

# Seal Monitoring on Skomer Island Report for 2024

**Report title: Seal Monitoring on Skomer Island Report for 2024**

**Year: 2024**

**Authors: E. Whatley<sup>1</sup>, L. Newman<sup>2</sup>**

**Address:**

<sup>1</sup> Department of Bioscience, Swansea University, Faculty of Science and Engineering, SA2 8PP

<sup>2</sup> Skomer Island, Lockley Lodge, Martin's Haven, Haverfordwest, SA62 3BJ



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



**Swansea  
University**  
**Prifysgol  
Abertawe**

**This report should be cited as:** Whatley, E. & Newman, L. 2024. Grey Seal Monitoring on Skomer Island Report for 2024. The Wildlife Trust of South and West Wales and Swansea University.

## Table of Contents

Executive summary .....	4
Background and introduction .....	5
Methodology.....	6
Pup counts .....	6
Haul outs .....	7
Results.....	8
Pup numbers.....	8
Site by site.....	14
North Haven.....	14
Matthew’s Wick .....	15
Castle Bay.....	16
Driftwood Bay .....	18
South Haven.....	18
South Stream Cave.....	20
High Cliff Boulders.....	21
The Wick.....	22
Other sites.....	23
Timing of breeding .....	23
Haul outs .....	25
Scarred individuals .....	30
Movements .....	31
Pollution, disturbance, disease.....	32
Improvements to the project.....	36
Acknowledgments.....	36
References .....	37
Appendices.....	38
Appendix 1    SMRU Age classification of pups .....	38
Appendix 2    2024 Week Dates.....	38

## Table of Figures

Figure 1: Number of seal pups born in the Skomer MCZ 1983-2024. ....	8
Figure 2: Weekly seal pup births on Skomer Island 2018-2024.....	9
Figure 3: The total number of pups born on Skomer island in 2024. ....	11
Figure 4: Total number of pups on Skomer Island in 2024. ....	12
Figure 5: Percentage of seal pups born at each site in 2024. ....	12
Figure 6: Weekly seal pup deaths 2021-2024.....	13
Figure 7: Number of seal pups born on North Haven 1983-2024. ....	14
Figure 8: Weekly seal pup births on North Haven in 2024.....	15
Figure 9: Number of seal pups born on Matthew’s Wick 1983-2024.....	15
Figure 10 Weekly seal pup births on Matthew’s Wick in 2024 .....	16
Figure 11: Number of seal pups born on Castle Bay 1983-2024. ....	17
Figure 12: Weekly seal pup births on Castle Bay in 2024.....	17
Figure 13: Number of seal pups born on Driftwood Bay 1983-2024.....	18
Figure 14: Weekly seal pup births on Driftwood Bay in 2024.....	18
Figure 15: Number of seal pups born on South Haven 1983-2024 .....	19
Figure 16: Weekly seal pup births on South Haven in 2024.....	20
Figure 17: Number of seal pups born at South Stream Cave 1983-2024. ....	21
Figure 18: Total number of pups observed at South Stream Cave in 2024. ....	21
Figure 19: Number of seal pups born on the High Cliff Boulders 1983-2024.....	22
Figure 20: Number of seal pups born on the High Cliff Boulders 1983-2024.....	22
Figure 21: Weekly seal pup births at The Wick in 2024.....	23
Figure 22: The day of the year (DOY) in which the first seal pup of the season was born on Skomer Island.....	24
Figure 23: The day of the year (DOY) in which the half of the seal pups of the season have been born on Skomer Island.....	24
Figure 24: Peak haul-out counts Skomer Island 1983-2024. ....	25
Figure 25: The number of seals hauled out in 2024 by date. ....	26
Figure 26: The number of seals hauled out on North Haven (including Rye Rocks) in 2024.....	27
Figure 27: The number of seals hauled out on Castle Bay in 2024.....	27
Figure 28: The number of seals hauled out on Driftwood Bay in 2024. ....	28
Figure 29: The number of seals hauled out on Matthew’s Wick in 2024.....	28
Figure 30: The number of seals hauled out on Garland Stone in 2024. ....	29

Figure 31: The total number of seals hauled out on the six locations monitored: North Haven, Driftwood Bay, Castle Bay, Matthew’s Wick, Garland Stone and Rye Rocks. ....	29
Figure 32: Scarred Skomer cow 23.SC.BK.156.DWB observed at The Slabs (top) in 2024 and at Driftwood Bay (bottom) in 2023.....	30
Figure 33: Scarred Skomer cow 23.SC.NET.242.DWB observed on Driftwood Bay in 2023 (left) and in 2024 (right). ....	31
Figure 34: Tagged seal SRI-J-087 (Spruce) photographed on North Haven Beach on 10/09/2024.....	32
Figure 35: Unidentified tagged seal photographed on South Haven on 14/09/2024 .....	32
Figure 36: Headless weaned pup (29/09/2024) on North Haven main beach. ....	34
Figure 37: Headless immature seal (05/10/2024) on North Haven slip beach.....	34
Figure 38: Weaned pup missing mid-section (10/10/2024) on North Haven main beach.....	35

## Table of Tables

Table 1: Monthly number and percentage of seal pup births on Skomer Island 1983-2024. ....	9
Table 2: Number of dead seal pups on Skomer Island in 2024.....	13
Table 3: Disturbances to grey seals occurring on Skomer Island in 2024.....	33

## Executive summary

The Grey Seal (*Halichoerus grypus*) is an Annex II species for which a Special Area of Conservation (SAC) can be designated and a primary reason for the selection of the Pembrokeshire Marine SAC. They are also recognised as a feature of the Skomer Marine Conservation Zone (MCZ).

In 1983, a systematic approach to seal monitoring on Skomer was established and continued, using the same or at least similar methodology, albeit at varying levels of intensity, until 1996 when Jim Poole standardised the seal monitoring on Skomer further by introducing the Seal Monitoring Handbook (Alexander, 2015). In 2024, the breeding activities of grey seals on Skomer Island were observed and recorded using a cliff-top vantage point methodology, with no beach access or marking of individual pups. This was a significant change from previous years, and therefore the results of the monitoring in 2024 should not be directly compared to previous years.

In 2024, 159 pups were born on Skomer island, which is 91 pups less than in 2023. On the Marloes Peninsula 167 pups were born, giving a total of 326 pups for the whole Skomer MCZ this year, which is 99 less than last year.

2024 was an early pupping season once again, with the first pup of the season born on Matthew's Wick on 27/07/24. The peak of the pupping season was in weeks 36 and 37 (when 61 pups were born). The most productive beaches were Matthew's Wick (37 pups) and South Haven (37 pups).

A total of 41 pups were found dead on Skomer Island in 2024 (37 pups and 4 weaners), which is 22 pups less than last year. We cannot confirm the cause of death of any of these pups, however abandonment has historically been the most common cause.

The maximum haul-out (on the main haul-out sites) in 2024 was 388 seals, which occurred on 22/10/24. North Haven had a peak haul-out of 96 seals on 07/11/24. Driftwood Bay had 46 seals on 22/10/24 Matthew's Wick had 104 seals on 22/10/24 and Castle Bay had 135 seals on 22/10/24.

Over 40 distinct, tagged or scarred seals were photographed in 2024. 24 seals with tags and scars were identified and catalogued, 9 of which were reidentified from previous years. Eleven seals were photographed with obvious signs of entanglement, six of them had distinct net scars.

The longest returning cow observed this year was 17.SC.RS.092.SBS, which was first observed on Skomer when pupping in 2017. None of the bulls observed in 2024 had been observed on Skomer Island before 2023. Three tagged seals were observed this year, one was known from previous years, and one could not be identified.

## Background and introduction

In January 2024, NRW withdrew all funding for the Grey Seal monitoring project on Skomer Island, invoking the annual break clause in the 5-year contract with the Wildlife Trust of South and West Wales (WTSWW). The decision was based purely on budget restrictions which forced NRW to re-evaluate the use of their internal monitoring priorities. The decision was no reflection on the value of the study or quality of the data generated.

Without funding for a full-time project officer and peak-season field assistant, plus the contract fund to cover staff training, kit and insurance, the project as described in the Grey Seal Management Plan (Alexander, 2015) was unable to continue. MCZ staff continue with seal monitoring on the mainland sites, using their current cliff-top survey method.

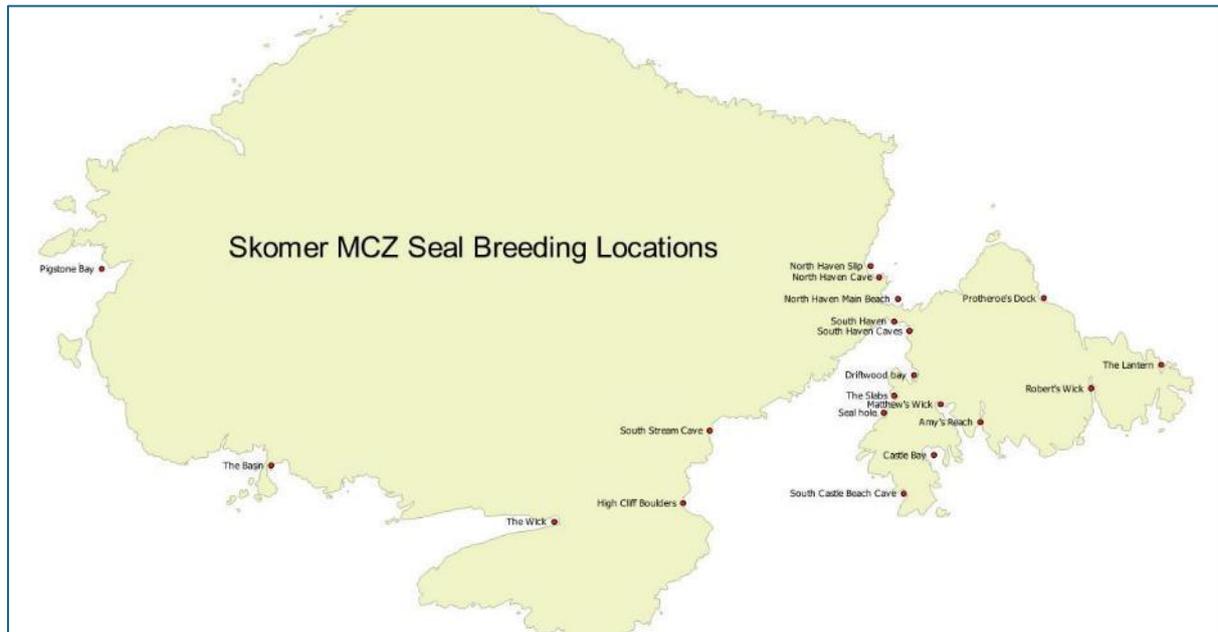
Due to the reduction in capacity and resources, the fieldwork and reporting elements have been streamlined to allow WTSWW to monitor general trends whilst a long-term solution is found, but without the high level of detail achieved previously. All studies are observational, from cliff-top vantage points. Beaches and cave and cove pupping sites were not accessed, and seal pups were not individually marked. Visits to the main pupping sites and haul-out sites were made every three days.

Grey seals (*Halichoerus grypus*) were monitored on Skomer Island between 6<sup>th</sup> August and 13<sup>th</sup> November in 2024.

# Methodology

The full methodology, including site by site descriptions can be found in Seal monitoring 2024 (Newman & Morgan, 2024). This revised method was agreed with the Skomer MCZ team. Hereafter is a breakdown of important methodology changes and differences between the most recent survey (Büche & Bond, 2023) and 2024.

## Pup counts



The sites monitored in 2024 were as follows: North Haven (including slip), South Haven, Driftwood Bay, Matthews Wick, Castle Bay, South Stream Cave, High Cliff Boulders, The Wick. Each site was monitored from the cliff top vantage points and no beach or cave visits were made in 2024.

Sites were monitored every three days from 6<sup>th</sup> August until 26<sup>th</sup> October from when visits were made weekly due to fewer pups being born and staff availability. During this period, one count was missed on 16<sup>th</sup> October. The final visit of the year was made on 13<sup>th</sup> November. When monitoring each site, pups were counted for the following two categories:

- Pups born in last three days
- Total number of pups.

Due to the change in methodology, the grey seal pups included in this report are the seal pups identified within three days of their birth, not those first observed after their death or those first identified three days after their birth as it cannot be confirmed if or where these pups were born on Skomer Island. Therefore, the final pup count for 2024 is lower when compared to previous years. Classification of pups born in the last three days was informed by the Sea Mammal Research Unit (SMRU) age classification of pups (Appendix 1). Due to the change in methodology, it is not possible to present a survival rate.

## Haul outs



The haul out sites monitored in 2024 were Castle Bay, Matthews Wick, Driftwood Bay, North Haven, Rye Rocks and the Garland Stone. Due to the distance between some sites, the Garland Stone was not counted when time was short, or staff availability was limited by other commitments

Haul out counts were made during the regular seal rounds every three days and all counts were completed in the two hours either side of low tide. All counts were made in the same low tide period. All animals at the haul out were counted and were categorised into the following categories:

Bull, Cow, Immature, Weaner, Pup, Unknown.

The first haul out counts were made on 9<sup>th</sup> August and were counted every three days until 26<sup>th</sup> October when counts were then made weekly until 13<sup>th</sup> November. One count was missed on 16<sup>th</sup> October.

# Results

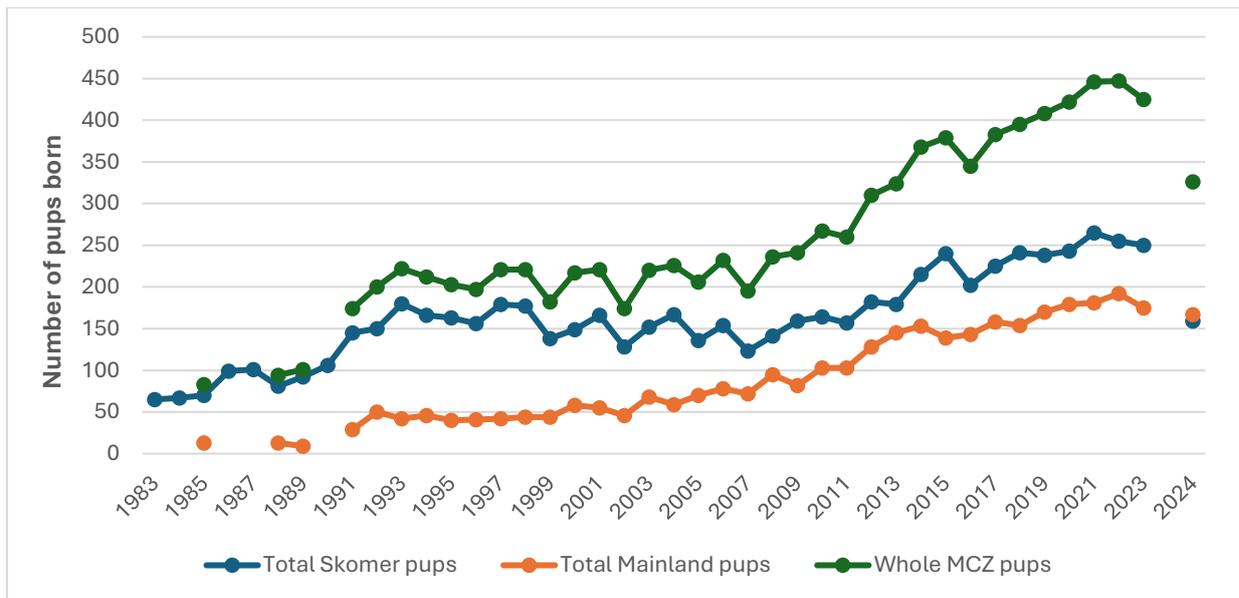
## Pup numbers

In 2020, a new record for the highest number of pups born on Skomer Island was set, when 243 pups were born. A new record was once again set in 2021 when 265 pups were born. This record has not since been broken as 255 and 250 pups were born were born in 2022 and 2023 respectively.

159 pups are known to have been born on Skomer Island in 2024, which is 91 less than in 2023. This decrease in the number of pups born is likely due to the change in the methodology used to observe these pups and is not an exact reflection of the number of pups born on Skomer Island in 2024.

These 159 pups were first observed within 72 hours of their birth and were therefore likely born on Skomer Island. At least 23 additional pups were observed approximately 72 hours after their birth, these pups may have been born in a location within the Skomer MCZ that is hidden from view and therefore cannot be included in this report.

Figure 1: Number of seal pups born in the Skomer MCZ 1983-2024.



In 2024, the first pups of the season were born on Matthew's Wick, these two pups were observed on 06/08/2024, the first monitoring date of the season. The eldest of these two pups was approximately 10 days old on 06/08/2024, so is estimated to have been born in 27/07/2024. In the years prior to 2021, the peak of the pupping season occurred in weeks 38 and 39. The peak of the 2024 pupping season was during weeks 36 and 37, when 30 and 31 pups were born respectively, so 2024 reflects the recent shift in the timing of breeding (see Figure 2 and Appendix 2).

Figure 2: Weekly seal pup births on Skomer Island 2018-2024.

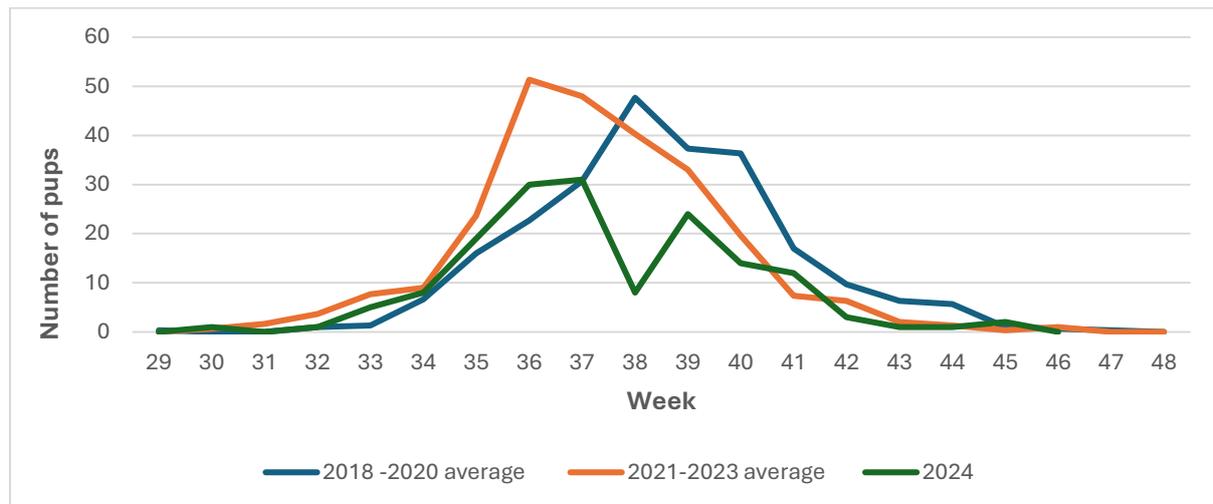


Table 1: Monthly number and percentage of seal pup births on Skomer Island 1983-2024.

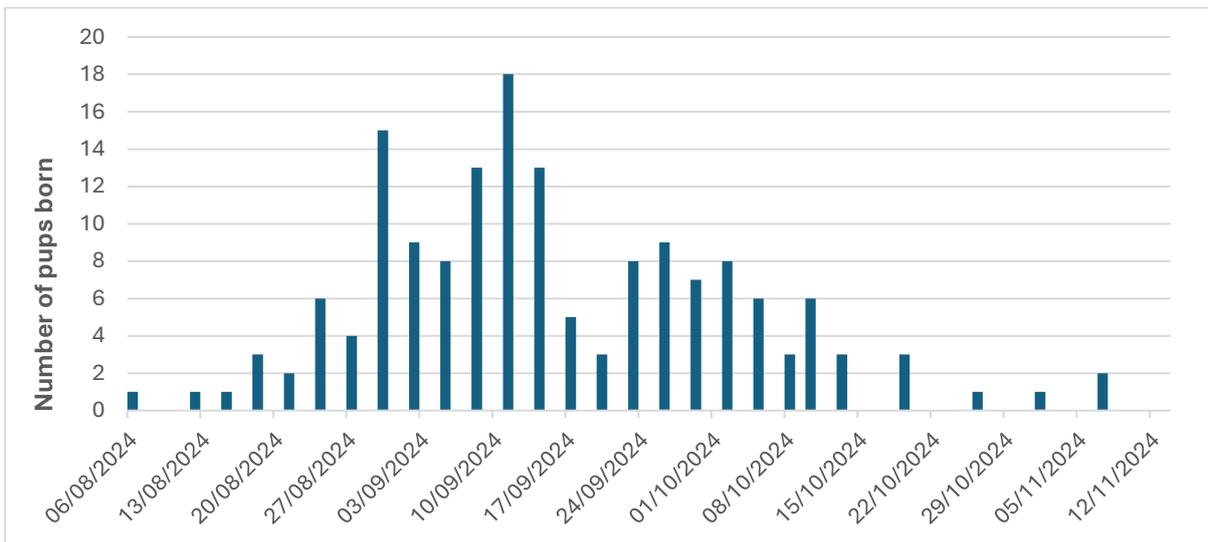
Year	July	August	September	October	November
2024	1 (0.6%)	33 (20.6%)	93 (58.1%)	30 (18.8%)	3 (1.9%)
2023	2 (0.8%)	45 (18%)	175 (70%)	27 (10.8%)	1 (0.4%)
2022	0	28 (11%)	174 (68%)	50 (20%)	3 (1%)
2021	0	22 (8.3%)	184 (69.4%)	56 (21.1%)	3 (1.1%)
2020	0	25 (10.3%)	158 (65.0%)	55 (22.6%)	5 (2.1%)
2019	0	16 (6.7%)	144 (60.5%)	73 (30.7%)	5 (2.1%)
2018	1 (0.4%)	22 (9.1%)	125 (51.9%)	87 (36.1%)	6 (2.5%)
2017	2 (0.9%)	12 (5.3%)	146 (64.9%)	57 (25.3%)	8 (3.5%)
2016	0	16 (7.9%)	96 (47.5%)	84 (41.58%)	6 (3.0%)
2015	0	12 (5%)	91 (37.9%)	114 (47.5%)	23 (9.6%)
2014	0	8 (3.7%)	77 (35.8%)	107 (49.8%)	23 (10.7%)
2013	0	8 (4.5%)	60 (33.5%)	92 (51%)	19 (11%)
2012	0	19 (10%)	65 (36%)	77 (42%)	21 (12%)

2011	0	11 (7%)	55 (35%)	56 (36%)	35 (22%)
2010	0	11 (7%)	75 (46%)	50 (30%)	28 (17%)
2009	0	13 (8%)	62 (39%)	47 (30%)	36 (23%)
2008	0	11 (8%)	79 (57%)	37 (27%)	11 (8%)
2007	0	10 (8.5%)	63 (53%)	35 (30%)	10 (8.5%)
2006	0	11 (7%)	78 (52%)	47 (31%)	15 (10%)
2005	0	12 (9%)	79 (58.5%)	35 (26%)	9 (6.5%)
2004	0	24 (14%)	98 (59%)	37 (22%)	8 (5%)
2003	1 (1%)	17 (11%)	92 (60%)	38 (25%)	6 (4%)
2002	0	21 (16.5%)	62 (48.5%)	42 (33%)	3 (2%)
2001	0	17 (10%)	90 (54.5%)	57 (34.5%)	1 (1%)
2000	2 (1%)	14 (9%)	102 (65%)	40 (25%)	No survey
1999	0	6 (4%)	91 (65%)	44 (31%)	No survey
1998	0	7 (4%)	96 (54%)	70 (39%)	5 (3%)
1997	0	3 (2%)	75 (43%)	85 (49%)	10 (6%)
1996	0	0	61 (39%)	75 (48%)	20 (13%)
1995	0	2 (1%)	49 (30%)	99 (61%)	13 (8%)
1994	0	2 (1%)	51 (31%)	96 (58%)	16 (10%)
1993	0	6 (3%)	67 (38%)	87 (49%)	18 (10%)
1992	1 (0.5%)	4 (3%)	40 (28%)	73 (50%)	27 (18.5%)
1991	1 (1%)	0	20 (14%)	75 (54%)	43 (31%)
1990	0	3 (3%)	17 (16%)	69 (64%)	18 (17%)

1989	0	2 (2%)	18 (19%)	45 (46%)	32 (33%)
1987	0	0	11 (11%)	41 (41%)	32 (32%)
1986	0	4 (4%)	22 (25%)	32 (36%)	34 (39%)
1985	0	0	18 (24%)	20 (27%)	20 (27%)
1984	0	0	9 (13%)	28 (41%)	18 (26%)
1983	0	0	24 (33%)	31 (42%)	15 (20%)

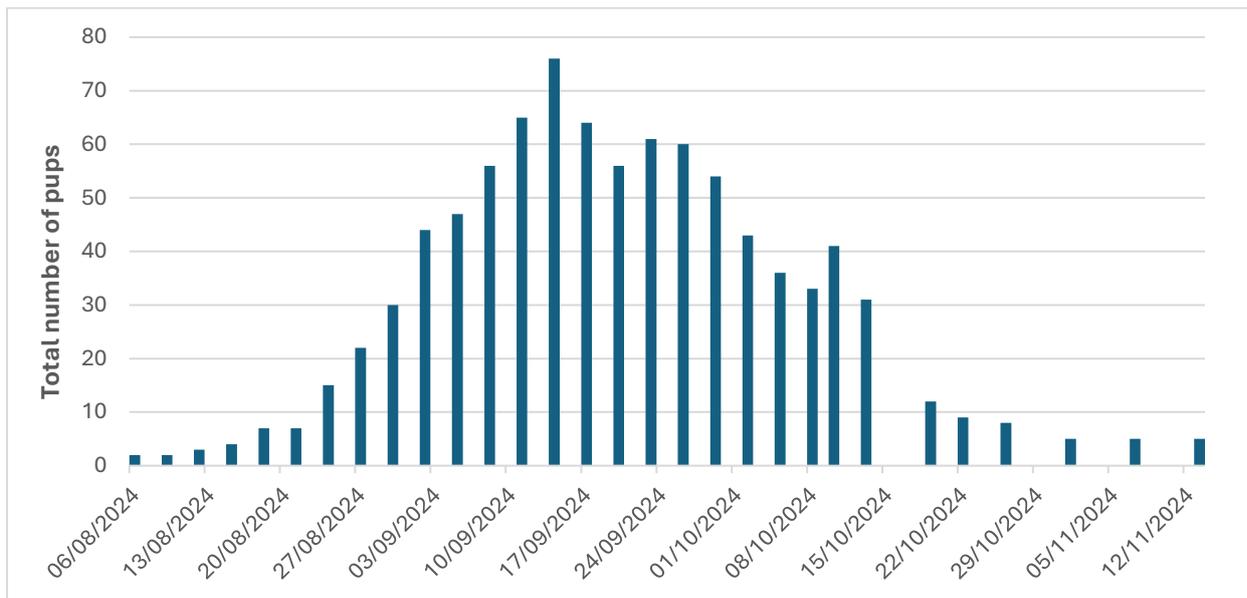
Seal observations continued to mid-December in 1983, 1985 and 1986 and to the end of January in 1984 and 1987. The following data (number of pups) was recorded in these survey years: 1983 Dec: 3 (4%), 1984 Dec: 6 (9%), Jan: 6 (9%). 1985 Dec: 14 (19%), 1986 Dec: 5 (5%), 1987 Dec: 15 (15%), Jan: 5 (5%). From 1989 onwards the survey has only continued up to the end of November, when the island is vacated by staff. The table above also excludes 1988 as it was not possible to extract the data for that year. The full survey (with routine site visits) does not commence until August; however pups are occasionally born in July, and these pups are included in the table.

Figure 3: The total number of pups born on Skomer island in 2024.



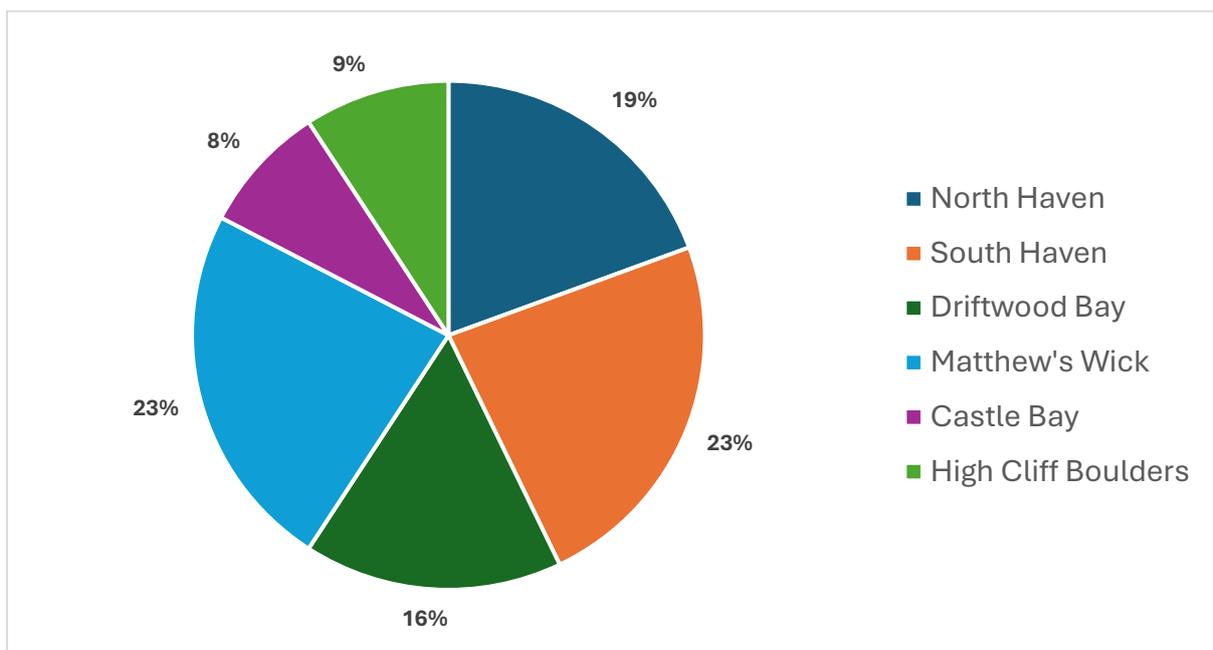
Due to the change in methodology this year, each individual pup was not individually marked and catalogued. The final total of 159 pups born this year on Skomer Island are only the pups observed 0-72 hours after their birth, as it is very likely these pups were born on the Skomer beaches monitored this year and not born elsewhere. Pups first identified 72 hours or more after their birth were discounted from the final total but were still counted during every monitoring visit. The total number of pups observed on Skomer Island during every monitoring date can be seen below (Figure 4).

Figure 4: Total number of pups on Skomer Island in 2024.



The day in which the highest number of seal pups were counted on Skomer Island was 14/09/2024 with a total of 76 pups. In 2024, the most productive beaches were South Haven (37 pups) and Matthew’s Wick (37 pups). In previous years, North Haven has been the most productive pupping site, the fact that North Haven’s pup numbers were lower this year suggests that the new methodology is missing more pups at North Haven compared to other sites, possibly due to the high number of caves and blind spots at the site.

Figure 5: Percentage of seal pups born at each site in 2024 (no pups were identified at South Stream within three days of their birth, so South Stream is discounted from this figure).

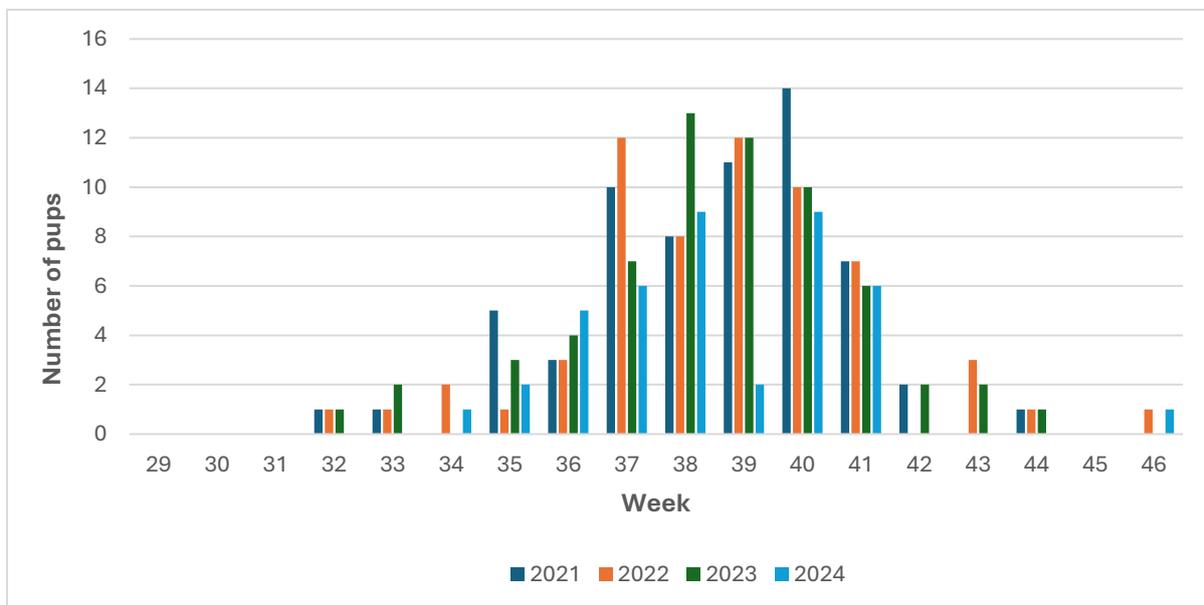


Due to the change in methodology seen this year, it was not possible to calculate the survival rate of the pups born on Skomer Island in 2024. A total of 41 dead pups were observed (37 pups and 4 weaned pups), which is 22 pups less than in 2023, but their cause of death cannot be confirmed. It is likely that many of these pups died before they were counted (as pups were monitored every third day in 2024) and are consequently discounted from the total of 159 pups born this year. The site at which the most seal pups were found dead was Castle Bay (12 pups), followed by North Haven (8 pups) and Driftwood Bay (7 pups). No seal pups were found dead at The Wick or High Cliff Boulders in 2024.

Table 2: Number of dead seal pups on Skomer Island in 2024.

Location	Number of dead seal pups
North Haven	8
South Haven	4
Driftwood Bay	7
Castle Bay	12
Matthew's Wick	8
The Wick	0
South Stream Cave	2
High Cliff Boulders	0
<b>Total</b>	<b>41</b>

Figure 6: Weekly seal pup deaths 2021-2024.



In 2024, the weeks in which the most seal pups were found dead were weeks 38 (9 pups) and 40 (9 pups), 14 pups were found dead in week 40 in 2021, which is the highest number to date. Likely explanations for high numbers of pup mortalities (such as those observed in 2021) are more extreme

weather conditions, higher rates of abandonment or higher rates of infections, however, the reason behind the high number of pup mortalities observed in 2021 cannot be confirmed.

## Site by site

### North Haven

It is difficult to monitor pups on North Haven main beach as there are several caves and overhangs at the back of the beach where pups are often hidden from view, especially during rough weather and on spring tides. The beach is a popular haul-out site, and it can be very difficult to see pups hidden at the back of the beach without disturbing hauled out seals. The North Haven site also includes North Haven Slip and three other caves. In 2024, a total of 30 pups were born on North Haven, 20 less than in 2023. It is likely that more than 30 pups were born on North Haven this year but went unnoticed due to the recent change in methodology. The fate of these 30 pups is unknown; however, eight seal pups were found dead on North Haven this year.

Figure 7: Number of seal pups born on North Haven 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.

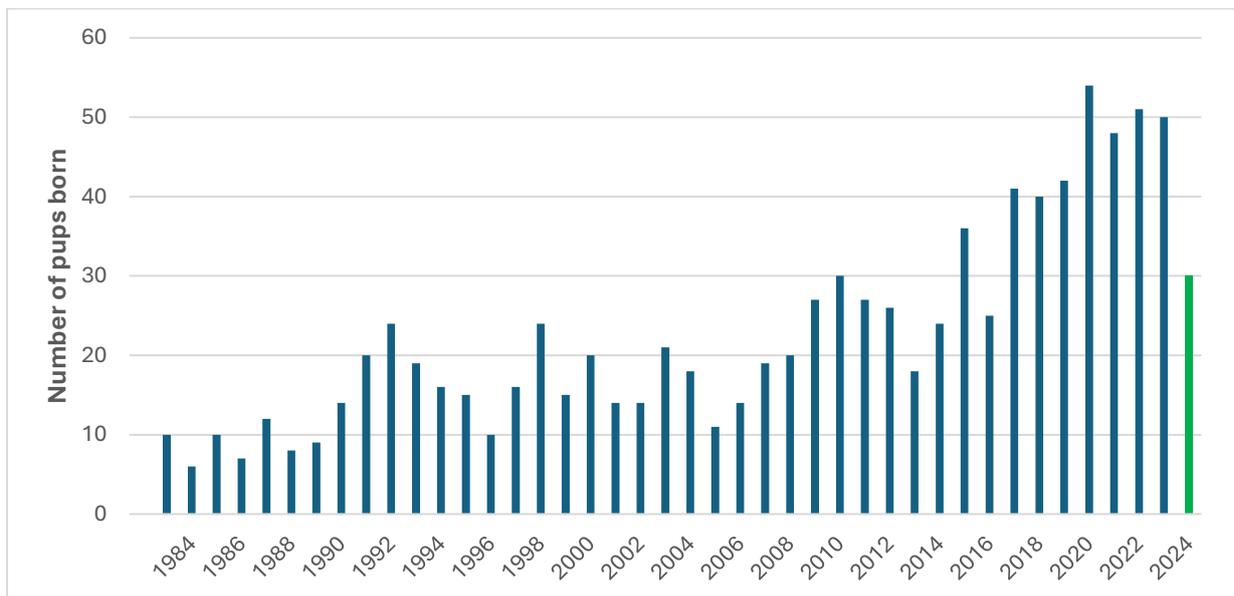
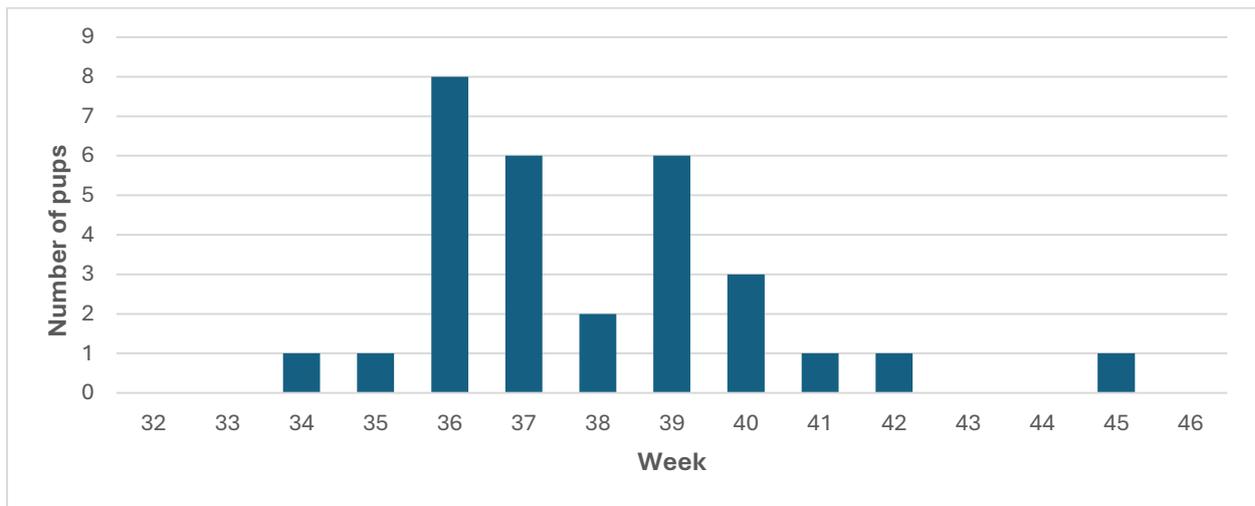


Figure 8: Weekly seal pup births on North Haven in 2024.



### Matthew's Wick

Matthew's Wick was a difficult site to survey with the new methodology, as sections of the site were hidden from the view of the surveyor. Several pups were also reared deep in the cave so could not always be seen. In 2024, 37 pups were born on Matthew's Wick, which is 13 less than in 2023 but only 3 pups less than in 2022. The fate of the 37 pups on Matthew's Wick is unknown, however eight pups were found dead at Matthew's Wick this year, which is seven less than in 2023.

Figure 9: Number of seal pups born on Matthew's Wick 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.

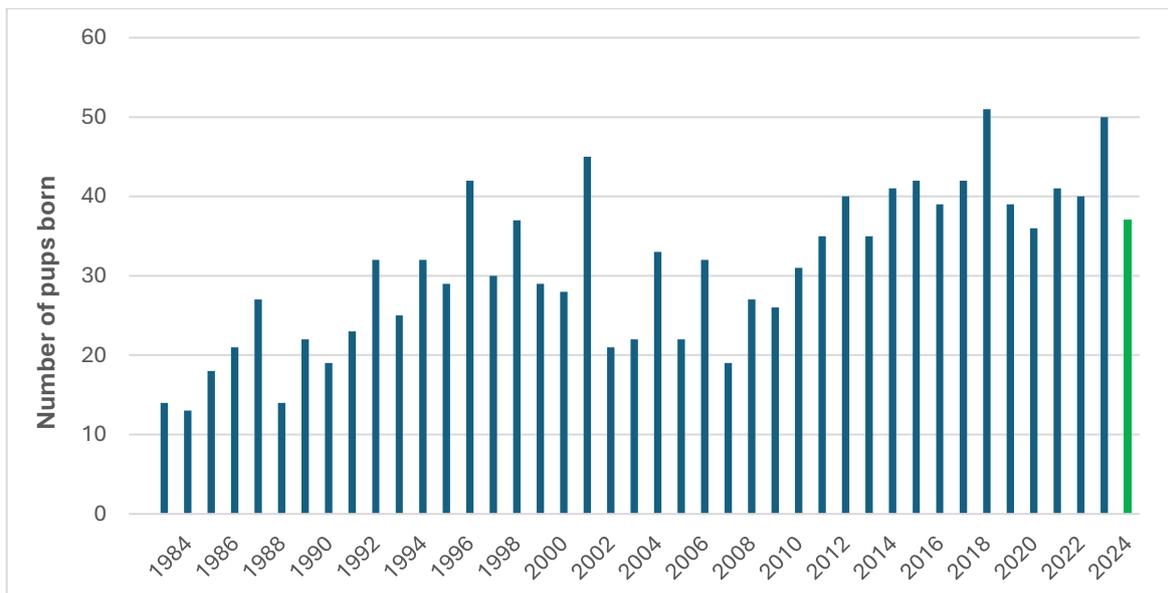
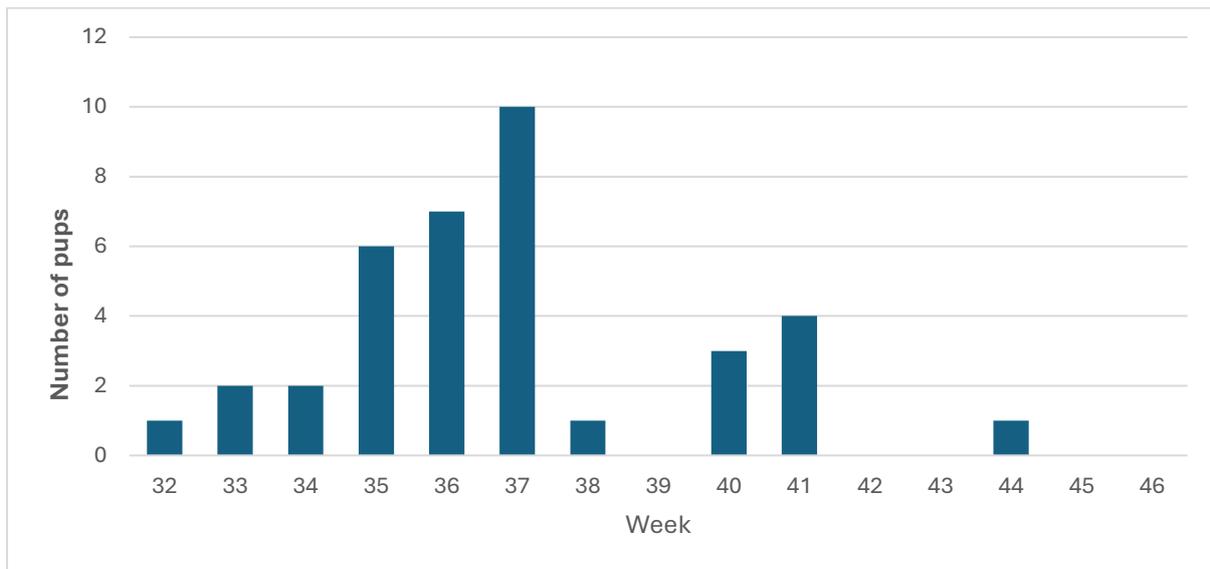


Figure 10 Weekly seal pup births on Matthew's Wick in 2024

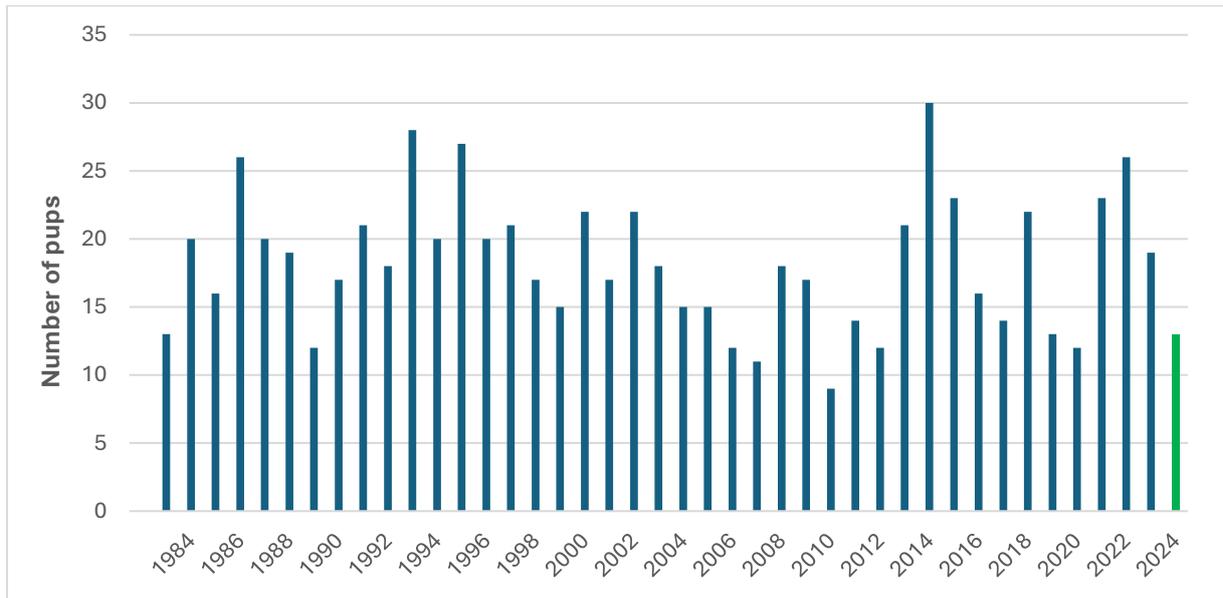


## Castle Bay

In previous years, the Castle Bay pupping site has not been accessed, as this would cause too much disturbance, and pups born there did not get marked. Hence monitoring was more challenging than on other beaches and was potentially less accurate. This could potentially mean that the change in methodology affected the pup counts on Castle Bay less than on other beaches.

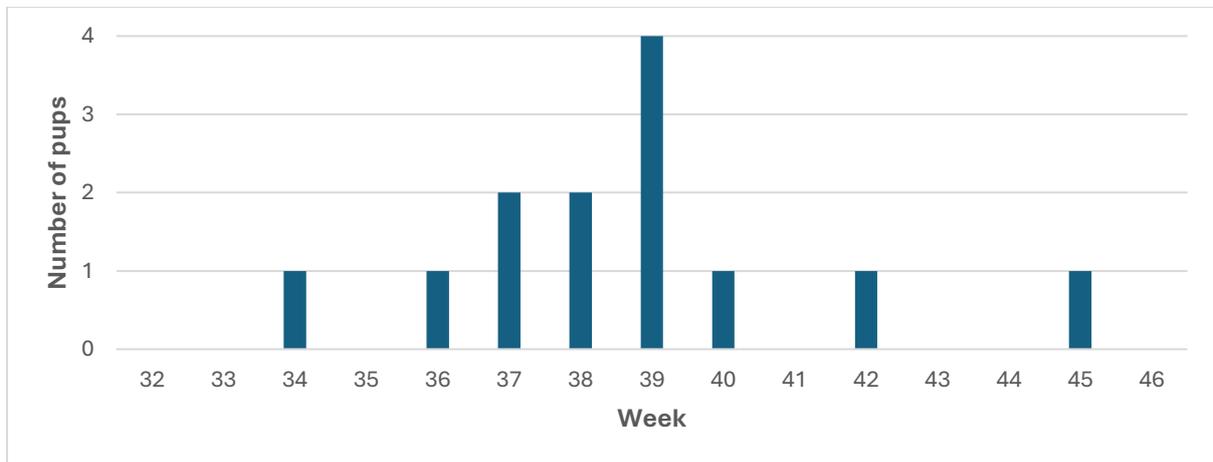
In 2024, 13 pups were born on Castle Bay, which is 6 less than last year. The fate of these pups is unknown; however, 12 pups were found dead on Castle Bay in 2024. It is highly likely that more than 13 pups were born on Castle Bay, and that several died within 72 hours of their birth, so were not counted (due to the new methodology). This would explain the high number of pup deaths compared to the number of births on Castle Bay. In most years, the survival rate at Castle Bay is lower than the whole island rate as the site faces the prevailing wind direction and gets fully flooded during storm tides. Büche and Stubbings (2015) speculated that as Castle Bay is the beach with the largest and most permanent haul-out, the presence of other seals could unsettle cows and pups and lead to abandonment of pups, from the site. This year Castle Bay was once again the site at which the most seal pups were found dead (12 pups, 4 more than at any other beach) which supports Büche and Stubbings' speculation.

Figure 11: Number of seal pups born on Castle Bay 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.



The number of pups born on Castle Bay in 2024 is significantly lower than in the three previous years (23 in 2021, 26 in 2022 and 19 in 2023), which suggests several pups were missed at this site due to the change in methodology.

Figure 12: Weekly seal pup births on Castle Bay in 2024.



## Driftwood Bay

In 2024, 25 pups were born on Driftwood Bay. As South Haven beach and The Slabs are in a close proximity to this site, lots of movement can occur between these sites, therefore the monitoring results may be less accurate than in previous years as pups were not individually marked this year. However, 25 pups is relatively similar to the numbers in previous years (21 pups in 2023 and 26 in 2022) despite the new methodology, which could suggest that the monitoring at Driftwood Bay remains somewhat unchanged, possibly due to the lack of blind spots and caves at the location. The fate of the 25 pups born on Driftwood Bay is not known, however seven pups were found dead on Driftwood Bay in 2024, which is two less than in 2023.

Figure 13: Number of seal pups born on Driftwood Bay 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.

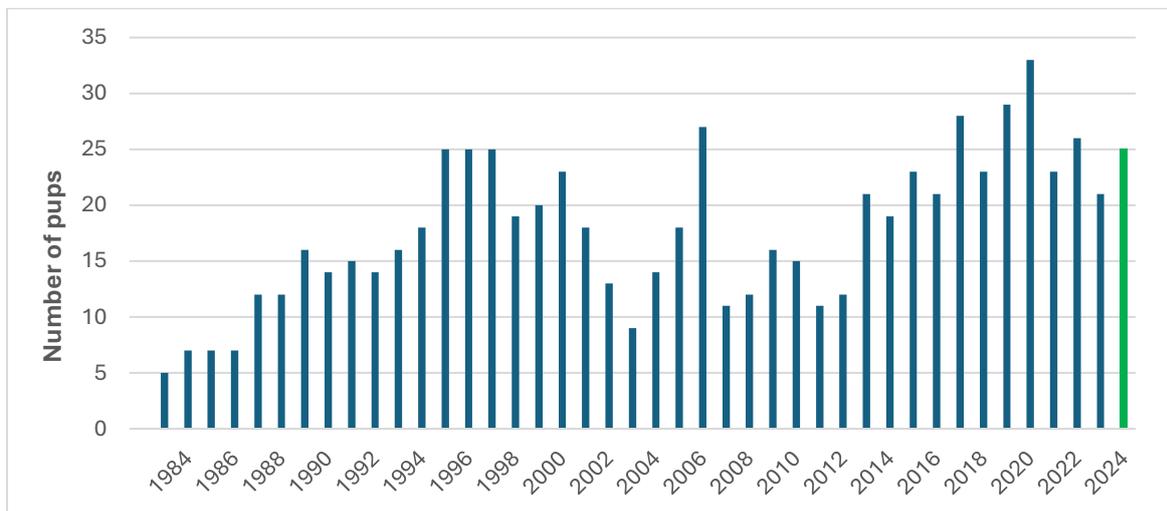
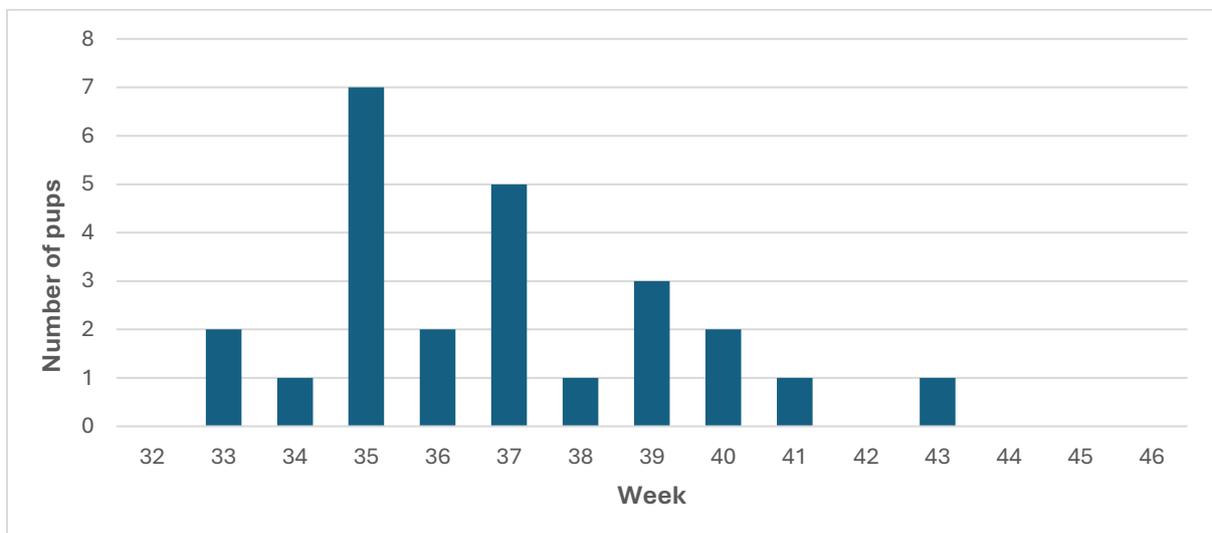


Figure 14: Weekly seal pup births on Driftwood Bay in 2024.



## South Haven

South Haven is a site comprised of the main beach and the two caves between the beach and Driftwood Bay. In previous years, the entrances to the caves at this site could be monitored from across the bay, pups tend to move out of the caves within their first week and can be observed from above thereafter, however in 2024, pups were observed from above, so it is possible that pups in caves may have gone unnoticed in the counts. South Haven beach is a challenging site to monitor as not all pups can be viewed every day and some stay in caves for longer than others.

In 2024, 37 pups were born on South Haven, nine less than in 2023. As movement can occur between South Haven, Driftwood Bay, The Slabs and Seal Hole, and because pups were not sprayed this year, the results of the 2024 monitoring on South Haven may be less accurate than in previous years. The fate of the 37 pups born on South Haven this year is unknown; however, four dead pups were observed on South Haven in 2024, which is five less than in 2023.

Figure 15: Number of seal pups born on South Haven 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.

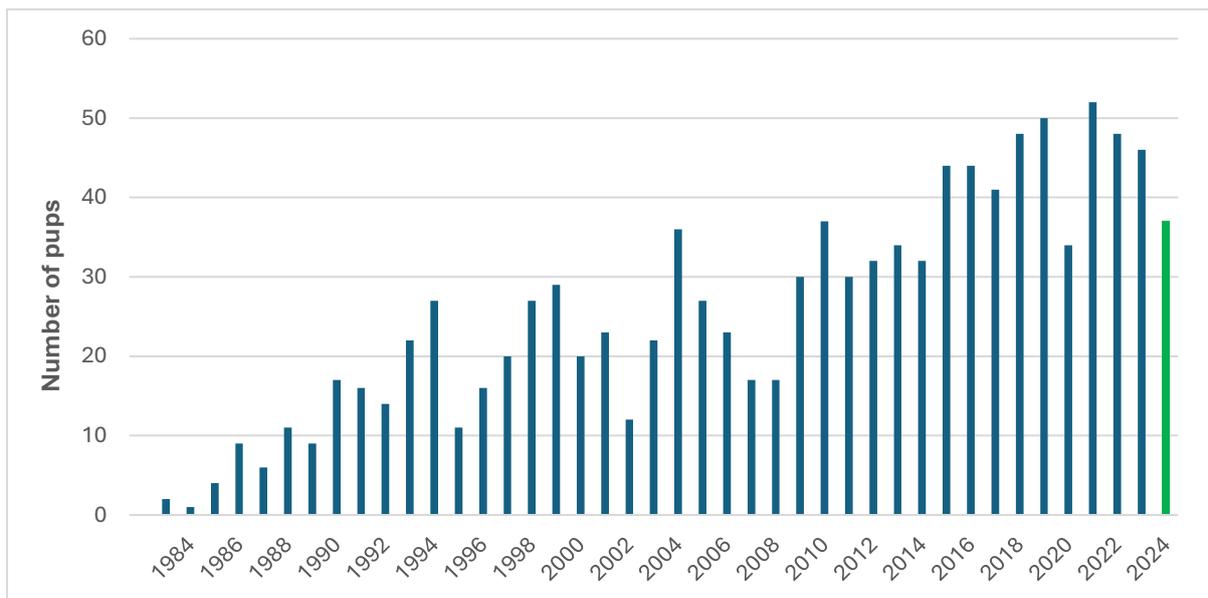
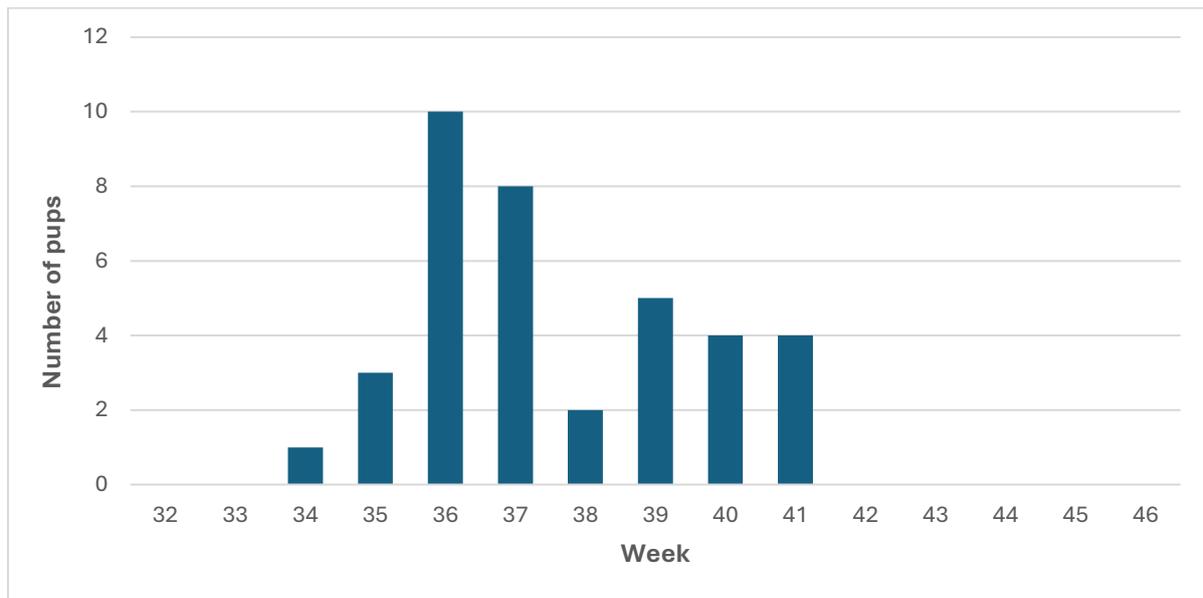


Figure 16: Weekly seal pup births on South Haven in 2024.



### South Stream Cave

South Stream Cave and Boulders is also a hard site to monitor accurately. Pups are often hidden in the cave or behind boulders, and the only sign that they are present is when cows are seen swimming offshore and looking towards the cave or coming ashore. Before 2014 it was customary to check the site daily from The Neck and then follow up any activity with a visit to the cave. However, in August 2014 it was deemed that pups could easily be missed when inspecting from such a distance. South Stream has since been monitored approximately every two to four days from the bottom of the South Stream research path, when weather allows, during the main pupping period. The recent change in methodology has not altered the way in which South Stream Cave is monitored and therefore the results from the 2024 monitoring period will likely resemble those of previous years more than other sites monitored this year.

Due to the change in methodology in 2024, none of the three pups observed at South Stream Cave in 2024 (see Figure 18 below) counted towards the final pup total for 2024, as these pups were observed 72 hours after their birth and therefore could have been born elsewhere. However, it is likely that these pups were reared in the cave and were hidden from view until over three days after their birth. An additional (likely stillborn) pup was also observed in the water near the site, likely bringing the total number of pups born at South Stream Cave in 2024 to four.

Figure 17: Number of seal pups born at South Stream Cave 1983-2024.

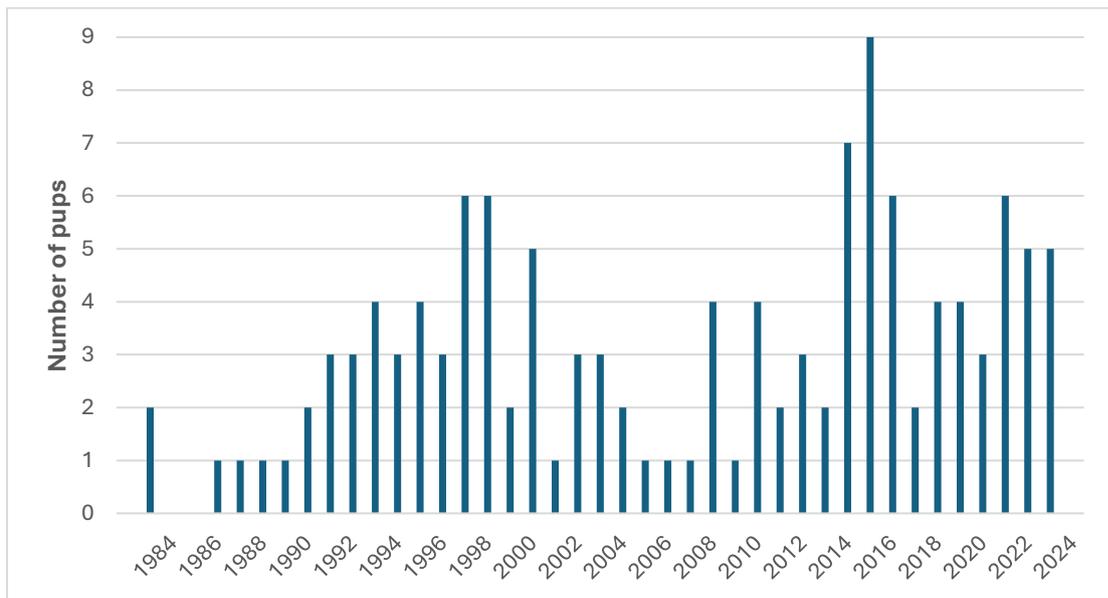
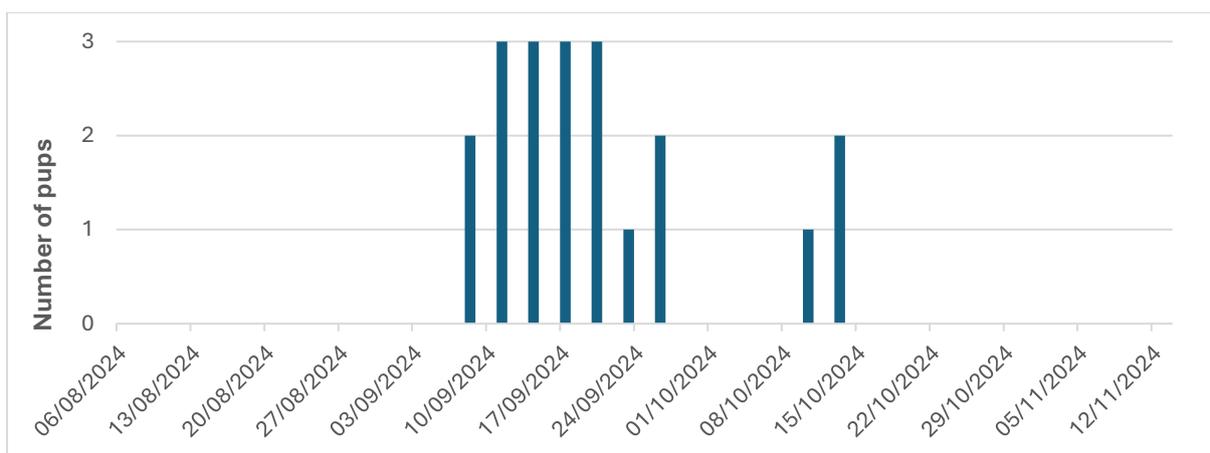


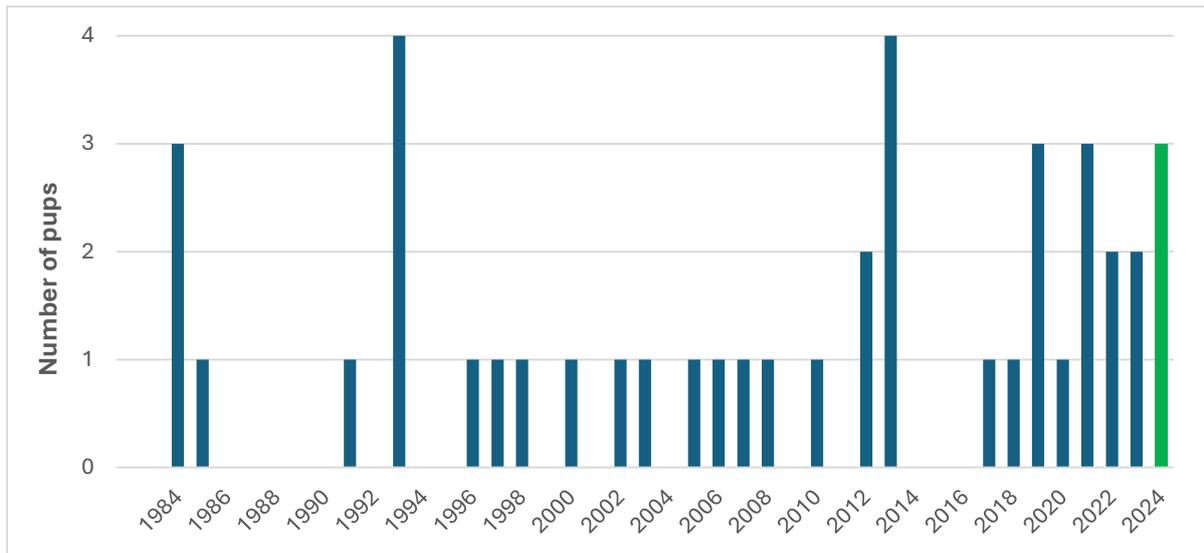
Figure 18: Total number of pups observed at South Stream Cave in 2024.



### High Cliff Boulders

High Cliff Boulders is another location which is difficult to monitor because the boulders at the site can hide pups from view. In 2024, High Cliff Boulders was monitored every three days, when the weather allowed, during the main pupping period. Three pups were born on the High Cliff Boulders this year, which is one pup more than last year. The fate of these pups is unknown, however no dead pups were observed at the High Cliff Boulders in 2024, so it is quite probable that they survived.

Figure 19: Number of seal pups born on the High Cliff Boulders 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.



### The Wick

The Wick was monitored from above every three days. This year, 14 pups were born at The Wick, which is 8 pups less than in 2023. The fate of these pups is unknown, however no dead pups were observed at the Wick this year, so the likelihood of their survival is high. Although, due to the change in methodology in 2024, it is possible that deceased pups were washed away in the two-day period between monitoring dates and were therefore missed from the counts.

Figure 20: Number of seal pups born on the High Cliff Boulders 1983-2024; the number of pups born in 2024 is coloured green to signify the different methodology used.

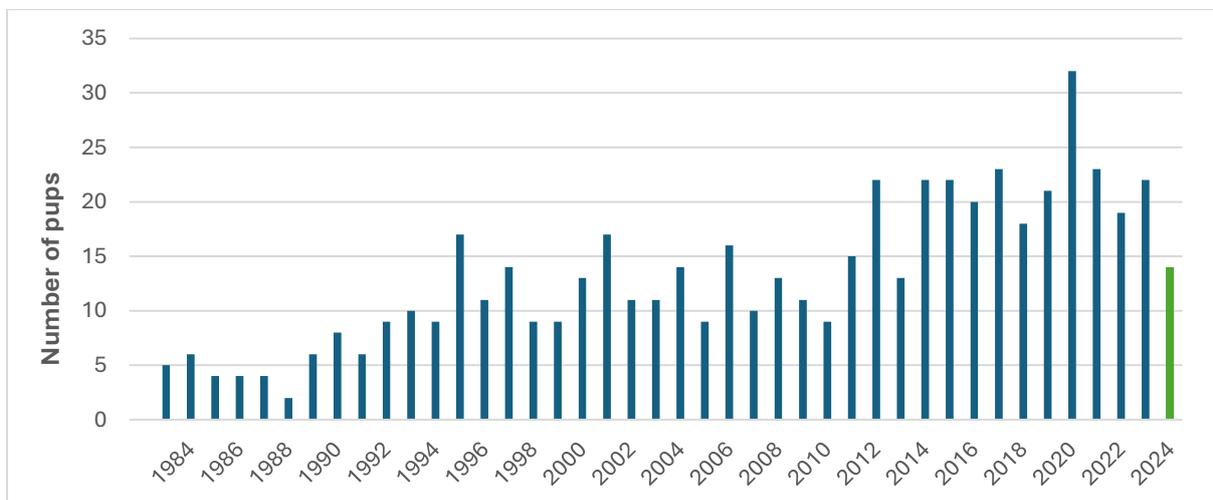
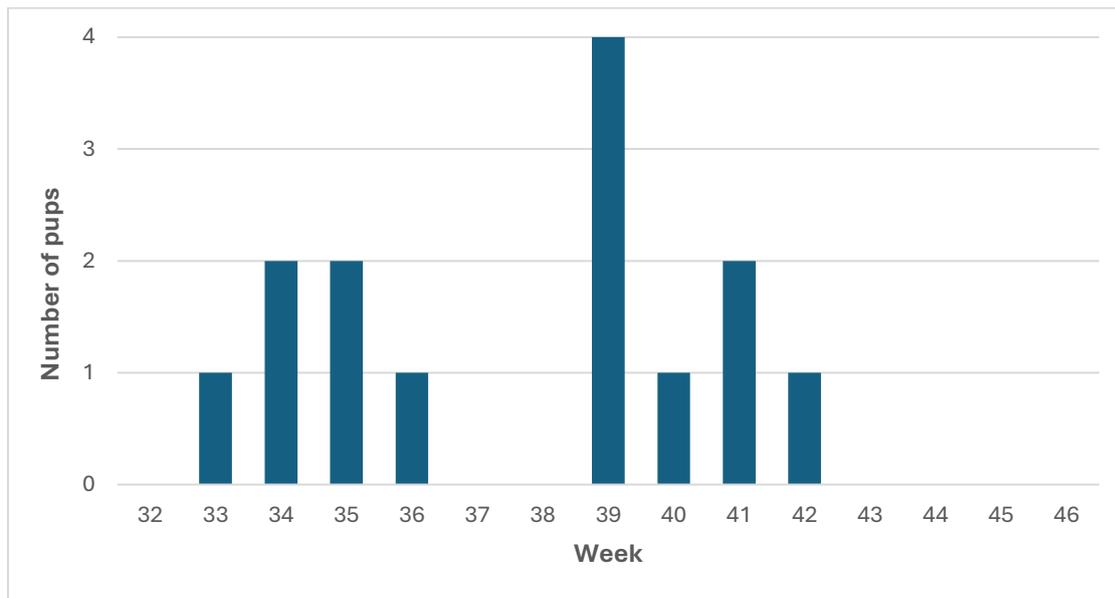


Figure 21: Weekly seal pup births at The Wick in 2024.



### Other sites

Due to the change in methodology, the following locations were not monitored this year: Seal Hole, The Slabs, The Lantern, Protheroe's Dock, Amy's Reach, Mew Stone, Robert's Wick, Tom's House, South Castle Beach Cave, Pigstone Bay and The Basin. Though pups have not been born at Mew Stone, Robert's Wick or Tom's House for several years, a total of 34 pups were born in the rest of these locations in 2023 and 37 pups in 2022. Due to this reduction in survey sites, it is probable that dozens of pups were born at these locations and are missing from counts this year. It is evident that this new methodology is leading to pups being missed, as the total number of pups observed in 2024 was 91 pups fewer than in the previous year.

Due to pups not being individually marked in 2024, wanderers (pups which are found at beaches unaccompanied by a cow, either moulting or just before the start of moult, where their natal beach is unknown) could not be identified. The appearance of wandering pups is likely linked to Spring tide events and storms. As wanderers could not be identified, they may have been included in the 'total pups' figures, but not the 'total pups born' figures.

### Timing of breeding

Monitoring the timing of grey seal breeding is important as it can help shed light on the health of marine ecosystems (Hughes, 2000). 2024 was once again an earlier pupping season, with the first pup likely born on Matthew's Wick on 27/07/24 (the pup was approximately 10 days old on the first survey date - 06/08/24), this is one day earlier than the first pup of 2023 (see Figure 22 below).

There is evidence that suggests the timing of breeding on Skomer Island is getting earlier. In the years prior to 2021, the peak of the pupping season occurred in weeks 38 and 39 (see Figure 2), whereas the peak of the pupping season in 2024 was in weeks 36 and 37. In 2009, the middle of the pupping season (the date in which half of the seal pups were born) was the 30<sup>th</sup> of September, whereas the middle of the pupping season was the 22<sup>nd</sup> of September in both 2023 and 2024 (see Figure 23 below). The earliest pupping season starts have all occurred within the last six years, with the first pups being born on the 18<sup>th</sup> July and 27<sup>th</sup> July in 2018 and 2022 respectively (see Figure 22 below). However, as shown in Figure 23 below, the middle of the pupping season was much earlier in the early 2000s than in the early 1990s, so the shift in phenology may be an uncommon occurrence in the grey seal populations on Skomer Island.

Figure 22: The day of the year (DOY) in which the first seal pup of the season was born on Skomer Island. Day 190 is 9<sup>th</sup> July, day 200 is 19<sup>th</sup> July, day 210 is 29<sup>th</sup> July, day 220 is 8<sup>th</sup> August, day 230 is 18<sup>th</sup> August and day 240 is 28<sup>th</sup> August.

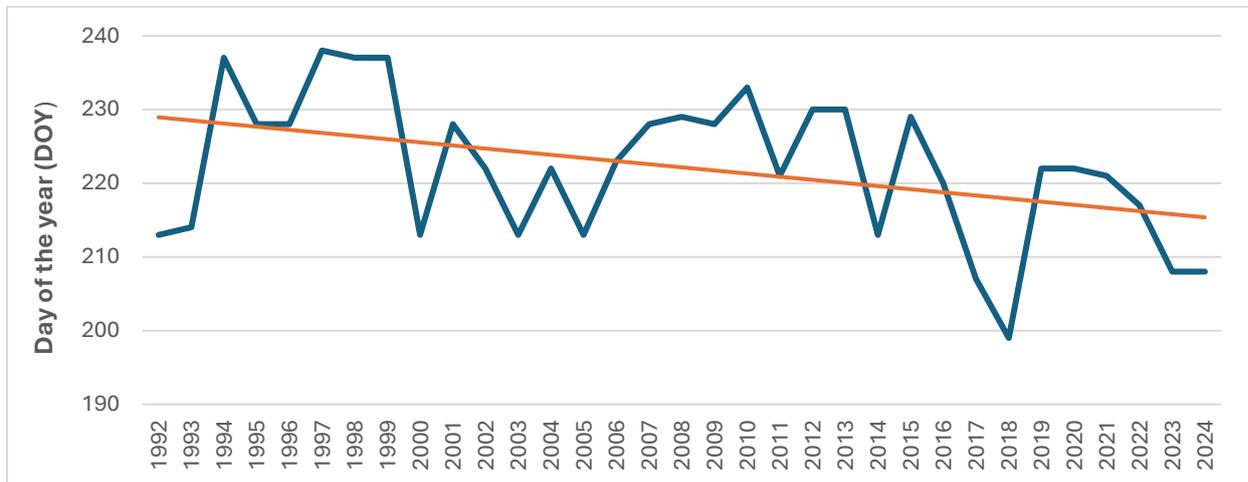
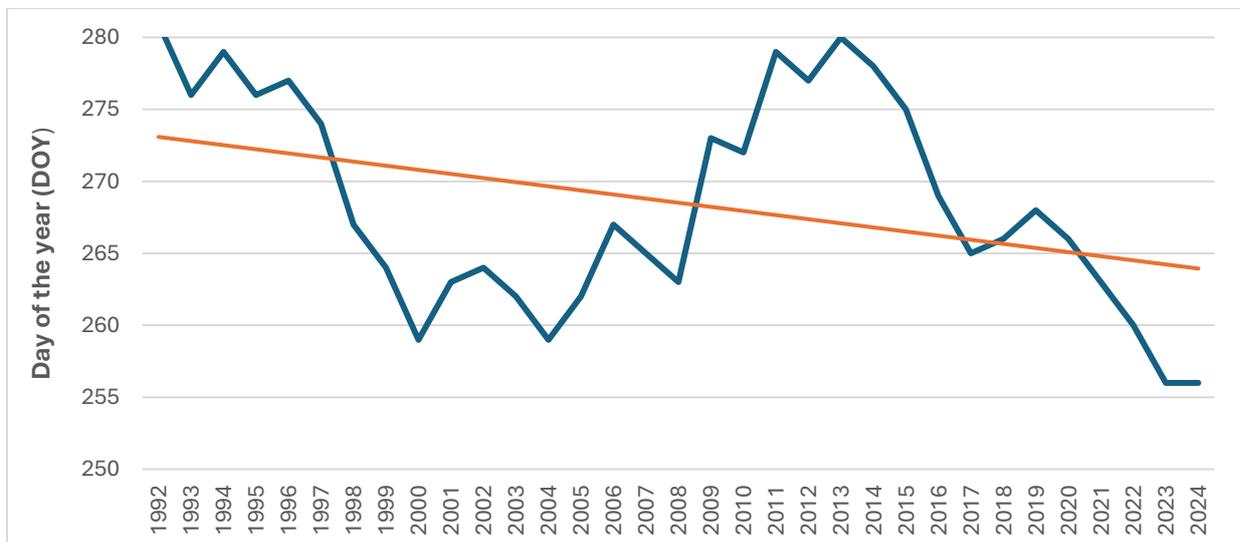


Figure 23: The day of the year (DOY) in which the half of the seal pups of the season have been born on Skomer Island. Day 250 is 7<sup>th</sup> September, day 260 is 17<sup>th</sup> September, day 270 is 27<sup>th</sup> September and day 280 is 7<sup>th</sup> October.



This observed shift in phenology cannot be fully accounted for, but there are several theories as to why pups are being born earlier each year. One explanation may be the increasing sea surface temperatures due to global warming; a 2021 study found that sea surface temperature increases of 2°C in the Skomer MCZ were associated with a pupping season advance of approximately seven days at population level (Bull et al., 2021). However, the 2021 study found that warmer years were associated with an older average age of mothers at the individual level, therefore a change in the age structure of cows on Skomer island could also account for the earlier pupping season, possibly through immigration. This shift is not just occurring in Welsh waters, a phenological shift has also been observed in grey seals in Canada, with an advancement in the mean birthdate of 15 days in the last three decades, further supporting the role of global rising sea temperatures in the shift in the pupping season (Bowden et al., 2020).

## Haul outs

In 2024, the highest number of seals hauled out (on the main sites of Matthew’s Wick, Castle Bay, Driftwood Bay and North Haven) was 388 seals, observed on 22/10/2024. The largest individual haul out observed in 2024 was on Castle Bay on 22/10/2024, where a total of 135 female seals were hauled out. Just like in previous years, Castle Bay was the most popular site on Skomer Island again, with an average daily haul out of 37 seals, which is 17 less than the average daily haul out for Castle Bay in 2023. An average of 119 seals were hauled out on the eight beaches monitored between 06/08/2024 - 13/11/2024.

Figure 24: Peak haul-out counts Skomer Island 1983-2024; the 2024 peak haul-out is coloured green to signify the different methodology used.

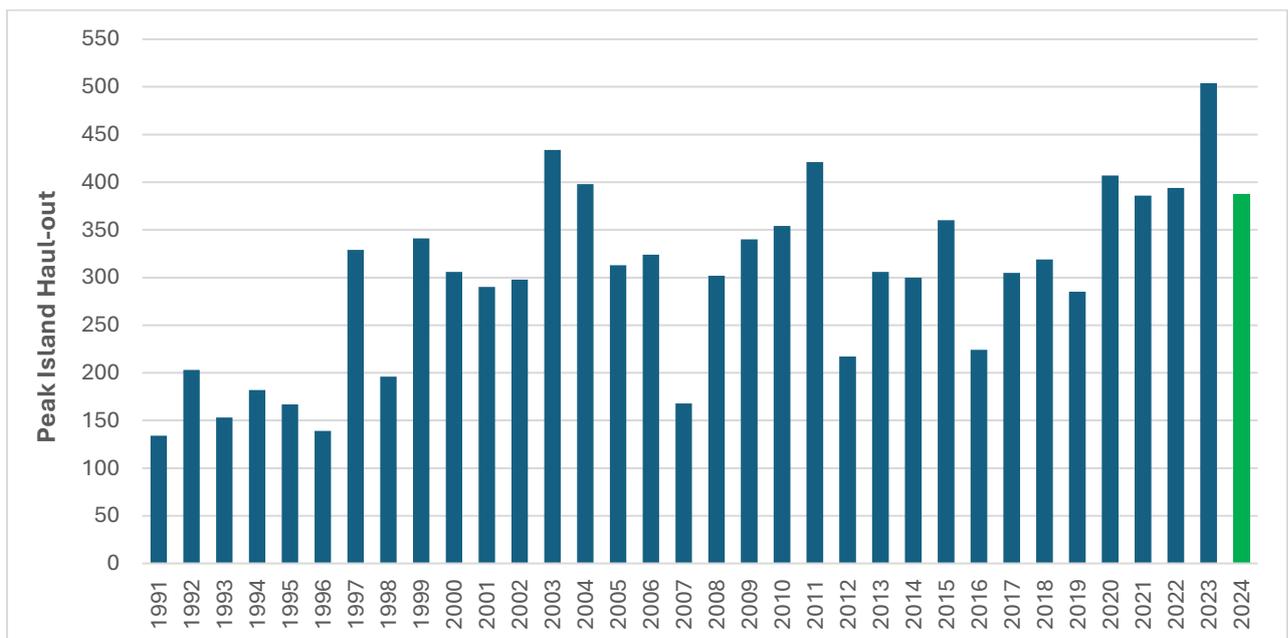
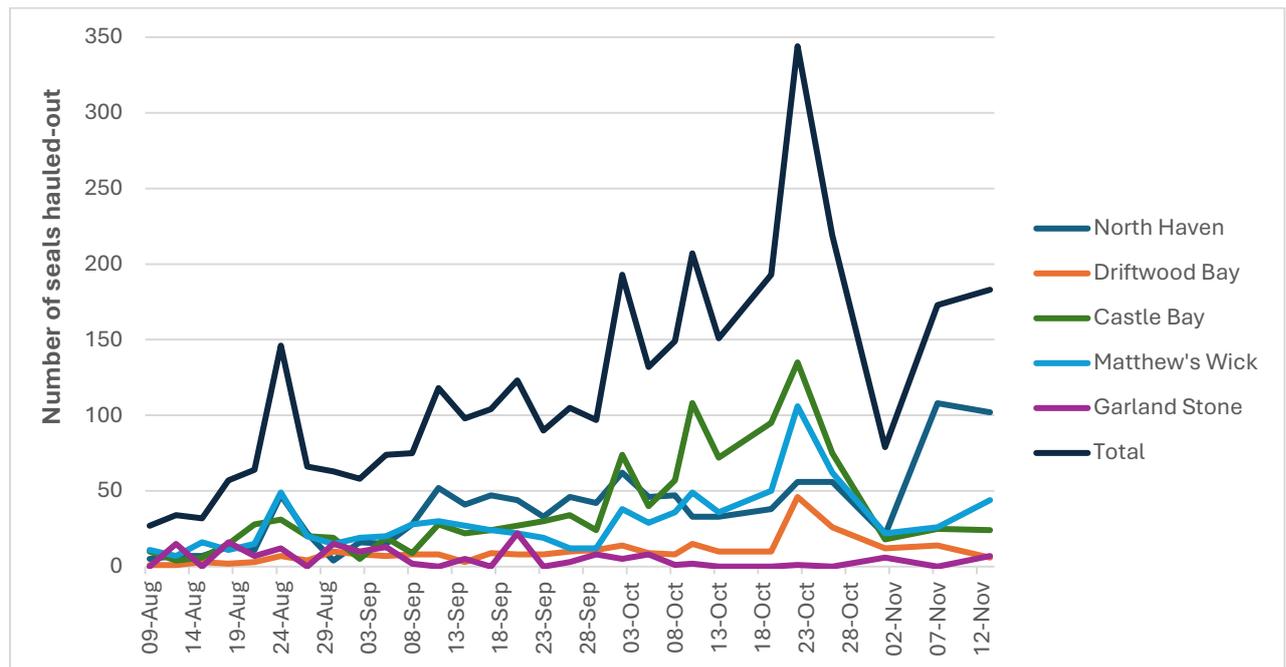


Figure 25: The number of seals hauled out in 2024 by date.



When looking at the total number of hauled out seals per site in 2024, Castle Bay was once again the most popular haul-out site with an average daily haul-out of 37 seals, 17 seals less than 2023. As with previous years, North Haven (including Rye Rocks) was the second most popular haul out site, with an average daily haul-out of 37 seals, which is six more than in 2023. The third most popular site was Matthew’s Wick with an average daily haul out of 29 seals, which is one less than in 2023.

The number of seals hauled out at each site varies significantly from day to day, which is likely determined by weather conditions. Sites such as Rye Rocks and Garland Stone are more exposed to strong wind and rough sea conditions than others, so when swell and strong winds impact these sites, seals depart. However, it has been previously observed on occasion that the number of hauled-out seals decreases significantly on calm days, an explanation may be that these seals forage when the weather is calmer.

Figure 26: The number of seals hauled out on North Haven (including Rye Rocks) in 2024.

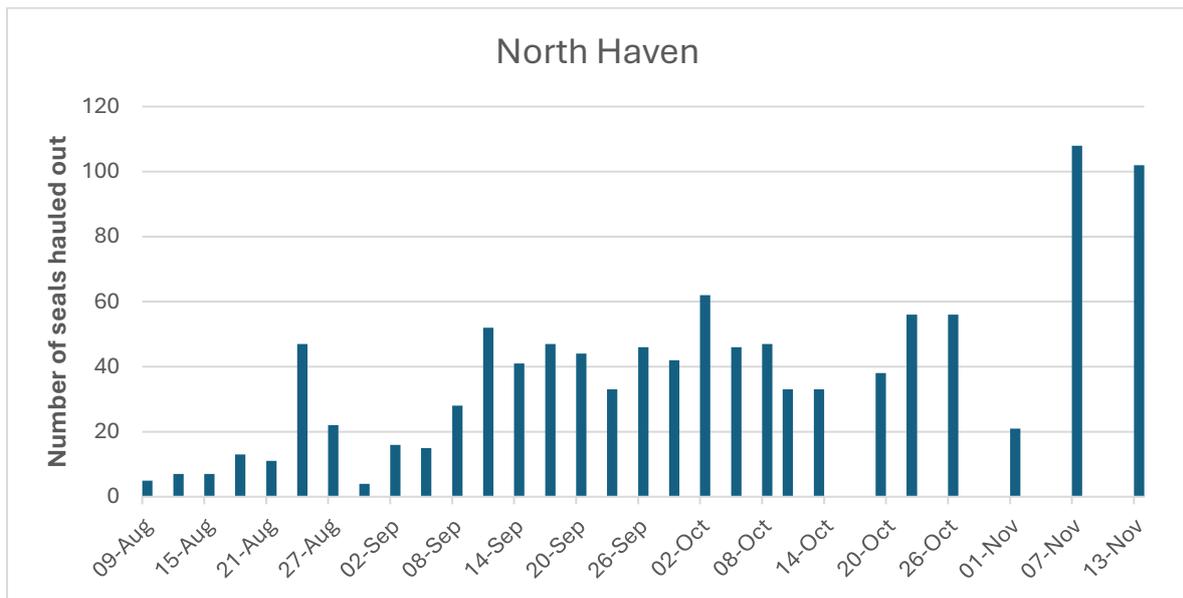


Figure 27: The number of seals hauled out on Castle Bay in 2024.

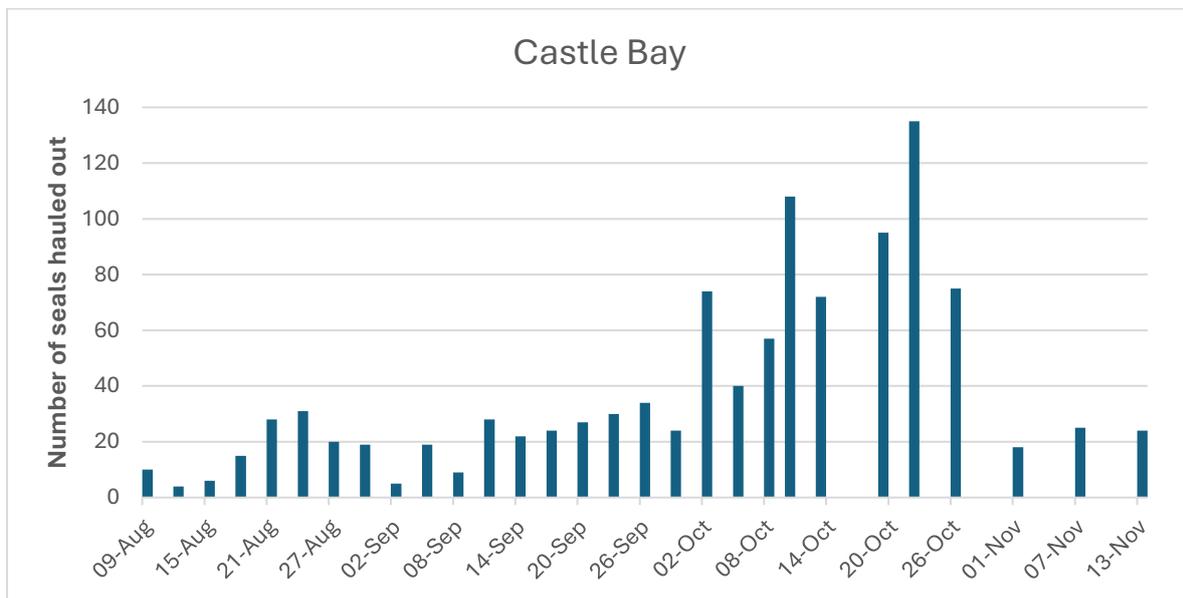


Figure 28: The number of seals hauled out on Driftwood Bay in 2024.

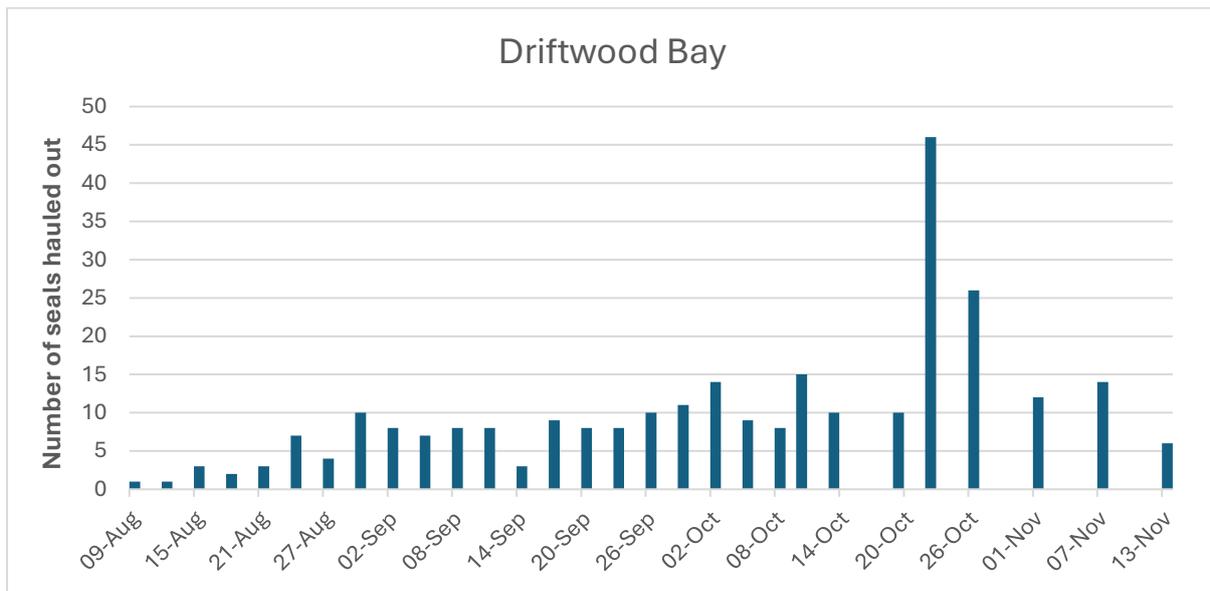


Figure 29: The number of seals hauled out on Matthew's Wick in 2024.

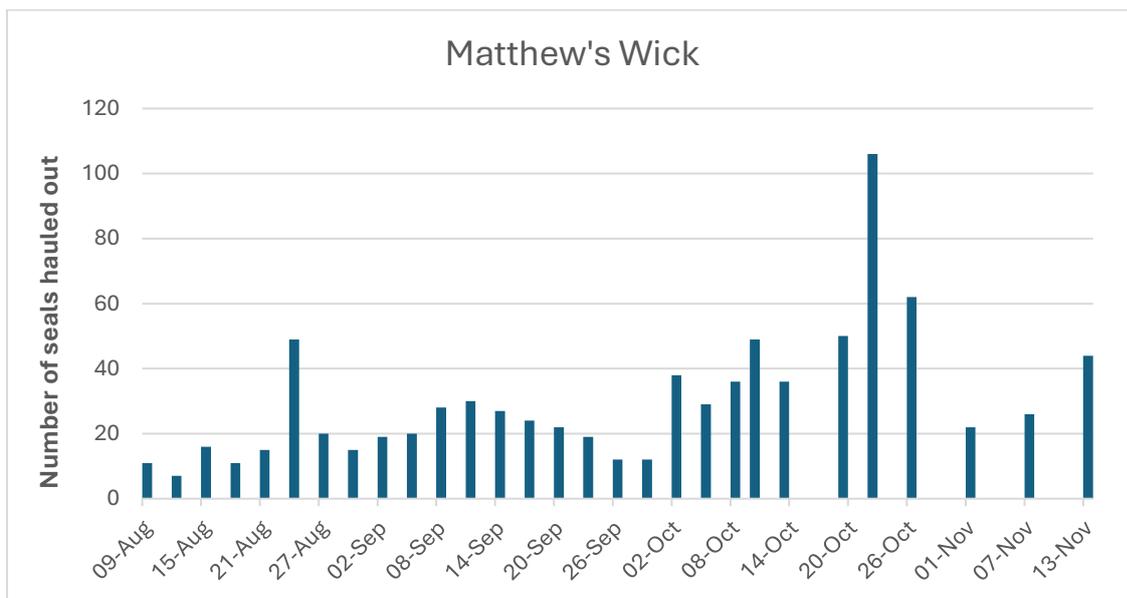


Figure 30: The number of seals hauled out on Garland Stone in 2024.

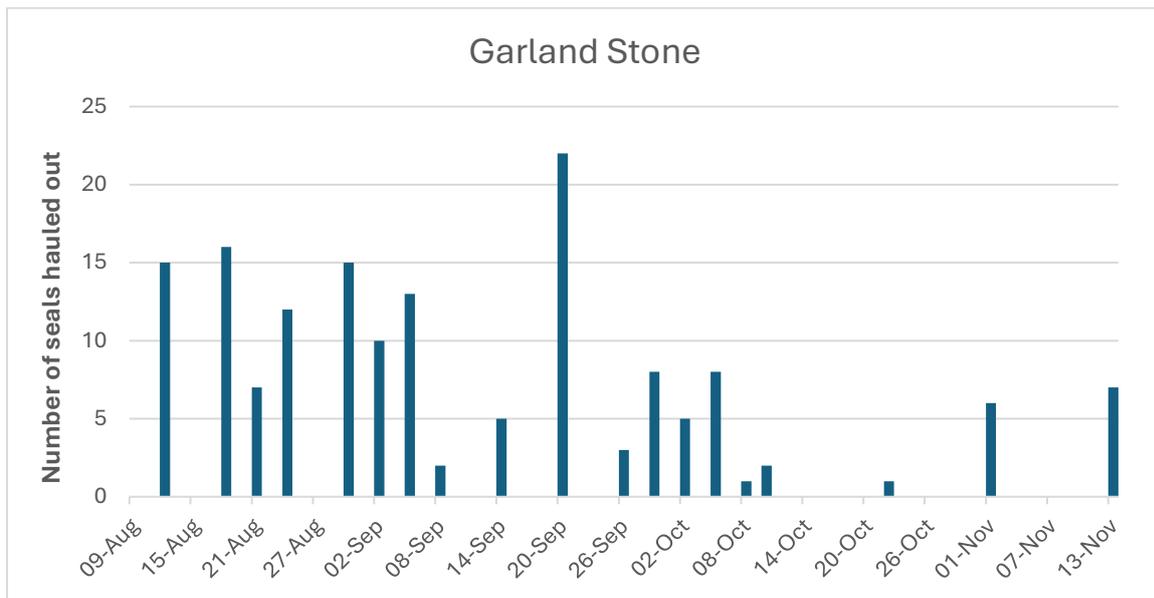
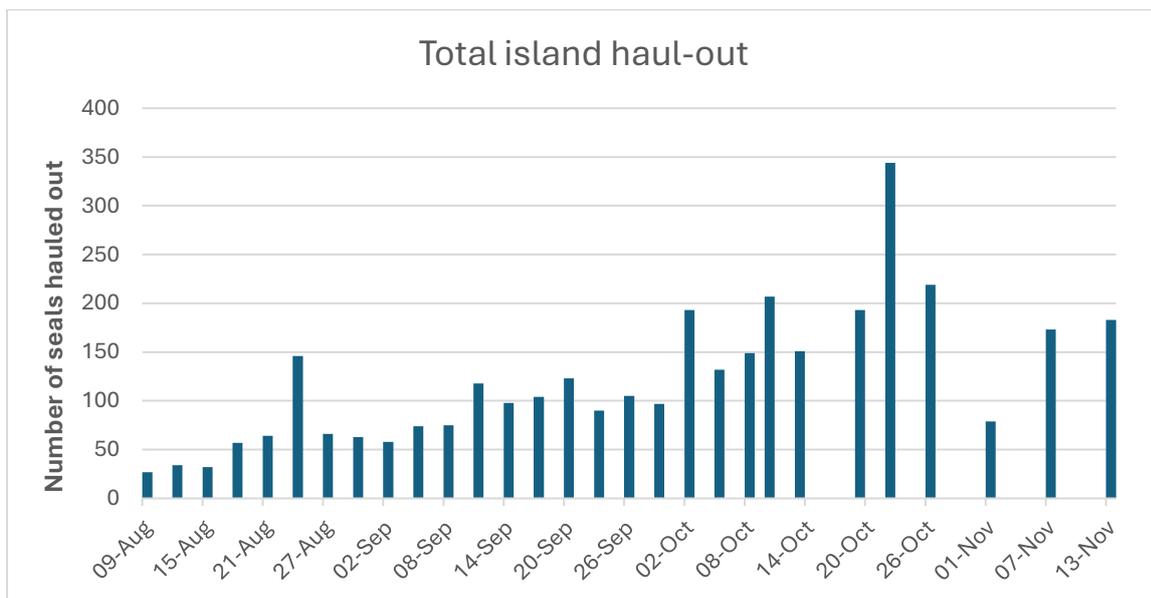


Figure 31: The total number of seals hauled out on the six locations monitored: North Haven, Driftwood Bay, Castle Bay, Matthew's Wick, Garland Stone and Rye Rocks.



## Scarred individuals

A total of 21 scarred individual seals were observed on Skomer Island in 2024, eight of which were returning seals known from previous years. Six individual seals were photographed with obvious signs of being entangled in nets at some point in their lives, most commonly a deep scar around their necks, often with netting still embedded.

Figure 32: Scarred Skomer cow 23.SC.BK.156.DWB observed at The Slabs (top) in 2024 and at Driftwood Bay (bottom) in 2023. The top image was photographed by Emma Whatley and the bottom image was photographed by Sarah Bond.



Figure 33: Scarred Skomer cow 23.SC.NET.242.DWB observed on Driftwood Bay in 2023 (left) and in 2024 (right). The left image was photographed by Sarah Bond and the right image was photographed by Emma Whatley.



## Movements

In 2024, two tagged seals were identified on Skomer Island, one of which was known from previous years. In August 2024 tagged seal SL140 was observed on Skomer Island for the first time, this seal was rescued by BDMLR on 01/02/2022 from Carbis Bay, St Ives and was released after rehabilitation on 13/04/2022. On 10/09/2024 tagged seal Spruce (blue tag SR1-J-087) was identified on North Haven beach and was first observed on Skomer Island in October 2023. Spruce was found at Lower Rosses Beach, Sligo in December 2019, weighing only 14 kg, and was released in February 2020 after rehabilitation. A third tagged seal (red tag) was observed on South Haven beach on 14/09/2024 and later hauled out on Rye Rocks, but it was not possible to read the number.

Figure 34: Tagged seal SRI-J-087 (Spruce) photographed on North Haven Beach on 10/09/2024 (photographed by Emma Whatley).



Figure 35: Unidentified tagged seal photographed on South Haven on 14/09/2024 (photographed by Emma Whatley).



## Pollution, disturbance, disease

### Pollution

Some marine debris (which appeared to be from fishing/angling practices) was observed on Skomer island in the North-West section of South Haven Main Beach and in the northernmost point of Matthew's Wick in 2024, but seals appeared unaffected by this debris. The only evidence of any issue was on 11/8/2025 when a seal was observed 'playing' with a plastic carrier bag on South Haven Beach.

### Disturbance

Table 3: Disturbances to grey seals occurring on Skomer Island in 2024.

Date	Location	Type	Comment
24/08/2024	NHV	Motorboat	Flushed 30 seals in NHV. 1/3 <sup>rd</sup> went into sea
31/08/2024	DWB	Paddleboarder	Flushed several seals off DWB
07/09/2024	NHV	RIB	Tender to yacht came too close to NHV haul out
17/09/2024	Several sites		Seals appeared distressed by firing range shots

### Disease

Highly Pathogenic Highly Pathogenic Avian Influenza (HPAI) H5N1 was a great concern in 2024. Whilst there is no routine surveillance for diseases, including AIV, specifically in marine mammals in the UK, sporadic findings of AIV in seals has been reported (UK Health Security Agency, 2022). In 2023, HPAI H5N1 was confirmed in elephant seal pups at sites of mass mortalities. The loss of new-borns was estimated to be near total, and the fate of reproductive females is unknown because they abandoned the beaches prematurely (Uhart et al., 2024).

Grey seals on Skomer Island were monitored every three days between 06/08/2024 – 13/11/2024 and there was no indication of a HPAI outbreak among the seals pupping or hauling-out on Skomer Island. There was no evidence of unusual deaths in adult seals that could be linked to avian influenza, of mortality rates higher than usual or of any dead birds washing onto any sites monitored.

In previous years, there have been higher recorded incidences of eye infections in seals at Matthew's Wick and The Wick than at other locations, one explanation for this may be the fact the site gets flooded during spring tides and rotting seaweed, seal excrement, dead pups etc. accumulate on the beach, possibly spreading diseases. This also occurs at The Wick to a lesser extent. Only one seal was observed as having a possible eye infection or cataract, a cow pupping at South Stream Cave with a 'milky' eye. It is likely that more seals had eye infections that were missed due to the change in methodology.

Between 28/09/2024 and 10/10/2024 there were three occurrences of dead weaners and/or immature seals on North Haven missing either their head or mid-section. On 28/09/2024 a headless

weaned pup was observed on North Haven main beach, with what was assumed to be its skull beside it. On 02/10/2024 a dead seal (likely an immature seal) was observed on North Haven main beach without a head but was not photographed, this individual was much larger than the one observed on 28/09/2024. On 05/10/2024 a headless seal was observed on North Haven slip beach, likely the same one observed on 02/10/2024. On 10/10/2024 a weaned pup was observed on North Haven main beach with its mid-section hollowed out.

Figure 36: Headless weaned pup (29/09/2024) on North Haven main beach.



Figure 37: Headless immature seal (05/10/2024) on North Haven slip beach.



Figure 38: Weaned pup missing mid-section (10/10/2024) on North Haven main beach.



While the cause of death of these seals is unknown, headless seal sightings are not uncommon. It is not unusual for grey seals to die during this developmental stage, pups may undergo a period of development after weaning without any maternal care or nutrition, so starvation is relatively common (Watson et al., 2020). The neck is one of the weakest parts of the grey seal anatomy (van Neer et al., 2021), so seals are often headless after tumbling in waves before washing ashore. Cases of infanticide and cannibalism in grey seals has been documented in Scotland (Bronlow et al., 2017), but it is highly unlikely that this was the case.

# Improvements to the project and next steps

During 2024, WTSWW continued to seek a long-term funding solution for the Skomer Grey Seal project. In Spring 2025 we were successful in an application to the Nature Networks Fund (Round 4) which includes funding for this project for the next three seasons (2025-2027). This project is funded by the Nature Networks Programme. It is being delivered by the Heritage Fund, on behalf of the Welsh Government

This grant funding will allow WTSWW to employ an experienced fieldworker from mid-August to December, covering on-island fieldwork, data handling, photo cataloguing and report writing. It will also cover accommodating provided on Skomer by WTSWW and a small kit budget for the fieldworker.

The fieldwork methodology in 2025-2027 will again be based on the revised Skomer Island Seal management plan (*Alexander, 2015, revised Lock and Morgan, 2025*). WTSWW are no longer in a position to cover the hugely increased cost of rope-access to cave and beach sites and insurers are becoming less likely to cover the risks. 2025 onwards will see cliff-top vantage point survey work on Skomer in line with the rest of the Skomer MCZ and other Pembrokeshire sites, including RSPB Ramsey).

Talks are ongoing with NRW as to the accuracy and validity of attempting to record pup survival rates on busy beaches where animals are not individually marked.

## Acknowledgments

I would like to sincerely thank Leighton Newman, Lisa Morgan and Ceris Aston from The Wildlife Trust of South and West Wales for their invaluable training and support throughout my project. I would also like to thank Pete Richards, Nick Richards, Ceris Aston and Rob Knott for their hard work around Skomer Island during the 2024 pupping season, I am incredibly grateful for their warm welcome and kindness during my time on Skomer.

The Wildlife Trust of South and West Wales would like to thank Emma Whatley for her work on this project in 2024/2025. Emma conducted the fieldwork element of the project between 01/09/2024 and 13/10/2024 as part of her year in industry research placement with Swansea University. Emma also worked on the existing data to analyse the statistical impacts of the change in methodology and the significance of excluding cave sites (with rope access) from the whole island pup production figure. Emma is the lead author of this report, and we are grateful for her enthusiasm and commitment to the Skomer Grey Seal project.

## References

- Alexander, M. (2015). *Skomer Island NNR Management Plan. Grey Seals - Status, Objectives, Rationale, Performance Indicators & monitoring/surveillance projects*. WTSWW.
- Bowen, W. D., den Heyer, C. E., Lang, S. L. C., Lidgard, D., & Iverson, S. J. (2020). Exploring causal components of plasticity in grey seal birthdates: Effects of intrinsic traits, demography, and climate. *Ecology and Evolution*, **10**(20), 11507–11522. <https://doi.org/10.1002/ece3.6787>
- Brownlow, A., Onoufriou, J., Bishop, A., Davison, N., & Thompson, D. (2016). Corkscrew seals: grey seal (*Halichoerus grypus*) infanticide and cannibalism may indicate the cause of spiral lacerations in seals. *PLOS ONE*, **11**(6), e0156464. <https://doi.org/10.1371/journal.pone.0156464>
- Büche, B., & Bond, S. (2023). *Grey Seal Breeding Census Skomer Island 2023*. NRW Evidence Report No 750 The Wildlife Trust of South and West Wales.
- Bull, J. C., Jones, O. R., Börger, L., Franconi, N., Banga, R., Lock, K., & Stringell, T. B. (2021). Climate causes shifts in grey seal phenology by modifying age structure. *Proceedings of the Royal Society B: Biological Sciences*, **288**(1964), 20212284. <https://doi.org/10.1098/rspb.2021.2284>
- Hughes, L. (2000). Biological consequences of global warming: is the signal already apparent? *Trends in Ecology & Evolution*, **15**(2), 56–61
- Newman, L., & Morgan, L. (2024). *Seal monitoring 2024*. Internal WTSWW report: unpublished.
- Uhart, M.M., Vanstreels, R.E.T., Nelson, M.I., Olivera, V., Campagna, J., Zavattieri, V., Lemey, P., Campagna, C., Falabella, V. & Rimondi, A. Epidemiological data of an influenza A/H5N1 outbreak in elephant seals in Argentina indicates mammal-to-mammal transmission. *Nat Commun* **15**, 9516 (2024). <https://doi.org/10.1038/s41467-024-53766-5>
- UK Health Security Agency 2022. Avian influenza in UK seal populations: HAIRS risk assessment. <https://www.gov.uk/government/publications/avian-influenza-in-uk-seal-populations-hairs-risk-assessment>
- Van Neer, A., Gross, S., Kesselring, T., Grilo, M. L., Ludes-Wehrmeister, E., Roncon, G., & Siebert, U. (2021). Assessing seal carcasses potentially subjected to grey seal predation. *Scientific Reports*, **11**(694). <https://doi.org/10.1038/s41598-020-80737-9>
- Watson, D. G., Pomeroy, P. P., Al-Tannak, N. F., & Kennedy, M. W. (2020). Stockpiling by pups and self-sacrifice by their fasting mothers observed in birth to weaning serum metabolomes of Atlantic grey seals. *Scientific Reports*, **10**, 7465. <https://doi.org/10.1038/s41598-020-64488-1>

# Appendices

## Appendix 1 SMRU Age classification of pups

I –first day or two after birth, fresh pink umbilicus, poor coordination, ribs visible, white coat stained yellow

II- usually days 3-9, white coat, ribs less prominent early on, good coordination

III- usually days 10+, white coat (although dark marks around head/flips may be visible), noticeably fat – abdomen rounded out

IV- usually days 14+, some white coat, but moulting

V- anytime from day 16+, no white coat left, fully moulted.

## Appendix 2 2024 Week Dates

<b>Week number</b>	<b>From:</b>	<b>To:</b>
31	July 29, 2024	August 4, 2024
32	August 5, 2024	August 11, 2024
33	August 12, 2024	August 18, 2024
34	August 19, 2024	August 25, 2024
35	August 26, 2024	September 1, 2024
36	September 2, 2024	September 8, 2024
37	September 9, 2024	September 15, 2024
38	September 16, 2024	September 22, 2024
39	September 23, 2024	September 29, 2024
40	September 30, 2024	October 6, 2024
41	October 7, 2024	October 13, 2024
42	October 14, 2024	October 20, 2024
43	October 21, 2024	October 27, 2024
44	October 28, 2024	November 3, 2024
45	November 4, 2024	November 10, 2024
46	November 11, 2024	November 17, 2024
47	November 18, 2024	November 24, 2024