



**WILDLIFE TRUST OF SOUTH & WEST WALES**

# **SKOMER ISLAND NATIONAL NATURE RESERVE**

**ANNUAL REPORT  
2017**

**B. Büche, E. Stubbings, L. Newman, S. Purdon**

# Contents

1 Summary.....	5
1.1 Weather.....	6
2 Monitoring and Recording.....	8
2.1 Birds.....	8
Feature 1: Seabirds.....	8
Feature 2: Manx Shearwater.....	9
Feature 3: Storm Petrel.....	10
Feature 4: Lesser Black-backed Gull.....	10
Feature 5: Black-legged Kittiwake.....	12
Feature 6: Puffin.....	13
Feature 7: Guillemot.....	15
Feature 8: Razorbill.....	17
Feature 9: Fulmar.....	19
Feature 10: Cormorant.....	20
Feature 11: Shag.....	21
Feature 12: Herring Gull.....	22
Feature 13: Great Black-backed Gull.....	24
Feature 14: Short-eared Owl.....	25
Feature 15: Chough.....	25
Feature 16: Peregrine.....	25
Feature 17: Bird assemblage not qualifying.....	26
Feature 18: Little Owl.....	27
Feature 19: Canada Goose.....	27
Constant Effort Site.....	28
2.2 Mammals.....	29
Feature 20 Skomer Vole.....	29
Feature 21 Grey Seal.....	29
Cetaceans.....	30
Rabbits.....	30
2.3 Invertebrates.....	31
Feature 24: Lepidoptera.....	31
2.4. Lichens.....	31
Feature 25:Lichen assemblage.....	31
2.5 Vegetation.....	32
Feature 27:Vegetation.....	32
3 Research.....	37
4 Visitors.....	38
4.1 Day Visitors.....	38
Day Boat Cancellations.....	38
4.2 Educational visits.....	39
4.4 Overnight Guests.....	40
4.5 Human Impact.....	43

Visitors .....	43
Seaborne disturbance .....	43
Pollution .....	43
5 Staff and Volunteers .....	44
5.1 Island staff.....	44
5.2 Lockley Lodge.....	44
5.3 Volunteers.....	44
Weekly vols .....	44
Work parties .....	44
LTV's.....	44
6 Media, Interpretation and Events .....	46
6.1 Media/Filming on Skomer.....	46
6.2 Marketing, Publicity and Social Media .....	47
6.3 Interpretation.....	48
6.4 Events.....	48
7 Reserve Management .....	49
7.1 Management Plan.....	49
7.2 Species and Habitat Management .....	49
8 External groups and liaison.....	50
ICAC.....	50
Friends of Skokholm and Skomer .....	50
Marine Conservation Zone MCZ.....	50
Natural Resources Wales (NRW) .....	50
Dale Sailing .....	50
Others .....	50
9 Acknowledgements .....	51

## Table of tables

Table 1	Survival rates of adult Manx Shearwaters .....	9
Table 2	Lesser Black-backed Gull population 2012-2017 .....	10
Table 3	Survival rates of adult Lesser Black-backed Gulls .....	10
Table 4	Productivity of Lesser Black-backed Gulls.....	11
Table 5	Kittiwake population in 2012-2017 .....	12
Table 6	Survival rates of adult Kittiwakes.....	12
Table 7	Puffin population 2012-2017 .....	13
Table 8	Survival rates of adult Puffins.....	13
Table 9	Puffin productivity.....	14
Table 10	Guillemot productivity.....	16
Table 11	Razorbill population 2012-2016.....	17
Table 12	Survival rates of adult Razorbills .....	17
Table 13	Razorbill productivity .....	18
Table 14	Fulmar population .....	19
Table 15	Fulmar productivity.....	19
Table 16	Cormorant population .....	20
Table 17	Shag population .....	21
Table 18	Herring Gull population .....	22
Table 19	Survival rates of adult Herring Gulls .....	22
Table 20	Herring Gull productivity.....	23
Table 21	Great Black-backed Gull population.....	24
Table 22	Great Black-backed Gull productivity .....	24
Table 23	Chough population.....	25
Table 24	Provisional estimates of the UK and IoM peregrine population (numbers of breeding pairs) 2014 .....	26
Table 25	Canada Goose counts .....	27
Table 26	Rabbit Numbers.....	32
Table 27	Number of no boat days over the previous five years. This does not include Mondays, when we're normally closed. ....	38

## Table of Figures

Figure 1	Map of Skomer .....	7
Figure 2	Minimum number of voles known to be alive/Ha in August.....	29
Figure 3	Mean number of Rabbits per hectare.....	32
Figure 4	Total number of visitors over a 10 year period. ....	38
Figure 5	Total number of day visitors in August and September over the past 10 years. ....	39
Figure 6	Educational visits in the past five years.....	39
Figure 7	Number of beds sold per year.....	40
Figure 8	Percentage occupancy of the rooms in the hostel in August and September .....	41
Figure 9	Percentage of guests who rated each category good or excellent in 2017.....	42
Figure 10	Media pieces on Skomer in 2017, broken down into categories.....	47

# 1 Summary

All staff (except our Field Worker) moved out to the island on 06/03/2017.

On arrival to the island an assessment of the buildings was made and other than missing guttering at farm no problems were found. However the boat trailer had been washed off the slip and had gone missing.

2017 was an average year for the auk species and a bad year for Lesser Black-backed Gulls and Kittiwakes. Razorbills and Fulmars were not counted (whole-island) in 2017, however the standard population plot counts were done and all other species were counted (whole-island).

A total of 170 bird species were recorded in 2017 including six new addition to the island list (Eastern Subalpine Warbler, Dark-eyed Junco, Bonelli's Warbler sp., Red-necked Phalarope, Siberian Stonechat, Common Crane).

There were 17,910 day visitors and 1,144 overnight guests which brings the grand total to 19,054 visitors in 2017, by far our most successful year to date

## 1.1 WEATHER

A mild winter with fewer storms than in recent years. A drop in temperature combined with rain at the end of May came at a bad time for hatching eggs and was followed by an unsettled June with above average rainfall and some generally rough weather.

Particular weather events that had the potential to impact on breeding birds came at the end of May, on the 5<sup>th</sup> and 11<sup>th</sup> of June with winds of force 6 and above and during wet spells in September (which can flood Manx Shearwater burrows).

Autumn storms came in the form of ex hurricanes Ophelia (16<sup>th</sup> October) and Brian (21<sup>st</sup> October).

**March** – The month began and ended with unsettled weather and south westerly winds. Temperatures and rainfall were slightly above average (but not exceptionally so) and sunshine was slightly below average.

**April** – A drier month than average with rain on eight days including wintery showers and hail on the 25<sup>th</sup> and 26<sup>th</sup>. Nationally the mean temperature was 0.5°C above the long term average.

**May** – Easterly winds dominated the first half of the month which was otherwise relatively settled. There were strong southerly winds and rain on the 13<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup> before becoming more settled again. After a warm spell between the 24<sup>th</sup> and 26<sup>th</sup>, the month ended with lower temperatures and some heavy rain. Overall, temperatures were slightly above average and rainfall was near to or just below average.

**June** – The month began wet and unsettled with some strong winds, especially on the 5<sup>th</sup> and 11<sup>th</sup>, which continued until mid-month when there was a period of more settled weather and higher temperatures. The month then ended with more wet and unsettled weather. Rainfall was well above average (twice the normal amount for Pembrokeshire in June) but temperatures were again slightly above average.

**July** – The month started changeable with sunshine and showers, before turning more settled for a time. There was also frequent fog at the start of the month. The second half of the month became increasingly more unsettled and cooler with frequent rain or showers.

**August** – The month was generally changeable with low pressure systems and fronts moving in from the west at regular intervals. It was mostly cool, but it turned generally warmer from the 22<sup>nd</sup> to the 27<sup>th</sup> with some warm sunshine at times. Temperatures were slightly below average and rainfall was slightly above average.

**September** – High pressure at the start of the month quickly gave way to unsettled weather and frequent rain. A generally dull and wet month with above average rainfall.

**October** – Changeable with mostly westerly winds. The main weather events came with two named storms around the middle of the month. Ophelia, which hit on 16<sup>th</sup>, brought winds gusting up to force 12 but no rain and Brian on the 21<sup>st</sup>, which was less severe, brought winds over force 7 and rain.



Figure 1 Map of Skomer

## 2 Monitoring and Recording

### 2.1 BIRDS

#### *Feature 1: Seabirds*

##### **RH0/01 Record human disturbance on the island**

Human disturbance was recorded daily during bird log.

##### **RH00/01 Record human disturbance from the sea**

Human disturbance from the sea was recorded daily during bird log.

##### **RH00/02 Record all oil pollution incidents**

No oil pollution was recorded in 2017.

##### **RA 10/09 Record any significant seabird burrow collapse**

No significant seabird burrow collapse was recorded in 2017. After a major Yorkshire Fog die-back in 2016 the island had recovered again and the ground was more stable.



## **Feature 2: Manx Shearwater**

### **RA/11/01 Monitor Manx Shearwater total population**

Lower limit: not set.

Census to be carried out every ten years. Next census scheduled for 2018.

### **RA 11/02 Monitor Manx Shearwater breeding population in study plots**

Lower limit: Any measurable decrease in the population detected in study plots.

Attribute not within limits in 2017. For details see JNCC Seabird Monitoring on Skomer Island in 2017, section 5.1.

### **RA 11/03 Monitor survival rates of breeding Manx Shearwater**

Lower limit: 3 in any 5 consecutive years with a survival rate less than 86%.

Attribute not within limit, see table below. For more details see JNCC Seabird Monitoring on Skomer Island in 2017 section 5.3.

<b>From</b>	<b>To</b>	<b>Estimated survival of Manx Shearwaters</b>
2010	2011	0.870
2011	2012	0.869
2012	2013	0.892
2013	2014	0.872
2014	2015	0.78*
2015	2016	0.77

Table 1 *Survival rates of adult Manx Shearwaters*

\*A number of birds not seen in 2015 were relocated in 2017, allowing last year's 2014-15 survival estimate to be raised from 0.724 to 0.78.

### **RA 11/04 Monitor Manx Shearwater productivity**

Lower limit: 0.5 chicks per breeding pair.

Attribute was within limits in 2017. Breeding success in 2017 was 0.58, for details see JNCC Seabird Monitoring on Skomer Island in 2017, section 5.2.

### **RH00/03 Record disturbance to rafting Manx Shearwaters**

No disturbance to rafting Manx Shearwaters was observed. However it is very difficult to judge whether rafting Manx Shearwaters get disturbed by for example tankers. Long-term Volunteer Cerren Richards did her personal project on distribution of Manx Shearwater rafts, see Influence of wind direction on the rafting Manx Shearwaters.

### **Feature 3: Storm Petrel**

#### **RA 10/09 Record predation of seabirds by owls**

No Little Owl nest were found in 2017.

### **Feature 4: Lesser Black-backed Gull**

#### **RA 11/05 Monitor LBBGU total population**

Lower limit: 3 in any 5 consecutive years with less than 20,200 pairs.

Attribute not within limit, see table below.

<b>Year</b>	<b>Lesser Black-backed Gull population</b>
2012	8643
2013	8132
2014	8432
2015	7630
2016	6936
2017	4,935

Table 2 *Lesser Black-backed Gull population 2012-2017*

For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 8.2.

#### **RA 11/06 Monitor LBBGU relationship with national trends**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 8.2

#### **RA 11/07 Monitor LBBGU annual survival rate**

Lower limit: a mean of at least 84% over the preceding 10 year period

Attribute within limits. The mean adult survival rate over the preceding 10 year period was 0.87 (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 8.4.

<b>From</b>	<b>To</b>	<b>Estimated survival of Lesser Black-backed Gulls</b>
2005	2006	0.870
2006	2007	0.902
2007	2008	0.881
2008	2009	0.920
2009	2010	0.828
2010	2011	0.844
2011	2012	0.835
2012	2013	0.901
2013	2014	0.920
2014	2015	0.824
2015	2016	0.85

Table 3 *Survival rates of adult Lesser Black-backed Gulls*

### **RA 11/08 Monitor LBBGU productivity**

Provisional lower limit: 3 in any 5 consecutive years with fewer than 0.6 chicks per breeding pair.

Attribute not within limit: In 2017 productivity was 0.59 chicks per breeding pair, for more details see JNCC Seabird Monitoring on Skomer Island in 2016, section 8.3.

Year	Productivity
<b>2013</b>	0.08
<b>2014</b>	0.57
<b>2015</b>	0.69
<b>2016</b>	0.36
<b>2017</b>	0.59

*Table 4 Productivity of Lesser Black-backed Gulls*

## **Feature 5: Black-legged Kittiwake**

### **RA 10/01 Record the impact of severe storms on Kittiwakes**

Spells of bad weather in June had a negative effect on Kittiwake nests at some colonies around the island including the Wick.

### **RA 11/09 Monitor Kittiwake island population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 2,000 nests (AONs). There should be no loss of any established colony. (A colony will be considered established when it has contained breeding birds for three years or more).

Attribute not within limit, see table below, however there was no loss of any established colony.

<b>Year</b>	<b>Kittiwake population (AON)</b>
2012	1594
2013	1045
2014	1488
2015	1546
2016	1477
2017	1336

Table 5 *Kittiwake population in 2012-2017*

For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 11.1.

### **RA 11/10 Monitor Kittiwake relationship with national trends**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 11.1.

### **RA 11/11 Monitor long-term survival rate of Kittiwake**

Lower limit: 3 in any 5 consecutive years with a survival rate of less than 85%.

Attribute not within limits. The mean adult survival rate over the preceding 10 year period was 0.83 (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 11.4.

<b>From</b>	<b>To</b>	<b>Estimated survival of Kittiwakes</b>
2005	2006	0.842
2006	2007	0.679
2007	2008	0.773
2008	2009	0.767
2009	2010	0.952
2010	2011	0.921
2011	2012	0.809
2012	2013	0.933
2013	2014	0.779
2014	2015	0.798
2015	2016	0.89

Table 6 *Survival rates of adult Kittiwakes*

### **RA 11/12 Monitor Kittiwake breeding productivity**

Lower limit: 3 in any 5 consecutive years with less than 0.7 chicks per breeding pair.

Attribute not within limit: In 2017 the productivity was 0.33, for more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 11.2.

## Feature 6: Puffin

### RA 11/13 Monitor total Puffin population and distribution of colonies

Lower limit: 3 in any 5 consecutive years with less than 12,500 individuals. There should be no loss of any established colony. (A colony will be considered established when it has contained breeding birds for three years or more.)

Attribute within limit, see table below.

Year	Puffin population
2012	11497
2013	19280
2014	18237
2015	21349
2016	22539
2017	25227

Table 7 Puffin population 2012-2017

For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 14.1.

### RA 11/14 Monitor Puffin relationship with national trends

See JNCC Seabird Monitoring on Skomer Island in 2017, section 14.1.

### RA 11/15 Monitor annual survival rate of Puffins

Lower limit: The mean adult survival rate should not fall below 86% over the preceding 10 year period.

Attribute within limits: The mean adult survival rate over the preceding 10 year period was 0.88 (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 14.6.

From	To	Estimated survival of Puffins
2005	2006	0.881
2006	2007	0.870
2007	2008	0.848
2008	2009	0.940
2009	2010	0.933
2010	2011	0.863
2011	2012	0.945
2012	2013	0.925
2013	2014	0.714
2014	2015	0.905
2015	2016	0.92

Table 8 Survival rates of adult Puffins

### **RA 11/16 Monitor annual Puffin breeding productivity**

Lower limit: 3 in any 5 consecutive years with less than 80% success.

Attribute not within limits, (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 14.2.

<b>Year</b>	<b>Puffin breeding productivity (%)</b>
2017	77
2016	78
2015	66
2014	53
2013	78
2012	85

Table 9            *Puffin productivity*

## **Feature 7: Guillemot**

### **RA 10/02 Record timing of Guillemot breeding**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 12.4.

### **RA 11/17 Monitor the total Guillemot population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 21,600 individuals. Lower limit: There should be no loss of any established colony. (A colony will be considered established when it has contained breeding birds for three years or more.).

Attribute within limits, see table below. For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 12.1.

<b>Year</b>	<b>Guillemot population</b>
2012	22508
2013	20862
2014	23493
2015	23746
2016	
2017	24788

### **RA 11/18 Monitor Guillemot population in study plots**

No significant changes in the population were found within the study plots between 2016 and 2017. For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 12.2.

### **RA 11/19 Monitor Guillemot relationship with national trends**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 12.1.

### **RA 11/20 Monitor annual survival rate of breeding Guillemots**

Lower limit: 3 in any 5 consecutive years with a survival rate less than 85%.

This study was undertaken by The University of Sheffield, under the supervision of Professor Tim Birkhead, for over 40 years. Unfortunately, in 2014, funding from Natural Resources Wales (NRW) was withdrawn from this study, hence no detailed results are available. Results from fieldwork in 2017 suggest that survival was slightly lower than in 2016.

### **RA 11/21 Monitor annual Guillemot productivity at the Amos**

Breeding success on the Amos was 0.82, which is close to the average of previous years.

For more details see JNCC Seabird Monitoring on Skomer Island in 2017, Appendix 1.

### **RA 11/22 Monitor Guillemot chick diet**

Lower limit: 3 in any 5 consecutive years with less than 70% Clupeids in diet or less than 3.0 feeds per chick per day.

Chicks were, as usual, fed predominantly (~60%) on clupeids. The study of Guillemot chick diet is being conducted by Tim Birkhead (Sheffield University) and due to funding cuts detailed data on chick diet of Guillemots is not available anymore, hence the information on whether this attribute is within limits or not is lacking. For more details see JNCC Seabird Monitoring on Skomer Island in 2017, Appendix 1.

### RA 11/23 Monitor Guillemot annual breeding productivity

Lower limit: 3 in any 5 consecutive years with less than 0.8 chicks per breeding pair.

Attribute not within limits (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 12.3. The breeding success at the Amos was higher and within limits, see RA 11/21

Year	Productivity per active + regular site	Productivity per active site only
2010	0.67	0.74
2011	0.52	0.59
2012	0.58	0.65
2013	0.63	0.75
2014	0.61	0.62
2015	0.76	0.76
2016	0.63	0.63
2017	0.66	0.69

Table 10 *Guillemot productivity*



## Feature 8: Razorbill

### RA 11/24 Monitor Razorbill population and distribution of colonies

Lower limit: 3 in any 5 consecutive years with less than 5000 individuals: There should be no loss of any established colony. (A colony will be considered established when it has contained breeding birds for three years or more.)

Razorbills were not censused (whole island) in 2017.

Year	Razorbill population
2012	4971
2013	6663
2014	6541
2015	7489
2016	7250
2017	no count

Table 11 Razorbill population 2012-2016

### RA 11/25 Monitor Razorbill population in study plots

The number of Razorbills within study plots showed a decline of 3.8% in comparison with 2016, and a decline of less than one percent from the five-year mean (2012 – 2016). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 13.2.

### RA 11/26 Monitor Razorbill relationship with national trends

Nationally there have been losses at colonies in Scotland, however the important colonies in England Wales (incl. Skomer) and Northern Ireland have all increased. The index has risen since 2010, with 2015 having the highest index value since the baseline began in 1986, although wide confidence intervals suggest this apparent increase should be treated with caution. There was no Fulmar count on Skomer in 2017 but Razorbill numbers have been decreasing since 2013 contrary to the national trend.

### RA 11/27 Monitor long-term variation in annual survival rate of breeding Razorbills

Lower limit: 3 in any 5 consecutive years with less than 90% adult survival.

Attribute within limits (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 13.5.

From	To	Estimated survival Razorbill
2010	2011	0.970
2011	2012	0.939
2012	2013	0.981
2013	2014	0.599
2014	2015	0.947
2015	2016	0.87

Table 12 Survival rates of adult Razorbills

## RA 11/28 Monitor annual Razorbill productivity

Lower limit: To be developed.

The Razorbill productivity in 2017 was 0.48 for active and regular sites and 0.52 for active sites only (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 13.3.

Year	Productivity per active + regular site	Productivity per active site only
2010	0.37	0.48
2011	-	-
2012	0.19	0.23
2013	0.34	0.42
2014	0.27	0.28
2015	0.37	0.39
2016	0.41	0.42
2017	0.48	0.52

Table 13 *Razorbill productivity*

## **Feature 9: Fulmar**

### **RA 11/29 Monitor Fulmar population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 650 apparently occupied nests.

<b>Year</b>	<b>Total AON</b>
2012	453
2013	503
2014	556
2015	584
2016	675
2017	no count

Table 14 *Fulmar population*

### **RA 11/30 Monitor Fulmar relationship with national trend**

The abundance of Fulmars breeding in the UK reached a peak in 1996 but appears to have been declining since then. Numbers have fallen in all areas although the greatest declines appear to be at colonies in the north and west of the UK. After an increase which mirrored the national trend Skomer's Fulmars started declining in 2005 but in contrast to the national trend the population since has stabilised and has increased since 2012.

### **RA 11/31 Monitor Fulmar annual productivity**

Lower limit: 3 in any 5 consecutive years with less than 0.5 chicks per apparently occupied site.

Attribute not within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 3.2.

<b>Year</b>	<b>Productivity</b>
2012	0.44
2013	0.33
2014	0.46
2015	0.35
2016	0.43
2017	0.41

Table 15 *Fulmar productivity*

## **Feature 10: Cormorant**

### **RA 11/32 Monitor Cormorant population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 8 pairs.

Attribute not within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 6.1.

The Cormorant colony on Skomer moved completely, from the Mew Stone, to Middleholm (where there were seven nests in 2017).

<b>Year</b>	<b>No of AON</b>
2012	4
2013	7
2014	6
2015	7
2016	4
2017	0

Table 16 *Cormorant population*

### **RA 11/33 Monitor Cormorant annual productivity**

In 2017 Cormorant productivity on Middleholm was not established.

## **Feature 11: Shag**

### **RA 11/34 Monitor Shag population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 3 pairs.

Attribute within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 7.1.

With the single nest on the Mew Stone, five nests in total were found in 2017 which is 16.67% less than last year.

<b>Year</b>	<b>No of AON</b>
2012	5
2013	5
2014	1
2015	4
2016	6
2017	1

*Table 17 Shag population*

### **RA 11/35 Monitor Shag annual productivity**

In 2017 the Shag productivity was 0.75 chicks fledged per nesting pair. For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 7.2.

## **Feature 12: Herring Gull**

### **RA 11/36 Monitor Herring Gull population and distribution of colonies**

Lower limit: 3 in any 5 consecutive years with less than 440 apparently occupied nests, there should be no loss of any established colony. (A colony will be considered established when it has contained breeding birds for three years or more.)

Attribute not within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 9.1. No loss of colony noted.

<b>Year</b>	<b>No of AON</b>
2012	401
2013	
2014	440
2015	377
2016	321
2017	297

Table 18 *Herring Gull population*

### **RA 11/37 Monitor Herring Gull relationship with national trends**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 9.1.

### **RA 11/38 Monitor long-term variation in annual survival rate of breeding Herring Gulls**

Lower limit: a mean of at least 84% over the preceding 10 year period.

Attribute not within limit (see table below). The annual survival rate mean over the preceding ten years is 0.81%. For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 9.3.

<b>From</b>	<b>To</b>	<b>Estimated survival Herring Gull</b>
2005	2006	0.781
2006	2007	0.806
2007	2008	0.891
2008	2009	0.880
2009	2010	0.692
2010	2011	0.798
2011	2012	0.752
2012	2013	0.751
2013	2014	0.971
2014	2015	0.800
2015	2016	0.77

Table 19 *Survival rates of adult Herring Gulls*

### RA 11/39 Monitor Herring Gull annual productivity

Lower limit: 3 in any 5 consecutive years with less than 0.7 chicks per breeding pair.

Attribute not within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 9.2.

Year	Productivity
2012	0.50
2013	0.86
2014	0.52
2015	0.69
2016	0.52
2017	0.72

Table 20 *Herring Gull productivity*

### **Feature 13: Great Black-backed Gull**

#### **RA 10/03 Record seabird predation by GBBGU**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 10.3.

#### **RA 11/40 Monitor GBBGU population**

Lower limit: 3 in any 5 consecutive years with less than 100 pairs.

Attribute within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 10.1 and Thomas Faulkner's Long-term Volunteer report: Great Black-backed Gull nest mapping in 2017.

<b>Year</b>	<b>No of AON</b>
2012	96
2013	84
2014	107
2015	123
2016	108
2017	120

Table 21 *Great Black-backed Gull population*

#### **RA 11/41 Monitor GBBGU relationship with national trend**

See JNCC Seabird Monitoring on Skomer Island in 2017, section 10.1.

#### **RA 11/42 Monitor GBBGU annual productivity**

Lower limit: 3 in any 5 consecutive years with fewer than 1.2 chicks per apparently occupied nest.

Attribute within limit (see table below). For more details see JNCC Seabird Monitoring on Skomer Island in 2017, section 10.2.

<b>Year</b>	<b>Productivity</b>
2012	0.92
2013	1.56
2014	1.88
2015	1.65
2016	1.44
2017	1.32

Table 22 *Great Black-backed Gull productivity*



### **Feature 14: Short-eared Owl**

#### **RA 11/43 Monitor Short-eared Owl population and distribution of nests**

In 2017 three pairs nested, one pair near Gorse Hill and two in North Valley. For more details see 2017 Skomer Island Bird Report.

### **Feature 15: Chough**

#### **RA 10/04 Record Chough productivity**

Lower limit: lower limit: 3 out of any 5 consecutive years with less 3 breeding pairs.

Attribute within limit (see table below). For more details see Annual surveillance of choughs.

<b>Year</b>	<b>No of AON</b>
2012	4-5
2013	3
2014	3
2015	3
2016	4
2017	3

Table 23 Chough population

#### **RA 11/44 Monitor Chough population and location of nests**

In 2017 three pairs appear to have attempted to breed at the Lantern, South Castle Beach Cave and Payne's Ledge. For more details see 2017 Skomer Island Bird Report.

#### **RA 11/45 Monitor Chough relationship with national trends**

The result of the 2014 national census which was coordinated by the RSPB unfortunately has not been published, hence a comparison is not possible at this time.

### **Feature 16: Peregrine**

#### **RA 11/46 Monitor Peregrine population and distribution of nests**

In 2017 three pairs bred on Skomer. The territories were held at Protheroe's Dock, Pigstone Bay and Double Cliff. For more details see 2017 Skomer Island Bird Report.

## RA 11/47 Monitor Peregrine relationship with national trends

The Peregrine population on Skomer is stable with three pairs nesting since 2008.

In 2014 the BTO organised a national Peregrine survey. Preliminary analysis of the data from the 2014 Peregrine Survey, carried out in the UK and the Isle of Man, estimates the overall number of breeding pairs at 1,505. Estimates for Wales, Scotland and the Isle of Man are lower than those from the previous survey, while those for Northern Ireland and England are higher.

Area	2002	2014	% change
Wales	283	249	-12
Scotland	571	509	-11
England	470	628	+34
Isle of Man	31	23	-26
Northern Ireland	82	96	+17
Total	1437	1505	+5

Table 24 Provisional estimates of the UK and IoM peregrine population (numbers of breeding pairs) 2014

### Feature 17: Bird assemblage not qualifying

Bird migration is followed by the wardens, staff, volunteers, researchers, overnight guests and anyone with an interest in the subject and recorded in the daily birdlog. The subject can provide a large part of island chatter and a good day of migration can make for an interesting evening log. Birdlog is also an integral part of the overnight 'experience' on Skomer and many overnight guests of all ages and abilities enjoy taking part and adding their sightings.

In 2017, as in the previous years, the island staff put together a comprehensive bird report for the island, see 2017 Skomer Island Bird Report which makes extremely interesting reading. It covers all species and summarises their status and details from 2016, including breeding numbers and/or maximum counts and last occurrences. Breeding seabirds are perhaps better covered in the JNCC Seabird Monitoring on Skomer Island in 2017 report but for non-breeding/migrant seabirds and all other birds (residents and migrants) it brings together all records in a single easily read document.

### RA 10/10 Annual census of breeding Oystercatcher

In 2017 46 breeding pairs were mapped. However, some areas were poorly censused. For more details see 2016 Skomer Island Bird Report, page 23.

### RA 10/11 Annual census of breeding Curlew

In 2016 two pairs were noted as breeding near Young Ground and one of the fields west of the Farm. No young were raised. For more details see 2017 Skomer Island Bird Report.

### RA 10/05 Record bird populations which are not qualifying features

The annual Breeding Bird Survey was conducted in 2017. Furthermore all wildlife sightings were noted in a daily log. For more details see 2017 Skomer Island Bird Report.

**Feature 18: Little Owl**

**RA 10/06 Annual census of Little Owl**

One pair was known to have bred in 2017. For more details see 2017 Skomer Island Bird Report.

**Feature 19: Canada Goose**

**RA 10/07 Annual census of breeding Canada Goose**

A total of 22 pairs nested on the island in 2017. For more details see 2017 Skomer Island Bird Report.

**RA 10/08 Record Canada Geese in winter/non-breeding population**

Canada Geese were recorded in the daily bird log throughout the season.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Max count	42	32	20	32	36	46	93	100	60

Table 25      Canada Goose counts

## ***Constant Effort Site***

The CES (Constant Effort Site) study (a scheme operated by the British Trust of Ornithology (BTO) continued in 2017, delivered by island staff. This study looks into the adult survival and breeding success of passerines, particularly migrant warblers by use of standardised ringing. This involves ringing for a set period of time once in every ten day period between May and August and recording the species, age and measurements of all birds caught. The main species involved on Skomer are Sedge Warblers and Common Whitethroats. The data is then inputted onto the BTO's database IPMR and used in their analysis and report on The State of the UK's Birds.

Nest recording was also carried out on the island to add to productivity and breeding data.

## 2.2 MAMMALS

### Feature 20 Skomer Vole

#### RA 00/04 Record population of Skomer Voles in study plot

2017 was a very good year for voles. Tim Healing conducted his annual monitoring in August and found 448 voles/Ha in Grid C (North Stream Valley), which is the highest density observed since records began and 80 voles/Ha in Grid E (Centre of Island), which is also a very high density of animals, see Fig 2.

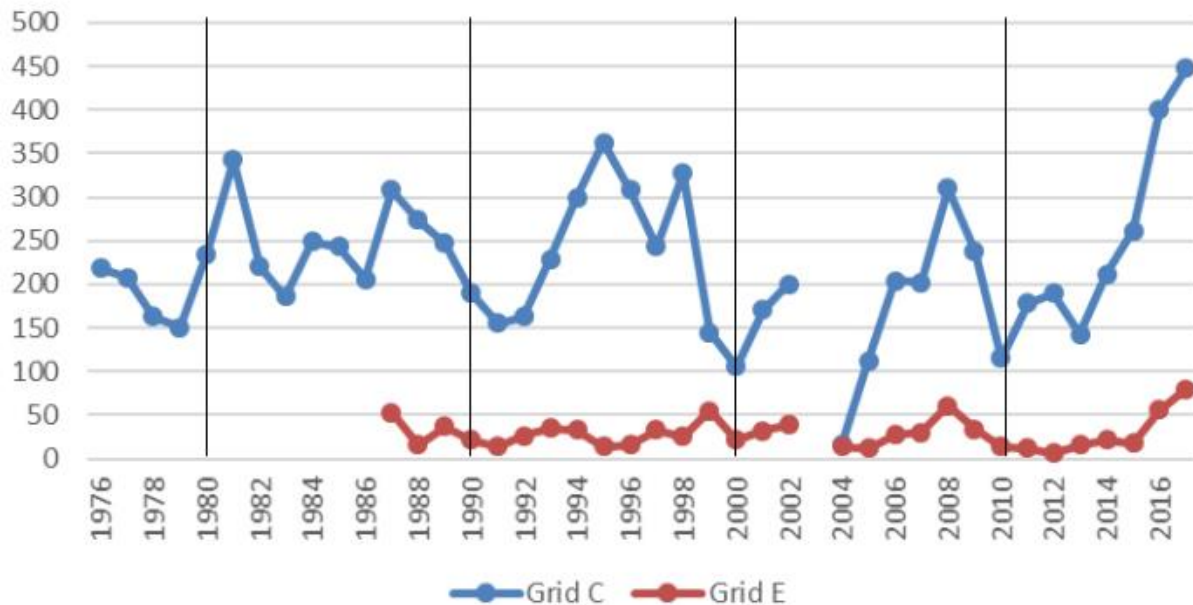


Figure 2 Minimum number of voles known to be alive/Ha in August on Grid C (1976-2017) and Grid E 1987-2017.

The mean population size on Grid C (1976-2017) is 224/Ha, the mean population size on Grid E (1987-2017) is 29/Ha. Numbers are always high at the end of the breeding season (Sept/Oct), decline throughout the winter and are lowest at the start of the breeding season (May/June).

### Feature 21 Grey Seal

Grey Seal productivity was monitored by WTSWW under NRW contract as an Marine Conservation Zone (MCZ) project. B. Büche and E. Stubbings carried out this work, assisted by Julie Riordan who acted as Seal Assistant in October. Furthermore S. Purdon, L. Newman and Long Term Volunteers helped collect the data. The report was submitted to NRW, for more details see Skomer Seal Report 2017.

#### RA00/01 Casual observation of seal behaviour

See Skomer Seal Report 2017.pdf section 8.

#### RA00/02 Identification of individual breeding and hauled-out seals

See Skomer Seal Report 2017.pdf section 10.

#### RA 00/06 Record any significant impact of severe storms on the seal population

Two severe storm events were noted in 2017, see Skomer Seal Report 2017 section 4.3.

#### RA 01/01 Monitor seal pup births and survival

The total of 225 pups born on Skomer Island. 170 pups are known, or assumed, to have survived on Skomer, giving a survival rate of 76%. For more details see Skomer Seal Report 2017 section 4.2.

## **RA 01/02 Monitoring seal attendance at haul-outs**

In 2017 the maximum haul-out (on the main haul-out sites) of 305 animals was recorded on 23 November, one day earlier than in 2016. For more details see Skomer Seal Report 2017 section 5.

### ***Cetaceans***

Standardised hour-long cetacean watches were conducted on a weekly basis from the Garland Stone and Skomer Head. These were carried out to Sea Trust methodology by weekly volunteers. The 2017 data was sent to the Sea Trust, CBMWC and the Marine Conservation Zone (MCZ) staff.

All cetacean sightings were recorded in the daily wildlife log.

### ***Rabbits***

See Feature 27:Vegetation

## 2.3 INVERTEBRATES

### *Feature 24: Lepidoptera*

#### **RA40/01 Annual butterfly transect**

The island butterfly transect was carried out once a week between April and the end of September. The butterfly transect data were entered online on to the Butterfly Conservation website.

#### **Moths**

Regular moth trapping was carried out at the Farm and North Haven during the season. Moth trapping on Skomer has a long history and there are some interesting species on the island. Furthermore it is a fabulous people engagement tool, hence well worth keeping up. All moth records were saved on the Skomer Warden computer under Natural History/Invertebrates and were also sent to the county moth recorder.

#### **Herpetiles**

Slow Worms, Common Lizards, Common Frogs, Common Toads and Palmate Newts, as well as any small mammals found under the refugia were recorded every week on two set transects. The Farm transect has been going for many years and the wider island transect was set up in 2013 and continued since. These were carried out by weekly volunteers and the data was sent to ARC (Amphibian and Reptile Conservation) Trust.

## 2.4. LICHENS

### *Feature 25:Lichen assemblage*

#### **RF50/01 Record lichen quadrats**

Project needs to be developed

#### **RF50/02 Teloschistes Flavicans photo surveillance**

Project needs to be developed

The population of *Teloschistes flavicans* was present on the rocks at the top of the Amos and seems healthy.

## 2.5 VEGETATION

### Feature 27:Vegetation

#### RA 00/05 Annual Rabbit census

Monthly Rabbit counts were done in the study plots on the central fields, the Wick grasslands and South Plateau. In 2017 the Rabbit numbers were more or less the same as in 2016. However due to very lush vegetation in 2017 the counts might not represent the actual number of rabbits present.

	March	April	May	June	July	August	September	October
<b>Plot</b>								
Plot 1+2+3	7	14	16	7	3	0	4	2
Plot 4	5	19	18	6	1	0	6	4
Wick Grassland	26	47	38	2	10	3	19	
South Plateau	39	65	41	24	22	2	30	

Table 26 Rabbit Numbers

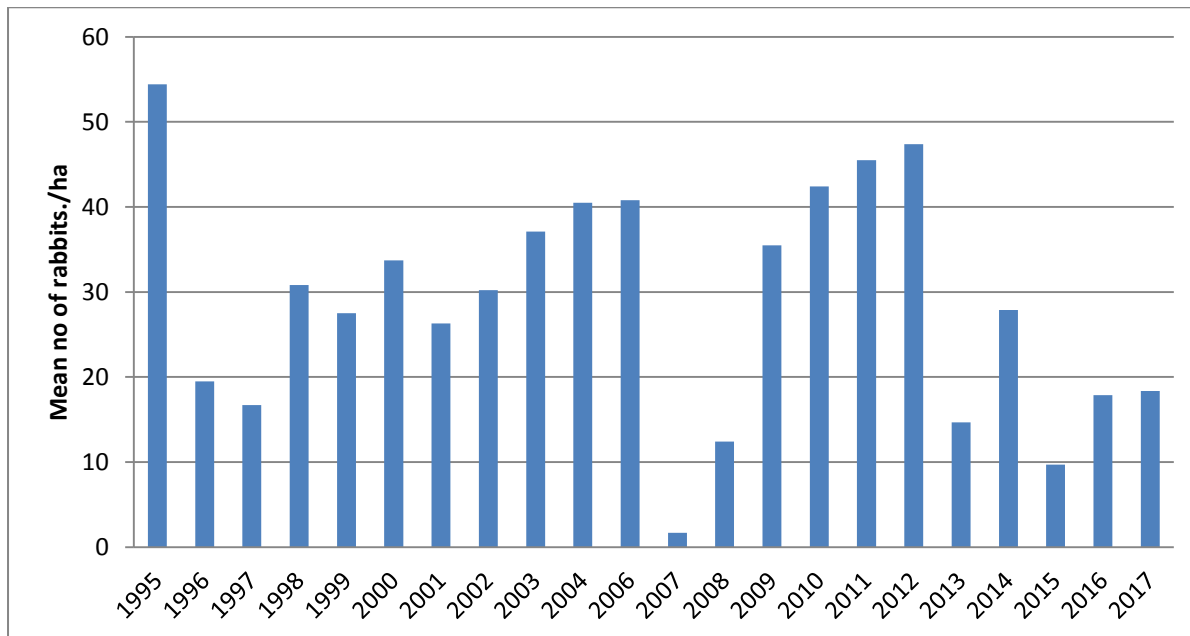


Figure 3 Mean number of Rabbits per hectare



## **RF00/01 High resolution aerial photography**

A private donor, who wishes to remain anonymous, generously financed two low level high resolution aerial photographic surveys of Skomer.

The commission was awarded to a private commercial company ExeGesis Spatial Data Management Ltd.

ExeGesis was required to:

- fly an area of up to 4 square km (including buffer areas necessary to account for irregular habitat areas totalling 3 square km).
- provide an image resolution to be better than 4.5 cm per pixel.
- orthorectify and 'stitch' together (orthomosaice) the individual images to provide wide area, high quality and high-resolution images.

The main purpose of the project was to provide an accurate reference point or baseline which can be used to help identify changes in the vegetation. It was also used to provide accurate maps of the rock outcrops and other landscape features.

Two flights were organised one to coincide with the spring flowering period (9 & 10 May 2017) the second to coincide with peak bracken growth. (1 & 2 September)

The final image files will be stored by the Wildlife Trust South and West Wales. The donor agreed that there will be no copyright limitations on the data which can be made available for any legitimate use in connection with the work of the WTSWW. Copyright will be held by WTSWW.

The copyright of all processed data captured from the original images, for example, the digitised maps, will also be held by WTSWW.

The photographs were processed by Mike Alexander, for more information see the report by M. Alexander : High resolution low level aerial photography on Skomer May and September 2017.

## **RF01/02 Fixed point photography**

Project needs to be developed.

## **RF01/01 Permanent vegetation quadrats**

In 2017 new vegetation quadrats were found and monitored however a detailed project needs to be developed. Also see Long-term Volunteer report: Vegetation mapping in 2017 - T. Faulkner.

### RF20/01 Map the distribution of Bracken

The September 2017 low level high resolution aerial photographic survey was used to provide an accurate map of bracken distribution. The survey showed that there had been a slight increase to 55% (1589 hectares) of the island being covered by Bracken. For more information see High resolution low level aerial photography on Skomer May and September 2017.

### RF20/02 Map the distribution of Bluebell

The spring 2017 low level high resolution aerial photographic survey was used to provide an accurate map of bluebell distribution.

May 2017: bluebells cover 84 hectares of Skomer, excluding the rocky areas. This represents slightly under a third of the soil surface. The distribution is limited by waterlogged soils in both North and South Valleys. With only few exceptions, bluebells are also absent from the extremely exposed coastal land to the south and west.

The relationship between bluebells and bracken: The bracken is shown in green, bluebells which grow beneath the bracken are pale blue, and bluebells outside the bracken are shown in dark blue. With the exception of a few very small areas which have recently become covered by Yorkshire fog, the bluebells are confined entirely to the areas occupied by bracken.

The exceptions were all in areas where bracken had been recently replaced by Yorkshire fog. There are very restricted and small areas of bluebell cliff grassland, an approximation of (MC12 *Festuca rubra-Hyacinthoides non-scripta* maritime grassland). The community is mainly confined to very sheltered moist north-facing gullies where sunlight rarely if ever penetrates. The shelter form rocks and gully sides maintains the moisture and fulfils much the same function as shady bracken on Skomer or a woodland canopy on the mainland.

### RF20/03 Map the distribution of Red Campion

No progress- unfortunately the flights did not coincide with flowering red campion. This should be given some attention; the cover of campion has increased rapidly over the past decades, possibly as a consequence of guano enrichment.

### RF20/04 Map the distribution of Ragwort

Ragwort was present in good numbers.

### RF20/05 Record rare plants

Portland Spurge (*Euphorbia portlandica*) was present at the landing/boat slip and South Castle.

Plants	South Castle	NHV Boat Shed
Sm. (<10 cm)	14	0
Med (10-30cm)	4	5
Lrg. (>30 cm)	0	0

Rock Sea-Lavender (*Limonium binervosum*) was present at South Castle.

	South Castle site 1	South Castle site 2
Clumps	76	38

Three-lobed Water Crowfoot (*Ranunculus tripartitus*) was present in Wick Stream.

Lancelot Spleenwort (*Asplenium obovatum*) was present at Sales Point and NHV Lime Kiln.

	NHV Lime Kiln	NHV Sales Point
Sm. (<10 cm)	1	37
Lrg. (>10 cm)	6	0

## **RF20/06 Map the distribution of Heath**

The 2017 low level high resolution aerial photographic survey was used to provide an accurate map of heath distribution.

The NVC communities identified in the 'The Pembrokeshire lowland heathland survey' (Prosser and Wallace 1996) are: squill clifftop heath (H7 *Calluna vulgaris* - *Scilla verna* heath), western gorse dry heath (H8a *Calluna vulgaris* – *Ulex gallii* heath, species-poor sub-community), lowland wet heath (M16a *Erica tetralix* – *Sphagnum compactum* wet heath, typical sub-community), and purple moor-grass sward (M25 *Molinia-Potentilla mire*). Wilberforce (1999) also identified fescue dry heath (H1 *Calluna Vulgaris-Festuca ovina* heath). In short, Skomer has one maritime heath community, two dry heath communities and two wet heath/mire communities. However, although the species composition differs in response to different edaphic factors, most of the critical factors and the predicted future outcomes will be common to all areas of heath on Skomer. To avoid unnecessary repetition, these communities have been aggregated and described as a single feature.

The 1969 heath map was based on aerial photographs and field survey. It is the most accurate and reliable of the historical maps and provides a good reference point.

The 1983 map was based on a large collection of low-level aerial photographs. Although not a commercial flight, the photographs were taken at several different times during the year and clearly show the distribution of heath. The aerial photographs were supplemented with a collection of ground photographs.

The 2017 heather map is by far the most accurate. It was digitised from a very high resolution aerial image. In general, it confirms a continuation of the overall decline, with further losses since 2008, but, surprisingly, there has been some recovery in the south of the island.

It is possible that we are not witnessing the extinction of heath on Skomer, and there is some reason for optimism. The best surviving original area of heath, near Bull Hole, is quite vigorous, despite the removal of the exclosures. Towards the south coast, near South Pond, an area of heath which appeared to be completely dead by 2013 suddenly began recovering in 2016.

South valley viewed from the west, showing an extensive area of heather which died before 2008. This photograph was taken in 2013, and, at that time, there had been no recovery and very limited replacement by other species.

A similar view of South Valley taken in April 2017. Most of the dead heather shown in the 2013 photograph has been replaced by a quite remarkable area of fresh, new growth.

There has been a similar change around Skomer Head where the fescue grassland has shown signs of recovery. Both events point to a reduction in grazing pressure. This is something that should be investigated. The first step would be to establish a simple rabbit surveillance project.

## **RF20/07 Map the distribution of Thrift**

The 2017 low level high resolution aerial photographic survey was used to provide an accurate map of thrift distribution.

The few remaining significant areas of thrift are restricted to the exposed south coast areas of rocky thin soils.

## **RF20/08 Map the distribution of Sea Campion.**

The 2017 low level high resolution aerial photographic survey was used to provide an accurate map of sea campion distribution.

Distribution of sea campion. The general pattern has not changed over the past few decades, but the extent of individual areas has always been quite dynamic. Sea campion covered around 5 hectares of Skomer in 2017.

## **Record of significant damage to vegetation**

No significant damage to vegetation was recorded

## **NPMS**

In 2015 we started to contribute to the National Plant Monitoring Scheme (NPMS) and the monitoring continued in 2017. In spring and late summer, five plots are being surveyed and the data uploaded onto the NPMS web page.

### 3 Research

In 2017 Tim Birkhead's long term study (40+ years) on the breeding success and adult survival of Guillemots on Skomer was continued. Tim Birkhead and his team had consent to take up to 30 first laid Guillemot eggs, and up to 10 replacement eggs in order to measure and quantify the shape of replacement eggs laid by the same female. Furthermore he took, photographed and replaced 100 guillemot eggs to measure with calipers. The Sheffield team also took up to 50 abandoned Guillemot eggs at the end of the breeding season for egg shape analysis. In 2016 the study was extended to include Puffin eggs, but the Sheffield team was unable to obtain any, hence Tim Birkhead collected up to two Puffin eggs to count the sperm on the perivitelline layer surrounding the yolk in 2017. And finally he photographed, measured and replaced up to 20 complete clutches of Lesser Black-backed gull eggs to establish whether egg shape is repeatable within females (i.e. by comparing the three eggs of the clutch) and to establish whether egg size (volume) affects egg shape (i.e. comparing A, B and C [smallest] eggs in a clutch).

During 2017 OxNav continued to GPS track breeding shearwaters during both incubation and chick-rearing, on Skomer and on Copeland. They conducted displacement experiments and demonstrated a dominant role for olfactory cues in pelagic shearwaters, with coastal landmark cues becoming important as land comes into view. Furthermore Oliver Padget has made use of long-term GPS tracking dataset to analyse homing decisions in Manx shearwaters as they return from natural foraging trips. In 2017 OxNav conducted a pilot trial to determine whether the leaving trajectories of fledgling shearwaters could be followed visually using temporarily attached miniature coloured LEDs, and under a control versus a magnetic disruption treatment to shed light on the question: how do seabirds solve the problem of first time migration. Annette Fayet carried out a pilot study tracking the return movements of chick-rearing shearwaters to the colony, and displacing them <4m away from their nest to record their movements when attempting to return to the nest. This study is investigating how Manx Shearwaters locate their burrows in the dark. Martyna Syposz was investigating the effect of light and light pollution on Manx Shearwaters. She is trying to understand the mechanisms behind grounding and disorientation by light. OxNav also continued its Puffin research which aims to understand at-sea behaviour and ecology of Atlantic puffins.

Samantha Patrick and Alice Trevail (Liverpool University) continued monitoring the Kittiwake colony at Protheroe's Dock with a trail camera to record the laying date, hatching success, chick growth and fledging success in breeding pairs at each colony. Furthermore they combined data from automated camera systems with GPS tracking technology to examine the links between breeding success and kittiwake foraging behaviour. GPS data loggers were attached to breeding kittiwakes to calibrate camera images and to investigate kittiwake foraging behaviour and habitat preferences by linking kittiwake movements to remotely sensed environmental variables

Flavia Occhibove from Aberystwyth University studied Skomer Voles for three days in 2017. Her PhD research aims to play a part in solving the debate about dilution effect, employing both field data and epidemiological modelling to perform community assembly/disassembly simulations. She was investigating whether and how host-diversity and/or community-diversity affect the prevalence of different pathogens among wild ground-dwelling rodents in Wales. On Skomer she live-trapped small rodents, in order to collect data for her PhD project and cooperated with the teaching activities of the Aberystwyth University "Evolution Field Course". She live-trapped, weighed, and measured Skomer Voles and collected faeces and ectoparasites to assess pathogen presence.

Emma Cole from Swansea University continued her study on the ability of auks to land according to the wind speed. Birds were observed landing at breeding cliffs and outcrops, in order to quantify the proportion of landing attempts that are successful under a given set of conditions.

The Skomer Island Project which is a joint archaeological project between RCAHMW, University of Sheffield and Cardiff University conducted another excavation close to High Cliff in 2017. The excavation for 2017 targeted and assessed the archaeological potential for undisturbed archaeological deposits surviving behind or beneath an alternative prehistoric field boundary on the island. Many field system boundaries are severely affected by burrows, but some of the largest lynchets have the potential to retain intact sediments towards their base. The obtained samples were used for palaeoenvironmental analysis, AMS Radiocarbon dating and OSL dating.

# 4 Visitors

## 4.1 DAY VISITORS

Skomer opened to the public on the 1<sup>st</sup> of April in 2017. The weather this season was generally settled with lower numbers of closed days than the previous few years, however, a very unsettled start and end to June meant that we were closed for 6 days in our busiest month of the year. We also had an incredibly stormy September which meant we were closed for 14 days due to bad weather. Even though this is the case, we still welcomed a record number of visitors on to Skomer, breaking the previous records set in 2016 and 2015. There were 17,910 day visitors and 1,144 overnight guests which brings the grand total to 19,054 visitors in 2017, by far our most successful year to date. This was also helped by a much later Easter, with Easter falling towards the end of April, a time when the seabirds are more likely to be settled.

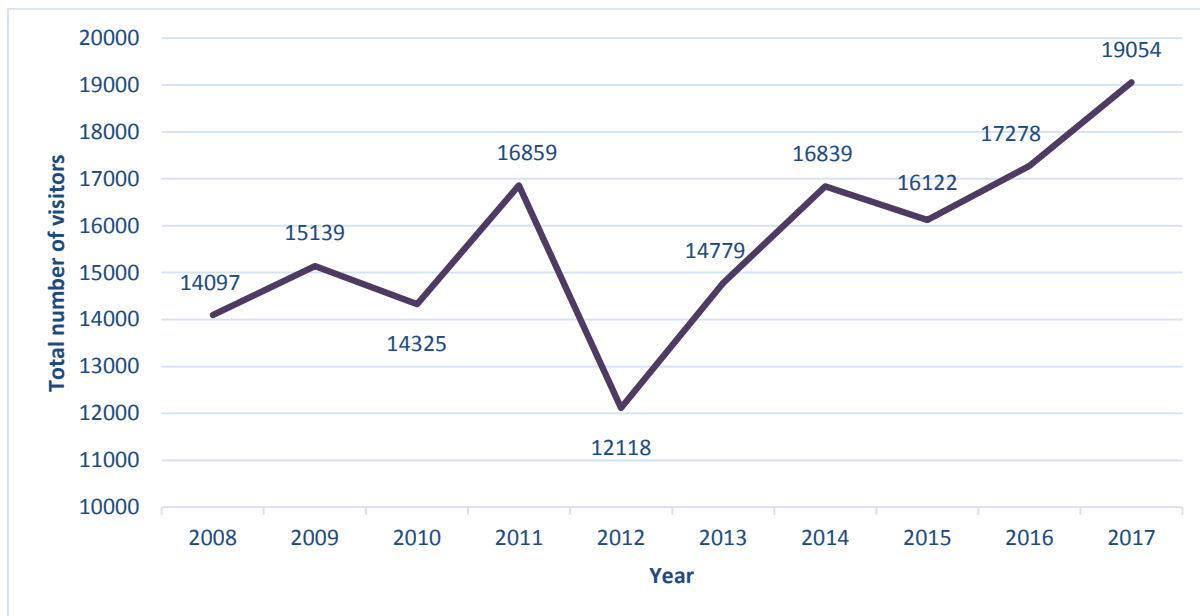


Figure 4 Total number of visitors including hostel guests, day visitors and private landers over a 10 year period.

### Day Boat Cancellations

	2013	2014	2015	2016	2017
Number of boat cancellations	52	27	42	38	30

Table 27 Number of no boat days over the previous five years. This does not include Mondays, when we're normally closed.

In terms of overall numbers of no sail days, 2017 was better than the previous two years, however, six no sail days in June will almost definitely have reduced numbers of visitors and 14 no sail days in September meant that including Mondays we were closed for over half of September.

Shoulder season numbers were slightly lower than the previous few years but still looked positive. Numbers were almost definitely affected by the amount of unsettled weather we experience in the latter part of the season, with five no sail days in August (four in 2016) and 14 in September (nine in 2016).

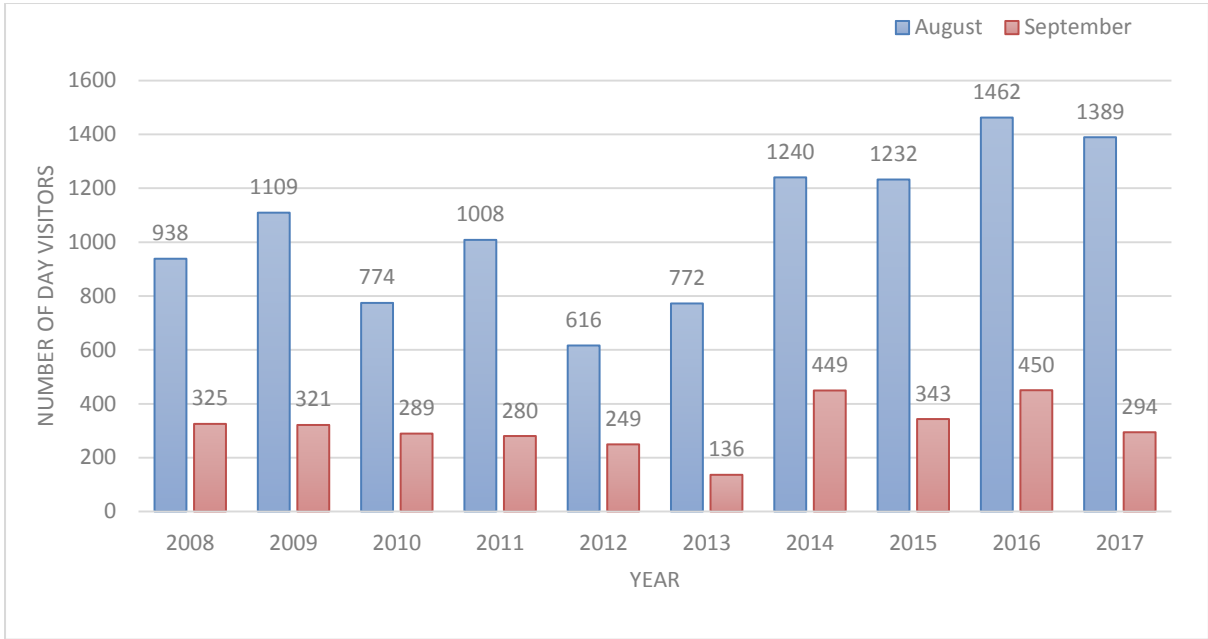


Figure 5 Total number of day visitors in August and September over the past 10 years.

### 4.2 EDUCATIONAL VISITS

There was a slight increase in educational visits this year with 1150 students visiting. Educational visits still account for a significant proportion of visitors and June was our busiest month for educational visits. Even though educational visits were not allowed to book in the first two weeks of June, we still welcomed 347 students in the second half of the month which equates to just under 8% of all the visitors in June.

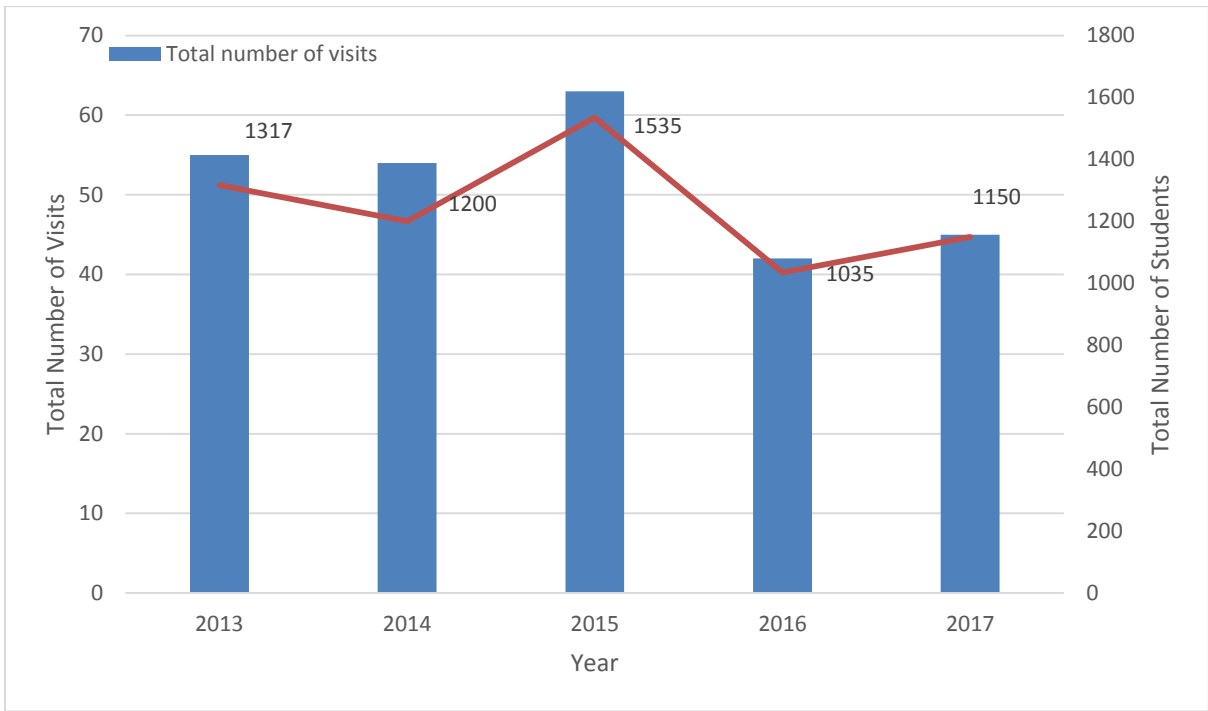


Figure 6 Educational visits in the past five years.

## 4.4 OVERNIGHT GUESTS

We sold 2087 beds in the hostel in 2017 which is a very slight reduction compared to the number of beds sold in 2016. This could be an indication that demand is starting to level off, however, the percentage occupancy below, shows there is still plenty of room and work to be done in August and September.

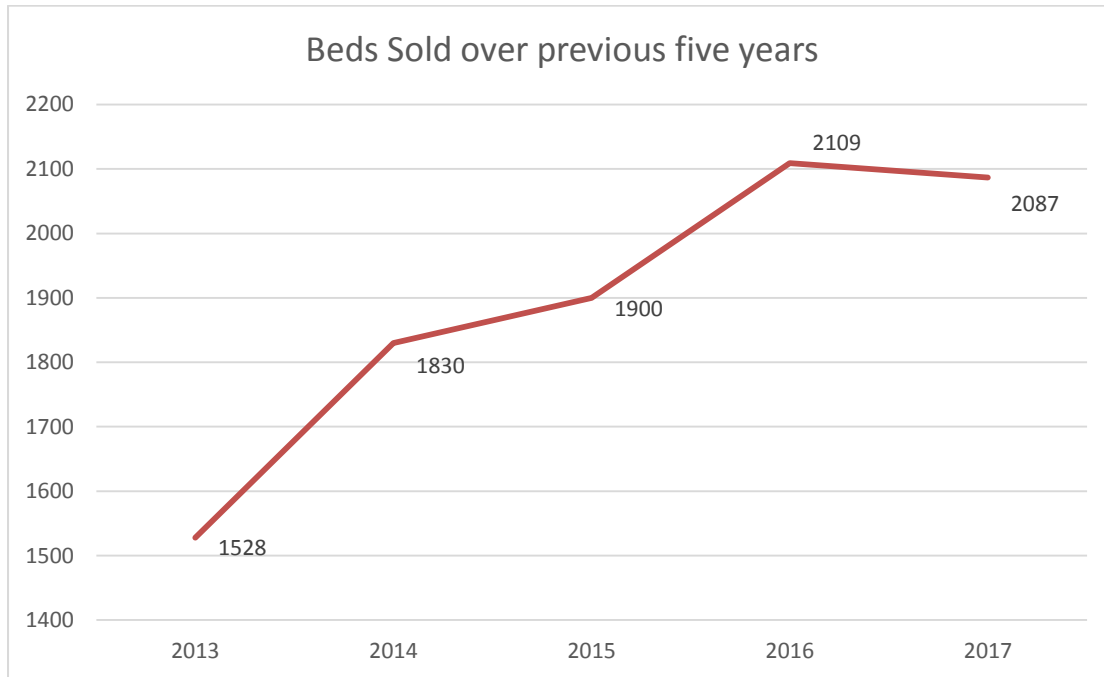


Figure 7 Number of beds sold per year.



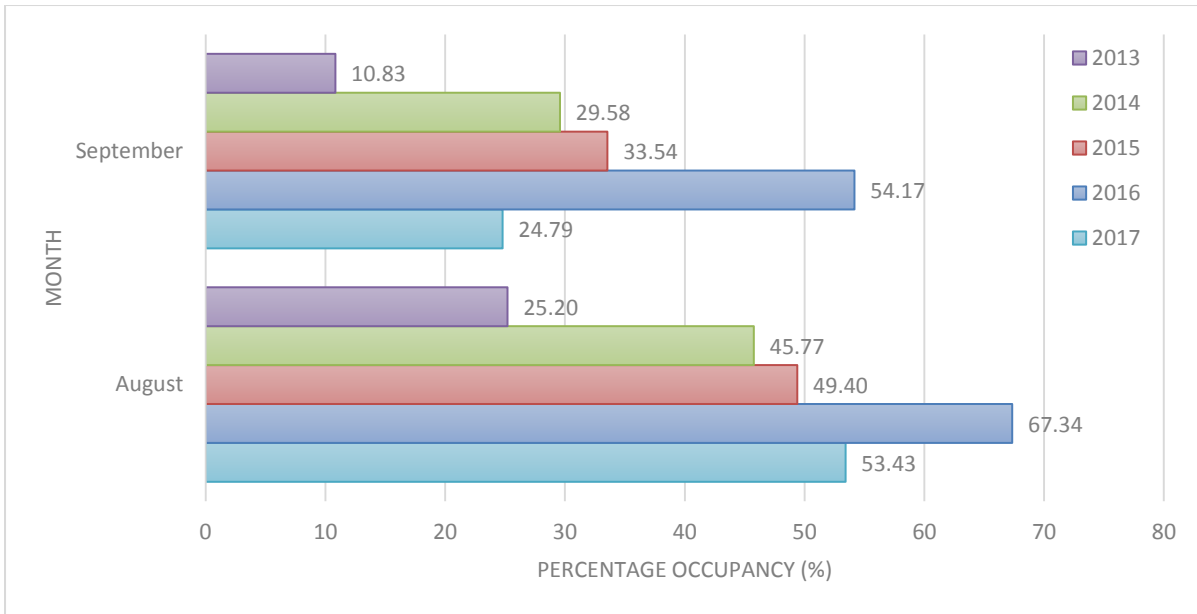


Figure 8 Percentage occupancy of the rooms in the hostel in August and September

Traditionally a quiet time of the year in the hostel on Skomer, August and September have been the focus of marketing and advertising over the past few years and it has been paying off with percentage occupancy increasing in the shoulder season. A drop in occupancy rates in August and September is still positive when compared to just four years ago and we're still achieving over 50% occupancy rates in August. September's reduction could be due to the moving of Shearwater Week into August in 2017 due to a bad moon phase in September. Shearwater Week regularly fills most beds for the eight days it runs for.

The hostel also received overwhelmingly positive feedback in 2017.

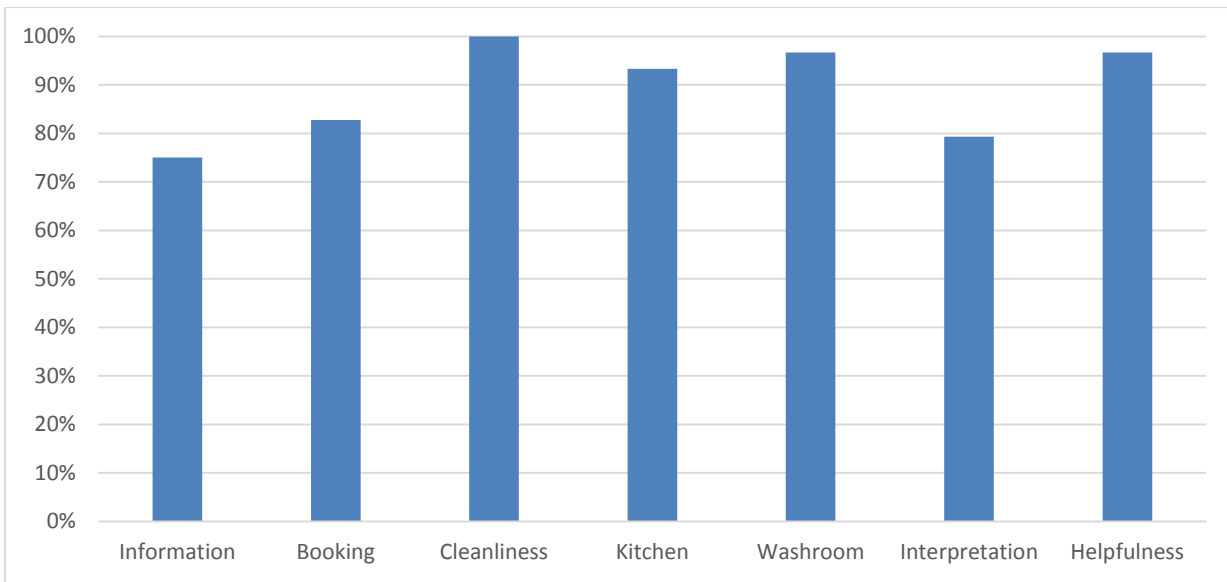


Figure 9 Percentage of guests who rated each category good or excellent in 2017.

Figure eight, shows that every category achieved good or excellent ratings for at least 75% guests. The lowest rated category, information, refers to information sent out prior to their visit and is something we have been constantly trying to improve.

## 4.5 HUMAN IMPACT

### **Visitors**

The island was regularly wardened and patrolled by volunteers and staff. All visitors received an introductory talk, emphasising 'dos and don'ts' with regards to safety and disturbance to wildlife. All introductory talks encouraged visitors to walk the island in an anticlockwise way, which seemed to reduce visitor pressure at the Wick slightly. A code of conduct for photography groups was displayed in the hostel and mentioned in welcome talks. Furthermore the Commercial Code of Conduct was continued in 2017.

The Wick was manned by staff and volunteers to prevent visitor disturbance and provide information about seabirds to visitors. A "white" Puffin which suffered from progressive greying received a lot of media attention and caused some people management issues at Welsh Way. Photographers blocked the path so that other visitors had to step off the narrow track to get past them. Conscientious guests complained to island staff about this situation. In consequence we stopped disclosing the exact location of the white Puffin.

Daily records of disturbance from anywhere on the island, including seaborne disturbance, were kept at evening log and are on record.

Most common type of disruption was people off paths, private landing without paying and without receiving intro talk, collapsed burrows during gull and Puffin count, BBS and Shearwater census, collapsed burrows by visiting guests.

### **Seaborne disturbance**

In 2016 we observed several incidents of seaborne disturbance. Boats and kayaks quite regularly go too close to seabird cliffs and hauled-out seals in North Haven and Rye Rocks. Several times a year people land or try to land in South Haven. In autumn boats regularly enter the voluntary no entry zones in South and North Haven. This has been a source of disturbance where boats (particularly tenders and dinghies) approach pupping beaches and loud noises e.g. from anchors being raised spook seals. This is a particular problem in South Haven. Furthermore lobster potting boats regularly come too close to nesting seabirds and pupping seals. One particularly bad incident of a lobster potting boat going too close to pupping beaches and causing the seals to panic and flee into the water, was recorded on video. All seaborne disturbance data is being made available to the NRW's Marine Conservation Zone team at Martin's Haven.

### **Pollution**

No major pollution incidents were reported in 2017.

# 5 Staff and Volunteers

## 5.1 ISLAND STAFF

Visitor Officer, Leighton Newman, Assistant Warden Sarah Purdon and the Wardens Birgitta Büche and Edward Stubbings moved out the island on 06/03/2017. The move to the island was delayed by several days of stormy weather. Field Worker Julie Riordan joined the team in mid-April.

Julie's contract ended mid-August but she returned to the island in October to take up her role as Seal Assistant.

Sarah and Julie left Skomer end of October; the wardens and Leighton left on the 25/11/17.

## 5.2 LOCKLEY LODGE

Chrissy and Gary Eade ran Lockley Lodge in 2017 and Mervyn Jones returned as recruitment officer. The Lockley Lodge team worked extremely hard throughout the season and the island could not have run so smoothly without their hard work. The Lockley Lodge team run an extremely tight ship which we think is important to keep order and give everyone the best possible experience whilst maintaining the interests of the Trust.

## 5.3 VOLUNTEERS

### *Weekly vols*

We had a total of 134 volunteers help with the running of the island in 2017. Of these, at least four were completing their Duke of Edinburgh Gold awards, and a further five were students and had their place paid for by the Skalmey Bursary. We're incredibly grateful to those new, and returning volunteers who make our lives so much easier through the season, especially with a new Assistant Warden.

### *Work parties*

On 23 September a team of volunteers, organised by Steve Sutcliffe, dismantled the water tank in the garden. A huge thanks goes to everyone who helped.

### *LTV's*

In 2017 we were joined by four Long-term Volunteers, they were Thomas Faulkner (April – July), Ruby Temple-Long (April – July), Joe Parker (July – September) and Jake Taylor-Bruce (July – September). Tom undertook a number of projects, including vegetation monitoring and Great Black-backed Gull nest mapping, see his Long-term Volunteer report: Vegetation mapping in 2017 - T. Faulkner and Great Black-backed Gull nest mapping in 2017 - T. Faulkner.

Ruby was in charge of monitoring Razorbill productivity at Bull Hole and being a Marine Biologist, took an interest in the shore line ecology and conducted a project on the Shore Clingfish which are found in the lower reaches of the inter tidal zone, see her Long-term Volunteer report : The Shore Clingfish - R Temple-Long.

Jake, also a keen Marine Biologist worked in collaboration with the NRW team in the mainland and set up remote cameras to find out which wildlife use the eel grass, which is located in North Haven, see his Long-term Volunteer report: The Marine Fauna of North Haven - J Taylor-Bruce.

We were also joined by a Hannah Meinertzhagen as the Seabird Monitoring Volunteer from 25<sup>th</sup> May until 30<sup>th</sup> June. Hannah is a previous weekly volunteer and became a valued member of the team very quickly, helping to co-ordinate the annual Shearwater Census as well as cliff nesting seabird counts.

All five volunteers were a fantastic addition to the island and became an integral part of the Skomer team. The personal projects completed by the Long Term Volunteers whilst on Skomer can be found in the Appendix of this report.

# 6 Media, Interpretation and Events

## 6.1 MEDIA/FILMING ON SKOMER

As ever there was a lot of media interest in Skomer in 2017 and it is broken down into month by month accounts of the media highlights plus a total number of media pieces for that month.

### March

Highlights included a piece on S4C TV, a piece in The Sunday Mirror about Skomer Rabbits and the island featured as one of Chris Packhams Favourite Walks in The Times. Online highlights included Landlove and Wales Online.

There were a total of 23 pieces of media from January, February and March.

### April

Various BBC Radio pieces were broadcast about Skomer. Annette's research on Puffins caught the attention of a lot of news.

There were a total of 30 pieces of media for April.

### May

The Telegraph posted online about the leucistic Puffin on Skomer and S4C broadcast a piece on Skomer Island.

There were a total of 12 pieces of media for May.

### June

Highlights included being featured on S4C with Iolo Williams, Countryfile Magazine online and BBC News online.

There were a total of 11 pieces of media for June.

### July

Highlights included being featured on the BBC's One Show and Natural World and ITV's Coast and Country. The Times featured a Puffin photograph taken on Skomer and there was also a piece on BBC Radio Wales.

There were a total of 19 pieces of media for July.

### August

A mention of Skomer's Razorbills was picked up in the Western Mail.

There were a total of 14 pieces of media for August.

### September

Highlights included various pieces on BBC Radio Wales and an online piece on BBC Wales' website. There were a total of 10 pieces of media for September.

### Winter

The Storms Appeal secured an enormous amount of media for us during October.

There were a total of 68 pieces of media for the winter period, October, November and December.

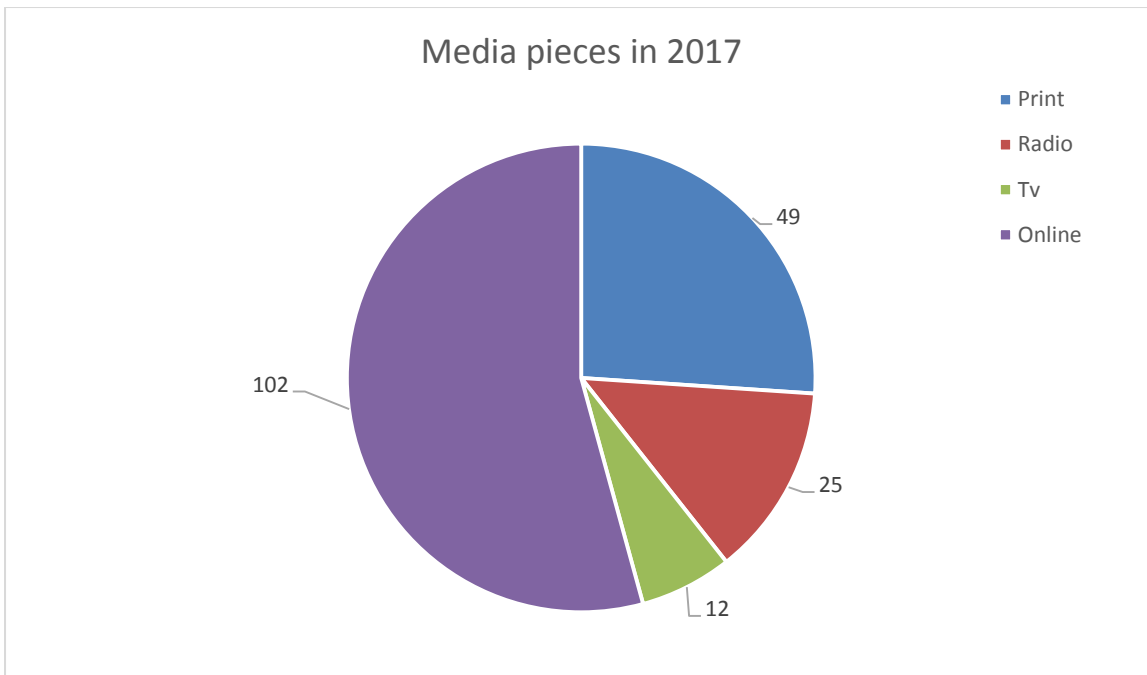


Figure 10 Media pieces on Skomer in 2017, broken down into categories.

As can be seen in figure nine, the largest category of media on Skomer is online, followed by print. Television and radio are less regular with 12 and 25 pieces respectively. A total of 188 pieces of media were recorded in 2017.

## 6.2 MARKETING, PUBLICITY AND SOCIAL MEDIA

Social media was again hugely popular, allowing people from all over the world to see what happens on Skomer, from recent bird sightings to the behind the scenes maintenance work, and upcoming events.

Our biggest platform, Facebook, now stands at 8,587 likes, an increase of 1,882 followers in 2017.

Twitter also gained many new followers and now stands at 6,996 followers which is an increase of 1,572 followers in 2017.

Instagram has increased in popularity hugely in 2017 and increased from 300 followers in 2017 to 940 at the end of the year.

## 6.3 INTERPRETATION

Due to time constraints, the new history trail was not in place in 2017, although it will hopefully be in place over the coming year.

## 6.4 EVENTS

### West Coast Birdwatching events

The West Coast Birdwatching events were successful again in 2017. Overall, 76 people attended the events. The spring guided walk was sold out as were four out of five of the Monday walks, with the fifth being cancelled due to bad weather. The autumn event had six participants.

### Photography Workshops with Andy Davies

We ran two photography residential courses in with Andy Davies in 2017. The spring event was sold out and the autumn photography event had two participants.

### History Walk

A new one off history walk run in conjunction with Dr Toby Driver and Louise Barker from the Royal Commission on the Ancient and Historical Monuments of Wales. The walk was run on the 27<sup>th</sup> April which was a backup date after the day before was cancelled due to poor weather. The walk was sold out and a great success. This event had a suggested donation of £5, on top of landing fees and boat fees.

### Rockpooling Fridays

Rockpooling Fridays ran in 2017 on the 11<sup>th</sup> and 25<sup>th</sup> August. Both events went ahead but were poorly attended, probably because most people want to spend the day walking around Skomer and enjoying the island, rather than spending an hour in North Haven.

These activities were free to attend apart from the usual landing fee and boat fare.

### Yoga Retreat

The Yoga Retreat ran from 13<sup>th</sup> - 15<sup>th</sup> August and it was the second year of the Yoga Retreat with Hester Clack of Hester Yoga. This event was sold out even after being expanded to double capacity with Hester running sessions for two separate groups per day.

### Skomer's Hidden Secrets

Skomer's Hidden Secrets ran from 19<sup>th</sup> -21<sup>st</sup> August in 2017 and was a chance for people to get involved with activities on the island that they would not normally have. A charge of £90 for adults and £50 for children were put into place and we had two families join us, consisting of three children and four adults.

### Shearwater Week

Shearwater Week ran from 22<sup>nd</sup> – 30<sup>th</sup> August in 2017. The week was slightly earlier than we would like it due to the timing of the full moon in September. Having said that, it was still a fantastic week and was enjoyed by all. In total we filled 122 beds out of a possible 128 beds available.

The price for 2017 was set at £99 for adults and £49 for children.

### Moths of Skomer

This year we ran a moth event from 22<sup>nd</sup> -24<sup>th</sup> September. The event had five people booked on in a time when the hostel is traditionally very quiet. Five traps were put out in various locations on the first night and three were put out on the second night. We caught over 450 moths of over 30 species over the two nights.



# 7 Reserve Management

## 7.1 MANAGEMENT PLAN

Species monitoring was done according to management plan. Some project descriptions are still outstanding and some adjustments to the management plan were done in accordance with the WTSWW and NRW.

## 7.2 SPECIES AND HABITAT MANAGEMENT

Apart from work on the footpaths no other habitat management was carried out. No species management was carried out above and beyond the normal people management to minimise disturbance to nesting birds.

## 8 External groups and liaison

### **ICAC**

The Islands Conservation Advisory Committee (ICAC) meetings were held on 24/2/17 (Cilgerran), 23/4/17 (Skomer), 1/9/17 (Skokholm) 5/12/17 (Cilgerran). The seabird monitoring subcommittee met at Tondy on 30/11/17. Minutes were taken and are kept in the island files.

### **Friends of Skokholm and Skomer**

The Friends of Skokholm and Skomer committee meeting was held on the 18<sup>th</sup> of February which was attended by the Wardens. The Friends reunion was held the next day and was another great success. The 'friends' also helped dismantle the water tank in the garden and helped man the shearwater week.

### **Marine Conservation Zone MCZ**

Especially strong links are maintained with NRW staff at the MCZ office at Martin's Haven. The MCZ team are extremely generous and helpful to the island and we would not be able to run so smoothly without them.

### **Natural Resources Wales (NRW)**

The island has obvious and important links with NRW. Mike Alexander and Chris Lawrence provided invaluable help and advice to the island wardens with regards the management plan and permissions and licencing.

### **Dale Sailing**

Another great year working with Dale Sailing. Good communication was maintained with all skippers and boat staff and especially with Gareth Reynolds.

### **Others**

Links were maintained with a wide range of external groups including NRW, the National Trust, Pembrokeshire Coast National Park Authority, the RSPB (especially Greg and Lisa Morgan on Ramsey) and H.M. Coastguards. Cooperative work was also undertaken between WTSWW and the Pembs Ringing Group.

## 9 Acknowledgements

Thanks go to many parties and individuals that helped with the successful running of Skomer Island in 2017. Apologies to anyone left off this inevitably incomplete list.

Many thanks go to all staff and volunteers (long-term, work party and weekly volunteers and anyone drafted in at last minute to get us out of trouble, especially Henry Lloyd who is our volunteer electrician), staff at the MCZ (especially Mark Burton) and Dale Sailing (Carl, Pete, Phil, Derek, Jamie, Gareth and John Reynolds in particular), Chrissy and Gary and the entire Lockley Lodge team, Lizzie Wilberforce (Conservation Manager for WTSWW), Gina Gavigan, all staff at Cilgerran and Tondy, Lucy and Sash Tusa, Anna and Steve Sutcliffe, The Friends of Skokholm and Skomer, all contractors, all members of the ICAC and other helpful wildlife consultants, Dave Astins and Hester Clack who ran birdwatching and yoga workshops respectively, staff and students at Oxford (especially everyone who helped with Shearwater week), Sheffield and Gloucestershire Universities and finally to all of the visitors that came and enjoyed the wonderful wildlife of our very special island.