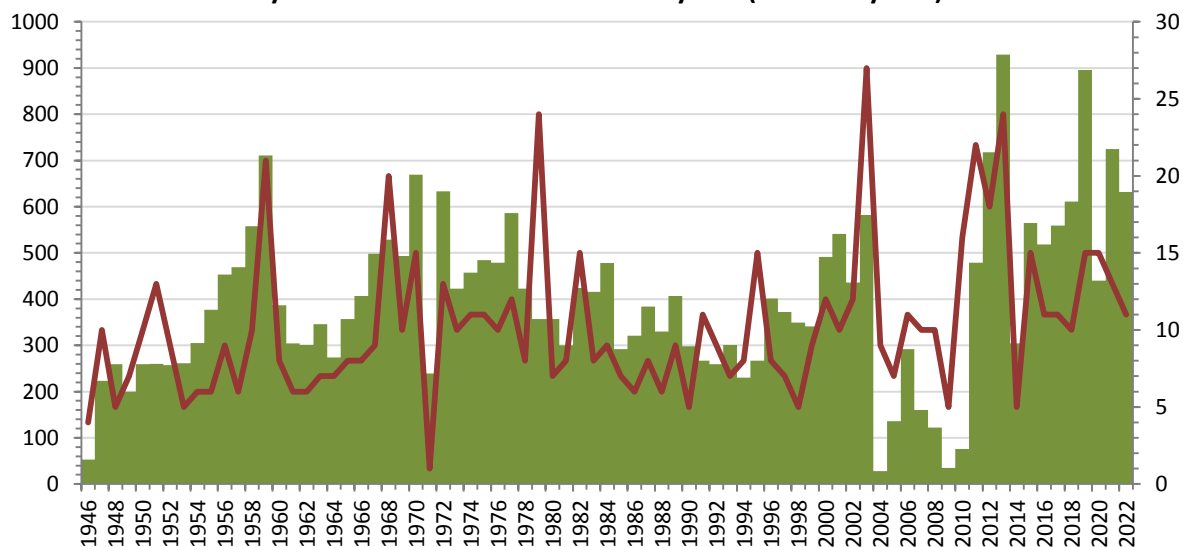
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	26	60	69	24	90	108	133	57	55
2021	56	39	62	26	57	140	143	105	76
2020	18	30	22	19	45	75	74	96	56
2019	29	89	150	32	82	152	168	102	88
2018	18	50	100	40	55	130	124	55	39
2022	4	7	8	6	9	11	10	4	6
2021	6	4	6	4	10	13	12	9	8
2020	4	5	4	6	7	15	11	9	5
2019	3	9	9	3	9	15	13	12	8
2018	4	5	10	5	8	9	9	5	6
	23 rd	29 th & 30 th	12 th	14 th	24 th	27 th	15 th	9 th & 17 th	14 th



Although there were no Shag seen at all on seven July dates to the 16th, daily sightings thereafter included a high of nine (when five were on the Stack and four were off the Lighthouse); a July bird-

days total of 90 matched that of 2013, this only down on the 132 of 1972, the 118 of 2011 and the 151 of 2012 (there was a record July daycount of 18 in both the latter two years). An August bird-days tally of 108 was down on that logged in six years this decade, but was close to a 2013-2021 mean of 120.4, whilst a peak daycount of 11 was only down on that logged in nine years this century (including six of the last ten). Although the peak daycount was of only ten, this 14 down on the 2013 high but close to a 2013-2021 mean of 11.1, the number of bird-days again peaked in September, with a total of 133 being up on a 2013-2021 mean of 119.4 and only down on that logged in three Septembers this decade (there were all-time highs of 193 in 1959 and 189 in 2013). Although 18 up on the 2014 low, an October bird-days total of 57 was the lowest since 2018 and down on a 2013-2021 mean of 81.6. A peak November daycount of six was two down on the record set in 2019 and 2021. A 2022 March to November bird-days total of 622 almost matched a 2013-2021 mean of 612.8 and was the third highest since 2013 (down on the 892 of 2019 and the 704 of last year), however a daycount high of 11 was the lowest for four years. Not all birds seen around Skokholm are associated with the Middleholm colony; a juvenile found in the Lime Kiln in November 2018 had been ringed on Ynys Gwylan-Fawr, Gwynedd and a bird with a green ring was found in May 2019 (the latter was too distant for the inscription to be read).

The total number of Shag bird-days logged in each year since 1946 (green), along with the peak daycount recorded in each of those years (secondary axis).



Cormorant *Phalacrocorax carbo*

Mulfran

Common Visitor particularly in late August and September, but has never bred

Cormorants were again common around Skokholm, with the majority of non-passage sightings being of birds on the Stack, in South Haven and in Crab Bay. An annual bird-days total of 800 was up on a 2013-2021 mean of 579.6 and only down on a total during this period of 867 in 2019 (a COVID-19 dictated reduction in observer numbers no doubt impacted records in 2020 and early 2021 due to fewer visits being made to view the Stack). As is typically the case, spring passage was not as pronounced as that observed in autumn, indeed the only counts of more than two flying birds were of three north on 10th March, three southeast on 21st March, six east then four west on 28th May and three southeast on 1st June. Peak summer counts from the Stack were of 11 on 21st July and 28th August and of 13 on 5th August. There were 14 autumn dates when three or more seemingly passage birds were noted, this the same number as last year (the 2013-2021 mean is 12.8, with a high of 17 dates in 2019); as previously noted by both Betts (1992) and Thompson (2007), the majority of passage birds were again heading in a southeasterly direction. The peak counts of autumn passage birds were lower than in the majority of recent years, with highs of 14 southwest on 21st August, 22 west then southeast on the 27th, 14 southeast on 10th September, ten southeast on the 18th, 13

southeast on the 29th and 12 east on 1st November; the peak matched that of 2017 and 2021, with 20 in 2018 the only lower count this decade, whilst highs of 97 in 2013, 48 in 2014 and 51 in 2016 take the 2013-2021 mean high to 39.3 (the only daycount up on that of 28th September 2013 is the 107 of 12th September 2003). Most birds seemingly head inland for the winter, indeed there were sightings on just nine October dates, two November dates (including the second highest daycount in this month, only down on the 16 of 2013) and on three of the first ten days of December.

The total number of Cormorant bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2018 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	27	51	76	74	169	244	124	15	15
2021	50	47	33	41	74	143	117	68	14
2020	21	18	20	26	22	69	146	33	7
2019	33	67	99	44	105	158	258	67	33
2018	14	56	104	66	77	118	202	57	31
2022	4	5	6	7	12	27	17	3	12
2021	8	7	4	7	8	17	11	22	3
2020	7	4	3	3	4	15	35	7	2
2019	6	5	18	5	11	12	36	21	8
2018	3	11	9	5	7	27	23	15	6
	10 th	28 th	28 th	1 st & 24 th	23 rd	27 th	10 th	3 dates	1 st

Grey Heron *Ardea cinerea*

Crëyr Glas

Uncommon but in some years Scarce

A post-sunset single at the Lighthouse on 21st March was calling constantly as it was mobbed by gulls, this becoming only the 11th bird-day in this month and the first since 2014. There was no April sighting for the first time since 2019, the all-time April total remaining at 26, whilst a May bird-days total of 30 has not been added to since 2003. Lone flyovers on the 20th and 30th made this the tenth consecutive June with a record, although a bird-days total of two was the lowest since 2016; the 2013-2021 June bird-days mean is 5.2, with a high of 14 logged in 2017 (which included a daycount of eight, this only down on the ten of August 1981, nine of August 1990 and 11 of September 2000).



One seemingly roosted in Crab Bay on the evening of 5th July, although it was not seen on the 6th, this followed by two on the 10th, flyover singles on the 16th, 25th and 27th and four on the 28th (two of which roosted on the Sugarloaf but were also not seen the following day); a July bird-days total of

ten matched that of 1980, 1988 and 1991 and was only down on the 11 of 1982, 18 of 1987 and 16 of 1989. Following a nocturnal single on the 7th, there were August sightings of one on the 13th, two on the 26th and one on the 30th, a bird-days total of five matching that of last year and close to a 2013-2021 mean of 6.3 (there were all-time August highs of 26 in 1981, 20 in 1990 and 17 in 2019). Sightings on 13 September dates were all of singles bar two on the 1st; there have been two September totals up on the 14 of this year, with 16 in 2014 and 21 in 2020. One was watched flying to Grassholm on 2nd October, whilst further singles on the 11th and 13th took the all-time October bird-days total to 62, 29 of which have been since 2013. A November bird-days total of 12 was not added to for a seventh time this decade, however one which arrived on the morning of 9th December was only the second sighting in this month following one on the 10th in 1928. A cumulative 2022 total of 36 bird-days was the second highest this decade, up on a 2013-2021 mean of 26.9 and only down on the 42 of 1981, 41 of 1988, 39 of 1990 and 37 of 2017.

Little Egret *Egretta garzetta*

Crëyr Bach

Rare 35 previous records, usually singles but with eight in September 2014 and seven in June 2021

One seen in flight over the Farm on 27th July settled at Orchid Bog, this the 11th bird-day to be logged in this month (OP). The only other 2022 record was of one found at North Pond on 29th November which was later above North Gully, this just the third sighting in this month following singles in 2014 and 2020. An annual bird-days total of two was down on that logged in five years this decade and a 2013-2021 mean of 4.0 (this period including all-time highs of ten in both 2014 and 2021). The first for Skokholm joined the Bread Rock Lesser Black-backed Gulls on 18th May 1983, this followed by three in the Dip on 10th October 1993, two on 1st May 1997 and records in 16 subsequent years. Little Egrets have been seen in every month between March and December inclusive, now with one record in March, two in April, six in May, four in June, 11 in July, four in August, two in September, three in October, three in November and one in December (all now tallying 56 bird-days).

Sparrowhawk *Accipiter nisus*

Gwalch Glas

Uncommon Visitor occurring in all months, but more frequent outside of the breeding season

2 trapped

1936-1974: 7 trapped, 2013-2021: 10 trapped, 1 retrapped

Following a female on the 10th and an unsexed bird on the 19th, there were four more sightings of a female between the 21st and 31st March, all these perhaps observations of the same bird; a March bird-days total of six was the highest since eight in 2003. Encounters with a female continued into April, with birds on the 1st, 5th, 7th (unsexed), 10th and 14th prior to a first-winter female being trapped in the Cottage Heligoland on the 15th; although a ring was not seen, it was perhaps the same individual logged on the 18th and 19th which took the bird-days total to eight, this the highest in April since the 19 of 2006. An all-time May bird-days total of 74, which includes highs of ten in 1993 and nine last year, was not added to, whilst the most recent of 15 June bird-days was in 2015. A spring bird-days tally of 14 was down on the 19 of last year but otherwise the highest this decade, up on a 2013-2021 mean of 6.6 (the 37 of 1993, 20 of 1996 and 26 of 2000 are the only totals up on the 19 of 1982, 1997, 2006 and 2021).

One at the Dip on 7th August was 11 days later than the first of last autumn but otherwise the earliest since 2016, five days earlier than the 2013-2021 first of autumn mean. A male and female were present the following day, although a male on the 15th was the only other sighting until daily encounters with singles between the 24th and 30th which probably involved two birds; an August bird-days total of 11 matched that of 2003, these only down on the 23 of 2015 and the 13 of 2019 and 2020. Numbers peaked in September for a tenth consecutive year, with a female on five dates to the 8th, a male and female on the 11th, singles on six further dates to the 20th (four of which were certainly female, these including one eating a puffinised Manx Shearwater on the 18th), a juvenile

male on the 23rd, a female and male on the 24th and daily singles thereafter which included sightings of both sexes; a September bird-days total of 22 was up on a 2013-2021 mean of 18.3 and only down on tallies of 30 in 2000, 28 in 2014, 26 in 2015 and 23 in 2019. October saw sightings of a female on the 2nd and 3rd, a young male on the 7th, singles on five dates to the 14th which included both a female and male, a male eating a Snow Bunting on the 17th, a female on the 23rd, a male and female on the 24th, one the following day and a first-winter female in the Wheelhouse Heligoland on the 26th; an October bird-days total of 14 was only down on the 21 of 1956, 19 of 1981, 17 of 1989 and 15 of 2015. A female on 4th November was perhaps the unsexed bird present the following day and a high female on the 16th was perhaps the unsexed bird present on the 17th, whilst a male on the 25th took the all-time November total to 35, 18 of which have been since 2014. A male eating a Song Thrush in Crab Bay on 8th December was just the fifth to be logged in this month following two in both 1992 and 2003. An autumn bird-days total of 53 was up on a 2013-2021 mean of 37.9, this a period which saw the four other highest autumn totals to date (with 41 bird-days in 2016, 44 in 2014 and 2019 and 66 in 2015). Given the mobile and often secretive nature of this species, daycounts of multiple individuals are usually due to differences in the age or sex of the birds concerned; rarely is it possible to prove the presence of two birds of the same age and sex, an uncertainty which no doubt leads to undercounting.



Marsh Harrier *Circus aeruginosus*

Boda'r Gwerni

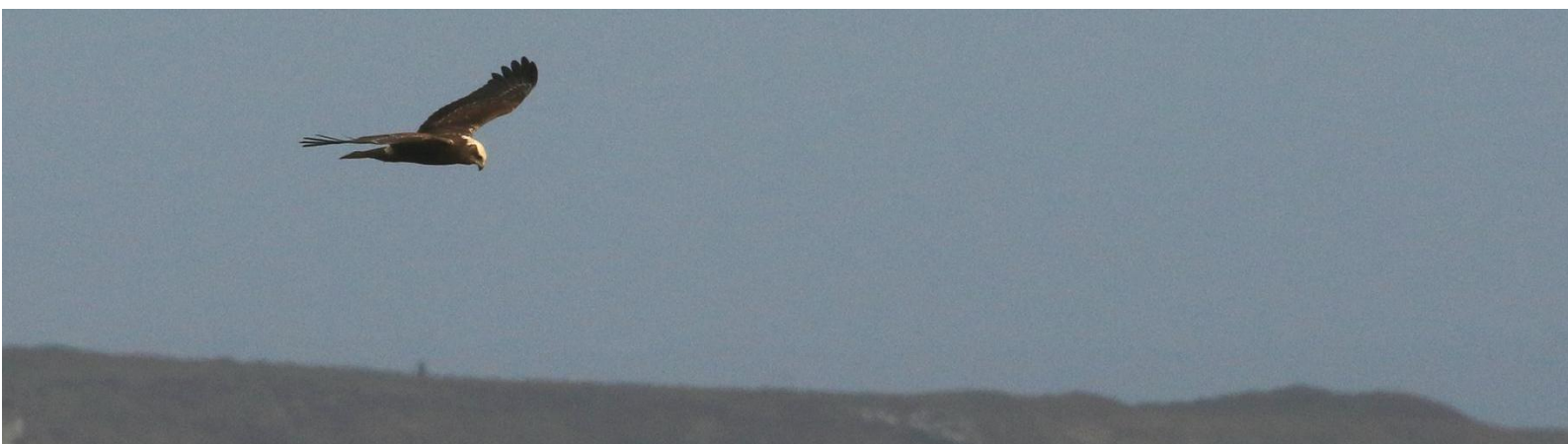
Scarce recorded in every month from March to November, but with only one adult male

Earliest 10th March 2015 (28th July 2022) **Latest** 4th November 2018 (28th October 2022)

2013: 1 control

There was no spring record for a second straight year; spring sightings in 16 years have totalled 27 bird-days, with 14 this century and the majority occurring in May. A juvenile on 28th July was the first of the year, this four days later than the first of last year and two days later than singles in 1999 and 2018 which were the only other July records. A juvenile again present on the 30th and 31st July was probably that seen on each of the first four days of August (although it was followed all the way to the end of the Marloes Peninsula on the morning of the 3rd). A second calendar-year male toured the Island on the morning of the 9th, this followed by two juveniles on the 10th, a moulting adult male on the 11th, a lone juvenile on the 13th and 14th, what was presumably the same moulting male on the 15th, two juveniles on the 21st and lone juveniles on the 24th, 28th and 29th (the latter of which probably roosted in the Bog, although it was not encountered on the 30th); the only other daycount of two was on 29th August 2018, whilst the only other adult male was logged on 3rd May 2001. Thus

at least four different individuals took the August bird-days total to 16; there have been 26 previous August bird-days, with seven in August 1998 being the previous high in any month. Two juveniles were again present on 1st September, what was perhaps the returning adult male was logged late on the afternoons of both the 8th and 9th and a juvenile on the 11th took the all-time total for this month to 13. Following one on the 8th, there were further sightings on nine October dates between the 17th and 28th, these all of a juvenile; sightings on six dates in 2018 and on one date in 2019 are the only others logged in October, whilst a juvenile on 4th November 2018 is the only later record. A 2022 bird-days total of 34 is unprecedented, this well up on a previous high of 13 in 2018 and a 2013-2021 mean of 3.3. There have now been sightings in 25 years, including 11 of the last 13, with at least 45 individuals accounting for 106 bird-days, however probable repeat visits by cream crowns lingering at nearby Marloes Mere have made an accurate count of individuals difficult.



Hen Harrier *Circus cyaneus*

Boda Tinwyn

Scarce Winter Visitor with no records between 2004 and 2011 inclusive

Earliest 5th September 2012 (**5th August 2022**) **Latest** 21st April 2019 (**17th May 2022**)

1993: 1 control

The only spring record was of a ringtail which circled the Island on the morning of 17th May before heading east towards the Dale Peninsula (DV *et al.*); this becomes the latest spring record, 26 days later than the last of 12 April bird-days. Of 22 previous bird-days logged in either March or April, 17 have been recorded since 2012. A ringtail which flew over the Farm on 5th August also headed out towards St Ann's Head, this the first record in this month and 69 days earlier than the 2013-2021 first of autumn mean. A September bird-days total of 23 (15 of which were in 2017) and an October total of 142 (23 of which were in 1993 and 17 of which were in 2018) were not added to. Indeed there were no further records until a ringtail arrived to North Plain on the afternoon of 5th November, this followed by further sightings of a ringtail on the 9th, 17th and 27th which took the all-time total for this month to 150 (there were highs of 17 in 1990 and 2016, 20 in 2003 and 24 in 2018). December saw a ringtail on the 1st, two together near the Farm on the 2nd and further lone ringtails on the 3rd and 4th which took the all-time tally for this month to 12; two birds have been logged on 25 previous dates over seven years, whilst three on 23rd October 1993 is the only higher daycount (the latter included a bird wing-tagged as a chick in North Wales that year). Although a 2022 bird-days total of 11 matched that of 2020 as the tenth highest to date, it was down on a 2013-2021 mean of 18.7 and all-time highs of 38 in 2003, 33 in 2016 and 46 in 2018.

Pallid Harrier *Circus macrourus*

Boda Llwydwyn

Vagrant no previous records

A juvenile, which arrived to East Bog from the east early in the afternoon of 12th September, circled Gull Field before drifting back past Spy Rock and out towards Dale (LM, AP, RDB *et al.*). This was the

first for Skokholm and only the third for Wales following a first-summer male present on Skomer Island, Pembrokeshire between 20th April and 1st May 2013 and an adult female at Connah's Quay, Flintshire on 30th September 2017. Given that the breeding range of this species is expanding northwestward out of southeast Europe, it would seem likely that there will be more records.



Red Kite *Milvus milvus*

Barcud Coch

Rare approximately 32 previous records of up to two birds, but becoming Scarce or Uncommon

All of the spring sightings were in April, with two on the 21st, two again on the 25th and three circling together on the 27th, a bird-days total of seven becoming the second highest spring tally to date (nine of the 20 previous spring bird-days were logged in 2020); two on 28th September 2018 and 26th March 2020 are the only previous records of multiple birds. One over the Neck and North Plain on 27th August was perhaps that seen over the Lighthouse Track and the Neck the following day, this the first record in this month and seven days earlier than one last September which was the earliest autumn sighting. There were no further records until 29th November when one drifted west then east along the North Coast; singles on four dates between the 2nd and 22nd in 2021 are the only other November sightings. An autumn bird-days total of three was half that logged last year but matched the third highest to date. An annual bird-days total of ten was one up on the previous highs logged in 2020 and 2021 and takes the all-time tally to 47; there have now been annual records since 2015, these accounting for 44 bird-days, with two in 2012 and one on 6th June 2000 being the only other sightings. An increase in the Pembrokeshire breeding population is inevitably going to lead to an increase in the number of Skokholm records, although an open sea crossing is seemingly not appealing to a species which is still much more regular on the mainland and islands just offshore.

Buzzard *Buteo buteo*

Bwncath

Scarce Breeder and Uncommon Visitor

1936-1957: 6 trapped, 2013-2018: 8 pulli trapped

Although a pair yet again held territory in Wreck Cove from March and toured widely, this proved an unobtrusive species which was not recorded every day. There were 12 spring dates when the daycount exceeded the two Skokholm breeders, this two fewer than last year but up on a 2013-2021 mean of 8.1 dates; three were present on four dates in March, three dates in April, one date in May and two dates in June and four were logged on the 3rd and 8th April. The peak spring daycount was close to a 2013-2021 mean of 4.3 but was down on a high during that period of six on 16th April 2015, the latter matching that of 6th April 1988 as the highest in spring since nine on 24th May 1955 (nine were also logged on 26th April 1949, with 12 on 10th April 1940 and ten on 20th May 1955 the only higher spring daycounts). For a fourth year, the rocky shelf which held the nest in each year between 2013 and 2018 was eschewed in favour of a narrower ledge on a taller section of near-vertical cliff. Three eggs were noted on both the 7th and 21st May, three small chicks were present on 3rd June and all three were close to fledging on 29th June (below photograph); the three youngsters lingered in the vicinity of Crab Bay until at least 1st August, after which they roamed more widely. It

was suggested in the 2019 Annual Report that the switch in nest site was perhaps brought about by a different adult being part of the pair and that the change had been a successful one; three 2022 fledglings matched the 2019 tally as the highest for more than a decade, this up on a 2013-2021 mean of 1.6 (although the Wreck Cove pair managed to fledge young in each year between 2013 and 2018, only in 2015, when two fledged, did they produce anything more than a singleton). Five were logged on 14th August and five were together at the Lighthouse on the 21st, however no more than three were seen each day in September and October, whilst the only daycounts of more than two between 24th October and 10th December were of four on 1st November and three on 5th December.



Short-eared Owl *Asio flammeus*

Tylluan Glustioig

Uncommon described in 1936 as a 'rare visitor', listed by Thompson as Scarce but has now bred once 1957-1969: 5 trapped, 2017: 3 pulli trapped

A long dead bird was found to the north of the Neck on 22nd March, the first live record not coming until 2nd April when one was to the northwest of South Pond. One at the Farm on the 29th was the only other April sighting, this taking the all-time bird-days total for this month to 73, 39 of which have occurred since 2013. The only May record was of one over the Bog on the 29th, this taking the all-time total for this month to 75, 40 of which have been this decade. There were no June sightings for just the second time in ten years, this a period which has contributed 46 of 104 June bird-days; all June totals have been of eight or less bar the 21 logged when this species bred in 2017. Breeding was obvious in spring 2017 as the pair aggressively pursued other birds passing close to the nest; although a regular breeder on nearby Skomer, where the fluctuating population is supported by Bank Voles, this successful attempt remains the only confirmed breeding on vole-free Skokholm. There were no July records for the third time this decade, the total for the month remaining at 106. The wing of a Storm Petrel found on 12th August hinted at a presence and that evening one was found hunting over North Plain, however one at South Pond on the 24th was the only other sighting during the month, this despite the discovery of a pellet containing a 2020 fledged Storm Petrel on the 26th and the remains of another Storm Petrel at the Hills on the 28th; sightings in 36 previous Augusts total 93 bird-days. Following the discovery of a predated adult Storm Petrel on the 1st, September saw singles on the 8th and 9th, a pellet containing a Storm Petrel head on the 11th, two together near the Sugarloaf on the night of the 21st, further singles on the 24th and 26th and two around the Farm at dusk on the 27th; eight September bird-days took the all-time tally to 211, this including highs of 14 in 1957 and 1960 and 21 in 1975. One of the owls on 27th September was filmed hunting craneflies, this listed as an infrequent food item in Cramp, 1985 (the below stills are

taken from an infrared camera). The only October sightings were of birds over Home Meadow on the evenings of the 5th and 8th; there have been more sightings in October than in any other month, with 357 previous bird-days including highs of 25 in 1957 and 2015 and 30 in 1989. One at Medicine Rock on 4th November was the last of the year. A 2022 bird-days total of 17 was the second lowest this decade, down on a 2013-2021 mean of 35.6 and highs of 72 in 1989, 59 in 2015 and 76 in 2017. A total of five eaten Storm Petrel matched the second lowest this decade, this down on a 2013-2021 mean of 29.7 and well down on a high of 98 logged during the year Short-eared Owls bred.



Hoopoe *Upupa epops*

Copog

Rare more regular in spring, with only 11 previous autumn records (most recently in 2017)

Earliest 12th March 1940 (24th March 2022) **Latest** 31st October 2017

1940: 1 trapped

One which arrived from the north at 0950hrs on 24th March was relocated at Tottenham Hill but flew north and was not seen again (GE, RDB); this was approximately the fifth March record and 44th individual to be logged since the first in May 1928.



There have now been 102 Skokholm bird-days recorded over 31 years, with eight this decade and a high of ten in April 1977 when a record three individuals were present on the 17th. Two individuals have been logged in at least eight further years, most recently in 2016, although two have only been seen on the same date in 1960 and 1977.

Kingfisher *Alcedo atthis*

Glas y Dorlan

Rare 14 previous records, all of singles

1948: 1 trapped

One in South Haven on 27th August was probably that found in Hog Bay later the same day (AP, LM); this was the first since 28th June 2019. One escorted the Dale Princess into South Haven during a guest changeover on 19th September, although it soon departed southwards. What was presumably the same juvenile was again in South Haven the following morning (below photograph) and was seen briefly sat on the vent pipe above the hydraulic ram pump (BV, GE); one on 29th September 1975 is the only later Skokholm bird, whilst this becomes the first year with two records. With the exception of the June and September sightings listed above, all other arrivals have occurred between 6th July (1963) and 28th August (2000).



Wryneck *Jynx torquilla*

Pengam

Scarce Migrant regular in autumn but rare in spring with only ten records of up to two birds

Earliest 3rd April 1995 (30th August 2022) **Latest** 12th November 2014 (9th September 2022)

1 trapped

1949-1975: 11 trapped, 2013-2021: 7 trapped, 2 retrapped

One found near the Farm Garage on 30th August was two days later than the first of last autumn (LM *et al.*); there have been 15 previous August bird-days, now with sightings in five of the last six years and with birds arriving on the 23rd in 2017, the 25th in 2019, the 28th in 1970 and 2021 and the 29th in 1998 and 2021 being the only earlier autumn records. What was likely the same juvenile was along North Pond Wall the following day and was netted opposite the Library on 1st September. There followed daily sightings from the 5th to the 9th, all from Middle Heath or North Plain and with a ring seen on two occasions. There have now been 272 bird-days, including the first on 6th May 1938, all in 41 years and with at least 20 individuals accounting for 113 bird-days in the last decade. The eight

bird-days logged this year was down on a 2013-2021 mean of 11.7, although this period included highs of 20 in 2013, 16 in 2014 and 45 last year, the latter the Skokholm record.



Great Spotted Woodpecker *Dendrocopos major*

Cnocell Fraith Fwyaf

Vagrant only eight previous records

2018-2021: 4 trapped

The increase in the British population has been substantial, a rapid rise linked to several factors such as Dutch Elm Disease, a significant drop in the Starling population, the maturation of new forests and, perhaps most importantly, the winter provisioning of bird food. In Wales there was a 159% increase in the breeding population between 1995 and 2008 (Baillie *et al.*, 2010). This increase is no doubt responsible for a spike in the number of birds logged on the Welsh Islands, particularly on Bardsey, Ramsey and Skomer where Great Spotted Woodpeckers are now expected annually. Although Skokholm records have also followed the trend, this has remained a rare visitor, perhaps in part due to the longer sea crossing required to reach the Island or the fact that it does not lie at the tip of a peninsula. Nevertheless one found at the Well on 18th October made this the fourth of the last five years with a sighting (GE). This becomes the latest Skokholm record, with the previous eight occurring between 3rd September and 16th October (both in 2021). This year's bird was feeding at the base of the Well willows, perhaps attempting to extract Lunar Hornet Moth larvae; one on 15th October 2020 was doing likewise.

Kestrel *Falco tinnunculus*

Cudyll Coch

Uncommon recorded in all months but more regular during the post-breeding period

1936-1973: 8 trapped, 2013: 1 trapped

Primarily due to a disappointing October, it proved a below average year for a species which often breeds on the nearby mainland but which is yet to nest on Skokholm. The season began with the discovery of an intact dead bird amongst the boulders of the easterly arm of Crab Bay on 22nd March; it is tempting to think that it perished as a result of the severe storms which dominated mid-February. A lone bird on 23rd April was the only live spring record; although never common in the first half of the year, the 2013-2021 spring bird-days mean is 9.4, with a high during this period of 29 in 2013. An adult male on 13th July was the first of the autumn, this perhaps the bird seen on the

20th, whilst further singles on the 21st and 27th took the total for the month to four; although a tally well down on all-time highs of 17 in 1989, 22 in 2002 and 19 in 2018, this matched the third highest July total since 2007. A single logged on each August date between the 4th and 10th was seen to be a young male on three occasions, this followed by one on the 13th and 17th and daily sightings between the 26th and 31st which included daycounts of two on four dates; an August bird-days total of 19 was up on a 2013-2021 mean of 8.0 and matched the sixth highest to date (there were all-time highs of 52 in 1989, 47 in 1995 and 27 in 2015).



As is typically the case, Kestrel were encountered more frequently in September, with birds noted on all but two dates, two logged on five dates between the 1st and 20th and three together on the 13th which was the highest daycount of the year; a September bird-days total of 35 was up on a 2013-2021 mean of 28.1 but was down on that logged in 21 previous years (including all-time highs of 73 in 1975, 54 in 1989 and 69 in 1992). The only October sightings were of one on the 5th, a male on the 8th and 9th which was probably that seen distantly on the 10th and one on the 31st which took the bird-days tally to just five, this the second lowest this decade and well down on a 2013-2021 October mean of 33.4 (there was a high during this period of 51 in 2016 and all-time highs of 60 in 1973 and 70 in 1975). Despite a staff presence throughout the month, there was no November record for just the second time this decade; the 2013-2021 bird-days mean is 17.1, this a period which included all-time highs of 33 in 2020 and 29 last year. A total of 65 bird-days were recorded in 2022, this down on a 2013-2021 mean of 103.0 and the second lowest total logged during this period (up on the 47 of 2019 and well off highs of 127 in 2015 and 143 in 2020); the highest annual totals are the 211 of 1973, 152 of 1974, 180 of 1975 and 199 of 1989. The largest daycounts remain the five noted in September 1975, August 1989 and September 2014, whilst the highest monthly totals are the 73 of September and 70 of October 1975 and the 69 of September 1992.

Merlin *Falco columbarius*

Cudyll Bach

Uncommon recorded in every month but with only four June and 11 July bird-days

1949-1976: 9 trapped, 2013-2021: 5 trapped

Lone Merlin were logged on six March dates from the 15th, with a first-winter male on the 24th and a female on the 27th the only birds sexed; the bird-days total was the third lowest this decade, down on a 2013-2021 March mean of 11.3 and a high during this period of 16 in 2017 (25 in 1959 is the only higher March tally). Sightings on 17 April dates were all of singles bar two on the 23rd (these a female and a blue-grey male), with females logged on a total of nine dates (including a first-winter on the 24th) and males on two dates; a bird-days total of 18 was down on five April tallies this decade which include all-time highs of 30 in 2018 and 2019 and 28 last year. The only May encounters were with singles on the 5th and 7th; sightings in 28 previous Mays, including seven of the last 11, total 140

bird-days, with highs of 29 in 1968, 14 in 1972 and 17 last year. There have been 72 later May or June bird-days, including 21 this decade. The last June bird was in 2002 and the last of July in 1982.



It proved the fifth successive year without an August record, the first of autumn not arriving until 11th September; nevertheless this was eight days earlier than the first of last autumn and seven days earlier than the 2013-2021 first of autumn mean (the earliest during this period was logged on 15th August in 2017). There followed further September singles on the 13th, 14th and 24th, two on the 25th and one on the 29th; daycounts of more than one have only been logged in ten previous Septembers, whilst a bird-days total of seven was the highest since 1993 and only down on nine previous years (including a high of 25 in 1968). Sightings on 15 October dates were all of singles bar two on the 10th and 20th, with a female noted on 12 dates, a blue-grey male on the 10th and 14th and a first-winter male on the 20th; an October bird-days total of 17 was down on a 2013-2021 mean of 21.2, the all-time highs being 30 in 1967, 28 in 2017, 38 in 2019 and 28 in 2020. A staff presence throughout November allowed for sightings on 13 dates, with a female logged on ten occasions and a male on the 21st which was the only date with two birds logged; a bird-days total of 14 was down on that logged in eight previous Novembers, including highs of 18 in 2017 and 2019 and 22 last year. Singles on six December dates to the 9th were confirmed as female on four dates. Five of the six highest annual bird-day totals have come in the last six years; a 2022 tally of 70 was close to a 2013-2021 mean of 72.3 and matched that of 1967 and 1991 as the seventh highest to date, but was down on peaks of 118 in 1968, 105 in 2017, 84 in 2018, 104 in 2019, 74 in 2020 and 112 last year. Daycounts of three have been noted on 13 previous occasions (once in September 1977, once in April and four times in November 2017, five times in October 2019, once in October 2020 and once in October 2021), whilst a record four were seen on 7th October 1968 and 23rd October 2018.

Peregrine *Falco peregrinus*

Hebog Tramor

Scarce Breeder and Uncommon Visitor resumed breeding in 1988 following a 56 year absence
2013-2020: 4 pulli trapped, 1 control

Although the only adults confirmed during the 2022 breeding season were the pair which attempted to nest on a ledge low over the eastern arm of Crab Bay, additional birds were logged on 22 occasions between 13th March and 21st May (this 12 more dates than last year); an additional unaged female was present on 1st April, an unsexed bird was logged in addition to the adults on 4th April, an unaged male was chased north by the pair on 16th April and a young female was noted on two dates in March, four dates in April and on 13 dates between the 5th and 21st May. It has been postulated in recent reports that an increase in the number of Peregrines present on Skokholm may

be impacting productivity by increasing the time that the breeding birds spend away from the nest; this was particularly the case between 2015 and 2017 as an unprecedented second pair prospected and later attempted to breed. Although only one pair have bred in each year since 2017, they are regularly seen attending to visiting birds, a distraction which may leave their nest vulnerable. The pair were active around Theatre Cove from 24th March and around Crab Bay from 5th April, with two eggs seen in a Thrift surrounded nest at the latter site on 28th April; the Crab Bay Hide and its access path were closed to ensure that the pair were not disturbed, however occasional checks were made under a Schedule One Licence until 14th June when the site was found abandoned (the scrape remained intact and there was no eggshell). It is unclear why the attempt failed, with infertile or damaged eggs, issues during the hatching process or predation all being possible causes.

The number of breeding pairs, their location and fledging success since 2005.
NH = North Haven, TB = The Bluffs, SC = South Coast, NB = Near Bay, CB = Crab Bay

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pairs	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1
Site	NH	TB	SC	SC	TB	TB	TB	TB	TB	TB	TB	TB SC	NB SC	TB	TB	NB	TB	CB
Fledglings	0	2	1	2	1	0	4	2	3	0	0	1	1	0	0	0	0	0

Sightings on 16 July dates were of singles bar the two logged on the 13th, 15th and 30th, with the adults regularly seen around Crab Bay and a subadult female logged on at least three dates. Although a subadult female was not confirmed, at least four different individuals accounted for sightings of up to two birds on 21 August dates, with the first juvenile from elsewhere encountered on the 16th (this 32 days later than the first of last year) and two juveniles seen together on the 30th; an August bird-days total of 26 was the highest since 2017 but down on a 2013-2021 mean of 35.0 and on highs of 63 in 1993 and 61 in 2016. A juvenile male on the 17th provided the only one of 30 September bird-days not attributable to the breeding pair; the September tally was the third lowest this decade, down on a 2013-2021 mean of 42.1 and on all-time highs of 55 in 2014, 56 in 2015 and 60 in 2016. Singles on ten October dates to the 21st were confirmed as adults on seven occasions and as males on four; the October bird-days total was the lowest this decade, down on a 2013-2021 mean of 30.8 and highs of 56 in 2015 and 53 in 2016. A staff presence throughout November allowed for encounters with singles on 14 dates, whilst sightings on four December dates to the 9th included two adults on the latter date; there were no sightings during this period attributable to any birds other than the breeding pair.

Chough *Pyrhocorax pyrrhocorax*

Brân Goesgoch

Scarce Breeder and Uncommon Visitor bred in 1928 and then annually since 1992

1964: 1 trapped, 2020: 1 trapped

Spring survey work again revealed four breeding pairs, this matching last year's tally as the highest yet recorded on Skokholm. A Steep Bay pair nest building from 17th March were watched mating on the 31st, the Peter's Bay pair were nest building from 22nd March and also mating on the 31st, a pair at the Quarry site occupied last year were nest building from 23rd March and a pair in the vicinity of Frank's Point were collecting Rabbit fur on 27th March. The breeding birds regularly strayed into adjoining territories during the early stages of the breeding season, indeed it was believed that flocks during March and April of six on eight occasions, of seven on one occasion and of eight on five occasions were made up of Skokholm breeders. Two which departed Little Bay Point for the north on 21st March were probably additional and perhaps the pair which began making regular visits to a fissure in Little Bay from 16th May; this fifth pair were regularly seen prospecting the same crack, indeed the site was entered six times in 30 minutes on 21st May, however there was no indication of a breeding attempt. There were nine dates in May when birds were present in addition to the eight

breeders and two Little Bay birds, with daycount highs of 18 on the 5th (all of which were together), 15 on the 14th and 17 on the 24th; it could not be established how many of these were visiting birds. There were three such dates in early June, with daycounts of 11 on the 2nd and 3rd and with 13 adults on the 10th. The Steep Bay pair were alarming on 8th June and were seen with three fledglings the following day, however it was not until the 14th that four fledglings were confirmed; these were the earliest Skokholm fledglings this decade, 17 days earlier than the 2013-2021 first fledgling mean. The Peter’s Bay pair had very vocal chicks from 31st May and had fledged three by 14th June, these 21 days earlier than the three which fledged this site last year. Two had fledged the Quarry nest by 27th June, these the first to fledge from this site since a pair established a territory last year. There was no indication that the pair nesting near Frank’s Point hatched eggs.

The number of Chough pairs, the total number of fledged young and productivity 2005-2022.

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	1	2	2	2	2	2	3	3	2	2	2	2	2	2	3	4	4
3	1	5	4	3	2	4	0	2	3	2	5	8	2	5	6	7	9
3.0	1.0	2.5	2.0	1.5	1.0	2.0	0.0	0.7	1.5	1.0	2.5	4.0	1.0	2.5	2.0	1.8	2.3



A total of nine 2022 fledglings was two up on last year and the highest total yet recorded (up on the eight of 2017), however a productivity figure of 2.25 fledglings per pair was down on that recorded in three years this decade (albeit being up on a 2013-2021 mean of 1.88 ±se 0.34). The only July daycounts in excess of the eight breeders and their nine fledglings were of 18 on the 2nd, when 11 were together over the South Coast, and 18 on the 27th, when 12 were together at the Lighthouse; the Little Bay pair could have made up the numbers, indeed they were still prospecting the new site on the 19th. Flocks of between ten and 13 were logged on seven August dates, with daycounts peaking at 16 on the 4th, 17th and 31st, 17 on the 13th and 20 on the 28th (all of the latter birds roosted that evening). Chough certainly arrived from elsewhere during September, with flocks of 20 on the 10th, 23 on the 23rd and 22 on the 25th all exceeding the 19 regulars; there have been higher September daycounts in just two years, with three counts of between 25 and 32 in 1965 and 26 on the 11th in 2007. Although no more than ten were seen each day from the 24th, numbers remained high in October, with peaks of 26 on the 2nd (24 together), 21 on the 3rd (19 together), 31 on the 8th (27 together at the Lighthosue) and 28 on the 11th (26 together) taking the bird-days total to 357; the 2013-2021 September bird-days mean is only 189.7, indeed the 380 of 2021 is the only higher total in any year, whilst the only higher daycounts in any month are the 32 of 28th September 1965

and the 35 of 9th October last year. Although ten birds were only logged on three dates, observations suggested that five pairs were regularly present in November, whilst daily sightings during the first ten days of December were all of six or less bar the 11 of the 6th.

Jackdaw *Coloeus monedula*

Jac-y-Do

Uncommon Breeder and Fairly Common Visitor

11 trapped, 6 retrapped

1936-1976: 89 trapped, 2011-2021: 166 trapped, 39 retrapped

It has always proven difficult to assess the number of breeding Jackdaw due to semi-colonial nesting, their secretive habits and hidden nests. Following their colonisation in 1965, counts rose to between 50 and 60 pairs between 1974 and 1976, dropped to 16 to 20 pairs between 1982 and 1988, dropped again to between six and 14 pairs from 1989 to 1996 and were most recently estimated at between 15 and 26 pairs during the period 2011 to 2021. This year saw at least 27 pairs, with the majority nesting colonially in the crevices and burrows of South Haven (8) and the Quarry (8), but with further pairs again in Rat Bay (1), Peter's Bay (2), Smith's Bay (1), near Little Bay Point (2), at Middlerock (1) and near Frank's Point (2). There were two additional pairs in Hog Bay. Daycounts again suggested that there were more present during the breeding season than were found nesting, whilst birds were seen arriving from the mainland on occasion. There were four retrapped during the season which had been ringed in previous years, with a female ringed as a juvenile in July 2021, one ringed as an adult male in July 2021, a male ringed as a first-summer in May 2019 and a male ringed as a juvenile in August 2013; the latter, EY72035 (which was re-ringed EM29206 due to moderate ring wear), has been ringed for 3378 days, this some way off the current British longevity record of 6231 days (17 years, 22 days).

The total number of Jackdaw bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2018 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	2250	1272	1366	1177	1489	1163	486	1077	431
2021	2620	1933	1335	1728	1479	1867	497	829	952
2020	838	1663	1272	2037	1156	1177	271	1031	397
2019	874	1201	1279	1716	1869	1313	301	1382	254
2018	1621	1242	1256	1425	1968	1460	570	1902	234
2022	134	90	62	60	95	96	106	132	86
2021	149	155	102	93	83	120	73	80	134
2020	89	103	66	116	70	141	44	162	74
2019	115	66	62	107	148	95	48	381	94
2018	108	104	83	80	120	137	110	185	104
	6 th	4 th	27 th	1 st & 30 th	28 th	5 th	25 th	3 rd	17 th

There were early indications that there would be more breeding pairs than at any point in the last 40 years, with March daycounts of 134 on the 6th, 121 on the 17th and 126 on the 23rd, the peak only down on four counts of between 136 and 149 logged last year (the previous March high was the 115 of 2019). Pairs were collecting nest material from 26th March, this six days later than the first of last year. April daycounts were down on the last two years, although peaks of 75 together on the 2nd, 90 on the 4th and 80 together on the 11th still exceeded the number of breeding birds; no more than 48 were noted each day from the 20th, this a typical drop in numbers seen as more pairs begin to incubate. Chicks were first noted in Rat Bay on 16th May, these the earliest of the last eight years, six days earlier than the first to be heard last year and four days earlier than the 2015-2021 mean. Nevertheless the first fledglings were not seen until 9th June, this the same date as the first of last year and two days later than the 2013-2021 mean. Fish dropped by Puffins were again an important

food source for some birds; although the majority were found following gull attacks, a small number of Jackdaw again attempted to steal directly from the Puffins (usually unsuccessfully, but see the Puffin section). Slowworms were also taken and one was eating a Blackbird fledgling on 19th May.

It again proved impossible to confirm the number of fledglings present in the mobile and nervous post-breeding flocks, although minimum counts of 12 between South Haven and the West Knoll, six between Crab Bay and the Quarry and three at Rat Bay were made; a total of 21 was the lowest of the last nine years, down on a 2014-2021 mean of 29.9 \pm sd 4.7. Seemingly poor productivity was reflected in the June daycounts, with peaks of 60 on the 1st and 30th and 57 on the 3rd being the lowest June highs of the last nine years; the 2013-2021 mean June high is 87.1, with peaks during this period of 134 in 2015 and 116 in 2020, whilst a June bird-days total of 1177 was down on a mean of 1491.3 logged during the same period. Although there were only six July daycounts in excess of 60, highs of 79 on the 21st, 95 on the 28th and 84 on the 30th took the bird-days total to a very typical 1489 (the 2013-2021 mean is 1470.2 and there were 1479 last year). It was only the third August this decade without a three-figure daycount, highs of 96 on the 5th, 86 on the 8th and 88 on the 14th being well down on a 2013-2021 mean of 120.7, whilst the customary exodus for the mainland saw no more than 12 logged each day between the 20th and 29th and no sightings at all on the 30th and 31st. With the exception of 106 on the 25th, all September daycounts were of 41 or less, with ten or fewer noted on nine dates and none at all on an additional eight; there have only been higher September daycounts in four years, with highs of 115 in 2013 and 112 in 2015. There were seven October dates without a sighting, but highs of 105 on the 2nd and 132 on the 3rd which took the bird-days total to 1077, this slightly down on a 2013-2021 October bird-days mean of 1146.2; the peak daycount was the highest of the autumn, this the lowest maximum since the 100 of 2012, down on a 2013-2021 peak autumn daycount mean of 192.0 and highs during this period of 189 in 2017 and 381 in 2019 (the latter was only down on the 500 of 24th October 1993). There were 13 November dates without a sighting and fewer than ten logged on five dates, indeed highs of 86 on the 17th and 69 on the 19th were the only daycounts of more than 42. Sightings on eight of the first ten days of December were all of six or less.

Rook *Corvus frugilegus*

Ydfran

Scarce daycounts of up to 25 in 69 previous springs and of up to 21 in 36 previous autumns

One north on the morning of the 19th made this the seventh consecutive April with a Rook, however there were no more spring records; there have now been 104 spring bird-days logged over 14 years this century, with highs of ten in 2016, 45 in 2017 (including one logged on 41 dates between 4th April and 16th May which was eventually eaten by a Great Black-backed Gull) and ten last year. The only September record was of one on the morning of the 12th; there have now been 15 Septembers with a Rook, with the only earlier September record being of two on the 1st in 1964, whilst 36 August bird-days were noted over five years between 1934 and 1961 and one was present on 25th July 1973. Three southwest on 15th November was the last record of the year; there have been encounters in four previous Novembers, including 2018 and 2021, with 14 on the 20th in 1991 the only later sighting. A 2022 bird-days total of five was down on a 2013-2021 mean of 11.4; there were four annual tallies of between 20 and 36 between 1929 and 1935, eight of between 17 and 50 between 1950 and 1961 and further highs of 23 in 1975, 25 in 1976, 27 in 1991, 23 in 2002 and 45 in 2017.

Hooded Crow *Corvus cornix*

Brân Lwyd

Rare records in 15 years totalling 27 bird-days, with one in October 2018 the only autumn sighting

One which left North Plain for South Haven on 20th March was probably that which flew west to the Table before heading back east on the 24th (GE, RDB); this becomes the sixth consecutive year with a record. Of the 26 previous spring bird-days, only three have been logged in March (with singles in 1982, 2017 and 2019), whilst there have been 16 in April (including the first for Skokholm in 1939

and two together in 1982 which remains the only record of multiple birds), five in May and two in June. The all-time bird-days total now stands at 29, 16 of which have been since 2015.



Carrion Crow *Corvus corone*

Brân Dyddyn

Uncommon Breeder and Uncommon Visitor

9 trapped (including 7 pulli)

1936-1975: 148 trapped, 2013-2021: 13 trapped (including 11 pulli), 1 retrapped

There were 11 nesting pairs mapped in 2022, this up on a 2013-2021 mean of 9.1 and matching that of last year as the highest total this decade. Although prior to 1963 there were up to 12 pairs nesting on Skokholm, this had declined to just two by 1982, there was no breeding at all in 1984, 1985 and between 1991 and 1995 and there were only between two and five pairs from 1996 to 2012. Similar territories to last year were held near Wardens' Rest, Fossil Bay, the Dents, at Little Bay Point, on Rat Island, in Dumbell Bay, near Theatre Cove and on the Hills. Additional pairs were to the east of Windmill Gully, on a surprisingly public ledge high on the east end of Guillemot Cliff and to the west of Winter Pond Gully (a pair were to the east of the Gully last year). Pairs were lost from the Neck's Obione Bay and Sword Point (to the south of Spy Rock). Between one and 14 birds additional to the Skokholm breeders were present on 13 days in March, on two days in April and on two days in May prior to the first fledglings, with daycount highs in March of 35 on the 10th, 36 on the 12th and 33 on the 23rd, in April of 31 on the 2nd and in May of 32 on the 8th; the peak spring daycount was a Skokholm record, up on the 35 of 1st March last year, however one was eaten by a male Peregrine five days later (what was seemingly the partner bird was calling at the carcass for ten minutes after the Peregrine had deserted its meal). There were regular sightings during the period of a pair working the auk ledges at Twinlet, with one Crow dragging Guillemots to sea by their tails, this allowing the partner to move in for the egg. Moorhen eggs were also taken.

The first fledglings of the year were at the Hills on 9th May, these having reached The Cutting by the 18th; these were 12 days earlier than the first of last year (which also fledged the Hills). The Hills pair fledged four, pairs near Windmill Gully and Little Bay Point fledged three, four pairs fledged two and the Dumbell Bay pair fledged a singleton. The pairs near Theatre Cove, the Dents and at Fossil Bay failed. The resulting productivity value of 1.73 was the fourth highest of the last decade, up on a 2013-2021 mean of 1.26 \pm se 0.21 (there were highs during this period of 1.88 in 2015 (when eight pairs bred) and 2.27 last year (when there were 11 pairs). A juvenile circling low off the Lighthouse on 27th July was perhaps attracted by a floating object; having landed on the sea it became waterlogged and drifted west with the tide. Despite the high number of breeders and their fledglings, most again proved unobtrusive during the post-breeding period, with no more than 21 logged on each date between 23rd June and 20th August. Daycounts then increased, with August highs of 29 on the 21st and 35 on the 23rd. There was no indication that September highs of 30 on the 18th, 44 on the 24th and 22 on the 25th included birds from elsewhere, however 18 daycounts of 15 or less suggested that Crows were regularly leaving the Island; the peak was the highest this autumn

and only down on daycounts of 48 on 9th November 2014 and 18th October 2020, 49 on 22nd October 2020 and 47 on 9th October 2021. Given the good productivity and high totals logged earlier in the year, that October daycounts failed to exceed 24 was a surprise; the peak October daycount was the lowest since 2013, down on a 2013-2021 mean of 33.4, whilst a bird-days total of 391 was down on a mean of 479.4 logged during the same period. Counts remained low in November, with highs of 25 on the 16th and 26 on the 19th being down on a 2013-2021 mean high of 30.2. Daily sightings during the first ten days of December included a high of 19 on the 1st. Although birds were clearly commuting to and from the mainland during the autumn, one heading northeast over Broad Sound on 13th November was the only movement noted.

Raven *Corvus corax*

Cigfran

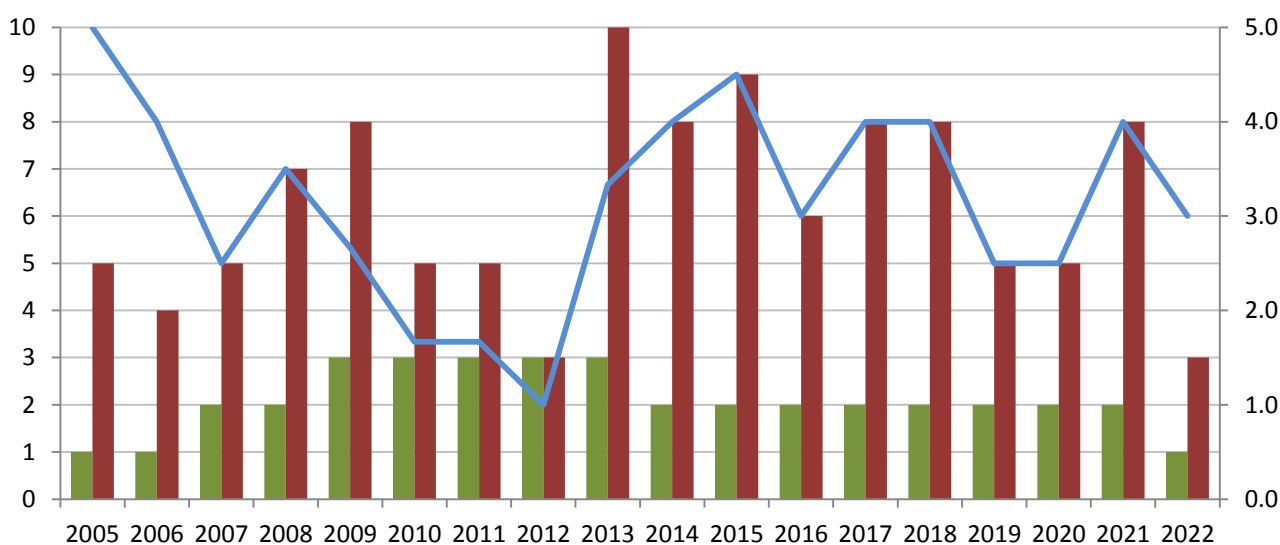
Scarce Breeder and Uncommon Visitor

1 trapped

1936-1965: 67 trapped

It soon became apparent in March that an adult in the vicinity of Steep Bay was alone, this a cove which held a nest in 2013 and in each year between 2017 and 2021; although the loss of a partner could have come about in many ways, the nest site occupied unsuccessfully in 2019 and successfully last year was particularly low, no doubt susceptible to the mid-February storms. A pair utilising the ledge hidden by a buttress of rock on the eastern side of North Haven were thus the only breeders this year, this a site used annually since 2017. With the exception of the two pairs which nested in 1966, only one pair of Raven was recorded in each year between 1928 and 2006, however there have since been 15 seasons in which two or more pairs have bred (see graph below). The lone Steep Bay bird was last seen on 16th March, whilst additional birds were noted on six spring dates; four were present on the 1st, 14th and 15th March, two flew south from the Lighthouse until lost from view on 12th March, there were 18 on 23rd March (a flock of 16 which flew west then north were watched by the North Haven pair) and one on 8th April was seen off by the pair. The peak spring daycount was the second highest to date, only down on the 21 recorded on 18th March last year; there have only been 21 further daycounts of more than 18, all logged across one August and 12 Septembers (with peaks (all in September) of 35 on the 22nd in 1983, 33 on the 19th in 2005 and 50 on the 14th in 2008).

The number of Raven breeding pairs (green) and the number of fledged young between 2005 and 2022, along with productivity (blue and secondary axis).



Both birds were off the North Haven nest on 13th April and one was watched heading there with a full crop the following day. The first fledgling was noted on 7th May, this six days earlier than the first of last year but on the same date as the 2013-2021 first fledgling mean (the earliest during this

period were logged on 30th April in 2014 and 2015). It was not until 21st May that three fledglings were confirmed, this one fewer than produced by a pair at this site in 2021 but matching that of 2020. A total of three Skokholm fledglings matched that logged in 2012 (when three pairs bred) as the lowest of the last 18 years, although mean productivity has only been higher in nine of those years. Mean productivity between 2009 and 2013, when three pairs nested on Skokholm, was 2.07, with 1.67 or fewer fledglings per pair logged in three of those years, this compared with a 2014-2021 mean of 3.56; it is tempting to conclude that a higher density of breeding birds impacts productivity. No more than two juveniles were encountered from 26th May, with both youngsters seen regularly during June, July and August. Two arrived from the mainland on 1st July, a fifth bird was logged on the 19th and 31st August and six were together on 21st August and 8th September, these the only autumn birds noted from elsewhere. Following four on 10th September, daycounts of three on the 14th, 15th and 22nd September and on 2nd October were the last encounters with birds other than the breeding pair, the female of which was trapped in the new Garage Heligoland on 8th November. The pair were seen each December day prior to the departure of staff on the 10th.

Great Tit *Parus major*

Titw Mawr

Scarce typically a late autumn or winter visitor in groups of up to 25 and has overwintered
1949-1970: 36 trapped, 2018-2021: 2 trapped, 1 retrapped

A male found in the Courtyard at 1900hrs on 16th April was singing the following morning but had seemingly departed by 0830hrs (WH *et al.*). A female on 15th March 2021 was the first spring record since one logged on 12 dates between 18th March and 2nd April 2011. The 2011 bird was perhaps that seen in November 2010, an indication of possible overwintering which has been suspected several times and confirmed in 1957-1958, 1992-1993 and 1997-1998. Although there have been 715 previous bird-days, only 25 have been since 2004; three were logged in September 1957, 364 in October (including a record daycount of 25 on the 9th in 1957 and one noted on seven dates between the 7th and 15th in 2018 which is the most recent autumn sighting), 124 in November, 28 in December, nine in January 1998, 46 in February, 123 in March, 17 in April and one on 28th May 1978.



Blue Tit *Cyanistes caeruleus*

Titw Tomos Las

Scarce records in 46 previous years, typically of singles or small groups but with up to 50 on occasion
1 trapped, 1 retrapped
1949-1975: 186 trapped, 2017-2021: 3 trapped

An adult found on the afternoon of 31st March was later trapped in the Wheelhouse Heligoland (PB); it was retrapped in the Well Heligoland the following day. The only other record was of one at the Lighthouse at 1700hrs on 16th April which flew east down the South Coast (GE); this becomes the first Island record to be logged between 12th April and 10th September. One sat on the gutter of the

Lighthouse tower on the morning of 21st March 2021 was the first spring sighting since one in March 2011, these the only other spring records since 2003. As with the preceding species, Blue Tit records have become a rare event on Skokholm, with only 17 of 1740 previous bird-days logged since 2004. There have now been 15 bird-days logged in September, 1037 in October (including daycount highs of 50 on the 16th in 1957, 50 on the 17th in 1964 and 32 on the 12th in 1981), 322 in November, 74 in December, 19 in January 1998, 95 in February, 168 in March and 13 in April. The autumn provisioning of peanuts almost certainly encouraged individuals to linger in some years.

Skylark *Alauda arvensis*

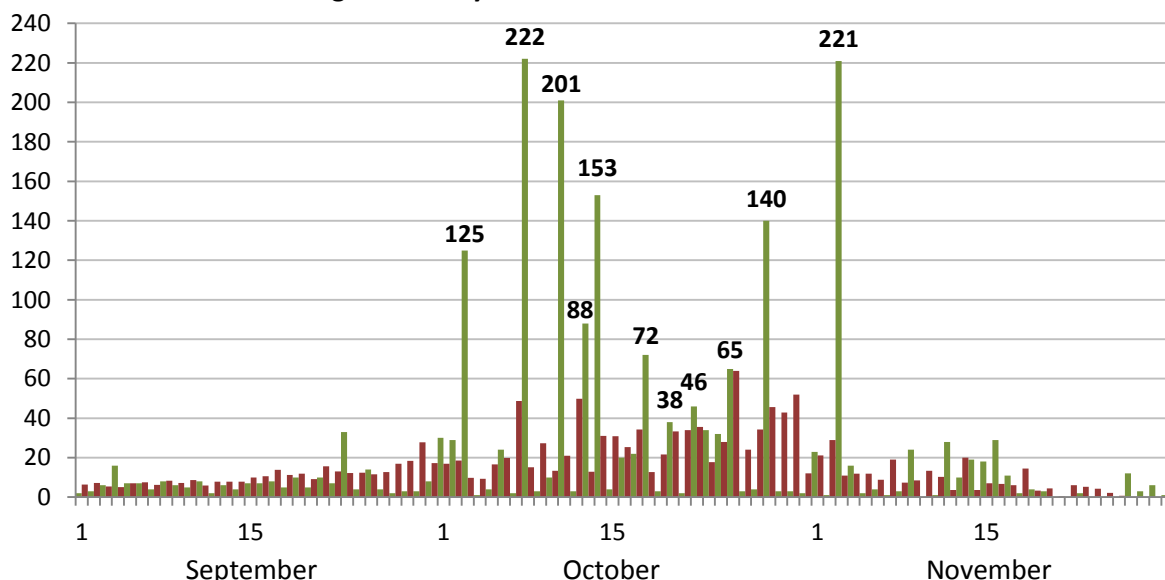
Ehedydd

Uncommon Breeder and Common Visitor

1936-1976: 299 trapped, 2015-2019: 17 trapped (including 4 pulli), 3 retrapped

There was again little evidence of a spring passage, with maximum daycounts of 19 in March, 15 in April and 14 in May being attributable to the Skokholm breeders; the March peak matched the fifth highest this decade and was well down on a daycount of 40 in 2017. Although no more than 12 singing males were logged on any one date, a total of 13 territories were registered regularly during April and May, this the lowest total since 2015 and down on a 2013-2021 mean of 14.78 ±sd 3.63 (there were highs during this period of 21 in 2017 and 19 in 2018); the number of territories mapped between 2002 and 2015 was lower, ranging between three and 12, however numbers were previously higher, with between 16 and 29 mapped between 1978 and 1996, 38 mapped in 1971 and a high of 48 logged in 1966. Adults were seen collecting food from 31st May, this 15 days earlier than the first of last year, and the first fledgling was encountered on 1st July, this 13 days earlier than last year. Given the number of overlapping territories and the secretive nesting habits of this species, it again proved impossible to accurately assess productivity, however young were noted at seven sites (one more than last year and one less than in 2019 and 2020). No more than 12 were seen on any date between 1st July and 3rd September, whilst a September high of 33 on the 23rd was down on a 2013-2021 mean of 40.6 (the all-time September highs are 59 in 1959 and 68 in 2020).

The number of Skylark logged on each day of autumn (green) compared with the 2013-2021 average. 2022 daycounts of 35 and above are labelled.



Although it proved the first October since 2016 with a sighting every day, ten or fewer were noted on 14 dates (14 to 18 dates between 2018 and 2021). A minimum of 125 on 3rd October was the first larger autumn arrival; there has not been a higher earlier daycount, although 250 were logged on the same date in 1952. There were 11 further October daycounts in excess of 30, with highs of 222 on the 8th, 201 on the 11th, 153 on the 14th and 140 on the 28th taking the bird-days total to 1388,

this the highest tally since 1988 and up on a 2013-2021 mean of 858.7; the peak October daycount was the highest since 231 were logged in 2018 and up on a 2013-2021 mean of 183.6, albeit being well down on all-time highs, all logged in October, of 1200 on the 21st in 1956, 601 on the 15th in 1959 and 700 on the 20th in 1988. There were sightings on all but six November dates, with highs of 221 on the 3rd, 28 on the 12th and 29 on the 16th, but no more than 12 from the 17th; the peak November daycount was up on a 2013-2021 mean of 61.7 and only down on highs of 450 on the 8th and 400 on the 12th in 1967 (200 on the 1st in 1970 is the next highest November count). Sightings on five December dates prior to the staff departure on the 10th included a high of 20 on the 1st; there have been higher counts in three Decembers, with 30 in 1930 and 1967 and 23 in 1981.



Shore Lark *Eremophila alpestris*

Ehedydd Traeth

Vagrant only three previous records

One found during North Plain Wheatear work on 23rd April was still present the following day (AWS *et al.*). Remarkably two of the three previous records were also found on this date, with one also remaining until the 24th in 1957 and one lingering to the 25th in 1961, whilst the most recent was present on 4th June 1990.



Sadly these may prove the only Skokholm Shore Lark records; the Norwegian population has shrunk considerably in recent decades and the Finnish population declined from approximately 10,000 pairs in the 1940s to fewer than ten by 2010 (perhaps due to overgrazing of lichen by Reindeer (Keller *et al.*, 2020)), whilst it is anticipated that the Fennoscandian breeding population will decline further as the area with a climate suitable for breeding diminishes (Huntley *et al.*, 2007). Mild winters are likely to reduce the number of birds coming this far to the southwest (Pritchard *et al.*, 2021).

Sand Martin *Riparia riparia*

Gwennol y Glennydd

Fairly Common and Common in some years with daycounts of up to 400 in spring and 500 in autumn

Earliest 8th March 2000 (27th March 2022) **Latest** 25th October 1971 and 1997 (13th October 2022)

1960-1967: 8 trapped, 2018-2020: 12 trapped

One over the Bluffs on the morning of 27th March was four days later than the 2013-2021 first of spring mean, with birds on 11th April 2013 and 4th April 2018 the only later vanguards during this period; there have been 184 bird-days earlier than the first of this year and a further 24 recorded on the same date. Another single the following day took the all-time March bird-days total to 476, 104 of which have been since 2013 (there were highs of 41 in 1965 and 40 in 2019). Records on 15 April dates from the 13th were all of five or less bar 11 on the 13th and seven the following day; the peak daycount was down on a 2013-2021 April mean of 21.6 (there was a high during this period of 73 in 2017 and all-time highs of 250 in 1954 and 200 in 1990), whilst a bird-days total of 61 was down on a 2013-2021 mean of 80.8 (the all-time April highs are of 380 in 1951, 313 in 1952 and 327 in 1954). There were sightings on 15 May dates, with highs of four on the 3rd and 8th and ten on the 14th; both a bird-days total of 34 and the daycount maximum were down on the 2013-2021 means, the former down on 48.9 and all-time highs of 792 in 1948, 544 in 1959 and 570 in 1989, the latter down on 15.6 and all-time highs of 300 on the 7th in 1948, 350 on the 6th in 1959 and 400 on the 8th in 1989. A single over North Pond on the 2nd was just the 29th June bird-day this century and the 329th to be logged since 1929 (there were peak totals of 27 in 1964, 67 in 1969 and 22 in 1991).

The total number of Sand Martin bird-days logged each month (2021 to 2019 in parenthesis), along with the maximum monthly daycount (2021 to 2019 in parenthesis) and the date(s) on which the 2022 peak was recorded.

March	April	May	June	July	August	September	October
2 (17, 6, 40)	61 (100, 59, 118)	34 (12, 32, 37)	1 (1, 0, 2)	11 (5, 9, 4)	162 (48, 56, 27)	298 (257, 120, 191)	5 (8, 2, 0)
1 (6, 4, 13)	11 (18, 17, 34)	10 (3, 8, 19)	1 (1, 0, 1)	4 (4, 7, 2)	64 (8, 36, 9)	144 (77, 44, 108)	2 (7, 2, 0)
27 th & 28 th	13 th	14 th	2 nd	7 th	28 th	19 th	8 th

A rather typical July showing saw two on the 4th, four on the 7th and counts of up to two on four further dates; there have only been eight totals of more than 30 in July, with peaks of 94 in 2016 and 211 in 2017. Sand Martin were noted on 14 August dates, with no more than six to the 24th but highs of 23 on the 27th, 64 on the 28th and 38 on the 29th which took the total to 162; there have been higher daycounts in six Augusts, with peaks of 250 in 1953, 300 in 1969 and 235 in 2018, whilst the total was down on five years including highs of 261 in 1953, 472 in 1969 and 309 in 2018 (the 2013-2021 August bird-days mean is 83.1). The September bird-days total more than doubled a 2013-2021 mean of 120.7, with sightings on 14 dates all being of nine or less bar highs of 48 on the 14th, 144 on the 19th (114 of which went through in 30 minutes), 29 on the 20th and 35 on the 23rd which took the total to 298; there have been higher daycounts and totals in six Septembers, with daycount highs of 500 in 1967 and 300 in 1997 and 2007 and with 1455 in 1967, 492 in 1997 and 554 in 2002 being the maximum totals. October saw singles on the 2nd and 3rd, two on the 8th and one over Home Meadow on the 13th which was the last of the year; a bird-days total of five was up on a 2013-2021 October mean of 1.8, whilst there have only been 31 later Sand Martin, 25 of which were in 1961.

Swallow *Hirundo rustica*
Gwennol
Scarce Breeder and Very Abundant Migrant
Earliest 11th March 2000 (30th March 2022) **Latest** 28th November 1932 (**1st December 2022**)

49 trapped (including 28 pulli), 19 retrapped

1936-1976: 234 trapped, 2010-2021: 1065 trapped (including 138 pulli), 110 retrapped, 13 controls

Two north on 30th March passed on the same date as the first ten of last year, but were one day later than the 2013-2021 first bird mean (the latest during this period were three on 11th April 2013 and nine on 5th April 2015, whilst the earliest were two on 12th March 2017); there have been 57 March bird-days earlier than the 30th, with one on the 11th in 2000 the only bird earlier than those of 2017. There were no sightings on seven of the first 12 days of April, with subsequent highs of 201 on the 27th, 103 on the 28th and 89 on the 30th only taking the bird-days total to 747; the peak daycount was up on a 2013-2021 mean of 136.0 and was the 18th highest to date (albeit well down on all-time April highs of 1000 in 1953 and 1990), however the bird-days total was down on a 2013-2021 mean of 793.3 and on six totals during that period (there were 1184 in 2017 and an all-time high of 1943 in 1953). Following daycount highs of 76 on the 2nd, 91 on the 3rd and 67 on the 14th, there were no more than 35 noted each May day from the 18th, a bird-days total of 957 also being down on most recent years; the peak May daycount was down on a 2013-2021 mean of 266.2 (the high during this period was 861 in 2019), whilst the bird-days total was down on a mean of 1374.6 (the high was 2457 in 2016). The highest May daycounts are of 2000 in 1953, 3000 in 1989 and 1500 in 1997, the highest May totals 2671 in 1948, 4185 in 1953 and 5574 in 1989. Apparent pairs in both the Smoking Room and the Courtyard on 2nd May were noted on the same date as the first arrival of a Skokholm breeder last year. Birds were collecting mud for a nest to the north of the Wheelhouse on 11th May, this 22 days earlier than the first nest building witnessed last year and nine days earlier than the first of 2019 and 2020. Unusually a juvenile was seen in both the Courtyard and at the Well on 23rd May, this presumably from much farther south. Six pairs took up residence, this one more than in each of the last three years and matching the number mapped in 2008 and 2015; seven pairs in 2007 is the only higher total. The only returning Swallow encountered this year was AKL5717, a bird ringed as a juvenile on 27th August last year; given that all 2021 fledglings were ringed, it would seem likely that this fledged from Skomer or the nearby mainland. There were 12 June daycounts in excess of the 12 breeders, all logged before the 19th and with highs of 16 on the 1st and 17 on the 2nd.



A pair over the door of the Wheelhouse were watched mating from 5th May, were nest building from the 14th and were feeding young from 17th June; six chicks were seen to be present on 24th June, two had fledged by 5th July and all six had departed the nest by the 7th. The pair in the Lighthouse

Smoking Room were watched nest building from 18th May and had five eggs on 8th June; all five hatched but one of the chicks was a runt which soon perished, the remaining four fledging by 6th July. A pair in the Red Hut gas store had two eggs on 10th June and five eggs on the 24th, all of which had hatched by 13th July and all of which had fledged by the 23rd. The nest to the north of the Wheelhouse was checked from a ladder on 24th June; two dead chicks were in the cup. Birds were entering the North Pond Nest Box from 19th May, however for a second straight year this site was not used; this was perhaps the pair which had an unlined nest in the porch of Chain Locker by 15th June, although this site was abandoned by the 24th. A pair nest building at Orchid Bog from 27th May had a complete nest in the western box by 6th June, however a check on the 15th revealed a lined nest in both the eastern and western boxes, neither of which went on to contain eggs. The three pairs which fledged young all had second broods. The pair over the Wheelhouse door had another six chicks in the same nest on 12th August, all of which had fledged by the 25th; pairs have managed to fledge five on seven occasions this decade (including once this year), however this was the first time a pair had fledged six (and they did it twice). The Smoking Room pair had two eggs in a new nest on 27th July and four on the 30th, but only three pulli on 18th August, all of which fledged on 7th September (one was in the Library Mist Net on the 8th). The Red Hut pair also produced four second brood eggs, three of which hatched and fledged on 10th September. A total of 27 fledglings was up on a 2013-2021 mean of 15.9 and was probably the highest yet recorded (there were peaks during this period of 20 in 2013 and 2021 and 23 in 2016, but a low of just eight in 2014). A productivity figure of 4.50 fledglings per pair was up on a 2013-2021 mean of 3.46 ±se 0.38 (the only higher productivity this decade was of 5.75 in 2016 when four pairs bred).

The total number of Swallow bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2021 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	2	747	957	358	528	1100	10,996	2612	1
2021	10	918	1385	281	332	986	5371	1124	5
2020	0	433	658	280	311	862	6797	2180	1
2019	44	1023	1794	237	360	649	5565	1898	0
2018	0	611	1265	287	397	1343	12,847	218	0
2022	2	201	91	17	36	158	4752	1939	1
2021	10	142	226	20	20	83	1463	727	2
2020	0	78	47	19	32	113	1127	736	1
2019	34	193	861	12	29	160	1164	1105	0
2018	0	71	265	16	36	478	5308	62	0
	30 th	27 th	3 rd	2 nd	16 th	29 th	19 th	2 nd	1 st

Two westbound birds were low over the sea off the Lighthouse on 6th July and five juveniles from elsewhere were ringed between the 11th and 18th, whilst 36 on the 16th was the first daycount well in excess of the number of breeders and their fledglings to that point. There were no higher daycounts until 47 were logged on 9th August, this followed by highs of 120 on the 10th, 93 on the 13th, 84 on the 14th and 158 on the 29th which took the August bird-days total to 1100; the August high was close to a 2013-2021 mean of 149.9 (there were all-time highs of 350 in 1959 and 478 in 2018), whilst the bird-days total was the second highest to date, only down on the 1343 of 2018. There were 25 or fewer noted on 14 September dates (three last year), including lows of 11 on the 6th, two on the 22nd and 27th and four on the 30th, but 12 daycounts of at least three-figures (16 last year) including highs of 1004 on the 14th, 4752 on the 19th, 1544 on the 23rd and 751 on the 24th; the peak September daycount was down on that logged in eight previous years, including all-time highs of 12,000 in 2014 and 12,979 in 2017, whilst a bird-days total of 10,996 was down on a 2013-2021 mean of 11,337.6 (the highs are of 18,664 in 1993, 30,693 in 2014 and 18,018 in 2017). Sightings on 20 October dates to the 24th included highs of 300 on the 1st, 1939 on the 2nd and 80 on the 14th, but

no more than 17 on any date thereafter; the only higher October daycounts are of 2500 on the 3rd in 1952 and 2000 on the 7th in 1998, whilst a bird-days total of 2612 was the highest this decade, more than doubling a 2013-2021 mean of 1069.9 (there were all-time highs of 3337 in 1952, 4047 in 1998 and 3686 in 2002). One east over East Bog on the 1st was just the 24th bird-day to be logged in November, 16 of which have been this decade. One south over Home Meadow at 1045hrs on the 1st was the first December Swallow for Skokholm, three days later than the previous latest (RDB).

Ringling recovery AKL5760

Originally ringed as a juvenile, LIBRARY MIST NET, SKOKHOLM 2nd September 2021

Recovered as an adult, OXWICH MARSH, SWANSEA 25th August 2022

Finding condition Intentionally taken

Distance travelled 79km at 101 degrees (ESE)

Days since ringed 357

Ringling recovery ARR7794

Originally ringed as a chick, THE RED HUT, SKOKHOLM 13th July 2022

Recovered as a juvenile, MULLOCK, PEMBROKESHIRE 11th August 2022

Finding condition Intentionally taken

Distance travelled 9km at 66 degrees (ENE)

Days since ringed 29

House Martin *Delichon urbicum*

Gwennol y Bondo

Common Migrant with a spring daycount high of 330 in 1948 and an autumn high of 710 in 2013

Earliest 20th March 1988 (6th April 2022) **Latest** 29th October 1975 (14th October 2022)

2 trapped

1938-1969: 23 trapped, 2015-2020: 14 trapped

One east along the North Coast on 6th April was four days later than the first two of last year but one day earlier than the 2013-2021 first bird mean; there have been 38 bird-days earlier than the first of this year, including 14 in March and 13 this decade. Records on 14 further April dates from the 10th were of no more than two prior to six on the 20th, these followed by highs of 11 on the 27th and nine on the 28th; although massively down on a spring daycount record of 330 logged on 18th April 1948, there have only been higher daycounts in ten Aprils (including five of the last seven). An April bird-days total of 58 exactly matched the 2013-2021 mean, but was only down on six previous years (including highs of 357 in 1948, 118 in 2016 and 81 in 2017). House Martin were logged on 22 May dates (additionally one was found dead at the Bluffs on a date with no further sightings), with 20 on the 14th and ten on the 21st being the only daycounts of more than six; the peak May daycount was the lowest since 2015, down on a 2013-2021 mean of 44.7 (there was a high during this period of 119 in 2016 which was only down on the 150 of 1989), whilst a bird-days total of 88 was the lowest since 2014, down on a 2013-2021 mean of 207.6 (there were all-time highs of 315 in 1948, 361 in 2016 and 313 in 2018). June proved typically quiet, with daycounts of up to four on five dates to the 7th, two on the 15th and one on the 30th which took the total to 16; there have been higher June totals in 40 years, with 52 in 1951, 101 in 1955 and 170 in 1969 the only tallies of more than 50 (the 21st century high is of 44 in 2018).

Up to two were logged on eight July dates between the 1st and 18th, with six on the 27th taking the bird-days total to 17; July daycounts of six were also logged in 1931, 1939 and 2020, with 17 last year being the only higher count, whilst the only higher total is the 19 of last year. Following seven on the 7th, House Martin were logged on just six further August dates from the 13th, but with highs of 24 on the 14th, 29 on the 27th and 38 on the 28th taking the total to a record 104; the previous daycount high was the 15 logged on the 28th in 2013, whilst 51 in 2015 was the highest tally (the 2013-2021 August bird-days mean is 22.0). Autumn passage again peaked in September, with

records on 21 dates, highs of 74 on the 19th, 60 on the 23rd and 40 on the 26th and a bird-days total of 307; the daycount maximum was down on that logged in 21 previous years, a 2013-2021 mean of 181.0 and all-time highs of 300 in 1956, 450 in 1959 and 710 in 2013, whilst the bird-days total was down on just five previous years, a 2013-2021 mean of 313.7 and all-time highs of 561 in 1959, 782 in 2013 and 675 in 2014. October sightings on five dates were of 39 on the 2nd, four on the 3rd, 72 on the 8th, 12 on the 13th and two on the 14th which were the last of the year; there have been higher October daycounts in five years, with peaks of 200 in 1939, 250 in 1952, 120 in 1958 and 112 in 2020, whilst the only totals up on the 129 of this October are 207 in 1939, 276 in 1952, 177 in 1958 and 179 in 2020. There have been 130 later bird-days, including 38 this century and 34 since 2013.

Yellow-browed Warbler *Phylloscopus inornatus*

Telor Aelfelyn

Scarce Autumn Migrant the first for Wales was found on 2nd October 1959. Rare until 2013

Earliest 18th September 2020 (13th October 2022) **Latest** 8th May 1990 (3rd December 2022)

2 trapped

1959-1968: 2 trapped, 2013-2020: 20 trapped, 3 retrapped

One on 13th October, found in the Library Mist Net at 0810hrs and present at the Well that afternoon, was one day earlier than the sole bird of last year but four days later than the 2013-2021 first bird mean. The only other record was of one found and later mist netted at North Gully on 3rd December (below photograph); this was the first December record for Skokholm, indeed the only November bird was present on the 3rd in 2017. Two individuals is down on a 2013-2021 mean of 2.89 and on all-time highs of four in 2013 and 2015, five in 2016 and six in 2020. There have still only been approximately 46 Skokholm individuals (54 bird-days) including the first for Wales present for two days in 1959, although post-2012 ringing has shown that sightings on consecutive dates, assumed in the past to be the same lingering individual, may actually refer to more than one bird. The recent increase in numbers is probably due to continued breeding range expansion to the west of the Urals, this mirroring an increase in the number wintering in western Europe.



Willow Warbler *Phylloscopus trochilus*

Telor yr Helyg

Abundant Migrant although only Common in some years

Earliest 23rd March 1972, 1997 & 2017 (24th March 2022) **Latest** 10th November 2020 (1st November 2022)

815 trapped, 66 retrapped

1933-1976: 11,698 trapped, 2010-2021: 6740 trapped, 835 retrapped, 14 controls

One at the Well on 24th March was six days earlier than the first 14 of last year and five days earlier

than the 2013-2021 first bird mean; singles were also logged on the 24th in 1995 and 2020, with singles on the 23rd in 1972 and 1997 and five on the 23rd in 2017 being the only earlier records (some earlier 2007 sightings are now deemed not proven). An analysis of the digitised Birdlog data reveals that the first individual of spring is arriving significantly earlier than it did only six decades ago (see chart below). There followed daily sightings to the 30th, with a peak daycount of six on the 29th taking the March total to 19; there have been nine higher March totals, with peaks of 221 in 1989, 46 in 1997, 60 in 2005 and 44 last year. Records on all but four April dates included 11 counts of fewer than ten (15 last year), but highs of 62 on the 3rd, 36 on the 13th and 35 on the 16th which took the total to 367; the peak April daycount was down on a 2013-2021 mean of 113.1, whilst the bird-days total was the second lowest this decade, 43 down on last April and well down on a 2013-2021 mean of 568.6 (the all-time April bird-day highs are the 1033 of 1953, the 1089 of 2012 and the 954 of 2017). Half of the birds counted in spring had gone through by 17th April, this three days later than last year, the same date as in 2020 and the 16th earliest date since recording began; an analysis of the Birdlog data suggests that the median spring bird is passing through earlier than it did in the early post-War years. Sightings on 12 May dates were of five or less bar highs of 13 on the 1st, eight on the 3rd and seven on the 4th; the peak May daycount was down on a 2013-2021 mean of 22.4 and a bird-days total of 50 was down on a 2013-2021 mean of 104.4. An adult female ringed on the 19th and a male in wing moult on the 30th were the only June records; there have been 272 previous June bird-days, 85 of which have been logged since 2013. As noted in previous reports, the vast majority of spring birds moved through quickly, indeed only five of the 208 ringed during the period were encountered again; one was present the day after ringing and further singles were present for three, four, seven and 15 days.

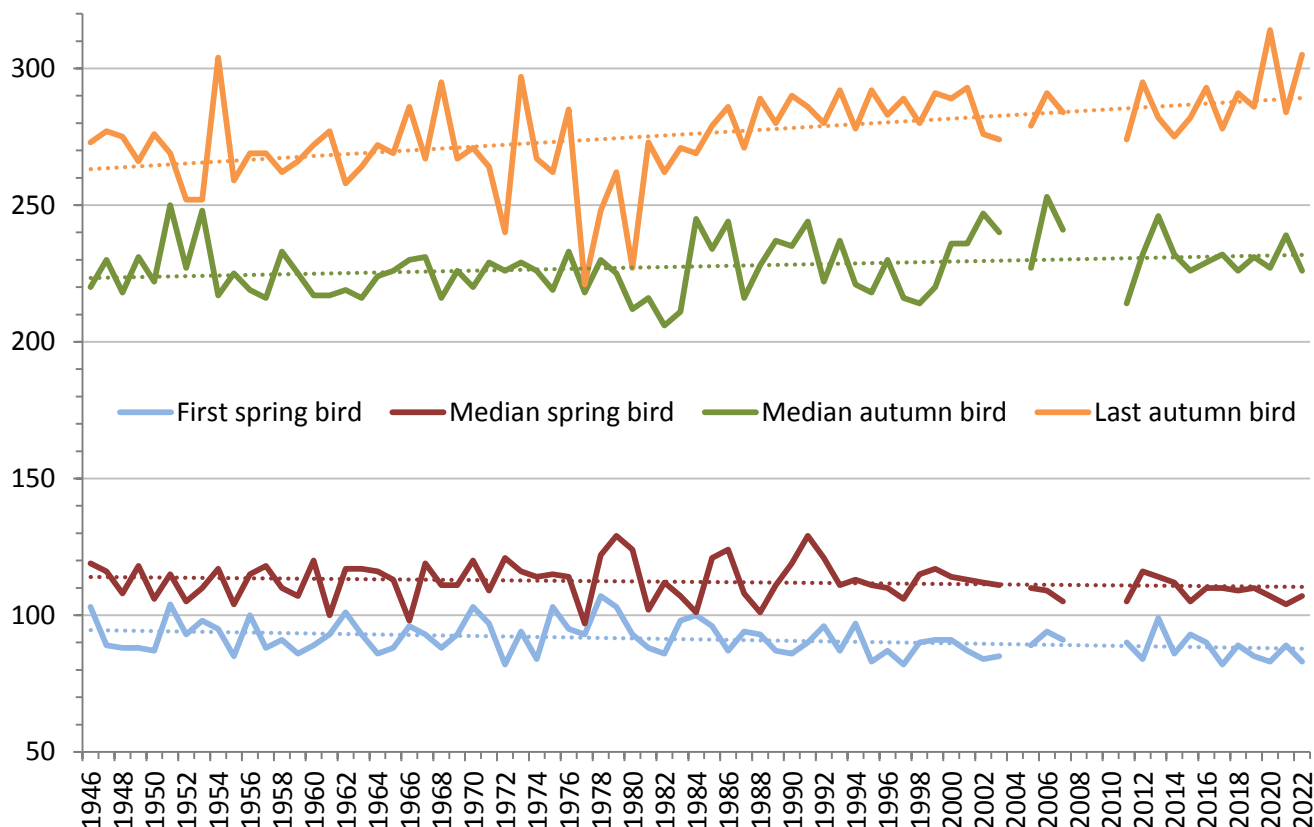
The total number of Willow Warbler bird-days logged each month, along with the maximum monthly daycount and the date on which the 2022 peak was recorded. Counts from 2021 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	19	367	50	2	284	667	369	0	1
2021	44	410	72	10	318	575	647	13	0
2020	4	411	65	4	168	614	118	27	7
2019	23	322	101	17	105	312	173	14	0
2018	4	429	122	6	101	785	184	3	0
2022	6	62	13	1	55	100	227	0	1
2021	30	110	13	2	110	103	134	3	0
2020	2	54	11	2	24	113	10	2	1
2019	8	38	32	4	31	32	29	3	0
2018	3	80	42	2	27	159	28	1	0
	29 th	3 rd	1 st	19 th & 30 th	26 th	1 st	1 st		1 st

Following an adult female on the 3rd, an unringed bird on the 4th and an adult male on the 8th, the first juvenile of the year was ringed on 9th July; the first 2022 juvenile was six days earlier than the first five of last year and four days earlier than the 2013-2021 first juvenile mean. Birds were logged on all but two subsequent July dates, with highs of 55 on the 26th, 36 on the 27th and 41 on the 30th taking the bird-days total to 284; there have been higher July daycounts in eight years, with highs of 3000 in 1948, 102 in 1963 and 110 last year, whilst the bird-days total was up on a 2013-2021 mean of 161.7 and only down on the 3048 of 1948, the 314 of 2011, the 457 of 2014 and the 318 of last year. There were sightings on every August date, with 12 daycounts of fewer than ten (there were 14 such counts last year), but highs of 100 on the 1st, 45 on the 11th and 84 on the 31st which led to a bird-days total of 667; the peak daycount was up on a 2013-2021 mean of 74.7 but was down on that logged in 15 previous Augusts (there were highs of 700 on the 23rd in 1939, 3000 on the 8th in 1948 and 1000 on the 21st in 1958, whilst the 21st century high is the 159 of 2018). The August bird-days total was up on a 2013-2021 mean of 487.1, but down on highs during that period of 719 in

2015 and 785 in 2018, along with the total logged in seven additional years (with peaks of 3938 in 1948, 1162 in 1958 and 2121 in 1975). The median autumn passage bird went through on 14th August, this 13 days earlier than last year and, equal with 2015 and 2018, the earliest date since 2011 when the median bird passed on 2nd August. The Birdlog data reveals that the median autumn Willow Warbler is passing significantly later, a trend which mirrors the shift in the date on which the last bird is logged; documented changes in phenology linked to climate change frequently cite earlier spring arrival dates, however the Skokholm Willow Warbler data suggests that it is departure dates which are changing more rapidly (see below chart).

The number of days into the year that the first and last Willow Warblers were logged 1946-2022 and the number of days after which the median spring and autumn birds went through.



There were September birds on all but four dates to the 24th, with no more than seven from the 9th and no more than three from the 14th, but highs of 227 on the 1st (175 were ringed, including 55 adults), 74 on the 2nd and 15 on the 8th; the only higher September daycounts are of 250 and 300 in 1951 and 250 in 1953, whilst the 2013-2021 peak September daycount mean is only 50.3 (with highs of 134 in 2014 and 2021). Despite the high daycount, a bird-days total of 369 was well down on the 647 of last September (albeit being up on a 2013-2021 mean of 261.0 and only down on further highs of 828 in 1951, 475 in 1953 and 550 in 2014). There were no Willow Warbler encountered in October, this for the first time in over a decade; there have been 288 October bird-days, including records in every year between 2011 and 2021 tallying 102 bird-days. One which moved from Boundary Hill to the Well, via East Bog and the Courtyard, on 1st November was only the second individual to be seen in this month following an adult female which lingered between 21st October and 10th November 2020. As was noted in previous reports, autumn birds frequently lingered for longer periods; of 607 ringed during the autumn, 25 were reencountered, with 12 present for a further day (including the only adult known to linger), two present two or three days later, three present four or five days later, one present six days later, four present 11 or 12 days later and further singles present for 19, 22 and 38 days after ringing.

Ringed recovery PCE999

Originally ringed as a juvenile, WELL HELIGOLAND, SKOKHOLM 1st September 2022

Recovered as a juvenile, PARQUE BIOLÓGICO DE GAIA, PORTO, PORTUGAL 19th September 2022

Finding condition Found sick and taken to a rehabilitation centre, although it eventually died

Distance travelled 1203km at 193 degrees (SSW)

Days since ringed 18

Chiffchaff *Phylloscopus collybita*

Siff-saff

Abundant Migrant although only Common in some years. Bred successfully for the first time in 2015

Earliest 19th February 1998 (10th March 2022) **Latest** 14th December 2000 (8th December 2022)

155 trapped, 63 retrapped, 2 controls

1934-1976: 2573 trapped, 2010-2021: 2787 trapped, 1149 retrapped, 18 controls

Three on 10th March were eight days later than the first two of last year but one day earlier than the 2013-2021 first bird mean; there is of course a possibility that early birds may come and go prior to an arrival of staff which this year occurred on 1st March. Sightings on an additional 17 March dates included one on the 19th which had been ringed as a juvenile in North Yorkshire the previous June and highs of six on the 16th, 28th and 30th and eight on the 29th which took the bird-days total to 53; the peak March daycount was down on a 2013-2021 mean of 17.2 and all-time highs of 60 in 1989, 29 in 2019 and 36 last year, whilst the total was down on a mean of 88.2 logged during the same period and all-time highs of 207 in 1989, 169 in 2017 and 195 in 2019. Chiffchaff were logged on just 22 April dates, this the fewest since 2011, with highs of seven on the 12th, 16th and 24th and eight on the 13th taking the total to only 76; the peak April daycount was the lowest since 2010, down on a 2013-2021 mean of 36.3 (there were highs of 75 in 1953, 72 in 2015 and 94 in 2018), whilst the lowest three April totals of this decade have come in the last three years (the 2013-2021 mean is 261.4 and the all-time highs 285 in 1991, 369 in 2015 and 575 in 2018). There were 'Siberian' *P. c. tristis* trapped on the 13th, 18th and 28th April; records of this subspecies are increasing but remain scarce in spring, whilst birds present between the 28th and 31st May 2017 and on 11th April 2020 are the only spring records confirmed via the mitochondrial DNA analysis of dropped feathers. Numbers remained low in May, with sightings on 25 dates and highs of seven on the 2nd and six on the 16th and 29th which were the only daycounts of more than four; both the peak May daycount and a bird-days total of 65 were the lowest since 2012, down on respective 2013-2021 means of 14.2 and 158.8 (this a period which includes the five highest May tallies to date and a record 307 in 2018).

It was also a poor June, with up to two noted on 20 dates and a bird-days total of just 25; daycounts

of more than two have been logged in 15 Junes, including in each year since 2013, whilst the total was down on ten previous Junes, including highs of 97 in 2015 (when a pair bred successfully), 225 in 2018 and 75 last year. Of 91 ringed during the spring, seven were retrapped, with four retrapped after one or two days, one reencountered after three days and one present eight days later; additionally NNB907, which was perhaps a female but showed no signs of breeding despite the regular passage of singing males through May and June, was present between 22nd May and 29th November (during which period it was retrapped 23 times and moulted from 21st July). A recent increase in spring numbers, coupled with maturing Well vegetation, has led to breeding; in 2014 a pair lingered between May and October but were not successful with any nest attempt, in 2015 a pair successfully fledged at least one, in 2017 a bird observed nest building was not known to progress beyond that stage, in May 2018 birds were building in two locations (although there was no indication that either attempt progressed) and lone males remained throughout the summer in 2020 and 2021. The only July sightings not attributable to NNB907 were of an adult female ringed on the 10th and unringed birds on the 12th and 16th. Similarly one at South Pond on the 15th and a second bird on the 23rd were perhaps the only August sightings of birds other than the lingerer; a bird-days total of 13 was down on a 2013-2021 mean of 29.7 and testament to how skulking NNB907 could be.



Chiffchaff were noted on all but four September dates, with four on the 2nd which included the first three juveniles of the year, then no more than two until six on the 17th and highs of eight on the 23rd and 14 on the 29th which took the bird-days total to 76; the peak daycount was down on a 2013-2021 September mean of 57.3 (indeed it was the lowest during this period which included all-time highs of 128 in 2013 and 133 in 2014), whilst the bird-days total was down on a mean of 240.6 logged during the same period (this decade includes seven of the nine highest September tallies and all-time highs of 404 in 2013 and 482 in 2014). Daily October sightings were all of seven or less bar ten on the 1st, 12 on the 10th and nine on the 11th and 13th which took the bird-days total to 149; although the peak daycount was less than half a 2013-2021 mean of 26.8, there have only been seven higher October totals, including highs of 307 in 2014, 292 in 2018 and 278 last year (the five highest October tallies have been logged this decade, raising the 2013-2021 mean to 200.7). There were 85 November bird-days, with sightings on 27 dates including highs of seven on the 1st and 4th and nine on the 5th, but with all sightings after the 19th attributable to NNB907; the only higher November daycounts were of 11 in 2014 and 12 in 2015, with the only higher totals the 109 of 2014 and the 112 of 2015 (the 2013-2021 mean is 45.2). Sightings on six December dates to the 8th were almost certainly of the lingering bird (which was last retrapped on 29th November); the only later

Skokholm record is of one on the 14th in 2000, although this is no doubt due to staff departures (which occurred on the 10th this year). Of 64 ringed during the autumn, 17 were retrapped on a later date (in addition to the bird present since May); there were seven retrapped after one or two days, two after three or four days and three after six or seven days, whilst one was present ten days later, one 11 days later, one 19 days later, one 21 days later and one lingered for a further 25 days.

The total number of Chiffchaff bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2021 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	53	76	65	25	19	13	76	149	85
2021	123	134	110	75	15	5	182	278	26
2020	73	138	100	44	19	28	140	66	47
2019	195	226	107	20	7	16	251	113	3
2018	18	575	307	225	102	93	232	292	48
2022	8	8	7	2	2	2	14	12	9
2021	36	15	10	8	2	1	49	22	5
2020	22	14	8	4	2	6	20	9	4
2019	29	21	16	3	2	4	65	9	1
2018	5	94	24	14	7	6	16	19	5
	29 th	13 th	2 nd	5 dates	10 th & 12 th	23 rd	29 th	10 th	5 th

The first 'Siberian' *P. c. tristis* of the autumn was calling at the Farm on 4th October, this six days earlier than the first of last autumn. Another ringed on the 20th was quite probably the ringed bird present around the Farm on the 24th and 25th (above photograph). Although this subspecies is now to be expected in autumn, a total of two individuals in the second half of the year was half that logged last year and down on the total recorded in four autumns this decade (the 2013-2021 autumn bird-days mean is 2.2). The only autumn birds to have been confirmed via the mitochondrial DNA analysis of dropped feathers remain singles present on 2nd November 2014, between the 22nd and 24th October and on 1st November 2015 and between the 15th and 20th November 2016 (see above for the confirmed spring records).

Ringing recovery NBP616

Originally ringed as an adult, THE WARREN, KILNSEA CLAYS, EAST YORKSHIRE 16th May 2022

Recovered as a first-summer, WHEELHOUSE HELIGOLAND, SKOKHOLM 4th June 2022

Distance travelled 422km at 240 degrees (WSW)

Days since ringed 19

This individual weighed only 6.2g when ringed in May, but 8.2g early on the afternoon of 4th June.

Ringing recovery NDL668

Originally ringed as a juvenile, SPENNITHORNE, NORTH YORKSHIRE 28th June 2021

Recovered as a first-summer, COTTAGE HELIGOLAND, SKOKHOLM 19th March 2022

Distance travelled 372km at 219 degrees (SW)

Days since ringed 264

This individual was ringed by John Bell, a trainer who for many years taught Richard how to ring.

Ringing recovery NNB601

Originally ringed as a juvenile, WHEELHOUSE HELIGOLAND, SKOKHOLM 18th October 2021

Recovered as an adult, STANFORD RESERVOIR, NORTHAMPTONSHIRE 18th April 2022

Finding condition Intentionally taken

Distance travelled 296km at 75 degrees (ENE)

Days since ringed 182

Sedge Warbler *Acrocephalus schoenobaenus*

Telor yr Hesp

Common Migrant and Uncommon Breeder previously a Scarce Breeder

Earliest 31st March 2021 (14th April 2022) **Latest** 2nd November 2019 (20th September 2022)

128 trapped, 113 retrapped, 4 controls

1934-1976: 1984 trapped, 2010-2021: 1470 trapped, 800 retrapped, 18 controls

Although there have only been 12 earlier bird-days, including six since 2016, one singing at South Pond on 14th April was 14 days later than the first of last year and one day later than the 2013-2021 first bird mean. Sightings on eight further April dates from the 21st included the first returning ringed bird on the 27th (the same date on which the first four returning birds were retrapped last year) and highs of 11 on the 29th and seven on the 30th which took the bird-days total to 31; the peak April daycount matched that of last year as the eighth highest to date (17 on the 20th in 2017 is the maximum), whilst the total was very close to a 2013-2021 mean of 30.3 (the five highest April totals have occurred in the last 12 years, with a high of 46 in 2011 and 2014). Birds were again seen on each May date, with daycount highs of 15 on the 14th and 27th and 16 on the 19th and 29th taking the total to 326; although the peak daycounts were down on a 2013-2021 mean of 21.3, the bird-days total was up on a mean of 303.2 logged during the same period, indeed there have only been six higher totals (with all-time highs of 575 in 1953, 376 in 1967 and 365 in 2019). Of 33 new birds encountered in April and May, six were retrapped, three of which remained until at least 15th July and were probably Skokholm breeders (these including the French ringed bird listed below, whilst a fourth bird was present from 15th May to at least 14th June). Additionally ten ringed in previous years were retrapped; three ringed as juveniles in 2021 had survived their first winter, one ringed as an adult in 2021 had survived at least a second, three ringed as juveniles in 2019 had survived a third winter (including one not seen in 2020 or 2021), a female ringed as an adult in 2019 had survived at least a fourth, a female ringed as a juvenile in 2018 had survived a fourth winter (it had not been encountered since 2018) and S147102, ringed as an adult male in May 2017, had survived at least a sixth winter (the latter now having been ringed for five years, two months and nine days).

The number of Sedge Warbler territories 2005-2022 (where data exists).

2005	2006	2007	08-09	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
7	3	4	-	4	13	4	8	9	7	11	13	15	15	15	14	15



There were a minimum of 15 breeding territories, this matching the record number mapped between 2018 and 2020; seven territories included larger areas of fresh water, whilst pairs on Isthmian Heath, above North Haven, near the Cottage, at the Top Tank, near Anne's Knoll, west of South Haven, north of the Hills and north of Migration Rocks occupied drier areas. Birds were nest

building at North Pond from 1st May and nest lining at the Well on the 21st, the latter five days later than the first of last year. Chicks were being fed at the Well from 9th June, this the same date on which the first chick of 2021 was logged, however the first fledgling was not seen until 8th July; the latter was nine days later than the first of last year and ten days later than the 2017-2021 mean. Productivity again proved impossible to calculate, primarily due to youngsters frequenting dense cover, closely positioned territories and the early arrival of fledglings from elsewhere. There were 43 juveniles ringed during July, this up on a 2013-2021 mean of 36.0 (there was a high of 68 in 2018 and lows of 20 in 2013 and just five in 2020, the latter no doubt due in part to a COVID-19 dictated reduction in trapping effort). Skokholm breeders were still feeding young in the South Pond Lower Drain on 14th August, this 17 days earlier than the last observed food delivery of 2021 and five days earlier than the last of 2020. Although the appearance of birds in unusual locations and a steady turnover of unringed individuals were again indicative of an autumn passage, peak August daycounts of 16 on the 3rd and 25th and 17 on the 14th were down on those logged in four years this decade (there were all-time August highs of 100 in 1948, 50 in 1951, 45 in 1966 and 43 in 2018); a bird-days total of 302 was up on a 2013-2021 August mean of 255.7 and only down on the 335 of 2016 and the 409 of 2018. Following six on the 1st and 2nd, there were sightings on ten further September dates to the 20th, with three on the 14th and singles on the 17th and 20th being the last of the year; the peak September daycount matched the second lowest this decade, whilst a bird-days total of 36 was down on a 2013-2021 mean of 53.1 (there were all-time highs of 75 in 2013, 72 in 2014 and 130 last year). The last of the year was three days earlier than the last of 2021; there have been 199 later bird-days, including 34 in October and one present on the 1st and 2nd November 2019. There were 85 juveniles ringed during the autumn, this the same number as last year and down on a 2013-2021 mean of 96.1 (a high of 199 was recorded in 2018).

Ringing recovery FRP 9714042

Originally ringed as a juvenile, TRUNVEL, TREGAT, FINISTÈRE, FRANCE 18th August 2021

Recovered as an adult male, WHEELHOUSE HELIGOLAND, SKOKHOLM 17th May 2022

Recovered as an adult male, WHEELHOUSE MIST NET, SKOKHOLM 19th May 2022

Recovered as an adult male, WELL 9 MIST NET, SKOKHOLM 29th May 2022

Recovered as an adult, COURTYARD MIST NET, SKOKHOLM 15th July 2022

Distance travelled 430km at 352 degrees (N)

Days since ringed 272, 274, 284 and 331

Ringing recovery ARR7892

Originally ringed as a juvenile, WELL 6 MIST NET, SKOKHOLM 14th August 2022

Recovered as a juvenile, DONGES, LOIRE-ATLANTIQUE, FRANCE 21st August 2022

Finding condition Intentionally taken

Distance travelled 543km at 155 degrees (SSE)

Days since ringed 7

Reed Warbler *Acrocephalus scirpaceus*

Telor y Cyrs

Uncommon Migrant previously Scarce. Bred for the first time in 2016, fledging at least three

Earliest 17th April 2015 (30th April 2022) **Latest** 30th October 1997 (12th October 2022)

12 trapped, 1 retrapped

1947-1976: 15 trapped, 2011-2021: 100 trapped (including 4 pulli), 55 retrapped, 2 controls

One around the Pig Sty on the 30th was just the 23rd April bird-day but eight days later than the first of last year and three days later than the 2013-2021 first bird mean. It proved the quietest May since 2015, with the only records being of one trapped on the 15th, two trapped on the 16th, one trapped on the 18th and one singing in the Courtyard on the 21st; although there have only been eight higher May totals, the five bird-days logged this year was down on the ten of last year, a 2013-2021 mean of 10.6 and a high of 42 in 2017 (when a male which had bred successfully in 2016 lingered

throughout the month). A male trapped in the Well Heligoland on 22nd June was perhaps that logged the following day; there have now been 100 June bird-days, including highs of 30 in 2016 (when Reed Warbler bred for the first time), 25 in 2017 (again primarily the 2016 male) and eight in 2019. One was singing at the Well on 2nd July and singles were present in the same area on the 7th, 10th and 19th; there have only been sightings in seven previous Julys, with bird-day highs of four in 2005, 42 in 2016 and 16 in 2017 (along with singles in 1986, 1994, 2001 and 2019). A juvenile trapped in the Well Heligoland on the 31st was the only August record, taking the bird-days total for this month to 133 (95 of which were recorded since 2013, including a high of 38 in 2016). Different juveniles were ringed on the 1st and 2nd September and three were ringed on the 12th, a bird-days total of five being down on a 2013-2021 mean of 10.0 and matching the 14th highest September tally (there were bird-day highs of 16 in 2016, 2018 and 2019). A juvenile ringed on 11th October was still present the following day, the latter the same date as that on which the last of 2021 was logged; there have now been 21 October bird-days, only five of which were later than the last of this year.

Icterine Warbler *Hippolais icterina*

Telor Aur

Rare 26 previous records, including 22 in autumn and the first for Wales on 31st August 1955

Earliest 14th May 1982 (29th May 2022) **Latest** 1st November 1995 (1st September 2022)

1 trapped

1955-1973: 7 trapped, 2014: 1 trapped

One found in the North Pond willows, late on the morning of 29th May, was the first since 2014 and briefly disrupted the seabird counts (RDB *et al.*); it soon headed north towards North Gully (upper photograph below). An afternoon twitch for the lingering Moltoni's Warbler saw 29 birders congregated on Home Meadow, several of which saw the Icterine Warbler around Well Stream as they departed for the boat; neither it or the Moltoni's Warbler were found the following day. There have been four previous spring records, with a male trapped on 28th June 1973 and singles on 14th May 1982, the 4th and 7th June 1982 (included in Pritchard *et al.* (2021) as two different birds but listed as a lingering individual in the 1982 Skokholm Report) and 13th June 1990.



A juvenile found on 1st September was frequenting the same North Pond bushes as visited by the spring bird (photograph below); this individual was later trapped in the Library Net and was also a one day bird (GE *et al.*). The 22 previous autumn records are of a juvenile trapped on 31st August 1955, two trapped on the morning of 3rd September 1962 (the only confirmed record of multiple

individuals), one trapped on 24th August 1966 (which was in the company of a second *Hippolais* warbler), one seen on 10th September 1968, one trapped on 12th September 1971, a juvenile trapped on 24th August 1973, one between 31st August and 9th September 1982 (seen on all but one date) which was different to a greyer juvenile present on the 14th (taking the 1982 total to a record four individuals), one noted daily between the 21st and 24th August and another on 7th October 1983, one on 23rd August, another on the 9th and 10th September and another daily between the 27th and 30th September 1988, one on the 29th and 30th August 1990 (a bird listed by Pritchard *et al.* (2021) for the 20th is not in the 1990 Skokholm Report or the paper logs), one on the 19th and 20th October and another on 31st October and 1st November 1995, one on an early 20th July in 1996, singles on the 11th, daily between the 15th and 18th and on 28th September 1997, a juvenile between the 29th and 31st August 2003 and a juvenile trapped at the Well on 2nd September 2014.



Grasshopper Warbler *Locustella naevia*

Troellwr Bach

Uncommon Migrant occasionally absent in autumn

Earliest 4th April 2003 (13th April 2022) **Latest** 7th November 1968 (8th September 2022)

6 trapped

1936-1976: 360 trapped, 2011-2021: 65 trapped

The first of the year was mist netted at the Well on 13th April, this nine days earlier than the first of last year and six days earlier than the 2013-2021 first bird mean; there have been 22 earlier bird-days, all logged in 1961, 1966, 1969, 1995, 2001 and 2003. Two on 27th April included one trapped in the Well Heligoland and another was trapped in the Wheelhouse Heligoland the following day. An April bird-days total of four was down on a 2011-2021 mean of 9.2 (a period which included a 21st century high of 25 in 2017, this well down on all-time April bird-day highs of 68 in 1966, 80 in 1967 and 60 in 1971). Two on 1st May (one in the Well Heligoland and one along Well Stream) were the last of the spring; there were record May totals of 73 in 1960, 38 in 1967 and 54 in 1970, whilst the post-1991 high is of ten in 2001 and the 2013-2021 May mean is 2.0. Two on 1st September, including a juvenile trapped in the Library Net, were the first of the autumn; these were six days later than the first of last autumn and made this only the 36th year with a September sighting (including nine of the last ten). One was at South Pond three days later and a juvenile, netted at the Well on the 8th, was the last of the year. Four autumn bird-days matched last year and was up on a

2013-2021 mean of 2.7, but was down on totals of between five and 39 logged in nine autumns (all between 1960 and 1972, bar five in 2013 and seven in 2016) and was well down on a remarkable 99 recorded in the autumn of 1970.



Blackcap *Sylvia atricapilla*

Telor Penddu

Common but recorded by both Thompson and Betts as Uncommon and Scarce prior to the 1960s

Earliest 9th March 1997 (24th March 2022) **Latest** 2nd December 1996 (30th November 2022)

234 trapped, 32 retrapped, 2 controls

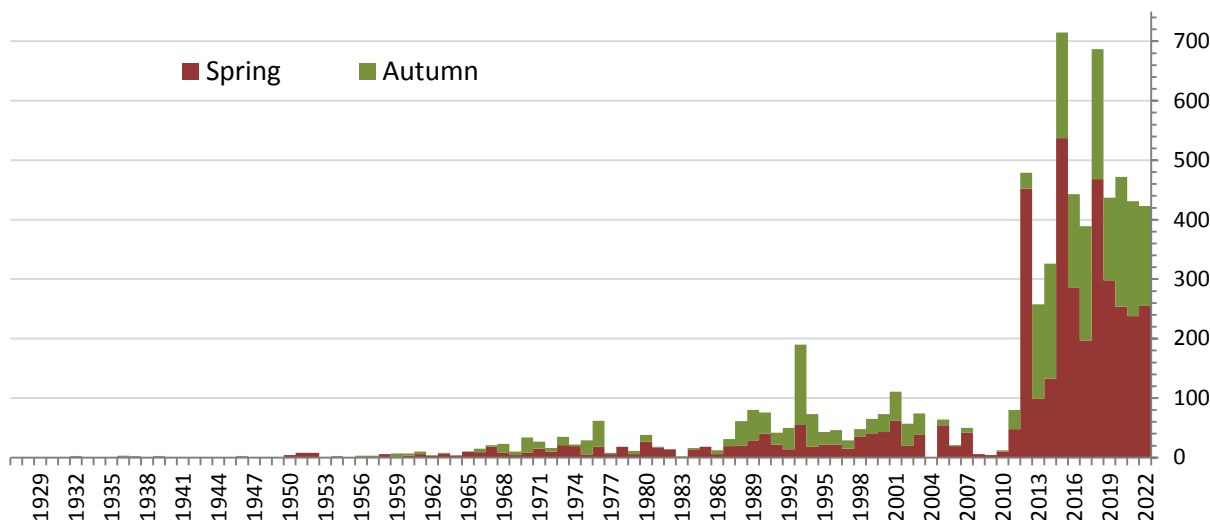
1936-1976: 211 trapped, 2011-2021: 1967 trapped, 256 retrapped, 4 controls

A female at the Well on 24th March was four days earlier than the first of last year and three days earlier than the 2013-2021 first bird mean; there have been seven earlier spring bird-days, all logged in March and with all bar one since 2012. A male on the 26th and four on the 30th took the March bird-days total to six and the all-time March tally to 64; a daycount of eight and a total of 14 in 2019 are the highest March counts. There were no further sightings until two on 9th April, these followed by birds on all but one April date from the 12th and highs of 40 on the 13th, 23 on the 16th and 28 on the 24th; the former daycount was the third highest to have been logged so early in the year and the tenth highest in April, down on peaks of 73 on the 12th in 2018, 164 on the 13th in 2018, 129 on the 15th in 2015 and 68 on the 20th in 2017 (these also the four highest daycounts in any month). An April bird-days total of 186 was the seventh highest to date, but was down on a 2013-2021 mean of 218.1 and all-time highs of 469 in 2015 and 413 in 2018; there were 488 April bird-days to the end of 2011, but now 2425 since. Sightings on 21 May dates were all of two or less bar 16 on the 1st, nine on the 2nd, eight on the 3rd and four on the 4th, a bird-days total of 59 being the fourth highest May tally to date (there were totals of 170 in 2012, 63 in 2015 and 122 in 2016). A male on the 7th and 8th, another on the 20th and a female on the 21st were the only June sightings; there have now been 101 June bird-days, with six higher June totals and peaks of 14 in 2018 and 19 in 2020. As noted for other species, Blackcaps typically moved through quickly during spring; of 159 ringed during the period, eight were retrapped, with four present for at least two days, two for three, one for four and a male ringed on 22nd May retrapped on the 26th (two of 121 were present for up to five days last year).

A juvenile in the Wheelhouse Heligoland on 8th July was 12 days earlier than the first confirmed youngster of last autumn, albeit over three weeks later than one ringed on 16th June 2020 which is the earliest yet recorded (the only other June juveniles were logged on the 20th in 2014 and on the 27th in 2019). A male in the Courtyard on the 30th was the only other July sighting, taking the all-time

July bird-days total to 55 (there was a high of 11 in 2018). August was typically quiet, with one singing on the 1st, one at East Bog on the 7th and one at the Well on the 11th; sightings in 12 previous Augusts total 33 bird-days, with a high of six in 2011.

The total number of Blackcap bird-days logged in each spring and autumn since 1927.



Blackcap were logged on 21 September dates, with highs of six on the 25th, ten on the 27th and 17 on the 29th; the peak daycount was the fourth highest in this month, down on 21 in 2017, 34 in 2020 and 23 in 2021, whilst a bird-days total of 73 was down on four previous Septembers, almost matching a 2013-2021 mean of 71.0 (there were highs of 84 in 2019 and 115 in 2020). Sightings on 25 October dates were all of three or less bar seven on the 2nd, five on the 22nd, six on the 23rd, five on the 24th and eight on the 28th; the peak October daycount was the lowest since singles in 2012 (there was an all-time high of 23 last year), whilst a bird-days total of 65 was the second lowest this decade, down on a 2013-2021 mean of 93.3 and all-time highs of 104 in 1993, 107 in 2017 and 127 in 2018. There were November birds on ten dates to the 13th and daily between the 27th and 30th, with highs of five on the 1st and three on the 3rd and 5th; the peak daycount matched the record set on the 3rd and 13th in 1993 and a bird-days total of 25 was a new high, up on the 24 of 1993 and the 23 of 2020. A male and a female on 30th November were the last of the year; the only later Skokholm Blackcap was a male present from 20th November to 2nd December 1996. Of 75 ringed during the

autumn, 13 definitely lingered, with one present for at least two days, three for three, five for four, two for five and juvenile females present from the 20th to 29th September (ten days) and from 20th September to 1st October (12 days).

The total number of Blackcap bird-days logged each month, along with the maximum monthly daycount and the date(s) on which the 2022 peak was recorded. Counts from 2021 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	6	186	59	4	2	3	73	65	25
2021	10	192	34	2	2	3	70	100	18
2020	8	189	38	19	1	3	115	76	23
2019	14	236	42	6	5	1	84	42	7
2018	0	413	41	14	11	0	65	127	16
2022	4	40	16	1	1	1	17	8	5
2021	6	33	8	1	1	1	23	23	4
2020	3	32	5	4	1	1	34	9	2
2019	8	35	19	2	1	1	12	13	3
2018	0	164	8	3	2	0	10	20	4
	30 th	13 th	1 st	4 dates	2 dates	3 dates	29 th	28 th	1 st

Ringling recovery AFL2264

Originally ringed as a first-summer female, CALF OF MAN, ISLE OF MAN 8th May 2021

Recovered as an adult female, WHEELHOUSE HELIGOLAND, SKOKHOLM 11th May 2022

Distance travelled 263km at 187 degrees (S)

Days since ringed 368

Ringling recovery AXL0647

Originally ringed as a juvenile female, NANJIZAL, LANDS END, CORNWALL 20th September 2020

Recovered as an adult female, WHEELHOUSE HELIGOLAND, SKOKHOLM 29th April 2022

Distance travelled 186km at 10 degrees (N)

Days since ringed 586

Garden Warbler *Sylvia borin*

Telor yr Ardd

Uncommon Migrant although Scarce between 2005 and 2012, in 2017 and in 2018

Earliest 6th April 1966 (29th April 2022) **Latest** 2nd November 1968 (21st September 2022)

4 trapped

1934-1976: 174 trapped, 2013-2021: 32 trapped, 7 retrapped

Two netted on the morning of 29th April (one to the north of the Wheelhouse and one by the Bottom Tank) were nine days earlier than the first two of last year and three days earlier than the 2013-2021 first bird mean; there have been 49 earlier bird-days, including just nine this century. One was at the Well Heligoland on 16th May and the last of the spring was netted at the Well on the 28th. A spring bird-days total of four was one down on that of last year and down on 38 spring tallies (including eight this century), all ranging between five and 14 bar the 20 of 1988, the 62 of 1993 and the 16 of 1997 (the peak total including 30 grounded by fog on 10th May and 15 the following day, these the only daycounts in any month to be up on the ten of 3rd May 1988 and the seven of 6th May 1985). There were no August birds for the fifth time in ten years, with one at the Well on 17th September being ten days later than the first two of last autumn and possibly that seen around the Farm later the same day. One found at Orchid Bog and later seen at the Farm on 21st September was the last of the year. An autumn bird-days total of two was down on that logged in seven of the last ten years, a 2013-2021 autumn bird-days mean of 6.3, recent peaks of 17 in 2014 and 13 in 2015 and all-time highs of 22 in 1968, 26 in 1969 and 31 in 1971.

Lesser Whitethroat *Curruca curruca*

Llwydfron Fach

Scarce Migrant not recorded every year

Earliest 20th April 2016 (1st May 2022) **Latest** 3rd November 1927 (25th October 2022)

4 trapped, 2 retrapped

1937-1976: 31 trapped, 2011-2021: 22 trapped, 7 retrapped

A first-summer trapped in the Cottage Heligoland and later seen at the Gap on 1st May was different to an unringed bird present at the Well on the same date; there have been 13 earlier spring bird-days, most recently with singles on 30th April in 2017 and 2019, whilst this was only the 16th day to date with multiple birds (there were highs of three on 8th May 2002 and 8th October 2013). There were no further spring sightings, these taking the all-time spring bird-days total to just 89, 18 of which have been since 2013. A mobile juvenile ringed on 20th September was the first of the autumn, this followed by another young *C. c. curruca* netted at the Wheelhouse on 3rd October. The last of the year, netted at the Wheelhouse on 23rd October and retrapped in the Wheelhouse Heligoland on the 24th and 25th, appeared a close match for a Siberian *C. c. blythi*, with a second primary roughly equal in length to the seventh and the browner crown and nape typical of this race (below photograph); the identification was confirmed via the mitochondrial DNA analysis of a dropped feather, this the second to be verified in this way following one present between the 3rd and 5th October 2014. The Siberian bird increased in mass from 10.7g on the 23rd to 11.5g on the 24th and to 12.0g on the 25th. There have now been 195 Skokholm bird-days, with highs of seven in 2014 and this year, eight in 2019, 14 in 1990 and 24 in 2013 (the latter tally comprising one in June and at least four different autumn individuals logged over 16 October dates).


Whitethroat *Curruca communis*

Llwydfron

Fairly Common Migrant previously Common and has bred in nine years (most recently in 2019)

Earliest 5th April 1966 (16th April 2022) **Latest** 30th October 1968 (19th September 2022)

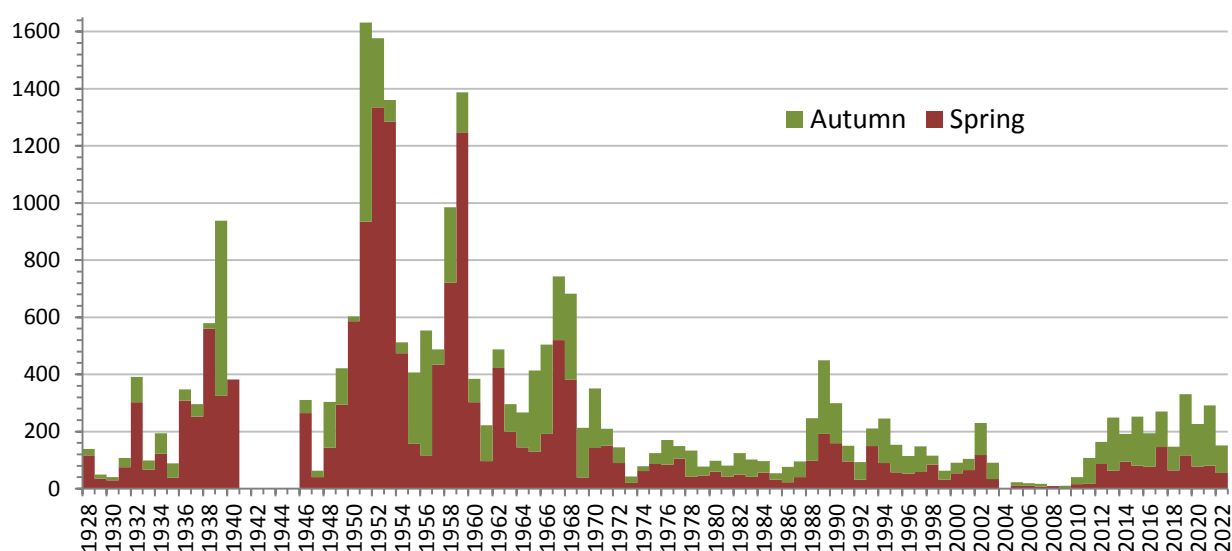
35 trapped, 12 retrapped

1934-1976: 5924 trapped, 2010-2021: 587 trapped, 155 retrapped, 8 controls

The first of the year was trapped in the Wheelhouse Heligoland on 16th April, this five days earlier than the first two of last year and three days earlier than the 2013-2021 first bird mean; the first has arrived between the 16th and 21st April in each of the last ten years, whilst there have been 29 bird-days earlier than the first of this year, 16 of which were in 1966 and only four of which were this century. Counts of up to seven on seven further April dates from the 21st took the bird-days total to

23, this the fifth highest April tally since 1976, albeit down on totals during this period of 29 in 2014 and 2017, 38 in 2019 and 49 in 2020; there were typically more birds prior to 1969, with daycounts of up to 200 contributing to April totals of up to 288. Birds were noted on 12 May dates, with highs of eight on the 1st and six on the 15th being the only daycounts of more than three; the peak May daycount was down on a 2013-2021 mean of 12.0 (there was a high during this period of 21 in 2019 and a low of four in 2020), whilst a bird-days total of 31 was the second lowest since 2011, down on a 2013-2021 mean of 54.8 and recent highs of 78 in 2012 and 100 in 2017 (historically May has proven the most productive month of the year, with daycount highs of 500 in 1952 and 1959 leading to record monthly totals of 1215 and 1223 respectively). Although a male had sung at the Well during the last two days of May, a single on the 6th was the only June record; a lone June bird-day was the lowest total since 2012, down on a 2013-2021 mean of 12.4, a high during that period of 30 last year and all-time June highs of 60 in 1989 and 55 in 1990. Territorial males built cock-nests in 2014, 2015 and 2017 and one sang throughout June last year, whilst the first confirmed breeding since 1998 saw a pair fledge two in 2019.

The total number of Whitethroat bird-days logged in each spring and autumn since 1928.



The first juvenile of the year and a ringed adult were near Migration Rocks on 11th July; the former was two days earlier than the first of last year and one day earlier than the first mainland juvenile of

2020, the latter perhaps a wanderer from Skomer. There followed sightings of up to three birds on 11 further July dates, with juveniles ringed on the 13th and 19th probably responsible for all bar one at the Table on the 27th; a July bird-days total of 16 was the second lowest this decade, down on a 2013-2021 July mean of 39.7 and an all-time high of 90 in 2019. Whitethroat were logged on all but six August dates, with five on the 17th, 27th and 29th the highest daycounts; the peak matched that of 2016 as the lowest since 2014 (down on a post-1969 August high of 17 in 2019 and massively down on earlier daycounts of up to 500), whilst a bird-days total of 64 was down on the last three years, a 2013-2021 mean of 73.3 and all-time August highs of 595 in 1939, 223 in 1955 and 228 in 1966. September saw three on the 1st, five on the 2nd, singles on six dates between the 3rd and 14th and two on the 19th which were the last of the year and took the bird-days total to 16; although down on the 15 of last September, the peak daycount was close to a 2013-2021 mean of 6.0, whilst the bird-days total was the second lowest to be logged in the same period, down on a 2013-2021 mean of 35.8 (September daycounts peaked at 250 in 1951, 120 in 1956 and 70 in 1965, whilst the record tallies are of 682 in 1951, 405 in 1956 and 159 in 1969). There have been 675 later bird-days, including 93 this century and 91 in October (the most recent of which were on the 4th and 6th last year).

Moltoni's Warbler *Curruca subalpina*

Telor Moltoni

Vagrant no previous records

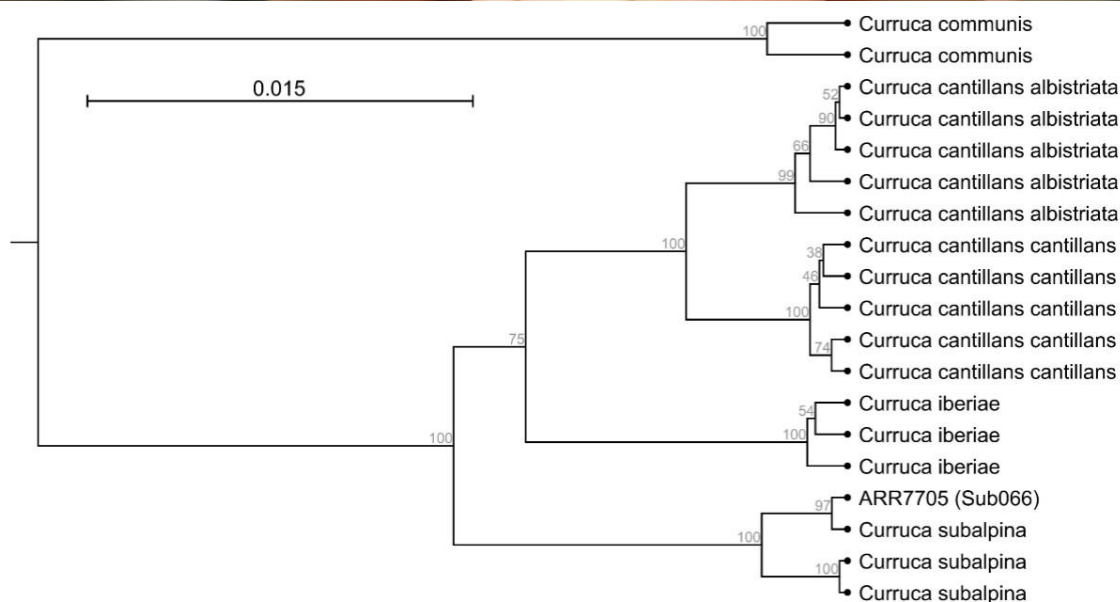
1 trapped, 1 retrapped

1953-1976: 3 'Subalpine Warbler' trapped, 2013-2020: 2 'Subalpine Warbler' trapped

Brief views of a silent male 'Subalpine Warbler' found in the Courtyard on 17th May initially gave the impression of a Western bird, however later in-the-hand examination revealed a tail pattern more consistent with Eastern Subalpine Warbler, the white portion of the second-outermost tail feathers extending down the shaft of the inner webs (RDB *et al.*). Correspondence with Tim Jones at Spurn Bird Observatory revealed that the bird was a close match for a DNA confirmed Moltoni's Warbler trapped in Sweden, which had exhibited similar salmony underparts and a more Eastern-type tail pattern (rather than the restricted white tips usually associated with this rare species of Northwest Italy, Corsica, Sardinia and the Balearics). Assuming the Skokholm bird to be a first-summer, a full complement of moulted flight feathers was also indicative of Moltoni's Warbler; Eastern and Western Subalpine Warblers undergo a partial post-juvenile moult into September, this followed by a pre-breeding moult through our winter and potentially into March which does not include all of the primaries, whilst Moltoni's Warbler does a similar post juvenile moult followed by a complete pre-breeding moult which finishes in February or March (only rarely are wing feathers retained (Demongin, 2016)). It remained in the Courtyard for the next two days, albeit silently so.

There followed a three day lack of records, this possibly in part due to seabird monitoring commitments, but also due to occasional strong winds, rain and perhaps its preference for the Elders beyond the Green Heath Lesser Black-backed Gull colony. Somewhat surprisingly, it was retrapped in the Cottage Heligoland on the 23rd; when released it gave the fast, Wren-like trill associated with Moltoni's Warbler. Although again missing on the 24th and subsequently elusive, it was calling, and occasionally singing, in the Courtyard on each date between the 25th and 29th May; a fast and scratchy *Sylvia* song regularly incorporated the diagnostic trill. A sizable swell finally abated by the 29th, when a successful twitch provided 29 observers with brief views and occasional snippets of song and call (along with views of a bonus Icterine Warbler). It was not seen again. Professor Martin Collinson and Tereza Senfeld of the University of Aberdeen used the Mitochondrial DNA analysis of a dropped feather to confirm the identification (see phylogram below) and sound recordings made by Alan Wilkins were also submitted to the British Birds Rarities committee. Although no doubt under recorded, often being lumped with other 'Subalpine Warblers' following field views of silent birds (there were 745 unidentified 'Subalpine Warbler' found to the end of 2020 (Holt *et al.*, 2021)), Moltoni's Warbler is undoubtedly the rarest of the three 'Subalps'; the 2022 Skokholm bird becomes the 13th for Britain and first for Wales, with eight of the previous records

coming from Scotland (including the first taken on St Kilda in 1894), three from Norfolk and one from the Isles of Scilly. As of 2022, there have been five Skokholm records of Eastern Subalpine Warbler (in May 2014, April and May 2016, May 2020 and May 2021), two of Western Subalpine Warbler (in May 2020 and July 2021) and 13 birds not identified to species level (including the first for Wales on 1st October 1953 and singles in May 2013 and May 2016).



Firecrest *Regulus ignicapilla*

Dryw Fflamben

Scarce Migrant recorded in 43 years since 1949, including 26 since 1988. More regular in autumn
3 trapped, 1 retrapped
1936-1976: 23 trapped, 2013-2020: 22 trapped, 15 retrapped

A female and a male, both first-winters caught in the Cottage Heligoland on 13th September, were

the first since 5th October 2020; two were also present the following day, although only the male was confirmed as the same. An unringed bird at the Well on 17th September was probably that seen around the Farm later the same day and what was probably the fourth individual of the month was at the Farm on the 23rd. A first-winter female feeding near the Cottage on 18th October was later trapped at the Well; the same bird was noted daily, either at the Farm or the Well, until last logged on the 23rd. The last of the autumn was found at the Dip on 28th October; this individual soon made its way up to Sugar's Delight and then into the Quarry. A total of six autumn individuals (accounting for 13 bird-days) was the most since the ten of 2017 (when there were 20 bird-days); there were 11 individuals encountered in 2015 (producing a record 39 bird-days) and a record daycount of seven on 19th October 1967. There have been more birds ringed in four previous years, with six in both 1967 and 1968, eight in 2015 and four in 2017.



Goldcrest *Regulus regulus*

Dryw Eurben

Common but only Fairly Common in some years

68 trapped, 15 retrapped

1938-1976: 431 trapped, 2010-2021: 878 trapped, 238 retrapped

Two on the 16th, one on the 18th and four on the 24th were the only sightings during what proved to be the second quietest March of the last 11 years; a March bird-days total of seven was down on a 2013-2021 mean of 28.6 and well down on all-time highs of 124 in 1974, 94 in 1989, 60 in 2017 and 57 last year. April was similarly quiet, with one on the 3rd, two on the 13th and three on the 14th the only birds logged; a bird-days total of six was down on five Aprils this decade, a 2013-2021 mean of 21.3 and all-time highs of 112 in 1972, 101 in 1975 and 84 in 2018. There were no May sightings for the fourth time in ten years, the all-time May bird-days total remaining at 65 (23 of which have been this century). None of the five Goldcrest ringed during the spring were retrapped subsequently.

One in the Courtyard on 18th August was eight days later than the first of last autumn, whilst daily singles between the 25th and 28th took the total for the month to five; although there have only now been 181 August bird-days, the 2013-2021 mean is 8.9 and there were all-time highs of 17 in 2014, 19 in 2015 and 31 in 2017. Following four on the 2nd and one on the 4th, there were September records on all but two dates from the 9th, with highs of ten on the 28th and 18 on the 29th which took the bird-days total to 118; the peak daycount was down on a 2013-2021 mean of 32.4 and all-time highs of 80 in 1989 and 121 in 2017, whilst the bird-days total was only down on six post-1995 years (albeit being well down on a 2013-2021 mean of 241.0 and all-time highs of 458 in 1988, 494 in

1989, 728 in 2017 and 355 in 2019). Numbers increased in October, with birds noted on every date and highs of 13 on the 1st, 19 on the 2nd and 17 on the 8th and 24th; there have been higher daycounts in 23 Octobers, including eight of the last ten and with highs of 250 in 1959 (the highest daycount in any month), 60 in 1988 and 1989 and 70 in 1990. An October bird-days total of 193 was the 15th highest to date, albeit down on a 2013-2021 mean of 211.1 and all-time highs of 346 in 1975, 452 in 1988 and 344 in 2017.



Goldcrest were noted on all but six November dates, with highs of five on the 4th and 12th taking the bird-days total to 57; although there have been higher November daycounts in three years, with a peak of 16 in 2015, the bird-days total was a new high, up on the 22 of 2003, the 56 of 2015 and the 31 of 2019. One or two were seen daily between the 1st and 5th December, with another on the 7th becoming the latest Skokholm record (the staff departed on the 10th); singles on the 3rd, 4th and 5th in 1992 are the only other December bird-days. Birds again lingered for longer in autumn than they had in spring; of 63 Goldcrest ringed during the autumn, 12 were definitely present for more than one day, with two encountered for two days, three for three, one for five, one for six, two for eight, one for nine, one for 15 and an adult male present between the 3rd and 29th November (27 days).

Wren *Troglodytes troglodytes*

Dryw

Fairly Common Breeder only recorded as a Common Winter Visitor prior to first breeding in 1988

91 trapped, 51 retrapped

1934-1976: 928 trapped, 2010-2021: 843 trapped, 641 retrapped

The 68 territorial males mapped this year included 67 registered on multiple visits and one singing in a discrete area on one of four survey dates which could not be linked to an adjacent territory. Although three down on last year and the lowest total of the last four years, this was the fourth highest total yet recorded and up on a 2013-2021 mean of 61.9. The last 12 years, all with over 50 territories, are remarkable for the fact that the previous peak in numbers was the 19 mapped in 1994 (six years after breeding was first recorded in Crab Bay); the most recent survey prior to the renovation period located ten territories in 2007. The reason for this substantial increase in territorial males is unclear. Nest building was first noted in Crab Bay on 9th April, young were being fed at Orchid Bog on 11th May and the first fledglings to be encountered were to the south of the Sugarloaf on 9th June; the first fledglings were 18 days earlier than the first of last year but two days later than the 2013-2021 mean (the earliest during this period were logged on 30th May 2018 and the latest on 27th June last year). One roosted in the hole drilled through the eastern sandstone

gatepost of the Knoll Wall on the night of 26th August. Prior to their establishment as a Skokholm breeding species, Wren were considered a common winter visitor (with a substantial October arrival which saw daycounts peak at up to 200); it is arguable that an autumn arrival is still evident in some years (see table below), although it is possible that increasingly active birds are more likely to be encountered during the post-moult period.

The number of Wren bird-days logged each month 2019-2022. Note that March recording began on the 16th in 2020.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	849	717	808	638	587	530	417	712	590
2021	1253	1381	1173	1041	732	567	734	652	583
2020	575	1558	1238	1064	544	662	824	820	659
2019	1165	1422	1395	1288	1037	653	652	818	677

Of nine Wren ringed in previous years and retrapped in 2022, seven ringed as juveniles in 2021 had survived their first winter and one ringed as a juvenile in 2020 was retrapped in November as it entered its third winter. Additionally male KYN332, ringed as a juvenile on 25th August 2018 having been trapped in the Well 9 Mist Net, was retrapped in the Well 9 Mist Net on 15th July after three years, ten months and 21 days; the oldest known British Wren wore a ring for seven years, nine months and 20 days, whilst the oldest Skokholm bird reached five years and three days.

Starling *Sturnus vulgaris*

Drudwy

Very Abundant bred from 1946, peaking at 53 pairs in the 1960s, with the last known pair in 2006
11 trapped
1937-1976: 1082 trapped, 2013-2021: 102 trapped

Sightings on all but three March dates to the 20th included highs of 24 on the 4th and 23 on the 6th and 10th, although no more than four were seen each day from the 11th, with four on the 23rd and one on the 28th taking the bird-days tally to only 196; the peak daycount was down on a 2013-2021 March mean of 73.2, a high during this period of 192 in 2018 and all-time highs of 1500 in 1947 and 1000 in 1960, whilst the total was down on a 2013-2021 mean of 651.3 and well down on all-time highs of 2360 in 1947, 4131 in 1958 and 2283 in 1964. Birds were again roosting under the eaves of the Wheelhouse on occasion. The sole April sighting was of a single on the 16th, the total down on a 2013-2021 April mean of 27.2 and a high during this period of 113 in 2018; the breeding years saw daycount highs of 200 in 1958 and 1967 and 500 in 1960, with the total reaching 1587 in 1958 and 1475 in 1965. May sightings are now scarce, indeed a single on the 15th was the only record this year and no birds were logged at all in 2004, 2009, 2012, 2015 and 2021. Following singles on the 10th and 15th, there were Starlings on all but one June date from the 19th and highs during the month of 25 on the 22nd (including the first six juveniles of the year), 30 on the 23rd and 24 on the 27th; the 2017-2021 first juvenile mean is 21st June, although only three juvenile plumaged birds were noted during the first three years of this period (a sad reflection of the Pembrokeshire breeding population which saw a 90% decline in numbers between 1988 and 2007 (Rees, 2012)). A June bird-days total of 185 was down on the 699 of 2020 but otherwise the highest since 2005, albeit being well down on peaks of 1263 in 1964, 1202 in 1966 and 1461 in 1989 (the latter including 12 dates when Starling were only listed as 'present'). Although counts were down on the last two years, birds again remained throughout July, with daily sightings totalling 779 bird-days and highs of 35 on the 12th, 36 on the 14th, 21st and 25th and 32 on the 29th; daycount highs of 120 in 2020 and 93 in 2021 took the July totals to 1977 and 1825 respectively, with both the peak daycount and bird-days total logged this year otherwise the highest since 2006 when a count of 50 took the tally to 814 (the July bird-days high is the 4516 of 1989, although this again includes six dates without a numerical Birdlog entry). It was suggested in 2020 that an increase in records was perhaps due to reduced disturbance during the COVID-19 pandemic; there were lower guest numbers in 2021 but a full complement this year.

There were daily August sightings for just the second time since 2007, with highs of 59 on the 20th, 56 on the 21st and 38 on the 23rd which took the bird-days total to 849; since 2010, the only other August totals of more than four have been 99 in 2013, 217 in 2017, 1481 in 2020 and 1948 last year, this year's tally being the third highest since 2006. Given what was a productive August by recent standards, that the only September records were of singles on the 1st and 29th was surprising; although the September total has now been of between zero and six in eight years this decade, it was 346 last year, whilst daycounts were in three-figures as recently as 2000 and bird-day totals were in four-figures up until 1999. Following a single on the 12th, two on the 13th and one on the 14th, there were October sightings on all but one date from the 18th and highs of 35 on the 19th, 30 on the 20th and 22 on the 21st which took the total to 173; the 2013-2021 October bird-days mean is 777.8, with a high during this period of 2846 in 2018 and a record 6936 logged in 1990 (when the birds present were not counted on six dates, but daycounts peaked at 1500). Although nowhere close to what was witnessed last year, numbers again increased in November, with sightings on 21 dates, six three-figure daycounts and highs of 170 on the 4th, 900 on the 13th and 199 on the 16th which took the bird-days total to 2194; there have only been higher November daycounts in ten years, with peaks of 5000 in 1968, 10,000 in 1970 and 5204 last year, however the total was the second lowest this decade, down on a 2013-2021 mean of 7555.6 and an all-time high of 18,894 logged last year. Daily December counts to the departure of staff on the 10th peaked at 72 on the 1st, 95 on the 2nd and 61 on the 9th, the tally being 513 (there were 829 in five days last year).



Ring Ouzel *Turdus torquatus*

Mwyalchen y Mynydd

Scarce previously Uncommon and more regular in spring

Earliest 15th March 1955 (23rd April 2022) **Latest** 21st November 1989

1934-1976: 52 trapped, 2015-2021: 3 trapped, 3 retrapped

A minimum of three were present on 23rd April (the true total was perhaps as high as five), these five days later than the first of last year; there have been 485 earlier bird-days, including 120 in March. One at the Lime Kiln the following day was the only other sighting this year. An April bird-days total of four matched that of last year as the fourth highest this century (it was nevertheless down on 34 previous April tallies, a recent high of 18 in 2015 and all-time highs of 24 in 1956 and 1967, 23 in 1964 and 27 in 1971). Although daycounts of three have been logged on 27 previous occasions (with 21 in spring and six in autumn), there have only been 18 higher daycounts (with 14 in spring and four in autumn) including all-time highs of six in April 1971, April 1973 and October 1991, seven in March 1974, eight in October 1966 and March 1974 and ten in April 1967. There have now been spring

records in 75 years totalling 643 bird-days, this including just 88 bird-days in 15 springs this century, whilst autumn records in 50 years total 216 bird-days and include just 22 bird-days in nine autumns this century. The decline in records has mirrored the status of this species nationally, with a 43% drop in the number of British breeding pairs occurring over 40 years and an 11% drop in the Welsh population occurring between 1999 and 2012 (Bladwell *et al.*, 2018).

Blackbird *Turdus merula*

Mwyalchen

Common Visitor and Uncommon Breeder peaking at nine pairs in 1990 and 2021

57 trapped, 46 retrapped

1934-1976: 1750 trapped, 2010-2021: 699 trapped (including 16 pulli), 430 retrapped, 2 controls

Although spring daycounts again failed to exceed the total number of breeding birds, there was evidence that migrants were passing through; given that the majority of the Skokholm breeders and first-winters were already ringed, it would seem likely that three first-winter females ringed between the 5th and 27th March (but not encountered thereafter) were passage birds. Of 14 known to have survived from previous years, four males and a female survived their first winters, a male survived at least a second winter, three males and three females survived a second winter, a female ringed as a juvenile in June 2019 survived a third winter (and was retrapped in November entering a fourth) and male LH16427, ringed as a juvenile in August 2018, was retrapped in April after a fourth winter. There was no sign of LH16008, a female ringed as a first-summer on 26th March 2013 and last retrapped on 18th April 2021 after nine winters; this bird had a ring for eight years and 24 days, this somewhat short of a British longevity record of 15 years, two months and five days. There were nine breeding territories mapped, this two more than in 2015, 2016 and 2020 and matching the 1990 and 2021 tallies as the highest to date; as was the case last year, pairs bred near the Wheelhouse, the Cottage, the Well, Orchid Bog, East Bog, Boundary Hill, South Pond, to the west of South Pond and between the Hills and North Pond. A male was observed taking a Palmate Newt from the Wheelhouse Pond on 22nd April. The first fledglings emerged from the Old Well Bramble on 18th May, these 24 days later than the first of last year and four days later than the 2013-2021 mean; the first 2021 fledglings were the earliest for at least a decade, with the latest of the last ten years appearing on 27th May in 2013 and on the 23rd in 2019.

Productivity again proved difficult to calculate due to overlapping territories, second broods and potentially the arrival of youngsters from elsewhere, however adults were seen feeding chicks in all nine territories, 17 first brood fledglings were recorded across eight territories (only the East Bog pair seemingly failed) and at least five second brood fledglings were recorded across three territories. Productivity was thus estimated at a minimum of 2.44 fledglings per pair, this matching that of last year but down on a 2013-2021 mean of 2.71 \pm se 0.25 and the joint lowest of the last six years (the peak during this period was the 3.67 of 2019, the lows 2.17 in 2014 and 1.29 in 2015). As was noted by Betts, Thompson and in recent reports, the number of sightings declined during the period of post-breeding moult; there were monthly totals of 198 in August and 153 in September (100 and 188 respectively last year). Although an unringed female on 6th July had probably arrived from elsewhere, it was not until 2nd September that the first larger bird was trapped (a bird with a wing chord of 135mm or more); this was the first September arrival of such a large bird this decade (the first in each year between 2014 and 2021 arrived in October, with a mean first arrival on the 19th). It was not until 5th November that a bird with a wing of at least 138.5mm arrived (the 2013-2021 mean is 22nd October) and there were no birds of 140mm or more this year (records in seven of the previous nine years average 27th October). Despite this obvious arrival of birds from elsewhere, October daycount highs of 18 on the 12th and 19 on the 23rd were down on a 2013-2021 mean high of 31.4, the peak down on that of all but two years during this period. Although an October bird-days total of 229 was up on five of the last nine years, it was down on a 2013-2021 mean of 258.4, a high during that period of 471 in 2020 and well down on all-time October peaks of 2314 in 1964 (which included what was described in the 1964 Annual Report as an 'avalanche' of 1000 on the 18th), 1136

in 1975 and 1075 in 1993. Ten or fewer were logged on 18 November dates, whilst daily sightings and highs of 48 on the 14th, 28 on the 19th and 23 on the 30th resulted in a bird-days total of 384; the 2013-2021 November bird-days mean is 370.9, this boosted by a 21st century daycount high of 121 on the 2nd in 2015 and a total of 605 in 2021, the latter only down on the 843 of 1939 and the 793 of 1967 (staff were present throughout the month in these years, although this is not always the case). Daily counts during the first ten days of December peaked at 25 on the 2nd and tallied 165 bird-days.

Fieldfare *Turdus pilaris*

Socan Eira

Uncommon or Fairly Common Winter Visitor

Earliest 14th September 1977 (19th October 2022) **Latest** 13th June 1980 (28th March 2022)

14 trapped

1940-1976: 8 trapped, 2016-2021: 5 trapped

Two which spent the morning of 28th March with a Starling were the only spring birds and five days later than the last of 2021; there have now been 1309 bird-days logged between March and June inclusive, all in 69 years and with daycount highs of 38 in 1947, 250 in 1965 and 20 in 1974 (but with only 117 bird-days across 12 years this century). Although spring was again quiet, the October total was unprecedented. A group of 85, heading east for the mainland at dusk on 19th October, were part of a substantial movement tracked along the coast of Wales that day; these arrived on the same date as the 2013-2021 first of autumn mean (three on 11th October 2013 and one on the same date in 2014 were the earliest during this period, whilst three on 5th November 2021 were the latest). The following day saw a minimum of 289 grounded birds, the majority of which remained for the day; the only higher daycount is the 300 logged on 26th October 1971, with the next highest counts being the 250 of 4th March 1965 and the 105 of 9th October 2004 (the latter up until this year). There followed 122 on the 21st, 133 on the 22nd and 110 on the 23rd, these all up on the 2004 peak, whilst further daycounts of 55 on the 24th and of between one and six on each subsequent date to the 30th took the October total to 815; there had only been 2300 previous October bird-days, with a 2013-2021 mean of 15.3 and highs of 282 in 1966, 330 in 1971 and 154 in 1993. Despite a record October, November proved quiet, with singles on seven dates and five on the 29th taking the total to 12; the 2013-2021 November bird-days mean is 37.1 and the all-time highs are 332 in 1967, 143 in 1968 and 146 in 2015. Singles on the 3rd and 5th were the only December sightings.



Mistle Thrush *Turdus viscivorus*
Scarce but not recorded every year
 1 trapped
 1936-1976: 3 trapped

Brych y Coed

One which frequented the area between the Farm, North Pond and North Gully on 4th April was quite probably that trapped in the Well Heligoland the following day (GE *et al.*); this was just the fourth to be ringed on Skokholm and took the all-time April bird-days total to 23 (including seven in 1967). There have been sightings in 55 previous years, accounting for 214 bird-days, with records in every month bar January but the majority noted in March (40), October (94) and November (29).



Redwing *Turdus iliacus*
Common Winter Visitor

Coch Dan-aden

Earliest 20th September 2001 (29th September 2022) **Latest** 18th June 1979 (5th April 2022)
 18 trapped
 1936-1976: 156 trapped, 2013-2021: 188 trapped, 8 retrapped

Daily sightings during the first six days of March included highs of 14 on the 1st and seven on the 3rd, with one found eaten on the latter date, whilst a further single on the 26th took the March total to 32; there have been 19 higher March totals, with peaks of 474 in 1955, 401 in 1962 and 852 in 1965 (the 2013-2021 mean is 47.1, although this period included a 'Beast from the East' generated high of 258 in 2018). An arrival of 21 birds on 4th April was unusual, indeed a fall of 52 on the 12th in 2013 is the only other April daycount of more than 11, whilst one the following day took the total to 22; there have been 282 previous April bird-days logged over 50 years, with 112 of these since 2013. Three on 29th September were ten days earlier than the 2013-2021 first of autumn mean; there have been ten earlier autumn bird-days, including three on the 28th in 2020. Following a single on the 11th and two on the 13th, daily October sightings from the 19th included highs of 26 on the 19th and 134 on the 20th (these associated with the large Fieldfare movement documented above) and of 85 on the 29th; there have been higher October daycounts in just nine years, including peaks of 400 in 1958, 350 in 1973 and 1124 grounded by thick fog on the 26th in 2017, however a total of 329 bird-days was down on 18 previous Octobers (there were highs of 1077 in 1958, 1781 in 1973 and 1214 in 2017). Redwing were noted on 20 November dates, including peaks of 11 on the 4th and 13 on the 15th, whilst sightings of metal ringed birds suggested that at least some were lingering (although

none were retrapped); the peak November daycount was the lowest this decade, down on a 2013-2021 mean of 57.3 (the all-time highs are 150 in 1968, 200 in 1994 and 233 last year), whilst a November bird-days total of 103 was well down on all-time highs of 915 in 1968 (when staff departed on the 18th), 379 in 1994 (when staff departed on the 20th) and 1016 last year (when staff were present throughout). Sightings on eight December dates to the 10th included highs of six on the 1st and 12 on the 6th and totalled 35 bird-days.



Song Thrush *Turdus philomelos*

Bronfraith

Common Visitor breeding has not been recorded but some return in successive winters

26 trapped, 6 retrapped

1934-1976: 447 trapped, 2013-2021: 366 trapped, 31 retrapped

Daily March sightings to the 6th included highs of six on the 1st and ten on the 3rd, these followed by two on the 10th and further singles on six dates (with at least three different first-years from the 20th); there have been higher March daycounts in 12 years, including peaks of 100 in 1931 and 1962 and of 350 in 1965 (just three of these years were since 1969, with a high of 37 in 2018). A March bird-days total of 32 matched a 2013-2021 mean of 31.6 and was down on 14 previous years, including highs of 249 in 1940, 212 in 1962 and 961 in 1965 (the highest total since the 187 of 1969 is the 104 of 2018). A typical April saw singles on the 2nd and 16th and a first-year in the Wheelhouse Heligoland on the 23rd; there have been 299 previous April bird-days logged over 59 years including highs of 27 in 1987, 29 in 2000 and 34 in 2015 (the 2013-2021 April bird-days mean is 7.8). One around the Farm on the 30th was the only May record and the 48th bird-day to be logged in this month; records in 32 previous Mays, including each of the last three, include bird-day highs of four in 1938 and 1982. A first-summer in the Wheelhouse Heligoland on the 2nd was perhaps the May bird and took the all-time June bird-days total to just 46, nine of which have been since 2018.

July saw singles on five dates from the 11th, with all sightings coming from the area between the Cutting and Medicine Rock; there have been 97 previous July bird-days, 22 of which have been since 2013 and 13 of which were in 1979. The only August records were of one at the Sugarloaf on the 23rd and one in the Courtyard on the 27th, these taking the all-time August total to 103 (28 of which were in 2002 and 2003 and 28 of which were since 2013). There was no September record for the fifth time in ten years, the all-time total remaining at 151. Following the appearance of two on the 11th, there were sightings on 19 further October dates, with numbers increasing from seven on the 13th to highs of ten on the 22nd, 11 on the 23rd and 12 on the 29th which took the bird-days total to 100; the peak October daycount matched the second lowest since 2012, this down on a 2013-2021 mean of

42.6 and all-time highs of 100 in 1939, 1964 and 1966 and 142 in 2017, whilst the bird-days total was the third lowest of the decade, down on a 2013-2021 mean of 169.2 and all-time highs of 698 in 1966, 577 in 1975, 488 in 1976 and 962 in 1993. Daily November sightings tallied 396 bird-days and included highs of 39 on the 14th, 22 on the 15th and 25 on the 29th; the peak daycount was down on a 2013-2021 mean of 53.4 (there was a high of 62 in 2013, 2014 and 2018 and a low of 31 in 2020), whilst the tally was down on a 2013-2021 mean of 479.7 and all-time highs of 614 in 1967, 788 in 2019 and 663 last year (although staff are often absent for some of November). Daily December sightings to the departure of staff on the 10th peaked at 28 on the 1st, 30 on the 3rd and 31 on the 7th (the December daycount record is the 400 noted by Lockley in 1927). Ringing has shown that a small number of birds return to Skokholm in successive winters (although their breeding grounds remain unknown); this was again the case this year, with one ringed as a juvenile on 20th October 2021 retrapped on 17th November and one ringed as a juvenile on 13th October 2020 retrapped on the 2nd and 5th December (it had also been retrapped on 17th November 2021). Of two juveniles ringed on 1st November this year, one was still present on 9th November and one on 2nd December.

Spotted Flycatcher *Muscicapa striata*

Gwybedog Mannog

Fairly Common Passage Migrant

Earliest 19th April 1966 (1st May 2022) **Latest** 23rd October 1968, 2001 & 2021 (25th September 2022)
31 trapped

1934-1976: 1619 trapped, 2010-2021: 316 trapped, 16 retrapped

Two on 1st May arrived seven days earlier than the first four of last year and four days earlier than the 2013-2021 first of spring mean; the first in each of the last ten years has arrived between 30th April and 8th May, whilst there have been 34 bird-days earlier than the first of this year (15 of which were this century). Following a single on the 2nd, there were sightings on 12 further May dates from the 15th, including highs of 15 on the 16th, eight on the 17th and four on the 21st and 22nd which took the bird-days total to 47; the peak May daycount was down on that logged in nine previous years (there were highs of 40 in 1958, 30 in 1959 and 35 in 1982, with 18 in 1997 being the most recent count up on this year's peak), whilst the total matched a 2013-2021 May mean of 47.6 (there was a high during this period of 72 in 2016 and all-time highs of 133 in 1962, 145 in 1967 and 104 in 1991 and 1994). The only June sightings were of singles around Home Meadow on the 6th and 7th, these perhaps of the same bird (although none of the 18 birds ringed in spring were seen on a later date); a bird-days total of two matched that of 2017 as the lowest of the decade, this down on a 2013-2021 June mean of 12.7 and on all-time highs of 29 in 1971, 1977 and 1991, 35 in 2015 and 23 in 2019.



A juvenile at the Well on 11th August was 17 days later than the first of last autumn, this followed by sightings on 11 further August dates from the 18th and highs of four on the 23rd and 24th, seven on

the 30th and 11 on the 31st which took the total to 39; although down on the 17 of 2020, there have only been higher daycounts in 14 Augusts (40 in 1964 is the maximum), whilst the bird-days total was the highest since 52 in 2001, up on a 2013-2021 August mean of 20.6 and the 15th highest to date (albeit well down on peaks of 87 in 1964, 85 in 1971 and 80 in 1976). Following ten on the 1st, daycounts on ten further September dates between the 11th and 25th peaked at three on the 13th and 15th and six on the 14th; the September high was fractionally up on a 2013-2021 mean of 8.7, but down on all-time highs of 25 in 1951, 1952 and 1969, 30 in 1969 and 21 in 2004 and 2021. A September bird-days total of 31 was down on a 2013-2021 mean of 41.4 and on all-time highs of 166 in 1969, 68 in 2002 and 91 in 2013. A ringed bird on 25th September was probably the juvenile trapped in the Well Heligoland on the 24th and was the last of the year; there have been 236 later bird-days, including 48 since 2013. Of 13 ringed during the autumn, only two were adults.

Robin *Erithacus rubecula*

Robin Goch

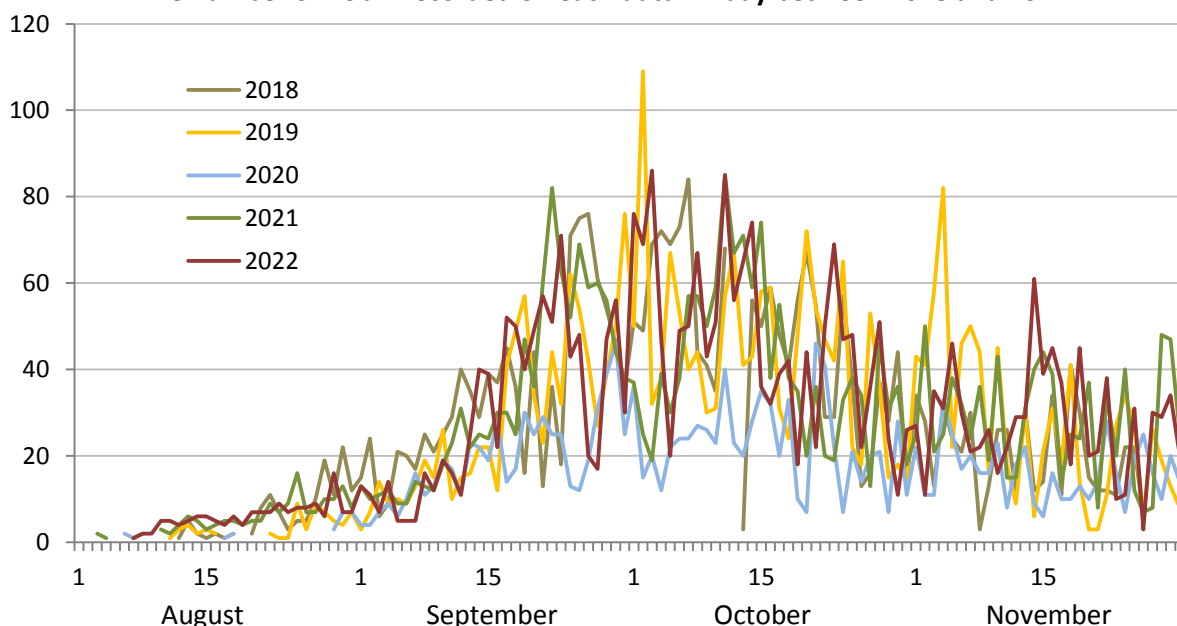
Abundant Winter Visitor and Passage Migrant bred in 1939, 1940 and 1980

85 trapped, 97 retrapped

1934-1976: 956 trapped, 2010-2021: 883 trapped, 756 retrapped, 3 controls

Robin were logged on each March date to the 14th (these including six individuals last encountered prior to the 11th which were ringed as juveniles in the autumn of 2021) and again on each date from the 21st, with highs of eight on the 3rd and 6th, ten on the 10th and 23rd and 11 on the 24th which took the bird-days total to 129; there have only been higher March daycounts in four years, with 12 in 1972 and 1996, 16 in 2003 and 15 in 2016, and higher March totals in three years, with 153 in 2003, 146 in 2013 and 198 in 2016. One in North Haven on 1st April was the last prior to different singles ringed on the 13th and 15th, the latter of which was still present the following day when it was joined by S957962; this individual, ringed as a juvenile on 21st August 2018 and last seen on the 27th of that month, was likely a passage bird (although there is a slim chance that it overwinters in a remote area of the Island or perhaps on the nearby mainland). At least four individuals accounted for sightings of singles on five further April dates, these taking the bird-days total for the month to ten; the total was down on a 2013-2021 mean of 31.4 and well down on all-time highs of 54 in 2013 and 132 in 2015 (when daycounts peaked at 17). There was no May record for a third time this decade.

The number of Robin recorded on each autumn day between 2018 and 2022.



There were no further sightings until a juvenile arrived on 5th August, this two days later than the first of last autumn and one day later than the 2013-2021 first of autumn mean. Daily sightings from

the 7th peaked at nine on the 23rd and 27th and 16 on the 29th, the August bird-days total climbing to 154; the peak daycount matched that of last year and almost matched a 2013-2021 mean of 17.4 (the August highs are 40 in 1993, 35 in 2015 and 25 in 2016), whilst the total was only down on the 198 of 1992, the 197 of 1993 and the 193 of 2015 and 2017. Daily September sightings totalled 891 bird-days, with 12 daycounts from the 14th of 40 or more and highs of 52 on the 17th, 57 on the 21st, 71 on the 23rd and 56 on the 29th; there have been four higher September tallies, all logged since 2014 and including a peak of 1649 in that year, however Robin were routinely under-recorded in the past, just being logged as present following quiet or average days (the peak daycount is perhaps thus more informative). There have been higher September daycounts in eight years, with highs of 100 in 1993 and 1995, 150 in 1994 and 128 in 2014. Numbers again peaked in October, with 13 daycounts of 50 or more and highs of 76 on the 1st, 86 on the 3rd, 85 on the 11th and 74 on the 14th which took the bird-days total to 1455; the total was up on a 2013-2021 mean of 1191.8 (indeed it was only down on the 1638 of 2014 and the 1485 of 2015), whilst the peak daycount was down on that logged in five previous Octobers, including highs of 150 in 1994, 118 in 2014 and 109 in 2019.



Daily November sightings tallied 837 bird-days and included fair weather highs of 46 on the 5th, 61 on the 14th and 45 on the 16th and 19th; the total was just nine bird-days down on the November record set last year, whilst the peak daycount was only down on highs of 70 in 1995, 63 in 2014, 91 in 2015 and 82 in 2019. Daily counts during the first ten days of December peaked at 51 on the 1st, 45 on the 2nd and 41 on the 7th; the peak was only down on the 60 of 2003. Four birds handled during the autumn had been encountered on Skokholm previously; all four had been ringed between 17th August and 25th September 2021 and all returned between 20th September and 8th October for a second winter. Of an additional 68 Robin ringed during the autumn, at least 22 lingered, with six present one or two days later, four between nine and 15 days later, five between 24 and 28 days later, two 38 days later and singles present for a further 62, 66, 86, 102 and 108 days.

Ringing recovery ACY7597

Originally ringed as a first-winter, WELL 6 MIST NET, SKOKHOLM 25th September 2022

Recovered as a first-winter, NANJIZAL, LANDS END, CORNWALL 8th October 2022

Recovered as a first-winter, NANJIZAL, LANDS END, CORNWALL 10th October 2022

Finding condition Intentionally taken

Distance travelled 186km at 189 degrees (S)

Days since ringed 13 and 15

This is the first Skokholm ringed Robin to be found elsewhere since ringing recommenced in 2010.

Pied Flycatcher *Ficedula hypoleuca*

Gwybedog Brith

Uncommon Migrant more frequent in autumn and sometimes absent in spring

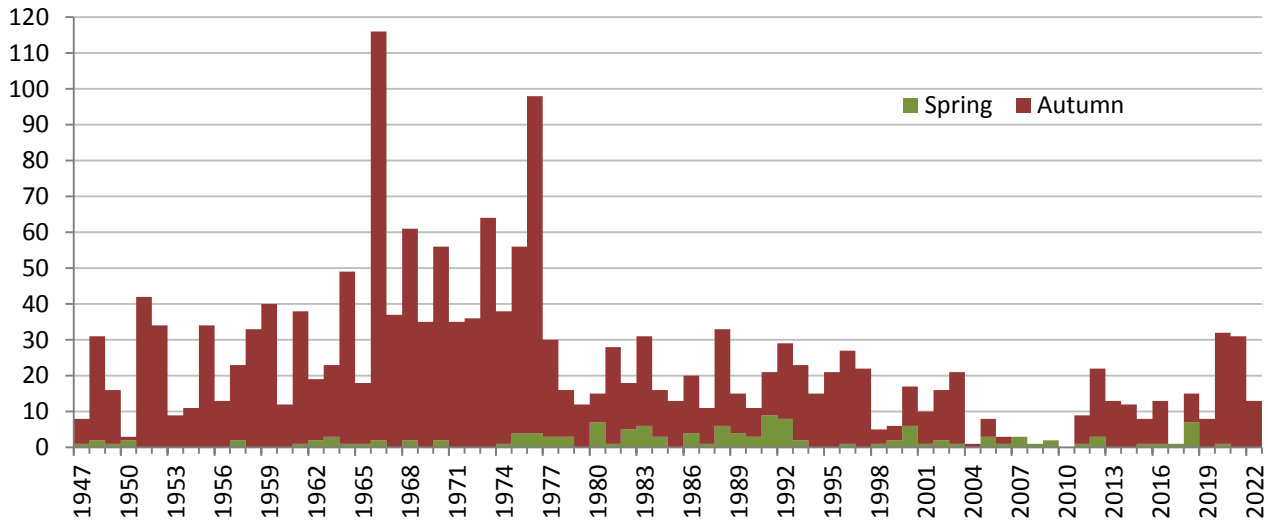
Earliest 10th April 1993 (21st August 2022) **Latest** 17th October 1988 (24th September 2022)

5 trapped, 1 retrapped

1934-1976: 385 trapped, 2011-2021: 54 trapped, 9 retrapped, 1 control

There were no spring birds for a second consecutive year, a fifth time in ten years and for a seventh time this century; this species has nearly always proven scarce in spring, with 35 of 141 bird-days logged this century and all-time highs of seven in 1980 and 2018, eight in 1992 and nine in 1991.

The total number of spring and autumn Pied Flycatcher bird-days logged between 1947 and 2022.



One found at the Well on the afternoon of 21st August was thus the first of the year, this 30 days later than the first of last autumn and eight days later than the 2013-2021 first of autumn mean; the bird on 22nd July last year was only the second to be found in this month following one on the 24th in 1994. Juveniles ringed on the 27th and 29th were the only other August records, a bird-days total of three being down on a 2013-2021 mean of 6.6, a high during that period of 25 in 2020 and well down on peaks of 86 in 1966, 47 in 1968 and 79 in 1976. Two were around the Cottage on 10th September, two were on the Knoll the following day, four on the 12th included three juveniles trapped and ringed, one at the Well on the 14th had been ringed on the 12th (but not seen on the 13th) and a final single was around the Knoll on the 24th; a September daycount high of four matched

that of 1992 as the highest since ten in 1988 (five further double-figure daycounts peaked at 20 in 1948), and a September bird-days total of ten matched the third highest since 1993 (albeit being down on 29 totals which peaked at 41 in 1951, 33 in 1959 and 34 in 1961). There have been 96 bird-days later than the last of this year, including 40 in October. A total of 13 autumn bird-days was down on the 31 of 2020 and 2021 but almost matched a 2013-2021 mean of 13.6; there have been 40 higher autumn totals (five this century), with peaks of 114 in 1966, 64 in 1973 and 94 in 1976.

Black Redstart *Phoenicurus ochruros*

Tingoch Ddu

Uncommon Migrant has probably overwintered on occasion

6 trapped

1934-1976: 105 trapped, 2013-2021: 23 trapped, 5 retrapped

One around the Farm on 20th March was one day earlier than the first of 2021 but three days later than the 2013-2021 first of spring mean (the earliest during this period was logged on 9th March 2013 and the latest on the 25th in 2020). Two the following day included a male at the Lighthouse, a first-winter trapped on the 22nd was still present on the 23rd and two individuals probably accounted for sightings of singles on the 25th, 26th and 27th; a March bird-days total of eight was the lowest since 2018 but close to a 2013-2021 mean of 9.3 (the all-time March bird-day highs are 241 in 1948 (when daycounts peaked at 50), 101 in 1949, 39 in 1983, 56 in 1995 and 28 in 2021). One in Windmill Gully on the 10th and a first-summer trapped on the 16th were the only April records; a total of 319 previous April bird-days includes a 2013-2021 mean of 4.7 and highs of 32 in 1949, 24 in 1958 and 21 in 1991. A fine male at the Lighthouse on the 10th was the only May record, this taking the all-time May bird-days tally to 72 (21 of which have been since 2013, with 2016 the only year during this period without a record). A June total of 17, which includes seven this decade, was not added to. There have been singles in six Julys (with four since 2011), up to two bird-days in the Augusts of 1973 and 2003 and ten September bird-days across six years between 1964 and 2001.



Two around the Farm on 27th October were 19 days later than the first single of last autumn and eight days later than the 2013-2021 first of late autumn mean. A juvenile trapped in the new Garage Heligoland on the 29th was still present the following day, this trap responsible for all four Black Redstart ringed during the autumn. An October bird-days total of four was close to a 2013-2021 mean of 5.4, but massively down on highs of 243 in 1968, 92 in 1975 and 86 in 1988 (although there

have only been six further totals of more than 20). November saw sightings on four dates between the 3rd and 7th, with two on the 6th the only daycount of more than one, daily sightings between the 14th and 17th which peaked at five on the 14th and 16th and further singles on four dates which took the bird-days total to 24; although staff have not always been present throughout the month, the 2013-2021 November bird-days mean is only 7.1, indeed the 38 of both 1968 and 1992 are the only November totals up on that of this year (19 in 1980 is the next highest tally). The sole December encounter was with one at Purple Cove on the 3rd.

Redstart *Phoenicurus phoenicurus*

Tingoch

Uncommon Migrant

Earliest 1st April 1991 (22nd April 2022) **Latest** 2nd November 1968 (**3rd November 2022**)

4 trapped, 2 retrapped

1935-1976: 393 trapped, 2013-2021: 48 trapped, 4 retrapped

A first-summer male trapped in the Cottage Heligoland on 22nd April was a week later than the first of last year and 11 days later than the 2013-2021 first bird mean (the earliest during this period was logged on the 2nd in 2019 and the latest on the 22nd in 2017); there have been 184 bird-days earlier than the first of this year. A female on the 30th was the only other April record; an April bird-days total of two was down on a 2013-2021 mean of 4.3 and on 37 previous Aprils, a 21st century high of eight in 2014 and all-time highs of 51 in 1966 and 14 in 1976. The only May record was of a first-summer female on the 16th; this took the spring bird-days total to three, this the lowest since 2013, down on a 2013-2021 mean of 7.2, a high during that period of 13 in 2015 and all-time highs of 26 in 1964, 1967 and 1988, 36 in 1991 and 55 in 1966. One at the Well on 2nd September was eight days later than the first of last autumn, but ten days earlier than the 2013-2021 first of autumn mean; this was the only September sighting, a disappointing total given that there have been 466 previous bird-days during the month, 54 of which have been this century. Different birds were in South Haven and Crab Bay on 11th October, whilst a first-winter trapped on the 29th was seen each day to 3rd November, typically in the vicinity of the Garage Heligoland (photograph below); the latter becomes the latest Skokholm record, one day later than a bird on the 2nd in 1968 (the 1968 bird was perhaps fresh in as the previous sighting was of one on 28th October). Although only four individuals accounted for the total, an autumn bird-days tally of nine was the second highest this decade and up on a 2013-2021 mean of 4.9 (there were ten in 2020). Although never common, this species was, as noted for that other denizen of Welsh woodland the Pied Flycatcher, more regular in the past, with autumn highs of 55 in 1966, 43 in 1968 and 39 in 1988 (the latter including 20 on 21st September which remains one of only two double-figure daycounts, the other being of 11 on 10th May 1993).



Whinchat *Saxicola rubetra*

Crec yr Eithin

Uncommon Migrant previously Fairly Common

Earliest 8th April 1997 (28th April 2022) **Latest** 2nd November 2014 (21st October 2022)

1 trapped

1936-1976: 326 trapped, 2013-2021: 20 trapped, 4 retrapped

A first-year male trapped at the Well on 28th April was one day later than a male trapped there last year, but three days earlier than the 2013-2021 first bird mean; there have been 110 earlier bird-days, with males from the 22nd in 2015 and the 24th in 2017 the only other earlier birds since 1997. There were no more spring sightings, this becoming the third year of the last ten without a May record. A lone spring bird-day matched the second lowest total of the last decade, this down on a 2013-2021 mean of 3.9 and a high during this period of 13 in 2017. Double-figure spring totals were previously the norm, with 41 such tallies between 1949 and 2002, eight of which were of 25 or more including highs of 35 in 1967, 44 in 1980 and 1991 and 43 in 1989 (there were maximum spring daycounts of seven logged in the Mays of 1960 and 1989). A juvenile near the Wheelhouse on 15th August was 12 days earlier than the first of last autumn and eight days earlier than the 2013-2021 first of autumn mean (the earliest during this period arrived on the 12th in 2017, the latest on 4th September 2014). One the following day was probably the same bird and the only other August sighting, a bird-days total of two being well down on highs of 38 in 1971, 48 in 1976 and 39 in 1983. September saw sightings on seven dates between the 11th and 20th, all of singles bar two on the 14th and three on the 15th which took the bird-days total to ten (the 2013-2021 September bird-days mean is 20.9, with nine in 2019 the only tally down on that of this year); unsurprisingly numbers were higher historically, with daycount highs of 17 in 1958, 40 in 1968 (the all-time daycount record) and 20 in 1992 and bird-day highs of 88 in 1956, 114 in 1968 and 91 in 1969 and 1971. One around Home Meadow and the Cottage on the 20th and 21st October was the last of the year, this taking the all-time October bird-days total to 366, 57 of which have been since 2013; there have been 19 later autumn bird-days, including one in November and seven since 2013. An autumn bird-days total of 14 was down on a 2013-2021 mean of 30.3 (13 in 2019 is the only lower tally during this period) and massively down on highs of 128 in 1968, 145 in 1971, 119 in 1976 and 104 in 1989.



Stonechat *Saxicola rubicola*

Clochdar y Cerrig

Fairly Common bred in 1928, 1932 and 2021

14 trapped, 4 retrapped

1934-1976: 340 trapped, 2013-2021: 136 trapped, 12 retrapped

Although the rings were not seen well enough to confirm their identity beyond doubt, indeed neither was fully read this year, it was very probable that the ringed pair seen in the vicinity of South

Pond from 3rd March were those which bred there last year; the female was likely ATJ2098, which had been trapped in the Well 9 Net as a first-winter on 19th September 2019 and retrapped at North Pond on 29th September 2020, whilst the male was likely AKL5024, which had been trapped as a first-winter in the Library Net on 29th September 2020 (both rings were read in the field last year, whereas this year it was only known that the male's began AK and ended with a 4). Despite the presence of a resident pair, there were March sightings on only 24 dates, with up to three additional birds noted on seven dates and the resident male heard singing on three dates; although the peak daycount was down on that logged in ten previous Marches (there were highs of ten in 1974 and 1979 and 12 in 2015), a bird-days total of 50 was only down on the 105 of 1958 and the 52 of 2016. A ringed female around Home Meadow on the 9th was the only April sighting perhaps not attributable to the breeding pair, at least one of which was seen near South Pond on 15 dates during the month; April sightings in non-breeding years are scarce, indeed there have only been encounters in seven Aprils this century, including six since 2015. The female was provisioning chicks hidden in dead Bracken to the south of South Pond on a very wet 1st May, although this was the only indication that first brood eggs hatched; the nest site was close to that used in 1932 and 2021, this just the fourth time that breeding has been confirmed on Skokholm. The pair were regularly seen together during early May, with the male heard singing on the 11th and 14th and the female only noted on one date from the 17th. No Stonechat were logged at all during the first eight days of June, however food deliveries were noted from the 10th and two fledglings were seen on the 13th; up to two fledglings were noted regularly to the 26th, however the male was provisioning four youngsters near Winter Pond on the 27th. One of the fledglings was spring trapped during Wheatear work on 29th June, this a bird which was still with its three siblings near Migration Rocks on 10th July but which had reached the Well Heligoland by the 13th. A third brood fledgling accompanied the male on 6th August, this youngster assumed to be that seen around Crab Bay, the Cutting and South Pond to 16th September. There were thus five Skokholm fledglings in 2022, four fewer than last year.



The first mainland youngster of the year was trapped at the Well on 16th June, this 12 days earlier than the 2013-2021 mean (the earliest during this period arrived on the 9th in 2020, the latest on 26th July in 2018). At least two juveniles from elsewhere on the 30th took the daycount to seven, this two up on the previous June high. Unsurprisingly a July bird-days total of 112 was only down on the 115 of 2021, however an August total of 25 was well down on the 120 of last year and only five up on that of 2020 which is the next highest total (this in part reflecting poorer productivity this year). Sightings on only 18 September dates, including highs of eight on the 23rd and six on the 30th, led to a bird-days total of 61, this less than half the 137 of last year and also down on 68 in 2001, 87 in 2016

and 110 in 2020. Sightings on all but two October dates included regular encounters with marked adults in the vicinity of South Pond and daycount highs of eight on the 8th and 24th and nine on the 10th and 15th which took the total to 144; the peak daycount was down on that logged in six years this decade (there were highs of 15 in 2019 and 18 last year), whilst the total was down on that logged in six previous Octobers (there were highs of 163 in 2014, 185 in 2016 and 156 last year). Daily November sightings included encounters with the breeding adults (which perhaps visited North Pond on occasion) and 17 daycounts of more than two, with highs of six on the 4th and 24th, seven on the 15th and eight on the 9th taking the total to 96; the only higher November daycounts are of ten in 2001 and nine in 2014, whilst the bird-days total was a new high, up on the 83 of 2014 and the 71 of 2016. Sightings on seven of the first ten days of December included highs of four on the 3rd and 9th, with what was thought to be the breeding male last seen on the 6th and the female on the 8th.

Wheatear *Oenanthe oenanthe*

Tinwen y Garn

Abundant Migrant and Uncommon Breeder

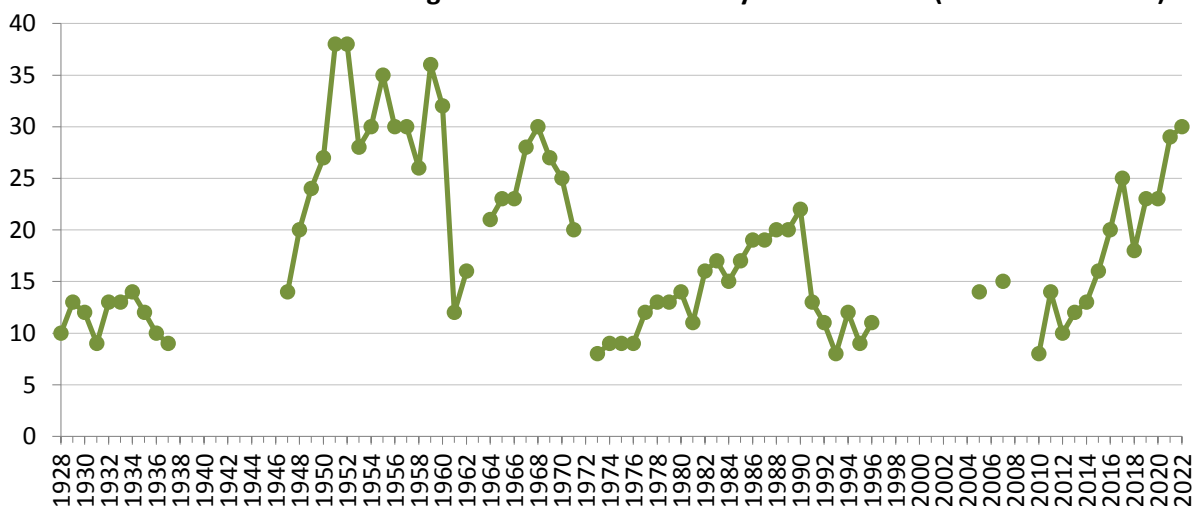
Earliest 2nd March 2003 (10th March 2022) **Latest** 13th November 1999 (30th October 2022)

143 trapped (including 18 pulli), 81 retrapped/resighted, 3 controls

1934-1976: 3636 trapped, 2011-2021: 552 trapped (inc. 42 pulli), 338 retrapped/resighted, 1 control

An unringed male was at North Gully on 10th March, this six days later than the first of last year but one day earlier than the 2013-2021 first bird mean (the extremes during this period were 4th March 2021 and 18th March 2019); there have been 34 bird-days earlier than the first of this year, including five since 2013. Two the following day were both colour ringed; males A33 and B52 were back for a fourth summer, these nine days earlier than the first ringed bird of 2021. There followed daily March sightings, with the first 2021 chick encountered on the 23rd and highs of 28 on the 25th, 20 on the 30th and 33 on the 31st taking the bird-days total to 242; although the peak March daycount was the second highest since 1989, it was down on that logged in 11 years including highs of 200 in 1930, 110 in 1949 and 150 in 1958, however the March total was only down on the 303 of 1949, the 320 of 1950 and the 263 of 1958 (the 2013-2021 mean is 139.0). Although daycounts up until 22nd April were of 36 or less, there followed highs of 156 on the 23rd, 144 on the 24th, 61 on the 26th and 50 on the 27th which took the total to 991, this up on a 2013-2021 mean of 828.4 but down on three Aprils during this period (there was a high of 1197 in 2015); two counts of 1200 in 1938, 250 in 1954 and 165 in 1999 are the only higher April daycounts. The majority of early migrants were nominate birds, with the first Greenland-type noted on 11th April, eight days later than the first of last year. There followed at least 92 *O. o. leucorhoa* bird-days logged over 17 dates between 16th April and 19th May, with highs of 21 on the 23rd, 22 on the 24th and nine on 26th April; there were 182 *O. o. leucorhoa* bird-days in spring 2021, with a high of 80 on 25th April.

The number of Wheatear breeding territories located each year 1927-2022 (where data exists).



Survey work during the spring revealed 30 breeding pairs (two of these pairs included the same bigamous male, whilst at least three of four unpaired males were returning birds); this was one more pair than mapped last year, indeed there have only been higher totals in five years, all between 1951 and 1960 and with highs of 38 in 1951 and 1952 (the 1928-2021 mean is $18.26 \pm \text{sd } 8.08$). A female provisioning chicks near the Lighthouse on 10th May was the earliest this decade, four days earlier than the first of last year and six days earlier than the 2013-2021 mean; the latest first food delivery during this period was noted on the 22nd in 2013. Although a female was alarming in a way which suggested that young were out of the nest near Twinlet on 22nd May, the first fledgling to be seen was near North Gully on the 23rd; the first 2022 fledgling matched that of 2014 as the earliest this decade, this five days earlier than the 2013-2021 mean (the latest during this period were logged on 5th June 2013). The increase in the number of breeding pairs, coupled with a protracted breeding season and mobile young, made an accurate assessment of productivity impossible. There were however 93 chicks (which went on to fledge) or recent fledglings ringed before 28th July; the resulting minimum productivity figure of 3.10 fledglings per pair was up on five of the last nine years and fractionally up on a 2013-2021 mean of $3.03 \pm \text{se } 0.25$ (there was a high of 4.00 in 2015 and a low of 1.96 in 2020). Ian Beggs' study into the survival, movements and behaviour of the Skokholm Wheatears remains the subject of a Masters project with the University of South Wales; as part of this work cameras were again installed over nests during the chick provisioning period, these in the purpose built boxes installed in 2019 (see the 2019 Annual Report for a map showing the nest box positions). A further two boxes were installed near Spy Rock on 11th April this year. Of the known age breeding birds, male A31 was again the oldest (ringed as a juvenile on 22nd July 2015, he had survived seven winters); observations suggested that he paired with both D15 and A27, the latter the oldest female (ringed on 25th April 2017, she had survived at least six winters).



A Lundy ringed moulting male seen on 28th June was probably that identified on three July dates (see below), this the first indication of adults arriving from elsewhere; the first of last year was noted on 10th July. The peak August counts of unringed migrants were of 15 on the 20th and 31st, 17 on the 21st (the legs of a further 20 were not seen), 18 on the 23rd (17 not seen) and 23 on the 25th (13 not seen), whilst daycount highs of 54 on the 13th, 47 on the 14th and 55 on the 21st took the August total to 1088; the peak daycount was down on that logged in eight previous Augusts (there were all-time highs of 200 in 1936 and 154 in 1950, whilst the 2013-2021 mean is 42.9) and the total was the highest this decade, up on a 2013-2021 mean of 675.7. Skokholm fledgling F09 was watched heading out to sea with two Meadow Pipit on 14th August. September sightings on each date to the 29th totalled 462 bird-days, with ten single-figure daycounts from the 19th and 41 on the 10th, 30 on the

13th and 44 on the 14th being the only daycounts of 30 or more (there were 13 such daycounts last year); the peak daycount was down on a 2013-2021 September mean of 58.2 (there were all-time highs of 150 in 1929 and 1933, 207 in 1951 and 123 in 2014), the total up on a mean of 412.4 logged during the same period (the highs being 1078 in 1951, 728 in 1958 and 782 last year). The last Skokholm ringed bird was seen on 13th September, this a week later than the last of 2021 and six days later than the 2018-2021 mean. Sightings on 16 October dates were of singles on 12 dates (these including one eating a Hummingbird Hawk-moth on the 11th), with three on the 1st the only daycount of more than two; an October bird-days total of 21 matched the second lowest of the last decade, this well down on all-time highs of 239 in 1961, 262 in 1976 and 290 in 2013. One to the east of North Gully on 30th October was the last Wheatear of the year, this 11 days later than the last of 2021 and five days later than the 2013-2021 last bird mean; the earliest last bird during this period was on 16th October 2016 and the latest on 6th November 2015, whilst there have been 17 later than the last of this year, including 11 in November and six since 2013. Apparent *O. o. leucorhoa* were noted on 11 dates from 3rd September to 8th October, with highs of 25 on the 14th and 16 on 15th September which took the autumn tally to 50 (there were 71 in 2021).

Ringing recovery Left tarsus orange over orange, right tarsus yellow and black stripe over AHX2316
Originally ringed as an adult male, LUNDY ISLAND, DEVON 28th May 2022
Recovered as an adult male, WINTER POND, SKOKHOLM 1st, 7th and 17th July 2022
Finding condition Colour rings read in field
Distance travelled 74km at 325 degrees (NW)
Days since ringed 34, 40 and 50

House Sparrow *Passer domesticus*

Aderyn y To

Scarce although not recorded every year; most recently absent in 2010 and 2016

1 trapped

1955-1976: 20 trapped, 2013-2021: 8 trapped

A male which dropped in at the Farm, mid-morning on 28th March, was 24 days later than the first of last March and soon trapped in the Wheelhouse Heligoland; there have been 11 previous March bird-days logged over six years. One around the Cottage on 18th April was again a male and was two days earlier than the last two spring birds of 2021; there have been sightings in 21 previous Aprils totalling 40 bird-days, with a high of five in 1962. A total of two 2022 bird-days was close to a 2013-2021 mean of 2.7 but down on highs of eight in 1967, 1975 and 2021, nine in 1976, 11 in 1966 and 1977 and 13 in 1972.



There were just nine House Sparrow bird-days logged prior to 1957, then records in all but two years until 1978 (totalling 109 bird-days), birds in ten of the years between 1979 and 2004 (totalling 24 bird-days) and birds in all but three years since 2005 (now totalling 39 bird-days). Four together in the Bramble to the north of the Wheelhouse on 11th October 2021 equalled daycounts on 22nd October 1966 and 30th September 1976 as the highest to date. May is the most productive month, with 58 bird-days (but just two since 1991), whilst October is the busiest autumn month with 38 bird-days (including 17 since 2011). There is yet to be an August sighting.

Dunnock *Prunella modularis*

Llwyd y Gwrych

Uncommon Winter Visitor and Irregular Scarce Breeder formerly Uncommon with up to 12 pairs

5 trapped, 4 retrapped

1934-1976: 396 trapped, 2012-2021: 77 trapped, 124 retrapped, 1 control

For the first time in five years, no birds were retrapped to prove overwintering, indeed the only spring sightings were of an unringed bird to the north of the Wheelhouse on 21st March and one in the Well 9 Mist Net on 14th April; a total of two spring bird-days was the lowest since 2011, down on a 2013-2019 mean of 58.1 (this a period in which Dunnock did not breed) and a 2020-2021 mean of 156.5 (there was breeding in both years). Up to seven pairs bred annually between 1928 and 1939, there were up to 12 pairs between 1964 and 1981 and up to two pairs in eight years between 1987 and 1995, while more recently there were three pairs in 2012, a pair fledged at least three in 2020 and two females fledged at least four last year. There were August sightings in two of the post-2012 non-breeding years and September sightings in every such year, with a 2013-2019 mean first autumn arrival on 1st September (one on 24th September 2018 was the latest during this period). It was thus a surprise that there were no further 2022 records until a minimum of five were logged on 11th October. Sightings on all but three subsequent October dates included highs of ten on the 20th, nine on the 22nd and 23rd and six on the 28th which took the bird-days total to 71; although the total was the lowest since the 36 of 2013 (the 2013-2021 mean is 102.9 with a high of 168 in 2015), the peak daycount was up on five years this decade and only down on the high logged in ten previous Octobers (there were peaks of 30 in 1930 and 1931 and 50 in 1994, with 14 in 2015 the highest since 1994). Sightings on 20 November dates included highs of seven on the 1st, nine on the 14th and six on the 29th, with daycounts otherwise of no more than four; there have been higher daycounts in six Novembers, most recently with ten in 1995 and with a high of 25 in 1931 (the 2013-2021 mean high is 5.9). Up to four Dunnock were seen on nine of the first ten days of December. Only four juveniles were ringed during the autumn, two of which were not trapped until 29th November.



Yellow Wagtail *Motacilla flava*

Siglen Felen

Uncommon previously Fairly Common, or Common on occasion, and more regular in autumn

Earliest 10th March 1966 (11th May 2022) **Latest** 18th November 1967 (10th October 2022)

1 trapped

1934-1976: 81 trapped, 2013-2015: 2 trapped

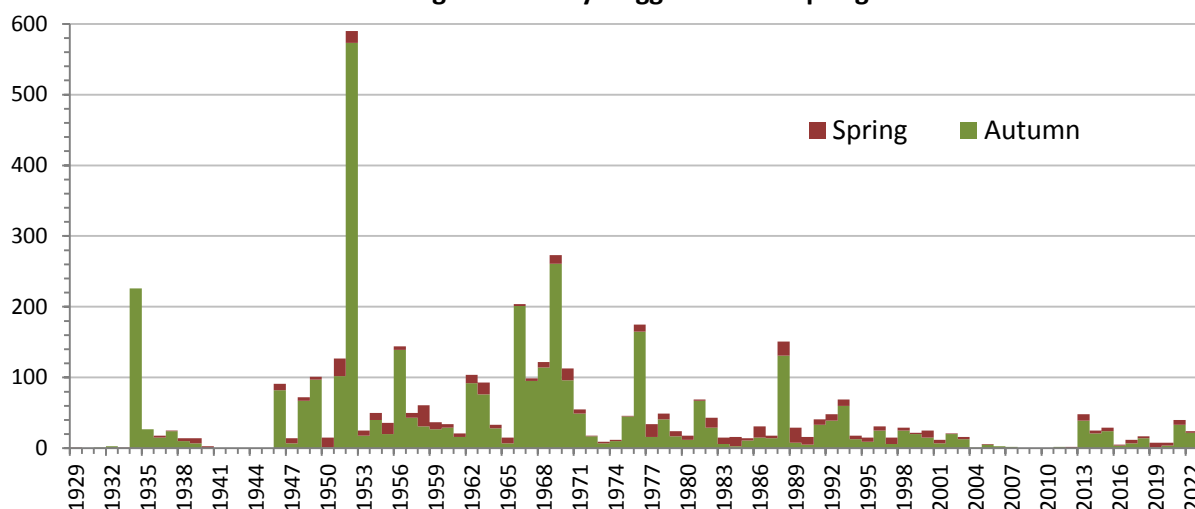
There were only two spring sightings, with a vocal flyover at 1100hrs on 11th May and one around the Farm on the morning of 24th May; the former was the latest first arrival this decade, 18 days later than the 2013-2021 first bird mean (the latest during this period arrived on 10th May 2016, the earliest on 2nd April last year). A spring bird-days total of two was the lowest since 2016, down on a 2013-2021 mean of 5.0; there was a high during this period of nine in 2013, the all-time highs being 25 in 1951, 30 in 1958 and 20 in 1988. A calling flyover at 1900hrs on 5th July was the first of the autumn, this nine days earlier than the first of last autumn and the earliest autumn arrival this decade; there have been 57 previous July bird-days, with four since 1990 and a high of 25 in 1976, whilst the 2013-2021 first of autumn mean is 26th August (with the latest on 11th October 2019).



There were no further sightings until August when there was a lone flyover on the 11th, one on Home Meadow on the 20th, two together near the Sugarloaf on the 28th and another flyover on the 31st; a daycount of two was down on 21st century August highs of three in 2013 and 2021, these well down on peaks of 50 in 1949, 1952 and 1969 and remarkable counts of between 75 and 150 logged on four dates in 1952 (September daycounts of 50 in 1951 and 31 in 1966 are the highest to be recorded outside of August). A juvenile which joined the Courtyard Pied Wagtail roost on the evening of 1st September was probably that around the Farm the following morning, this followed by one on the 8th, a flyover on the 21st, one at the Farm on the 22nd and one which joined the Courtyard roost on the 30th; a September bird-days total of six was down on a 2013-2021 mean of 10.3, a high during this period of 26 in 2021 and on 50 September tallies (the all-time highs are of 136 in 1934, 84

in 1951 and 94 in 1956). The first-winter male from 30th September was noted on each of the first ten days of October and was trapped in the new Garage Heligoland on the 5th; although the call and relatively short hindclaw confirmed it as a Western bird, this fascinating individual was impossible to race with certainty, some feeling that it was a pure *M. f. flava* as seen in Sweden, others suggesting the presence of some (or many) *M. f. thunbergi* genes (above photograph). A 2020 review of *M. f. flava* records found 23 to be acceptable, with 17 males in spring (31 bird-days) and six in autumn (six bird-days). There were no sightings after 10th October; there have been 27 later bird-days, including four since 2013 and three in November. A total of 22 autumn bird-days was up on a 2013-2021 mean of 16.3, albeit down on 37 previous years and now almost unimaginable highs of 226 in 1934, 573 in 1952 and 261 in 1969. Although numbers fluctuate markedly between years and historical highs were probably in part due to the presence of livestock tempting passage birds down to feed, there are clearly far fewer Yellow Wagtail passing Skokholm than there were 50 years ago.

The total number of Yellow Wagtail bird-days logged in each spring and autumn since 1929.



Grey Wagtail *Motacilla cinerea*

Siglen Lwyd

Uncommon Visitor Scarce in spring but occasional double-figure daycounts in autumn
1938-1976: 8 trapped, 2013-2021: 4 trapped, 1 control

There were no spring sightings for the fourth time this decade and for a third time in four years; six of 34 previous March bird-days have been logged since 2013, whilst 11 of the 43 bird-days logged between 1st April and 28th June have been in the same period. A juvenile at North Pond on 8th July was thus the first of the year, this six days later than the first of last autumn but only the 17th to be seen in this month. There were no August records for the first time in eight years; a total of 155 August bird-days counted over 37 years includes 33 since 2015. Sightings on 19 September dates from the 2nd included highs of ten on the 10th (with six together around the Quarry), six on the 13th and four on the 14th, 18th, 19th and 25th which took the bird-days total to 57; the only higher September totals are the 63 of 1960, the 110 of 2014 and the 58 of 2020, the only higher September daycounts the 25 of 1960 and the 11 and 12 of 2014 (although there were ten in 1951, 1959, 1971, 2016 and 2018). Daycounts of 25 on 30th August 1952 and of 15 on 25th August 1981 are the only others in any month up on that of this September. Grey Wagtail were encountered on nine October dates to the 28th, with a minimum of four on the 11th the only daycount of more than two; both the peak daycount and a bird-days total of 17 were typical by recent standards, the daycount matching a 2013-2021 mean of 4.1 and the total close to a mean of 20.3 logged during the same period (the October bird-day highs are 28 in 1975, 32 in 2015, 39 in 2016 and 24 in 2018 and 2021). A November bird-days total of 28, 16 of which have been over seven years this decade, was not added to. An annual bird-days total of 75 was down on three years this decade and matched a 2013-2021 mean of 75.8, but was nevertheless a good showing by historical standards, this a species described in 1939

as a 'curiously rare visitor' and by Thompson (2007) as usually providing only 'a handful of autumn records each year'; there were record annual totals of 90 in 1960, 126 in 2014 and 83 in 2020.

Pied Wagtail *Motacilla alba*

Siglen Fraith

***M. a. yarrellii* Scarce Breeder and Fairly Common Visitor**

White Wagtail *M. a. alba* Common Migrant flyovers unassigned to race are also Common

***M. a. alba* Earliest** 11th March 1997 (17th March 2022) **Latest** 29th October 1988 (25th September 2022)

42 trapped (including 13 pulli), 13 retrapped

1934-1976: 286 trapped, 2011-2021: 255 trapped (including 42 pulli), 105 retrapped, 3 controls

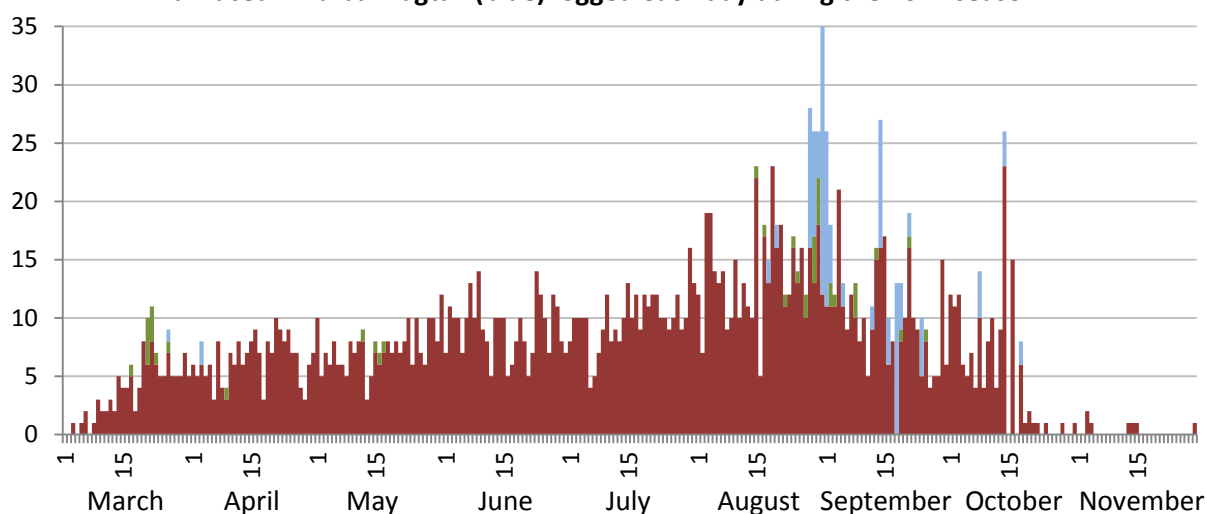
One which arrived into South Haven on the morning of the 3rd, a ringed male on Home Meadow on the 5th and two on the 6th were the only March records prior to daily sightings from the 8th, with no more than five noted each day prior to the 20th, then highs of eight on the 20th and 22nd; the peak March daycount matched a 2013-2021 mean of 8.4 and a bird-days total of 113 was a little up on a mean of 98.3 logged during the same period (there were all-time March highs of 137 in 2007 and 154 last year). A male White Wagtail on 17th March was six days earlier than the first of last year and ten days earlier than the 2013-2021 first bird mean, indeed a male on the 16th in 2016 and a female on the 11th in 1997 are the only earlier records. There followed four on the 21st, three on the 22nd and singles on the 23rd and 26th which took the March bird-days total to ten, with both the peak daycount and the total being new March records; there were daycounts of three in 2012 and 2020 and previous bird-day highs of five in 1973 and 1990. The only April White Wagtail was at South Pond on the 9th, the only May sightings being of singles on the 12th, 15th, 16th and 17th; a spring nominate bird-days total of 15 was down on the 22 of last year, a 2013-2021 mean of 26.0 and highs during this period of 75 in 2013 and 49 in 2016 (the only spring tallies higher than that of 2013 are the 80 of 1988 and the 122 of 1989). There were again no spring counts indicating that any *M. a. yarrellii* were present other than the Skokholm breeders.



Although birds were seemingly nest prospecting in the Courtyard as early as 14th March, Pied Wagtail were not observed nest building until 4th May (at the Cottage), this the first time in eight years in which building has not been seen in April (the 2015-2021 mean is 19th April, with the earliest on the 16th in 2020). Six breeding pairs were subsequently mapped, this one fewer than the record set in 2020 and 2021 but matching the previous high logged in 2006 and 2007 (there were five pairs in each year between 2017 and 2019). Just two adults were retrapped which had been ringed in previous years; male AKL5507, ringed as a first-summer in July last year, was retrapped on 14th April and male AJH1254, ringed as an adult in August 2019, was retrapped on 15th September. Chick provisioning was first noted in the Courtyard on 17th May, this two days earlier than the first food delivery witnessed last year; the five pulli present in the nest box (the same box as used last year) all

went on to fledge, with at least two having departed the box on the 28th. Three further pairs were known to fledge first brood young, with a pair in Crab Bay fledging a singleton by 18th June, a pair in a pile of removed Lighthouse windows fledging two from the Compound by 20th June and a pair in North Haven fledging two by 27th June. A pair nest building near South Haven on 15th May seemingly failed prior to any young hatching, whilst the Cottage Garden pair also failed prior to any chick provisioning being seen. The Courtyard pair had fledged a further four from the same nest box by 11th July, the Crab Bay pair (the male with a damaged foot which allowed him to be tracked to North Plain and Purple Cove) had fledged a further two by 21st July, the Cottage Garden pair fledged their first four of the year on 26th July and the North Haven pair fledged a further single by 31st July. Following the removal from the Island of the old Lighthouse windows, the pair in this area moved to a crevice high in the Quarry, however a dead nestling found near the Lighthouse on 30th July was the only indication that eggs hatched. There was no suggestion that the South Haven pair which failed with their first attempt had made a second. A total of 21 fledglings was five up on last year and matched that of 2016 (26 in 2019 is the only higher total this decade). A 2022 productivity figure of 3.50 fledglings per pair was down on that logged in seven years this decade, a high during this period of 5.25 in 2016 and a 2013-2021 mean of 3.85 \pm se 0.42; it is perhaps no coincidence that productivity was up on recent lows of 1.71 in 2020 and 2.29 last year, these the two years with record breeding numbers. An additional six youngsters in post-juvenile moult were trapped by 24th August; although these were potentially Skokholm young (which would increase the productivity estimate to 4.50), fledglings which departed the Courtyard on 28th May had reached Little Bay Point by 9th June, highlighting how far youngsters can quickly disperse. The Crab Bay male had lost his foot by late July and the female of this pair was seen limping on 11th August.

The number of Pied Wagtail *M. a. yarrellii* (maroon), White Wagtail *M. a. alba* (green) and unraced *M. alba* wagtail (blue) logged each day during the 2022 season.



There were no autumn daycounts in excess of the 33 breeding *M. a. yarrellii* and their fledglings, with peaks of 23 on 19th August and 14th October being down on a 2013-2021 mean high of 28.2 and peaks during this period of 37 in 2016 and 2018 and 48 last year (the only autumn daycount of more than 70 is the 120 of 19th September 1997). No more than 17 *M. a. yarrellii* were logged on each September date from the 5th and, with the exception of the October high, no more than 12 were logged in the first two weeks of October, these followed by 15 on the 16th, six on the 18th and no more than two on seven further October dates from the 19th. A first-winter White Wagtail on 15th August was ten days earlier than the first seven of last year and three days earlier than the 2013-2021 first of autumn mean. There were a further 24 *M. a. alba* logged during the autumn, including highs of four on the 29th and 30th August and three on 8th September; both the peak autumn daycount and the bird-days total were the lowest this decade, the former down on a 2013-2021 mean of 19.4, the latter down on a mean of 116.4 logged during the same period (the highest

autumn totals this decade are 199 in 2013 and 266 in 2015, whilst the all-time highs are 1712 in 1988 and 1134 in 1991, the former including a record daycount of 200). There were an additional 124 unraced flyovers noted between 18th August and 18th October, with highs of 23 on 31st August, 15 on the 1st and 13 on 18th September; the total was the lowest since 2017, down on a 2013-2021 mean of 313.0 and on highs during this period of 557 in 2013 and 466 in 2014. The last White Wagtail of the year was at Orchid Bog on 25th September, this eight days earlier than the last of 2021; there have been 1006 later bird-days, including 356 in October and 131 this century. Pied Wagtail were logged on six November dates, with two on the 3rd the only count of more than one; a November total of seven was down on a 2013-2021 mean of 12.6, this despite the fact that staff have sometimes departed mid-month (there was a high of 23 last year). One over Crab Bay on the afternoon of the 8th was the fourth to be seen in December following singles in 1927, 1992 and 2021.

Richard's Pipit *Anthus richardi*

Corhedydd Richard

Rare logged in 19 previous autumns, with peak daycounts of four in 1968 and 1970

A calling bird on 15th November headed south over North Plain and North Pond before continuing over the Bog (RDB). It is conceivable that a similarly vocal bird on the 29th, which flew over Isthmian Heath and Medicine Rock before landing at North Plain, was the same bird (GE). The only other 21st century records are of singles between the 4th and 5th October and on 10th November 2001 and on 15th September 2014, 21st October 2016, 2nd November 2017, 10th October 2018 and 1st October 2021. All previous sightings have been between 12th September (1971) and 10th November (2001), with the majority in October (40 bird-days). Whereas there is seemingly no trend in the number of British records (White and Kehoe, 2021), this species was more regular on Skokholm between 1967 and 1994 when approximately 22 birds led to 55 of an all-time 65 bird-days.

Meadow Pipit *Anthus pratensis*

Corhedydd y Waun

Very Abundant Visitor and Uncommon Breeder

170 trapped, 28 retrapped

1934-1976: 4456 trapped, 2010-2021: 1648 trapped (including 5 pulli), 482 retrapped

Sightings on every March date were of no more than 35 during the first 13 days, with numbers increasing to 65 on the 16th and 86 on the 22nd, then to highs of 108 on the 23rd, 111 on the 24th and 97 on the 26th; the peak March daycount almost matched a 2013-2021 mean of 109.2 and was down on that logged in 16 previous years, including a recent high of 183 in 2019 and all-time highs of 250 in 1950, 1955 and 1988 and 350 in 1990. There were April highs of 59 on the 3rd, 74 on the 11th (which included 54 together around the Farm) and 55 on the 17th; although the peak was close to a 2013-2021 mean of 82.0 (an all-time April high of 700 was logged on the 4th in 1988), an April bird-days total of 1076 was the lowest since 2014 and well down on a 2013-2021 mean of 1518.3. Survey work during April and May revealed 41 breeding territories and an additional singing male which was encountered on only one of four visits; the total number of territorial males was down on the 43 of last year but up on a 2013-2021 mean of 36.7 (there was a high of 50 in 2016 and a low of 28 in 2013 and 2014). Birds were seen with nest material on 20th April and adults were first seen carrying food on 16th May, the latter eight days later than the first of last year and two days later than the 2015-2021 mean. The first fledglings of the year were around Gull Field on 29th May, these the earliest since birds on the same date in 2015 (the 2013-2021 first fledgling mean is 5th June, with the earliest on 15th May 2014 and the latest on 28th June 2013). There were 15 birds retrapped which had been ringed on Skokholm in previous seasons, this compared with 19 in 2019, 14 in 2020 and 15 last year; seven had survived their first winter, two at least a second, three had survived a third winter, one at least a third, one had survived a fourth winter and S147977, ringed as a first-summer on 23rd April 2018, was retrapped as an adult female on 15th July having survived five winters (she had worn a ring for four years, two months and 22 days, this short of the British record of seven years, nine months and ten days and the Skokholm record of seven years and 17 days (the latter ringed in 1968)).

As is typically the case, numbers increased in August, albeit not to the extent seen in recent years; there were peak daycounts of 80 on the 13th, 74 on the 20th and 72 on the 30th, the high down on that logged in each of the last eight Augusts, a 2013-2021 mean of 130.2 and on all-time highs of 179 in 2017 and 205 in 2018. Chicks were still being fed at the Bluffs on 11th August. A total of three September daycounts in excess of 100 individuals was six fewer than recorded last year and 17 fewer than in 2020, with highs of 187 on the 17th, 126 on the 20th and 151 on the 23rd contributing to a bird-days total of 1810; the peak daycount was well down on a 2013-2021 September mean of 477.6 and on all-time highs of 1000 in 1988, 1080 in 1990 and 1353 in 2013, whilst the total was down on a 2013-2021 mean of 3513.7 (the peak during this period was 4474 in 2019). There were October highs of 141 on the 3rd, 197 on the 8th and 220 on the 11th, but no more than 25 from the 21st and ten single-figure daycounts from the 5th; the peak October daycount was the highest since 2013 and up on a 2013-2021 mean of 180.3, however a total of 1419 bird-days was close to a mean of 1405.9 logged during the same period (a 2013 daycount of 281 was the highest since 400 in 1994, whilst the record is the 2000 of 1972). Counts on all but eight November dates included just four double-figure tallies and highs of 17 on the 14th and 14 on the 16th; the peak was down on that logged in eight Novembers this century and a high of 70 in 1989. Following four on the 1st and three on the 2nd, there were singles on six further December dates prior to a staff departure on the 10th.

The total number of Meadow Pipit bird-days logged each month, along with the monthly maximum and the date on which the 2022 peak was recorded. Counts from 2019 to 2021 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022	1319	1076	814	689	1168	1300	1810	1419	119
2021	1477	1646	1240	1014	1243	1761	2614	1607	121
2020	1285	1888	1393	1402	1575	2338	3942	1229	106
2019	1536	2142	1327	1163	1601	2099	4474	1340	147
2022	111	74	46	36	65	80	187	220	17
2021	138	83	69	54	70	92	175	177	23
2020	111	82	75	74	79	152	293	177	19
2019	183	107	72	57	68	113	931	175	45
	24 th	11 th	10 th	30 th	28 th	13 th	17 th	11 th	14 th



Tree Pipit *Anthus trivialis*

Corhedydd y Coed

Uncommon although Scarce between 2004 and 2012 and more regular in autumn

Earliest 16th March 1966 (23rd April 2022) **Latest** 13th October 1959 (25th September 2022)

1936-1976: 123 trapped, 2013-2021: 12 trapped, 2 retrapped

One over Gull Field on 23rd April was six days later than the first of last year and five days later than the 2013-2021 first bird mean; there have been 66 earlier bird-days, including 16 since 2013 and three very early singles in March 1966. Disappointingly there were no further spring records, a bird-days total of one matching that of 2014 and 2016 as the lowest this decade, down on a 2013-2021 mean of 6.1 and all-time highs of 17 in 1960 and 2015, 18 in 1990, 21 in 1987 and 34 in 1964 (the record spring daycount is the four logged in 1938, 1970 and 1987). One over the Farm on 12th August was 12 days earlier than the first of last autumn and six days earlier than the 2013-2021 first of autumn mean (the earliest during this period was present on 6th August 2018 and the latest on the 24th last year). There followed at least one around the Well on the 15th which may have been that present on the 16th and 17th, two over on the morning of the 19th, two at East Bog on the 21st, flyover singles on five dates between the 22nd and 29th and two on the 31st which took the bird-days total to 15; there have been 14 higher August tallies, with peaks of 45 in 1959, 30 in 1966, 33 in 1976 and 29 in 2018. The only September sightings were of singles on the 1st, 4th, 9th, 19th, 22nd and 25th; a bird-days total of six matched the fourth highest this decade, but was down on that logged in 29 previous Septembers including all-time highs of 39 in 1958, 37 in 1969 and 45 last year (the latter included 12 on the 2nd, this matching that of 7th September 1966 and 25th August 1973 as the highest daycount in any month). The last of the year was six days later than the last of 2020 and 2021; there have been 35 later bird-days, including four since 2015 and 21 in October.

Olive-backed Pipit *Anthus hodgsoni*

Corhedydd CefnwyRDD

Vagrant one previous record, the first for Britain present in April 1948

1948: 1 trapped

A vocal bird, found near the South Coast Cut at sunset on 13th November, generally remained hidden as it worked through Bracken to the south of South Pond, although fortunately it briefly ran along the Lighthouse Track allowing for photographs at 1/125 of a second (GE, RDB). It could not be found the next day.



This was the second for Skokholm following the first for Britain trapped on 14th April 1948 (below photograph); the 1948 bird was seen again on the 16th, when it was ‘almost caught by hand’, and

also on the 18th. This species, which now breeds from the northern Urals to eastern Siberia, has since become a regular migrant in Britain, with an increasing number of records averaging 30 a year between 2010 and 2019 and with 683 logged between 1958 and 2021 (White and Kehoe, 2023). Nevertheless encounters remain very rare in Wales, indeed there have only been four other Welsh records, with Pembrokeshire singles in April 2001, October 2002 and October 2017 and a lone Caernarfonshire bird in October 2003. Nationally this is still a rare bird during the first half of the year, for example there were no spring sightings at all in 2019 or 2020.



Rock Pipit *Anthus petrosus*

Corhedydd y Graig

Uncommon Breeder and Scarce Visitor with a high of 67 pairs (1959) and a low of 17 pairs (1983)

81 trapped, 29 retrapped

1934-1976: 2667 trapped, 2010-2021: 318 trapped (including 2 pulli), 92 retrapped

There were no spring birds resembling Nordic breeding *A. p. littoralis* for an eighth consecutive year, indeed there was again no indication that the birds logged this season were anything other than the Skokholm breeders and their offspring; there are records of *A. p. littoralis* logged in seven previous years, most recently with one on 22nd March 2014. Spring survey work revealed 51 territories, this six more than mapped last year and up on a 2013-2021 mean of 45.3 (there were highs during this period of 53 in 2016 and 61 in 2017, but lows of 32 in 2013 and 34 in 2014). What was seemingly the only territory without a section of coastline was held in the vicinity of the Table. Male 2774148, spring trapped in July, was the only retrap from a previous year; it had survived its first winter. Birds were first seen provisioning chicks at North Gully on 9th May, this five days later than last year but three days earlier than the 2016-2021 mean (the earliest during this period were feeding chicks on 3rd May 2017 and the latest on 19th May 2018). Although large chicks were heard in South Haven on 31st May, fledglings were not encountered until 10th June when two were around the Bluffs; the latter were ten days later than the first of last year, 15 days later than the 2013-2021 mean and the latest first fledglings this decade (the earliest during this period were logged on 14th May 2014 and

the latest on 3rd June in 2013 and 2018 (the earliest Meadow Pipit fledglings were also in 2014)). The last adult to be seen carrying food was around the Neck on 13th July, this 19 days earlier than the last of 2021. Daycounts increased during the autumn as birds made their customary move up onto the plateau, however highs of 75 on 8th October, 73 on 17th October and 76 on 15th November were down on those logged in every year this decade; the peak autumn daycount was down on a 2013-2021 mean of 122.0, a low during this period of 78 in 2018 and on highs of 165 in 2014 and 145 in 2015 (a record 400 were logged in September 1934).

Chaffinch *Fringilla coelebs*

Ji-binc

Fairly Common to Abundant listed by both Betts and Thompson as Common to Very Abundant

3 trapped

1934-1976: 288 trapped, 2013-2021: 82 trapped, 15 retrapped

Lone flyovers on the 4th and 18th March were the only spring records, this the lowest total since 2017; although Chaffinch are logged in the majority of Marches, including annually between 1955 and 1977, 1979 and 2003 and since 2011, they are seldom common, indeed the mean March totals for these three periods are 59.9, 15.2 and 11.1 (with 195 in 1932, 374 in 1960, 137 in 1969 and 436 in 1976 being the only March totals of more than 70). There were no April sightings for a fourth time this decade; there have been April records in 75 years, with a post-War bird-days mean of 5.9, a 2013-2021 mean of 4.3 and all-time highs of 91 in 1934 and 43 in 1981. Ten on 3rd October were eight days earlier than the first two of last autumn, but six days later than the 2013-2021 first of autumn mean (the earliest during this period were present on 5th September 2015, this ignoring the unprecedented stay made by a female between 19th May and 14th October 2019); there have been records in 30 previous Septembers, including six of the last nine. Counts on a further 22 October dates from the 8th peaked at 32 on the 11th, 21 on the 14th (when one, pursued under a small rock by a Merlin, hid with the raptor sat above until Crows chased the predator off) and 15 on the 23rd; there have been higher daycounts in six Octobers this decade (the 2013-2021 mean high is 120.8), with all-time highs of 3200 in 1966 and 2000 in 1988, whilst a bird-days total of 147 was down on a 2013-2021 mean of 290.1 and a recent high of 1100 in 2018 (the latter was the highest total in any month since the 1627 of October 1993 and the 11th highest monthly total to date (there were a record 5054 in October 1966)). Daily November sightings until the 19th peaked at 15 on the 1st, 17 on the 3rd and 38 on the 12th, with two on both the 22nd and 29th taking the total to 138; despite a staff presence throughout the month, the bird-days total was down on a 2013-2021 mean of 245.7 and was well down on all-time highs of 1905 in 1967, 3267 in 1968, 1171 in 1970 and 804 in 2017. A female at the Lighthouse on 3rd December was the last prior to a staff departure on the 10th.

Brambling *Fringilla montifringilla*

Pinc y Mynydd

Uncommon although Scarce on occasion and with records in only 16 springs

Earliest 3rd October 1964 (14th October 2022) **Latest** 27th April 1949 (**23rd May 2022**)

1 trapped

1954-1967: 6 trapped, 2013-2017: 4 trapped

A female at South Pond on the 21st and a stunning male around the Farm and Well on the 27th were the first March bird-days since 1995, these taking the all-time total for this month to 19. A female at the Well on 21st May arrived the day after a Serin and was the first to be seen in this month, 24 days later than the previous latest record (below photograph); it was trapped in the Well Heligoland the following day, when it was found to have a full complement of feathers and healthy fat and muscle reserves, and was still present on the 23rd. There have only been 33 previous spring bird-days, with a high of five in 1949 matching this year's total. A flyover on 14th October was the first of the autumn, this two days earlier than the first of last autumn and three days earlier than the 2013-2021 first of autumn mean (the earliest during this period was logged on 10th October 2017, whilst one on the 4th in 2020 was the only first not present until November); there have been 32 autumn bird-days earlier

than the first of 2022, with four this decade, eight in 1966 and ten in 1992. A male around the Courtyard on the 6th and 7th November was the only other autumn record, an autumn bird-days total of three being the third lowest this decade, down on a 2013-2021 mean of 16.9 and highs during this period of 42 in 2017 and 41 last year; there have been six autumn totals up on that of 2017, all between 1966 and 1975 and of 107 or more, these including highs of 1382 in 1966, 160 in 1967 and 223 in 1973 (the former including an unprecedented minimum of 800 on 22nd October).



Common Rosefinch *Carpodacus erythrinus*

Llinos Goch

Rare at least 29 individuals logged over 22 years, accounting for 68 bird-days

Earliest 3rd May 1970 (1st October 2022) **Latest** 12th October 1995 (3rd October 2022)

1 trapped

1949-1974: 4 trapped, 2011-2021: 8 trapped, 1 retrapped

There were no spring sightings this year; there have been 11 spring birds logged over ten years and totalling 18 bird-days, with three individuals since 2013 and a daycount high of two on 16th June 1992. The stunning male ringed on 29th May last year met a disappointing end in Ireland (see below).



A first-winter found in the entrance of the Wheelhouse Heligoland on 1st October was soon trapped and ringed (LM *et al.*); this was 13 days later than the last date on which the only autumn bird of 2021 was seen. The same bird was present between the Well and the Lime Kiln on the 2nd and 3rd, this taking the all-time October bird-days total to 14 (including ten later bird-days logged over three years). It is believed that 11 of 18 previous autumn birds have lingered, with three being present for two days and further singles present for three, four, five, six, seven, nine, ten and 12 days; at least in part due to rough weather impacting the search, the latter three were not seen for between three and seven days during the course of their stays (only one of these was trapped, the presence of a ring when reencountered suggesting that it was the same individual (although it was not retrapped)). Singles in 1949 (the second for Wales), 1969, 1970 and 1974 were the only Common Rosefinch logged prior to 1989, however there have now been at least 30 individuals and 71 bird-days, including ten individuals and 33 bird-days since 1st September 2011. Three first-winters on 11th October 2001 remains the only record of multiple birds other than that of June 1992.

Ringing recovery TX22136

Originally ringed as an adult male, WELL 9 MIST NET, SKOKHOLM 29th May 2021

Recovered as an adult male, BALLYCOTTON, CORK, IRELAND 5th June 2022

Finding condition Rescued from a cat, but upon release flew into a window and died

Distance travelled 210km at 275 degrees (W)

Days since ringed 372

A tragic end to what was a stunning bird (see the Annual Report 2021 for a photograph). This species typically overwinters in southern Asia, although whether this was the case for such a westerly individual will never be known.

Greenfinch *Chloris chloris*

Llinos Werdd

Uncommon but recorded by both Betts and Thomson as Fairly Common or Common

1934-1976: 98 trapped, 2011-2021: 6 trapped, 1 retrapped

There were no spring records for the fourth time this decade; there have been 651 bird-days recorded during the first half of the year, with 73 this century and only 13 since 2013. Three heading east together on 11th October were thus the first of the year, these on the same date as the first single of last autumn and seven days earlier than the 2014-2021 first of autumn mean (there were no autumn birds in 2020, with the firsts during this period otherwise arriving between the 6th and 29th October). One over the Lighthouse on the morning of 18th October and two at the Farm on 15th November were the only other records, these taking the autumn bird-days tally to six. Although historical counts have fluctuated, a 2013-2021 autumn bird-days mean of 5.2 is well down on totals which have exceeded 200 on 12 previous occasions (most recently in 2003) and on highs of 582 in 1939, 334 in 1957, 525 in 1966 and 422 in 1976 (the former including a record daycount of 300 on 18th October). Since the nine bird-days noted in 2005, there have now been records in 14 years totalling only 119 bird-days. This significant decline is likely linked to the spread of trichomonosis, a disease caused by the protozoan parasite *Trichomonas gallinae* which led to a 59% drop in the British population in just ten years (Massimino *et al.*, 2017).

Linnet *Linaria cannabina*

Llinos

Common bred in 1929, 1997 and 1998

5 trapped

1936-1975: 63 trapped, 2011-2021: 48 trapped

Flyover singles on the 14th and 18th were followed by sightings on all but one March date from the 21st, with highs of nine on the 24th, 13 on the 25th and six on the 29th; the peak March daycount was the fourth highest this century and a bird-days total of 46 was the second highest since the 199 of 1996, indeed there have only been six March tallies up on that of this year. Linnet were logged on 25

April dates, with six double-figure daycounts (15 last year) and highs of 36 on the 12th, 68 on the 14th and 22 on the 16th which took the bird-days total to 229; although the peak daycount was a new April record, up on the 64 of the 12th in 1997, the total was down on the 333 of 1960 and the 326 of last year (226 in 2018 is the next highest tally). Sightings on 12 May dates were all of two or less bar four on the 3rd; a bird-days total of 19 was down on a 2013-2021 May mean of 28.9 and a post-1945 mean of 34.3. Sightings of up to two birds on 14 June dates and of singles on five July and three August dates led to totals typical of the summer months. Following a single on the 9th, Linnet were seen on ten further September dates from the 17th, with no more than 14 prior to the 25th then highs of 29 on the 25th and 115 on the 29th which took the total to 212; the only higher September daycount is the 137 of 2015, whilst the only higher totals are 259 in 1994, 270 in 2015 and 242 in 2018. Sightings on ten October dates to the 14th included peaks of 69 on the 2nd, 118 on the 8th, 65 on the 11th and 23 on the 13th, with singles on six further dates to the 25th taking the total to 341; the peak daycount was down on the high logged in 15 previous Octobers (there were peaks of 250 in 1967, 239 in 2016 and 452 last year, the latter the highest in any month), whilst the total was down on a 2013-2021 October mean of 558.6 and on 21 previous Octobers (there were highs of 911 in 1959, 939 in 1975, 892 in 2018 and 906 last year). The five first-winters ringed this year were all in the new Garage Heligoland on 2nd October. Three on the 4th, singles on the 5th, 10th and 17th, 15 on the 19th and 12 on the 29th were the only November birds; the peak daycount and a bird-days total of 33 were down on respective 2013-2021 means of 31.3 and 57.4 (an all-time November daycount high of 113 in 2016 led to a record total of 188). A single on the 1st and three on 7th December were the last of the year; there were December bird-day highs of 31 in 1929 and 81 in 1930.

Lesser Redpoll *Acanthis cabaret*

Llinos Bengoch Leiaf

Uncommon recorded by both Betts and Thompson as Scarce
 1950-1976: 16 trapped, 2013-2020: 21 trapped, 1 retrapped

A flyover on 27th March was 24 days earlier than the 2013-2021 first bird mean, indeed the only earlier sightings are of flyovers on 25th March 2002 and 26th March 2003. One low over the Bluffs on the 26th, one lingering with a Goldfinch on the 29th and a flyover on the 30th took the all-time April tally to 57, 31 of which have been since 2014. An all-time May bird-days total of 223, 120 of which have been since 2013, was not added to, this just the third May this decade without a sighting (a record 54 were logged in 2016). A flyover on the morning of the 19th took the all-time June total to 44, 16 of which have been in the last ten years; this was the last of the year, 2022 becoming the first year since 2019 and the second year since 2016 without an autumn record. A 2022 bird-days total of five was the second lowest since 2012, well down on a 2013-2021 mean of 32.6. Of the 667 bird-days now recorded on Skokholm since the first four in 1950, 327 have occurred in spring (including 168 since 2013) and 340 have occurred in autumn (including 130 since 2013). The highest daycounts are of 17 in October 1959 and September 1972, 21 in May 2016 and 16 in October 2017.

Goldfinch *Carduelis carduelis*

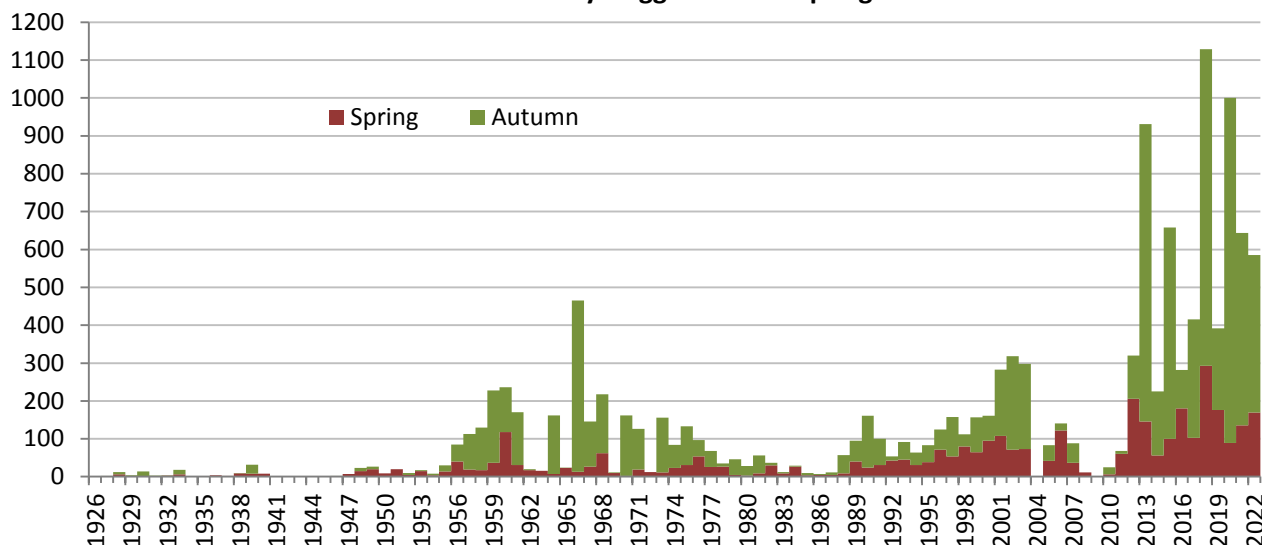
Nico

Common but recorded by both Betts and Thomson as Fairly Common
 12 trapped
 1947-1976: 68 trapped, 2011-2021: 210 trapped, 5 retrapped, 3 controls

One east over the Sugarloaf on 15th March was ten days later than the first of last spring but six days earlier than the 2013-2021 first bird mean. Sightings on four further March dates were all of singles bar three on the 26th, a bird-days total of seven matching the tenth highest in this month. Goldfinch were present on 25 April dates, with 90 bird-days including highs of 18 on the 14th and 13 on the 17th which were the only daycounts of more than eight; the peak April daycount was only down on the 20 of 2012 and the 21 of 2018, whilst the only higher totals are 112 in 2012, 116 in 2018 and 98 in 2019. Sightings on 22 May dates, including a high of seven on the 2nd, tallied 59 bird-days; there have been higher May daycounts in 14 years, including peaks of 16 in 2013 and 23 in 2018, and higher

May totals in five years, with highs of 91 in 2013, 113 in 2016 and 136 in 2018. Encounters with up to three birds on nine June dates to the 20th took the all-time total for this month to 265, 153 of which have been since 2012. A spring bird-days total of 169 was the fifth highest to date.

The total number of Goldfinch bird-days logged in each spring and autumn since 1926.



What were perhaps the same two adults, seen in the vicinity of the Farm on four dates between the 8th and 12th, took the all-time July total to 57 (37 of which have been since 2014), however there were no further Goldfinch until three arrived to the Neck on 14th September; August records in seven previous years, including four of the last eight, have totalled 38 bird-days. Sightings on 12 further September dates from the 17th included highs of 33 on the 25th, 18 on the 28th and 147 on the 29th, the latter a new September record and the fifth highest daycount to be recorded in any month (the highs, all in October, are of 285 in 2013, 170 in 2018, 180 in 2020 and 279 last year). Although September counts in recent years have fluctuated widely, a bird-days total of 251 was only down on the 328 of 2020 and more than doubled a 2013-2021 mean of 92.7. October was disappointing by comparison, with birds on 14 dates and highs of 29 on the 1st, 15 on the 3rd and 26 on the 25th (22 of which headed west for Grassholm), which took the bird-days total to 128; although there have only been 15 higher October totals, these include peaks of 746 in 2013, 582 in 2018 and 523 in 2020 which have led to a 2013-2021 mean of 344.9. Goldfinch were present on seven November dates, with 22 bird-days logged and seven on the 4th the only daycount of more than five; there have been higher daycounts in 15 Novembers and higher totals in 14 Novembers (with 30 in 1968 the maximum daycount and 138 in 2015 the maximum tally). The first ten days of December saw singles on the 3rd and 6th, four on the 7th and one on the 9th. An autumn bird-days total of 416 was the seventh highest to date, but down on a 2013-2021 mean of 488.6 and a high of 911 in 2020.

Siskin *Spinus spinus*

Pila Gwyrdd

Uncommon sometimes Scarce and with records in just 13 previous springs

1959-1975: 37 trapped, 2017-2021: 7 trapped

Given that a male on the 19th in 1994 was the only previous March record, sightings of one east over the Quarry on the 14th, one on the 23rd, three on the 25th and further singles on the 26th and 29th were unexpected; this becomes the 14th spring with a sighting, with 33 of an all-time 53 spring bird-days coming in the last seven years. Despite a record March, there were no April Siskin this year; sightings in five of the last seven Aprils include 13 bird-days last year. There were no further records until 10th October when six were being chased by a male Merlin; these arrived on the same date as the first seven of last autumn but were 17 days later than the 2013-2021 first of autumn mean (there have been no previous August sightings, but 332 bird-days over 15 previous Septembers

including 187 since 2015). Sightings on nine further October dates included 98 on the 11th and 90 on the 13th, these both likely undercounts given that some vocal birds were too high to see; the only higher daycounts to be logged in any month were all in October and of 100 on the 24th in 1959, 1200 on the 26th and 800 on the 27th (all grounded by fog) in 1988 and 180 on the 14th in 1993. An October bird-days total of 270 was up on a 2013-2021 mean of 46.6 and only down on highs of 2156 in 1988 and 405 in 1993 (the next highest total is the 210 of 1975). There were 14 November bird-days, with sightings on seven dates to the 29th and highs of three on the 3rd and 13th; there have now been 204 November bird-days, including 121 since 2015. Siskin have now been noted in 43 years, including 1949 when the first 11 were logged; the most recent year without a record is 2014.

Serin *Serinus serinus*

Llinos Frech

Vagrant only three previous records

1967: 1 trapped

A female found in the Courtyard, late on the morning of 20th May, toured the area around the Farm before heading high and east (RDB, GE *et al.*). The only previous records are of a male trapped on 10th June 1967, a male on 11th May 1978 and a female on 23rd November 2003. There had been a further 32 Welsh individuals to the end of 2022, with 17 in Pembrokeshire including the first two for Wales found at Marloes on 21st October 1933. The number of Welsh sightings peaked around the turn of this century and has since declined (this mirroring records from elsewhere in Britain (Pritchard *et al.*, 2020)), however another upturn might be expected; a climate driven northwards expansion of the Serin's breeding range may occur over the coming decades (Huntley *et al.*, 2007).



Tennessee Warbler *Leiothlypis peregrina*

Telor Tennessee

Vagrant no previous records

The avian highlight during what was a fantastic year for scarce and rare birds came on 12th October when a wet lunchtime mist cleared and encouraged the four remaining Skokholm residents to again take to the field. A check of the area around the new Garage Heligoland at 1400hrs found a first-winter Tennessee Warbler feeding amongst the Goldenrod, this a first for Wales, the first British bird to be found away from Scotland and the sixth and latest British record (RD, RDB *et al.*); the first two for Britain were on Fair Isle, Shetland between the 6th and 24th September 1975, these followed by one on mainland Orkney from the 5th to 7th September 1982, one on St Kilda, Outer Hebrides on 20th

September 1995 and one on Yell, Shetland from 29th September to 4th October 2020. Although the bird kept low and moved in a seemingly tired way, its eyes were almost always wide and it was not fluffed up in the manner of an exhausted migrant during a fall. It soon made its way to a patch of Wood Sage outside of the Central Block and, at 1430hrs, from there past the Library and towards the Wheelhouse Heligoland; observers took up a position on Home Meadow where the bushes around the Farm could be viewed from a distance, however it did not reappear. The sea state would have proven suitable for a twitch the following day and over 700 callers were queued on the Dale Sailing switchboard in anticipation of such, however boats were cancelled when the bird could not be found during the rest of the day. A later search under the Bramble and Fuchsia failed to locate any sign.



Yellowhammer *Emberiza citrinella*

Bras Melyn

Scarce more than annual until 1971, but only recorded in ten years between 1972 and 2021

1 trapped

1934-1976: 29 trapped, 2011-2014: 2 trapped

One trapped in the Well Heligoland at 1710hrs on 27th May was the first since one on the 26th and 27th October 2014 and the first May record since one in 2013 (ML *et al.*). There were 24 bird-days

prior to Lockley's Wartime departure, with all but two in spring, a daycount high of three in April 1936 and peak totals of four in 1931 and 1940. The situation remained similar in the years after the War, with 114 bird-days logged between 1946 and 1971 (with records in all but three years and 91 bird-days in spring), a daycount high of three in September 1947 and peak annual totals of eight in 1957 and 1966, nine in 1959, 11 in 1950, 12 in 1964 and 14 in 1960. Following a four year absence, there were singles on six days in April (four sightings of a male and two of a female over well-spaced dates) and on 24th October in 1976, these followed by another four year absence prior to one which remained for five days in April 1981. Singles on 17th March and 10th April 1984, 17th March and 20th May 1986 and on 13th June 1990 were the last prior to 1996 when there was a record bird-days total; a male, singing from the Wheelhouse roof on 13th April, lingered for a further 13 days and was joined by a second bird on the 20th, this perhaps the male seen on the 5th and 6th May and followed by a single on 25th September. There were no further sightings until one was trapped on 17th April 2011, this followed by singles on the 9th and 14th September of that year, on 15th March 2012 and on 20th May and 26th June 2013. The only subsequent birds have been in October 2014 and May this year. There has now been one bird-day in February, 21 in March, 86 in April, 37 in May, five in June, one in July, two in August, ten in September, 17 in October and one in November.



Reed Bunting *Emberiza schoeniclus*

Bras y Cyrs

Scarce Breeder and Scarce Visitor bred in 1960, in most years 1967-1980 and since 2005

4 trapped, 4 retrapped

1949-1976: 163 trapped, 2010-2021: 100 trapped, 169 retrapped, 6 controls

A male singing to a dark faced female at South Pond on 23rd March was the latest first spring sighting in 11 years. A pair went on to occupy the area between South and Winter Ponds, whilst a male first seen at the Well on 25th March would hold territory between there and North Pond. A total of two territories was the lowest in a decade, two down on last year and down on a 2013-2021 mean of 5.2; an all-time high of seven territories were mapped in each year between 2015 and 2017, with three in 2019 the lowest total between 2013 and 2021. There were no spring sightings attributable to any bird other than one of the four breeders and no adults ringed in previous years were retrapped. The northerly pair were collecting nest material at North Pond on 16th April, however it was the southerly pair which were first seen to be provisioning young, with both adults collecting food near Migration Rocks on 14th June. Young yet to commence their post juvenile moults were seen in both

territories during July, with one trapped at the Wheelhouse on the 12th (which was in the Courtyard on the 18th), one along the Lighthouse Track on the 13th and one at the Well on the 14th (which was also there on 26th July and 24th August); the first was three days later than the 2013-2020 first juvenile mean (the earliest during this period was logged on 20th June 2020, the latest on 26th July 2019, whilst there were no fledglings seen last year). A ringed juvenile near the Lighthouse on the 16th and 27th July and on 6th August must have returned to the trapping area during this period (or was from elsewhere). A minimum of three 2022 fledglings matched that of 2020 as the highest total since ten in 2018, a 2022 productivity figure of 1.50 being the highest in four years but down on five years this decade (the 2013-2021 mean is 1.47 \pm se 0.29, with a high during this period of 2.50 in 2018). A moulting juvenile trapped in the Wheelhouse Net on 15th August (and retrapped there on 2nd September), was potentially a fourth Skokholm fledgling, although no behaviour was seen to confirm this. In the years in which Reed Bunting did not breed, they were considered a scarce visitor; low counts were logged most Octobers. Such small scale arrivals have proven difficult to detect now that a breeding population has again established, however a first-winter trapped at the Well on 11th October was probably from elsewhere. No doubt due in part to the reduced number of breeding birds, autumn counts were down on the majority of recent years, with no more than three seen on any date and bird-day totals of 28 in August (the 2013-2021 mean is 91.8), 24 in September (the 2013-2021 mean is 87.6), six in October (the 2013-2021 mean is 68.3) and three in November (the 2013-2021 mean is 16.9).

Lapland Bunting *Calcarius lapponicus*

Bras y Gogledd

Scarce but recorded in only 50 previous years and with just six spring records, most recently in 2021

Earliest 30th July 1957 (13th November 2022) **Latest** 8th June 1963 (26th April 2022)

1956: 1 trapped, 2017-2020: 2 trapped

A female, first seen on North Plain on 20th April, was found on each date to the 24th and again on the 26th (RDB *et al.*, photograph below); this was a rare spring sighting, indeed the only other records are of males on 10th May 1948, 8th June 1963, 14th May 1981 and 18th May 1995, of two on the 23rd and 24th March 2017 (one lingered to the 26th) and of one on 21st April last year. One over the Lighthouse on the morning of 13th November arrived on the same date as the first of last autumn, these the latest autumn vanguards this decade, 39 days later than the 2013-2021 mean (the earliest during this period were in September, with birds on the 27th in 2013, the 25th in 2014 and the 18th in 2020).



One over South Pond on 15th November was perhaps that near North Pond later the same day, whilst one which escaped the attentions of a Merlin near the Cutting on 22nd November was the last of the year. An autumn bird-days total of three was down on four years this decade, a 2013-2021 mean of 4.2 and a high during this period of 13 in 2016. The only autumn totals up on that of 2016 are the 56 of 1956, the 15 of 1957, the 17 of 1960, the 14 of 1973 and the 45 of 1993 (the latter including a record daycount of 11 on 20th October).

Snow Bunting *Plectrophenax nivalis*

Bras yr Eira

Scarce but only six spring records, with five in March and one in April

Earliest 17th September 1999 (15th October 2022) **Latest** 25th April 1959 (**9th June 2022**)

1967-1968: 6 trapped, 2014: 1 trapped

In a year filled with avian surprises, one of the biggest was the appearance of a stunning Snow Bunting to the east of North Gully on the morning of 9th June (GE *et al.*, upper photograph below); it was not found subsequently. The only previous spring records are of a young male on 28th March 1932, a male on the 10th and 11th March 1958, a male daily between the 22nd and 25th April 1959 and further singles on 22nd March 1969, 29th March 1981 and 17th March 2006. One on 31st January and 2nd February 1998 is the only other record during the first half of the year.



The first of the autumn was on North Plain on 15th October, this seven days later than the first of last year but 20 days earlier than the first of 2020 and six days earlier than the first of 2019; there have been 155 autumn bird-days earlier than the first of this year, including 34 in September. Feathers on the northern Isthmian Heath path and remains with a beak found under the Well willows on 17th October were perhaps of the same bird; a male Sparrowhawk flushed from the area. One sat under the Central Block porch and then on the Knoll, late on the afternoon of 21st October, was not found the following day, whilst a vocal bird high over the Quarry on 16th November was the last of the year. An autumn bird-days total of three matched a 2013-2021 mean of 3.1 but was down on four years this decade and highs during this period of seven in 2014 and 2021 and eight in 2019; there are seven autumn totals higher than that of 2019, with peaks of 44 in 1961, 63 in 1967, 128 in 1968 and 26 in 1975, whilst the record daycounts are of 17 in 1961 and 15 in 1967 (but with no more than four after 1968).

The Non-avian Report

It should come as no surprise that 2022 was another phenomenal year for records of non-avian species. Observations made during the daily census were supplemented using targeted surveys to produce a fascinating list covering a range of taxa. Despite a long history of intensive field studies on the Island, 2022 again saw the discovery of several species not encountered previously. **Black-tailed Skimmer** became the 21st species of Odonata to be seen on Skokholm, whilst a **Radford's Flame Shoulder** was a first for Wales, a **Vagrant China-mark** was a first for Pembrokeshire, a **Slender Burnished Brass** was the first county record since 1875 and the first seven **Striped Hawk-moth** for Skokholm were logged. It was a record-breaking year for several common migrant moth species too, whilst **Common Pipistrelle** and **Soprano Pipistrelle** triggered the bat detectors on more occasions than ever before, dwarfing previous totals. At sea, it was the best year ever for sightings of **Short-beaked Common Dolphin**, whilst a **Common Thresher Shark** was just the fourth for Skokholm and a **Bluefin Tuna** only the second.

The 2022 sightings are documented systematically below and, where appropriate, compared with the digitised historical records, Thompson (2007) and observations made since 2012.

Invertebrates Dragonflies

Skokholm's three largest water bodies are relatively exposed and, in most years, dry up during the warm summer months; Winter and South Ponds are the first to do so, whilst in some years a small wet scrape may remain at North Pond throughout the year. In an attempt to prolong the period in which it holds water, regular efforts have been made to remove a build-up of silt at North Pond, though drier, hotter summers are lengthening the number of days in which it remains dry; this year it was empty from 21st July until 27th October (it was dry from 22nd July until 19th October in 2021). Despite the exceptionally dry year, Orchid Bog and the small Wheelhouse and Courtyard Ponds again held water throughout the season; unsurprisingly these sites provided many of the Odonata records. There are now 21 species on the Island list but, unsurprisingly, species diversity varies greatly between years. The vast majority of records are of transient individuals, with very few the product of breeding on the Island; indeed only **Emperor Dragonfly** *Anax imperator* and **Red-veined Darter** *Sympetrum fonscolombii* have been observed ovipositing in the last decade, whilst **Broad-bodied Chaser** *Libellula depressa* is the only species known to have bred successfully. Historically **Blue-tailed Damselfly** *Ischnura elegans*, **Common Blue Damselfly** *Enallagma cyathigerum* and **Common Darter** *S. striolatum* have bred on the Island. Increased temperatures caused by climate change are thought to be driving positive trends in both abundance and distribution of many dragonfly species in the United Kingdom (Taylor *et al.*, 2021); five species, whose arrival is likely linked to such changes, were added to the Skokholm list in the last ten years: **Red-veined Darter** (first seen in 2013), **Banded**

Demoiselle *Calopteryx splendens* (first seen in 2017), **Lesser Emperor** *A. parthenope* (first seen in 2018), **Vagrant Emperor** *A. ephippiger* (first seen in 2021) and **Black-tailed Skimmer** *Orthetrum cancellatum* (first seen this year).

Migrant Hawker *Aeshna mixta* (Latreille, 1805)

A single on 26th July was the first of the year, this nine days earlier than the first of 2021 and the only July record in at least a decade. A total of 13 dragonfly-days were logged in August, with two at Crab Bay and one along the Lighthouse Track on the 7th the peak daycount. A single in South Haven on 2nd September was the last, taking the annual dragonfly-days tally to 15; the total was up on the six of last year and only down on that logged in two years this decade (there were no sightings in 2013, but 15 dragonfly-days in 2014, 36 in 2015, 13 in 2016, 21 in 2017, nine in 2018, three in 2019 and 13 in 2020). Hawkers, seen too briefly to confidently assign to a species, were recorded on three July dates, on five August dates and on two September dates. Singles on the 10th and 12th September were suspected to be Southern Hawker, although neither settled to allow for confirmation; the latter would be a new species for Skokholm and is anticipated to arrive in the near future.

Emperor Dragonfly *Anax imperator* (Leach, 1815)

One feeding between Winter Pond and the Dip on 13th July was the first of the year, this on the same date as the first of 2021 but 19 days later than the first of 2020. There were a further seven dragonfly-days logged during the remainder of the month and three in August, with one at Orchid Bog on the 30th the last record of the year. Additionally there was a single insect, reported as a large blue dragonfly, on 16th June. An annual total of 11 was down on the 13 of last year but up on a 2013-2021 mean of $9.7 \pm \text{sd } 7.4$.

Red-veined Darter *Sympetrum fonscolombii* (Sélys, 1840)

A male and female hunting over North Pond on 22nd June was the only record of the year. With the exception of 2020, this species has been logged annually since the first record in 2013, whilst breeding pairs were encountered in 2015, 2017 and 2019. Although this is a fairly frequent migrant to the south of Britain, the number arriving to Skokholm has fluctuated; single insects were logged in 2013, 2014, 2016, 2018 and 2021, whereas there were 31 in 2015, 24 in 2017 and 12 in 2019.



Common Darter *Sympetrum striolatum* (Charpentier, 1840)

A female in the Wheelhouse Heligoland on 9th July was the only sighting of the year and the first since 2019 when singles were logged on two August dates. Occurring in only seven of the last ten years and with a recent high of five in 2014, this has proven to be a scarce Skokholm species.

Historically it was one of the most common dragonflies on the Island; there were breeding records in 1956 and 1997, whilst an impressive 923 were logged between July and September 1948.

Black-tailed Skimmer *Orthetrum cancellatum* (Linnaeus, 1758)

A striking male feeding at North Pond on 22nd June was an addition to the Island list. It was watched patrolling the pond, alongside two Red-veined Darter, where it frequently perched on bare patches of earth along the pond edge. This is a fairly common species in southeast England and has spread significantly in England and Wales over the last 30 years. The first Pembrokeshire record was in 1983 and it has since spread across the county (Coker, *pers. comm.*).



Moths

Whilst some of the Skokholm moth records date back to 1910, there are several gaps in the historical database; although moths appear to have been surveyed intensively at times, particularly during the late 1990s, putting recent findings into context can thus be challenging. The effort afforded to the study of Skokholm's moths has now been relatively consistent for a decade, this seemingly the longest constant period of moth monitoring in the Island's history. The data gathered is shedding some light on how numbers of both breeding and migrant species vary and some trends are apparent. A fantastic diversity was once again encountered this year, indeed there were 42 Island scarcities (moths occurring in no more than five previous years) and 13 additions to the Island list (there were seven additions in 2018, 17 in 2019, ten in 2020 and nine last year). Of the Island scarcities, four species (**Pale-backed Clothes Moth**, **Brown House Moth**, **Bracken Neb** and **Dotted Shade**) are almost certainly under-recorded. Several species were recorded for just the second time ever; these include the first **Dark Spectacle** since 1912, the first **Clouded Drab** since 1992, the first **Dot Moth** since 1995 and the first two **Double Square-spot** since 2014.

Overall, 2022 was an excellent year for sightings of immigrant species, though of mixed fortunes for those we expect to see regularly. It was a record year for **Rush Veneer** (930% up on 2021), **Hummingbird Hawk-moth** (+933%) and **Pearly Underwing** (+375%) and the second busiest for **Rusty-dot Pearl** (+143%). Conversely it was the worst year of the last decade for records of **Diamond-back Moth** and **Silver Y** although, following a blank 2021, a total of 17 **Vestal** was a welcome return. Singles of **Vagrant China-mark** (a first for Pembrokeshire), **Olive-tree Pearl**, **Slender Burnished Brass**, **White-point**, **Cosmopolitan** and **Radford's Flame-shoulder** (a first for Wales), two **Convolvulus Hawk-moth**, seven **Striped Hawk-moth**, three **Bordered Straw**, four **Scarce Bordered Straw**, two **Mottled Willow**, three **Delicate** and three **White-speck** added an extraordinary amount of excitement to the season's moth trapping.

The 2022 records listed here are the result of both nocturnal trapping and ad hoc field observations. The majority of trapping was carried out using the solar mains powered Skinner Trap situated at various sheltered sites around the Farm (sites reachable using a 50 metre extension cable). Additional trapping was again carried out by Wheatear researcher Ian Beggs in the spring, whilst visiting moth enthusiasts Graham Farmer and Steve Roberts, via the use of mobile 12 volt systems, were able to trap at a range of sites including the Well, North Haven and East Bog. Within the following text 'Nationally Scarce' refers to a species which occurs in between 16 and 100 hectads (10x10km squares) in Great Britain.

The following codes have been used where appropriate: **I** Immigrant, **S** Nationally Scarce and **N** New to Skokholm.

3.001 **Orange Swift** *Triodia sylvina* (Linnaeus, 1761)

Three taken from the trap on 16th August were the first of the year. A male and female found along the Lighthouse Track after dark on the 25th were the only others encountered. An annual total of five almost matched the six of last year, whilst a recent peak of 25 was logged in 2018.

3.002 **Common Swift** *Korscheltellus lupulina* (Linnaeus, 1758)

A total of 86 trapped between 12th May and 22nd June included a peak catch of 40 from two traps on 3rd June. Three found at the Bluffs on 7th June took the 2022 tally to 89, this the best showing by this species in recent history; the previous high was the 52 logged in 2021.

3.003 **Map-winged Swift** *Korscheltellus fusconebulosa* (De Geer, 1778)

The first came to light at the Well on 1st June. A further 11 were trapped over five June and two July dates, with the last of the year taken outside of the Cottage on 14th July. An individual of the plain form *gallicus* was encountered on 17th June, this the second in a decade following one on 30th June last year.

4.001 **Sorrel Pigmy** *Enteucha acetosae* (Stainton, 1854) **S**

In 2021, following a study measuring all of the smallest moth species, Sorrel Pigmy was officially declared the smallest in the world (Stonis *et al.*, 2021). This Nationally Scarce Nepticulid was first recorded on Skokholm in 2014 when its distinctive larval mines were found on the leaves of Common Sorrel *Rumex acetosa* growing near North Pond Hide and in a Manx Shearwater census plot adjacent to the pond. The mines have been encountered every year since, although for the four years following its discovery Sorrel Pigmy were only found in areas adjacent to North Pond. Since 2019, larval signs have been seen at Little Bay Wall, Winter Pond, the South Coast Cut, North Haven, the Bog, Windmill Gully and Wallsend; it is unclear whether this apparent increase in distribution and abundance reflects genuine population growth or increased observer awareness. There was no targeted mine counting survey this year, indeed the only mines logged were all again in the vicinity of North Pond.



11.012 **Common Bagworm** *Psyche casta* (Pallas, 1767)

A single case was found on the Lighthouse Garage on 12th June. Five cases were logged on the 18th, five on the 19th and four on the 20th, although the level of overlap is unclear. A single case found walking down the old Crab Bay Hide on the 23rd was the only other record. This species was first recorded in 2013 when cases were found among the inspection hatches of the Lighthouse Manx Shearwater study plot; although no targeted surveys have taken place, the number encountered at this site has seemingly declined over the past three years. Most sightings still occur in the vicinity of the Lighthouse and Quarry, where seabird work sees observers crawling in close proximity to suitable substrate; it is likely that similar close inspection at other sites would reveal this moth to be more abundant and widespread than ad hoc records suggest, indeed a 2016 whole Island Storm Petrel census led to a minimum of 100 cases being found in a section of rarely examined loose scree along the West Coast. The apterous case-bearing females crawl to higher positions, such as up the walls of the Lighthouse and surrounding rocks, however adult males are more unobtrusive; although no adult males were seen in 2022, they were logged in six of the last ten years (on warm, calm days).

12.030 **Pale-backed Clothes Moth** *Monopis crocicapitella* (Clemens, 1859)

Singles found by day at Crab Bay and the Farm on 15th October were the only 2022 records. This becomes just the fourth year in which this, rather inconspicuous, species has been identified on the Island, with the most recent prior to this year being the four found in October 2019.

18.001 **Diamond-back Moth** *Plutella xylostella* (Linnaeus, 1758) †

It was another abysmal year for records of this diminutive migrant; a single at Purple Cove on 21st May and another in the Courtyard on 7th June were the only sightings. Whilst the number of moths arriving to the UK fluctuates widely from year to year, an annual total of two moth-days was the lowest of the last decade. There were six last year, whilst a record 4425 were logged in 2016.

28.010 **Brown House Moth** *Hoffmanophila pseudospretella* (Stainton, 1849)

One trapped at the Farm on 27th April and one found in the Wheelhouse Kitchen on 27th May were the only sightings this year. Although this species is almost certainly overlooked, it has only previously been noted in the years 2011, 2014, 2016, 2019 and 2021.

32.036 **Parsnip Moth** *Depressaria radiella* (Goeze, 1783)

One found in the Cottage on 5th April was the first of the year. Singles were taken from the light trap on 16th April and 16th August and 26 were found hibernating behind hanging pictures and mirrors in the Farm accommodation during the November shutdown. Although not noted this season, in some years the caterpillars of this species can be found in large numbers on Common Hogweed *Heracleum sphondylium* growing in the Courtyard and to the west of Home Meadow.

32.039 **Dingy Flat-body** *Depressaria daucella* ([Denis & Schiffermüller], 1775)

This is an overlooked species on Skokholm, superficially similar to the more abundant Parsnip Moth, indeed singles in 2019, 2020 and 2021 are the only earlier records. Whilst no adults were identified this year, the distinctive caterpillars were found feeding on Hemlock Water Dropwort *Oenanthe crocata* at the Well on 16th June; this is the first confirmed record of breeding on the Island.



35.065 **Bracken Neb** *Monochroa cytisella* (Curtis, 1837)

One trapped in the Cottage Garden on 16th June was the sole record, this becoming the second consecutive year in which this easily overlooked Gelechid has been seen. It was first discovered on Skokholm in 2014, when a total of nine came to light during seven July trapping sessions, however the only other years with a record are 2016 and 2017. This species has a propensity to hide amongst large swathes of Bracken, the larval foodplant, which perhaps explains the paucity of records.

35.146 **Large Groundling** *Teleiopsis diffinis* (Haworth, 1828)

This common and widespread mainland species was first documented on Skokholm in 2014 when eight were taken from the trap. This year a total of 81 were trapped during 14 sessions between 31st May and 18th September, with a peak catch of 19 on 1st June. Whilst usually logged in low numbers between 2015 and 2019, there were highs of 38 in 2020 and 140 in 2021. The larval foodplant is Sheep's Sorrel *Rumex acetosella* which is widespread and often abundant on Skokholm.

41.002 **Dingy Dowd** *Blastobasis adustella* (Walsingham, 1894)

This species was accidentally introduced to Ireland at the beginning of the 20th century and later became established and widespread throughout the United Kingdom (De Prins *et al.*, 2009). On Skokholm it is a common and active mid-summer visitor to light, although a high proportion often depart the trap prior to being counted. This season just 25 were taken between the 6th and 26th August, this down on the 262 moth-days of last year, the 331 of 2020 and 109 of 2019.

45.037 **Dusky Plume** *Oidaematophorus lithodactyla* (Treitschke, 1833)

One found resting on Common Fleabane *Pulicaria dysenterica*, the larval foodplant, in Billy's Dyke on 2nd August was the only record, this down on the six moth-days of last season. A lone moth matches the poor showings of 2019 and 2020, these the worst years since this species was discovered in 2016 (the 22 counted in that year remains the highest annual total). Common Fleabane can be found in Well Stream, Billy's Dyke and Orchid Bog and its abundance varies markedly from year to year; varying foodplant availability may in part explain the fluctuating annual totals.

45.044 **Common Plume** *Emmelina monodactyla* (Linnaeus, 1758)

One in the Lighthouse Bathroom on 18th August and singles at South Pond and the Quarry on the 25th made 2022 just the second year in which there has been multiple sightings. Six were logged last year, whilst singles were taken in 2014, 2015, 2016 and 2020. This is one of the commonest British plume moths whose larvae feed primarily on Bindweeds *Convolvulus* spp., however they can also use Orache *Atriplex* spp., of which five species have been found on Skokholm (Thompson, 2007).

48.001 **Common Nettle-tap** *Anthophila fabriciana* (Linnaeus, 1767)

Just three were observed this year, all of which were found in Billy's Dyke on 27th May. Whilst such a low total may be in part attributable to recorder effort, this is a disappointing tally; six were logged in 2021, whilst there were 50 moth-days in 2020. This diminutive Nettle specialist becomes more obvious as density increases, this being particularly apparent in 2016 when 456 were logged.

49.025 **Barred Fruit-tree Tortrix** *Pandemis cerasana* (Hübner, 1786)

This common mainland species was not found on Skokholm until 2016, however it has been encountered in each year since. A total of 20 were trapped over 12 dates between 7th June and 26th August, with a peak catch of five on 23rd June. This matches 2020 as the second-best year for numbers, both down on a high of 39 moth-days logged last year. There were singles in 2016, 2018 and 2019 and five in 2017. Although this is primarily a woodland moth, whose larvae feed on deciduous trees, its annual occurrence and increasing numbers suggest that it has colonised.

49.045 **Dotted Shade** *Eana osseana* (Scopoli, 1763)

Recorded for the first time in 2014, when 319 were trapped in late June and July, there have since

been records of one in 2015, two in 2016, three in 2017 and 17 in 2021. This year a total of ten were attracted to light between 15th June and 26th August, with a peak catch of seven on 16th July. This nondescript species is widely distributed on the mainland but easily overlooked; it is likely that it is far more abundant on the Island than recent records suggest.

49.077 **Garden Rose Tortrix** *Acleris variegana* ([Denis & Schiffermüller], 1775)

One taken on 16th August was the only record of the year and made this just the fourth year in which this species has been encountered on Skokholm. Three were logged last year and two in 2020, with one in 2015 the only other record. The larvae of Garden Rose Tortrix feed on a variety of plants including Bramble *Rubus fruticosus*, mature examples of which exist near the trapping site.



49.109 **Common Yellow Conch** *Agapeta hamana* (Linnaeus, 1758)

Singles taken outside of the Cottage Garden on the 22nd and 23rd June were the first since 2017 when five were trapped. The larvae of this distinctive Tortricid feed within the roots of thistles and it is thus likely that this species is under-recorded; prior to 2017 there were records in 2016, 2015, 2014, 2013, 1998 and 1997.



49.127 **Thistle Conch** *Aethes cnicana* (Westwood, 1894)

One trapped on 6th June was a fifth for Skokholm and made 2022 just the third year with a record; there was one in June 2019 and three in June 2016. As the common name suggests, the larvae feed on thistles; as with the previous species, it is possible that this is thus an unobtrusive Island breeder.

49.139 **Black-headed Conch** *Cochylichroa atricapitana* (Stephens, 1852)

This species, which is widespread across the British Isles but more common in coastal areas, has often been encountered in the Skokholm trap. However, as with many of the smaller micros, it has a tendency to escape prior to being counted. A total of 18 were taken between 2nd June and 18th September, this up on the 11 of 2021 and a continuation of the gradual increase in records observed since the blank year of 2019. Whilst this was the best tally of the last four years, it falls well short of

the record count of 80 logged in 2016. This is a double-brooded species, with the first brood larvae feeding on the flowers and flower stalks of Common Ragwort *Senecio jacobaea* and the second brood utilising the stem and rootstock. The number present is likely to correlate with Common Ragwort availability, this a plant which fluctuates in abundance dramatically between years and which has been particularly plentiful for the past three.

49.161 **Barred Marble** *Celypha striana* ([Denis & Schiffermüller], 1775)

The third for Skokholm came to light outside of the Cottage on 14th July. Previous encounters were with singles on 4th July 2015 and 22nd July 2017. The larvae of this species, which is fairly common across the south of Britain and in Pembrokeshire, bore into the roots of Dandelion *Taraxacum officinale*.

49.164 **Thyme Marble** *Celypha cespitana* (Hübner, 1817)

The first of the year was trapped at the Well on 1st June. A single was caught on 14th July, two were taken at the Farm on 6th August and a record catch of 25 were found in the moth trap on 16th August, these the last of the season. With the exception of a blank 2018, this primarily coastal micro has been logged in each of the years since its discovery in 2014. A 2022 moth-days total of 29 is the highest on record, with 22 in 2021 and 17 in 2019 the next highest tallies. The low plants on which its larvae feed, such as Wild Thyme *Thymus polytrichus* and Thrift *Armeria maritima*, are heavily grazed by Rabbits but thrive on Skokholm's more sheltered and inaccessible cliff faces.

49.166 **Common Marble** *Celypha lacunana* ([Denis & Schiffermüller], 1775)

Three observed by day along the South Coast Cut on 5th August was the only record of the year; there were none taken from the moth trap. This is probably one of the commonest members of the Tortricidae to be found on Skokholm and has often been disturbed from Bracken during daylight hours, however, as is the case with the Thyme Marble, it is easily overlooked.

49.261 **Southern Bell** *Crociosema plebejana* (Zeller, 1847) **N**

Singles taken from the light trap on the 10th and 12th October and one found resting inside the Wheelhouse Heligoland on 7th November were the first for Skokholm. The first observation of this distinctive species in the British Isles came from Devon in 1900; it has since expanded its range along the south coast. The larvae feed on Tree Mallow *Lavatera maritima*, which in recent years has been restricted to the steep cliffs of Crab Bay and the Stack, out of the reach of grazing Rabbits. A lone plant, found in the Crab Bay Puffin colony and moved to the Courtyard in 2019, has since flowered and seeded profusely, although germinated seeds have only survived in Rabbit-proofed areas. That the Southern Bell's larval plant is now in close proximity to the Farm, where the moth trap is most often deployed, may explain the discovery of this species on Skokholm.

49.265 **Hoary Bell** *Eucosma cana* (Haworth, 1811)

A total of 15 were trapped between 15th June and 23rd July, these the first since one was recorded in 2019. Three were taken in 2017, 23 in 2016 and 12 in 2014, the latter the year of its discovery.

49.269 **Marbled Bell** *Eucosma campoliliana* ([Denis & Schiffermüller], 1775)

This distinctive micro was recorded during nine trapping sessions this year, these the first encounters since one was logged in 2019 and making 2022 just the fifth year with a sighting. A total of 18 moths were taken between 21st June and 23rd July, with a peak catch of four on 11th July; the 2022 total is thus greater than the cumulative tally recorded since its discovery on Skokholm in 2014. The larvae of this beautiful Tortrix feed on the seeds and stems of Common Ragwort.

49.285 **Thistle Bell** *Epiblema scutulana* ([Denis & Schiffermüller], 1775)

A total of 15 came to the light between the 1st and 7th June, with a peak catch of six taken at the Well on the 1st; this was the highest tally to date, up on a previous peak of 14 logged in 2016 and the ten

of both 2017 and 2021. This is another moth which was only discovered on the Island in 2014 and which has been found infrequently since (in six years), although given that it is regular on the nearby mainland, this is perhaps as a result of recorder effort.

49.294 **Bramble Shoot Moth** *Notocelia uddmanniana* (Linnaeus, 1758)

This species was first logged in 2016 when one was attracted to a light trap at the Well. Two were taken in both 2017 and 2019 and a single in 2021, whilst two trapped at the Farm on 23rd July made this just the fifth year with a Skokholm record. Given that this common and widespread species is easily identified, a paucity of earlier Island sightings may suggest that it is a recent colonist, with low counts reflecting the limited number of mature Bramble patches on which the larvae could feed.

52.003 **Lunar Hornet Moth** *Sesia bembeciformis* (Hübner, 1796)

A vacated exuvia and an adult were found on the mature Grey Willows *Salix cinerea* in the Well Heligoland on 5th June. A second exuvia was found on the 16th and there were three more on the 17th when three adults were found (including two in copula). A sixth and seventh exuvia were observed on the 18th and 19th, with more singles encountered on the 22nd and 24th. Another adult was found in the Well Heligoland on 2nd July and the tenth exuvia of 2022 was noted on the 4th (this may have belonged to the adult seen two days earlier). Only one exuvia (that found on 22nd June) was in the trees behind the Well 6 Mist Net, the remaining nine all within the Well Heligoland. Lunar Hornet Moth was only discovered on Skokholm in 2020 when a vacated exuvia protruding from the base of a tree at the Well was found during a routine push of the Heligoland. Over the days that followed, regular inspections of the area revealed a further 12 emergences (one of which failed) and eight adults which included two pairs in copula (one of the mated females was later seen ovipositing). There was no indication of an emergence in 2021, however three distinct piles of fresh frass at the foot of known breeding sites on 26th July suggested that live larvae were present (this pleasingly confirmed by the emergence of adults in 2022).



52.016 **Thrift Clearwing** *Pyropteron muscaeformis* (Esper, 1783) **S**

It was an excellent year for records of this Nationally Scarce clearwing, a species which on Skokholm is predominantly found along the North Coast clifftops where its larval foodplant abounds. A count of 22 between Purple Cove and Twinlet on 2nd June was the first of the year, these over five weeks earlier than the first of 2021 but four days later than the first of 2020. A further 82 were noted over eight June dates, including an observation of mating at the Dents on the 10th, a tally of 16 attracted to a pheromone lure at Steep Bay on the 15th and a record daycount of 46 on the 20th (when a lure was not used). In July, one was found on the 11th and the use of a pheromone lure along the North Coast on the 14th produced one moth at the Dents and two at Twinlet (although none were attracted at a further four sites). A total of 108 moth-days is the highest on record by some margin; the next highest tallies are the 49 of 2019, 38 of 2018 and 43 of 2017. The caterpillars of this species feed and overwinter inside the roots and stems of Thrift, typically emerging as adults in early June. The number of insects found each year is in part determined by the prevalence of suitable recording conditions, with calm, warm and sunny days like those experienced this June being the ideal.



54.010 **Five-spot Burnet** *Zygaena trifolii* (Esper, 1783)

A dead adult found along the Lighthouse Track on 5th July was the first of the year, this two days earlier than the first of 2021, whilst the first five live insects were at North Pond on the 7th. There followed a further 81 moth-days over 17 July dates, with a peak count of 12 at North Pond on the 18th; all records originated from the areas adjacent to North Pond, South Pond and East Bog. Five at North Pond on the 29th were the last in what was an abysmal season for sightings. Typically numbers decline sharply during August, however this proved the first year in a decade without a sighting during the month. A 2022 tally of 87 moth-days is the worst on recent record; there were 234 last year and 258 in 2020, whilst highs of 775 and 1484 were recorded in 2018 and 2017 respectively.

62.042 **Thistle Ermine** *Myelois circumvoluta* (Fourcroy, 1785)

Two trapped near the Knoll on 3rd June were the first since 2018 and marked the start of a record-breaking year for this species on Skokholm. A further 12 were attracted to light over four June and three July trapping sessions, with a peak of four on 9th July (the latter catch higher than any previous annual total). The only other sightings this century were of singles in 2018, 2016 and 2015, whilst the only other records are of two trapped in 1997 and three in 1996.

62.058 **Ermine Knot-horn** *Phycitodes binaevella* (Hübner, 1814)

One taken at the Farm on 22nd June was a second for Skokholm following a single trapped on 23rd June 2020. This is a common species of light sandy soils, although there have been just 36 Pembrokeshire records to date (the majority of which are from Ramsey Island).

62.074 **Large Tabby** *Aglossa pinguinalis* (Linnaeus, 1758) **N**

One found hiding in a dark corner of the Cottage Common Room on 4th July was an addition to the Island list, a fifth for Pembrokeshire and the first county record since 2009. This is a species of barns and warehouses, the larvae of which feed on straw, chaff and sheep dung. Whilst it has been

suggested that the four previous Pembrokeshire records were accidental imports (in grain or hay, for example), the origins of the Skokholm individual are perplexing; there are no such deliveries to the Island, suggesting this moth either travelled some distance or arrived with a guest.



62.077 Rosy Tabby *Endotricha flammealis* ([Denis & Schiffermüller], 1775)

A single trapped at the Farm on 13th July was the first of the year. A further 65 were attracted to light during six July and four August trapping sessions, with a peak catch of 20 on 28th July. Additional diurnal and nocturnal field observations tallied 105 in July (with a peak count of 30 on the 28th) and 261 in August (with a peak count of at least 50 on the 3rd), these taking the 2022 moth-days total to 432. Although dwarfed by a phenomenal 2021 total of 2666 moth-days (when a minimum of 1000 were along the Lighthouse Track on one night alone), this is nevertheless the second-best year on record; the next highest tally is the 214 of 2014, whilst there were just 21 logged in 2020.

63.018 Elder Pearl *Anania coronata* (Hufnagel, 1767)

One trapped at the Farm on 13th July was just a fifth for Skokholm and only the second to be taken from a light trap. The larval foodplant, Elder *Sambucus nigra*, is one of the more abundant tree species growing on the Island, however given that light trapping near these trees had failed to locate an imago, the first record in July 2019 was presumed to be a wanderer from the mainland. Nevertheless, with subsequent records of two in 2020 and one in 2021, along with that of this season, it can perhaps now be considered likely that the Elder Pearl has colonised (this will hopefully become more apparent over the coming years).



63.025 Small Magpie *Anania hortulata* (Linnaeus, 1758)

One trapped in the Cottage Garden on 22nd May was the first of the year and one found in the Library on the 29th was the first diurnal record. There were three field records in June and nine in July, whilst the next to be found in the light trap was on 4th July. A further four singles came to light

in the remainder of the month, taking the annual moth-days total to 19. This was an improvement on the seven recorded last year (which was the lowest tally since 2013) and close to the 21 of 2020, but was down on recent highs of 79 in 2014 and 50 in 2015. Interestingly both highs occurred in the years with the lowest Rabbit numbers (a result of the summer 2013 population crash); Small Magpie larvae primarily use Common Nettle *Urtica dioica* as a foodplant during August and September, a plant which the Rabbits often decimate in late summer when other resources become scarce.

63.031 Rusty-dot Pearl *Udea ferrugalis* (Hübner, 1796) |

It was a good year for records of this regular Skokholm immigrant. The first of the season was taken from the light trap on 19th May, this 24 days earlier than the first of 2021. Nine were trapped in June, two in July, nine in August, three in September, 39 in October and three in November. Field observations resulted in an additional six moth-days being logged in August, then two in September, 12 in October and four on 16th November (attracted to a lit window at the Lighthouse) which were the last of the year. An annual total of 90 moth-days is an excellent tally and the second highest on record; there were 37 last year, 24 in 2020 and 64 in 2019, whilst a record 576 moth-days were logged in 2014 (including a daycount of at least 150 flushed from vegetation above North Haven).

63.038 Mother of Pearl *Patania ruralis* (Scopoli, 1763)

This beautiful moth, one of the largest British species of microlepidoptera, is recorded infrequently on Skokholm. Two taken from the light trap outside of the Central Block on 23rd July was the only record this year. This continues a recent run of low annual tallies; there were three in 2021, one in 2020, two in 2019, five in 2018, four in 2017, none in 2016, one in 2015, three in 2014 and one in 2013. Given that the larvae feed on Common Nettle *Urtica dioica*, it is perhaps surprising that the only other years in which Mother of Pearl have been documented are 1996, 1997 and 1999.

63.044 Vagrant China-mark *Diasemiopsis ramburialis* (Duponchel, 1834) | N

The first for Pembrokeshire was taken from the moth trap situated at the top of Home Meadow on 25th October. This is a scarce migrant from mainland Europe which in Britain is mainly encountered along the south coast of England; the only previous Welsh records have come from Glamorgan, Carmarthenshire and Merionethshire.



63.048 Olive-tree Pearl *Palpita vitrealis* (Rossi, 1794) |

One was watched by day as it flew in off the sea at Purple Cove on 9th August; it settled on a cliff face allowing the identification to be confirmed. This was the first since 2019 and just a sixth for the Island, this becoming the fifth year with a record; there were singles in 2013, 2017 and 2019 and two in 2018. Although an uncommon migrant to the UK, this is a widespread species in southern Europe where its larvae feed on jasmine *Jasminium* spp. and on the leaves and fruit of olive *Olea* spp.

63.050 **Long-legged China-mark** *Dolicharthria punctalis* ([Denis & Schiffermüller], 1775) **S**

Although this species was first noted in 1998, it was not documented again until 2013, however it has since been recorded annually. The first of the year was observed by day along Little Bay Wall on 5th July, whilst singles trapped on the 16th and 23rd July brought the 2022 moth-days total to three. A record 26 were logged last year, but only one was encountered in 2020. This distinctive, Nationally Scarce species is distributed along the southern coasts of Britain, the larvae feeding on decaying plant matter which on Skokholm is probably that of trefoils and plantains.



63.052 **Rush Veneer** *Nomophila noctuella* ([Denis & Schiffermüller], 1775) **I**

It was a record year for sightings of this familiar immigrant. One found on Isthmian Heath on 15th May was the first of the year, whilst the first to be trapped was on 19th May. Four were attracted to light in June, with 17 in July, ten in August, 38 in September, 106 in October (including a peak catch of 30 on the 20th) and three in November taking the trapping total to 179. Field observations, both diurnal and nocturnal, tallied one moth-day in June, 24 in July, 58 in August, 154 in September (including at least 60 on the 9th) and 57 in October, these taking the annual total to 474. There were 46 moth-days last year and just six in 2020, whilst the previous high of 236 was logged in 2016.



63.066 **Meadow Grey** *Scoparia pyralella* ([Denis & Schiffermüller], 1775)

This distinctive micro is regularly encountered on the Island and is sometimes conspicuous amongst Bracken during spring seabird monitoring. A single found by day on 16th May was the first, with two further singles during the month being the only other diurnal field observations this year. Two attracted to light at the Farm on 26th May were the first to be trapped. A further five were taken in May and 135 in June, with peak catches in June of 20 on the 3rd and 38 on the 6th. A single trapped on 30th June was the last of the year.

63.069 **Narrow-winged Grey** *Eudonia angustea* (Curtis, 1827)

An early singleton trapped on 28th April was the first of the year and the first to be logged since 2020. Whilst this species typically flies later in the year, spring emergences are also now being

observed at mainland sites. There were no further records until October, when a total of 16 came to light between the 2nd and 23rd. This species is seldom observed on the Island, indeed an annual total of 17 moth-days is an excellent showing and the highest on record; there were ten in 2020, whilst the previous high of 11 was recorded in 2019. The only other encounters with this species have been with singles in both 2018 and 2017, two in 2014, one in 1998 and three in 1996. Given that the larvae feed on a range of mosses, it is quite possible that this is an inconspicuous Island resident.

63.071 **White-line Grey** *Eudonia lineola* (Curtis, 1827) **S**

Singles taken on the 13th, 16th and 23rd July made 2022 just the seventh year with a record. This lichen feeding, Nationally Scarce species is a coastal specialist but infrequently encountered on the Island; although first recorded in 1997, it was not documented again until 2014 and has since been logged in only 2015, 2016, 2017 and 2020.



63.080 **Garden Grass-veneer** *Chrysoteuchia culmella* (Linnaeus, 1758)

A total of 80 were trapped between 1st June and 23rd July, with highs of 17 on 23rd June and 15 on both 17th June and 8th July; there were 75 trapped last year. This Crambid is easily disturbed during the day, although it is hugely under-recorded in the majority of years.

63.089 **Common Grass-veneer** *Agriphila tristella* ([Denis & Schiffermüller], 1775)

One caught outside of the Cottage Garden on 16th August was the only record of the year and the first since 2019 when eight were trapped. Although common across much of the British Isles, this species is infrequently encountered in the Skokholm light trap; the first was not logged until 2000, with 13 in 2014, 11 in 2015, three in 2016 and 26 in 2017 being the only other records.

63.093 **Straw Grass-veneer** *Agriphila straminella* ([Denis & Schiffermüller], 1775)

One found in the moth trap on 6th August was the first since 2020 and the only record this season. Although this species has now been recorded in seven of the last ten years, the only other years with a record are 1998 and 2000.

63.095 **Elbow-stripe Grass-veneer** *Agriphila geniculea* (Haworth, 1811)

Although typically the most regularly encountered member of this genus on Skokholm, this year it was found in the moth trap on only two August dates, with a total of four moths logged. There were 52 trapped in 2021, 21 in 2020 and 75 in 2019.

63.117 **Ringed China-mark** *Paraponyx stratiotata* (Linnaeus, 1758)

One trapped in the Cottage Garden on 7th June was just a fourth for Skokholm following a single in 2017 and two in 2015. The aquatic larvae feed on a variety of pond-weeds and submerged plants. Whilst the larval stage has not been observed on the Island, the 2015 adults were caught adjacent to the Wheelhouse Pond, giving rise to speculation that this may be a low-density breeder.

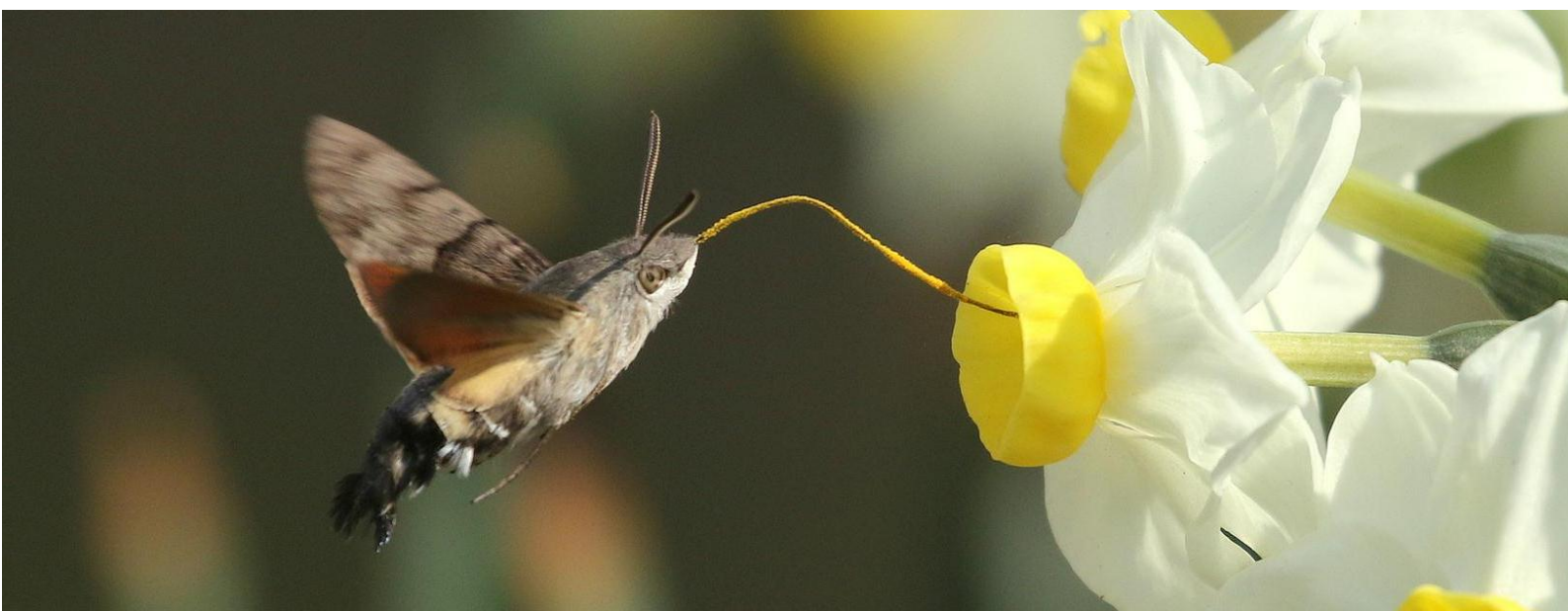
69.004 **Convolvulus Hawk-moth** *Agrius convolvuli* (Linnaeus, 1758) |

The first of the season was found in the catching end of the Well Heligoland on 13th September, presumably funnelled there in the same way as a bird. What was probably the same moth (owing to a distinctive bald patch on its thorax) was found in the same trap the following day. There was only one individual attracted to light this year, this taken from a trap deployed outside the Workshop on 20th October. The first Convolvulus Hawk-moth for Skokholm was logged in 1940, however there were no further encounters until one was found in the Well Heligoland in August 2014; there followed one in 2015, nine in 2016, three in 2017, one in 2018, three in 2019, two in 2020 and one last year, 2022 thus becoming the ninth consecutive year with a record.



69.010 **Hummingbird Hawk-moth** *Macroglossum stellatarum* (Linnaeus, 1758) |

An exceptionally early moth, which had perhaps overwintered locally, was nectaring on Narcissi in the Courtyard on 27th March; this is the earliest Skokholm sighting, with the previous earliest on 27th May 2017. The next encounter was not until 6th June when one was found on Isthmian Heath; there followed a further five June moth-days. Sightings peaked in July with 25 moth-days logged over 16 dates, these including at least three individuals present on both the 19th and 26th.



One which flew in from the sea at the Lighthouse on the 27th contributed to an August total of seven moth-days, whilst 14 were logged in September and nine in October (including one eaten by a Wheatear at Steep Bay on the 11th), with the last of the season found near the Farm Garage on the 29th. A 2022 total of 62 moth-days is the highest on record; there were just six in 2021, whilst the previous highs are the 45 of 2019 and 40 of 2017.

69.015 **Striped Hawk-moth** *Hyles livornica* (Esper, 1804) **I N**

A southerly airflow extending from southern Europe and North Africa in early May led to a significant influx of Striped Hawk-moth into southern Britain. A visiting ringer had brief views of a large hawk-moth near the Cutting on 18th May, although this disappeared into the Bracken and could not be relocated. On 22nd May three stunning Striped Hawk-moth were taken from the trap which had been deployed overnight in the Cottage Garden (top two photos). One was observed flying low over Home Meadow on 29th May and on 2nd June singles were taken from two moth traps, one deployed in the Cottage Garden and the other at the Well (bottom left photo). One trapped at the top of Home Meadow on 21st June was the final record of the year, this taking the 2022 tally to seven (bottom right photo). Striped Hawk-moth are a rare but annual vagrant to the UK from the Mediterranean and North Africa, however, despite moths being monitored on Skokholm since 1910, the 2022 records were the first for the Island. There was a significant influx into the UK in 2006, with 384 moths recorded, whilst a minimum of 540 were found in 1943 (sadly any naturalists who may have been present on Skokholm following Lockley's Wartime departure did not leave an account).



69.017 **Small Elephant Hawk-moth** *Deilephila porcellus* (Linnaeus, 1758) **N**

A somewhat worn individual taken from a light trap outside of the Cottage Garden on 8th July was another addition to the Island list. This becomes the eighth species of hawk-moth to be recorded on

Skokholm; in addition to the four species encountered this year, there are records of Death's-head Hawk-moth (one in 1940), Poplar Hawk-moth (one in 1992), Elephant Hawk-moth (one in 1992) and Bedstraw Hawk-moth (one in 2019).



70.011 Single-dotted Wave *Idea dimidiata* (Hufnagel, 1767)

A single on the 16th and two taken on 23rd July were the only sightings this year. Following records in 1937 and 1960, there was a 54 year absence until six were discovered in 2014. There has since been a run of encounters with this infrequent Skokholm *Idea*, including an all-time high of 16 last year. This is in the most part a species of moist areas where the larvae feed during the autumn, primarily on the flowers of Cow Parsley *Anthriscus sylvestris*, Burnet Saxifrage *Pimpinella saxifraga* and Hedge Bedstraw *Galium mollugo*; given that none of these are known from Skokholm, the regularity of recent records suggests the use of less typical foodplants such as Blackthorn *Prunus spinosa* or other species in the Compositae and Plantago families.

70.013 Small Fan-footed Wave *Idea biselata* (Hufnagel, 1767)

Two taken from the trap on 6th August were the first since two were logged in 2019. A further three, attracted to light on 13th August, were the last. There have only been records in four further years this decade and in four years prior to that, however, given that the larvae feed on a variety of species such as plantains and Bramble, it is plausible that this is a discreet Island breeder.

70.016 Riband Wave *Idea aversata* (Linnaeus, 1758)

One trapped on 13th July, two on 16th July and a second generation individual on 11th September were the only records this year. An impressive 16 were taken last year, a total which included four of the darker form (which exhibits a dark band across all four wings), these encountered less frequently on Skokholm.

70.023 Mullein Wave *Scopula marginepunctata* (Goeze, 1781)

This species, which is double-brooded in the south of its range and which has a mainly coastal distribution in the British Isles, is now recorded almost annually on Skokholm, albeit in low numbers. A total of ten first brood imagoes were trapped between 2nd June and 29th July, whilst four second generation moths were taken between the 6th and 16th August. A moth-days total of 14 just topped the record of 13 set last year, whilst previous highs of five were logged in 2014, 2016 and 2019.

70.038 Vestal *Rhodometra sacraria* (Linnaeus, 1767) I

One found at the Farm by day on 23rd September was the first since 2020. A second was at the Farm the following day, whilst the third of the month was found along the Lighthouse Track during the

night of the 29th. Four on 10th October were the first to be trapped and a further ten came to light during four October trapping sessions, with a peak catch of six on the 13th and the last on the 25th. A 2022 moth-days total of 17 is an excellent showing by Skokholm standards, indeed it is the third highest on record, only down on the 18 of 2016 and the phenomenal 2020 total of 58.



70.049 Garden Carpet *Xanthorhoe fluctuata* (Linnaeus, 1758)

Four were attracted to light at North Haven and the Farm between 3rd June and 11th September and one was found resting in North Haven during a diurnal Storm Petrel survey on 29th June. There were four last year and singles in both 2020 and 2019, with five in 2016 the only other records this decade. Although common and widespread in the British Isles, a preference for suburban habitats is reflected in a sporadic presence in the Island database.

70.051 Red Twin-spot Carpet *Xanthorhoe spadicearia* ([Denis & Schiffermüller], 1775)

A neat first generation moth trapped on 3rd May was the first of the year. A single was trapped on the 5th and there were two on 6th June, whilst the first two second brood insects were taken on 23rd July. One at the Farm on 6th August was the last of the year. Although separating worn individuals from the red form of Dark-barred Twin-spot Carpet can be challenging, this is seemingly the much scarcer species on Skokholm; there was just one last year, this the first record since 2017 when 14 were taken between 13th June and 26th August. The only other 21st century record is of a single on 4th August 2013, whilst this species was also logged in 1910, 1912, 1937, 1960 and 1968.

70.052 Dark-barred Twin-spot Carpet *Xanthorhoe ferrugata* (Clerck, 1759)

It proved a good year for records of this common Skokholm breeder. Two trapped on 27th April were the first. There followed a further single in April (one in 2021), 15 in May (five in 2021), 22 in June (nine in 2021), 25 in July (11 in 2021) and 28 in August (26 in 2021). Whilst there were five September moths in 2021, this year there were none, with three on 26th August the last. An annual moth-days total of 93 is the second highest tally on recent record; there were 57 last year and 12 in 2020, whilst a high of 101 was recorded in 2018.

70.059 Yellow Shell *Camptogramma bilineata* (Linnaeus, 1758)

This is one of Skokholm's most conspicuous day-flying macro moths, a species often flushed from Bracken during the summer months but one which is only occasionally found in the moth trap. The first of the season was on 3rd June, this eight days earlier than the first of 2021. A further 104 moth-days were logged during the remainder of the month, including four trapped and a peak count of 20 on the 25th (there were 99 logged in June 2021). A total of 260 moth-days were noted in July, including a peak count of 41 on the 3rd and two found in the moth trap (there were 95 moth-days in

July last year). Two of 44 August moth-days were trapped (there was an August total of 36 in 2021), whilst a single found on 16th September was the last of the year.

70.061 **Common Carpet** *Epirrhoe alternata* (Müller, 1764)

Singles were trapped on the 13th and 16th August and one was found at the Well on the 22nd. These were the first since 2020, when a singleton was logged, and constitute the highest year total on record. This widely distributed mainland moth is surprisingly scarce on the Island; two observed in 2016 are the only other sightings this decade and there are entries in the database for only six further years, with 1998 being the most recent prior to 2016.

70.095 **Red-green Carpet** *Chloroclysta siterata* (Hufnagel, 1767)

A rather lethargic individual taken from the moth trap on 2nd November was just a second for Skokholm; the first was trapped on 4th October 2019. This is an autumn species which hibernates from December to February as an adult. Their stunning camouflage is well suited to deciduous woodland where the larvae feed on oaks *Quercus* spp. and Rowan *Sorbus aucuparia*.



70.100 **Green Carpet** *Colostygia pectinataria* (Conch, 1781)

The only 2022 record of this distinctive species was of a single taken from a moth trap outside the Cottage on 1st June. This is the first to be seen since a worn individual was logged on 19th September 2019. Although the larvae feed on bedstraws, examples of which grow on Skokholm, there were records in only four years prior to 2019; there were singles in the May and June of 2018, the October of 2015, June of 2013 and September of 2000.

70.138 **Sandy Carpet** *Perizoma flavofasciata* (Thunberg, 1792)

One trapped on 21st June was the first to be logged since 2019 when a total of four were recorded between 7th May and 2nd July. The only other sightings of this champion *Silene* spp. eating species this decade were of two in 2018, one in 2015 and two in 2014, whilst the historical database contains further entries for the years 1937, 1912 and 1910.

70.141 **Double-striped Pug** *Gymnoscelis rufifasciata* (Haworth, 1809)

There was only one sighting of this distinctive pug in 2022, this of a singleton taken from the moth trap on 13th October. Five were recorded last year, indeed this species has been logged in all bar one year since 2013 (there were no sightings in 2020). The only records prior to this decade were logged in 1990, 1998 and 2000.

70.155 **Netted Pug** *Eupithecia venosata* (Fabricius, 1787)

One found by day in the South Haven Hide on 7th May was the only record this year. Two freshly emerged adults were on the exterior walls of the Cottage in 2021, these the first since four were encountered in 2019. Although now logged in only six of the last ten years, including a recent high of 11 moth-days in 2016, it is probable that this species is a more abundant breeder than the records

suggest; the larvae feed within the seed capsules of Sea Campion *Silene maritima*, a plant dominant across many parts of the Island.



70.173 Lime-speck Pug *Eupithecia centaureata* ([Denis & Schiffermüller], 1775)

Peak catches of 18 on 6th June, 14 on 16th July, 15 on 16th August and 22 on 26th August contributed to a 2022 moth-days total of 161 logged between 31st May and 2nd September; this is the highest annual tally on record and follows a previous high of 106 moth-days logged last year. The last two seasons have proven exceptional for records of this bird dropping mimic; there were only 39 in 2020 and 27 in 2019, whilst the highest tally prior to last year was the 60 of 2016. Although this is seemingly a common Skokholm breeder, a single caterpillar found feeding on ragwort in the Courtyard on 17th September 2021 was the first to be documented on the Island.

70.179 Wormwood Pug *Eupithecia absinthiata* (Clerck, 1759)

Four were taken between 23rd June and 16th July, this down on the eight trapped in 2021. Like many of Skokholm's invertebrates whose breeding ecology relies on the presence of Common Ragwort, numbers in the trapping area probably fluctuate in accordance with plant abundance; there were 50 moth-days in 2014 when the foodplant was plentiful around the Farm, but only one in 2017, six in 2018, seven in 2019 and five in 2020.

70.199 Small Seraphim *Pterapherapteryx sexalata* (Retzius, 1783) **N**

A slightly worn first generation individual taken from the light trap in the Cottage Garden on 6th June was another addition to the Island list. This common Pembrokeshire moth has a preference for damp woodland, hedgerow and marshy habitats where its larvae feed on willows *Salix* spp.



70.222 Brown Silver-line *Petrophora chlorosata* (Scopoli, 1763)

This Skokholm breeder is often flushed from Bracken during late spring and early summer and can be quite conspicuous when present in good numbers. One trapped on 25th April was the first of the year, five days later than the first of 2021. Five taken from the moth trap on the 30th were the only

others logged during April. There followed 59 in May (of which 35 were trapped), 274 in June (including 168 trapped, a peak catch of 34 at the Well on the 1st and a peak diurnal count of 20 on the 22nd) and 47 in July (of which 15 came to the light). Seven on 25th July were the last field records, whilst two on the 27th were the last to be trapped. An annual total of 386 moth-days is the highest on record; there were 62 moth-days in 2021, whilst the previous high of 203 was recorded in 2016.

70.294 **Yellow Belle** *Aspitates ochrearia* (Rossi, 1794)

An early first generation moth attracted to the light trap on 27th April was the first to be logged since 2016, 2022 becoming just the sixth year with a record. Previous encounters with this species occurred in 1968, 1960, 1912 and 1910. This is a moth restricted to the coastal counties of southern England and Wales where its larvae feed on a variety of low-growing plants, including Buck's-horn Plantain *Plantago cornopus* which grows abundantly on Skokholm. Nevertheless, given that there have been just two records in a decade of regular trapping, it seems unlikely that this is an established breeding species on the Island.



71.025 **Buff-tip** *Phalera bucephala* (Linnaeus, 1758)

One trapped in the Cottage Garden on 29th May was the first of the year. A further five were trapped in June, whilst two were observed mating on the End Bench of the Farm on the 20th. A total of 12 came to the light trap in July and two were found in the Wheelhouse Heligoland on the 8th. A tally of 22 adults is the highest on record; only two were recorded last year, whilst nine in 2020 was the previous high. Indeed this becomes just the seventh season with a sighting of an adult following further records in 1992, 2011, 2014 and 2019 (with breeding confirmed in 2011, 2014, 2019, 2020 and 2021). The first caterpillar of 2022 was found in the Courtyard on 5th August; there followed counts of 14 along Well Stream on the 16th, 27 in the Wheelhouse Heligoland on the 19th and 12 at the latter location on the 28th (all on willows). The majority of leaves on the first tree were stripped, whilst mature caterpillars looking to pupate were found in the Courtyard from 26th August.



72.001 The Herald *Scoliopteryx libatrix* (Linnaeus, 1754)

A stunning individual trapped at the Farm on 14th July was the first since one taken on 4th July 2018 and just the sixth Skokholm record to date; a single was trapped on 25th September 2017, one appeared in the Lighthouse Kitchen on 22nd March 2014 and singles were noted in 1992 and 1990.



72.002 Straw Dot *Rivula sericealis* (Scopoli, 1763)

A relatively fresh individual was taken from the light trap on 16th August, 2022 becoming the second consecutive year with a record but just the third this century. An extremely worn insect was trapped on 6th September last year, this the first since 27th August 2017. Although a relatively common mainland moth, whose larvae feed on a range of grasses, the only other years with a Skokholm record are 1910, 1912, 1937, 1960 and 1968.



72.017 Vapourer *Orgyia antiqua* (Linnaeus, 1758)

A male at the Bluffs on 10th August was the first to be seen on the wing. There followed further August singles at Purple Cove on the 13th and along the Lighthouse Track on the 14th. In September, single males were encountered along North Pond Wall on the 18th, on Home Meadow on the 21st and at Peter's Bay on the 24th and 25th. Neither the flightless female nor the larval stage were found this year. There have been regular sightings of Vapourer larvae since 2013, albeit in low numbers, but records of adult males were rare until 2017 when nine were noted; there followed 11 males in 2018, 15 in 2019, 20 in 2020 and four last year. The much less conspicuous females were not encountered until 2018 when two were logged; there followed singles in 2019 and 2020.

72.019 Buff Ermine *Spilosoma lutea* (Hufnagel, 1766)

The first of the season was taken on 8th May and a further 105 were trapped during the remainder of the month (there were nine in May 2021). There followed 323 in June (42 in 2021), 179 in July (68 in 2021), 22 in August (75 in 2021), one in September (one in 2021) and five in October (none in 2021),

with one on the 25th the last of the year. There were peak catches of 46 at the Well on 1st June, 38 at North Haven on 3rd June and 48 at the Well on 27th July. The six September and October moth-days continue a run of late season observations, these part of a once unusual second generation emergence first noted in 2019. A 2022 moth-days total of 636 is the highest on record by some margin; there were 195 in 2021 (this the previous high), 109 in 2020, 180 in 2019, 190 in 2018 and 137 in 2017.



72.020 White Ermine *Spilosoma lubricipeda* (Linnaeus, 1758)

One trapped at the Farm on 12th May was the first of the season, this on the same date as the first of last year. A further 17 were trapped during the remainder of the month, with 57 taken in June and ten in July, whilst a single was observed at East Bog after dark on 16th June. A moth-days total of 86 is the highest on recent record; there were 11 last year, 13 in 2020 and 25 in 2019, with the previous high of 84 recorded in 2018.

72.022 Muslin Moth *Diaphora mendica* (Clerck, 1759)

It was an improved year for records of this species, with 18 males taken over nine dates between 29th April and 2nd June. Just three were trapped last year, however there were 21 in 2020, 20 in 2019 and a recent high of 54 in 2016.

72.024 Ruby Tiger *Phragmatobia fuliginosa* (Linnaeus, 1758)

A single found in the Courtyard, during daylight hours on 28th April, was the first of the year and the only first brood moth to be observed. There were no further records until 13th August when four were taken from the light trap, with a lone insect trapped on the 16th being the last of the year. An annual total of six moth-days is the second lowest of the last decade; there were 44 moth-days recorded last year and a high of 49 in 2015, with four in 2013 the poorest total of the last ten years.

72.026 Garden Tiger *Arctia caja* (Linnaeus, 1758)

An adult taken from a light trap at the Farm on 23rd July was the only 2022 record of this stunning summer species, this matching last year's total. Despite an abundance of Common Nettle, one of the larval foodplants, this is seemingly a scarce moth on Skokholm; there have now been records in eight of the last ten years, with five moth-days recorded in 2015, 2017, 2018 and 2019, a single dead insect in 2016 and a high of nine in 2014, whilst in the period between 1910 and 2011 there were records in only 12 years. Although this moth has never been abundant on Skokholm, between 1968 and 2002 numbers fell by 89% nationally. This decline, in both abundance and distribution, is thought to have been caused in part by climate change; the larval stage of the Garden Tiger has evolved to survive long, cold winters, with mild, wet winters and warm springs thought to increase the incidence of disease. Unsurprisingly an increase in mean winter temperatures has significantly reduced overwinter survival in this species (Conrad *et al.*, 2002).

72.031 Cinnabar *Tyria jacobaeae* (Linnaeus, 1758)

The first adult was on the wing at Peter's Bay on 14th May, this almost a month earlier than that of 2021 (which was the first year since 2013 without a May imago). Singles on the 19th and 31st were the only other May records. One attracted to light on 3rd June was the first to be trapped. There followed a further 24 June moth-days (five of which were taken from the trap), with a peak diurnal count of five on the 14th; whilst this is a slight improvement on the ten moth-days logged last June and the 12 of 2020, numbers are still well down on those seen in some recent Junes (there were 1037 logged in 2017, 1010 in 2018 and 66 in 2019). One on the 11th was the only imago encountered during July and a total of 24 caterpillars were observed (all of which were on the Neck). A single caterpillar found on the Neck on the 5th was the only August record. Whilst the huge decline in numbers seen recently is alarming, this species has undergone local extinctions in the past, with several years elapsing without an Island record (Thompson, 2007). The reason behind the decline in the number of both adults and larvae is unclear, although a poor Ragwort year in 2018 perhaps led to the initial drop. An abundance of Ragwort in 2019 and 2020 did not halt the decline, as was described by Van der Meijden *et al.* in 1991; this study, which followed several similar population crashes, showed that numbers continue to decline for two years despite an increase in foodplant. Reasons for this retarded recovery may include an increase in numbers of the parasitic wasp *Cotesia popularis*, or perhaps a decline in adult Cinnabar size and fecundity. Ragwort remained common in 2021 and 2022, this perhaps allowing for a slight increase in the Skokholm population.

72.044 Dingy Footman *Eilema griseola* (Hübner, 1803)

One trapped at the Farm on 23rd July was the only record. Three were taken last year, these the first to be encountered since 1st August 2019 when a single was logged. The first Island record was trapped as recently as 25th July 2014, whilst a catch of five was taken on 22nd July 2017. This year's records thus make 2022 just the fifth season in which this species has been recorded. This is a common moth in the southern half of Wales, where its larvae feed on sea-cliff lichens; that there have been so few Skokholm records may thus reflect limited trapping along the coast.

72.045 Common Footman *Eilema lurideola* (Zincken, 1817)

One trapped at the Farm on 16th July and another at the same location on the 29th were the first to be recorded since 2017 and the fifth and sixth individuals to be seen on Skokholm. Singles were taken in 1998, 1999, 2014 and 2017, this becoming just the fifth year with a sighting.

72.046 Scarce Footman *Eilema complana* (Linnaeus, 1758)

This summer-flying species was first recorded in July 2017 when three were trapped, these followed by singles taken on 6th August 2018, 3rd August 2019 and 8th August 2020. One on 23rd July this season thus makes 2022 just the fifth year with a record. As with the closely related Dingy Footman, a paucity of Island records may reflect a preference for trapping around the Farm; this species has a mainly coastal distribution in Wales, with the larvae feeding on a variety of mosses as well as lichens.

72.047 Hoary Footman *Eilema caniola* (Hübner, 1808) **S**

This Nationally Scarce moth is largely restricted to maritime habitats along the southwest coasts of England and Wales. It appears in the Skokholm light trap irregularly and in low numbers, with one trapped on 16th August the only record this year. Just one was observed last year, this a moth attracted to a lit Lighthouse window on 5th September, whilst four were taken in 2019 (a tally which matched the 2017 record). Although logged in seven of the last ten years, 2022 becomes just the 11th year with an encounter. That it utilises clifftop lichens as larval food may explain a dearth of sightings of this probable breeder; most Skokholm trapping sessions occur inland.

73.001 Spectacle *Abrostola tripartita* (Hufnagel, 1766)

The first was taken from the moth trap at the Farm on 30th April. A total of 23 were trapped in May, with 19 in June, 11 in July and four in August. An additional adult was found outside the Cottage on

6th July, whilst two caterpillars were found there on the 10th. An adult inside the Cottage on 10th August was the last of the year. A total of 60 moth-days is the highest this decade; there were 37 last year, nine in 2020 and 20 in 2019.

73.002 Dark Spectacle *Abrostola triplasia* (Linnaeus, 1758)

A stunning individual trapped outside the Cottage on 2nd October was just a second for Skokholm and the first since 1912. This is a relatively common moth in Pembrokeshire and across the southwest of Britain where it occupies suburban habitats and woodland margins.



73.004 Slender Burnished Brass *Thysanoplusia orichalcea* (Fabricius, 1775) **IN**

An immaculate individual trapped in the Courtyard on 30th October was a second for Pembrokeshire and possibly just a fourth for Wales. This is a rare immigrant originating from the Mediterranean and African regions, the first county record of which was documented by Charles Golding Barrett, a leading lepidopterist of the time, in 1875. It has been suggested, given the length of time which has elapsed since Barrett's observations and that it is now impossible to confirm early records without specimens, that moths not seen since the 19th century should be discounted from the Pembrokeshire list; it would however be amiss to not include all previous sightings here.



73.012 Burnished Brass *Diachrysia chrysitis* (Linnaeus, 1758)

One taken on 16th July and two trapped on 11th September were the only encounters this year. Despite an abundance of Common Nettle, one of the preferred larval foodplants, there are surprisingly few Skokholm records; although there were 15 in 2014 (when a single night of trapping

at North Haven produced 11 individuals), there was only one in 2016, two in 2017, one in 2018, three in 2019 and two in 2021 (no Burnished Brass were found in 2015 or 2020).



73.015 Silver Y *Autographa gamma* (Linnaeus, 1758) I

One trapped at the Farm on 27th April was the first of the year, this five days later than the first of 2021. Five on Isthmian Heath on 16th May were next, these followed by diurnal tallies of ten in June, four in July, 23 in August, 36 in September and three in October. The light trap contributed a further three in July, three in September and six in October, with two on the 25th the last of the year. An annual total of 94 moth-days was down on the 385 of last year, indeed it was the lowest on recent record; there were 542 in 2013, 142 in 2014, 627 in 2015, 458 in 2016, 99 in 2017, 1474 in 2018, 128 in 2019 and 684 in 2020.

73.022 Gold Spot *Plusia festucae* (Linnaeus, 1758)

A gleaming individual taken from the light trap on 8th October was just the eighth for Skokholm and a second in two years following one on 23rd August 2021. The only other records are of two in September 1996 and singles in September 1999 and the Octobers of 1992, 1994 and 1996. There is no shortage of larval food on the Island, with Yellow Flag *Iris pseudacorus* being particularly common, so it is perhaps surprising that there have now been just two 21st century records.



73.045 Knot Grass *Acrionicta rumicis* (Linnaeus, 1758)

One trapped on 16th April was the first of the year. Two more were attracted to light during the remainder of April, these followed by 13 in May, two in June, 16 in July and seven in August. There were additional field observations totalling five in May, two in June and three in August. An annual total of 51 moth-days was up on the 43 of last year and was the highest Skokholm tally to date. Single caterpillars were noted on 22nd June and on the 26th and 28th October.

73.052 Shark *Cucullia imbratica* (Linnaeus, 1758)

This is a rare Skokholm find, with one taken from the light trap outside of the Cottage on 11th June being just the third to be recorded on Skokholm. It follows singles taken on 30th May 2017 and 15th

May 1997, the latter of which was extremely early for this species but within the flight period of the very similar Chamomile Shark.



73.053 **Chamomile Shark** *Cucullia chamomillae* ([Denis & Schiffermüller], 1775)

A lone insect trapped outside the Cottage on 12th May was the first since a singleton on 12th April 2020 and just the ninth to be recorded this decade. An impressive four individuals were trapped in 2019, whilst singles were observed in 2017, 2016 and 2015. Prior to this, there are records for 1937, 1960, 1992 and 1994. One taken on 10th July 1996 was at the very end of the flight season for this species, but within the flight period of the very similar Shark.

73.055 **Star-wort** *Cucullia asteris* ([Denis & Schiffermüller], 1775) **S**

Following a 2021 total of just four moth-days, it was an improved season for records of this Nationally Scarce coastal specialist. Four found in the trap on 28th May were the first, these followed by a single on the 31st. A total of 15 were trapped over six June trapping dates, whilst a single on 4th July was the last of the year; there were thus 21 moth-days this year, this the second highest tally on record. Although first discovered on the Island in 1999, this species was not logged again until 2013 when two were taken. Star-wort have been observed more regularly since; there were six moth-days in 2014, two in 2015, 25 in 2016, 19 in 2017, two in 2018, 11 in 2019 and eight in 2020 (the latter total perhaps impacted by reduced July trapping effort). This increase in records can be attributed to an expanding distribution of Goldenrod *Solidago virgaurea*, the larval foodplant.

73.068 **Green-brindled Crescent** *Allophyes oxyacanthae* (Linnaeus, 1758) **N**

A fresh individual trapped outside the Workshop on 20th October was an exciting addition to the Island list. This autumn species is a common Pembrokeshire moth, where its caterpillars feed on a variety of woodland species, particularly Blackthorn and Hawthorn *Crataegus monogyna*. Given the lack of previous records, this moth was almost certainly a wanderer from the mainland.



73.074 **Bordered Straw** *Heliopsis peltigera* ([Denis & Schiffermüller], 1775) **I**

One found along the Lighthouse Track on 22nd May was the first 2022 record of this scarce immigrant. The only moth to be trapped was taken above North Haven on 3rd June, whilst one

observed at the Farm by day on 8th August was the last of the year. These are the first three records since one was taken on 6th September 2018, indeed this species has only been documented in six further years, including 2015 when an impressive eight were trapped.



73.076 Scarce Bordered Straw *Helicoverpa armigera* (Hübner, 1808) |

A tired individual taken from the trap at the Farm on 2nd September was the first of the year, with a single observed along the Lighthouse Track after dark on the 7th being the only other September record. One was in the trap outside the Workshop on 20th October, whilst an exceptionally worn (but still alive) moth was found upside-down in a puddle adjacent to South Pond on 23rd November. An annual total of four is the best showing on record for this immigrant species; there was one last year, two in both 2018 and 2016 and one in 1996.



73.085 Marbled Green *Nyctobrya muralis* (Forster, 1771)

Despite being a reasonably common maritime moth, this species remains a relatively scarce find on Skokholm. One trapped at the Farm on 14th July was the first, this followed by four singles taken during three July and one August trapping nights. One was observed by day at the Pissoir on 23rd July, two were nectaring on the Hemp-agrimony *Eupatorium cannabinum* outside Bridge on the night of 10th August and a single resting on the North Pond Hide on 20th August was the last of the year. A moth-days total of nine was the second highest on record; an all-time high of 18 was logged in 2017, although this involved the use of multiple traps away from the Farm (the four moth-days recorded in both 2014 and 2016 is the next highest tally). The Marbled Green is almost certainly an under-recorded Skokholm breeder, especially given its unobtrusive nature and excellent camouflage when resting on lichen encrusted rocks.

73.087 Small Mottled Willow *Spodoptera exigua* (Hübner, 1808) |

One taken outside the Cottage on 26th August was the first to be trapped since a record four were taken in 2018. A second, worn individual was attracted to the light on 29th October. Although nationally this is a fairly regular immigrant from the Continent, it was not recorded on Skokholm until 2015 when two were trapped. There followed records of one in 2016 and three in 2017.

73.092 Mottled Rustic *Caradrina morpheus* (Hufnagel, 1766)

One taken on 3rd June was only the fourth of the 21st century. Singles were logged in the Junes of 2020, 2016 and 2014, whilst there were further sightings in 1992, 1960 and 1937. A tally of 102 logged between 6th June and 30th July 1996 (with a peak of 52 on 29th July) is perhaps erroneous. This is a common Pembrokeshire species, with the larvae feeding on a variety of herbaceous plants, a preference for Nettle suggesting that there should be suitable breeding habitat on the Island.



73.113 Angle Shades *Phlogophora meticulosa* (Linnaeus, 1758)

One taken from the light trap on 16th March was the first, this 15 days earlier than two in 2021 and one in 2019 which were the earliest encounters on record. The trap produced a further two in April, one in May, two in August, seven in September, 12 in October and one on 6th November. There were an additional 161 moth-days logged in the field, 142 of which were in October; there were mating pairs on the 1st and 11th, whilst the rotting apples at the Farm (left out for migrant birds) fed five on the 1st, six on the 2nd, ten on the 3rd, six on the 7th, 22 on the 8th, two on the 10th, 16 on the 11th, 17 on the 12th and 45 on the 13th. A year total of 187 moth-days was down on the 297 of last year but became the second highest on record (113 in 2020 being the next highest); the lure of sugary apples no doubt resulted in more insects being observed this year.



73.114 Small Angle Shades *Euplexia lucipara* (Linnaeus, 1758)

Despite the fact that the larvae of this dead leaf mimic feed on Bracken, this species is encountered much less regularly than some of the other moths reliant on this food source. Nevertheless, it was an excellent year for records with 37 trapped between 27th May and 26th August and a peak catch of six taken on 14th July. An additional insect was found in one of the Cottage bedrooms on 26th May. A year total of 38 moth-days was well up on the 12 of last year, indeed it was the highest on record; the 24 logged in 2016 is the next best total.

73.123 **Rosy Rustic** *Hydraecia micacea* (Esper, 1789)

A single taken on 29th July was the only record of this late-summer moth. There were eight tallied last year (this a record total), whilst four were logged in 2020. Although the larvae will feed on a range of plants, they have a preference for docks; on Skokholm these are primarily distributed around the seasonal ponds and on cliffs.

73.131 **Flounced Rustic** *Luperina testacea* ([Denis & Schiffermüller], 1775)

It was yet another quiet year for records of this late-summer moth whose larvae feed underground in dry grassland; one trapped on 16th August and two on 2nd September were the only records. Although there are regular entries for this species in the Skokholm database, the number encountered is generally low; there were a record 15 moth-days in 2016, but only two in 2017, one in 2018, ten in 2019 and three in both 2020 and 2021.

73.134 **Large Wainscot** *Rhizedra lutosa* (Hübner, 1803)

Two trapped at the Well on 24th September were the first of the year. A single was trapped at the same location on the 28th, with one taken at the Farm on 18th October and three there two days later being the last of the season. Although its larval stage is yet to be found, this species has probably established itself as a Skokholm breeder within the last decade; following the first record on 23rd July 2011 and singles encountered in the Octobers of 2016 and 2018, there have since been ten logged in 2019, three in 2020 and a record 27 last year. The larvae feed in the bases and stems of Common Reed *Phragmites australis*, an extensive area of which is now present in the vicinity of the Well. There has been some speculation as to whether this species, along with the Brown-veined Wainscot *Archanara dissoluta*, is responsible for a localised summer die-off of reeds witnessed at the Well over the last four years.



73.141 **Brown-veined Wainscot** *Archanara dissoluta* (Treitschke, 1825)

A single trapped at the Farm on 26th August was the first since 2020, a tenth for Skokholm and the first ever taken from a moth trap. Brown-veined Wainscot was first discovered on the Island in August 2019 when eight were observed after dark at the Well. A single logged in the same location, after dark on 17th August 2020, was the only other record but led to speculation that this species may have recently colonised the Island. As with Large Wainscot, the larvae utilise Common Reed as a foodplant, feeding within the protection of the stems.

73.144 **Small Wainscot** *Denticucullus pygmina* (Haworth, 1809)

There was just one 2022 record of this diminutive Noctuid, this of a singleton trapped at the Cottage on 29th July. A total of nine came to light last year, a tally which equalled the record count logged in 2017. The larvae feed in the stems of sedges *Carex* spp., plants which grow abundantly in the wetter areas of Skokholm.

73.162 Dark Arches *Apamea monoglypha* (Hufnagel, 1766)

This double-brooded species is often one of the most regularly encountered moths in the Skokholm trap, although numbers this year proved to be disappointing with a tally which was the second lowest of the last decade. A total of 122 were taken from light traps over 19 dates between 28th May and 2nd September, with peak catches of 29 at the Farm on 23rd July and 21 at East Bog on 28th July. There were 293 last year, 168 in 2020 and 275 in 2019, whilst a recent high of 578 was recorded in 2017. The Island database includes several high annual tallies, with the record occurring in 1999 when 848 moth-days were logged.



73.163 Light Arches *Apamea lithoxyloae* ([Denis & Schiffermüller], 1775)

One trapped at the Farm (the right-hand moth above) and a dead insect found in the Well Heligoland on 22nd June were the first of the year. A further 20 came to light during one June and seven July trapping sessions, with a peak catch of five on 14th July and four on the 23rd which were the last of the year. A 2022 moth-days total of 22 is an excellent showing, second only to the 23 logged in 2021. This species has often proven a scarce Skokholm find; there were four in 2014, three in 2015, eight in both 2016 and 2018, four in 2019 and three in 2020. Although now logged in eight of the last nine years, there are records for just five years prior to this period, with the most recent being in 1996.

73.176 Middle-barred Minor *Oligia fasciuncula* (Haworth, 1809)

One taken on 6th June was the first since one on the same date in 2018 and just the fifth Island record. A single trapped on 28th June 2016 is the only other 21st century record of this diminutive macro, whilst there are further entries in the database for 1937 and 1960. This is a common species in Britain which favours riverbanks and damp woodlands; it is quite possible that all the Skokholm records are of wanderers from the mainland.



73.186 Beaded Chestnut *Agrochola lychnidis* ([Denis & Schiffermüller], 1775)

One found in the light trap at the Farm on 25th October was the sole 2022 record and the first since 1960. This autumnal species is a common find in the southern half of England and Wales, but prior to the 1960 record it had only been encountered on Skokholm in 1937, 1912 and 1910.

73.193 **Lunar Underwing** *Omphaloscelis lunosa* (Haworth, 1809)

This highly variable species is relatively common in the southern half of Britain, whilst on Skokholm it is an increasingly regular find during autumn trapping sessions; there was one in 2014, three in 2015, 30 in 2016, 26 in 2017, 43 in 2018, 67 in 2019, 19 in 2020 (a reduced number likely caused by inclement October weather) and 42 in 2021. This year a total of 133 moth-days were logged between 26th September and 25th October; this record tally includes trapping highs of 27 on the 3rd and 20 on 9th October and three nocturnal field sightings in October (of which two were feeding on rotting apples around the Farm).

73.201 **Pale Pinion** *Lithophane socia* (Hufnagel, 1766) **N**

A pristine moth found after dark on 12th October was a first for Skokholm; it was feeding on apples in the Wheelhouse Heligoland. What was believed to be a different individual was then taken from the moth trap on the 18th. This is a relatively common Pembrokeshire species which occupies woodland habitats, its larvae feeding on broad-leaved plants such as sallows before moving on to low plants such as docks as they mature.



73.233 **Black Rustic** *Aporophyla nigra* (Haworth, 1809)

Singles trapped on the 15th and 18th October were the first since one was taken on 27th September 2020. This single generation species is common across much of the UK, where its larvae utilise herbaceous and woody plants, however on Skokholm there have been records in just five of the last ten years. Prior to the four taken in October 2017 and the three of October 2016, there are observations from 1996, 1994, 1960 and 1937.



73.234 **Brindled Ochre** *Dasypolia templi* (Thunberg, 1792)

One trapped outside the Cottage on 10th October was the only record of the year, this of a species rarely encountered on Skokholm. Two were logged in 2020, these a female trapped on 14th April and one attracted to a lit window at the Lighthouse on 4th November. There were three trapped in 2018, whilst the only other records were in 1960 and 1937. Brindled Ochre mate in autumn and only the

female overwinters, using rocky outcrops, outbuildings and stone walls for protection. Eggs are laid on suitable host plants in the spring; on Skokholm this is most likely to be Common Hogweed.



73.235 Feathered Ranunculus *Polymixis lichenea* (Hübner, 1813)

This is chiefly a coastal species, which on Skokholm probably uses Thrift as a larval foodplant. Two taken on 18th September were the first. There followed seven further September moth-days (taken over three trapping sessions) and 72 October moth-days (taken over 16 sessions), with a peak catch of ten on 14th October. An annual total of 81 moth-days is likely a result of increased autumn trapping effort, but is nevertheless a new record; there were 35 in 2021, 26 in 2020 and 45 in 2019, whilst the previous high of 62 was logged in 2017. Surprisingly there was only one individual noted in both 2014 and 2015, the former a year of particularly intense autumn trapping effort.

73.236 Black-banded *Polymixis xanthomista* (Hübner, 1819) **S**

This Nationally Scarce species is restricted to clifftops and beaches along the southwest coasts of England and Wales. Only one was logged this year, this a moth attracted to a light trap at the top of Home Meadow on 10th September. In 2021 three were logged (including a dead insect found in the Ringing Hut) and there was just one trapped in both 2020 and 2019, these the only other records since 2016 when a single was also encountered. There were two in 2015 and 16 in 2014, the latter a year during which a light trap was used at various coastal locations around the Island; it would appear that this species seldom wanders far from the areas in which it breeds. Although the larvae are typically found in the flowers and leaves of Thrift, they will also use Sea Campion; declining Thrift availability will perhaps thus have less of an impact on this species.



73.237 Large Ranunculus *Polymixis flavicincta* ([Denis & Schiffermüller], 1775)

A total of five were taken across four nights between 18th September and 3rd October. This was marginally up on the four of last year, but down on the nine of 2020; the latter total was produced

during a single 20th September South Haven trapping session, this the highest annual tally since 21 were taken in 2014. First recorded on Skokholm as recently as 1992, there were sightings in three further years prior to the record 2014 tally; there followed four in both 2015 and 2017, three in 2018 and two in 2019. In Wales this is a species of coastal cliffs; unsurprisingly the highest Skokholm counts have been in years when autumn clifftop trapping has occurred (as with Black-banded, it seems this species rarely strays far from this habitat). Nationally this is a southern moth which can prove locally common, however a 50% decline in abundance was observed between 1970 and 2016 (Randle *et al.*, 2019).

73.241 Pine Beauty *Panolis flammea* ([Denis & Schiffermüller], 1775) N

The first record for Skokholm was taken from the moth trap outside the Workshop on 21st April. This early spring flyer is a moth of coniferous forests and plantations where the adult is well camouflaged as it rests on spring buds. Its larvae feed primarily on the needles of Scots Pine *Pinus sylvestris* but will feed on other species within the genus. Given the absence of a foodplant on Skokholm, this moth was certainly a wanderer from the mainland.



73.242 Clouded Drab *Orthosia incerta* (Hufnagel, 1766)

A second for Skokholm was taken from the light trap at the Farm on 26th April; the only other record was in 1992. This single generation species is common and widespread in the UK where it occupies woodland, heathland and gardens, its larvae feeding on a range of broadleaved species. Clouded Drab is frequently encountered in Pembrokeshire, although a lack of records suggest that it is not a Skokholm breeder.

73.244 Common Quaker *Orthosia cerasi* (Fabricius, 1775)

Given that singles in 1992 and on 17th April 2020 were the only records of a moth of mature gardens and deciduous woodland, it was assumed that this was an immigrant to Skokholm. However, singles were taken during five trapping sessions between 21st March and 22nd April 2021, whilst this year one was trapped at the Farm on 21st April. It has been suggested that an early flight season may have had an impact on the number of previous records; insects are on the wing during March and April, two months which often experience weather conditions prohibitive to running the Island light trap.

73.249 Hebrew Character *Orthosia gothica* (Linnaeus, 1758)

Singles trapped on 27th April and on the 3rd and 5th May were the first records since 2020 when three were also taken. There have been records in only six of the last ten years, with seven in 2017 the highest count to date. As suggested for the previous species, a paucity of Island records is perhaps due to the fact that there are fewer opportunities to run a moth trap during the early spring months.

73.254 Antler Moth *Cerapteryx graminis* (Linnaeus, 1758)

Two taken on 16th August was the only 2022 record, this down on the 18 of last year. The number encountered over the last decade has followed an interesting pattern; there were two in 2014, one

in 2015, three in 2016 and seven in both 2017 and 2018, the population seemingly then peaking in 2019 with 64 moth-days logged, this followed by a drop to 34 in 2020 and to 18 in 2021. An apparent increase and subsequent decrease in the distribution of rank grassland has been seen around the Farm in recent years, a pattern probably linked to disease triggered fluctuations in Rabbit numbers; it is possible that recent ups and downs in Antler Moth catches have mirrored habitat changes.

73.267 **Bright-line Brown-eye** *Lacanobia oleracea* (Linnaeus, 1758)

This common Skokholm breeder is a regular find in the moth trap throughout the visitor season. This year there were two in April, 115 in May (five in 2021), 553 in June (136 in 2021), 108 in July (141 in 2021), 19 in August (five in 2021), three in September (six in 2021), two in October and one in November. An additional four moth-days were logged diurnally in June, contributing to an annual total of 807, this the highest on record by quite some margin; the previous high of 311 was logged in 1996, whilst a more recent peak of 293 moth-days was recorded in 2021. It should be noted that two traps were deployed on several dates during the 2022 flight season, including on the 1st, 2nd and 3rd June when double trap deployment produced tallies of 100, 47 and 83 respectively. That this species was also encountered earlier and later than ever before does however suggest that the increased number caught may have been the result of a genuine population rise. The availability of the larval foodplants orache and goosefoot *Chenopodium* spp. increases dramatically during the summer, particularly during dry seasons when they proliferate in waterless ponds. In Britain and Ireland as a whole, this species has declined significantly in abundance since 1970 (Randle *et al.*, 2019).

73.270 **Dot Moth** *Melanchnra persicariae* (Linnaeus, 1761)

One taken from the light trap at the Farm on 23rd July was just a second for Skokholm, the first being logged in 1995. This is a common and widespread species in Wales and England and is encountered frequently on the Pembrokeshire mainland where it readily comes to light; it frequents a range of suburban habitats (such as gardens and roadside verges), the larvae feeding on a wide variety of plants. Given both the frequency of summer trapping on Skokholm over the last decade and that there is only one other Island record of this species, it would seem likely that this year's encounter was with a wanderer from the mainland.



73.271 **Broom Moth** *Ceramica pisi* (Linnaeus, 1758)

The first example of this common resident was trapped on 30th April. A total of 66 were logged in May, with 79 in June and six in July. Ten, taken over one September and nine October dates (with the last on the 27th) were part of an unusual second brood emergence, an event also observed in 2019 (five moth-days), in 2020 (three moth-days) and in 2021 (two moth-days). A 2022 moth-days tally of 162 was an improvement on the 77 of last year, although it was down on recent peaks of 367 in 2016, 197 in 2017 and 171 in 2018.

73.276 **Campion** *Sideridis rivularis* (Fabricius, 1775)

It was a fantastic year for records of this common Skokholm breeder. A total of 819 moth-days were logged, with the first on 28th April and the last on 18th September. Double-figure counts were recorded on 11 dates and peaks of 122, 104 and 147 were taken at the Farm on the 14th, 16th and 23rd June respectively (the latter of which is the second largest single trap catch in the history of Skokholm moth recording, only down on the 151 of 31st July 1996). Double trap deployment occurred over three June dates; a Heath Trap set in better Campion habitat attracted 96 moths, whilst only seven were taken by the Skinner Trap at the Farm. The 2022 moth-days total was a Skokholm record, with 378 in 1996 and 314 in 2021 the next highest tallies.

73.278 **Barrett's Marbled Coronet** *Conisania andalusica* (Staudinger, 1859) **S**

This Nationally Scarce species, which in the British Isles is very much restricted to the coasts of south Wales, southern Ireland and southwest England, is an infrequent find on Skokholm. One trapped at North Haven on 3rd June was the first of the year, whilst two taken in the Cottage Garden on 16th June were the only others seen. This becomes the fifth year of the last ten in which there has been a sighting; there were seven in 2016, one in 2018, two in 2020 and five last year, whilst earlier records were logged in 1937, 1960, 1992, 1995 and 1996. Sea Campion and Rock Sea-spurrey *Spergularia rupicola* provide the larval food.



73.281 **Lychnis** *Hadena bicurris* (Hufnagel, 1766)

Only five fresh imagoes were identified from catches taken on the 19th, 27th and 28th May and on the 7th and 8th June. Although this species is encountered annually, totals seldom reach double-figures; there were three in 2013, two in 2014, four in 2015, two in 2016, ten in 2017, nine in 2018, 12 in 2019, 14 in 2020 and seven last year, whilst Lychnis has made it onto the Skokholm list in just four further years. This is a moth which could potentially be overlooked amongst larger catches of Campion, especially when worn individuals of both species are present in a busy trap.

73.283 **Marbled Coronet** *Hadena confusa* (Hufnagel, 1766)

This coastal Noctuid is a relatively abundant Skokholm breeder, where its larvae feed on a plentiful supply of Sea Campion. A total of 125 moth-days were recorded between 21st April and 13th July, with peak catches of 18 at Billy's Dyke on 2nd June, 20 above North Haven on 3rd June and 16 at the Farm on 6th June. Double trap deployment on several dates no doubt contributed to a higher annual tally (which was up on the 97 of last year), although recent totals have fluctuated widely; there were 196 in 2016, 22 in 2017, 44 in 2018, 133 in 2019 and 74 in 2020.

73.286 **Pod Lover** *Hadena perplexa capsophila* ([Denis & Schiffermüller], 1775)

Although this coastal subspecies is typically found in Ireland and the Isle of Man, Skokholm moths appear a better match for this than any other form of Tawny Shears. The first of the year was taken on 27th April. There followed 13 more in April (one of which was in the Quarry after dark on the 30th),

107 in May, 244 in June (with a peak of 54 on the 6th), 115 in July, ten in August and two in October (with the last on the 12th). An annual total of 492 is an excellent showing and up on a previous high of 395 taken last year (double trap deployment on three dates in June may have contributed to this achievement); there were 174 in 2016, 25 in 2017, 34 in 2018, 105 in 2019 and 100 in 2020.

73.290 Brown-line Bright-eye *Mythimna conigera* ([Denis & Schiffermüller], 1775) N

One trapped at the Farm on 23rd July was another addition to the Skokholm list. This summer flier is fairly common across Britain, where at dusk the adults can be found nectaring on flowers. Their nocturnal larvae feed on grasses such as Cock's Foot *Dactylis glomerata*.



73.291 Common Wainscot *Mythimna pallens* (Linnaeus, 1758)

Although common and widely distributed on the mainland, where it utilises a variety of grasses as larval foodplants, this is a scarcely encountered Skokholm species. Four trapped on 2nd September was the only record this year, although this was up on the three logged over three trapping dates in 2021 and was the highest total on recent record. Three were logged in 2014, two in 2016 and three in 2017, these the only other 21st century years with a sighting. Five moth-days in 1998 appears to be the all-time high, whilst 1937, 1960, 1992, 1994 and 1997 are the only other years with a record.

73.293 Smoky Wainscot *Mythimna impura* (Hübner, 1808)

It was a quieter year for encounters with this grass eating species, a moth which, despite almost certainly being a Skokholm breeder, has proven to be an infrequent visitor to the trap. Four attracted to light at the Well on 27th July were the first of the year. A further three July moth-days, along with singles in August and September, took the annual total to nine; this was well down on the 39 moth-days of last year and the 34 of 2020.

73.295 The Delicate *Mythimna vitellina* (Hübner, 1808) I

Singles taken at the Farm on the 19th and 28th May and on 26th August were the first since one was trapped on 17th October 2018. There have now been records of this scarce immigrant in five of the last ten years, with five in 2017, one in 2016 and one in 2013 the only other 21st century records. Prior to these, there were sightings in 1937, 1960 and 1992.



73.296 **White-speck** *Mythimna unipuncta* (Haworth, 1809) **I**

Two observed feeding on rotting apples at the Farm, after dark on 8th October, were the first since a single found during a nocturnal walk to the Well on 29th September 2019. One trapped at the Farm on 12th October took the 2022 moth-days total to three, this the second highest tally of the 21st century. There were singles logged on 31st October 2018 and 1st September 2017, whilst the most recent records prior to these were in 2000 when a substantial influx of this immigrant into Britain produced six Skokholm individuals between 4th September and 6th October. The only other White-speck records are from 1996 when five were logged.



73.297 **White-point** *Mythimna albipuncta* ([Denis & Schiffermüller], 1775) **I N**

One found feeding on apples at the Farm, after dark on 3rd October, was the first to be recorded on Skokholm. This was seemingly the first Pembrokeshire record since 2015 and just the 20th for the county. This is an immigrant species from Europe which has bred in years with larger arrivals, indeed there have been occasions when it has become temporarily established in the southeast of England.



73.298 **The Clay** *Mythimna ferrago* (Fabricius, 1787)

Two trapped on 23rd July were just the seventh and eighth to be recorded this century and the first since two were trapped in 2020. Three taken in July 2014 were the only other records this decade.

73.300 **L-album Wainscot** *Mythimna l-album* (Linnaeus, 1767)

One trapped at Billy's Dyke on 25th September was the only L-album Wainscot to be attracted to light this year, whilst the rotting apples at the Farm attracted three on the night of 2nd October and one the following night. An annual total of five moth-days is the highest on record, with 2022 becoming just the fourth year with a sighting. The first Skokholm encounter was of an extremely worn individual found resting on grass outside of the Central Block on 25th October 2018. A total of

four moth-days were recorded the following year, these in much better condition, whilst four were also trapped in September last year. This species colonised Cornwall and Devon in the 1930s before spreading along the south coast of England. Since 1990 they have colonised Suffolk and south Wales, although the first Pembrokeshire record did not occur until 2007. There have now been multiple county reports, with the majority coming from the Dale and Marloes Peninsulas.



73.301 Shoulder-striped Wainscot *Leucania comma* (Linnaeus, 1761)

One trapped in the Cottage Garden on 6th June was the first to be recorded since 7th June 2018 and should probably be considered as just the second for Skokholm. There are eight entries for this species in the digitised log, all of which were noted between 1992 and 1999, however of the seven for which a date is provided, none fall within the expected flight season of May to July; the dated records are all listed for the period 21st August to 8th October and are probably incorrect.



73.304 The Cosmopolitan *Leucania loreyi* (Duponchel, 1827) |

A fine example of this scarce immigrant was attracted to the light trap at the Farm on 27th October. This was just a third for Skokholm and the second of the last decade; one was attracted to the lit window of the Wheelhouse on the night of 6th October 2013, with the only other encounter logged in 1992. It would seem that there have only been a further 12 Pembrokeshire records.



73.307 **Pearly Underwing** *Peridroma saucia* (Hübner, 1808) |

Two taken from the trap on 21st May were the first, whilst a further May single and two on 6th June were atypically timed Skokholm records; prior to last year, when an early moth was trapped on 31st March, all Island records have occurred in either September or October. A single in August was followed by six September and seven October moth-days, two of which were found after dark, feeding on rotten apples left out for migrant birds; one trapped on the 15th was the last of the year. A moth-days total of 19 is a fantastic showing for this irregular migrant, indeed it is the highest on record; there were singles in both 2013 and 2014, eight in 2017, one in 2019 and four in 2021.



73.317 **Heart & Dart** *Agrotis exclamatoris* (Linnaeus, 1758)

This species has of late been regarded as a scarce Skokholm resident, albeit one encountered only infrequently at the light trap, however it would appear to be increasing in abundance. The first came to light on 27th May, this followed by 48 moth-days taken over one May, 15 June and six July trapping dates (with a peak catch of six on 16th June). One trapped on 2nd September was the only record of the month and the last of the year. A moth-days total of 50 was just down on the 54 of last year, whilst the all-time record of 57 was set in 1996. There was only one in 2013, seven in 2014, one in 2015, nine in both 2016 and 2017 and one in 2018, before numbers of this common mainland species increased to 28 in 2019 and 26 in 2020.

73.319 **Turnip Moth** *Agrotis segetum* ([Denis & Schiffermüller], 1775)

It was a record year for sightings of this species on Skokholm. A total of 50 were trapped between 20th April and 28th October, with a peak catch of eight on 15th October. Additional nocturnal observations of one along the Lighthouse Track on 10th August and 30 feeding on apples at the Farm over seven October dates (including a peak of 14 on the 13th), took the 2022 moth-days tally to 81. There were just four moth-days logged last year, with a previous high of 11 recorded in 2019.

73.324 **Crescent Dart** *Agrotis trux* (Stephens, 1829)

This moth of cliffs and rocky shores is typically found along the southwest coasts of Britain. On Skokholm it is a fairly common summer species which, for a second consecutive year, proved to be unusually abundant. Following the first on 30th June, there were 195 moth-days taken over 11 July nights, with a high of 54 at the Farm on the 23rd. There were 12 August moth-days, with one on the 26th the last of the year. A 2022 moth-days total of 208 is the second highest on record; an all-time high of 224 was logged last year, whilst the next highest total is the 132 of 2017. The larvae of this species will feed on a variety of low-growing coastal plants, particularly Rock Sea-spurrey and Thrift, the former of which has seemingly increased in abundance on the Island.

73.327 **Dark Sword-grass** *Agrotis ipsilon* (Hufnagel, 1766) |

The first of the season was trapped on 3rd May. A further five were taken in May, with three in June, one in August, eight in September and two in November including one on the 2nd which was the last. A further four were observed after dark; there was one along the Lighthouse Track on 30th

September and three feeding on rotting apples left out for migrant birds on 13th October. A total of 24 moth-days was down on the 51 of last year, whilst a recent high of 90 was logged in 2017 (this a year which saw a significant spring influx into the United Kingdom).

73.328 The Flame *Axylia putris* (Linnaeus, 1761)

One taken on 17th June was the first since three were trapped in 2018. This species has become a much scarcer Skokholm find of late; there have been records in just six of the last ten years, with highs of 15 in 2016 and five in 2014, 2015 and 2017, whereas the database contains records of 180 moth-days in 1996 (including 108 on 10th July) and 142 in 1997 (including 65 on 4th June).

73.329 Flame Shoulder *Ochropleura plecta* (Linnaeus, 1761)

One trapped on 18th May was the first of the year and a further 16 first generation moth-days were logged between 19th May and 11th July. The first two second brood insects were trapped on 13th August and there followed a further four August moth-days. A single on 2nd September was the last of the year, taking the 2022 moth-days tally to 24; there were 31 in 2021 and just eight in 2020, whilst a peak of 52 was logged in 2017. This is a widespread moth on the British mainland which has undergone a 65% increase in abundance since the 1970s (Randle *et al.*, 2019).

73.330 Radford's Flame Shoulder *Ochropleura leucogaster* (Freyer, 1831) **IN**

The first Welsh record of this rare immigrant was taken from the moth trap in the Cottage Garden on 2nd June. Superficially similar to Flame Shoulder (which is a common resident), this individual showed the key features of longer duller forewings (with a comparatively straight costa), a smaller oval, a black streak extending distal to the kidney mark and a clean 'flame' along the costal edge extending well beyond the kidney mark. Closer inspection showed it to have white hindwings and diagnostic white hairs around the anterior part of the upper abdomen. The first British record was taken in West Sussex as recently as 1983, indeed there had only been 29 British records up until 2015. Although there has been an upturn in sightings in the southern counties in recent years, the vast majority have arrived between late September and November.



73.333 Ingrailed Clay *Diarsia mendica* (Fabricius, 1775)

One trapped on 21st June was the only record of the year, 2022 becoming the fifth year of the last ten, and the ninth year ever, with a sighting. Three were taken last year, this the first time that multiple insects had been recorded in a season. A highly variable moth, this species is common and widespread across the British Isles where it occupies wooded and moorland habitats. It uses a range of herbaceous and woody plants as larval food, several of which are present on Skokholm. However, given the sporadic nature of previous records, it is possible that this species has either yet to establish itself on the Island or does so only periodically.

73.334 **Small Square-spot** *Diarsia rubi* (Vieweg, 1790)

A total of 62 were noted between 8th May and 2nd September, this the highest tally of the last decade and only four moth-days short of an all-time peak of 66 logged in 1998. There were 24 taken last year, but only five in 2020. Although a widespread and often numerous species on the mainland, it has suffered a long-term decline in abundance (with national data suggesting a 54% drop (Randle *et al.*, 2019)).

73.336 **Red Chestnut** *Cerastis rubricosa* ([Denis & Schiffermüller], 1775)

Perhaps owing to its early spring flight season, Red Chestnut are encountered infrequently on Skokholm. Despite it being a spring of relatively favourable trapping weather, just five came to the light between 15th March and 21st April. There have been records in seven of the last ten years, with 20 taken last season and 22 in 2020, whilst there were just four in 2019 and one in 2018. That it has only made it onto the Island list in six further years probably reflects unsuitable weather conditions, low early season trapping effort and reduced battery power during March and April.



73.341 **Northern Rustic** *Standfussiana lucerneae* (Linnaeus, 1758)

A lone moth was taken from the light trap at the Farm on 7th June. Singles trapped on the 8th and 20th July last year were the first to be encountered since 1968, indeed 2022 becomes just the sixth year with a record. This is primarily a species of coastal cliffs, scree slopes and quarries which is more regular in the west of Britain. Larval food includes grasses and other low plants; on Skokholm stonecrops *Sedum* spp. would be suitable, these present on rocky outcrops and the sections of herringbone wall less accessible to Rabbits.



73.342 **Large Yellow Underwing** *Noctua pronuba* (Linnaeus, 1758)

One trapped on 3rd June was the first, this followed by a further ten in June, 17 in July, 18 in August, 80 in September (including a peak of 53 on the 2nd), 32 in October (including two observed feeding on rotting apples after dark) and one on 6th November which was the last of the year. A 2022 total of 159 moth-days was down on the 183 of last year and a recent high of 382 recorded in 2019.

73.357 **Square-spot Rustic** *Xestia xanthographa* ([Denis & Schiffermüller], 1775)

Four were trapped over three dates between the 11th and 24th September. One found feeding on rotting apples after dark on 3rd October was the only other record. Eight were observed last year, whilst 27 in 2017 is the highest recent tally.

73.359 **Setaceous Hebrew Character** *Xestia c-nigrum* (Linnaeus, 1758)

It was another good year for encounters with this Nettle eating species. A lone moth trapped on 18th May was the first of the season and a further seven first generation individuals were taken between 1st June and 16th July. The first three second brood moths were trapped on 16th August, after which a further 106 were logged, this including highs of 14 on 2nd September, 25 on 2nd October and 15 on 3rd October and insects feeding on rotting apples after dark which contributed five October moth-days. Two on 25th October were the last of the year, taking the moth-days total to 117, this up on the 40 of last year and a new Skokholm record.

73.361 **Double Square-spot** *Xestia triangulum* (Hufnagel, 1766)

Two trapped on 23rd July were just the second and third examples for Skokholm following one taken on 25th July 2014. This single generation summer moth is abundant on the Pembrokeshire mainland, occupying woodland habitats where its polyphagous larvae feed on trees and shrubs.



73.365 **Autumnal Rustic** *Eugnorisma glareosa*

A lone insect trapped at the Farm on 26th September was the first since four were taken in 2019. This is a surprisingly scarce Skokholm species, the four of 2019 being the highest total to date, whilst one in 2018, three in 2017, two in 2016 and one in 2000 are the only other 21st century moth-days.

Aggregates and species groups

16.002-06 **Ermine Moth agg.** *Yponomeuta* agg.

One was trapped at the Farm on 16th July. The four Ermine moth species Orchard Ermine, Apple Ermine, Spindle Ermine and Willow Ermine cannot usually be distinguished from one another.

70.161/90 **Golden-rod/Grey Pug** *Eupithecia virgaureata/subfuscata* (Doubleday, 1861/Haworth, 1809)

Whilst on mainland Pembrokeshire Grey Pug are more commonly recorded than Golden-rod Pug, the two species can be difficult to tell apart; there is a risk that a worn or poorly marked Golden-rod Pug could be mistaken for Grey Pug. This year they were treated as an aggregate, with a total of four taken between 17th June and 6th July. It should be noted that Grey Pug were recorded in 2014, 2016, 2017 and 2018, although the possibility of Golden-rod Pug was probably not eliminated on occasion.

73.037/8 **Dark/Grey Dagger** *Acronicta tridens/psi* ([Denis & Schiffermüller], 1775/Linnaeus, 1758)

Adult Dark Dagger and Grey Dagger cannot be reliably distinguished by appearance alone. One trapped at the Farm on 23rd June was the first 'Dagger' to be encountered since 1960. The 1960

record is listed as a Grey Dagger, as is the only other Dagger in the database which was logged in 1937; it is unclear whether either specimen was genitally dissected to confirm the species. Both moths are uncommon in Pembrokeshire, with 23 records of Dark Dagger and 42 of Grey Dagger.



73.096/7 **Uncertain/Rustic** *Hoplodrina octogenaria/blanda* (Goeze, 1781/[Denis & Schiffermüller], 1775)
Although specific identification is generally possible on appearance alone, records were again lumped. The first lone moth came to light on 3rd June. There were no further records until July when 1051 moth-days were logged, the bulk of which came from catches of 375 on the 23rd and 453 on the 29th. A total of 49 moth-days were logged in August, with nine on 2nd September the last of the year. A 2022 moth-days total of 1110 was well down on a remarkable 2021 tally of 2224, but was nevertheless the second highest to date; the 499 of 2014 is the next highest tally.

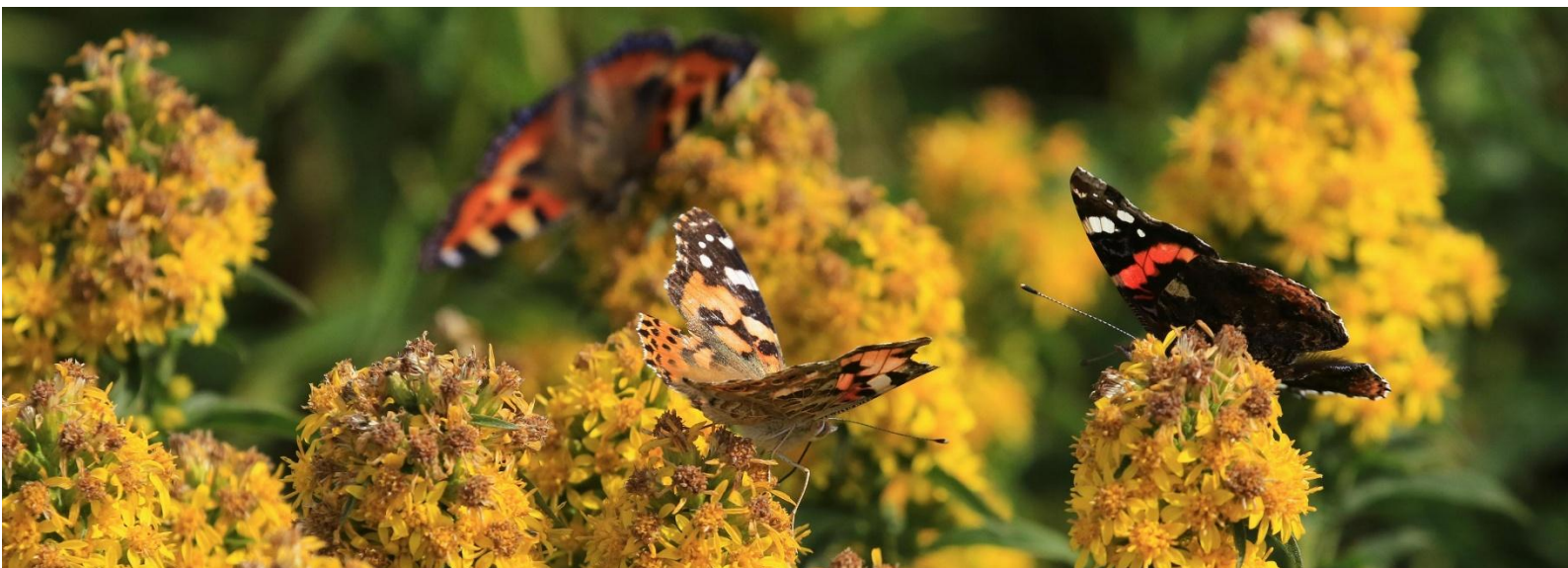
73.169/70 **Common/Lesser Common Rustic** *Mesapamea secalis/didyma* (Linnaeus, 1758/Esper, 1788)
A total of 13 moths were taken over eight nights between 4th July and 2nd September, with a peak catch of four on 6th August. The total was significantly down on the 54 of last year and the recent high of 235 recorded in 2017.

73.312/3 **Square-spot/White-line Dart** *Euxoa obelisca/tritici* (Tutt, 1902/Linnaeus, 1761))
Given its possible confusion with White-line Dart, the Skokholm status of Square-spot Dart was recently brought into question by then County Moth Recorder Robin Taylor. Four individuals identified as Square-spot Dart were retained for genital dissection in 2020, all of which proved to be as anticipated (see Annual Report 2020). Nevertheless, these species have been lumped in each year since. Only 21 were taken from the moth trap over four trapping sessions between the 6th and 26th August this year, this the lowest tally of the last nine years. There were 105 moth-days logged in 2021, with 96 in 2019 the next highest tally of the last decade and 143 in 2000 the all-time high.

Butterflies

Six of the nine regularly occurring species were recorded in numbers up on last year, with five of these also above their 2013-2021 means. The most dramatic increase occurred in **Small White** which beat last year's tally by 1270% and the nine year average by 357%. Of the others that topped their means, **Small Tortoiseshell** and **Painted Lady** did so most impressively, with increases of 57% and 45% respectively. Following the worst year on recent record, **Peacock** made a come-back with numbers 306% up on the 2021 total and 4% above the long-term average. **Small Copper** numbers provided a disappointing contrast, with a total 44% below the nine year mean which was the second poorest this decade. It proved the first year of the last ten without a sighting of **Green-veined White**. **Meadow Brown** resumed its status as the most abundant Skokholm butterfly, this despite an increase of just 3% on the 2021 total; this species lost its title to **Painted Lady** in 2019, whilst **Small**

Copper has taken the top spot for the last two years. Following an absence of two years, it was pleasing to encounter **Clouded Yellow** on the wing again, whilst the Island scarcities **Wall**, **Speckled Wood**, **Gatekeeper**, **Dark-green Fritillary** and **Comma** added some much appreciated diversity.



Skokholm butterfly sightings were again recorded during Birdlog. An account of each species encountered is listed systematically below, with the totals for the period 2017 to 2022 included in tables to allow for comparisons to be made. The ‘Maximum Daycount’ refers to the highest number of individuals seen on any one day in a particular month and ‘Butterfly-days’ are the cumulative number of butterflies seen in a defined period of time (thus the same individual may be included for multiple dates). For each of the regularly occurring species, the earliest and latest records from the last ten years, the highest and lowest annual totals from the same period and the 2013-2021 butterfly-days mean are listed below the species title. Where relevant, the text compares these with historic butterfly data which is now digitised and readily accessible; this comparison more often than not paints a rather gloomy picture, one which reflects dire declines seen in both the abundance and distribution of many of Great Britain’s common species.

Large White *Pieris brassicae* (Linnaeus, 1758)

High 487 in 2020

Low 73 in 2015

2013-2021 mean 231.1 ±sd 130.4

Earliest 13th April 2022

Latest 29th September 2018 and 2022

A lone insect at East Bog on 13th April was the first, this three days earlier than the first of 2021 and the earliest Skokholm record in a decade; the only earlier insect was noted on 9th April 1997. There were no June sightings for a second consecutive year, whilst encounters peaked in August with 106 butterfly-days logged; this was the second highest August tally of the last ten, a figure 139% up on the nine year August mean (44.4 ±sd 33.0). Three double-figure daycounts contributed to the August total, including a peak of 37 on the 29th which was the highest of the year and the most logged on any day since 105 were counted on 18th September 2020. Regular sightings in early September dropped off sharply from the 11th and one on the 29th was the last of the year. A 2022 butterfly-days total of 204 was close to the 210 of last year but 12% lower than the 2013-2021 mean. Sadly, the Skokholm data once again reflected the wider picture; the Big Butterfly Count 2022 recorded a Welsh Large White total 14% down on that of last year (Butterfly Conservation, 2022).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	2	3	0	3	37	18	0	0
2021	0	1	2	0	14	14	24	0	0

2020	0	0	4	2	2	15	105	0	0
2019	0	0	1	1	18	14	4	0	0
2018	0	0	2	4	84	9	25	0	0
2017	0	1	4	5	20	5	4	0	0
2022 Butterfly-days Total	0	4	9	0	17	106	68	0	0
2021	0	2	3	0	51	47	107	0	0
2020	0	0	6	5	9	17	450	0	0
2019	0	0	1	1	63	63	18	0	0
2018	0	0	6	6	219	49	104	0	0
2017	0	1	27	12	96	19	14	0	0

Small White *Pieris rapae* (Linnaeus, 1758)

High 507 in 2022

Low 11 in 2017

2013-2021 mean 111.0 ±sd 95.2

Earliest 13th April 2022

Latest 13th October 2016

One found at the Farm on 13th April was the first of the season, this 16 days earlier than the first of last year and the earliest Skokholm sighting of the last decade. Historically there have only been four earlier butterfly-days, with two on 9th April 1997 the earliest. There were very few August encounters until the 10th, after which the butterfly-days total increased to 250, this becoming the peak month for sightings this year; the August total was 511% up on the nine year mean (40.9 ±sd 47.5) and the highest tally in any month this decade. Egg laying was observed on the Kale growing in the Courtyard on 14th August and numbers increased considerably from the 29th, the last three days of the month producing counts of 44, 40 and 115. Peak activity continued into early September, with 118 on the 2nd being the highest daycount since 300 were logged on 10th August 1983 (an impressive 984 butterfly-days were amassed that year). One at the Well on 1st October was the last of 2022, this becoming the fourth year of the last ten with a sighting in this month. A 2022 butterfly-days total of 507 was the best showing this decade, a tally 1270% up on that of last season, 357% up on the nine year average and the best since 592 butterfly-days were logged in 1995. Interestingly, this species exhibited a 26% decline in the UK and a 16% decline in Wales between 2021 and 2022 (Butterfly Conservation, 2022).



Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	2	2	0	6	115	118	1	0
2021	0	2	1	0	6	2	7	0	0
2020	0	2	5	1	6	4	24	0	0
2019	0	2	1	0	7	77	3	0	0
2018	0	0	0	1	8	15	9	0	0
2017	0	0	1	0	1	2	1	0	0

2022 Butterfly-days Total	0	9	8	0	22	250	217	1	0
2021	0	3	1	0	6	10	17	0	0
2020	0	4	5	1	7	16	53	0	0
2019	0	2	1	0	25	154	15	0	0
2018	0	0	0	1	44	70	35	0	0
2017	0	0	1	0	1	4	5	0	0

Clouded Yellow *Colias croceus* (Geoffroy, 1785)

Two at the Farm on 30th August were the first to be seen on Skokholm since 26th September 2019. A minimum of three were logged the following day. One was found on 2nd September, this followed by singles at the Red Hut and Orchid Bog on the 4th and further singles on the 5th, 12th and 14th which took the September butterfly-days total to six; although the September total matched that of both 2014 and 2019 as the highest this decade, all pale in comparison with the September record of 99 logged in 1998. A lone insect flying over Home Meadow on 13th October was the last of the year, resulting in a 2022 butterfly-days total of 12 which was the second highest this decade; Clouded Yellow have now been logged in seven of the last ten seasons, with 13 in 2014 the only higher butterfly-days total.



Wall *Lasiommata megera* (Linnaeus, 1767)

A lone insect at Wallsend on 11th August was the first since one found on Isthmian Heath on 24th September 2019 (just moments before a Long-tailed Blue appeared). The only other record this decade was of one at the Lighthouse on 28th August 2013. Additionally a butterfly thought to be of this species was observed too briefly to be certain on 28th July. This is clearly now a scarce Skokholm butterfly, although it was more frequent historically with records in 35 years between 1947 and 2011. Sadly this change reflects a UK population which has declined by 86% since 1976 (although this loss has been particularly evident in areas of central England and Northern Ireland (United Kingdom Butterfly Monitoring Scheme, 2022)). Climate change induced warmer autumns are thought to be causing a third generation of imagoes to emerge (this species typically produces two broods, with caterpillars from the second overwintering in their larval stage); this third emergence becomes a lost generation, with adults unable to survive long enough to breed (Van Dyck *et al.*, 2015).

Speckled Wood *Pararge aegeria* (Linnaeus, 1758)

One photographed at Wallsend on 29th August was the only record, this making 2022 the fourth consecutive year and the eighth of the last ten with a sighting. Although it has occurred more regularly of late, this is a scarce Island species which has historically been encountered much less frequently; prior to 2013 there were observations in just 11 years, whilst 27 of an all-time total of 32 butterfly-days have now occurred from 1987 onwards (including a record annual total of five logged

in 1987). The increase in Island records reflects population expansion across the UK mainland; the distribution of Speckled Wood has increased by 71% during the last 40 years, with an 84% increase in abundance noted during the same period (United Kingdom Butterfly Monitoring Scheme, 2022).

Meadow Brown *Maniola jurtina* (Linnaeus, 1758)

High 15,288 in 2018 **Low** 1873 in 2020 **2013-2021 mean** 4851.6 ±sd 4116.6
Earliest 9th June 2016 and 2020 **Latest** 18th September 2015

Three on 20th June were the first, these the herald of a Skokholm summer and six days earlier than the first (albeit late emergence) of 2021. Sightings increased from the 29th when 29 were logged; this was the highest June daycount, 190% up on last June's peak, although the monthly total was 55% below the nine year mean (211.7 ±sd 249.3). There were sightings every day in July, including three-figure counts on eight dates from mid-month and a high of 140 on the 31st; a butterfly-days total of 2043 was the highest July tally since 2019, albeit 50% down on the 2013-2021 July mean (4089.9 ±sd 3896.6). The number of butterflies on the wing dropped off dramatically in the second week of August, with a minimum of 50 on the 1st being the monthly high (this the second lowest August maxima of the last decade, 48% below the nine year mean (95.2 ±sd 39.4)). A single on 29th August was the only butterfly to be seen after the 22nd and was the last of the year. An August total of 252 butterfly-days was the poorest of the last decade, a tally 54% lower than the nine year average (544.7 ±sd 235.8). Although 51% short of the 2013-2021 mean, a 2022 butterfly-days total of 2391 was the highest since 2019, Meadow Brown becoming the most abundant butterfly species on Skokholm for the first time since 2018; this species has now held this title in six of the last ten years.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	0	0	29	140	50	0	0	0
2021	0	0	0	10	160	160	0	0	0
2020	0	0	0	39	95	67	1	0	0
2019	0	0	0	36	383	85	1	0	0
2018	0	0	0	265	1368	106	0	0	0
2017	0	0	0	60	381	80	1	0	0
2022 Butterfly-days Total	0	0	0	96	2043	252	0	0	0
2021	0	0	0	23	1737	558	0	0	0
2020	0	0	0	186	1206	480	1	0	0
2019	0	0	0	130	3058	278	2	0	0
2018	0	0	0	833	13986	469	0	0	0
2017	0	0	0	207	5179	461	1	0	0

Gatekeeper *Pyronia tithonus* (Verity, 1915)

Single insects at the Farm and along the Lighthouse Track on 9th July were the first since 2020 when eight butterfly-days were logged (the latter the highest annual total since 1959 when 11 were recorded). This becomes the fifth of the last ten years with a sighting; there were three butterfly-days in 2018, two in 2015 and six in 2013.

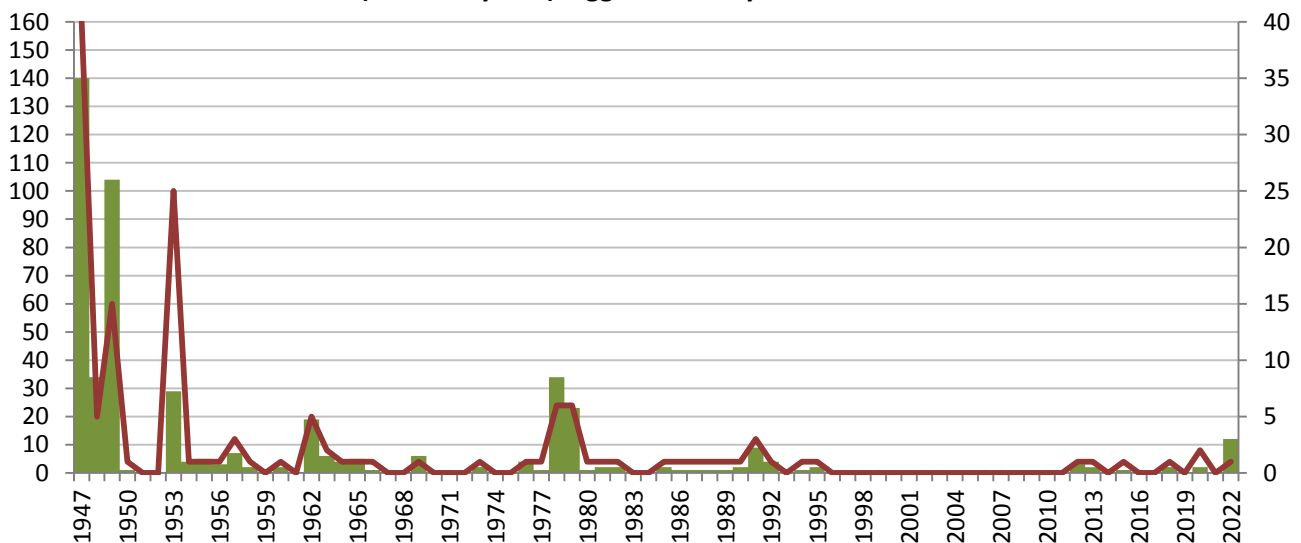
Dark Green Fritillary *Speyeria aglaja* (Linnaeus, 1758)

Following two probable encounters with this species (with one at South Haven on 2nd June and one along North Pond Wall on 5th July), the first definite observation came from East Bog on 20th July. There followed a further six July butterfly-days, all but one occurring in an area between the Red Hut and the Farm. Whilst no more than one was seen on any one date, differences in wing brightness suggested that the single observed on the 29th was different to one the previous day. An additional unidentified fritillary was at the Wheelhouse Heligoland on the 27th. Singles were observed feeding on the Buddleia outside the Cottage on the 3rd and 4th August, one was at East Bog on the 6th and worn butterflies were noted on the 8th and 10th, the latter the last of the year. Given that there have

only been butterfly-day totals of up to three in five of the last ten years, a 2022 total of 12 was an impressive showing, indeed it was the highest since 1979 when 23 were logged.



The total number of Dark Green Fritillary butterfly-days (green) and the maximum daycount (secondary axis) logged in each year since 1947.



It is believed that the steep drop in numbers seen after 1947 was caused by ‘intensive collecting’; up to 21 individuals were taken in one day (Skokholm Annual Report 1947). Between 1947 and 1961 there was no evidence of breeding (Skokholm Annual Report 1961). It is unclear whether post-1953 June butterfly-day highs of 34 in 1978 and 23 in 1979 were the result of an emergence of Skokholm-bred butterflies or of an arrival from elsewhere.

Red Admiral *Vanessa atalanta* (Linnaeus, 1758)

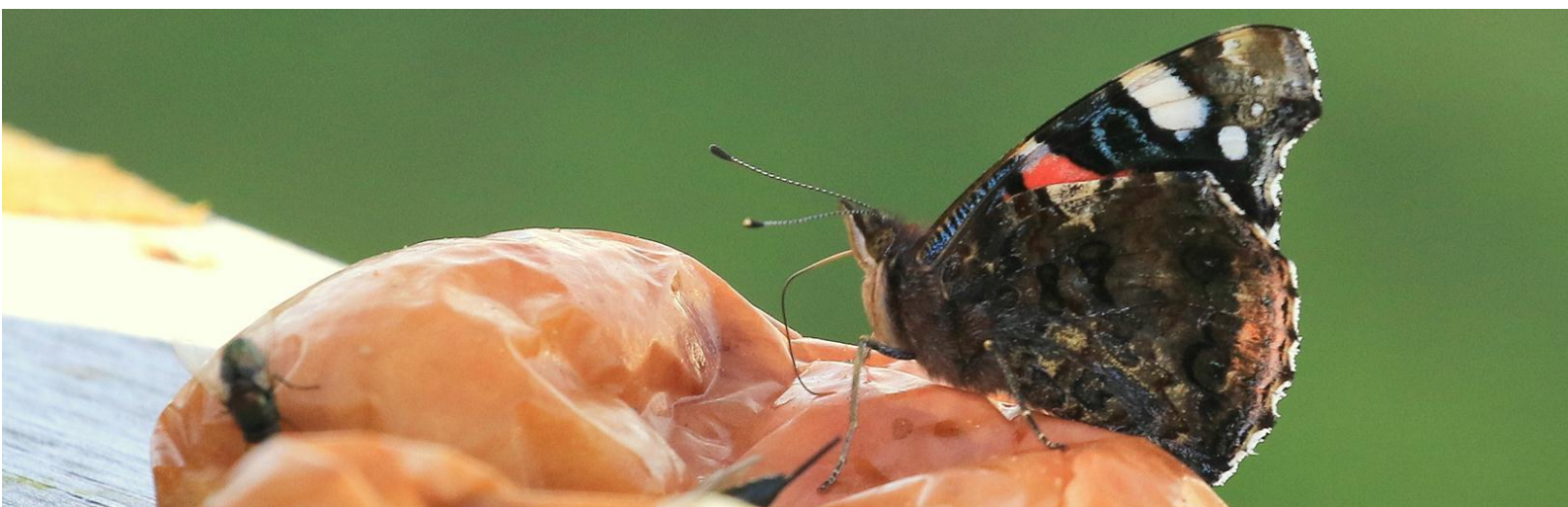
High 3598 in 2014 **Low** 890 in 2015 **2013-2021 mean** 1494.6 ±sd 849.7

Earliest 10th March 2014 **Latest** 16th November 2022

One at the Farm on 17th April was the first of the year, this almost four weeks later than the first of 2021. Numbers encountered during the remainder of April and May were low, with daycounts not exceeding four in April and three in May. Although the peak June daycount only reached 15 on the 23rd, encounters on all but four dates resulted in 132 butterfly-days being logged, this very close to

the June average (128.1 ±sd 90.0). The third best July showing of the last ten saw a monthly butterfly-days total 30% up on the 2013-2021 mean (172.3 ±sd 50.9), whilst the first two chrysalises were noted on the 10th (one of which had hatched by the 20th). The number of insects on the wing began to increase in the last week of July and into August, with the flowering Buddleia outside the Cottage proving particularly important. Arrivals were noted on 12th August when 46 were logged (33 of which were heading east), and on the 13th when 48 were logged (36 of which were heading east), whilst a significant influx during the last days of the month saw 272 on the 29th, 175 on the 30th and 120 on the 31st. An August total of 936 butterfly-days was the highest of the last decade, 145% up on the 2013-2021 mean (382.1 ±sd 144.7), indeed it was the best showing in this month since 953 were logged in 1982 (this the record August tally). Following a peak daycount of 65 on the 1st, the number of insects on the wing dropped sharply from 11th September. Whilst the maximum October daycount was typical, the monthly tally was 29% below average (107.4 ±sd 94.4). A single insect was at the Farm on 15th November and one the following day was the last of the year, this the second latest Skokholm sighting ever (there was one on 23rd November 1982). A 2022 total of 1706 butterfly-days is the third highest of the last decade and a tally 14% above the nine year mean.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	4	3	15	22	272	65	24	1
2021	1	5	2	9	24	24	57	13	1
2020	0	2	16	70	15	87	227	28	2
2019	0	1	7	37	48	38	35	7	3
2018	0	3	6	13	19	33	21	4	0
2017	0	0	14	21	24	29	44	5	1
2022 Butterfly-days Total	0	10	24	132	224	936	302	76	2
2021	2	25	6	54	182	323	535	84	1
2020	0	9	48	308	125	722	624	58	4
2019	0	3	49	209	229	352	304	51	3
2018	0	3	25	100	223	371	240	32	0
2017	0	0	43	145	236	369	457	37	1



Painted Lady *Vanessa cardui* (Linnaeus, 1758)

High 5894 in 2019

Low 140 in 2020

2013-2021 mean 1089.0 ±sd 1831.4

Earliest 13th April 2015

Latest 22nd November 2014

It was an excellent year for records of this vivid immigrant, with an annual total of 1582 butterfly-days being the second highest of the last decade and 385% up on last year's 326. A single on Isthmian Heath on 15th May was the first and a further 39 butterfly-days were noted during the

remainder of the month, this resulting in the second highest May total of the last ten (216% up on the 2013-2021 May mean of 12.7 \pm sd 15.8). A steady trickle of June sightings resulted in 101 butterfly-days; whilst an improvement on the June totals of the last two years, this was dwarfed by the 943 logged in 2019. The first big influx of insects was noted at the end of August (at the same time as a significant arrival of Red Admiral), with 244 logged on the 29th, 309 on the 30th and 165 on the 31st; these daycounts contributed significantly to an August total of 885 butterfly-days which was second only to the 2870 logged in 2019 and 80% higher than the nine year average (494.1 \pm sd 906.6). There was a noticeable drop in the number of insects on the wing from 11th September and there were only eight October butterfly-days. One at North Pond on 6th November was the last of the year; the only previous November records were in 2019 (four butterfly-days), 2014 (six butterfly-days) and 1988 (one butterfly-day).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	0	6	19	16	309	88	2	1
2021	0	1	2	8	3	27	8	2	0
2020	0	0	1	3	1	8	9	0	0
2019	0	0	2	208	72	614	218	5	3
2018	0	7	7	28	8	92	48	2	0
2017	0	5	8	13	16	18	26	12	0
2022 Butterfly-days Total	0	0	40	101	78	885	469	8	1
2021	0	1	2	57	15	192	56	3	0
2020	0	0	2	11	1	55	71	0	0
2019	0	0	2	943	639	2870	1414	22	4
2018	0	7	21	184	75	615	257	12	0
2017	0	5	46	56	65	209	146	22	0



Peacock *Inachis io* (Linnaeus, 1758)

High 387 in 2015

Low 34 in 2021

2013-2021 mean 132.9 \pm sd 114.6

Earliest 10th March 2015

Latest 3rd December 2019

Following a tragically low showing in 2021, this year saw a welcome improvement in numbers of this unmistakable species; an annual total of 138 butterfly-days was 306% up on last year's tally and 4% up on the nine year mean. Two on 3rd April were the first, these 18 days later than the first of 2021, indeed April sightings were scant thereafter. Counts of insects on the wing during May and June were typically low, though above the nine year average (Peacock have only been logged in five of the last ten Junes). Caterpillars were noted on Isthmian Heath on 19th June and above South Haven on

the 20th. A lone butterfly in the Quarry on the 13th began a run of July encounters which peaked at ten on the 28th; a July total of 66 butterfly-days was the highest in any month since 71 were logged in July 2020. The bulk of August sightings occurred in the first two weeks of the month, with 47 of 51 butterfly-days falling between the 1st and 13th, whilst there were three in September including two on the 4th which were the last of the year.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022 Maximum Daycount	0	3	2	1	10	8	2	0	0	0
2021	1	2	0	0	4	2	1	0	0	0
2020	2	5	3	3	11	4	2	0	1	0
2019	0	4	3	0	11	12	2	2	1	1
2018	1	0	1	1	4	6	0	0	0	-
2017	0	1	1	0	12	5	4	2	0	-
2022 Butterfly-days Total	0	9	5	4	66	51	3	0	0	0
2021	1	7	0	0	18	7	1	0	0	0
2020	4	31	8	6	71	20	6	0	1	0
2019	0	13	4	0	44	27	7	4	3	1
2018	2	0	1	4	14	17	0	0	0	-
2017	0	3	2	0	95	25	20	3	0	-



Small Tortoiseshell *Aglais urticae* (Linnaeus, 1758)

High 562 in 2018

Low 60 in 2016

2013-2021 mean 335.7 ±sd 187.3

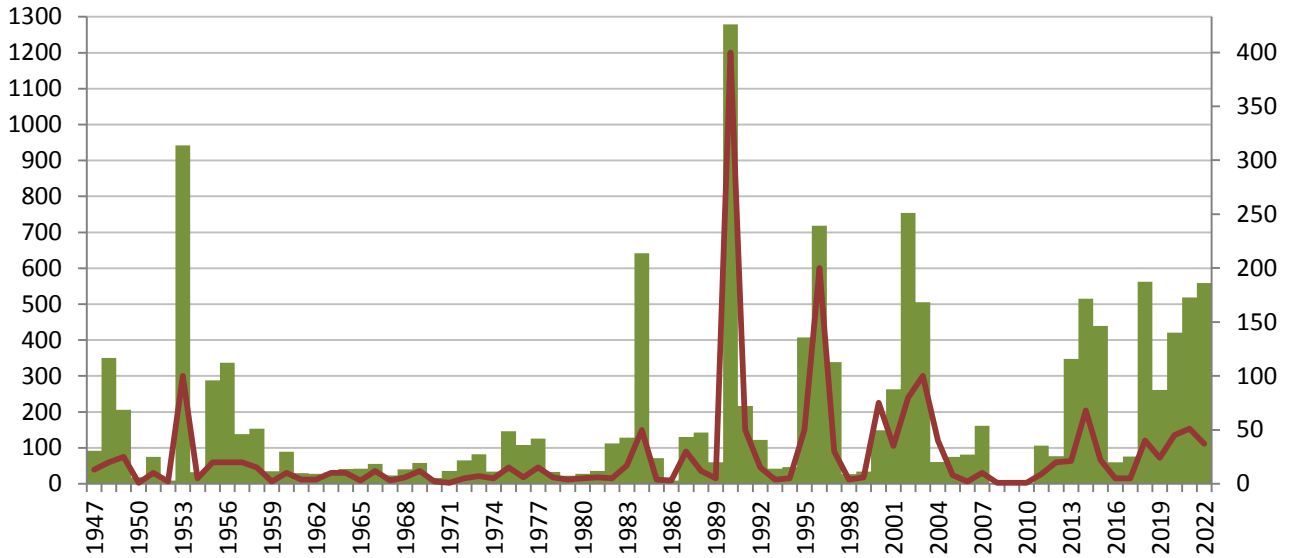
Earliest 9th March 2014

Latest 14th November 2018

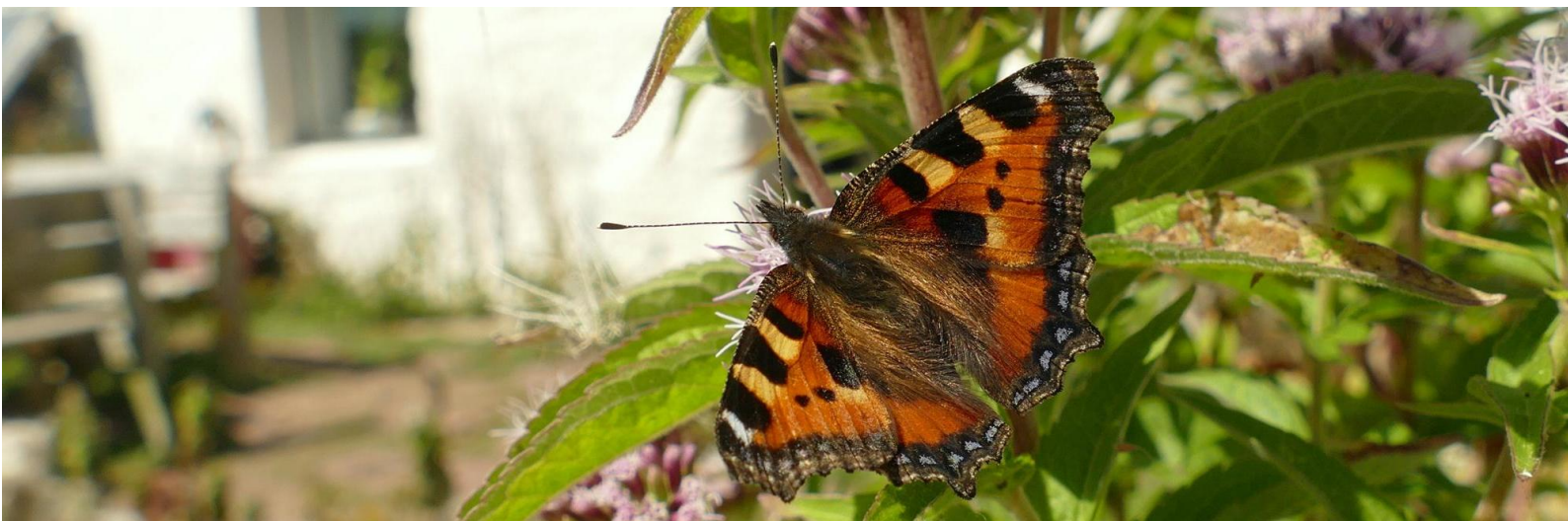
One at the Knoll on 25th March was the first, this just one day later than that of 2021 and the only record of the month. The number of insects on the wing remained low throughout April and May, with just four butterfly-days logged across both months. Following a single on the 10th, two on 13th June heralded an increase in numbers, with a further 45 butterfly-days tallied during the month; a June total of 48 butterfly-days was 57% up on the 2013-2021 mean (30.6 ±sd 29.3). Small Tortoiseshell were encountered on 26 July dates, peaking at 24 on the 31st (a count which included 15 feeding on Buddleia); a total of 97 July butterfly-days was the highest since 2018 and a figure 28% above the nine year mean (75.7 ±sd 63.4). Counts peaked in August, with a total of 373 butterfly-days logged, these including 17 double-figure daycounts and a high of 37 on the 14th (14 of which were in North Haven); an arrival was suspected on the 11th when insects were observed at the Bluffs

and at Crab Bay. The first five days of the month saw 29 of the 33 September butterfly-days logged, whilst three on the 13th were the sole October sightings and the last of the year. A 2022 butterfly-days total of 559 was 8% up on that of last year, 57% higher than the nine year mean and the second highest total of the last ten.

The total number of Small Tortoiseshell butterfly-days (green) and the maximum daycount (secondary axis) logged in each year since 1947.

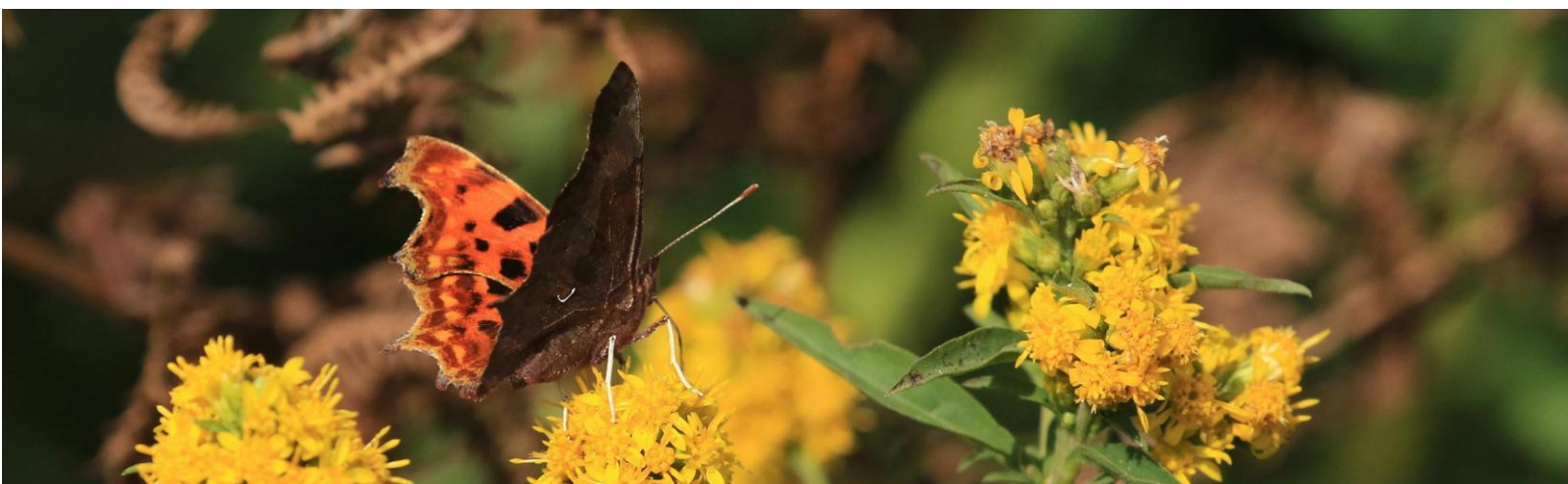


Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	1	1	1	13	24	37	14	3	0
2021	1	3	1	8	8	51	43	1	0
2020	0	2	2	14	12	45	35	0	0
2019	1	1	1	3	4	24	22	1	0
2018	0	2	3	11	14	40	15	1	1
2017	1	0	0	2	2	5	3	1	0
2022 Butterfly-days Total	1	3	1	48	97	373	33	3	0
2021	1	10	1	23	53	312	118	1	0
2020	0	8	5	62	44	202	100	0	0
2019	4	2	1	5	40	124	84	1	0
2018	0	3	9	40	122	294	92	1	1
2017	2	0	0	3	8	40	22	1	0



Comma *Polygonia c-album* (Linnaeus, 1758)

Singles were at the Wheelhouse Heligoland on 13th July and at the Cottage on the 14th and 15th; it would seem likely that all sightings were of the same individual. One on 31st August was the last of the year. Whilst it is probable that there were just two insects this year, these were the first since a single was observed over two dates in September 2019, indeed this is just the fifth year of the last ten with a record.

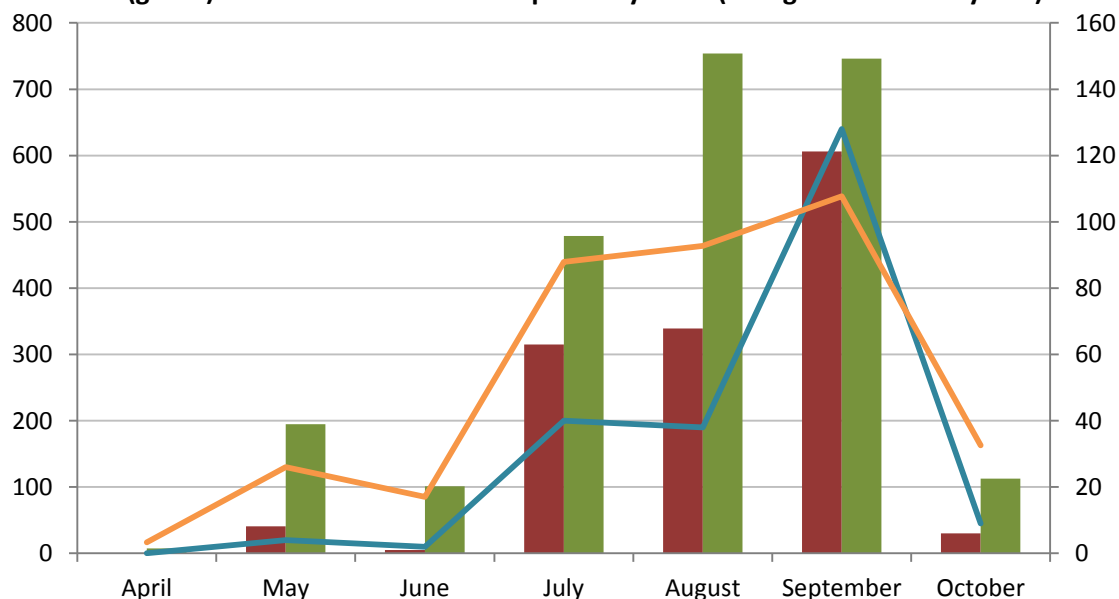


Small Copper *Lycaena phlaeas* (Linnaeus, 1761)

High 5775 in 2013 **Low** 1124 in 2016 **2013-2021 mean** 2394.9 ±sd 1368.6
Earliest 19th April 2015 and 2020 **Latest** 30th October 2018

Singles at the Well and Orchid Bog on 5th May were the first of the year, these 11 days later than the first of 2021. A fresh individual observed at East Bog on 27th June was probably a late first brood insect, with evidence of a second generation emergence not occurring until mid-July when there was a noticeable increase in numbers. A minimum of 40 insects on the 31st brought the July butterfly-days total to 315, this figure 71% lower than that of last July and 34% below the 2013-2021 July mean (478.8 ±sd 323.0).

The number of Small Copper butterfly-days (maroon) and the peak daycount (blue on secondary axis) logged in each month of the 2022 season, along with the 2013-2021 mean butterfly-days total (green) and the 2013-2021 mean peak daycount (orange on secondary axis).



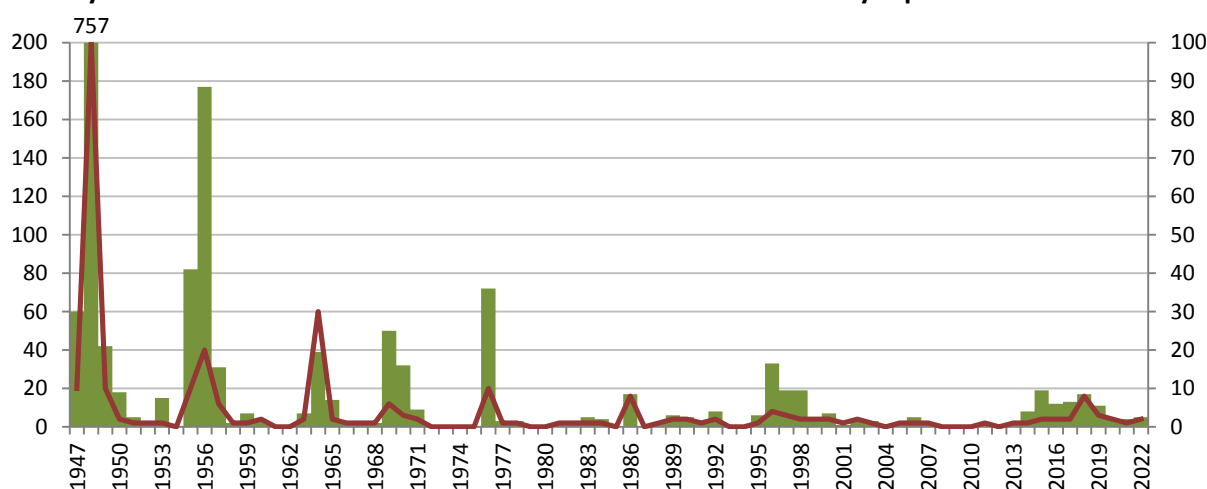
The number of second brood insects continued to increase in August, with double-figure counts on 13 dates contributing to 339 butterfly-days. Sightings peaked in September following the emergence of a third generation, with a total of 606 butterfly-days including 128 on the 10th which was the highest daycount this year; this was the lowest daycount high since the 74 of 21st May 2017 and the fourth lowest maxima of the last decade. An October butterfly-days total of 30 was the lowest of the last ten, 73% down on the 2013-2021 mean (122.7 ±sd 101.5), whilst a high of nine on the 1st matched that of 2014 as the poorest to be logged during the same period. A 2022 total of 1336 butterfly-days was 47% down on last year, 44% lower than the 2013-2021 mean and the second worst showing in a decade.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022 Maximum Daycount	0	0	4	2	40	38	128	9	0
2021	0	13	26	13	158	65	61	44	0
2020	0	3	16	4	32	22	199	26	0
2019	0	1	21	8	40	30	241	22	0
2018	0	0	16	16	161	226	96	53	0
2017	0	1	74	57	42	47	19	11	0
2022 Butterfly-days Total	0	0	41	5	315	339	606	30	0
2021	0	28	265	79	1081	507	486	88	0
2020	0	9	152	12	237	165	1537	69	0
2019	0	2	237	57	345	260	1285	84	0
2018	0	0	93	92	767	941	665	198	0
2017	0	5	419	205	360	400	154	33	0

Common Blue *Polyommatus Icarus* (Rottemburg, 1775)

There were no first brood insects observed this year, with lone males on Home Meadow and at Crab Bay on 6th August being the first of the year. There followed a male at North Pond on the 9th, a male at East Bog on the 13th and a male at the Quarry on 31st August which was the last of the year. No females were observed in 2022 and a 'blue' male on 15th June was seen too briefly to identify. Although a butterfly-days total of five is the highest since the 11 of 2019, it is 50% below the 2013-2021 mean (9.9 ±sd 6.1).

The total number of Common Blue butterfly-days (green) and the maximum daycount logged in each year since 1947. Note that the 1948 total of 757 is not accurately represented on this chart.



Common Blue have now been recorded in 58 of the last 76 years, however numbers have fluctuated and declined significantly since the first half of the 20th century; the database includes an Island record of 757 butterfly-days in 1948 and a subsequent peak of 177 in 1956, but 18 years without a sighting, 15 of which have been since 1972. Nevertheless, an increase in records between 2014 and

2019, which included sightings during both flight seasons, raised hopes that this species was to again establish itself; it was believed that an increase in the extent of Greater Birds-foot-trefoil *Lotus corniculatus*, brought about by a drop in Rabbit numbers, may benefit Common Blue. However, given both the low numbers encountered and an absence of females in the last three years, it would seem likely that the butterflies seen in 2022 were immigrants.



Hippoboscidae

We continued to participate in the UK wide Flat Fly mapping project begun by UK Hippoboscidae Recorder Denise Wawman in 2021. The aim of the study is to collect specimens encountered during bird ringing from sites around the UK, with the intention of mapping both their overall geographical distribution and their range on specific host species; as the majority of work on UK Hippoboscidae was undertaken in the 1950s and 1960s, little is known about their current distributions.

A total of nine Flat Flies were collected from eight host species between 2nd June and 27th July this year (19 Flat Flies were taken from eight species between 11th June and 25th September 2021); a similar drop in the number of encountered Flat Flies was reported at other sites. The following results were kindly provided by Denise.

The different Flat Fly species encountered on Skokholm in 2022.

Host Species	Species of Flat Fly	Number of Flat Flies taken	Number of birds from which they were taken
Jackdaw	<i>Ornithomya avicularia</i>	1	1
Swallow	<i>Ornithomya avicularia</i>	1	1
Sedge Warbler	<i>Ornithomya fringillina</i>	1	1
Blackbird	<i>Ornithomya chloropus</i>	1	1
Song Thrush	<i>Ornithomya avicularia</i>	2	1
Wheatear	<i>Ornithomya fringillina</i>	1	1
Pied Wagtail	<i>Ornithomya chloropus</i>	1	1
Meadow Pipit	<i>Ornithomya chloropus</i>	1	1

For a summary of previous Hippoboscidae studies on Skokholm (which date back to 1937), along with the results of sampling in 2021, see the Skokholm Annual Report 2021.

Amphibians

Common Frog *Rana temporaria*

A search of North Pond on 2nd March found one sunken clump of spawn in a pool to the east of the North Pond iris bed, this the only evidence of breeding this year. South Pond was not inspected so as

not to disturb the breeding Stonechat which were already on territory when staff returned on 1st March. Last year saw 12 rafts of spawn found in South Pond and 14 in North Pond, whilst March checks of the main ponds and pools between 2017 and 2020 failed to find any evidence of breeding (staff arrived on 28th February in 2019, but between the 6th and 16th March in the other years). Whilst initially concerning, it was speculated in the 2019 Annual Report that, because of the mild maritime climate, Frogs may be spawning as early as January on Skokholm. Some evidence to support this came in 2020 when an unusual early season daytrip undertaken by WTSWW staff on 6th February resulted in a large raft of spawn being found in a small pool to the north of North Pond Wall; there was no sign of this spawn when staff arrived in mid-March.



There have been very few sightings of adults in recent times, as was again the case this year. On the warm and wet evening of 4th September, an adult was found on the Lighthouse Track between the Knoll and East Bog (photograph above). Just one was also found in each year between 2013 and 2016 (with the 2015 record being of a dead Frog), these followed by three in 2017 (the highest count this decade), a single in 2018, two in 2019, one in 2020 and two in 2021 (including a swollen animal at North Pond on 30th November which was found dead the next day). The digitised data, although incomplete, suggests that numbers have been much higher, but have also plummeted, in the past; whereas 127 Frogs were logged in 1948, only six were found the following year. Adults can survive for up to 12 years; there is thus the potential for numbers to again increase if conditions allow.

Mammals

European Rabbit *Oryctolagus cuniculus*

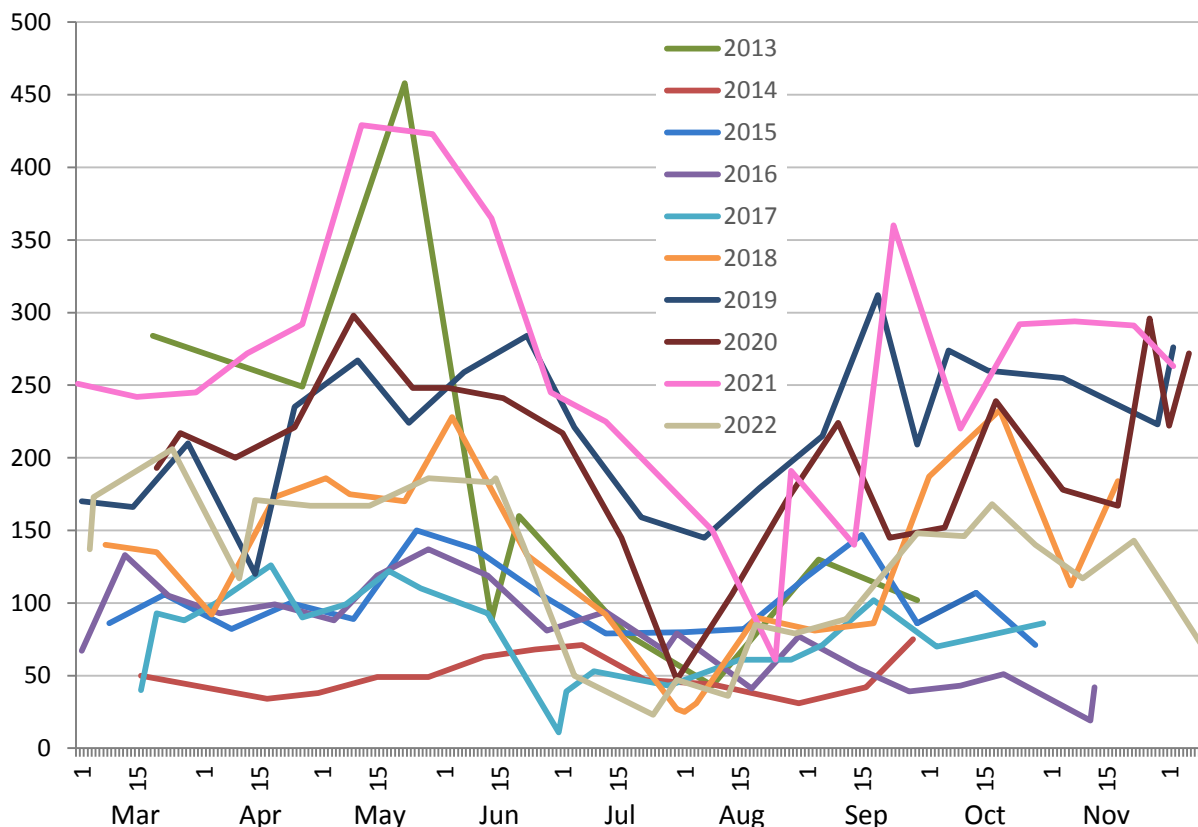
Adults and juveniles, either apparently diseased or intact but dead, were found at various locations during the 2022 season. The first dead animal was a kit found on the Lighthouse Track on 18th April, whilst the first apparently sick animals were noted on 14th May when two adults (one at the Farm and one along the Lighthouse Track) showed signs of ocular discharge (this a symptom most closely linked to Myxomatosis). Two dead animals were logged in May, these at the Farm on the 17th and 19th. June saw a peak in the number of sick and dead Rabbits; a total of 21 dead animals found during June included at least 12 juveniles and a high of six fresh-dead animals on the 11th, whilst ten sick animals comprised a convulsing juvenile in the Cottage Garden on the 7th, juveniles at Migration Rocks and North Pond Wall on the 10th (the latter of which was found dead the same day), a dying animal at East Bog on the 11th, one on Isthmian Heath on the 12th, singles on the Neck and Lighthouse Track and two on Home Meadow on the 14th (the latter two died later that day) and a fitting juvenile at East Bog on the 21st. Outbreaks in the first half of 2022 seemingly ran their course quickly; there were no further observations of ill or dead Rabbits for the remainder of the season. A 2022 total of 36 sick or dead Rabbits is certainly an undercount; as in 2021, strong cadaverine odours

emitting from areas with no dead surface animals in late June suggested that Rabbits were dying underground. The 2022 total was three up on that of 2021 and 13 up on that of 2020.

With the exception of the two sick Rabbits on 14th May, this year saw infected animals exhibiting symptoms predominantly associated with Rabbit Viral Haemorrhagic Disease (RVHD), such as partial or complete paralysis (followed within 24 hours by death), seizures, breathing difficulties and death without external signs of damage. Similar symptoms were observed in 2019, whilst in 2020 and 2021 approximately half of the sick animals encountered showed symptoms commonly linked with Myxomatosis (namely matted fur and fur loss, a lack of coordination, swollen face, audible breathing and red, infected eyes). It has been suggested that the absence of the European Rabbit Flea *Spilopsyllus cuniculi* would prevent the spread of Myxomatosis on Skokholm (Thompson, 2007), however the disease can be transmitted via several different arthropod vectors including Harvest Mites *Neotrombicula autumnalis* (Cousquer, 2013), an invertebrate present in large numbers on the Island. Animals thought to have Myxomatosis have not been tested for at least 20 years.

Rabbits were first monitored from a fixed point on the Knoll in the mid-1990s when an outbreak of RVHD caused a significant decline in the Skokholm population. Monitoring of the same area has occurred ever since, although with varying degrees of regularity. Following the massive decline in numbers noted in 2013, a crash due at least in part to an outbreak of a new strain of RVHD (Westcott and Choudhury, 2015), a decision was made to increase the number of counts per month from one to two, this in order to gain more information on how the population was changing during the year. Rabbits were counted in the two adjacent North Plain plots on 26 evenings between 3rd March and 9th December this year, with the survey commencing approximately 90 minutes before sunset when animals are typically more active (as stipulated by Thompson, 2007). The counts discussed below are the total number of animals recorded across both plots (this an area of approximately seven hectares).

The total number of Rabbits logged during evening counts of the North Plain study area between 2013 and 2022.



Due to a slightly later return of staff, the first survey of 2022 was three days later than the first of 2021; a total of 137 animals were counted in a chilling northerly wind, whilst a second survey which took place in better conditions the following day produced a tally of 173. The latter was 31.1% down on the first survey of last year, though that count was notable as the highest post-winter figure since the 2013 crash. Surprisingly a total of 206 counted on 24th March was the highest of 2022, this the lowest maxima since 2017 when a peak of 126 was logged; the 2022 total was 52.0% below a peak 2021 count of 429 and 16.4% lower than the 2013-2021 mean high (246.4 \pm sd 137.1).



Sick and dead animals were noted from mid-May (see above), but this was not reflected in the plot counts until late June when numbers had declined rapidly. The 23 counted on 24th July was this season's low, this 50.0% below the 2013-2021 mean low (46.0 \pm sd 34.6), 62.3% down on the lowest count of 2021 and the lowest annual low since 30th June 2017 when just 11 were present. Although 72 animals on 9th December was the last count of the year, a survey made on the 1st perhaps provided a tally more comparable with the last of 2021; a total of 106 animals were in the plot on 1st December, 59.7% fewer than were counted on the 2nd last season.

Bats

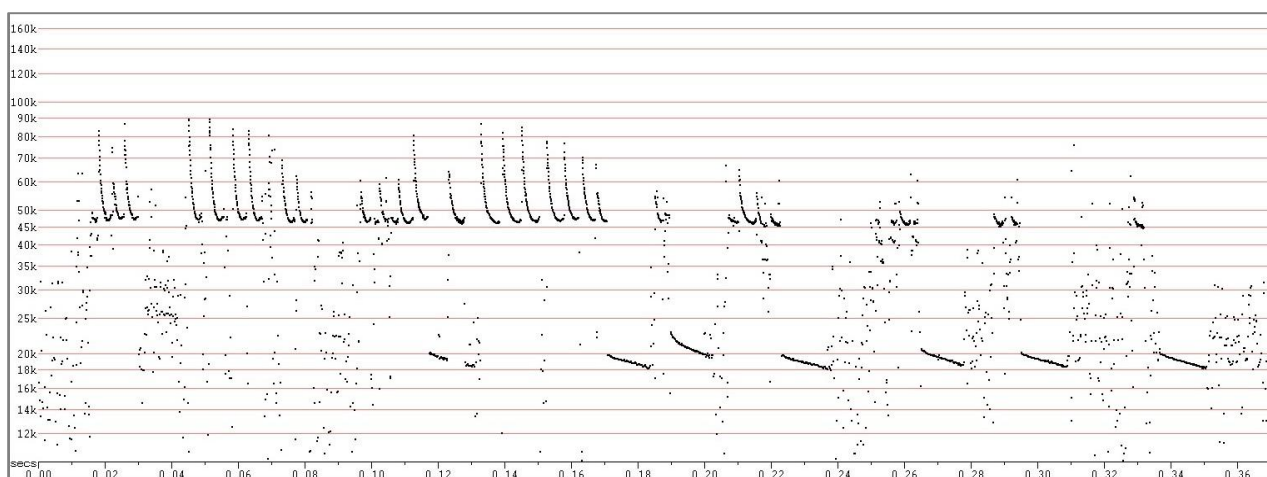
Bats have been surveyed on Skokholm since 2014 using an SM2 (an automated detector which is left in situ to record echo-locating animals which pass within its range). The use of such a device has allowed us to gather regular and systematic data, vastly improving our knowledge of the species which visit the Island. To maintain consistency with the previous eight years, the SM2 was again located at the Well (housed in the Well Hide and with the microphone facing due east). This year it was connected to a small solar array, this negating the need to periodically remove the 12v battery for charging at the Farm; there was thus a more complete deployment over the 2022 season. Since recording began here in 2014, the detector has been triggered by **Nathusius'**, **Soprano** and **Common Pipistrelles**, **Leisler's Bat**, **Noctule**, **Serotine** and **Greater Horseshoe**; a **Myotis spp.** was also recorded, although this could not be identified to species level. Although this set up has clearly yielded valuable information about the bats which have flown over the Well, it provides only a glimpse as to how these enigmatic mammals exploit the Island. A second detector (an SM4) was thus purchased in 2019; as was the case in 2020, it was located on the North Pond Hide this season (a new microphone was attached, this a replacement for that which failed early in 2021). The Well detector was deployed on 3rd April, whilst the North Pond detector was in situ from 20th April. Using their own equipment, visiting bat enthusiasts carried out ad-hoc monitoring at various other sites around the Island, this providing some interesting additional records.

For a second consecutive year, just three species were identified, this down on the five of 2019 and the four of 2020. **Common** and **Soprano Pipistrelle** were both recorded in numbers up on anything

seen before, whilst **Noctule** was once again the most abundant species. In the following text a ‘pass’ refers to each occasion that the detector was triggered into recording. Passes are allocated to a particular species when certain parameters are met within the call.

Common Pipistrelle *Pipistrellus pipistrellus*

Three passes at the Quarry, 17 at North Haven and two at the Bluffs on 16th June were the first in a phenomenal season for recordings of this species. One pass was logged at the Quarry and one at North Gully the following day, although the next were not until the 23rd when two were logged on the North Pond detector. One was recorded at South Haven on 9th July and there was one at East Bog on the 10th; the latter was the date of the first pass to be detected at the Well and a further four were recorded there over three July dates. There were 39 August recordings taken over ten dates at the Well, whilst a remarkable 389 passes were logged at North Pond over 12 August dates. There was a final pass at the Well on 2nd September, whilst North Pond produced four on the 29th and three on the 30th which were the last of the year. A 2022 total of 469 passes was inconceivable based on previous records; five were logged last year (this the former high), two passes in 2014 were the first recordings of this species on Skokholm and one found in the Ringing Hut on 20th July 2015 was a very rare encounter. Additional recordings were made where it could not be determined if the calls were from a Common or a Soprano Pipistrelle, these attributed to ‘50kHz Pipistrelles’; there were 38 Well passes between 16th July and 25th August and 378 at North Pond between the 14th and 23rd August. The sonogram below shows a Common Pipistrelle with a Noctule at North Pond.



Soprano Pipistrelle *Pipistrellus pygmaeus*

The first four passes were logged at the Well at 0227hrs on 16th July; there followed three passes on the 30th and four on the 31st. Five were recorded on 1st August and one at 2219hrs on the 6th was the last at this site. The first trigger at North Pond did not occur until 14th August, whilst a further 28 passes were logged on the 18th including one at 0319hrs which was the last of the season. A total of 46 Soprano Pipistrelle passes was a new high, well up on the eight of last year which was the previous record. The first for Skokholm was heard in the Courtyard on 25th September 2013, this followed by single calls detected at the Well on 15th August and 3rd September 2014 and on 15th September 2015, four recordings made at Purple Cove between the 19th and 20th September 2019 and two passes at North Pond in 2020. The 2022 season thus became the seventh with a record.

Noctule *Nyctalus noctula*

For a ninth consecutive year, Noctule was the most frequently recorded bat species on Skokholm. Four passes at the Well between 2130hrs and 2158hrs on 16th April were the first of the year, however two on the 19th were the only other April passes at this site. There followed 16 passes over five May dates, 192 passes over 21 July dates, 180 passes over 23 August dates, 55 passes over 11 September dates and singles on four October dates; one at 0048hrs on 18th October was the last of

the year, bringing the Well total to 453 passes. There were 479 Noctule passes at the Well in 2021, 559 in 2020, 461 in 2019, 295 in 2018, 131 in 2017, 396 in 2016, 143 in 2015 and 621 in 2014. The first North Pond Noctule was recorded at 2145hrs on 20th April; there followed a further 69 April passes between the 25th and 27th. There were no further records until the detector was triggered at 0237hrs on 20th July, whilst 113 passes recorded over 11 August dates included one at 0306hrs on the 31st which was the last at this site. There were thus 184 North Pond Noctule passes in 2022; this detector was not in use in 2021, whilst there were 199 in 2020 and 183 in 2019. There were additional July records of one at the Lime Kiln on the 5th, 18 over Home Meadow between the 5th and 9th and 20 at East Bog on the 10th, these taking the 2022 whole Island total to 676 passes.

Prior to the start of passive bat monitoring on the Island in 2014, the only documented Noctule was a single mist netted in September 1968. In the years 2014, 2015, 2016 and 2020, activity at the Well peaked during September and October, this the same period in which animals from northeast European populations migrate southwest (UNEP, 2021). That the Noctules logged over the Island could be long-distance migrants is an exciting idea, however no evidence exists at present to suggest that this is the case. An autumnal increase in numbers may just reflect the dispersal of juvenile and/or post-breeding adults from the nearby mainland, or perhaps a smaller scale migration of British animals from summer roosts to winter hibernacula. Recordings made in 2017, 2018, 2019 and 2021 showed Noctule activity peaking in July and August, these arrivals perhaps more indicative of dispersal from nearby; this was again the case this year, with 78% of all Noctule passes occurring in these two months (73% in 2021).

Noctule/Leisler's Bat

There were again difficulties in attributing some calls to a specific species; this may arise when certain parameters within the sonogram are within the overlap zone of two species, or as is more often the case, this may be as a result of the quality of the recording. A total of 39 passes were logged where it could not be determined if the call had been made by a Noctule or a Leisler's Bat; 38 of these were from the Well (with one in April, three in May, 17 in July, 11 in August and six in September) and one was at North Pond on 26th April. Leisler's Bat has been recorded in four previous years, with three passes in 2014, two in both 2016 and 2017 and five in 2018; one of the 2018 passes was in May, with all other records being from August or September.

Seals

Atlantic Grey Seal *Halichoerus grypus*

Grey Seals are present in the waters around Skokholm throughout the year. The rocks in South Haven and Crab Bay are the two main low tide haul-outs and it is here where the majority of non-breeding adults congregate. Both locations are part of the daily census route and are visible to overnight guests from the path network; a high proportion of the monthly totals are thus made up of counts from these areas (although visits do not always coincide with low tide). Daycounts are regularly supplemented by small numbers seen elsewhere around the Island, primarily off the Neck.

There were 44 seal-days in March, with a high of six on the 29th; the peak daycount was 40% down on that of last March and the total 36% down, however the peak matched the 2013-2021 mean and the total was well up on a mean of 28.7 logged during the same period. Although a maximum April daycount of 29 matched that of 2021, a seal-days tally of 300 was 65% up on last year and 84% higher than the April mean (162.9 ±sd 79.8). Peak daycounts were up in May (104% higher than in 2021), June (23% higher than in 2021) and July (10% higher than in 2021), whilst the monthly totals were up on last year's tallies by 79%, 54% and 69% respectively. Numbers peaked in July for the seventh time this decade, with a total of 937 seal-days being 45% above the 2013-2021 mean (646.3 ±sd 128.7) and the highest to be logged in any month of the last ten years (the previous high was the 806 of July 2018). A cow with fishing line around her neck was noted on the 7th and 9th July and there

was a dead adult drifting north past the Lighthouse on the 28th. Oddly the pattern of higher daycounts and higher monthly totals did not continue into the autumn, indeed a September peak of 27 on the 15th was 47% lower than that of 2021 and 30% below the nine year mean high (38.4 \pm sd 9.9). A peak October daycount of 12 was disappointing, this 52% lower than that of 2021 and 41% below the mean October high (20.4 \pm sd 5.5), whilst an October seal-days total of 82 was the lowest in a decade by some margin, 69% down on that of 2021 and 63% below the nine year mean (222.3 \pm sd 48.2). Although November is typically a quieter month for Grey Seal sightings, just eight were logged this year (one of which was a dead animal in Broad Sound on the 6th), this 93% down on a November 2021 total of 109 and 80% below the 2013-2021 average (40.8 \pm sd 29.2). It has been noted that a high proportion of the autumn seal counts are made up of youngsters (both from Skokholm and elsewhere); whilst it is unclear why autumn numbers dropped so sharply this year, fewer weaners visiting from other sites may have had an impact.

The total number of Grey Seal recorded around Skokholm rose steadily between 2013 and 2018, plateaued in 2019 and declined somewhat in 2020 and 2021, the latter no doubt due in part to reduced observer numbers during the Covid-19 years. Primarily due to the impressive July tally, this year saw a seal-days total of 3751, this the highest of the last decade and 26% more than the 2013-2021 mean (2987.9 \pm sd 450.5). The last decade has seen daycount highs of 56 in September 2016 and 60 in July 2017, with the 54 of this July being the third highest during the period.

The total number of Grey Seal logged each month, along with the maximum monthly daycount. Counts from 2017 to 2021 are included for comparison.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2022* Monthly Total	44	300	524	633	937	746	470	82	8
2021*	69	182	293	412	555	585	466	263	109
2020*	14	186	271	410	456	465	428	246	40
2019*	48	199	518	616	735	548	487	262	50
2018	34	105	505	662	806	767	464	245	50
2017	15	290	336	629	747	697	386	217	28
2022 Maximum Daycount	6	29	53	53	54	43	27	12	1
2021	10	29	26	43	49	45	51	25	10
2020	4	38	25	45	39	39	27	26	9
2019	9	24	37	37	47	42	35	25	11
2018	9	20	31	49	49	41	38	22	9
2017	2	22	29	42	60	32	32	18	11

* There was one on the last day of February 2021, three in the first three days of both December 2019 and December 2020, four in the first five days of December 2021 and seven in the first ten days of December 2022.

Pupping beaches are plentiful around the nearby mainland and on the islands of Skomer and Ramsey to our north, but suitable areas on Skokholm are few. As a result, pups are recorded in only very small numbers each autumn. The relatively sheltered and somewhat sandy coves of North Haven and Peter's Bay are seemingly the most frequently used pupping areas, the use of these beaches apparently resulting in a higher success rate. Other bays, mostly situated around the Neck, are used infrequently and animals born in such exposed locations typically have less chance of survival. There are also a small number of caves around Skokholm where young may go unrecorded.

An older, but still unmoulted, pup was found with a cow in attendance at Peter's Bay on 11th September, this one day later than the first of last year. A second pup was found in North Haven on the 15th, this joined by a third on the 19th and a fourth on the 21st. A moulting pup and cow had moved to South Haven on 22nd September, this probably born in a hidden area of the Island. The South Haven pup was joined by a lone moulting pup on the 28th, the origins of which were unclear. There were no further records of pups likely to have been born on Skokholm, the 2022 total

remaining at five; this was four down on the 2021 total and the poorest showing since 2017, but close to the 2013-2021 mean ($5.8 \pm \text{sd } 3.9$). There were three pups discovered in 2013, two in 2014, five in 2015, two in both 2016 and 2017, ten in 2018, 12 in 2019 (a total which included twins in North Haven), seven in 2020 and nine last year.



Cetaceans

It proved an interesting year for observations of marine mammals; it would seem that Harbour Porpoise numbers are still declining, however it was a record year for sightings of Short-beaked Common Dolphin and, following a blank 2021, Risso's Dolphin made it back onto the year-list (they have now been observed in the waters around Skokholm in nine of the last ten years). An account of each species encountered is listed systematically below, with the totals for the period 2017 to 2022 included in tables to allow for comparisons to be made. The Maximum Daycount refers to the highest number of individuals seen on any one day in a particular month and cetacean-days are the cumulative number of animals seen in a defined period of time (thus the same individual may be included for multiple dates). Additionally the number of days with a sighting is recorded for each month.

Harbour Porpoise *Phocoena phocoena*

Largely owing to their infrequent and rather discreet surfacings, sightings of this diminutive cetacean are very much dependent on the suitability of sea conditions for viewing. Nevertheless data, which has been gathered somewhat consistently for the last ten years, appears to show an alarming long-term decline in both the frequency of encounters and the number of animals seen from Skokholm. With the exception of November, the porpoise-day totals for all months fell below their 2013-2021 means, whilst only July, September and November saw peak daycounts up on their nine year means and only September and November saw the number of days with a sighting top their means. Nevertheless, a total of 115 porpoise-days was logged over the season, this the highest tally since the 125 of 2019; the highest annual total of the last decade is the 391 of 2014, whilst the 2013-2021 porpoise-days mean is $192.6 \pm \text{sd } 102.4$.

Two off the Lighthouse on the evening of 26th March were the first of the year, this the only sighting during the month. As has been the case for the last three years, records over the three months that followed were few; an April total of six was 70% below the nine year mean ($19.7 \pm \text{sd } 14.5$), the nine logged in May was an improvement on last year's three but 64% down on the mean ($24.8 \pm \text{sd } 13.2$)

and June's tally matched the second worst showing of the last decade, with just two animals logged off the Bluffs on the 21st. The frequency of sightings began to increase in July and a monthly tally of 24 was the highest in any month since the 49 of July 2019, however it still fell 33% below the 2013-2021 July mean (35.8 ±sd 25.2). Numbers peaked in August and September, with both months seeing a total of 35 porpoise-days, these 192% and 483% up on the respective 2021 tallies; however the 2013-2021 August mean is 39.7 ±sd 25.7 and that of September 36.8 ±sd 27.8. There were no October sightings for the first time in a decade, whilst two off the Lighthouse on 9th November were the last of the year, this the seventh of the last ten Novembers with a record. The only calves observed this year were singles on 23rd April and 18th September; two were also logged last year.

The total number of Harbour Porpoise logged during each recording month between 2017 and 2022, along with the maximum daycount made each month and the number of days during each month on which there was a sighting.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022 Monthly Total	2	6	9	2	24	35	35	0	2	0
2021	7	12	3	8	8	12	6	1	6	0
2020	0	6	14	2	13	18	6	6	6	0
2019	16	13	19	0	49	9	12	5	1	1
2018	1	14	17	54	27	43	38	5	1	
2017	0	47	31	14	57	49	51	3	0	
2022 Maximum Daycount	2	3	3	2	8	7	12	0	2	0
2021	3	3	2	3	2	3	2	1	6	0
2020	0	4	9	1	4	3	2	4	6	0
2019	11	5	5	0	12	2	4	3	1	1
2018	1	4	4	8	5	11	11	5	1	
2017	0	10	14	7	11	13	23	2	0	
2022 No. of Days Recorded	1	4	4	1	9	11	16	0	1	0
2021	3	7	2	4	6	6	3	1	1	0
2020	0	2	3	2	7	10	3	3	1	0
2019	3	5	8	0	12	5	6	2	1	1
2018	1	4	9	12	14	14	11	5	1	
2017	0	12	8	5	21	14	9	2	0	

Short-beaked Common Dolphin *Delphinus delphis*

Following a lack of sightings during March and April, a pod of six off the Lighthouse on 3rd May were the first of the year; although 57 days later than the first of last year, the 2021 dolphins were the earliest ever seen from Skokholm. Interestingly, animals in 2015 and 2016 are the only other May records this decade. A June dolphin-days total of 16 was close to a 2013-2021 mean of 19.1 ±sd 15.4, however, following 13 on the 9th, the frequency of sightings picked up considerably in July (even more than is typically the case). A daycount of at least 95 on the 28th (which included a pod containing a minimum of 50 animals) contributed to a July total of 274, this 234% up on the 2013-2021 July mean (82.1 ±sd 42.5) and the highest July total in a decade. An August dolphin-days total of 268 was the highest since 2018 and 48% up on the nine year monthly mean (181.0 ±sd 110.6). Records on 16 September dates included daycounts of 50 on the 13th, 90 on the 15th, 65 on the 17th, 75 on the 18th, 120 (including a pod of 70) on the 19th and 55 on the 24th which contributed to a dolphin-days tally of 654, this the highest monthly total in any year this decade; the September total was 627% up on that of 2021 and 245% above the 2013-2021 average (189.6 ±sd 108.4). A dead animal was off South Haven on 30th September. Although there was just one more October dolphin-day than logged in 2021, a total of 36 was the highest of the last ten Octobers (there were no records in this month between 2015 and 2017). A minimum of three off the Lighthouse on the 29th made 2022 the second consecutive year (but just the third of the last decade) with a November record, whilst 11 off the Quarry on 3rd December were the last of the year. Primarily due to a record

number of September dolphin-days, an annual total of 1268 was significantly up on the 438 of last year, indeed it was 152% above the 2013-2021 mean (503.2 \pm sd 180.0) and the highest annual total of the last decade.



The total number of Short-beaked Common Dolphin logged during each recording month between 2017 and 2022, along with the maximum daycount made each month and the number of days during each month on which there was a sighting.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022 Monthly Total	0	0	6	16	274	268	654	36	3	11
2021	39	16	0	45	87	87	90	35	39	0
2020	4	0	0	15	90	148	165	26	0	9
2019	0	6	0	5	57	95	77	20	7	68
2018	0	0	0	23	25	309	161	16	0	
2017	0	19	0	25	111	222	379	0	0	
2022 Maximum Daycount	0	0	6	10	95	62	120	14	3	11
2021	31	9	0	25	19	46	30	15	10	0
2020	4	0	0	12	23	27	43	6	0	9
2019	0	6	0	3	10	16	28	10	7	68
2018	0	0	0	14	10	45	21	8	0	
2017	0	19	0	25	24	45	120	0	0	
2022 No. of Days Recorded	0	0	1	2	14	17	16	3	1	1
2021	2	3	0	3	11	11	6	3	5	0
2020	1	0	0	2	10	12	14	6	0	1
2019	0	1	0	2	11	14	7	2	1	1
2018	0	0	0	3	5	18	20	4	0	
2017	0	1	0	1	10	19	15	0	0	

Four calves amongst a loose pod of 40 on 10th July were the first of the year. There followed two calves on both the 22nd and 25th and three on the 26th, 27th and 28th (the latter of which included one still exhibiting foetal folds). In August there was one on the 1st and two on both the 7th and 31st, whilst in September there were at least five calves with a pod of 30 on the 15th and three on the 26th which were the last to be logged. A total of 30 calf-days was up on the 17 of 2021 and matched that of 2017 as the highest of the last decade.

Risso's Dolphin *Grampus griseus*

A pod of six off the Lighthouse on the evening of 30th May were the first since 2020. Four off the

Lighthouse on 13th August was the only other record this year. Risso's Dolphin have now been logged in nine of the last ten years. Sightings have been somewhat erratic in the past; there were observations in 15 years between 1958 and 1998, but no documented encounters in the 14 years between 1999 and 2012.

Fish

Common Thresher Shark *Alopias vulpinus*

A single fish was observed from the Lighthouse as it breached three times in the direction of The Smalls on 20th September. This was the first record since one watched from the Lighthouse on 23rd July 2019 which remains the only other sighting of this species from Skokholm. Island staff and guests chumming for seabirds towards the Celtic Deep (approximately 20 miles offshore) watched one from the Dale Nelson as it breached spectacularly in 2017, whilst a member of the Dale Sailing crew saw a breaching individual from a boat positioned half a mile to the west of Skokholm Lighthouse in 2015. It would appear that this remarkable shark is occurring more regularly in the waters around the Island.

Atlantic Bluefin Tuna *Thunnus thynnus*

One, possibly two, seen during a seawatch from the Lighthouse on 9th July, was just the second ever sighting from the Island. A single clearing the water off the Lighthouse on 29th September 2019 was the first to be documented in the sea around Skokholm. Both sightings have coincided with a period which has seen an increase in the number of British records. Although the number seen in UK waters has fluctuated over the last two centuries, an increased presence since the early 2000s is thought to be due to hydroclimatic variability as a result of the Atlantic Multidecadal Oscillation (AMO) (Faillettaz *et al.*, 2019). The AMO is a climatic cycle affecting the sea surface temperature of the North Atlantic; a negative phase causes temperatures to decrease and a positive phase causes temperatures to increase, the switch occurring approximately every 60 to 120 years. The number of warm blooded Atlantic Bluefin Tuna in British waters increases during positive phases; the AMO has been in such a phase since the mid-1990s (Faillettaz *et al.*, 2019).

European Eel *Anguilla anguilla*

Eels are encountered irregularly on the Island, with increased sightings occurring in years when staff or guests lamp waterbodies more frequently after dark. As a result of inconsistent surveying, a comparison between years is difficult, although documenting their continued presence is important. April saw singles observed at Billy's Dyke on the 19th, at Orchid Bog on the 20th and in the Well Stream on the 27th. A larger individual was in the Well Stream on 16th May, there was a fully grown adult in North Pond on 14th June and two adults were found in Orchid Bog on 20th June. Orchid Bog produced September sightings of two on the 19th, one ashore on the 21st and three on the 26th. Lockley reported elvers wriggling up the cliffs at freshwater outfalls around the Island and mature adults have been noted in several ponds historically (Thompson, 2007). The digitised records suggest that this species previously occurred, or at least was recorded, in larger numbers; high totals include the 74 of 1954 (when there was a peak daycount of 11 on 13th September) and an impressive 190 in 1955 (when there was a peak of 26 on 15th August).

Additional Species

Orange Ping-pong Bat Fungus *Favolaschia calocera*

An unusual, bright orange fungus was found on dead Elder twigs in the leaf-litter adjacent to the Library Net on 3rd November. Further investigation suggested the fruiting bodies to be those of the Orange Ping-pong Bat fungus and this was confirmed by David Harries, the County Recorder for Fungi in Pembrokeshire. This is a subtropical species of fungus which was originally described from specimens taken in Madagascar, although it has recently arrived to the UK. First found in Cornwall in

2012, it has since expanded its range; most records still come from Cornwall and Devon, but an increasing number are being found in west Wales. It was first reported in Pembrokeshire in 2020 and has since been found at several sites in both the north and south of the county (WWBIC, 2022).



Observers, Photographers and Literature Cited in the Text

Observers cited in the text. Many other people provided records at the evening log, far more than can be listed here. We are hugely grateful to everybody who contributed during the 2022 season.

AP	Alys Perry	GE	Giselle Eagle	MS	Margaret Stewart
AWS	Amy Schwartz	IMB	Ian Beggs	OP	Ollie Padget
BV	Bart Vercruyse	JA	Jackie Adams	PB	Phil Blatcher
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DDJ	Diek De Jonghe	LM	Luke Marriner	RDB	Richard Brown
DV	Denbeigh Vaughan	ML	Miguel Lurgi	WH	Dr Will Hurt

All photographs © Richard Brown and Giselle Eagle except for Dotterel on North Pond © Luke Marriner, drake Eider © Margaret Stewart, Oystercatcher © Andy Teasdale, Whimbrel on Orchid Bog © Rhodri Llewellyn, Bar-tailed Godwit © Rhodri Llewellyn, Green Sandpiper © David Jackman, Mediterranean Gull © Luke Marriner, Great Black-backed Gull with Rabbit © Paul Giles, Great Black-backed Gulls with Puffin © Megan Gee, Lesser Black-backed Gull attempting to move Great Black-backed Gull © Andy Teasdale, Lesser Black-backed Gull and Puffin © Rhodri Llewellyn, Razorbill in flight © Phil Arnold, Puffin in flight © Mike Turtle, Puffin with fish © Phil Arnold, Storm Petrel on South Haven Wall © Phil Mugridge, Storm Petrel ringing under a full moon © Kenny Cramer, Fulmar in flight © Paul Giles, three Fulmar © Andy Teasdale, Manx Shearwaters at night © Bart Vercruyse and Pol Dewulf, Short-eared Owl hunting sequence © Emily Dennis, Kingfisher © Bart Vercruyse, Robin © Bart Vercruyse, interesting Yellow Wagtail © Luke Marriner, Meadow Pipit © Bart Vercruyse and 1948 Olive-backed Pipit © Skokholm Bird Observatory.

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