SKOKHOLM

BIRD OBSERVATORY

YMDDIRIEDOLAETH
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WILDLIFE TRUST

South and West Wales
De a Gorllewin Cymru

Annual Report 2019

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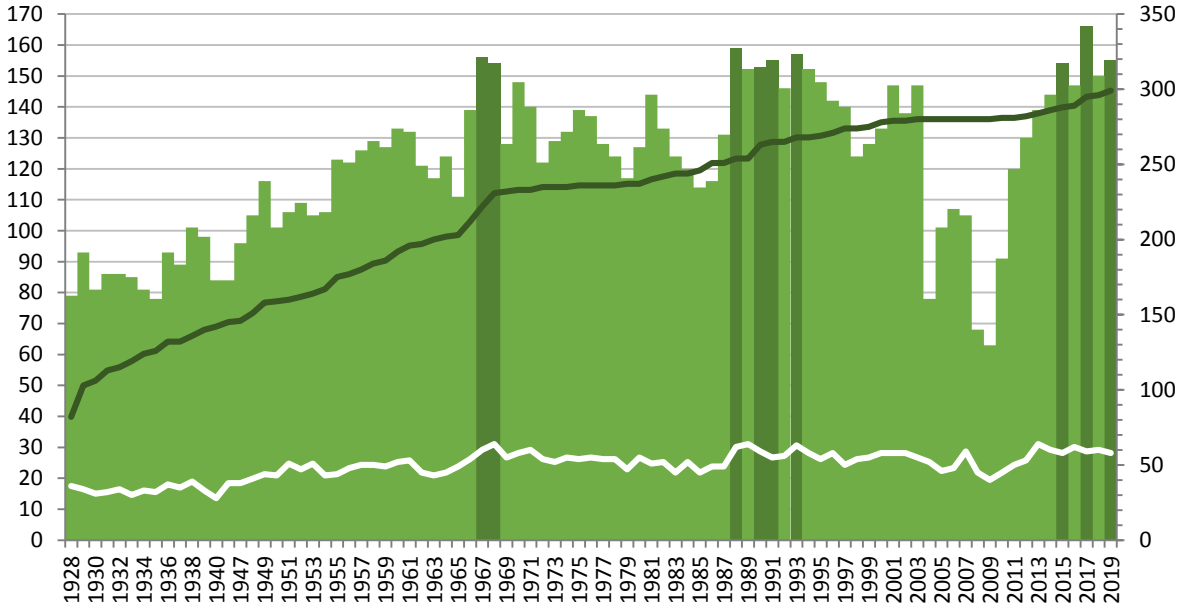
Wardens' Report

Introduction to the Skokholm Island Annual Report 2019

Our seventh year on Dream Island flew by, a telling indication as to just how enjoyable, diverse and rewarding it was. It proved yet another season remarkably different to what had gone before. Long-term research projects continued, whilst new and exciting collaborations began. The birding was excellent; Skokholm's second Red-eyed Vireo was the cherry on an already well adorned cake, a cake which included another three Island firsts (Laughing Gull, Night-heron, and Great White Egret) along with a fine mix of Island rarities such as Ring-necked Duck, Stone-curlew, American Golden Plover, Short-toed Lark, Greenish Warbler and Red-breasted Flycatcher. There was also a stunning selection of non-avian fauna logged; a Long-tailed Blue was a first for Pembrokeshire and a second for Wales, the immigrant moths Small Marbled and Bedstraw Hawk-moth were Island firsts (the former just a second for Pembrokeshire) and the bat detector recorded the second and third Nathusius' Pipistrelle for Skokholm. At the top of the list of seabird highlights has to be the first Storm Petrel chicks to fledge from the Petrel Station. We were joined by a superb team of Long-term Volunteers and were supported tremendously by an amazing group of volunteers here for shorter periods. It was our busiest year yet in terms of guest numbers; what an absolute pleasure it was to share so much of 2019 with so many brilliant people. We have had a lot of fun documenting all of the information collected during an outstanding season; we hope you find what follows as fascinating as we do.

This report follows the same format as used in the previous six years. It provides a full account of the 2019 season, documenting the fortunes of Skokholm's breeding birds, along with a detailed record of migrant birds and the non-avian wildlife encountered this year. Each species logged during 2019 is addressed separately and every piece of information we have gathered during the season can be found under that species title; thus details of first and last dates, numbers, breeding, ringing totals, ringing recoveries, specific projects and all other relevant information can be found in the one place. Following the success of our six previous online reports, the Skokholm Island Annual Report 2019 has again been produced in a free to download, tree-saving, searchable PDF format. For any readers wishing to contribute to our work, a 'donate now' button is available on the source page.

The number of bird species recorded in each year since 1928 (with the nine most productive years in darker green), the cumulative number of species seen on Skokholm (which had reached 299 by the end of 2019) and the maximum daycount logged in each year (plotted on the secondary axis).



The 2019 Season and Weather Summary

The season ran from 28th February to 3rd December and we welcomed paying guests from 17th April to 2nd October. Including the arrival and departure dates, the Island was occupied for 279 days, this the longest duration of the last seven years; Skokholm was inhabited for 266 days in 2018, 243 days in 2017, 273 days in 2016, 267 days in 2015, 266 days in 2014 and 261 days in 2013.

Whilst February 2018 will be remembered for snowfall and sub-zero temperatures, the end of winter this year could scarcely have differed more. A late February heat wave, caused by a southerly incursion from North Africa between the 21st and 27th, resulted in record breaking winter temperatures for many parts of the UK. Kew Gardens saw a British record 21.2°C on the 26th, whilst the Welsh record was set on the same date when a peak of 20.8°C was recorded in Porthmadog, Gwynedd. It proved the second sunniest February in Wales since 1929, although this spell began to break on the 28th (the date on which we arrived to Dream Island).

March was a month of two contrasting halves. A southwesterly breeze on the 2nd backed that evening to a southerly gale accompanied by lashing rain. This was the beginning of Storm Freya which culminated in violent storm force winds the following day; gusts of over 80mph were recorded at the Wooltack Point Coastguard Lookout during the early evening and very rough sea conditions, with an eight metre swell, resulted. The following week was wild and unsettled, with a

slight respite on the 8th followed by the development of another low-pressure system in the western Atlantic on the 10th. Gale force winds peaking at 86mph battered the Island that morning, this system being named Storm Gareth on the 11th and resulting in maximum gusts of 76mph on the 12th and 75mph on the 13th. Despite the wild weather, the sea temperature logger in South Haven recorded a maximum of 10.6°C on the 14th, this 2.3°C warmer than the high of March 2018 (Burton, 2019). Tempestuous weather continued until the 18th when a gentle westerly finally subdued a sea which had been continuously rough throughout. The remainder of March was calm and mostly dry, with the period between the 24th and 30th noted as being warmer than average. A storm ravaged first fortnight was unsurprisingly accompanied by heavy precipitation; rain was logged on 73% of days between the 1st and 15th but on just 8% of days between the 16th and 31st.

April was a drier month, although rain fell on 43% of days. Light northeasterlies brought heavy hail showers and bitter conditions on the 3rd and 4th. Indeed winds were from the easterly quarter on all but one date between the 1st and 25th, with the majority being light to moderate but with a near gale southeasterly between the 13th and 15th which produced gusts of up to 59mph. The almost unbroken run of easterlies ended on 25th April when a light northeaster veered to the southwest, freshening as it turned; this was the beginning of Storm Hannah, a system which raged over the next two days. The wind quickly intensified on the 26th, reaching storm force by the evening; regular gusts of over 80mph were accompanied by very heavy rainfall. The following day was much the same, resulting in extremely rough sea conditions. The storm passed during the night of the 27th, with the wind veering to a gentle northwesterly on the 28th prior to the return of light easterlies. A largely calm and pleasant May saw a strong breeze on only the 8th, 9th, 14th and 15th, whilst 61% of the month saw light northerlies which resulted in cooler temperatures during the first week and warmer days thereafter. Although there were several cloudy periods, there was very little May rainfall; light showers were noted on only nine dates and mist enveloped the Island on two occasions.

The weather in June was rather variable; southerly winds from the 1st to the 6th produced warm but showery days, there were southerly gales on the 14th and 16th and gentle winds, which toured the compass, dominated for the remainder of the month. A ridge of high pressure produced dry and sunny conditions on the 21st and 22nd and it became increasingly hot between the 26th and 28th; the 24.7°C recorded at Wooltack Point on the 27th was the highest temperature of the year. Glorious weather continued into what proved a predominantly calm and dry July; precipitation was experienced on only a quarter of days, the majority of which fell as light showers (although heavy overnight rain accompanied a near gale southwester on the 19th and 20th and a strong northwesterly

blow on the 30th). A hot spell between the 22nd and 26th saw a peak July temperature of 22.9°C logged on the 23rd, whilst unusually warm nocturnal temperatures included an average of 17.6°C between midnight and 01:00 on the 26th.

August has proven unsettled of late, as was also the case this year; rain or light showers were experienced on 74% of dates, although this was regularly overnight prior to sunny days which saw temperatures on the warm side of average (peaking at 24.6°C on the 24th). Winds came from the south or west on 71% of August dates, with severe gales noted on the 10th (with gusts of 62mph) and the 16th (with gusts of 52mph) and near gales experienced on seven additional dates. Westerlies continued into September, with the first two thirds of the month proving predominantly dry and sunny. The relatively calm conditions ended on the 20th when an easterly gale quickly roughened the sea. The wind veered to a light southerly on the 22nd, but the sea remained rough, delaying the final guest boat of the season. A week of turbulent conditions followed, sustaining near constant big seas which peaked on the 27th when a southwesterly gale saw gusts in excess of 60mph. Regular torrential showers flooded tracks and meadows, whilst North Pond again held water from the 27th.

October dawned calm, however the rough seas did not abate until the 2nd, this the first opportunity to evacuate stranded guests. The weather window was brief; a southerly gale returned the following

day, this the extratropical remnants of Hurricane Lorenzo. Regular low pressure systems to the west made for an extremely unsettled month, with calm conditions experienced on just seven dates. There were 20 days of heavy rain or drizzle, whilst light showers fell on a further three; the rain on the 17th was accompanied by a spectacular thunder and lightning storm to our west and torrential rain on the 25th caused flooding across the Island. The wild conditions continued into November, with a storm force westerly on the 2nd whipping up an enormous 12 metre swell. A week of gentle northerlies resulted in sunny days punctuated with occasional heavy showers, this followed by a run of strong, primarily northerly, blows interspersed with light breezes. Dry days were scarce, with regular heavy showers for much of the remainder of the month. A violent southeasterly storm on the 20th produced heavy overnight rain which continued for much of the next two days; by the 22nd the ground was so saturated that streams ran down tracks and ephemeral pools carpeted the Island. A moderate northeaster and clear afternoon skies on 1st December made for a chilly mean of 5.6°C, whilst an almost windless 2nd resulted in flat sea conditions and a perfect last 24 hours before our bouncy departure on a breezy 3rd.

The Elbcarrier Container Loss

During rough weather on the night of 8th December, cargo vessel Elbcarrier, en-route from Rotterdam to Dublin, lost 12 containers overboard at position 051°41'40"N, 005°50'90"W (roughly 20 miles to our west). The contents of the lost containers included rice cakes, tin foil, food packaging, plants and trees, apples, dry food, bottles, air refrigeration equipment and brass components. Further strong winds saw a substantial arrival of rice cakes, apples and plastic tubs to mainland beaches around Broad Haven, however the extent of affected coastline was much larger; items were found from Newgale, Pembrokeshire to Pembrey, Carmarthenshire. A refrigerated container broke up in Skomer's South Haven, however the exposed Skokholm coastline was largely unaffected. There was nevertheless a real concern regarding biosecurity; the insurers of the Elbcarrier have thus agreed to fund rodent monitoring stations which will be installed on Skokholm early next year.

Spring Work Parties

The 2019 spring work parties ran from 29th March to 11th April. They began with the arrival of the Lady Helen and the new Dale Sailing barge; the barge crane efficiently lifted six tonnes of materials directly into the dumper truck, items which previously had to be split and chained one by one onto the Island. The myriad of jobs tackled in week one included the construction of new catch boxes for the Heligoland traps at the Observatory, the annual maintenance and PAT testing of electrical

equipment, the patching up of the Wheelhouse roof, the tackling of ongoing damp issues and interior cleaning at the Lighthouse, the repair of the dumper truck steering column and the transport of drinking water to the Lighthouse. Week two focussed on the annual limewashing of the buildings at the Observatory, whilst the Ringing Hut was treated, exterior metalwork was prepared and repainted and the sink unit in Smoke Room was moved (to keep the curtains from entering the basin). The interiors of all bedrooms, communal areas and toilets were cleaned and given attention where necessary, which left the guest accommodation in the finest condition we have yet seen. The team was fuelled with delicious and hearty meals prepared by two fantastic volunteer chefs.

Spring Long-term Volunteers

On 29th March we were joined by Long-term Volunteers Jenni Hood and Ishbel Hayes. Jenni has supported Skokholm for many years now, both as a regular Short-term Volunteer and as a guest. As an avid birder, she made a fantastic contribution to the daily census and found some excellent birds (the highlights being a summer-plumaged Spotted Redshank and a Kingfisher). Jenni, an experienced trainee ringer, was also able to assist during busy ringing sessions. Ishbel, fresh from her final year at the University of Aberdeen, is a nature enthusiast with a long-standing interest in lepidoptera; she duly took charge of moth trapping and recording. The spring period always begins with a baptism of fire, with long days focused on the less glamorous side of life on Skokholm (specifically preparing the infrastructure for the season ahead). Ishbel and Jenni applied themselves to the task with enthusiasm, attention to detail and good humour. They subsequently assisted with the annual seabird work, taking charge of monitoring Puffin attendance around the Neck and establishing the 2019 Fulmar productivity plots, whilst also aiding with Storm Petrel, Manx Shearwater and Razorbill productivity checks and with Puffin and Great Black-backed Gull adult survival research. They were both meticulous on changeover days, making sure that the Wheelhouse, kitchen and toilets were sparkling for our new guests. Jenni returned during the autumn as a Short-term Volunteer, whilst Ishbel, having been awarded a first-class honours degree, went on to study for her PhD with Rothamsted and Exeter University (researching the impact of light pollution on moth populations).

On 10th June Jodie Henderson joined the team as our 2019 Storm Petrel Volunteer. Jodie took charge of the core Storm Petrel survey work, leading on the annual playback transects and productivity survey. She also assisted with late summer mist netting of adult Storm Petrel in South Haven, Manx

Shearwater productivity checks and with Puffin adult survival and productivity monitoring. She was a great help with elements of Ian Beggs' Wheatear project. In addition to her fantastic seabird work, Jodie was a perfectionist when it came to cleaning bedrooms on changeover days. She stayed on at the end of the season to help with the mammoth task of packing up for the winter and was duly rewarded; whilst folding tea towels in the Courtyard during a gloomy October afternoon, she found the second Red-eyed Vireo for Skokholm.

Spring Migration Highlights

A **Red Kite** on 25th March was just the fifth spring bird for Skokholm, whilst a **Hooded Crow** the same day was the first of at least two individuals seen over seven spring dates (there are 16 previous records). Four **Black Swan** drifting north off the Lighthouse on 26th March were the first for the Island, albeit destined for the Escapes and Exotica section of this report. Ten pale-bellied **Brent Goose** flying northwest on 5th April was the 11th spring record. Another **Red Kite** two days later was the sixth spring sighting since the first in 2000. A **Little Ringed Plover** on 17th April was the 11th spring record and a **Hobby** on the 23rd was the first since 2012. A drake **Gadwall** present on 5th May was presumed to be the same as that which lingered between the 9th and 12th and returned on the 14th; there have been 21 previous sightings.

A **House Sparrow** on 12th May was the only individual this year. A **Sanderling** on the 13th was different to the summer-plumaged bird seen between the 14th and 17th; there are 37 previous Island

records. Two **Turtle Dove** arrived on the 14th and another **Hobby** visited on the 16th. A stunning **American Golden Plover** present between the 25th and 28th May was just the second for Skokholm (above photograph). Three **Night-heron**, two adults and a juvenile, toured the Island on the 30th; this was an addition to the Skokholm list. The last day of the month saw a **Quail** above Purple Cove and a **Greenish Warbler** in the Cottage Garden, the latter the seventh to be documented. A **Quail** was in the South Pond Lower Drain on 1st June, with further singles singing near North Pond on the 4th and flushed from Windmill Gully on the 6th. A second-summer **Laughing Gull**, which briefly settled at North Pond on the 10th, reappeared on the 26th when it joined the North Plain gull roost; this was the first Island record. A mobile **Stone-curlew** on 16th June was the fifth for Skokholm and the seventh for Pembrokeshire. A breeding-plumaged **Spotted Redshank** graced North Pond on the 19th, this just the fourth record this century. A **Short-toed Lark** present on Western Plain between the 22nd and 27th was the tenth to be found here. A **Wood Sandpiper** on the 23rd was only the fourth June sighting, whilst a **Kingfisher** flying west through Broad Sound on the 28th was the 15th for Skokholm. If accepted as such by the relevant rarities committees, spring sightings of **Night-heron** and **Laughing Gull** will take the Skokholm list to 298 species.

The Breeding Season

There were again record counts of **Guillemot** and **Razorbill** on suitable breeding ledges, whilst the breeding populations of all three gull species declined. Although territorial males built cock-nests in 2017, 2015 and 2014, this year saw the first confirmed **Whitethroat** breeding since 1998. **Water Rail**, **Shag**, **Short-eared Owl**, **Chiffchaff** and **Reed Warbler** did not breed.

A summary of the status of seabirds breeding on Skokholm in 2019.
The lower limits given here, taken from the Skokholm Island Management Plan, have been established by the Wildlife Trust of South and West Wales and endorsed by the Seabird Subgroup of the Islands Conservation Advisory Committee. A green box is an attribute above its lower limit, a red box an attribute below the lower limit stipulated in the plan.

		Whole Island or Annual Plot Total (2018-2015 in parenthesis)	Productivity (2018-2015 in parenthesis)
Storm Petrel		**Study plot population:** any measurable decrease in the population	
Population	Not set	**Productivity:** limit not yet set due to a lack of data	
		89 transect responses (83, 89, 76, 87)	0.74 (0.55, 0.50, 0.58, 0.55)

Fulmar		**Whole Island population:** not to drop below the 2014-2018 mean of 196	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.50 chicks per breeding pair	
		198 aia (217, 213, 194, 179)	0.62 (0.49, 0.45, 0.57, 0.47)
Manx Shearwater		**Study plot population:** any measurable decrease in the population	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.69 chicks per breeding pair	
		331 responses in 8000m^2 (373, 295, 297, 269)	0.72 (0.70, 0.80, 0.68, 0.68)
Great Black-backed Gull		**Whole Island population:** not to drop below the 2014-2018 mean of 89	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 1.10 chicks per breeding pair	
		86 nests (93, 93, 93, 83)	1.43 (1.40, 1.54, 1.38, 1.66)
Herring Gull		**Whole Island population:** not to drop below the 2014-2018 mean of 307	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.70 chicks per breeding pair	
		301 nests (320, 302, 322, 289)	0.69 (0.73, 0.70, 0.86, 0.66)
Lesser Black-backed Gull		**Whole Island population:** 3 in any 5 consecutive years with less than 4600 pairs	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.60 chicks per breeding pair	
		1028 aia (1069, 1123, 1397, 1486)	0.27 (0.63, 0.38, 0.23, 0.15)
Guillemot		**Whole Island population:** not to drop below the 2014-2018 mean of 3884	
Population	Not set	**Productivity:** not monitored on Skokholm	
		4654 aol (4316, 4038, 3949, 3603)	- (0.55-0.61 in 2013)
Razorbill		**Whole Island population:** not to drop below the 2014-2018 mean of 2350	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.80 chicks per breeding pair	
		2755 aol (2585, 2491, 2242, 2382)	0.63 (0.69, 0.40, 0.39, 0.21)
Puffin		**Whole Island population:** not to drop below the 2014-2018 mean of 6998	
Population	Productivity	**Productivity:** 3 in any 5 consecutive years with less than 0.74 chicks per breeding pair	
		7447 adults (8762, 7800, 6692, 6665)	0.76 (0.75, 0.80, 0.73, 0.75)

A summary of breeding birds on Skokholm in 2019. Productivity is the average number of fledglings produced by each breeding pair ('-' indicates insufficient data).

	Total (2018-2014 in parenthesis)	Productivity (2018-2014 in parenthesis)
Canada Goose	2 pairs (4, 7, 7, 10, 11)	0 (0, 0, 0, 0, 0)
Shelduck	3 pairs produced ducklings (1, 2, 2, 1, 3)	0 (0, 0, -, 0, 0)
Shoveler	0 pairs produced ducklings (1, 1, 0, 1, 0)	0 (0, 0, 0, 0, 0)
Mallard	5 pairs produced ducklings (6, 4, 3, 2, 1)	0 (0, 0, 0, 0, 0)
Water Rail	0 territories (1, 0, 0, 0, 0)	0 (0, 0, 0, 0, 0)
Moorhen	3 pairs (2, 3, 3, 3, 3)	2.00+ (3.50, 2.67, 2.67, 2.33, 1.00)
Oystercatcher	53 pairs (52, 61, 54, 55, 51)	0.47 (1.62, 0.57, 0.82, 0.36, 1.55)
Buzzard	1 pair (1, 1, 1, 1, 1)	3 (1, 1, 1, 2, 1)
Short-eared Owl	0 pairs (0, 1, 0, 0, 0)	0 (0, 2+, 0, 0, 0)
Peregrine	1 pair (1, 2, 2, 1, 1)	0 (0, 0.5, 0.5, 0, 0)
Chough	2 pairs (2, 2, 2, 2, 2)	2.50 (1.00, 4.00, 2.50, 1.00, 1.50)
Jackdaw	22 pairs (22, 20, 20, 20, 19)	- (-, -, -, -, -)
Crow	10 pairs (10, 9, 9, 8, 8)	0.70 (0.60, 1.11, 1.78, 1.88, 1.25)
Raven	2 pairs (2, 2, 2, 2, 2)	2.50 (4.00, 4.00, 3.00, 4.50, 4.00)
Skylark	14 territorial males (19, 21, 16, 12, 11)	- (-, -, -, -, -)
Swallow	5 pairs (4, 4, 4, 6, 4)	3.20 (4.00, 3.25, 5.75, 2.50, 2.00)
Chiffchaff	0 pairs (2, 1, 0, 1, 1)	0 (0, 0, 0, 1, 0)
Sedge Warbler	15 territorial males (15, 13, 11, 7, 9)	- (-, -, -, -, -)
Reed Warbler	0 territorial males (0, 1, 1, 0, 0)	0 (0, 0, 3, 0, 0)
Whitethroat	1 pair (0, 0, 0, 0, 0)	2 (0, 0, 0, 0, 0)
Wren	69 territorial males (63, 58, 60, 52, 57)	- (-, -, -, -, -)
Blackbird	6 pairs (6, 6, 7, 7, 6)	3.67 (3.33, 2.83, 2.29, 1.29, 2.17)

Wheatear	23 pairs (18, 25, 20, 16, 13)	3.70 (3.89, 2.12, 2.65, 4.00, 3.38)
Pied Wagtail	5 pairs (5, 5, 4, 3, 3)	5.20 (3.60, 3.60, 5.25, 4.33, 3.67)
Meadow Pipit	33 territorial males (40, 40, 40, 30, 28)	- (-, -, -, -, -)
Rock Pipit	49 territorial males (41, 61, 53, 44, 34)	- (-, -, -, -, -)
Reed Bunting	3 pairs (4, 7, 7, 7, 5)	0.67+ (2.50, 1.86, 1.43, 2.00, 1.80)

Autumn Migration Highlights

A **Great White Egret** which flew over the Courtyard on 5th July was the first for the Island, a bird which took the Skokholm list to 299 species. A **Curlew Sandpiper** with a mobile flock of 21 Dunlin on 3rd August was the ninth autumn record. A **Balearic Shearwater** the following day was the first of seven seen up to 14th November, whilst a **Sooty Shearwater** on the 10th was the first of seven logged during August. An early **Grey Phalarope** was in Broad Sound on the 21st, a moulting juvenile **Turtle Dove** was found on the 24th and a **Wryneck** the following day was present until 4th September. A juvenile **Red-backed Shrike** logged on the 6th and 7th September was only the fifth 21st century record. A **Wood Sandpiper** went over on the 13th and a second **Wryneck** was present on the 16th and 17th. A juvenile **Common Rosefinch** seen intermittently between 23rd September and 1st October made this the 22nd year with a record. A **Lapland Bunting** over the Bluffs on 2nd October was the first of six 2019 bird-days, whilst single **Yellow-browed Warbler** were present on the 6th and 14th. Three first-winter **Sabine's Gull** on the 9th set a new daycount record. A **Grey Phalarope** was logged the following day, this becoming just the 20th date with a sighting.

A juvenile **Red-eyed Vireo** on 12th October was the second for Skokholm and the third for Pembrokeshire. Different **Red-breasted Flycatcher** were ringed on the 14th and 22nd; there had been 33 previous birds. A **Snow Bunting** on the 21st was the first of eight bird-days, this the highest tally since 1999. A **Siberian Chiffchaff** on 27th October was the only one seen well this year. Up to two **Barnacle Goose** were logged on four November dates from the 1st; there had been 13 previous autumn records. Two adult **Little Gull** were in Broad Sound on the 7th. A lone **Long-tailed Tit** on 10th November was an 11th record for Skokholm and a first-winter **Iceland Gull** on the 14th was the sixth. A first-winter male **Ring-necked Duck** was with six **Tufted Duck** at North Pond on the 20th; there had only been one previous sighting of the former species and 13 of the latter. A **Velvet Scoter** heading southeast off the Lighthouse on the morning of 2nd December was the second Island record, whilst

two **Long-tailed Duck**, which did likewise a short time later, was the third record. A total of 18 **Great Northern Diver**, also logged on 2nd December, was a new daycount record.

Autumn Long-term Volunteers

On 1st July we welcomed Long-term Volunteers Alice Edney and William Bevan to Skokholm. They quickly settled into the routine of seabird monitoring and accommodation cleaning, picking up perfectly where the spring team left off. For the next three months they assisted with the remainder of our core seabird projects, following the breeding attempts of our Fulmar, Manx Shearwater and Puffin study pairs through to a conclusion. They assisted Jodie with the Storm Petrel monitoring and were an instrumental part of the team during Storm Petrel ringing sessions.

They contributed a lot to the daily census and in her first week Alice found Skokholm's first Great White Egret. Together they ran the moth trapping and nocturnal sweeping, with Will catching the first Bedstraw Hawk-moth for Skokholm. When Alice suspected Grey Seal twins in North Haven, she organised cliff-top vigils in very unpleasant weather conditions to confirm that both pups were suckling from the same cow. Will, Alice and Jodie also helped construct Wheatear nest boxes which they installed at various suitable sites around the Island. September nights saw all three working the

Manx Shearwater transect with us, helping to ring fledglings and gaining valuable ringing experience along the way. Alice, already a trainee ringer, was awarded her C-permit after leaving the Island. Will, Alice and Jodie were a great autumn team and a pleasure to work with, whilst their infectious enthusiasm for Skokholm and its wildlife was also much appreciated by our guests.

Autumn Work Party

A small autumn work party ran from the 9th to 16th September, the primary purpose of which was to paint the north face of the Lighthouse (this the last side to receive attention since the Wildlife Trust of South and West Wales acquired the building in 2012). Pleasingly it proved the first autumn since 2016 in which the weather did not demand a shortening of the scheduled week. Painting a face of the Lighthouse is no straightforward task, but it was made a lot easier by having bellies full of excellent meals, cakes and plentiful hot drinks (provided by our amazing volunteer chefs). The walls were pressure washed to remove salt and algae, whilst scaffolding was erected over the entrance porch in order to reach the awkward sections of the tower and its window frames. The north face and gantry railings were then painted and a leaking window was resealed. Improvements were made to exterior bedroom doors at the Farm (in an attempt to exclude heavy rain and crafty mice), the leaking roof of North Pond hide was fixed and firewood was cut and stored. Howard Driver, a skilled carpenter, again volunteered for an extended period in both the spring and autumn; he was as efficient, resourceful and brilliant as ever, undertaking countless tasks which included the raising of the Neck hide roof (which is now safer for taller people and more comfortable to use).

Skokholm Bird Observatory

Ringing Projects

Colour ringing birds allows us to recognise individuals without the need to retrap them; such projects thus provide new insights into survival and movements. The Skokholm Bird Observatory has focussed its attention on such worthwhile studies. The Great Black-backed Gull colour ringing scheme, established in 2014, continued for a sixth year; both breeding adults and their fledglings were fitted with red darvic rings inscribed with unique white alpha-numeric codes (318 had been marked by the end of this year). In 2015 we joined an Oystercatcher colour ringing project run by the Pembrokeshire Ringing Group and funded by the Crown Estate, although no adults were captured on

the nest this year. A 2017 project monitoring adult survival in Herring Gulls was continued for a third year, this an extension of a study originally established on Skomer Island; breeding adults were trapped on the nest and fitted with red darvic rings inscribed with white alpha-numeric codes.

The exciting long-term Wheatear project, designed and implemented by visiting ringer Ian Beggs, continued for its third year. Breeding adults and their offspring were colour ringed in order to determine survival rates, pairings and movements (without the need to retrap returning birds). The findings will eventually be compared with those made by Peter Conder between 1947 & 1952, work which was published as part of his seminal monograph, The Wheatear (1989); any conclusions will be published to support conservation work on Skokholm and elsewhere. Study birds are fitted with a green darvic ring on their left leg, each inscribed with a unique white alpha-numeric code which can be read in the field. This year saw over 50% of colour ringed adults return from their sub-Saharan wintering grounds and an additional 83 individuals were colour marked, taking the three year ringing total to 57 adults and 165 fledglings. Ian's study is also providing some fascinating behavioural observations; his note 'Partner swapping between broods in the Northern Wheatear in consecutive years' was published in September 2019 in British Birds 112 (9): 541-542.

Visiting Ringers

Skokholm Bird Observatory continues to attract visiting ringers who assist us with our monitoring work and provide additional coverage on the Island between April and September; the benefits of increased ringing effort to the Observatory mean that accommodation is provided at a discounted rate. There are many other benefits for the ringers involved; apart from the thrill of ringing on Skokholm during the spring and autumn migration periods, two of the big draws are our long-term studies targeting the Manx Shearwaters and Storm Petrels. These are species which most ringers rarely have the privilege of encountering on their own patch and which we are particularly interested in monitoring. This year we welcomed a total of 48 ringers, taking the 2013-2019 total to 298. The Manx Shearwater transect again proved popular, with a total of 1898 birds handled (1754 in 2018, 988 in 2017, 1761 in 2016, 1688 in 2015 and 3388 in 2014), 1321 of which were new (1226 in 2018, 721 in 2017, 1166 in 2016, 1188 in 2015 and 2104 in 2014). From mid-July efforts were again focussed on ringing Storm Petrels in South Haven, resulting in a total of 846 adult birds trapped (1063 in 2018, 646 in 2017, 699 in 2016, 919 in 2015 and 688 in 2014), 90% of which were new (89% in 2018, 84% in 2017 and 91% in 2016) and 5% of which were controls ringed elsewhere (4% in 2018, 2017 and 2016). Visiting ringers also assisted with other long-term projects such as the colour ringing of adult Puffins in Crab Bay (as part of a continuing study into adult survival) and the ringing of Great Black-backed Gulls and Herring Gulls as outlined above.

Birds Ringed in 2019

A total of 7170 birds of 58 species were caught and processed this season, this 15% down on last year but 5% up on the 2013-2019 mean (6817.86 ±sd 1439.98). Seabirds comprised 58% of new birds ringed (53% in 2018, 44% in 2017 and 51% in 2016) and Manx Shearwater accounted for 67% of these and 39% of the overall total (34% in 2018, 27% in 2017 and 32% in 2016). Seabirds made up 62% of the retrap total (birds caught which had previously been ringed on Skokholm) and Manx Shearwater accounted for 88% of seabird retraps and 55% of overall retraps (37% in 2018, 46% in 2017 and 45% in 2016). It proved a better than average year for controls (birds caught which had been ringed elsewhere); although there were nine fewer than in 2018, there were nine more than the seven year mean (46 ±sd 10.74). Seabirds contributed 80% of that total and Storm Petrel were responsible for 93% of these and 75% of controls overall. There were ten passerines encountered wearing rings from elsewhere (14 in 2018, ten in 2017, 14 in 2016, ten in 2015, seven in 2014 and six in 2013). Fewer species were handled, indeed diversity equalled that of 2016 as the lowest of the last seven years, however a **Red-eyed Vireo** took the total number of species ringed on Skokholm

since 2012 to 106. Details of each control, of the more interesting retraps and of where the birds we ringed have been found are given within the Systematic List of Birds, as is the total number of each species ringed between 1933 and 1976 and between 2011 and 2019.

The total number of New Birds, Retraps and Controls processed between 2012 and 2019, along with the number of different species handled.

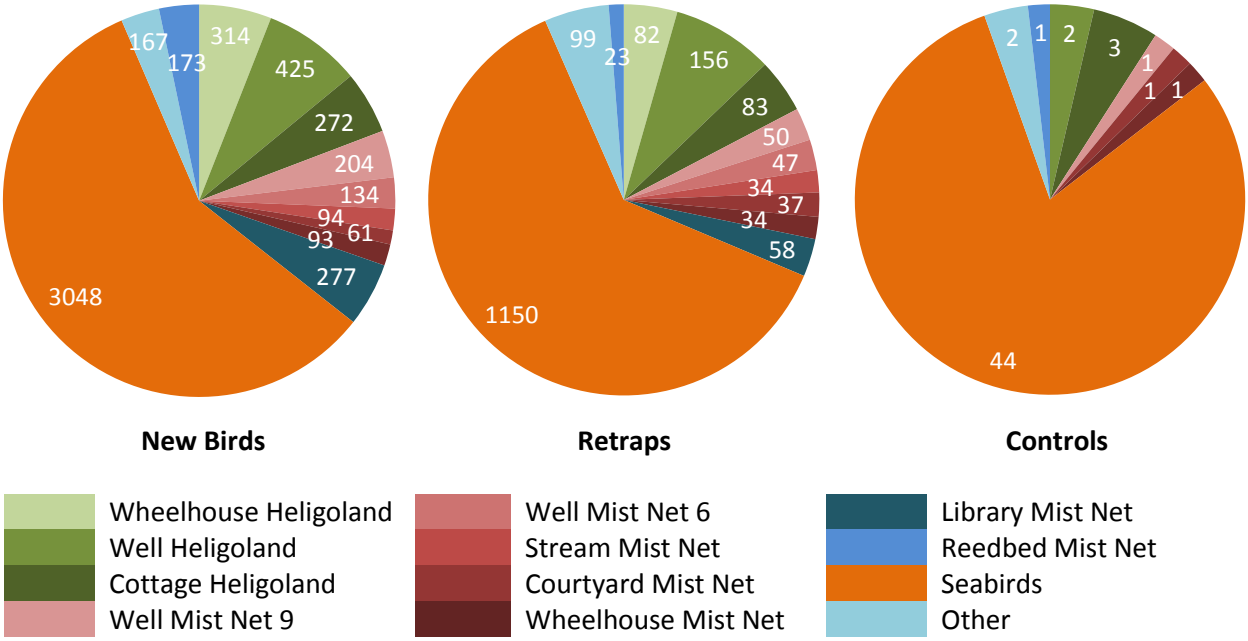
	Total Birds Processed	New Birds (full grown)	New Birds (pullus)	Retraps	Controls	Species processed
2019	7170	4964	298	1853	55	58
2018	8417	6123	325	1905	64	71
2017	6030	4285	295	1411	39	69
2016	5979	4263	274	1394	48	58
2015	7245	5367	270	1563	45	67
2014	8439	5785	313	2303	38	59
2013	4446	3436	297	680	33	65
2012	697	648	2	46	1	25
Total	**48,423**	**34,871**	**2074**	**11,155**	**323**	**106**

Catching Methods

There are three Heligoland traps on Skokholm (at the Well, in the Cottage Garden and alongside the Wheelhouse), two of which are constructed on the footprints of those originally erected by Ronald Lockley in 1933. These provide an invaluable method of trapping birds when blustery weather prohibits the use of mist nets. The Heligolands were driven regularly on every day of the season and with increased frequency on good fall days. There are five permanent mist nets at the Well: Well 6, Well 9 (with a six metre extension), the Stream Net (a new site in 2015) and the Reedbed Net (a new site in autumn 2018). Around the Farm there are a further four permanent nets: the Courtyard Net, the Wheelhouse Net and the Library Net (the latter of which was extended with a second net in the autumn of 2017). The mist nets were opened on most occasions when conditions were suitable. Additionally four potter traps, eight spring traps, two very large spring traps and a perch trap were used to target rails, gulls, chats and pipits. Seabirds were caught using a variety of methods,

although the majority were trapped by hand in the colony. Adult and fledgling Manx Shearwaters were trapped in study burrows, but also by hand along the Manx Shearwater transect and on the north coast after dark. Adult Great Black-backed Gulls and Herring Gulls were trapped on the nest using a remote-controlled leg-noose and noose carpet. Lesser Black-backed Gulls and Herring Gulls were caught using a baited Gull Trap on Home Meadow. Adult Puffins, trapped as part of our colour ringing studies, were mist netted in the colony at Crab Bay. Adult Storm Petrels were mist netted in South Haven using a tape lure to attract the birds towards the net.

The number of new birds, retraps and controls trapped during 2019 and the proportion made up of seabirds, birds trapped in each Heligoland and birds from each permanent mist netting site.



The Heligoland traps produced 1011 new birds, 46% of the new non-seabird total; there were 865 in 2018 (29% of the total), 1125 in 2017 (44%), 952 in 2016 (46%), 1237 in 2015 (40%), 1426 in 2014 (57%) and 818 in 2013 (70%). There were 321 retraps (501 in 2018, 302 in 2017, 291 in 2016, 448 in 2015, 500 in 2014 and 242 in 2013) and five controls (seven in 2018, five in 2017, seven in 2016, one in 2015, five in 2014 and two in 2013). The Well, for a seventh consecutive season, proved the most productive of the three Heligolands for new birds, providing 42% of the total (43% in 2018, 42% in 2017, 52% in 2016, 49% in 2015 and 48% in 2014). Although the difference was smaller this year, the Cottage Heligoland once again caught the fewest, contributing 27% of the new birds total (19% in 2018, 21% in 2017, 17% in 2016, 14% in 2015 and 11% in 2014). The proportion of birds caught in each trap is unsurprisingly rather similar year on year, with the continuing success of the Well Heligoland no doubt due to the corridor of vegetation which runs from South Haven and funnels migrants towards a trap where more extensive cover and standing water hold birds for longer. The three most abundant species were the same for each trap and the same as in both 2018 and 2017. **Willow Warbler** was again the most commonly encountered species, with 270 new birds from the three traps (288 in 2018, 398 in 2017). **Chiffchaff** was the second most regularly trapped with 200 new birds (188 in 2018, 224 in 2017) and **Blackcap** the third with 134 new birds (114 in 2018, 92 in 2017). Highlights from the Well Heligoland included six **Water Rail**, a **Yellow-browed Warbler**, five **Grasshopper Warbler**, a **Garden Warbler**, a **Lesser Whitethroat**, a **Firecrest**, a **Black Redstart** and a **Stonechat**. Highlights from the Wheelhouse Heligoland included a **Sparrowhawk**, a **Garden Warbler**, two **Lesser Whitethroat**, a **Pied Flycatcher**, a **Red-breasted Flycatcher**, two **Black Redstart**, a **Redstart**, two **Stonechat** and a **Common Rosefinch**. Although it catches fewer individuals, the Cottage Heligoland still provided some good birds; these included a **Collared Dove**, a **Water Rail**, a **Greenish Warbler**, three **Redstart** and three **Wheatear**.

The permanent mist nets produced 1036 new birds (1925 in 2018, 1300 in 2017, 1110 in 2016, 1673 in 2015, 1182 in 2014 and 556 in 2013), 283 retraps (489 in 2018, 329 in 2017, 397 in 2016, 405 in 2015, 351 in 2014 and 155 in 2013) and four controls (seven in 2018, five in 2017, seven in 2016 and 2015, two in 2014 and four in 2013). As has been the case for the past four years, the nets around the Well provided the majority of birds, with the Well 9 and Well 6 nets catching 33% of new birds (these two nets produced 47% of birds in 2018, 49% in 2017 and 51% in 2016). However it was the Library Net which proved the single most productive site, catching 27% of new birds, whilst the least fruitful was the Courtyard Net, catching just 6% (the Wheelhouse Net caught the fewest in 2018 with 9% of new birds). The poor contribution made by the Courtyard Net is probably due to its shorter length and it being in an area frequently used for outdoor dining and accessing the Wheelhouse block. **Swallow** was the most commonly trapped species in the Well nets, with 114 new birds, whilst **Sedge Warbler** and **Willow Warbler** were the second and third most abundant with 100 and 89 respectively. **Meadow Pipit** was the most commonly trapped around the Farm, with 190 new birds, this in part due to the successful use of a tape lure during periods of passage. **Willow Warbler** and **Chiffchaff** were the second and third most frequently encountered, with 74 and 22 respectively. Highlights from the Well mist nets included a **Sparrowhawk**, three **Sand Martin**, a **House Martin**, a **Red-breasted Flycatcher**, nine **Stonechat** and a **Wheatear**. Around the Farm the mist nets produced a **Red-eyed Vireo**, two **Grasshopper Warbler**, three **Starling**, a **Redstart** and a **Wheatear**.

Arrival and Departure Dates

The first arrival and latest departure dates of 2019 migrants, along with the extreme earliest and latest dates on which they have been recorded in the past, are documented at the beginning of each species account in the Systematic List of Birds. There were seven records of a species outside of its period of previous occurrence this year, this four more than last year and three more than in 2017. This year they were of a **Grey Phalarope** in Broad Sound on 21st August (the previous earliest and only other August record was logged on the 31st in 1970), a **Greenshank** on 30th March (the previous earliest went over on 5th April 2015), a **Great Northern Diver** off the south coast on 3rd August (the previous earliest and only other August record was logged on the 11th in 1991), a **Balearic Shearwater** during a 14th November gale (the previous latest was on 29th October 1990), a **Hen Harrier** on 21st April (the previous latest was on the 17th in 2016), a **Greenish Warbler** on 31st May (the previous earliest was present from 4th June 2003) and a very late **Sedge Warbler** on the 1st and 2nd November (the previous latest was seen on 17th October 1957). The following species were recorded close to their Skokholm limits: a **Wood Sandpiper** on 13th September (latest on 22nd

September 1966), a **Sandwich Tern** on 30th March (earliest on 29th March 1984), a **Sedge Warbler** on 10th April (earliest on 6th April 1961 and 2005), a **Lesser Whitethroat** on 30th April (earliest on 20th April 2016) and a **Redstart** on 2nd April (earliest on 1st April 1991).

2018 Rarity Decisions

A juvenile **Pallid Swift**, which spent most of 4th November feeding along the north coast cliffs, was accepted by the British Birds Rarities Committee as the first for Skokholm and the third for Pembrokeshire. A **Great Shearwater** off the Lighthouse on 18th August was accepted by the Welsh Records Panel as the fifth individual to be seen from Skokholm. A **Melodious Warbler** on 2nd September, watched as it moved between East Bog, the West Knoll and Boundary Hill, was accepted as the same individual trapped in the Well Heligoland on the 5th. A first-winter **Common Rosefinch**, found under the north face of the Knoll on 16th September and logged intermittently until the 27th, was also accepted as such. A juvenile **Buff-breasted Sandpiper**, which spent the evening of 27th September in the vicinity of the Lighthouse Helipad, was accepted by the Welsh Records Panel as the fourth Island record.

Siberian Chiffchaff present on the 7th and between the 20th and 28th October were accepted by the Welsh panel, whilst a bird seen below the Howard's End hide on 8th November was not submitted (due to it being silent and not photographed). A **Cattle Egret** roosting to the north of the Sugarloaf on the morning of 9th October was also accepted. A mobile **Richard's Pipit** seen and heard on three occasions during 10th October was accepted by the County Records Panel. The acceptance of **Pallid Swift** by the relevant rarities committee takes the Skokholm list to 296 species.

Research Projects

The Visual Fields of Waterbirds

Jennifer Cantlay, an experienced British Veterinary Surgeon with a Masters in Conservation Medicine, visited the Island in May and June to conduct an examination of the visual fields of three of Skokholm's breeding seabirds: the Storm Petrel, Herring Gull and Lesser Black-backed Gull. This was to form part of some exciting doctoral research into avian sensory ecology at Royal Holloway University, research investigating the visual field characteristics of a wide range of waterbirds with different foraging behaviours. A total of five Storm Petrels, four Herring Gulls and five Lesser Black-backed Gulls were trapped and measurements were taken using an ophthalmoscope.

It is estimated that longline and trawl fisheries kill over 300,000 seabirds annually, the majority of which are Albatrosses and Petrels; these are caught on (or collide with) fishing gear, before drowning. Recent research has determined that, due to the configuration of their frontal visual fields, some birds are particularly prone to collisions. Current knowledge of avian sensory ecology also suggests that, due to the limitations of underwater vision, birds foraging below the surface do not recognise fishing nets as hazardous (Martin and Crawford, 2015). Jenny's research, which expands upon previous studies, will provide a comprehensive evaluation of visual field parameters for a wide range of waterbirds. The aim is to then identify the key characteristics of species susceptible to interactions with anthropogenic hazards. A better understanding of how these birds view the world will allow for practical recommendations to be made, which will hopefully reduce the number and impact of interactions with such dangers.

Skokholm Bird Observatory is well placed to assist with such research as we are home to an internationally important seabird assemblage where birds are routinely captured for ringing and our annual monitoring. We are passionate about supporting research with conservation applications.

The Skokholm House Mouse Study

Although the exact date is not known, it is widely believed that the House Mouse *Mus musculus* was accidentally introduced to Skokholm at the turn of the 20th century (in the bedding straw which arrived aboard a boat delivering a colt). It quickly became established, with the isolated population reverting to a largely independent life; many live among the cliffs, rocky boulders and dry-stone walls, as opposed to their primarily commensal mainland existence. This rather unusual situation led to intensive studies by R.J. Berry and colleagues in the 1960s and 1970s. In April this year, Dr. Sarah Knowles of Oxford University re-established the Skokholm House Mouse study system; this was to follow up on the seminal work of Berry, with a shift to focussing on symbiont ecology (studying the drivers and consequences of naturally occurring variation in the gut microbiome).

PhD student Eveliina Hanski has established two House Mouse trapping areas on Skokholm, one which runs from the Bluffs to the Lighthouse and includes the Quarry, and one which is centred on the Observatory and radiating walls. In autumn, along with research assistant Aura Raulo, she trapped, microchipped and took faecal samples from a total of 173 individual mice (animals which accounted for 469 separate handlings). Eveliina is studying natural variation in the gut microbiome and the affect this has on host health and survival. The main focus of her study is to characterise the microbes found in their guts and to investigate how this changes over time (as the mice age and face

different environmental challenges). This is the beginning of what we hope will be an exciting long-term collaboration with Oxford University.

Bird Observatory Fundraising

The Ticks Jar

The ticks jar is a Bird Observatory tradition which we started here in 2013; birders and ringers are encouraged to make a small donation if they see or ring a new species during their stay. By the end of 2018, the Skokholm bird list stood at 296 species; thus, to encourage some extra money into the jar, we began a 'Guess the 300th Species' competition. Birds were graded and priced according to the likelihood of their occurrence and guests were encouraged to have a flutter; the prize was a free stay during the peak migration period. The competition was popular and bolstered the 2019 ticks jar to a mighty £630. This takes the seven year total to an amazing £2121.94. This money has enabled us to purchase a variety of items including the Storm Petrel sound system, the eco-fan for the wood-burning stove in the Cottage, two-way radios for communicating sightings to the guests and each other, bat detector accessories, gardening equipment for management of the trapping area, additional ringing equipment, local artwork for bedroom walls and other luxury items which help to make Skokholm feel more homely or function more efficiently. Some of the monies from this year's jar have funded a fantastic seabird themed reupholstering of an old armchair.

Bird Observatory Merchandise

In 2013 we started selling Skokholm Bird Observatory polo shirts, with 100% of the profits contributing towards the work of the Observatory; the proceeds reside in the Skokholm Bird Observatory account and are used to buy equipment essential for our monitoring work. The polo shirts proved popular, so much so that our range has since expanded to include fleeces, hoodies, headwear and mugs.

Acknowledgements and Thanks

Skokholm Island has, for such a long time, been supported by a huge number of people from all walks of life; this year was no exception. Our first and biggest thank yous must go to the 2019 Long-term Volunteers; Jenni Hood, Ishbel Hayes, Jodie Henderson, Will Bevan and Alice Edney provided boundless energy and enthusiasm. It was a pleasure to work on the core seabird projects with them, whilst their dogged field trudging produced some excellent records. There is a huge amount of work

involved in a typical Skokholm season, from seabird surveys to toilet emptying and from migration monitoring to pond digging; it is thanks to the massive contributions made by our Long-term Volunteers that these jobs get done. Dream Island was a little more magical with them around.

We would like to thank the skilled Short-term Volunteers who visited with a specific task in mind; artists and Skokholm regulars Julia Manning and Celia Smith repainted the Skokholm jetty sign which had been pounded by the sea since its stunning 2014 restyle, Professor Chris and Mary Perrins again assisted with the annual Manx Shearwater productivity and adult survival monitoring (and were roped in to the Lesser Black-backed Gull colony walkthrough counts), Mike Alexander focussed on vegetation monitoring and the digitisation of historical maps, Steve and Anna Sutcliffe volunteered their time and boat to help with our annual cliff nesting seabird counts, local mechanic Alun Lewis serviced both vehicles and fixed the brakes on the dumper truck, John Hayes spent a week transporting drinking water to the Lighthouse and made Wheatear nest boxes, Alan Wilkins and Nick Davison of the Wildlife Sound Recording Society continued to work on their project to recognise individual Manx Shearwaters and Storm Petrels by their calls, John Jones and fellow lichenologists surveyed the Island's lichens in autumn and Emyr Roberts again spent the end of the season with us, this time decorating the Lighthouse Corridor (which has made the Lighthouse feel much more loved and homely) and making some bespoke Swallow nest boxes for the Orchid Bog hide (designed to prevent Jackdaws from raiding the nests).

Throughout the year the Island received many generous donations, items such as books, building supplies, soft furnishings, kitchen items and artworks, all of which are hugely appreciated. A special mention must go to Anna Grime and the Solva Woollen Mill who donated 15 luxurious wool throws for the guest accommodation, ensuring that all of our visitors enjoyed a cosy night's sleep. Sue Wood again made some lovely curtains for the bedrooms. We would once more like to say a particular thank you to John Parker of E.H. Smith Builders Merchants who has, for five years, donated a huge quantity of building materials and quality equipment to the Island. Our gratitude also goes to the British Birds Charitable Trust who funded the infrared camera equipment used by Chris Payne on the Island this year (which captured some fascinating footage of a Storm Petrel feeding its chick in the Petrel Station).

We are once again hugely grateful to all of the work party volunteers who continue to give so much of their time and energy to keep the Skokholm buildings in excellent condition; they work tirelessly in all weathers to ensure that major maintenance work is completed in the small windows of opportunity either side of the visitor season. Thank you Henry, Howard, Steve, Anna, John H, Jeff, Mark, Pete, Nick, Rob, Keith, Mike and John W. Our amazing volunteer chefs Shirley, Sam, Renate and Bryony spent many hours menu planning, shopping, preparing and cooking to create hearty and delicious meals which fuelled the works. We must also thank Dave, Renate, Anna and Steve who, on a bouncy late February morning, accompanied us on our first trip over to Skokholm; they made sure that all of our supplies got moved quickly off the Dale Nelson and onto the Island before the sea conditions worsened.

The team at Dale Sailing, particularly John and Gareth Reynolds, once again kindly delivered all of the materials and volunteers to the Island and allowed materials and equipment to be delivered to and stored in their yard at Neyland. A special thanks goes to the expert crews who work incredibly hard during the season to bring guests and supplies to and from Skokholm.

We must thank our colleagues at the Wildlife Trust of South and West Wales who take care of many behind-the-scenes jobs. In particular we would like to acknowledge the amazing support we receive from our fantastic line manager Lizzie Wilberforce. We must also mention the staff at Natural Resources Wales for their advice and consents. The Bird Observatories Council continue to support and publicise Skokholm Bird Observatory, making sure we have a presence at high profile events such as the Bird Fair. The Islands Conservation Advisory Committee (ICAC) and the Seabird Subgroup continued to provide support and advice on relevant issues.

The regular arrival of visiting ringers contributes significantly to ongoing research on Skokholm, as well as providing a wealth of interesting information for other guests and helping to create that special Bird Observatory atmosphere; we are indebted to them all for the extra ringing effort and census coverage which they provide. Our sincere thanks go once more to Wendy James and Richard Dobbins of the Teifi Ringing Group and Skokholm Bird Observatory Committee; they made several visits during the year, assisting with colour ringing projects and migration monitoring as well as promoting the work of the Bird Observatory. Richard stayed at the end of the season to provide extra census and ringing coverage, whilst Wendy continued to oversee the sourcing and stocking of Skokholm Bird Observatory merchandise (which now includes postal orders). Chris Brown and Eric Wood, of the Tees Ringing Group, again spent countless hours in the field, colour ringing both Great Black-backed and Herring Gulls (as well as running the trapping area). Chris again produced the fantastic cover of this report. Ian Beggs had another productive and exciting Wheatear season and assisted with the ringing of migrants on good fall days. We must also acknowledge Kenny Cramer, Helen Franklin and the Northants Ringing Group who supported the Bird Observatory for a seventh consecutive season, donating yet more useful items to the Ringing Hut as well as providing a top-notch ringing effort. Much of the work carried out at the Observatory relies on birders and ringers, from all over western Europe, northwest Africa and the east coast of South America, who observe and submit sightings of Skokholm ringed birds; we are hugely appreciative.

The Friends of Skokholm and Skomer continued to provide amazing support, both on and off the Island. The wonderful infrastructure which allows guests to comfortably enjoy this spectacular Island is chiefly down to the hard work and vision of this proactive group. We are grateful to each and every Friend (there are over 650 of you!), although we would like to specifically thank Steve and Anna Sutcliffe for their continued support, not only of Skokholm but of ourselves and our Long-term Volunteers; they once again organised and ran the work parties, negotiated donations of materials and welcomed us into their home during the winter. Mark Burton again received, checked and repacked our monthly food deliveries before making sure that they made it onto the Dale Princess; having such regular access to fresh food is an amazing luxury for both ourselves and our Long-term Volunteers. Shirley Matthews and Renate Thome took charge of supplies for the Skokholm food shop and Renate once more organised the laundry.

We would like to say a heartfelt thank you to everyone, regular guests and new, from near and far, who visited Dream Island this year. Whilst sat in front of the roaring fire in Lockley's Cottage during the evening Log, you have again contributed thousands of records during the season. These have been added to the longest Bird Observatory database in Britain and have provided much of the information given in this report. Your kindness, excitement, laughter and support have once more made for an extremely enjoyable year. We really look forward to seeing you all again in 2020.

Giselle and Richard

Definitions and Terminology

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

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

The systematic list below follows that of the British Ornithologists' Union (McInerny *et al*., 2017) but includes updates published in BOURC reports up to and including January 2020. In addition to some minor reordering within the families, the location of Swift, Cuckoo, pigeons and doves, rails, divers, tubenoses, egrets and herons might come as a surprise to those familiar with earlier lists.

The Systematic List of Birds

Quail *Coturnix coturnix* **Sofliar**
Rare noted on 46 previous dates, with approximately 39 records of 42 birds and only two in autumn 1936-1976: 2 trapped

One photographed on the plateau above Purple Cove on 31st May was the first since one at the same location on 10th June 2017 (LP, KO). One was flushed from the culvert along the South Pond Lower Drain the following day (RDB), a male was singing near North Pond on 4th June (GE *et al*.) and a bird was flushed from Windmill Gully on the 5th (RDB). Although it is possible that some of these sightings refer to the same very mobile individual, it would seem likely given the typically elusive nature of this species that more than one bird was present. There were three singles between 2014 and 2017, three singles in the 1990s, approximately six records in the 1980s (three of which were probably of two birds lingering for up to three days), five singles in the 1970s, seven singles in the 1960s, eight singles in the 1950s, four singles in the 1940s and three between 1938 and 1939 including one found dead on the roof of the Lighthouse.

Brent Goose *Branta bernicla* **Gwydd Ddu**
Rare only ten spring and four autumn post-War records, although three long-stayers in spring
Earliest 9th September 2003 **Latest** 20th June 2015 (5th April 2019)

Ten pale-bellied *B. b. hrota* which flew northwest on 5th April were the first since a single dark-bellied *B. b. bernicla* logged on the 18th and 19th April 2017 (GE, RDB); this was the second largest skein to have been seen from Skokholm. Lockley mentions Brent Goose passing in the winter and notes a flock of 16 on 10th April 1936, however no Brents were recorded between 1939 and 1983 and only 15 records totalling 33 individuals have now been logged since (including 17 in the last five years); ten of the records have come in April. Given that the majority of Pembrokeshire Brent Goose sightings assigned to race each year have been *B. b. hrota*, the pale-bellied Greenland breeding subspecies, it is perhaps surprising that of the 11 Skokholm records where race has been determined, all but four have belonged to the dark-bellied nominate form of Arctic Russia.

Barnacle Goose *Branta leucopsis* **Gwydd Wyran**
Rare seven spring records of up to five birds and 13 autumn records of up to ten birds
Earliest 8th October 1987 (1st November 2019) **Latest** 2nd June 2018

A single joined the Canada Goose flock on 1st November, two were with them on the 12th, a single on the 24th and two again on the 30th; it is probable that all four observations were of the same two individuals. As with the majority, if not all, of the previous Skokholm sightings, a feral origin would seem likely; there have now been six records since 2015, this an increase in occurrence which mirrors the increasing feral population in Wales. October continues to be the most likely month in which to encounter this species, with ten sightings coming during the period (there have now been four in November).

Canada Goose *Branta canadensis* **Gwydd Canada**
Uncommon Breeder and Common Visitor four in October 1952 were the first for Pembrokeshire

The majority of spring sightings were again of birds which would attempt to breed on Skokholm, indeed only 15 March, April or May daycounts exceeded the four breeders. There were highs of 13 on 31st March, 11 on 1st April and ten on 29th March and 3rd April, these primarily counts of roosting birds which soon departed for the mainland; the peak spring daycount was the lowest since 2000 when a maximum of nine was logged. Two pairs, one of which made two nesting attempts and one of which made three, was the lowest total since at least 2003 and probably since 2000; this species colonised in 1999 and the population had increased to seven pairs by 2004 (with egg control measures to protect rare aquatic vegetation taken under licence from 2002). The first incubating bird was found to the east of the Bog on 24th March (two days before the first of 2018 and 2017), although a second pair near Orchid Bog did not have a full clutch until 23rd April. Both breeding attempts failed at egg stage, as did the three subsequent clutches; Canada Goose productivity thus remains very poor, with a single fledgling in 2012 and no fledglings at all in the last seven years (by contrast there were 38 fledglings in 2006 and a minimum of 40 in 2007). Two in the Bog on 1st June were the last to be seen before September; there was no August record for the first time since 2009.

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

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
9	8	6	-	36	41	23	16	18	11	10	7	7	4	2

The only September record was of eight birds at North Pond on the evening of the 7th; this was the lowest September tally since a single in 2008, well down on recent highs of 61 in 2018, 809 in 2015 and 1856 in 2012. Although a late, typically post-sunset arrival to the North Pond roost and a very

early departure inevitably lead to undercounting, birds were only logged on six October dates, with eight on the 30th the largest count; a monthly bird-days total of 20 was the lowest since 2014, down on the 149 of 2018, the 104 of 2017 and a record 860 in 2015. The use of North Pond as a roost site remained sporadic in November, although the number of birds arriving increased; there were records on just seven dates but highs of 62 on the 12th, 40 on the 24th and 56 on the 30th, whilst two lingered throughout the day on the 29th and eight remained for all of the 30th. A November bird-days tally of 224 was the fourth highest of the last seven years, although flocks of up to 205 birds contributed to November totals of up to 1133 during the same period.

Shelduck *Tadorna tadorna* **Hwyaden yr Eithin**
Scarce Breeder first seen with young in 2006 and only eight post-July sightings before 2013

There were records on all but four days between the return of staff on 28th February and 26th June, usually of six or fewer but with highs of eight on the 2nd and 11th April and of seven on three dates. The breeding season bird-days total was the lowest of the last nine years and the peak daycount was the lowest since 2006, both perhaps a reflection of ongoing poor productivity linked to chick-stage losses to the gulls. The first indication of a breeding attempt this year was the appearance of three accompanied ducklings between North Gully and North Pond on 26th May; they almost certainly did not survive the day. The chicks were 14 days earlier than the first of last year, two days earlier than the first of 2017 and four days earlier than in 2016. A pair appeared at North Pond with seven ducklings on 6th June, one was eaten by a Great Black-backed Gull the following day, only four were seen on the 8th and 9th and all of the young were gone by early morning on the 10th. On 26th June an adult was watched escorting a minimum of ten ducklings through the gull colony along the West Knoll Wall; at least eight made it as far as North Pond but they had all been taken by the end of the day. This was a typically disappointing breeding season; although it is possible that the adults which swam their young towards St Ann's Head in 2016 managed to protect them through to fledging, only in 2011 did young definitely fledge from Skokholm. Three 2019 broods was two up on last year and matched 2014 as the year with the most broods logged; there were two broods seen in 2017, 2016 and 2008 and single broods in a further seven years since chicks were first noted in 2006.

One at North Pond on the 19th and 20th November was a now typical autumn record and the only other 2019 sighting; a single on 11th November 2013 was only the ninth post-July record for Skokholm, however there were up to three birds present on nine dates in November 2014, up to six birds on nine dates in November 2015, three singles during October and November 2016, up to two birds on three dates during October and November 2017 and a lone flyover in November last year.

Shoveler *Spatula clypeata* **Hwyaden Lydanbig**
Rare Breeder and Uncommon Visitor bred in 1988, 1993-1996, 1999, 2015, 2017 and 2018

There were sightings on all but nine dates between 28th February and 20th May, including records on every day in April and with highs of two females on 17 dates and of two males on 20 dates. It is likely that at least one breeding attempt was made during this period, however there was no evidence of such. Although breeding was proven in three of the four years prior to this season, on each occasion the chicks were soon lost to the gulls. Two males on the morning of 24th May was the only further record prior to November; there was no July sighting for only a second time since 2013. In November a female was logged on the 1st and 4th and a pair were at North Pond on the morning of the 2nd; there have only been sightings in ten previous Novembers, including five of the last six.

Gadwall *Mareca strepera* **Hwyaden Lwyd**
Rare only 21 previous records of up to two birds

A drake was on South Pond for approximately one hour from 0600hrs on 5th May (RDB); this was the first record since a flyover drake on 30th June 2013. What was probably the same male lingered on North Pond between the 9th and 12th and reappeared at South Pond on the 14th. There have now been 22 records accounting for 38 bird-days over 18 years, with all but four sightings occurring between 10th March and 14th July and with the majority falling in May (seven records totalling 16 bird-days).

Wigeon *Mareca penelope* **Chwiwell**
Uncommon Winter Visitor
Earliest 22nd August 1986 (20th September 2019) **Latest** 29th May 2017 and 2018 (25th March 2019)
1936-1976: 1 trapped

There were sightings on all but one date between 28th February and 18th March, with highs of ten on the 1st and eight on the 4th but no more than five from the 5th. A female on the 24th and 25th March was the last of the spring; despite being down on the 99 of last year and the 122 of 2017, the March bird-days total of 77 was otherwise the highest since the 111 of 1999. Although a male southeast through Broad Sound on 20th September was 21 days later than the first autumn record of last year, this was just the eighth September sighting this century. The sole October record was of 12 birds, only one of which was an adult male, on the 13th; there have been birds in 29 previous Octobers, however larger companies have only been noted on eight occasions. A pair were at North Pond on 10th November and three were there on the 13th and 14th; despite a staff presence throughout the month, the November tally was well down on recent highs of 29 in 2018 and 62 in 2016.

Mallard *Anas platyrhynchos* **Hwyaden Wyllt**
Scarce Breeder and Fairly Common Visitor
1936-1976: 10 trapped, 2018: 1 trapped

There were sightings on all but four dates between 28th February and 27th July. The peak spring counts were logged in March, with highs of ten on the 1st and 2nd and of 12 on the 6th; although well down on a high of 70 on the night of 2nd March 1930, the 2019 peak was the sixth largest spring gathering on record (down on a further two pre-War daycounts of up to 25, a sute of 22 on 3rd March 1993 and 13 on 9th March 2013). April daycounts peaked at nine on the 8th, although a total of three females on this date was bettered on the 1st when four were noted; the peak April daycount equalled that of 2016 and was only down on the ten logged in 1933 and 1948. It is unusual to see Mallards sat on the sea around Skokholm; a male in North Haven on 24th April was thus notable. The first ducklings of the year arrived to South Pond on 4th May, although two had soon been taken by a Raven and the remainder were not seen again; their appearance came nine days later than the first of 2018 but on the same date as the first of 2017. A different female accompanied a brood of 11 at the same location on the 14th, although these were also seemingly lost within the day. A female defending eight ducklings at North Pond on the 15th had only lost one by the following morning, however a further three had been taken by that evening and the remainder were not seen subsequently. Two further broods, both very recently hatched, were seen on only one date; there was a brood of six at the Well on the 16th and a brood of seven at Orchid Bog on the 21st. Five broods of ducklings in a season was one down on last year but one up on 2017 and two up on the peak count listed by Thomson (2007). However it is seemingly well over a decade since any young fledged; there were occasional fledglings between 1985 and 2000, with a peak of 25 in 1988 (surprisingly so given that this was a period when gull numbers were more than twice what they are today).

For a second consecutive year, only four singles were logged in August; there was a flyover on the 2nd, nocturnal records on the 25th and 26th and one on the 28th. The first four of eight September records were again nocturnal; this species, as with the other ducks, regularly exhibits a post-dusk arrival and pre-dawn departure from roost sites which makes an accurate assessment of numbers challenging. Seven at Orchid Bog on the 24th was the first diurnal September sighting, four went southeast off the Lighthouse on the 28th and three were seen on the last two days of the month; although a total of 31 was well down on the 1930 peak of 185 September bird-days, there have only been 14 higher September tallies, the most recent of which was in 2000. Records on 17 October dates included highs of 36 on the 26th and 19 on the 30th; five of the 13 highest October daycounts have now been logged this decade. Numbers continued to increase in November with records on 17 dates, totalling 218 birds and with high counts of 42 on the 6th and 26 on the 13th; there have only been higher bird-days totals in three Novembers, with a peak of 274 in 1989, whilst the maximum daycount was the ninth highest to date. Two on the 1st and 3rd December were the last of the year.

Teal *Anas crecca* **Corhwyaden**
Common Visitor recorded in all months but more regular in winter, possibly bred in 1936
1936-1976: 16 trapped, 2014-2018: 3 trapped

Following ten on 28th February, there were sightings on every March date including highs of 17 on the 4th and 28 on the 5th which took the bird-days total to 260; the peak daycount was the highest since 45 were logged in 2014 and the total the second highest this century, only down on the 284 of last year (there have however been 11 higher March tallies with peaks of 874 in 1969 and 492 in 1940). As is invariably the case, numbers dropped in April with up to seven noted on 26 dates tallying 65 bird-days; the peak count was the lowest of the last three years but the total the third highest since 1999. A female was seen on six May dates to the 10th; there have only been sightings in 20 previous Mays, with ten in 1978 and seven in 1946 the only higher bird-days totals. One at Orchid Bog on the night of 26th August was the first of the autumn, this 15 days later than a nocturnal single

at the same site last year; counts in this month are seldom high, but this was the lowest total since the blank August of 2014. It proved a poor September with the only sighting being of two at Orchid Bog on the night of the 29th; this was the lowest September tally since 2011 when two were also logged. Bar a group of 13 at North Pond on the 11th, records on eight October dates were all of four or less; there have been six higher October totals this decade, with the 28 bird-days being down on a peak of 170 in 2012. Although well down on the Skokholm record 547 November bird-days logged last year (when daycounts peaked at a record 110), sightings on 14 dates this November, including highs of 21 on the 17th and 29 on the 24th, took the total to 105; the tally was the sixth highest to be logged in this month, albeit only the fourth highest of the last six years. There were daily December sightings prior to the staff departure, with eight on the 1st, 16 on the 2nd and six on the 3rd.

Ring-necked Duck *Aythya collaris* **Hwyaden Dorchog**
Vagrant only one previous record

A first-winter male, with a typically dull eye and poorly marked bill, accompanied six Tufted Duck at North Pond on the morning of 20th November (RDB, GE); this was the first record of a male on Skokholm, the only previous sighting being of a female on 12th October 1986. The group soon departed for the mainland, however it was over a month until what may have been the same male was found at Marloes Mere. The most recent of approximately 16 previous Pembrokeshire records was of a drake which overwintered on Marloes Mere between 2012 and 2013.

Tufted Duck *Aythya fuligula* **Hwyaden Gopog**
Rare only 13 previous records, but logged in each month between May and November

A group of six at North Pond on the morning of 20th November were in the company of the second Ring-necked Duck for Skokholm and included only one breeding-plumaged male; they soon departed for the mainland (GE, RDB). This was the largest chern to have been seen on the Island and makes this the third consecutive year with a sighting. The only other Skokholm records concern two on 7th November last year, a pair on 4th June 2018, a male on 3rd July 2000, a female on 28th August 1999, three on the 21st and two on 29th September 1994, a male for nine days from 1st June 1991, a female on 10th October 1982, a pair on 8th May 1981, two on 3rd May 1972, a single on 8th August 1961 and a female which stayed for 16 days from 5th May 1958. On mainland Pembrokeshire Tufted Duck numbers tend not to build up until November and peak in January and February when birds are thinly distributed across several freshwater sites, whilst cold weather movements can result in a further increase in numbers (Donovan and Rees, 1994); a Wardening presence during the winter would perhaps thus increase the number of Island records.

Velvet Scoter *Melanitta fusca* **Môr-hwyaden y Gogledd**
Vagrant only one previous record

A brown bird in the company of three Common Scoter, steaming southeast off the Lighthouse on the morning of 2nd December, was perhaps surprisingly just the second Skokholm record (RDB). The only other sighting is of a male which headed south off Spy Rock on 26th October 1966. This is a scarce but annual overwintering species in Pembrokeshire, with the majority of records coming from St Brides Bay and the western reaches of Carmarthen Bay (Donovan and Rees, 1994).

Common Scoter *Melanitta nigra* **Môr-hwyaden Ddu**
Common recorded offshore in all months, but particularly June to September
1936-1976: 11 trapped (oiled birds following rehabilitation)

Following a record breaking 2017 season, the cumulative number of Common Scoter logged in each of the last two years have been the lowest since 2012. There was no early spring record for the first time since 2012, with nine on 1st May the first of the year. The only other records of a typically quiet May were of eight on the 3rd and ten on the 13th; nevertheless there are only ten higher May totals, including 530 in 1992 (when a record daycount of 420 was logged on the 29th). The June total was the lowest since 2015, with groups of 24 on the 18th and 12 on the 29th being the only birds logged. Numbers again increased in July, with 35 on the 6th, 53 on the 11th and eight on the 29th; a bird-days total of 96 was the lowest July tally since 2012, 73% down on the 2013-2018 mean of 357.8. August observations were more regular, with records on 12 dates (11 dates last year), however peak daycounts of just 11 on the 9th and 12 on the 15th took the bird-days total to only 62; the total was the second lowest of the last seven Augusts, massively down on the August record of 1044 logged in 2017 (when sightings on 15 dates included daycounts of 247 and 392). Records on six September dates, including peaks of 28 on the 5th and 37 on the 29th, took the monthly total to 91, less than half of that logged in the previous two Septembers and the lowest tally in this month since the 83 of 2014. There was the customary decline in numbers as the autumn progressed, with up to seven noted on three October dates and up to nine counted on five dates in November. A total of 71 passed the Lighthouse on 2nd December, these accompanied by two rarer species of seaduck; the only previous December record was of seven on the 15th in 2000, although this is undoubtedly in part due to recording effort. As is typically the case, the majority of birds seen during the autumn were heading southeast, presumably towards wintering grounds in Carmarthen Bay.

Long-tailed Duck *Clangula hyemalis* **Hwyaden Gynffon-hir**
Vagrant only two previous records

On 2nd December, during what proved to be an excellent morning for records of seaducks, two headed southeast off the Lighthouse with four Common Scoter (RDB, GE). The only other Skokholm

records are of a first-winter drake which flew south on 16th October 1990 and of two on 30th October 1995.

Swift *Apus apus* **Gwennol Ddu**
Fairly Common Migrant common in some years and most regular in late spring
Earliest 15th April 1991 (5th May 2019) **Latest** 28th October 1976 (31st August 2019)
1936-1976: 12 trapped

One along the south coast on 5th May was ten days later than the first four of last year and the latest spring arrival since 13 on 7th May 2014; April singles on the 15th in 1991, the 16th in 1961 and the 17th in 1970 are the earliest Skokholm records. There followed counts of up to five birds on all but two dates to the 17th, two on the 22nd and a single on the 31st; a May bird-days total of 29 was the eighth highest this century, but also the lowest of the last four Mays and well down on the 282 of 1948 (which remains the highest total of any month). A further 175 were counted over 17 June dates including highs of 36 on the 22nd and 70 on the 26th; the peak daycount was the highest since 89 were logged on 5th May 2017 and equalled two counts in the July of 1956 as the 12th highest in any month, whilst the monthly total was the highest since the 198 of July 1990 and the second highest in June (only down on the 224 logged in 1969). The July total was slightly up on the post-2013 mean of 49, with up to nine birds on 19 dates taking the monthly bird-days total to 56, 16 fewer than last year (which was the highest July total since 2000, albeit well down on the record of 247 logged in 1956). Up to three noted on six August dates took the monthly total to ten; the August total is rarely high, with this year's tally matching the post-2014 average. Two on 31st August were the last of the year, these 29 days later than the last of 2018 and five days later than the last of 2017; a single on the 4th in 2005 is the most recent of 117 September bird-days, whilst four October singles were all logged between 1960 and 1976.

Cuckoo *Cuculus canorus* **Cog**
Scarce Migrant has bred, most recently suspected of having done so in 2006
Earliest 6th April 1960 (29th April 2019) **Latest** 8th September 1956 (9th May 2019)
1936-1976: 82 trapped, 2015-2018: 5 trapped

A male found singing along North Plain, late on the evening of 29th April, was two days later than the first of last year but otherwise the earliest spring arrival since one on the 22nd in 2015. A female near

North Pond on 8th May was perhaps the bird seen near the Sugarloaf the following day, these the only other sightings this season. Three spring bird-days was five down on last year but up on five of the last ten years (and equalled a further two of those years). There was no autumn sighting for the first time since 2016 and for the 15th time this century; there were 14 autumn bird-days last year, this the highest total since the 37 of 1966, whilst the only other autumn records this century concern a single on 9th August 2017, up to two juveniles noted over eight days in 2013, a single in 2008 and a juvenile in 2006 which was logged on three dates and suspected of having hatched on Skokholm.

Stock Dove *Columba oenas* **Colomen Wyllt**
Scarce formerly Fairly Common and up to 62 pairs bred between 1967 and 1983
1936-1976: 28 trapped

One sat on Lighthouse Rock on the morning of 28th April was the only record this year and the first April bird since 1988. Singles on three October dates last year, two October dates in 2016, on 9th March and 25th November 2015 and on 28th March 2012 are the only other records since sightings of up to two birds on 22 dates took the 2003 bird-days total to 28.

Woodpigeon *Columba palumbus* **Ysguthan**
Uncommon Visitor has bred, most recently in a South Haven sea cave in 2007
1936-1976: 3 trapped, 2017: 1 trapped

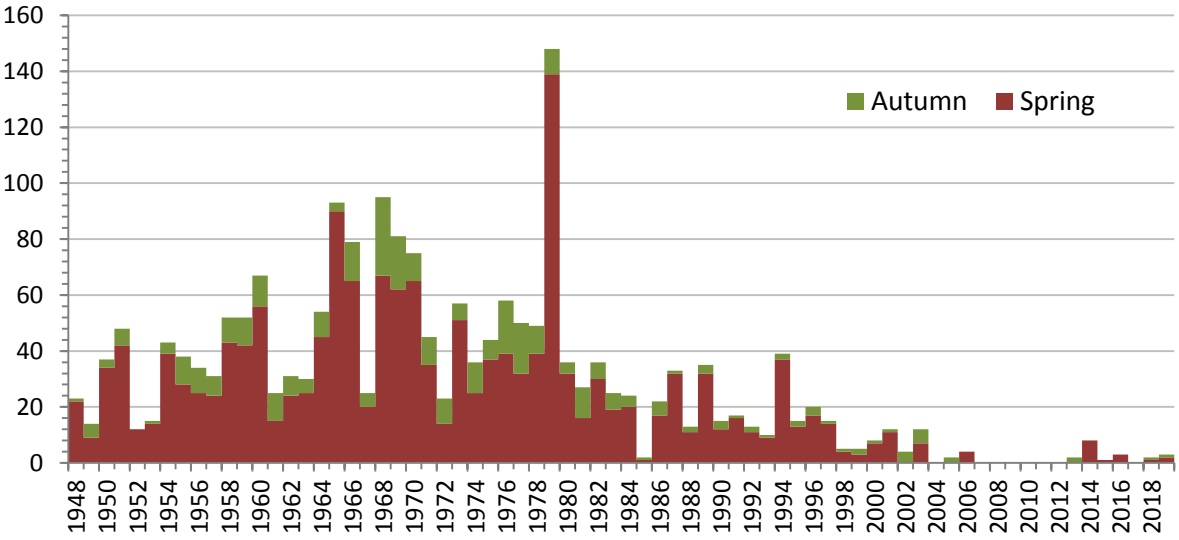
A pair and two singles on 20th March were perhaps the four birds seen together the following day; these were the highest daycounts since six were logged on 24th March 2013 (Skokholm daycounts have never been big, with peaks of 11 in the May of 1989 and the August of 1987, 12 in April 1978 and 18 in May 1960). Feathers were found at Little Bay Point on the 23rd and there were further March singles noted on the last two days of the month; a bird-days total of ten was the highest in any month since the 13 of March 2013 and the third highest monthly total since 2008 (prior to when counts were considerably higher, peaking at 88 in April 1996 and 86 in April and 106 in May 1995). There were lone April birds on the 5th, 8th, 19th, 20th and 28th and sightings on eight May dates, again all singles bar three on the 5th; interestingly several of these arrivals again coincided with the appearance of Collared Doves, probably suggesting that the same environmental cues trigger their movements. The June tally was also a typical one for this non-breeding era, with lone birds logged on four dates and two together on the 18th; the latter was the first June record of multiple birds for 11 years. There were July singles on the 9th, 10th, 12th and 17th but no August sighting for a sixth time since 2010. A lone bird on 9th September was just the eighth post-2008 record in this month. One

which spent the majority of 28th October sat on the Anticline had perhaps had an encounter with a raptor, whilst a single at Spy Rock on 8th November was the last of the year and only the 36th bird-day to be logged in this month. A 2019 bird-days total of 37 matched last year as the highest since the 49 of 2008.

Turtle Dove *Streptopelia turtur* **Turtur**
Scarce Migrant previously Uncommon
Earliest 1st April 1949 (14th May 2019) **Latest** 18th October 1995 (24th August 2019)
1936-1976: 36 trapped

A mobile bird on 14th May was later found to be in the company of a second individual (RDB, IH); this was the first May record since 2016 and the first occurrence of multiple birds since two on the 17th and 18th May 2014. The only other sighting this year was of a moulting juvenile on 24th August, originally found at the Tabernacle and later seen over North Pond (RD, RDB); this was the first August record since 2000, although there have now been 79 bird-days logged in this month. The 2019 sightings take the post-2006 bird-days total to just 19 and the total for the first two decades of the 21st century to 61; alarmingly there were 407 bird-days recorded in the last two decades of the previous century. Sadly this has become a truly scarce species in Wales, with a 96% drop in the breeding population observed between 1970 and 2010 (Bladwell *et al.*, 2018).

The total number of Turtle Dove bird-days logged in each year since 1948.



Collared Dove *Streptopelia decaocto* **Turtur Dorchog**
Uncommon Visitor the majority of sightings coming in spring. First recorded 7th June 1962
1 trapped
1962-1976: 36 trapped, 2013-2018: 6 trapped, 2 retrapped

One around Home Meadow on 27th March was over a month earlier than the first of last year and made this only the 14th year with a record in this month. Singles at the Neck and the Lighthouse on the morning of 18th April were assumed to be the two together at the Lighthouse that afternoon, whilst a single on the 25th was the only other April sighting; there have been between one and four bird-days in each of the last seven Aprils. Numbers again increased in May, with records on ten dates including two together on the 10th and 11th and a male singing on the 5th, 22nd and 23rd; although historically daycounts of up to 13 have produced May bird-days totals of up to 60 (1977), a 2019 bird-days total of 12 matched the post-2000 mean (a tally not helped by the appearance of pluckings on the 18th). Singles on five dates produced the second lowest bird-days total of the last seven Junes; birds were again regularly harassed by Meadow Pipits, an unnecessary display of awareness which routinely befalls visiting Collared Doves. A juvenile was around the Farm on 9th July and three arrived to the same area on the evening of the 12th; perhaps surprisingly, given the higher annual totals of the 1970s, 80s and 90s, the latter was the highest July daycount on record. The last of the year was at the Bluffs on 24th August, this only the second August record of the last eight years.

Water Rail *Rallus aquaticus* **Rhegen y Dŵr**
Uncommon Winter Visitor and Irregular Scarce Breeder confirmed in 1929, 1931 and 2012
8 trapped
1936-1976: 19 trapped, 2013-2018: 19 trapped, 6 retrapped

Following successful breeding in 2012 and 94 records of up to two birds during a 2013 breeding season without a confirmed attempt, 2014 saw only two spring singles logged (probably due to the severe preceding winter). The following three springs saw up to three birds noted in a day, but there were no sightings between 21st April and the autumn influx. During the last two years birds have been logged later into the spring, indeed there was a territorial male in May and a June single noted last year, however there has been no suggestion of breeding in either year. There were records on nine dates this March, all singles bar three on the 21st when birds were at South Pond, Medicine Rock and the Well; there have only been five higher March tallies, including a record 31 last year. There were also records on nine April dates, again all singles bar three on the 20th; the April bird-days total was the third highest to date and the peak daycount matched the record set in 2015. All of

the May sightings came from the vicinity of the Well, with two logged on the 9th and singles on an additional 12 dates to the 21st; the latter was the last record until July when the only bird of the month was along Well Stream on the 12th.

There were records on 11 August dates, with a peak count of two noted on four dates from the 25th; both the monthly total and maximum daycount were the lowest of the last four Augusts and down on the post-2012 means. However numbers increased in September, with sightings on all but two dates and highs of eight on the 16th, seven on the 29th and 30th (by when one had been eaten by a Sparrowhawk) and six on four dates which took the bird-days total to 96; both the peak daycount and bird-days total were only down on last year and 2014 (when highs of nine in both years took the bird-days totals to 120 and 137 respectively). Whereas August sightings had only come from the Well and Orchid Bog, September saw records from Isthmian Heath, South Haven, Home Meadow, Medicine Rock, the Top Tank, East Bog, Spy Rock, South Pond, Garden Rocks, the Bog and the Cottage Heligoland. Daily October sightings included peak daycounts of nine on the 2nd and eight on the 22nd which took the monthly total to 139; the peak daycount was down on four of the last five years and the Skokholm record of 20 logged in October 1931, whilst the total was also down on four of the last five years, including the 195 of last year and the October record of 281 logged in 2015. Occupied sites additional to those previously noted were North Haven, Boundary Hill (where a bird feeding high in the Elder was being mobbed by Blackbirds on the 5th), Frank's Point, the Hills, Winter Pond, the Dip and North Pond. Records on all but four dates, including peaks of seven on the 3rd and 6th and nine on the 24th, took the November bird-days total to 85; both the peak count and monthly total were down on three of the last four years, albeit both higher than anything logged prior to 2014. Sites occupied in November additional to those previously mentioned were Blacksmith's Brakes, Western Plain and Sugar's Delight, all dense stands of Bracken some distance from the main ponds. Unsurprisingly there were daily December records until the departure of staff on the 3rd, with a high of five on the 1st.

Moorhen *Gallinula chloropus* **Iâr Ddŵr**
Scarce Breeder
1936-1976: 10 trapped, 2013-2018: 23 trapped, 7 retrapped

The only March record was of one in the Cottage Garden on the 1st; early spring is typically quiet on Skokholm, a paucity of records which may reflect either an absence of birds or just skulking non-breeding behaviour (although 2018 saw a marked increase in numbers, perhaps due to freezing conditions driving birds from the mainland or leading to them being more conspicuous). The next was not until 4th April, this a ringed adult at the Well (thus presumed to be a returning breeder). Singles were noted at the Well on two further dates prior to the 16th, from when there were daily records which included two birds on eight dates, four birds on the 24th, sightings at Orchid Bog from the 17th and sightings at North Pond from the 21st; although the peak daycount matched the second highest April count to date, the bird-days total was the lowest since 2013 and less than half that logged in 2016 and 2015. Daily May counts of up to three birds produced a monthly bird-days total of 53, the same as last year but otherwise lower than in every year since 2013; significantly there was no May record from South Pond for the first time since 2013.

The first six chicks were seen at the Well on 2nd June, these three days later than the first of last year and on the same date as the first of 2017; two youngsters, close to independence, were still present at the Well on 27th June. A minimum of three second-brood chicks there on 24th June were thought to be the four still present on 8th July. Of two hatchlings seen at Orchid Bog on 5th June, at least one was still present on the 29th. It is thus possible that at least seven fledged from these three attempts, however three fledglings present around Orchid Bog from 20th July was the maximum confirmed count. Two mid-sized chicks seen regularly at Orchid Bog from 9th July had fledged by the 24th; these were additional to the three older fledglings at this site. A large chick at North Pond from 7th July was

seen regularly until 1st August. Three confirmed pairs thus fledged at least six, and possibly as many as ten, from five known nest attempts; three pairs was one up on last year and matched the number recorded in each season between 2014 and 2017, whilst four pairs in 2007 and four or five in 2011 remain the highest counts. Additionally an adult was seen at South Pond on ten June dates from the 18th and on three July dates to the 4th; it could not be ascertained whether this was an additional bird or a wanderer from North Pond. A 2019 productivity figure of at least 2.00 fledglings per pair was down on the 3.50 achieved by two pairs last year but close to the seven year mean (2.17 ±se 0.29). Sightings of up to five birds on 23 September dates all came from the vicinity of Orchid Bog and included two youngsters watched eating slugs on a drizzly 12th (one of which was eating the slugs in situ, the other of which was carrying them to dunk in the pond prior to consumption). Interestingly the October tally was by far the lowest of the last seven years, with nocturnal singles at the Well on the 4th and 7th and diurnal singles there on the 16th and 19th; the previous six years saw peak daycounts of between two and four contribute to bird-days totals of between 11 and 45. November was similarly quiet, with one seen crossing the track north of Bracken Rock on the 6th and one at the Well on the 25th; there were six November singles last year and between six and 19 in the four years prior to that. Nevertheless one was still at the Well on 1st December, perhaps suggesting that some birds are remaining hidden rather than departing for the winter.

Stone-curlew *Burhinus oedicnemus* **Rhedwr y Moelydd**
Vagrant six previous Pembrokeshire records including four previous Skokholm records

A mobile bird found during an increasingly wet and windy 16th June eventually settled on North Plain (SIH, SUH, *et al*.). This was the first Island record since one on 18th July 2003, with the only other previous sightings being of singles on 21st August 1991, 7th July 1982 and 25th April 1940. The two other Pembrokeshire records are of one shot near St Davids during January 1891 (by Mr Browne Edwardes and recorded in the local paper) and of one near the Teifi Estuary on 13th May 1997.

Oystercatcher *Haematopus ostralegus* **Pioden y Môr**
Fairly Common Breeder and Common Visitor previously an Uncommon Breeder
11 pulli trapped, 29 resightings
1936-1976: 1882 trapped, 2014-2018: 58 trapped (including 36 pulli), 21 resightings

Despite lows of 31 on the 10th, 44 on the 13th and 33 on the 20th, it proved a productive March; there were five counts of 100 or more for a second successive year and a peak of 148 on the 1st which was

the fifth highest post-War tally in this month (between 150 and 155 were noted on three occasions between 1988 and 1990, whilst 160 were logged on the 26th in 1951). The largest roosts again formed in the vicinity of the Anticline, with nine counts in excess of 60 (ten last year) and highs of 99 on the 9th and 105 on the 22nd. Birds were quicker to vacate communal roosts and establish breeding territories than during the 2018 breeding season (which followed a particularly bitter early spring); this April saw seven fewer Anticline roosts in excess of 50 birds than last year, with 64 on the 2nd the only sizable count. The first egg to be found this year was near North Pond on 22nd April. A whole Island census during May revealed 53 territorial pairs, this eight fewer than in the record 2017 season and the second lowest total of the last five years, but one more than last year and a total well up on the 2002-2018 mean (40.69 ±sd 11.27). Colour ringing again suggested that the population is maintained in part by a high adult return rate; of 11 birds bearing colour rings during the 2018 breeding season, all 11 returned to the same territories this year (including the bird found overwintering in Côtes-d'Armor, France during December 2017). Intriguingly North Pond roosts were unusually large for a second consecutive breeding season; there were peak May counts of 52 on the 4th, 55 on the 7th and 48 on the 19th (the May 2018 high was 36) and peaks in June of 57 on the 7th, 61 on the 16th, 56 on the 17th and 60 on the 27th (the June 2018 high was 58).

As in the previous six seasons, nests were selected for productivity monitoring during early May (19 in total). Of these, eight successful pairs managed to fledge nine young, with a pair nesting amongst the dead Heather to the west of the Farm the only ones to fledge more than a singleton. Productivity was thus a rather disappointing 0.47 fledglings per pair, this the second lowest figure of the last eight years, well down on a remarkable 1.62 observed last year and 52.5% down on the 2013-2018 mean (0.99 ±se 0.16). As is often the case, only Great Black-backed Gulls were seen to take young. The first flying youngsters were near Crab Bay and the Farm on 20th June, two days earlier than the first of last year but four days later than the first of 2018. North Pond roost counts increased during the first half of July, with highs of 61 on the 1st, 64 on the 8th and 71 on the 13th; the peak matched that observed last year. Counts again declined during the second half of July as both adults and fledglings departed the Island, whilst the latest of the 2019 chicks had fledged by the 27th. The maximum August daycount was of 41 on the 14th, no more than 29 were noted from then until the end of the month and there were lows of eight on the 25th and six on the 30th. September proved typically quiet, with daily records of up to 26 birds but lows of one on three dates and of three on two dates. There were sightings on all but one October date, including a high of 24 on the 14th, and on all but two November dates, including a high of 31 roosting at the Anticline on the 26th; the October peak was the second highest of the last seven years and the November peak matched the second highest recorded during the same period.

Ringing recovery FB28157
Originally ringed as an adult, THE GANN, PEMBROKESHIRE 16th August 2013
Recovered as an adult, SKOKHOLM 30th August 2019
Finding condition Freshly dead
Distance travelled 9km at 258 degrees (WSW)
Days since ringed 2205
Additionally four adults colour ringed at the Gann (one in 2016, two in 2017 and one in 2018) were resighted in Skokholm roosts during 2019. Of 12 colour ringed adults breeding on Skokholm this season, five were seen at the Gann during the year, whilst one of the 2018 Skokholm chicks was resighted there on 10th June, 26th September and 29th November.

Ringing recovery Left leg: Orange above FB46120, Right leg: Orange darvic with black 4C
Originally ringed as a chick, NORTH POND WALL, SKOKHOLM 6th July 2017
Recovered as an adult, PEMBREY HARBOUR, CARMARTHENSHIRE 15th August 2019
Finding condition Colour ring read at roost
Distance travelled 70km at 91 degrees (E)

Days since ringed 771
The second bird to be ringed as a chick on Skokholm and resighted in Carmarthenshire (following one seen at Ginst Point in 2017 after 552 days).

Ringing recovery Left leg: Orange above FS19729, Right leg: Orange darvic with black 84
Originally ringed as a chick, SKOKHOLM 20th June 2018
Previously recovered as a first-winter, THE GANN, PEMBROKESHIRE 26th November 2018
Recovered as an adult, TEIGN ESTUARY, DEVON 3rd and 15th November 2019
Finding condition Colour ring read whilst feeding
Distance travelled 177km at 128 degrees (SE)
Days since ringed 502 and 514

Lapwing *Vanellus vanellus* **Cornchwiglen**
Scarce previously Common and an Uncommon Breeder, but last bred in 2000
1936-1976: 694 trapped

There were no spring sightings for a third year since 2013; there have only been records of up to five birds on 21 spring dates since 2004, this a sobering statistic for a species which produced chicks on Skokholm as recently as 2000. Two between North Gully and North Pond on 20th October were thus the first of the year, a tally which was doubled the following day; a daycount of four was the highest in autumn since 2015 when four were together in August and 11 were logged on 27th October. A juvenile was at North Pond on 17th November, three birds were there the following day and a single there on 2nd December was the last to be seen prior to the departure of staff. A total of eight autumn bird-days matched last year and was up on the three of 2017, however there were tallies of 19 in 2016, 34 in 2015 and 13 in 2014. Winter visits would probably increase the number of records as historically counts peaked during this period.

Golden Plover *Pluvialis apricaria* **Cwtiad Aur**
Uncommon but only 35 bird-days between 2006 and 2013; not recorded in 2008, 2009 or 2011
1936-1976: 1 trapped, 2018: 1 trapped

Whereas the 2018 'Beast from the East' produced March daycounts of up to 130 and a record monthly total of 234 (along with the emaciated corpses of 22 birds), there were no cold weather movements logged this year. Indeed there was no March or April record for the first time since 2015.

The first of the year was thus a fine summer-plumaged bird which settled on North Plain between the 7th and 10th May. Two feeding there on the 28th were joined by the lingering American Golden Plover; of the three, only a lone European bird was present that afternoon, this probably the individual which was seen on each of the following three days. The May bird-days total was perhaps surprisingly the highest since the 11 of 1989. A bird which lingered for three days from the 8th made this only the 23rd year since 1927 with a June sighting. The only record of a typical August was of two together over North Plain on the 25th. Numbers increased as September drew to an end, with seven east off the Lighthouse on the 29th and 26 on the last day of the month when wings of 12 and 14 headed south; the peak daycount was the third highest to be noted in this month, only down on the 33 of 1992 and the 50 of 1950, whilst the bird-days total equalled the fourth highest to be logged (with 65 in 1950 the maximum). The October total was however the lowest of the last six years, with the only birds being a single between Winter Pond and North Plain on the 11th and flyovers on the 12th, 13th and 24th. In November there was one at North Plain on the 10th and flyovers on the 24th and 25th; there have only been sightings in 19 previous Novembers, with only three of these seeing a higher number of bird-days logged. Although down on totals of 56 in 2015 and 46 in 2014, 42 autumn bird-days was 18 up on last year, 21 up on 2017 and 25 up on 2016.

American Golden Plover *Pluvialis dominica* **Corgwtiad Aur**
Vagrant only one previous record

A stunning but rather mobile bird, initially found near North Pond on 25th May, commuted between North Plain, Winter Pond, the Dip and Windmill Gully during the following three days (GE, RDB, *et al*.); on the morning of the 28th it joined two European Golden Plover on North Plain before seemingly departing with one of them. The only previous Skokholm record was the first for Pembrokeshire, logged on 26th September 1981 and described in sufficient detail to allow it to be assigned to species following the 1986 splitting of this and Pacific Golden Plover *P. fulva*.

Ringed Plover *Charadrius hiaticula* **Cwtiad Torchog**
Uncommon but Scarce between 2004 and 2011
1936-1976: 3 trapped

One on the 31st was the fifth March bird-day of the last four years, but only the seventh since 2000 and only the 56th since the first in 1955. There followed sightings on seven April dates, all singles bar two on the 22nd; both the peak count and April total equalled the lowest of the last six years. Numbers increased in May, with records on all but one date between the 5th and 23rd, including highs of four on the 9th and 12th and of five on the 20th and 21st; although the maximum daycount matched two of the previous six years (and was well down on the 14 of May 2014), the bird-days total was the second highest to date, only down on the 52 of 2014. Mobile singles on the 4th and 6th June were the last of the spring and took the spring bird-days total to 53; there were 34 spring bird-days in both 2018 and 2017, 35 in 2016, 47 in 2015, 62 in 2014 and 45 in 2013. Autumn passage began with a bird at North Pond on 12th July; there have been earlier autumn records in 16 years, with two on 6th July 2016 the most recent. A single at North Pond on the 15th was the only other July record and there were August singles on 11 dates, all flyovers bar a juvenile at an ever diminishing North Pond on the 12th and 13th; there have only been double-figure August totals in 17 previous years, with 65 in 2016 and 24 in 2015 the highest tallies. No doubt due in part to a much reduced North Pond, all but one of the September records were also of flyovers; birds were noted in flight on 11 dates, all singles bar two over the Neck on the 24th, and two were on the baked mud of North Pond on the 18th. A September bird-days total of 14 was the second lowest of the last seven years, although there were only eight higher totals prior to 2013. The last of the year, and the only record of a typical October, was a lone bird at North Pond on the 1st. A total of 28 autumn bird-days was up on the ten of last year and the 13th highest autumn tally to date, but the third lowest of the last seven years and well down on highs of 158 in 2016, 68 in 2015 and 59 in 1989.

The total number of Ringed Plover logged each month (2018 to 2016 in parenthesis), along with the monthly maximum (2018 to 2016 in parenthesis) and the date(s) on which the 2019 peak was recorded.

March	April	May	June	July	August	September	October	November
1	8	42	2	2	11	14	1	0
(2, 0, 2)	(12, 13, 14)	(17, 18, 18)	(3, 3, 1)	(0, 4, 11)	(9, 7, 65)	(1, 19, 74)	(0, 2, 7)	(0, 0, 1)
1	2	5	1	1	1	2	1	0
(1, 0, 1)	(4, 3, 2)	(3, 4, 4)	(1, 1, 1)	(0, 1, 2)	(3, 1, 11)	(1, 11, 9)	(0, 1, 3)	(0, 0, 1)
31st	22nd	20th & 21st	4th & 6th	12th & 15th	11 dates	18th & 24th	1st	

Little Ringed Plover *Charadrius dubius* **Cwtiad Torchog Lleiaf**
Rare ten spring records totalling 12 birds and four autumn records totalling five birds
Earliest 27th March 2012 (17th April 2019) **Latest** 24th August 2016

One which briefly settled at North Pond on 17th April was photographed prior to its departure (IH, JH, *et al*.); this was the fourth April record for Skokholm. Given the increase noted in the Welsh breeding population over the last few decades, it is unsurprising that nine of the 15 Skokholm records have come in the last nine years and that all have occurred since May 1986.

Whimbrel *Numenius phaeopus* **Coegylfinir**
Common Visitor has seemingly overwintered on at least 19 occasions
1936-1976: 30 trapped, 2018: 2 trapped

A ringed adult seen on nine dates between the 1st and 23rd March is very likely to have been the bird ringed in September 2018 and noted on 20 dates during the October and November of that year; it is tempting to think that this was the same lone bird which spent the previous four winters on and

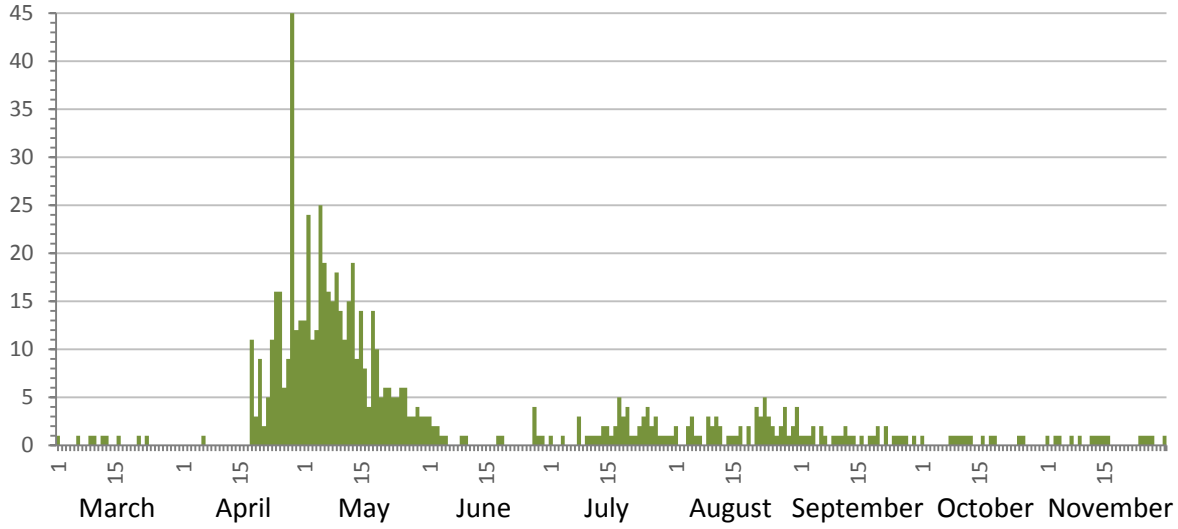
around the Anticline and Crab Bay, and perhaps one of the two birds which had spent earlier winters in the same area. It could not be confirmed if a bird at the Anticline on 6th April was ringed; a total of 11 on 18th April were thus the first definite passage birds of spring, these 13 days later than the first two of last year, nine days later than the first two of 2017 and the latest since seven on the 20th in 2013. There followed daily April records, with high counts of 16 on the 24th and 25th and of 45 on the 28th which took the monthly bird-days total to 159; the peak count matched one made in 2016 as the third highest April tally (only down on counts of 64 in 2003 and 47 in 1989), whilst the monthly total matched that of 1978 as the third highest (only down on the 179 of 2016 and the 173 of 1989). May proved similarly productive, with daily sightings producing a bird-days total of 326 which included highs of 24 on the 2nd, 25 on the 5th and 19 on the 6th and 13th; although there have been 20 higher May daycounts, including a record 50 on the 1st in 1993, there have only been two higher May tallies, with 356 in 1993 and 423 in 1989. A leucistic bird which frequented North Plain between the 6th and 10th May gave some indication as to how long individual birds were lingering (below photograph). A better than average June saw records on 12 dates to the 29th, a maximum daycount of four on the 27th and a monthly bird-days total of 19. The combined April, May and June totals for the previous seven years show a tight spread, with between 321 and 357 birds logged; this year's total of 504 was the second highest on record, only down on the 615 counted in 1989.

The total number of Whimbrel logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2016 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	9	159	326	19	48	57	27	12	15
2018	7	117	227	5	15	88	59	12	8
2017	6	156	196	5	45	92	38	12	5
2016	4	179	166	3	14	49	52	9	18
2019	1	45	25	4	5	5	2	1	1
2018	1	25	19	2	3	9	5	1	1
2017	1	17	21	2	18	12	7	1	1
2016	1	45	23	2	2	6	12	1	1
	9 dates	28th	5th	27th	18th	23rd	5 dates	12 dates	15 dates

As is occasionally the case, it is difficult to say where spring passage ended and autumn passage began in 2019. Following singles on the 1st and 4th and three on the 8th, there were daily July sightings from the 10th, records which tallied 48 bird-days and which included highs of five on the 18th and of four on two dates; the total equalled that of 1983 as the third highest in July to date, only down on the 72 of 1976 and the 66 of 1967. Whimbrel were logged on all but six days in August, with highs of five on the 23rd and of four on three dates taking the bird-days total to just 57; although up on the post-1927 average of 48.4, the August bird-days total was 31.6% down on the 2012-2018 mean of 83.3. A ringed bird seen regularly on the Anticline from 9th August was almost certainly the over-wintering individual last seen on 23rd March. Sightings on 22 September dates were predominantly of the ringed adult, although two birds were noted on five dates to the 22nd and a recently dead juvenile was found on the 24th; a September bird-days total of 27 was the lowest since 2011. A lone bird, noted on 27 dates between 1st October and 30th November, was seen to be ringed on nine occasions; it was usually to be found between the Anticline and Crab Bay, although on 4th November it was at Oystercatcher Rock.

The number of Whimbrel logged on each day of 2019.



Curlew *Numenius arquata* **Gylfinir**

Common Visitor previously Abundant and usually present throughout the year, but has never bred
1 trapped, 1 control
1936-1976: 141 trapped, 2016-2018: 4 trapped, 1 control

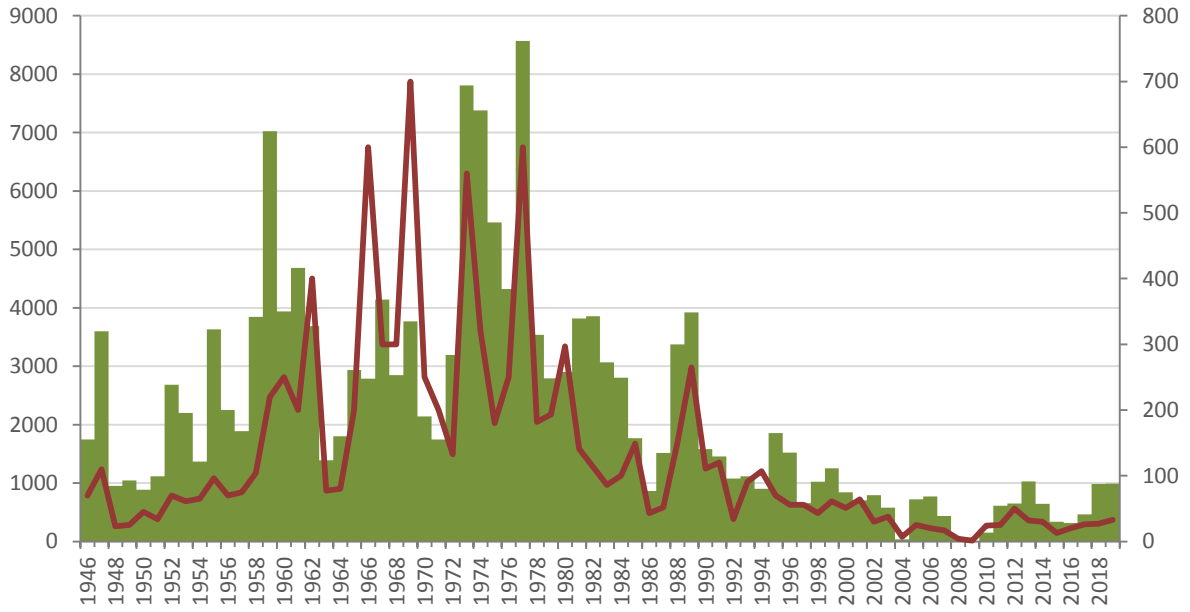
The drop in the number of Curlew visiting Skokholm has been alarming, with recent seasons proving the worst on record for this charismatic red-listed wader, a species which between 1994 and 2010 declined in the United Kingdom by 46% and in Wales by over 50% (BTO, 2016). Following a singing bird on 28th February, there were sightings of up to three on 20 March dates; both the March bird-days total and the maximum daycount were the lowest since 2014. There were daily April records of up to three birds to the 10th and singles on seven dates between the 17th and 25th; an April bird-days tally of 26 was the lowest since 2016, a total down on the post-War mean of 76.94 and well down on record highs of 269 in 1977 and 203 in 1978. Records on all but two May dates from the 6th included two birds on six dates from the 12th and three on three dates from the 25th; a bird-days total of 36 was close to the post-War mean of 40.07 but well down on May highs of 155 in 1981 and 115 in 1959. The unique number of a Gann ringed first-summer logged on the 29th and 30th contained a '3' but could not be confirmed. As was the case last year, counts increased in June with records on all but one date from the 2nd and highs of six on the 7th and 30th, the latter count including the first two definite juveniles of the year; a bird-days total of 76 was the highest June total since the 91 of 1995 but massively down on historical counts which peaked at 898 in 1959. What was presumed to be the

same Gann ringed bird was seen on the 17th, 22nd and 28th; on each occasion the tibia ring was confirmed as number '33' which identified this as a bird hatched in 2018, ringed at the Gann on 26th March 2019, seen on Skomer Island on 27th April and again seen at the Gann on 28th October and 31st December. All Curlews seen during this period are not necessarily local; birds in June may have already departed their mainland Europe breeding grounds and reached coastal wintering quarters, as exemplified by the failed German breeder observed at North Pond on 16th June 2016.

The total number of Curlew logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2015 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	27	26	36	76	191	377	155	81	20
2018	147	29	12	61	252	240	159	66	16
2017	39	39	3	17	90	126	109	36	3
2016	28	10	17	7	38	82	82	28	18
2015	69	18	14	29	60	83	24	32	9
2019	3	3	3	6	14	33	19	5	4
2018	24	7	3	6	27	27	18	8	5
2017	4	5	1	10	11	26	22	4	1
2016	8	2	4	2	4	11	20	2	4
2015	10	1	2	6	11	13	2	2	1
	27th & 31st	7th	3 dates	7th & 30th	6th & 7th	14th	9th & 30th	3 dates	1st

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



The majority of autumn records were again of birds which returned to Skokholm to roost but which were feeding elsewhere. Daily sightings in July included highs of 13 on the 3rd, 14 on the 6th and 7th and of 11 on the 11th and 22nd which took the bird-days total to 191; although the peak daycount matched the post-2013 mean and the total matched the post-1988 mean, historically July daycounts of up to 149 (1985) and totals of up to 1741 (1959) were logged. The Gann ringed bird was again confirmed on 6th July and was probably the ringed bird noted on the 10th. The August tally of 377 was the highest since the 489 of 1999, albeit down on totals which peaked at 1389 in 1989, 1897 in 1978 and 2175 in 1959; peak August daycounts of 33 on the 14th and 30 on the 28th were the highest since 50 were logged in 2012, but again massively down on a record 297 counted in 1980. The Gann ringed '33' was seen for a last time on 9th August. Although substantially down on historical tallies, which have reached four-figures in nine previous Septembers including a peak of 2069 in 1977, the

September total of 155 was only four bird-days down on last year and the second highest since 2006. The monthly total in October 1973 was an almost unimaginable 4305; that records on all but three dates tallied just 81 this October is a sad reflection of the Curlew's plight. Numbers dwindled further in November with records on 13 dates totalling 20 bird-days; less than 50 years ago a herd of at least 600 were present on one November date. A lone bird at the Neck on 1st December was the last prior to the staff departure.

Bar-tailed Godwit *Limosa lapponica* **Rhostog Gynffonfrith**
Uncommon Visitor although occasionally Scarce or Fairly Common
1936-1976: 8 trapped

Two at North Pond on 23rd April were the first of the year; the 2018 'Beast from the East' led to an influx into Pembrokeshire which included the first seven Skokholm March bird-days since 2001, however the first in four of the years between 2014 and 2018 was on either the 18th or 20th April. There were six, including two in breeding plumage, at North Pond on 24th April, two brown birds around North Plain on the 25th and 26th and what was perhaps the same single at Orchid Bog on the 27th and at North Plain on the 28th and 29th; the peak daycount was the highest in any month since 24 in September 2016 and the highest in spring since 13 on 4th May 1991, whilst the bird-days tally equalled that of 1995 and 1975 as the third highest April total to date. A confiding single seen at either North Pond or North Plain on each date between the 3rd and 15th May was believed to be different to a skittish individual there on the 18th, 19th and 21st; although their lingering led to the highest May bird-days total since 2000, two or three individuals was a rather typical tally for this month. A first-winter at South Pond on all but one date between the 5th and 14th was just the second October record since 1988; what was perhaps the same individual returned to the same site on the 26th. An annual total of 41 bird-days was the highest since 68 were logged in 2016 and otherwise the highest since the 65 of 2000. Traditionally this has proven the commoner godwit on Skokholm, although this was not the case this year or in eight of the nine years between 2010 and 2018.

Black-tailed Godwit *Limosa limosa* **Rhostog Gynffonddu**
Scarce or Uncommon Visitor but Fairly Common in 2012, 2013, 2015 and 2017
1936-1976: 1 trapped

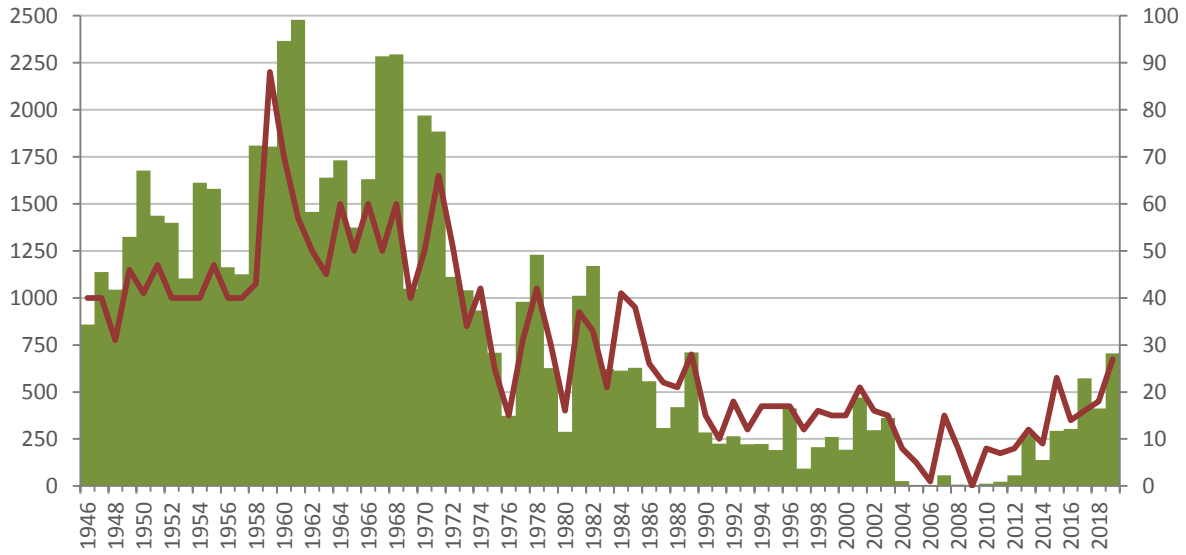
The first of the year frequented North Pond between the 1st and 7th March, this two days earlier than one in 1964 and the earliest spring record for Skokholm; the remains of a bird found near the Bluffs

on the 20th were perhaps the same individual. A fine summer-plumaged *L. l. islandica* was present for two days from 30th March, a different summer-plumaged bird spent 4th April on the same pond, one was in the Bog on the 6th and one was at North Pond on the 18th; there have now been April sightings in 32 years since the first in 1938, including six of the last nine. The only May record was of one which arrived on the evening of the 4th and was still present the following day; a bird-days total of two was the lowest since 2014 and well down on May highs of 23 in 2015, 31 in 2016 and 35 in 2017. By contrast it proved the most productive June on record, with a single at North Pond on the 10th, two there between the 11th and 13th, five there on the 15th, a summer-plumaged bird at South Pond on the 23rd, two at North Pond on the 26th and singles there on the 27th and 28th; a bird-days total of 17 was two up on June 2017 and five up on June 1989. Six summer-plumaged birds were at North Pond on 2nd July and there were records of up to three birds on all but one date between the 4th and 14th; the 2nd July pantheon was the fifth largest to be logged in this month and a bird-days total of 27 was the third highest, only down on the 41 of 2017 and the 36 of 2012. One heading east off the Lighthouse on 6th August was the last of the year. An annual total of 59 bird-days was well down on the 149 counted in a record 2017, but the fourth highest to date; in contrast to the preceding species, the six best years on record for this godwit have occurred since 2012.

Turnstone *Arenaria interpres* **Cwtiad y Traeth**
Common Visitor once Abundant but sometimes only Fairly Common in recent years
1936-1976: 12 trapped

Although Turnstone are no doubt under recorded due to their predilection for spending the majority of time below cliffs and their sporadic use of visible high tide roosts, off-path coverage was similar to recent years suggesting that totals will be comparable. Although nine on the 4th was the highest March daycount since 2002, it went on to be what has become a typically quiet spring; the only additional March records were of three on the 10th and one the following day, whilst April saw four on the 17th and a single on the 29th and 30th. Historically spring counts were much higher; an April total in excess of 400 was not uncommon between 1947 and 1961, although the last time that three-figures was reached was in the April of 1982 when 137 were noted. Birds were seen on six May dates, all singles bar three on the 19th; records from North Pond are scarce, so a summer-plumaged bird there on the 10th, 15th and 25th was notable. Two birds were briefly at North Pond on 2nd June, these the first to be logged in this month since 2016; there have now been records in seven Junes since 2000 and in 47 Junes since 1938.

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



Two in South Haven on 25th July were the first in this month since 2017 and made this only the

seventh July since 1996 with a record; the monthly total matched the lowest of those seven years and was considerably down on tallies of up to 228 logged previously. There were sightings on all but two August dates from the 10th, including highs of 11 on the 18th, 16 on the 28th, 22 on the 30th and 20 on the 31st which took the bird-days total to 136; both the peak count and monthly total were the highest in August since 1989 (when a daycount of 23 contributed to a monthly total of 225, this a tally well down on the August record 781 logged in 1971). One at Orchid Bog on 26th August was the first to be seen at this site since one in August 2015, these the only records here in at least seven years. September again proved the busiest month of the year, with birds logged on all but seven dates, a bird-days total of 299 and highs of 19 on three dates, 20 on two dates, 21 on the 4th and at least 27 on the 19th; the majority of these sightings were again of birds roosting on the Anticline. The maximum September daycount was the highest since the 28 of 1989 and the bird-days total the highest since the 323 of 1985. There continued to be regular sightings in October, with birds noted on all but three dates to the 26th, highs of 18 on the 4th and 8th and at least 24 on the 5th (when 15 at Little Bay Point may have been different to the 24 on the Anticline) and a bird-days total of 203; both the peak daycount and October total were the highest since 1974 when 42 on the 16th contributed to a bird-days total of 301. Records of up to ten birds on 12 dates took the November bird-days total to 34; a daycount of 13 and a monthly total of 82, both in 2003, are the most recent higher November tallies. Singles on the 1st and 2nd December were the last prior to the departure of staff.

The total number of Turnstone logged each month (2018 to 2016 in parenthesis), along with the monthly maximum (2018 to 2016 in parenthesis) and the date(s) on which the 2019 peak was recorded.

March	April	May	June	July	August	September	October	November
13	6	8	2	2	136	299	203	34
(4, 4, 10)	(6, 3, 20)	(24, 10, 30)	(0, 0, 2)	(0, 20, 2)	(38, 135, 16)	(258, 268, 141)	(69, 113, 62)	(14, 19, 21)
9	4	3	2	2	22	27	24	10
(1, 2, 6)	(2, 3, 7)	(7, 6, 5)	(0, 0, 2)	(0, 4, 1)	(5, 14, 5)	(18, 16, 14)	(14, 16, 13)	(8, 8, 8)
4th	17th	19th	2nd	25th	30th	29th	5th	14th

A cumulative autumn total of 676 birds over 90 dates was up on the 379 logged over 56 dates last year and autumn totals of 555 over 83 2017 dates, 242 over 52 2016 dates, 235 over 63 2015 dates, 115 over 38 2014 dates and 217 over 43 2013 dates; indeed it was the busiest autumn since 1982 when 871 birds were counted over 72 dates. Totals were however considerably down on historical levels which exceeded 636 birds a month on six occasions between 1950 and 1971. Given that the majority of monthly totals doubtless consist of counts of the same birds over multiple dates, the highest daycount made each year is telling; the maximum Skokholm daycount of 88 logged on 26th August 1959 was 61 up on this season and starkly illustrates how the number of Turnstones visiting the Island has declined markedly since the 1960s and 70s.

Knot *Calidris canutus* **Pibydd yr Aber**
Scarce usually singles, although occasionally more with 67 on 29th September 1958 the maximum
1936-1976: 8 trapped

Summer records of this Arctic breeder are rare, indeed three on the 21st last year was the first June sighting, whilst this year a grey adult which spent 3rd July at North Pond became just the seventh record in this month; this also becomes the earliest July bird, with one on the 14th in 1992 the previous earliest. The only other record this year was of a single at North Pond on the evening of 30th September. This was another species caught up in cold weather movements associated with the 2018 'Beast from the East', movements which led to the first March sightings since recording began and contributed to an annual bird-days total of 13; the two bird-days logged in 2019 was a more typical tally and made this the 40th of 88 recording years with a record. There have been birds logged in every month of the year bar December, but the vast majority pass through in September.

Curlew Sandpiper *Calidris ferruginea* **Pibydd Cambig**
Rare with five spring records of up to two birds and eight autumn records of up to five birds
1936-1976: 2 trapped

One with 21 Dunlin, flying low and south towards the south coast cliffs on 3rd August, was the first Skokholm record since a stunning breeding-plumaged bird logged on 10th July 2015 (GE). There have been two previous August records, with one lingering between the 27th and 30th in 1993 and two on the 24th in 1975; only September has seen more individuals logged.

Sanderling *Calidris alba* **Pibydd y Tywod**
Rare only 37 previous records including eight totalling 13 birds this century
1936-1976: 2 trapped

A winter-plumaged individual which headed southeast at the Lighthouse on 13th May (PB, DB), was different to the smart summer-plumaged bird which frequented South and Winter Ponds between the 14th and 17th; these were the fifth and sixth individuals to be noted in the last five years. There have now been birds in 31 years, with a total of 39 records accounting for 78 bird-days. Although Sanderling have been logged in every month between March and November inclusive, the most productive month is May, now with a total of 13 records, whilst there have been six records in August and eight in September. All but six sightings have been of singles, with 11 on 7th August 1994 and five on 4th September 1979 being the maximum daycounts.

Dunlin *Calidris alpina* **Pibydd y Mawn**
Common Visitor recorded in all months but only Fairly Common in some years
2 trapped
1936-1976: 181 trapped, 2014-2018: 16 trapped

Two on 17th April were the first of the year, making this only the second year since 2010 without a March record. Sightings of up to four birds on a further eight April dates took the monthly total to a

below average 23, this the second lowest total of the last six years (the lowest being in 2017, the other post-2010 year without a March record). Records on 22 dates in May totalled 155 bird-days and included highs of 11 on the 6th, 14 on the 11th and 15th and 16 on the 14th; the bird-days total was the fifth highest May tally to date, down on peaks of 167 in 2016 and 193 in 1967. Whereas last year saw spring counts peak in June for the first time on record, sightings of up to four birds on ten dates took the June 2019 bird-days total to just 17; this was nevertheless the fourth highest June total to date, only down on the 18 of 1947, the 30 of 1963 and the unprecedented 133 of last year. A juvenile, in the company of an adult, at North Pond on 2nd July was seemingly the earliest youngster to be seen on Skokholm, with one on the 11th in 2013 the previous earliest. There followed sightings of up to nine birds on a further 22 dates, including an adult singing in display flight on the 8th; although down on the 134 of 2017, a July bird-days total of 73 was well up on the pre-2017 maximum of 32 logged in 1949.

The total number of Dunlin logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2016 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	0	23	155	17	73	87	6	3	2
2018	11	42	111	133	24	5	7	2	0
2017	0	21	58	3	134	192	30	12	0
2016	1	55	167	7	30	53	32	10	13
2019	0	4	16	4	9	21	3	2	1
2018	4	17	21	21	9	2	2	1	0
2017	0	8	15	1	17	22	6	3	0
2016	1	13	34	2	10	6	6	5	4
		18th & 20th	14th	7th	19th	3rd	9th	1st	24th & 27th

A group of 21 heading south with a Curlew Sandpiper on 3rd August was the third highest daycount in this month. Records on a further 20 August dates, including highs of eight on the 14th and 26th, took the bird-days total to 87, a tally undoubtedly helped by the continued presence of some water in the seasonal ponds and only down on August counts of 97 in 1988, 139 in 2015 and 192 in 2017. The only September records came from an almost empty North Pond, with three on the 9th, one on the 29th and two on the 30th; a total of six September bird-days was one down on last year and the lowest since 2013 (the first year in which accumulating sediment was removed from North Pond in an effort to provide an autumn water body). The only records in a typically quiet October were of two on the 1st and a single on the 4th, whilst flyovers on the 24th and 27th November were the last of the year; there have only been November records in 17 previous years, including three since 2013.

Purple Sandpiper *Calidris maritima* **Pibydd Du**
Scarce Visitor but recorded by Thompson and Betts as Uncommon and previously Fairly Common 1936-1976: 8 trapped

Three at Crab Bay Rocks on 4th March, along with one to the west of Crab Bay on the 14th, were the first spring birds since May 2010 and the first March birds since 2003. One high up on the cliff at Howard's End on 4th October was the first of the autumn, this over two weeks later than the firsts of 2018 and 2017. Four were logged the following day and seven were at the Devil's Teeth on the 11th; the latter was the highest daycount in any month since the nine of 1st November 2003, albeit a tally well down on record highs of 32 on 20th March 1968 and 26th August 1978 and of 30 on 27th March 1966. In November one was in East Bay on the 7th, one was below Howard's End on the 16th and two were at the Devil's Teeth on the 24th. A bird-days total of 20 was the highest annual tally since 2014 when there were 13 records totalling 32 birds. Prior to 1983 three-figure annual totals were the norm, with record monthly tallies of 279 in August 1971, 234 in August 1978 and 229 in August 1979. As noted for Turnstone, it is likely that birds go under recorded as they inhabit the spray zone

at cliff bases, however the decline in Island records seems to suggest a genuine lack of birds, a sad reflection of the situation nationally and their amber listing as a species of UK conservation concern.

Woodcock *Scolopax rusticola* **Cyffylog**
Scarce Winter Visitor not recorded every year but over 200 corpses found in February 1963
Earliest 15th July 1962 (26th October 2019) **Latest** 19th May 1999
1936-1976: 3 trapped, 2018: 1 trapped

As is typically the case, there were no spring birds this year; there have been records between 3rd March and 19th May in only 23 previous years, including four of the last eight. One flushed from along the Lighthouse Track on 26th October was the first of the autumn, this three days later than the first of last year but otherwise the earliest autumn bird since 2001 (the first of 2017 was logged on the 31st, the first of 2016 on the 27th and the first of 2015 on the 28th). The only other October sighting was of one on Isthmian Heath on the 31st, whilst November saw singles noted on four dates between the 3rd and 10th. A combined October and November total of six bird-days was surprisingly the fifth highest to date, only down on the 11 of last year, the ten of 1991 and 1968 and the seven of 1975. A winter presence would no doubt increase the number of records; there were 93 in January 1982, including 47 on the 15th which is the highest daycount of live birds.

Jack Snipe *Lymnocryptes minimus* **Gïach Bach**
Scarce Winter Visitor although not recorded every year
Earliest 18th August 1938 (31st October 2019) **Latest** 22nd May 1995
1936-1976: 8 trapped

Although Jack Snipe have been noted in 35 previous springs, this proved to be only the second of the last seven years without a record. One at South Pond on 31st October was thus the first of the year. Singles at the same site on the 1st and 9th November were perhaps the same individual and the only other sightings this year; a 2019 total of three autumn bird-days matched 2016 as the highest tally since the 11 of autumn 2013. Lockley described Jack Snipe as 'common from 7th October to 24th March', however by 2004 they had become 'far less common, but recorded in most years' (Thompson, 2007); the latter status summary is still accurate today.

Snipe *Gallinago gallinago* **Gïach Cyffredin**

Common Winter Visitor and Passage Migrant breeding suspected in 1927 and 1965
2 trapped, 1 retrapped
1936-1976: 54 trapped, 2018: 12 trapped, 2 retrapped

An earlier than average staff return allowed 54 to be found on the last day of February, a tally which included a count of 50 from the vicinity of North Pond. The following day saw a minimum of 72 logged, including an impressive wisp of 42 together over the Hills; albeit only fractionally up on the 70 logged on 5th March 1971, this was the highest spring daycount since Lockley noted 100 on 15th March 1931. There followed sightings on all but four March dates, with further highs of 46 on the 2nd and 25 on the 6th but no more than 13 logged on each date from the 13th; a March bird-days total of 313 was the third highest in any spring month, only down on the 331 of March 1973 and the 314 of March 1971 (although more birds were probably present historically, the logs often only include this species as being present rather than offering any count data). April also proved productive, with records on all but four dates to the 23rd and further singles on the 27th and 29th which were the last of the spring; peak counts of 16 on the 2nd, seven on the 5th and six on the 13th took the bird-days total to 61. The peak April daycount was the fourth highest in this month to date, only down on counts of 20 logged in 1995, 1971 and 1955, whilst the bird-days total was the highest since 63 were noted in 1984. There was no May sighting for the first time since 2015.

The total number of Snipe logged each month (2018 to 2016 in parenthesis), along with the monthly maximum (2018 to 2016 in parenthesis) and the date(s) on which the 2019 peak was recorded.

March	April	May	June	July	August	September	October	November
313	61	0	0	1	25	64	113	149
(170, 20, 24)	(32, 30, 7)	(3, 2, 1)	(0, 0, 0)	(10, 5, 0)	(35, 42, 11)	(83, 29, 40)	(174, 51, 65)	(184, 14, 56)
72	16	0	0	1	6	7	13	18
(33, 6, 4)	(5, 4, 2)	(1, 2, 1)	(0, 0, 0)	(2, 4, 0)	(18, 8, 6)	(15, 6, 10)	(23, 9, 7)	(21, 5, 23)
1st	2nd			30th	25th	19th	5th	18th & 21st

One at Orchid Bog on 30th July was the first of the autumn, this the latest arrival since 2016 when the first was not logged until 14th August. Four together on 3rd August, along with a single on the 15th, were the only other records prior to the 23rd, from when there were daily sightings which took the monthly bird-days total to 25; a peak August daycount of six matched those of 2016 and 2014 as the lowest since 2013, however the bird-days total was fractionally up on the 2013-2018 mean. There were up to seven logged on all but three September dates, the peak count being the third lowest in this month since 2012 but the bird-days total of 64 being the second highest since the 145 of 1972 (only down on the 83 of last year). Counts again increased in October with 113 bird-days noted over 25 dates and highs of ten on the 2nd and 24th, 13 on the 5th and nine on the 20th and 27th; the peak count was ten down on that of last October but otherwise the highest since the 17 of 1997, whilst the bird-days total was the ninth highest October tally, albeit down on the 174 of last year. There were sightings on all but two November dates, with highs of 11 on the 6th and 7th and 18 on the 18th and 21st taking the monthly total to 149. Although differing staff departure dates mean that November tallies are not directly comparable, the total was the second highest on record, only down on the 184 of last year; there have however been three higher daycounts in the last three years. There were six on each of the first two days of December and two were noted as staff left on the 3rd.

Grey Phalarope *Phalaropus fulicarius* **Llydandroed Llwyd**
Rare records of up to three on 18 previous dates along with 29 unidentified phalarope bird-days

One seen well for two minutes as it passed through Broad Sound at 1340hrs on 21st August becomes the earliest Skokholm record (SV, KF); the only other August sighting is of one on the 31st in 1970. A second 2019 bird went west off the Lighthouse at 0815hrs on 10th October (RDB, GE). The only other definite Island records, of what is a surprisingly rare species here, concern one which spent much of 17th October last year in Broad Sound, singles on 9th October 2001 and 20th November 1999, three on 21st September 1981, one on 31st August 1970, at least one on 26th October 1967, singles on 9th September and the 24th and 25th October 1961 (the latter a two day bird which 'visited the ponds'), up to three on five dates between the 18th and 25th September 1960 (which, along with a further eight unidentified phalaropes likely to have been of this species, occurred as part of a substantial incursion into the Western Approaches (Donovan and Rees, 1994)), singles on the 7th and 27th September 1959, two on 30th September 1957 and two on 17th September 1955.

Common Sandpiper *Actitis hypoleucos* **Pibydd y Dorlan**
Uncommon more regular in autumn
Earliest 21st March 1948 (22nd April 2019) **Latest** 29th October 1975 (8th September 2019)
1936-1976: 23 trapped, 2018: 1 trapped

One in South Haven on 22nd April was six days earlier than the first of last year but two days later than the first of 2017, three days later than the first of 2016 and six days later than the firsts of 2015 and 2014. One was at the same site three days later, whilst in May there were singles on the 10th, 14th and 16th; five spring bird-days was a rather typical 21st century tally, albeit down on recent highs of 17 in 2016 and 12 in 2014. The first five returning birds were logged on 27th June, with four together in Little Bay and one in North Haven; there have only been sightings in 19 previous Junes, all singles bar two on the 29th in 1981. One was in North Haven on 1st July, further singles were noted on the 20th and 27th and seven were in East Bay on the 31st; the latter was the highest daycount in any month since a record 14 were counted on 6th August 2013, indeed there have only been eight higher daycounts (with seven also counted on an additional eight dates). Records on eight August dates all came from the stretch of coast between South Haven and the Lighthouse and were all of singles bar three on the 2nd and two on the 12th, whilst singles on four September dates to the 8th included one calling near the Lighthouse at 0100hrs on the 5th. An autumn total of 30 bird-days was six up on last year and up on the 1970-2018 autumn mean of 16.1, but down on recent highs of 36 in 2014 and 58 in 2013.

Green Sandpiper *Tringa ochropus* **Pibydd Gwyrdd**
Scarce not recorded every year, only seven records 1998-2013 and only 16 spring records
Earliest 2nd April 1997 (29th April 2019) **Latest** 21st October 1967 (19th August 2019)

A vocal flyover at 2300hrs on 29th April was a rare spring record; 2019 thus joins 2018, 2014, 2013 and 2011 as the only years since 1997 with a spring observation. One over at 0610hrs on 16th July was probably the bird watched on North Pond for approximately half an hour before a 0730hrs departure; this was the earliest autumn record since one on the 14th in 2008 and the fourth earliest autumn bird to date. One which briefly visited North Pond at 0630hrs the following day was perhaps the same individual. Following a further North Pond single on 30th July, there were two at Orchid Bog on 7th August, a vocal single the following day (over the Farm at 0200hrs and presumed to be the same as that which passed the Lighthouse at 0730hrs) and a juvenile commuting between Orchid Bog and North Pond on the 19th which was the last of the year. A total of seven autumn bird-days was an improvement on a blank 2018; a lack of records last year was perhaps at least in part due to little standing water being present during August, the period during which passage typically peaks. There were ten autumn bird-days in 2017, two in 2016, 13 in 2015, eight in 2014 and three in 2013.

Redshank *Tringa totanus* **Pibydd Coesgoch**
Uncommon more regular in autumn
1936-1976: 4 trapped, 2018: 1 control

Two were at North Pond when staff returned on 28th February. There followed records on all but four March dates to the 26th, all singles bar four together at South Pond on the 3rd and two at North Pond on the 4th, 5th, 8th, 11th and 19th; the peak equalled that logged last year as the highest March daycount to date, whilst a bird-days total of 30 was five down on last year but up on the previous high of three logged in 2013. The single on 1st March was colour ringed number 26, this the same Gann ringed individual seen in both the spring and autumn of 2018; this is the first Redshank proven to have returned to Skokholm in successive winters. The returning bird was seen on four further dates and was joined by a second colour ringed bird, number 58, on the 5th (see below); it would seem likely that the unidentified colour ringed bird present with number 26 on 19th March was also number 58, whilst the latter was seen on two further March dates. There was no April record for the first time in five years, whilst a flyover single on the 14th was a rather typical lone May sighting. June was similarly quiet, with one on the 4th equalling the lowest total since the blank June of 2013.

An unaged bird commuted between North Pond and Oystercatcher Rock on 9th July, an adult and a juvenile were together at North Pond on the 14th and there were further singles on the 22nd and 23rd; the July total was fractionally up on the post-1930 mean, albeit well down on a record 22 bird-days logged in 2015, whilst the first confirmed juvenile was 11 days later than the first of last year. Records on seven August dates comprised four singles, six over together on the 7th and two on the 25th and 27th; the peak daycount equalled one made in 2017 as the tenth highest in July, whilst a bird-days total of 14 was fractionally down on the post-2011 July mean (a period which includes a record 34 bird-days logged in 2017). September is typically quiet, indeed the bird-days record logged in 1973 is just 17, nevertheless a lone flyover on the 7th equalled the lowest total of the last eight years. October is usually quieter still, with records in only 16 previous years; three east together off Howard's End on the 1st was the only October record this year but was a new maximum daycount for this month. Sightings of up to two birds on ten November dates from the 18th produced a bird-days total of 13, a tally eight up on the record set last year; there have now been November records in eight years including four of the last six. One heard on 2nd December was only the second to be noted in this month following a single on the 8th in 1927.

Ringing recovery Left tibia: Orange, Right tibia: White 26 on Black, Right tarsus: DT23625
Originally ringed as a first-winter, THE GANN, DALE, PEMBROKESHIRE 17th February 2018
Previously retrapped as a first-winter, THE GANN, DALE, PEMBROKESHIRE 21st February 2018
Previously resighted as a first-winter, NORTH POND, SKOKHOLM 29th March 2018
Previously resighted as a first-winter, NORTH POND, SKOKHOLM 4th April 2018
Previously resighted as a first-winter, NORTH POND, SKOKHOLM 5th April 2018
Previously resighted as an adult, NORTH POND, SKOKHOLM 4th November 2018
Previously resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 9th January 2019
Resighted as an adult, NORTH POND, SKOKHOLM 1st, 5th, 7th, 11th and 19th March 2019
Finding condition Colour rings read in field
Distance travelled 9km at 78 degrees (ENE)
Days since ringed 396

Ringing recovery Left tibia: Orange, Right tibia: White 58 on Black, Right tarsus: DT23633
Originally ringed as an adult, THE GANN, DALE, PEMBROKESHIRE 21st February 2018
Previously retrapped as an adult, THE GANN, DALE, PEMBROKESHIRE 10th December 2018
Resighted as an adult, NORTH POND, SKOKHOLM 5th, 23rd and 25th March 2019
Subsequently resighted as an adult, THE GANN, DALE, PEMBROKESHIRE 28th November 2019
Finding condition Colour rings read in field
Distance travelled 9km at 78 degrees (ENE)
Days since ringed 398

Wood Sandpiper *Tringa glareola* **Pibydd y Graean**
Scarce not recorded every year and only ten spring records
Earliest 22nd April 1973 (23rd June 2019) **Latest** 22nd September 1966 (13th September 2019)
1936-1976: 2 trapped

A vocal bird flushed from between Twinlet and North Pond on 23rd June was just the fourth to be logged in this month following singles in 2005, 1964 and 1963 (JH, GE, *et al*.). The only autumn record was of one calling as it headed southwest on the evening of 13th September, this the first September bird since 1996 and only the 21st bird-day to be logged in this month. This becomes the sixth consecutive year with a record, a regularity of occurrence which has not previously been recorded here; there were sightings in each of the three years between 1994 and 1996, 1971 and 1973 and 1962 and 1964. Nine records in the last six years comprise five flyover singles, lone juveniles which have lingered for one, four and six days and two together at North Pond for 15 minutes in August 2015 (the latter one of only six sightings of multiple birds). Since the first in

August 1955, there have now been approximately 51 records totalling at least 57 individuals and with birds noted on 94 dates, all logged during 30 of 65 recording years.

Spotted Redshank *Tringa erythropus* **Pibydd Coesgoch Mannog**
Scarce records in 27 previous years of up to five birds
Earliest 15th April 1983 (19th June 2019) **Latest** 26th September 1989

A stunning breeding-plumaged bird found at North Pond on 19th June was the first since a vocal flyover logged on 19th May 2017 and only the fourth this century following further singles on 16th August 2016 and the 3rd and 4th September 2005 (JH *et al*.). There have now been six spring records, all singles bar a group of five present on the 15th and 16th April 1983. This species was more regular in the past, with five bird-days logged between 1st September 1995 and 5th September 1992, 20 in the 1980s, 13 in the 1970s, 20 in the 1960s and six between 25th May 1958 and the first Island sighting on 14th August 1955. The drop in Skokholm records has mirrored a decline in the number of birds passing through and wintering in Pembrokeshire.

Greenshank *Tringa nebularia* **Pibydd Coeswerdd**
Uncommon but not recorded every year and only seven records between 2005 and 2012 inclusive
Earliest 5th April 2015 (**30th March 2019**) **Latest** 9th November 1958 (21st April 2019)

A flyover on 30th March was the first to be logged in this month and five days earlier than a 2015 flyover which was the earliest Skokholm record. The only other 2019 sighting, a single at South Pond on the 21st, made this the fifth consecutive April with a record. Two spring bird-days was up on the one of last year but down on the three logged in each year between 2014 and 2017 inclusive. There was no autumn sighting for the first time since 2009; there was one autumn bird-day last year, four in 2017, 11 in 2016, three in 2015, five in 2014, seven in 2013 and singles in 2012 and 2011.

Kittiwake *Rissa tridactyla* **Gwylan Goesddu**
Very Abundant a single pair attempted to breed in 1959
2018: 1 control

Although present offshore in all months, Kittiwake were logged in smaller numbers than might be expected given the presence of 1451 breeding pairs on nearby Skomer. The pattern of records broadly matched that observed in recent years, with a quiet pre-breeding period, an increase in numbers during the breeding season, a post-breeding dip and a substantial autumn arrival. An

apparent departure from this usual pattern occurred during early March, when four Broad Sound daycounts in excess of 240 and a high of 919 on the 4th were logged; the peak March daycount was the highest since 1500 were counted in 1980, conceivably owing to a shift in where pre-breeding birds were feeding. Given that seawatching effort during the busy summer months fluctuates between years, maximum daycounts during this period perhaps provide a better indication as to changes in abundance; peak summer daycounts in 2019 were typical of recent years and over 90% down on historical highs, unsurprisingly so given that the Skomer population has steadily declined since the early 1990s and dropped by 32% between 2000 and 2015. There were several summer observations of Kittiwakes feeding above aggregations of feeding Razorbills, the diving auks seemingly pushing fish up to where they could be reached by the gulls. A substantial 2018 increase in the number of birds seen ashore during late summer was not repeated this year, whilst colour rings again suggested that birds seen during this period are potentially not local (see below). Seawatching effort increases in August as autumn passage attracts more observers and prolonged observation, so the usual decline in Kittiwake numbers logged during this period no doubt reflects a genuine absence; adult birds moult their primaries during early autumn, although whether the drop in numbers is connected to moult or just the pelagic nature of Kittiwake during the post-breeding period is unclear. As had been the case in three of the previous five years, counts remained low during September, although this was followed by the usual October influx into Skokholm waters.

The total number of Kittiwake logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2014 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	2152	361	597	2627	2136	1928	786	10414	3715
2018	115	71	1053	954	1587	3876	3221	600	4539
2017	37	688	779	1422	1820	472	3847	3070	2263
2016	603	620	1254	1022	1272	573	799	2273	13913
2015	387	1271	2363	1727	1467	570	495	1096	9963
2014	336	224	835	2197	930	854	163	2703	606
2019	919	65	171	640	262	332	388	3032	860
2018	89	22	187	113	443	427	678	127	1102
2017	9	259	323	390	440	78	1049	585	800
2016	125	161	465	176	210	158	204	700	2548
2015	190	426	457	167	191	65	165	556	2820
2014	207	51	164	392	250	163	66	1245	248
	4th	30th	1st	28th	12th	22nd	4th	10th	7th

Whereas Kittiwake were noted ashore on 13 dates between 9th July and 2nd September last year (totalling 1235 bird-days and including a high of 261 on 21st August), the only roosting birds logged this year were a single at Oystercatcher Rock on 20th May, 32 on the Stack on 14th August and 15 at the same site two days later. Three of the birds seen ashore on the 14th were colour ringed with five separate bands, a combination which matches that used by the French scheme; three different French ringed birds were seen ashore during the 2018 arrival including one confirmed as having bred at Pointe Du Van that year. It would seem probable that many of the birds seen around Skokholm during late summer and early autumn are from the south; no Skomer ringed individuals have been seen ashore. Daycounts increased substantially from 8th October, with highs of 758 on the 8th, 3032 on the 10th, 842 on the 11th, 1299 on the 12th and 1030 on the 16th, the majority of which were feeding in Broad Sound; the peak count was the highest in any month since a minimum of 5000 were logged on 28th September 1978, albeit well down on the Skokholm record of 8000 counted in November 1968. Despite some large October 2019 daycounts, there were also 16 dates when fewer than 100 were present; interestingly they were often absent on days when other small gulls remained, for example during the last four days of October Kittiwake daycounts peaked at six whilst up to 684 Black-headed Gull and 154 Mediterranean Gull fed in Broad Sound (conversely there were

only 11 Black-headed Gull and 95 Mediterranean Gull logged on the day of the peak Kittiwake count). A sporadic Broad Sound presence continued into November with highs of 860 on the 7th, 433 on the 9th and 585 on the 26th but fewer than 100 logged on 20 dates.

Sabine's Gull *Xema sabini* **Gwylan Sabine**
Rare records in only eight previous years, totalling 21 birds and with two logged on four dates

A northwesterly gusting force nine and a rough sea encouraged hundreds of Kittiwakes to congregate to the south of the Island on 9th October, feeding flocks which also contained three first-winter Sabine's Gulls (RD, RDB, *et al*.); this was the highest Skokholm daycount to date. An annual bird-days record of six were counted between 12th September and 21st October 2017, whilst three have also been logged in 2011, 2003 and 1980. All 24 birds seen from Skokholm occurred in the period 8th September to 1st November, now with 14 bird-days in September and nine in October.

Black-headed Gull *Chroicocephalus ridibundus* **Gwylan Benddu**
Abundant offshore during autumn and winter. Two pairs defended North Pond territories in 1968

Given the size of the Broad Sound flocks which gather each autumn and winter, it was again surprising that there were very few spring records, this probably suggesting that Black-headed Gulls have already dispersed towards their breeding grounds by the time that staff return to Skokholm. Indeed four on the 1st and eight on 2nd March were the only sightings prior to the arrival of two second-summers to North Pond on 7th June; this was thus the first April since 2012 and the first May since 2015 without a record (the 2013-2018 April bird-days mean being 3.5 with a high of nine in 2016 and the 2016-2018 May mean being 3.7 with a high of six in 2016). The only other June records were of an adult on the 26th, a second-summer on the 27th, a juvenile at North Pond on the 28th and a second-summer on the 29th; six June bird-days was down on the 19 of last year and the 2013-2018 mean of 7.5, whilst the first juvenile was six days later than an early 2018 bird but on the same date as one in 2017 (between 2013 and 2016 the first juvenile of the season was logged between 26th June and 15th July). There were records on seven July dates from the 9th, with a high of seven on the 25th and a total of 16 bird-days logged; although down on the record 102 bird-days counted last July, there have only been 13 higher totals in this month.

The only August sightings prior to the 24th were of two on the 2nd and four on the 3rd, however records on all but one subsequent date, including highs of 97 on the 29th and 70 on the 30th, took the monthly total to 224; both the peak daycount and bird-days total were new August records, both up on those set in 1958 when a daycount of 66 took the monthly total to 117. There were sightings on

ten September dates totalling 83 bird-days and with highs of 31 on the 1st and 19 the following day; although up on the 32 of last year, there have been six higher September totals including a record 270 in 2015. Numbers again increased significantly in October with birds on all but six dates from the 3rd and highs of 407 on the 28th, 684 on the 29th and 415 on the 30th; an October bird-days total of 2213 was nevertheless the lowest of the last six years, massively down on a record 10,147 logged last year and a 2013-2018 mean of 4690.3. There were November highs of 841 on the 8th, 799 on the 16th, 949 on the 17th and 660 on the 28th, the peak being well down on the 1466 of last year and the 2400 of 2017 (the latter being the highest November daycount and otherwise only down on the 2500 logged on the 11th and 13th October 1992). November bird-days totals are impacted by differing staff departure dates; despite a 2019 presence throughout the month, 12 dates with fewer than 100 birds and lower peak counts led to a bird-days total of 7564, the second lowest November tally of the last four years and one well down on the 12,320 of last year (when staff left on the 26th). Although late autumn records were all of birds at sea, a Peregrine eaten juvenile was at East Bog on 15th November. There were December counts of 778 on the 1st and 704 on the 2nd.

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

The only sighting this year was of two adults in Broad Sound on 7th November, this matching 2015 as the lowest annual total since a blank 2014 (RDB); this species is never common, with the highest annual totals being 13 in 1996, ten in 1990, 14 in 1980 and 12 in 1967. Although a small number of birds have been logged at other times of year, this species is not expected until late autumn; there have now been a total of 15 bird-days logged in September, 36 in October and 51 in November.

Laughing Gull *Leucophaeus atricilla* **Gwylan Chwerthinog**
Vagrant no previous records

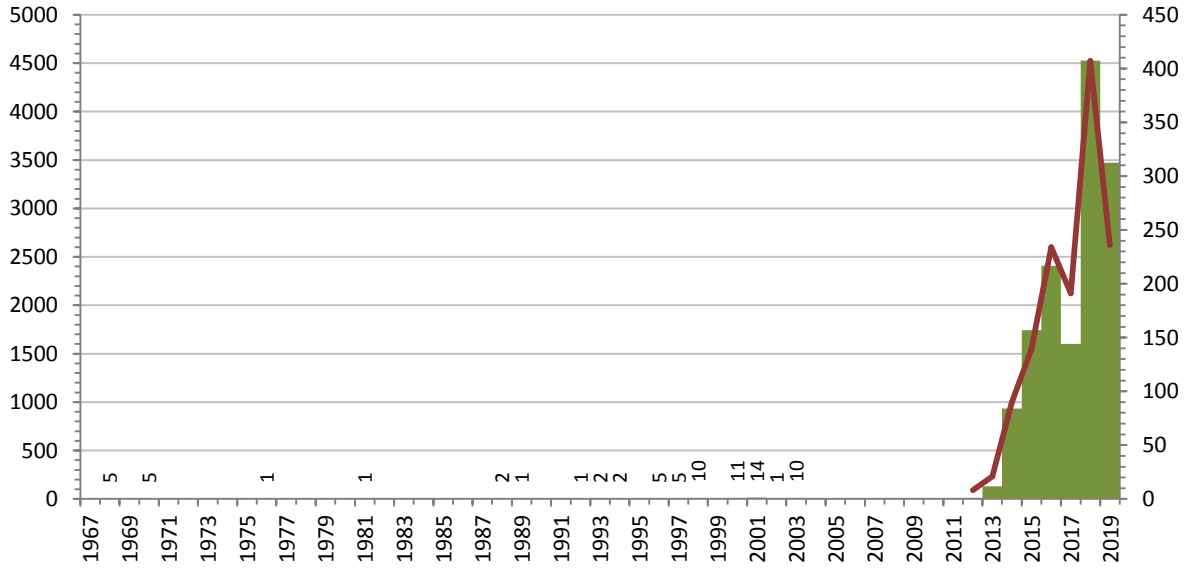
A stunning and rather vocal second-summer which flew over the Farm at 1630hrs on 10th June briefly landed at North Pond before flying north (GE, RDB, *et al*.); after an absence of ten minutes it reappeared over the Farm before again drifting off North. Amazingly the same bird, as shown by an identical primary covert pattern, was calling as it headed east past the Lighthouse on the evening of 26th June (RDB *et al*.); having rounded Spy Rock it again flew in over the Farm before settling in a

Lesser Black-backed Gull roost on North Plain. It was later seen bathing in North Pond but had seemingly departed Skokholm by 1930hrs. The only other birds reported in Britain this year were an immature off Portland Bill, Dorset in April and a first-winter on North Uist, Outer Hebrides in October, although intriguingly one of three reported in Ireland was an adult at Raven Point, County Wexford the day before the first Skokholm sighting. The only previous Pembrokeshire records are of five mobile birds spread across the County during November 2005, this part of a substantial arrival into Britain brought about by hurricane Wilma, and an adult over Skomer in May 2009.

Mediterranean Gull *Ichthyaetus melanocephalus* **Gwylan Môr y Canoldir**
Common offshore during late autumn but Rare prior to 2013 and first logged in 1968

Considering that there had only been a total of 76 bird-days up until 2003, that there were no birds observed at all between 2004 and 2011 inclusive and that there were only four records in 2012, the 21 records totalling 130 bird-days logged in 2013 was exceptional. However there has followed a remarkable increase, primarily due to a rise in the number of birds feeding in Broad Sound during October and November; there were 934 bird-days logged in 2014, 1743 in 2015, 2407 in 2016, 1602 in 2017 and an incredible 4528 last year. Despite this huge increase in birds, spring records are still rare, indeed an adult in Broad Sound on 28th February, four adults and two first-winters there on 1st March, a first-winter off South Haven on 2nd March and a first-winter in Broad Sound on 23rd March were the first spring birds since a single in March 2013; a lone bird in March 1994 is the only other spring sighting. There were no further records until one attaining first-winter plumage passed the Lighthouse on 15th August, this one day later than the first two birds of last autumn and 36 days later than a 2017 adult; there have only been ten birds logged in July, five of which occurred in 2017. Singles on a further three dates, followed by six second-years off the Bluffs on the 30th, took the August total to ten; the 11 bird-days logged last year is the only higher August tally and the peak count was a new August record, up on the two noted on two dates last year. Surprisingly an adult in Broad Sound on the 19th proved to be the only September record; this was the lowest September tally since 2012, well down on highs of 27 logged in 2013 and 2017 (although there have still been fewer than 100 bird-days logged in this month and September records in only ten previous years).

The total number of Mediterranean Gull noted in each year since the first five bird-days logged in November 1968 (green) and the maximum daycount logged in each year since 2012.



There were records on all but four October dates from the 6th, with numbers increasing from 42 on the 9th to 95 on the 10th and 123 on the 12th and with further highs of 106 on the 26th, 115 on the 28th, 108 on the 29th and 154 on the 30th; an October bird-days total of 1033 was down on the 1961

of last year and was the lowest of the last four years, primarily due to daycounts between the 13th and 22nd which failed to exceed 30. There were nine November dates with fewer than 15 birds logged including a blank day on the 2nd, however 11 three-figure daycounts including highs of 153 on the 8th, 230 on the 14th and 236 on the 28th took the bird-days tally to 2224; although this November total was the second highest to date, only down on the 2547 of last year, 2019 saw a staff presence throughout the month for the first time since 2003. The peak November daycount was the fourth highest to be made in any month, only down on counts of 243 on 28th October, 361 on 3rd November and 407 on 4th November last year. There were December counts of 111 on the 1st and 82 on the 2nd prior to the departure of staff the following day. Given the substantial number of birds being recorded in Skokholm waters, it is surprising how few are first-winters, for example only 16 of the 407 daycount record were young birds; the maximum count of first-winters logged this year was 11 on 12th October, whilst numbers peaked at 33 last year, ten in 2017 and 12 in 2016. The most recently published estimate of the British overwintering population is 4000 individuals (Frost *et al*., 2019); the Broad Sound feeding grounds are seemingly of significant importance to this species, with up to 5% of the published total being regularly present and 10% present on one occasion in 2018.

Common Gull *Larus canus* **Gwylan y Gweunydd**
Uncommon offshore during the late autumn and with only 26 records between April and July
1936-1976: 12 trapped

Four adults in Broad Sound on 1st March and two second-winters off the Bluffs the following day were the first spring birds since 2015; there are spring records in a further 23 years, with sightings in 2013, 2007, 2006 and 2002 being the only others this century. Two adults were off the Quarry on 27th August, this the earliest autumn record since one on the 12th in 2012; there have only been August sightings in ten previous years, totalling 29 bird-days. In September there were two on the 20th and a single on the 28th, these the first September birds since 2013 when sightings on four dates included a record September daycount of 26; observations in an additional 18 years tally 51 bird-days. As is customary, numbers increased in October with sightings on 15 dates, all of six or fewer bar ten on the 12th, 24 on the 23rd and 13 on the 30th; a bird-days total of 75 was 18 down on last October but otherwise the highest since the record 182 of 1992. The peak October daycount comprised 20 adults and four first-winters; whilst the adult total was the maximum logged, there were daycounts of three second-winters and six first-winters during the period. Records on all but seven November dates, including highs of 24 on the 8th, 16 on the 9th and 33 on the 15th, took the bird-days total to 169; peak counts during the month were of 19 adults and eight second-winters on the 15th and eight first-winters on the 8th. Both the peak November daycount and bird-days total were down on last year (when a daycount of 44 and a total of 247 bird-days were logged), however they were otherwise the highest since 1990 when three daycounts of 50 contributed to a total of 297; these tallies are eclipsed by November totals of 823 in 1968 and 573 in 1967 and daycounts of 150 on the 15th and 16th November 1968 and 120 on 15th November 1967. Eight adults and five first-winters were noted on 1st December and there were ten adults the following day.

Great Black-backed Gull *Larus marinus* **Gwylan Gefnddu Fwyaf**
Fairly Common Breeder and Common Visitor
62 trapped (including 44 pulli), 3 retrapped, 1 control
1936-1976: 219 trapped, 2013-2018: 342 trapped, 12 retrapped, 4 controls

Although up to 132 were logged on each March date, the majority of birds were on territory, with maximum roost counts of only 26 on the 9th, 16 on the 25th and 38 on the 31st (including 13 subadults); March roost counts peaked at 37 in 2018, 48 in 2017 and 2016, 37 in 2015 and 34 in 2014. Similarly there were up to 144 logged on each April date, with communal roosts of 38 on the 12th, 26 on the 13th and 24 on the 17th; April roosts peaked at 50 in 2018, 58 in 2017 and 2016, 63 in 2015 and 54 in 2014. The sizable roost which formed at the Bog during the early part of the 2013

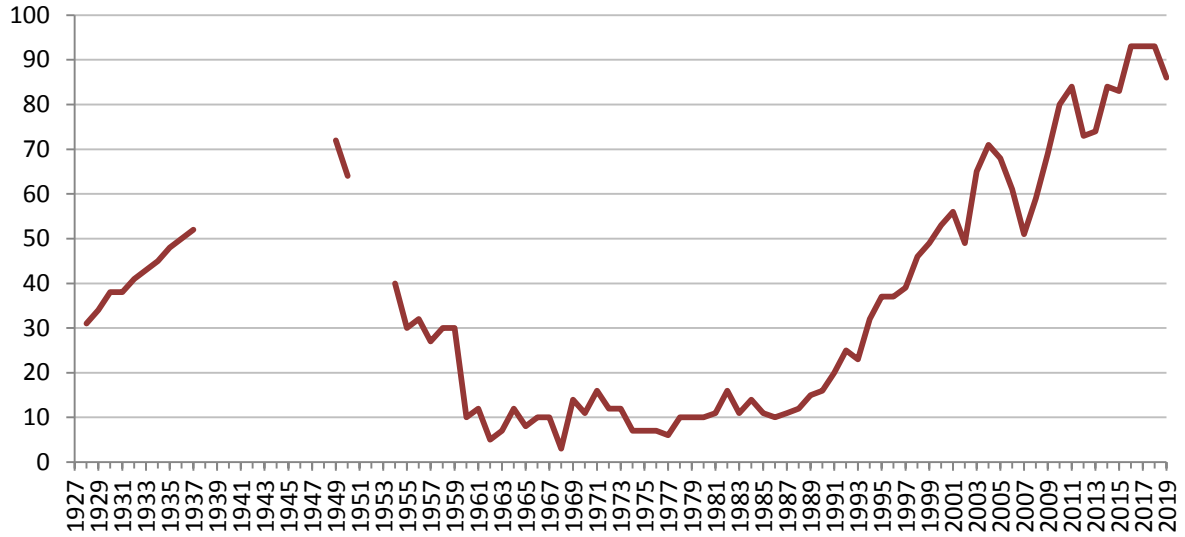
season, which peaked at 213 individuals on 3rd April, again failed to materialise. A whole Island census during the second week of May located 86 apparently incubating adults (the only nests not visited to confirm the presence of eggs were adjacent to the Bog Lesser Black-backed Gull colony and on offshore stacks); this was down on the 93 mapped in 2018, 2017 and 2016 but otherwise the fourth highest total to be recorded on Skokholm. A marked drop in adult survival is seemingly, at least in part, to blame for the decline in the size of the Skokholm breeding population (see below). A decline in the size of the April roost is perhaps indicative of a drop in the number of individuals available to recruit to the breeding population.

The recent increase in the breeding population was probably driven in part by high adult return rates; of 21 adults wearing colour rings in 2015, 19 returned in 2016 (90.5%), whilst 32 of 33 adults returned in 2017 (97.0%) and 31 of 36 returned in 2018 (86.1%). As nearly all of the adults present on Skokholm each breeding season are checked for rings, it seems likely that these were good approximations of survival (although the sample size was still a little on the small side for a confident estimate). None of the colour ringed adults which have gone missing during the last five seasons have been rediscovered subsequently; it seems very likely that Skokholm Great Black-backed Gulls rarely take a year away from the colony or go unseen. Of 43 adults wearing colour rings in 2018, only 32 were found this year (74.4%). A return rate of 74.4% suggests that approximately 48 established adults did not return for the 2019 breeding season (26 in 2018), and that 34 new birds recruited to the breeding population. One potential issue is that the ringing of adults on the nest may be deterring them from returning to Skokholm, however if we exclude the data collected in the year after ringing (when any disturbance should take effect) the return rates remain at a very similar 89.5% in 2016, 100% in 2017, 87.5% in 2018 and 71.0% this year; it thus seems likely that disturbance at the nest is not responsible for the 2019 decline in return rate.

It is not clear what may have caused such seemingly high 2018-2019 adult mortality, although interactions with the fishing industry and some form of poisoning are the main areas of concern. Three of the study birds were found dead during the 2018 season; two of these adults, which formed a colour ringed pair nesting on Boundary Hill, apparently perished at approximately the same time (their outwardly undamaged bodies were both found within 50 metres of the nest site), whilst the third was also found in July, washed up dead on Freshwater West. Another colour ringed bird was found dead on the Castlemartin Range in August this year, whilst W:238 had an injured foot on 23rd July and W:282 was injured in a similar fashion on 14th August. Unringed birds this year

included dead (but seemingly undamaged) adults on 28th April and 1st June, a lethargic adult found on the Neck on 15th May, a lethargic and later dead second-summer at North Pond on 23rd July and five individuals found with serious leg injuries between 16th April and 30th May (see Herring Gull for further 2019 leg injuries). In August last year an unringed adult arrived to the Lighthouse with a bloody leg which was missing its foot. Although birds can be injured during aggressive encounters with other gulls, it seems likely that undamaged corpses are usually caused by poisoning, perhaps botulism, and that many violent injuries are caused by interactions with fishing gear. Great Black-backed Gulls were again regularly observed behind fishing vessels this year, although clearly some boats were more attractive than others; the peak count was of 27 birds behind 'Boy's Pride' on 1st April. An important step in understanding the Skokholm Great Black-backed Gull population will be to discover if such anthropogenic food sources are regularly exploited; additional food, particularly during the winter or periods of low seabird and Rabbit numbers, may increase survival, however foraging around boats or mainland food sources also has the potential to seriously impact health.

The number of Great Black-backed Gull breeding pairs 1928-2019 (where data exists). Control of numbers started in 1949 (destruction of both nests and adults) and stopped in 1985.



Four fully formed but empty nests were present on 2nd April, although the first egg, found at South Pond, was not seen until the 18th. Three eggs were located on 10th April last year (whilst 14 further nests were empty), the first egg of 2017 was also found on 18th April, the first two of 2016 were on the 12th, the first two of 2015 on the 19th and the first of 2014 on the 10th. The first chicks of 2019 were found in the Bog on 16th May, the same date on which eggs at the Neck were seen to be hatching and four days earlier than the first of 2018. Of 30 monitored nests, 11 pairs failed, three pairs fledged a singleton, eight pairs fledged two and eight pairs fledged three. There were thus 43 young fledged and a productivity figure of 1.43 fledglings per monitored pair; productivity was 2.1% up on that of 2018, 31.2% up on the 1989-2004 mean of 1.09 and 10.9% up on the 2009-2018 mean (1.29 ±se 0.13).

Productivity estimates 2005-2019 (average number of fledglings per sample pair).

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0.76	1.07	1.02	1.02	-	0.71	0.89	-	1.80	0.93	1.66	1.38	1.54	1.40	1.43

On 10th July a large Lesser Black-backed Gull chick was watched tapping on the gonydeal spot of an adult Great Black-backed Gull, its persistence being rewarded with a regurgitated Puffin wing (below left photograph). The Great Black-backed Gulls, which raised two of their own chicks to fledging, were seen feeding the Lesser Black-backed Gull youngster on several dates to 2nd August, a period during which the youngster was also accepted by its larger step-siblings. Given the positioning of the

Great Black-backed Gull nest in question, it seems most likely that this pair adopted a Lesser Black-backed Gull chick rather than an egg, perhaps a chick which arrived as a third Great Black-backed Gull chick perished. At the same time as this was being witnessed above the Anticline, adult Great Black-backed Gull W:282 was routinely killing Lesser Black-backed Gull fledglings on North Pond and feeding them to its chick W:316.

The Great Black-backed Gulls are spectacular apex predators and an exciting component of the Skokholm seabird assemblage, however it is important that we monitor the impact that higher breeding numbers have on the Manx Shearwater population. Dead shearwaters were counted for a sixth consecutive year, the vast majority of which had been eaten by Great Black-backed Gulls (see the Manx Shearwater section for more details); a total of 2661 predated corpses, comprising 1618 adults and 1043 youngsters, were marked this year (3199 comprising 2228 adults and 971 young in 2018, 3360 comprising 2071 adults and 1289 young in 2017, 3697 comprising 2299 adults and 1398 young in 2016, 4026 comprising 2702 adults and 1324 young in 2015 and 4218 comprising 2931 adults and 1287 young in 2014). This was thus the fifth consecutive year in which the overall number of dead shearwaters has declined, with a 16.8% drop this year (following a 4.8% drop in 2018, a 9.1% drop in 2017, an 8.2% drop in 2016 and a 4.6% drop in 2015). Ad hoc observations suggested an increase in the number of individuals digging Manx Shearwater chicks out from their burrows this year, particularly around the Lighthouse where what were believed to be the same birds were working relatively small areas over a number of July days, areas which soon showed signs of significant digging; the chicks extracted during this period would probably not be represented in the corpse counting survey as they were typically swallowed whole. Indeed there are many factors influencing the number of corpses found; observer effort has been rather consistent, but possible or certain differences between years have included the number of Great Black-backed Gulls present (which may include differences in the number of shearwater specialists (Westerberg *et al*., 2018) and differences in where the birds eat), the number of Manx Shearwaters available (which may include differences in the number of prospecting individuals likely to spend longer on the surface), the prevalence of suitable hunting conditions (governed primarily by the moon cycle and weather), the size of the Rabbit population (which may provide an alternative food source) and the prevalence of puffinosis (which may make young birds easier to catch). Although the number of dead birds currently being found represents a relatively small proportion of the Skokholm shearwater population, it seems likely that any growth in the Great Black-backed Gull population will impact the shearwaters. Ultimately more data is required to understand these relationships in greater detail.

In an effort to further understand the Skokholm population, a Great Black-backed Gull colour ringing project was begun in 2014, in part to shed light on juvenile survival and recruitment. Of 43 fledglings ringed in 2014, 29 (67.44%) have been resighted subsequently including four which have been found

dead. At least 17 birds (39.53%) definitely survived their first full year, 12 (27.91%) survived their second years, ten (23.26%) survived their third years, eight (18.60%) survived their fourth years and three (6.98%) have survived at least five years (birds typically breed at five or six years). Of 52 fledglings ringed in 2015, 27 (51.92%) have been resighted subsequently, 18 (34.62%) survived their first full year, 15 (28.85%) survived their second years, 13 (25.00%) survived their third years and eight (15.38%) survived their fourth years. Of the 32 2016 ringed fledglings, 14 have been seen subsequently, whilst seven of the 39 2017 ringed fledglings and 12 of the 38 2018 fledglings have been seen again. Although these figures do not give an exact measure of juvenile survival, the birds ringed longer ago (of which more have returned to Skokholm and for which there has been longer for them to be encountered on the mainland), suggest that nearly 17% of fledglings are surviving to four years of age. Only time will tell whether this study provides a sound estimate of recruitment to the breeding population, something which may well be dependent on how many birds establish territories on Skokholm or Skomer (where they should be seen) as opposed to other less studied breeding sites. Of 24 youngsters which have so far returned to Skokholm at some point, five were first back as first-summers, three as second-summers, ten as third-summers, five as fourth-summers and one as a fifth-summer; although more data will improve the estimate, birds are most likely to return in their third summer (with a mean of 3.3 a year). Although resighting records away from Skokholm will be somewhat biased by a preponderance of birders at the main roost sites in Cornwall, it seems likely that there is a genuine southerly bias to the movements of young Skokholm Great Black-backed Gulls (see map below). Birds then gravitate back towards Pembrokeshire as they get closer to breeding age (see both the table and map below). All of the records below were received since a similar table was published in the 2018 Seabird Report.

Darvic	Ring	Location	County	Age	Date
W:003	MA37970	Portland Bill	Dorset	First-winter	09/10/19
W:004	MA37971	Newquay Harbour	Cornwall	First-winter	10/08/19
W:004	MA37971	Trevose Head	Cornwall	First-winter	10/10/19

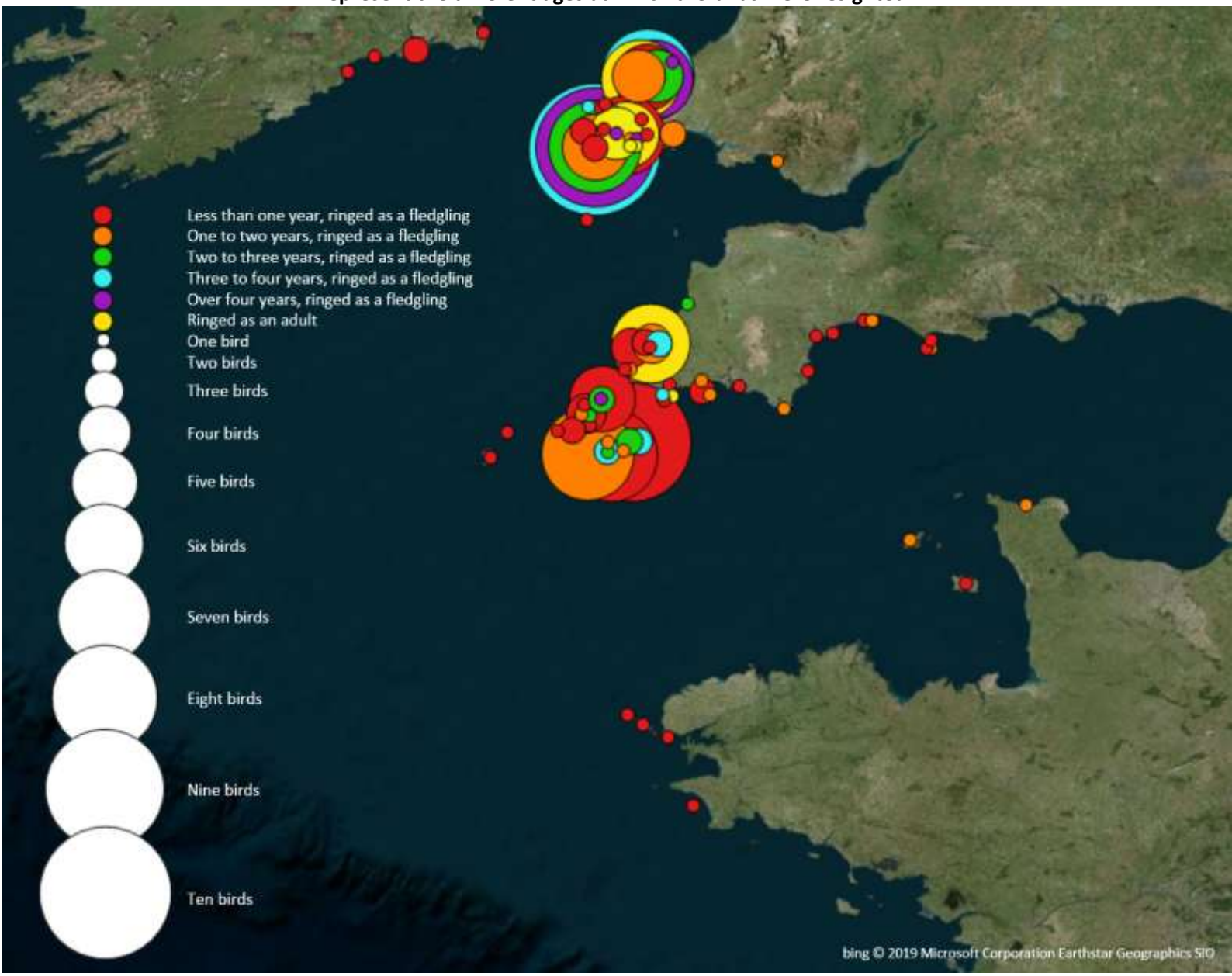
W:005	MA37972	Portreath Beach	Cornwall	First-winter	19/08/19 (dead)
W:007	MA37974	Gann Estuary	Pembrokeshire	First-winter	23/09/19
W:026	HT94871	Nevern Estuary*	Pembrokeshire	Adult	17/03/19, 21/03/19
W:026	HT94871	Dale Airfield*	Pembrokeshire	Adult	20/09/19
W:039	HT94878	Dale Airfield	Pembrokeshire	Sixth-winter	24/09/19
W:039	HT94878	Gwithian	Cornwall	Sixth-winter	05/12/19, 31/12/19
W:055	HT94917	Nevern Estuary	Pembrokeshire	Sixth-winter	12/07/19, 26/11/19
W:066	HT94926	Nevern Estuary	Pembrokeshire	Fifth-winter	26/03/19
W:068	HT94928	Nevern Estuary	Pembrokeshire	Fifth-summer	26/04/19
W:074	HT94931	Gann Estuary	Pembrokeshire	Adult	30/09/19
W:079	HT94936	Nevern Estuary*	Pembrokeshire	Adult	17/03/19, 21/03/19
W:079	HT94936	Dale Airfield*	Pembrokeshire	Adult	20/09/19
W:099	HT94962	Nevern Estuary	Pembrokeshire	Fourth-summer	02/04/19
W:116	HT94976	Nevern Estuary	Pembrokeshire	Fourth-summer	20/03/19, 09/05/19
W:127	HT94983	Nevern Estuary	Pembrokeshire	Fourth-summer	22/03/19, 19/06/19
W:140	HT94995	Castlemartin Range	Pembrokeshire	Adult	13/08/19 (dead)
W:154	MA37811	Ramsey Island	Pembrokeshire	Third-summer	25/07/19
W:213	MA37878	Coverack	Cornwall	Second-winter	28/02/19
W:230	MA37844	Dale Airfield	Pembrokeshire	Adult	25/09/19
W:231	HT94842	Gann Estuary	Pembrokeshire	Seventh-winter	27/11/19
W:237	MA37850	Dale Airfield	Pembrokeshire	Adult	20/09/19
W:254	MA37919	Nevern Estuary	Pembrokeshire	Second-winter	12/06/19, 17/11/19
W:254	MA37919	Gann Estuary	Pembrokeshire	Second-winter	21/12/19
W:264	MA37909	Coverack	Cornwall	First-summer	09/04/19, 14/04/19
W:264	MA37909	The Lizard	Cornwall	First-summer	25/04/19
W:264	MA37909	Coverack	Cornwall	First-summer	26/04/19
W:272	MA37929	Brixham	Devon	First-winter	17/02/19
W:278	MA37935	Crymlyn Burrows	Neath Port Talbot	First-summer	08/07/19
W:297	MA37966	Porthlysgi Beach	Pembrokeshire	First-winter	24/10/19 (dead)
W:299	MA37968	Coverack	Cornwall	First-winter	28/11/19
W:300	MA37969	Newlyn Harbour	Cornwall	First-winter	27/12/19
W:316	MA37990	Grassholm	Pembrokeshire	First-winter	22/10/19
W:317	MA37991	Castlemartin Range	Pembrokeshire	First-winter	30/09/19
W:318	MA37992	Gwithian	Cornwall	First-winter	05/12/19
W:321	MA37995	Gann Estuary	Pembrokeshire	First-winter	27/12/19

* W:026 and W:079 were together at the Nevern Estuary, north Pembrokeshire on the 17th, 19th and 21st March. This is the first evidence we have received suggesting that known breeding pairs may associate during the winter at what is a considerable distance from the Island (46.5km). Although not reported as together, both birds were on Dale Airfield on 20th September 2019 (6km from Skokholm).

A roost of up to 35 birds, but more typically less than 30, regularly formed in the Bog during the breeding season; the smallest post-2012 breeding season roosts have occurred in the last two years, perhaps in part due to a drop in adult survival (see above). The first fledglings were recorded on 30th June, three days earlier than the first of last year, however it was not until mid-August that the larger post-breeding roosts began to develop, with highs of 74 on the 19th and 24th, 150 on the 30th and 103 on the 31st; as is typically the case, the largest roosts formed on North Plain and the Head. The first Skokholm fledgling to be seen away from the Island was found at Newquay Harbour, Cornwall on 10th August (its sibling was found dead on Portreath Beach, Cornwall nine days later); this was 17 days earlier than the first southwest resighting of 2018, 31 days earlier than the first of

2017, 51 days earlier than the first of 2016 and 36 days earlier than the first of 2015. September roost counts were lower than in recent years, with highs of 84 on the 5th, 113 on the 9th and 80 on the 22nd being well down on peaks of 135 in 2018, 183 in 2017, 247 in 2016 (when there were also six counts in excess of 200 birds), 249 in 2015 and 355 in 2013 (the September 2014 maximum was only 52). There were three October counts in excess of 100 individuals (two in 2018 and 2017 but seven in 2016), with highs of 109 on the 1st, 111 on the 8th and 110 on the 11th (the high last year was 126). Between 12th October and the departure of staff on 3rd December, the only counts in excess of 31 were of 64 on 18th October, 43 on 2nd November and 62 on 27th November, whilst there were 32 single-figure daycounts during the same period. Both the November bird-days total of 356 and the peak daycount were the highest of the last four years, albeit well down on 2013 when highs of 270 and 243 during the first five days of the month took the total to 947.

The movements of Skokholm ringed Great Black-backed Gulls 2014-2019. The different colours represent the different ages at which the birds were resighted.



Ringing recovery CHANNEL ISLANDS J1400 (yellow darvic with black 5AA4)
Originally ringed as an adult, TY COED, VALE MARAIS, GUERNSEY 8th June 2014

Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 2nd August 2014
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 15th August 2014
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 27th February 2015
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 19th July 2019
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 7th August 2019
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 8th August 2019
Previously recovered as an adult, CHOUET LANDFILL BEACH, GUERNSEY 15th August 2019
Recovered NORTH PLAIN, SKOKHOLM 23rd August 2019
Finding condition Colour ring read in field and photographed
Distance travelled 312km at 322 degrees (NW)
Days since ringed 1902
An intriguing eight day journey from Guernsey to North Plain for a bird not previously seen away from the Channel Islands.

Ringing recovery MA02062
Originally ringed as a chick, SKOKHOLM 19th June 2012
Recovered as an adult, SKOKHOLM 20th August 2019
Finding condition Dazzled
Days since ringed 2618
Only the second 2012 ringed chick to be found back on Skokholm as an adult.

Iceland Gull *Larus glaucoides* **Gwylan yr Arctig**
Vagrant only five previous records

A first-winter which cruised up and down the north coast of the Island during a severe gale on 14th November was the first since a first-winter which frequented North Pond and South Haven on 27th March last year (GE, RDB). Perhaps surprisingly this was only the sixth for Skokholm following further singles logged on 7th July 2012, 26th March 1996, 27th April and 16th May 1993 (considered at the time to be the same second-year bird), and 19th March 1983. A third-summer 'found in the Lesser Black-backed Gull colony' on 23rd August and 9th September 1988 'showed faintly brown flight and tail feather markings and was presumably a hybrid' (Betts, 1992).

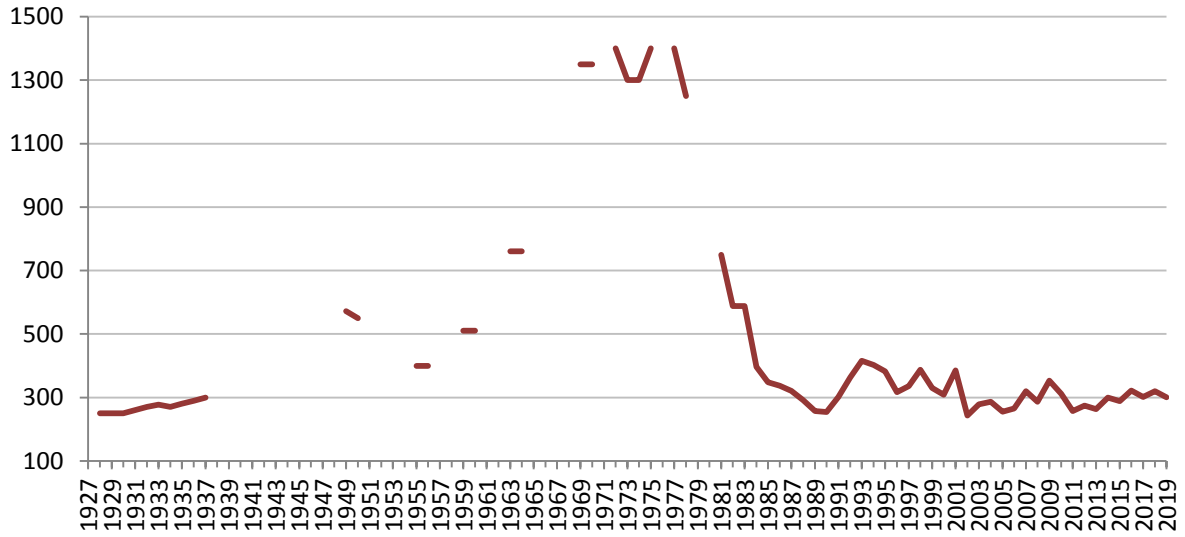
Herring Gull *Larus argentatus* **Gwylan y Penwaig**
Common Breeder abundant breeder in the 1970s
20 trapped (including 2 pulli), 7 retrapped
1936-1976: 13,164 trapped, 2013-2018: 114 trapped, 17 retrapped, 1 control

March counts again fluctuated widely, with lows of 18 on the 13th and 30 on the 28th when birds fed and roosted away from Skokholm, but highs of 204 on the 1st, 295 on the 2nd and 261 on the 30th; although the peak daycount was well down on the 439 of an inclement 2018, it was otherwise the highest of the last four Marches. In contrast with observations made of Lesser Black-backed Gulls during the same period, Herring Gull roosts again included reasonable numbers of subadult birds. The first egg was found in Crab Bay on 18th April, one day earlier than the first of 2018 and on the same date as the seven year mean (see below table). On the night of 26th April Storm Hannah brought wind speeds of up to 80.5mph, conditions which seemingly impacted the Herring Gulls; there was considerable nest building activity during the following days, suggesting that many nests had been destroyed. Whole Island counts during mid-May located 301 active nests. This was a 5.9% decline on the 320 nests found in 2018 but a total which almost matched the 2009-2018 mean (299.2 ±sd 29.53). The number of breeding pairs has apparently stabilised at a level close to that seen in the 1930s (the 1928-1937 mean was 269.70 ±sd 17.47), counts well down on the artificial peak of the 1970s. The whole Island counts have oscillated around the mean for the last decade, with higher totals falling in even years.

When the first egg was located in each year 2013-2019, along with the mean first egg date.

2013	2014	2015	2016	2017	2018	2019	Average
18th April	14th April	25th April	17th April	18th April	19th April	18th April	18th April

The number of breeding pairs 1927-2019 (where data exists). The 1970s peak was attributed to the exploitation of local fish waste and the decline to botulism (Thompson, 2007).



The number of breeding pairs and productivity estimates (average number of fledglings per sample pair) 2005-2019.

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
255	265	320	287	353	312	257	274	263	300	289	322	302	320	301
0.57	0.47	0.61	-	-	0.82	0.67	1.15	0.72	0.70	0.66	0.86	0.70	0.73	0.69

The monitoring of adult survival in Herring Gulls has been undertaken on Skomer for many years, however recent struggles with trapping sufficient adult birds to produce a reliable estimate led to the Islands Conservation Advisory Committee recommending that a project be established on

Skokholm in 2017. There were 13 nesting adults trapped in 2017, 15 in 2018 and a further nine were added this year; each trapped adult was ringed with a red darvic inscribed W:9** in white, the latter two digits identifying the bird as an individual. Of the 13 birds marked in 2017, 11 returned to breed in the same areas in 2018 (84.62%). Only 16 of 26 birds were resighted this year (61.54%); two of the 16 were not found back on their 2018 territories, with one moving from South Haven to the Top Tank (but not seen to be breeding) and one not seen on the Island at all (but photographed on the Gann Estuary during winter 2019-2020). Additionally a bird breeding in South Haven in 2018 was found to be breeding at Purple Cove in 2019, a movement of over 800m across the Island; there is clearly the potential for an underestimate of survival if birds are breeding away from their ringing territories (something which is apparently not occurring in Great Black-backed Gulls). These movements do not seem to be linked to the ringing process; if we exclude the data collected in the year after ringing (when any disturbance should take effect) the 2019 return rate remains at a very similar 63.64%. Interestingly the return rates have mirrored those seen in Great Black-backed Gulls; the Great Black-backed Gull return rate was 86.11% in 2018 but dipped to 74.42% this year, perhaps suggesting that similar factors are influencing survival in both species. The only colour ringed Herring Gull to be found dead, a bird in South Haven during July 2018, was seemingly undamaged, however non-ringed birds have exhibited various injuries this season; an adult in South Haven had a badly broken leg on 10th April, one on 1st May had a mangled leg whilst another had a stump and one on 29th May had rope around its leg. Additionally two adults were heavily impacted by a black (non-Fulmar) oil at the Lighthouse on 5th May, another was similarly covered in South Haven on 3rd June and a juvenile at Orchid Bog was covered on 27th September. It would appear that interactions with fishing gear and marine pollution are impacting survival.

On 11th May and between the 25th and 26th July four adult birds were trapped for an examination of their visual fields by visiting researcher Jennifer Cantlay of the Royal Holloway University of London (NRW licence S085854/1). The birds were securely held in a dark room apparatus for between 41

and 55 minutes, during which time the extent of their visual fields were assessed using an ophthalmoscope. It is hoped that, when analysed alongside data collected from other seabird species susceptible to bycatch (including Storm Petrel and Lesser Black-backed Gull on Skokholm), it will be possible to ascertain how various visual field characteristics influence how seabirds interact with potential anthropogenic threats. A knowledge of their sensory ecology should subsequently help improve mitigation in areas where birds are at risk (for example around fishing nets, underwater turbines, wind turbines and power lines).

The first chick was seen at Dumbbell Bay on 16th May, two days before the first of last year and six days before the first of 2017, whilst the first three flying fledglings were logged on 4th July (the first fledglings were noted on 4th July in 2018, 7th July in 2017, 30th June in 2016, 10th July in 2015, 2nd July in 2014 and 7th July in 2013). Checks of the Neck productivity plot from early July, where 132 pairs had established nests, located a maximum of 91 fledging-sized young (which equates to a productivity estimate of 0.69 fledged young per pair); this was 5.5% down on the 0.73 logged in 2018 and 11.5% down on the 2009-2018 mean (0.78 ±se 0.05). Nevertheless there have been lower productivity estimates in five of the previous 12 years with an assessment and, following good years in 2012 and 2016, it appears that current levels are sufficient to sustain a stable breeding population at this time. Herring Gull productivity remains consistently higher than that of the closely related Lesser Black-backed Gull, circumstantial evidence suggesting that this may be due to differing feeding habits. Additionally Great Black-backed Gulls seemingly target the coastal nesting Herring Gulls less frequently than they do the inland gull colonies, although predation by Greats was again witnessed this year and probably led to an underestimate of the Herring Gull population due to the emptying of nests prior to the whole Island count.

There was the customary post-breeding departure of both adults and fledglings during July and the mean daycount during August dropped to 69, although there were highs of 111 on the 7th, 180 on the 23rd and 115 on the 24th and 26th when birds were feeding on swarming ants; the maximum August daycount was the lowest of the last eight years, well down on ant swarm enticed highs of 295 in 2018 and of 348 and 409 in 2017. As is typically the case, few Herring Gulls visited Skokholm in September; there were 17 single-figure daycounts and the only totals in excess of 46 were of 74 on the 2nd, 79 on the 8th, 84 on the 14th and 75 on the 18th when ants were again being collected.

October counts remained low, indeed they were the lowest of the last five years, with a high of 55 on the 28th being down on a 2018 peak of 187 and well down on the all-time record of 493 logged in 2017. Although November proved more productive, counts failed to reach those made during the previous six years; there were highs of 192 on the 17th, 206 on the 27th and 215 on the 28th, totals down on the 339 of last year and well down on the 585 of 2015, the 588 of 2016 and the November record of 612 logged on the 3rd in 2017. The lower autumn counts this year reflected a substantial drop in the number of Herring Gulls feeding in Broad Sound.

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

Darvic	Ring	Location	County	Age	Date
W:995	GV22354	Gann Estuary	Pembrokeshire	Adult	09/10/19
W:987	GV22362	Nevern Estuary	Pembrokeshire	Adult	01/01/19
W:983	GV22390	Dale Beach	Pembrokeshire	Adult	15/10/19
W:978	GV22428	Milford Haven	Pembrokeshire	Adult	06/02/19
W:970	GV22457	Gann Estuary	Pembrokeshire	Adult	09/10/19
W:961	GV83058	Gann Estuary	Pembrokeshire	Adult	23/12/19
W:960	GR87998	Gann Estuary	Pembrokeshire	Adult	23/09/19

Lesser Black-backed Gull *Larus fuscus* **Gwylan Gefnddu Leiaf**
Abundant Breeder previously very abundant breeder
61 trapped (including 11 pulli), 2 retrapped
1936-1976: 12,085 trapped, 2013-2018: 518 trapped, 24 retrapped, 16 controls

A mean March daycount of 476 was the lowest yet recorded, down on the 568 of last year, the 494 of 2017 and the 823 of 2016. The number of birds within the colonies again fluctuated considerably during the day; for example the Frank's Point colony contained 135 birds on the morning of the 19th but only 24 by the afternoon, 76 on the morning of the 20th but only 14 by the afternoon and 23 on the morning of the 25th but 86 by the afternoon. Nevertheless the larger communal roosts recorded in previous years were again generally absent, with the majority of March counts being of birds on territory; the largest roosts away from the breeding colonies were of only 77 birds near North Pond on the 6th, 40 there on the 10th and 44 there on the 12th. A more detailed description of how the gulls prepare for the breeding season was available in 2015 and 2016 due to the GPS trackers fitted by the British Trust for Ornithology in 2014 (funded by the Department of Energy and Climate Change) which gave some idea as to when birds first returned to Skokholm (see the relevant Skokholm Seabird Reports for details of return dates and the range of over-wintering strategies used); the last of the functioning trackers and the base station were removed in 2017. Peak April daycounts were the lowest of the last eight years, with highs of only 686 on the 27th, 643 on the 28th and 759 on the last day of the month, whilst the largest roost away from the colonies contained only 34 birds on the 27th (although 95 birds roosted at North Pond on 2nd May, April roosts peaked at 200 in 2018 and 260 in 2017). Two nests at the Top Tank contained single eggs on 28th April and another was produced at the Neck between the 28th and 29th; the first egg was two days later than the first of 2018 but one day earlier than the seven year mean.

When the first egg was located in each year 2013-2019, along with the mean first egg date.

2013	2014	2015	2016	2017	2018	2019	Average
3rd May	24th April	4th May	25th April	1st May	26th April	28th April	29th April

Vantage point counts of all the inland breeding subcolonies and a full census of the coast nesting pairs were made between the 18th and 22nd May, during which 951 apparently incubating adults were located; this was the third lowest total in over 50 years which, although up on the 947 of last

year and the 903 of 2017, was well down on the 1209 of 2016, the 1189 of 2015 and the 1407 of 2014. Walk through counts were undertaken at four subcolonies on the 21st and 22nd to check the accuracy of the point counts. A comparison of the number of apparently incubating adults and the number of nests containing eggs suggested that there was a discrepancy (see table below). All four plots contained more nests with eggs than the number of apparently incubating adults (aia), presumably due to incubating birds being hidden in vegetation; this was again most apparent to the west of Orchid Bog where there were 16.13% more nests containing eggs than aia (34.48% in 2018) and to the north of the Top Tank where there were 11.11% more nests with eggs (20.97% in 2018). The point count of the colony to the south of North Pond again proved the most accurate, again with a discrepancy of only a single nest (2.27% this year and 1.54% in 2018). On average across the four plots there were 9.28% more nests containing eggs than were located during the vantage point counts (212 with eggs compared with 194 aia during the counts); in 2018 the walkthroughs revealed 14.66% more nests with eggs than picked up during the vantage point counts, in 2017 there were 27.32% more, in 2016 18.18% more, in 2015 25.00% more and in 2014, when the vegetation was particularly low, 12.89% more. A correction factor of 1.09 (212/194) was thus applied to inland vantage point plots containing similar dense vegetation to that encountered in the walk through plots, but not to the cliff counts nor areas of very short sward.

The corrected total for the inland plots was 713 pairs. This, combined with the 212 nests with eggs encountered on the walkthroughs and the 103 birds incubating in open areas, gave a 2019 whole Island total of 1028 pairs. This was 3.8% down on the 1069 pairs recorded in 2018, down on the 1123, 1397, 1486, 1565 and 1476 pairs logged between 2017 and 2013 respectively and the lowest predicted total of the post-War era.

A comparison of vantage point counts (of apparently incubating adults) and walk through nest counts, along with a summary of nest contents.

	Vantage point count	Walk through count	Empty/ With egg(s)	Percentage of empty nests	Difference between counts*	Difference between counts**	Egg count	Eggs per nest with eggs
Top Tank N	54 aia	62 nests	2/60	3.23%	+11.11%	+14.81	168	2.80
North Pond	44 aia	55 nests	10/45	18.18%	+2.27%	+25.00	125	2.78
Orchid Bog	31 aia	45 nests	9/36	20.00%	+16.13%	+45.16	98	2.72
Frank's Point	65 aia	89 nests	18/71	20.22%	+9.23%	+36.92	190	2.68
Total	**194 aia**	**251 nests**	**39/212**	**15.54%**	**+9.28%**	**+29.38**	**581**	**2.74**

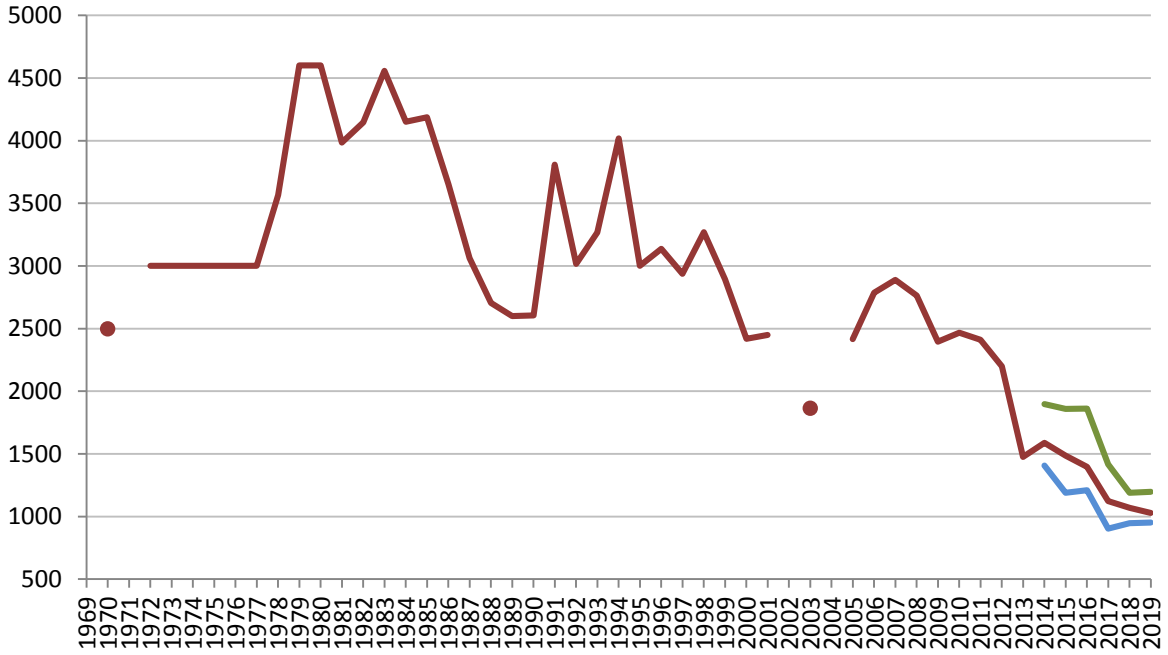
* How many more/less nests with eggs were present than the number of apparently incubating birds seen (%).

** How many more/less nests (including empty nests) were present than the number of apparently incubating birds seen (%).

As the four walk through plots mirrored those used in recent years, a direct comparison can be made. The most striking declines occurred to the south of North Pond where there were 21 fewer nests containing eggs than last year (a 31.8% decline) and to the north of the Top Tank where there were 15 fewer nests than last year (a 20.0% decline). There were only three fewer nests with eggs at Orchid Bog, this a 7.7% drop on 2018. The same three colonies have declined by 43.0%, 40.0% and 44.6% since 2016 respectively. Given the poor productivity witnessed for many years, it is no surprise that the Skokholm breeding population is declining, however it has also been suggested that in some years sickness may be taking its toll. There were 21 dead adults found between 4th March and 1st August 2016 which were thought to be diseased or poisoned, with the period before death characterised by very lethargic behaviour, fine shaking and an eventual loss of limb control. Only three dead adults were logged in 2017 but 15 dead adults with no obvious injuries were located between 23rd May and 11th July last year; although aggressive interactions may have caused death in some instances, one on 9th May had a particularly dirty vent and a very weak bird handed in from a

passing boat on 20th May exhibited the same symptoms prevalent in 2016. This season saw an adult with a broken wing on 10th April, dead adults with clean vents on 13th June and 2nd July, an adult with a broken leg also on 2nd July and a heavily non-Fulmar oiled adult which was bathing off the Lighthouse on 11th August (below photograph). Unusually a bird at Crab Bay on 25th May and 9th June was spinning in circles and aggressively biting its own carpal, a behaviour which was exhibited by a bird at the same site in July 2018 and June 2017.

The total number of Lesser Black-backed Gull breeding pairs 1970-2019. Control measures started in 1984 (destruction of nests) and stopped in 1998. The green line is the population estimate if all empty nests are assumed to belong to additional pairs. The blue line is the uncorrected vantage point count total.



Over the period 1991-2002 the count of empty nests varied from 11-44% of the total number of nests, with a mean of 22.7% (Thompson, 2007), however the proportion of empty nests has more recently declined. All four colonies visited this year again contained fewer empty nests than this

1991-2002 mean, however for the first time in three years the average fell within that recorded by Thompson. The Top Tank north colony again held the lowest proportion, with only 3.23% of nests being empty; intriguingly this colony has contained the lowest proportion of empty nests for the last five years, with 1.32% empty last year, 1.11% in 2017, 1.96% in 2016 and 7.45% in 2015. Overall, of 251 visited nests, 15.54% were found to be empty this year (4.98% in 2018, 9.86% in 2017, 17.62% in 2016, 17.30% in 2015, 16.32% in 2014 and 19.84% in 2013). It was unclear whether the empty nests were second nests made by the pairs present, nests which had been robbed of eggs or nests where the adults had yet to lay. The breeding season was certainly a protracted one, with the first chicks located on 22nd May (23rd May in 2018 and 24th May in 2017) but four nests in the Bog still containing two eggs each on 2nd July, only four days prior to when the first fledgling was logged at the Top Tank (the first fledgling was noted on the 5th in 2018 and the 7th in 2017). An adult was still defending a fledgling at South Pond as late as 22nd September (although the fledgling potentially had a wing injury). It would thus seem possible that, at least in some cases, the latter two of the above three explanations for empty nests may have been the case, meaning that the Skokholm breeding population is actually higher than that calculated above. However, even if we wrongly assume that all empty nests belonged to additional pairs (the green line on the above chart), the predicted Island total would only be in the region of 1198 pairs (an extra 170 pairs and only eight more than the 2018 estimate which was the lowest in over 50 years).

The Frank's Point colony was again used for productivity monitoring this year (using BTO rings as a mark for a mark/recapture population estimate), however the ever dwindling sample size led to a poor assessment. In an attempt to increase the number of resightings, the colonies were again re-entered this season (rather than observing fledglings at a distance with a telescope, a method which was failing to locate many rings). A simple calculation was again used, (number of fledglings ringed x number checked for rings on second visit)/ number of birds found to have rings on second visit, to predict the number of fledglings within the area. Only four fledglings were ringed at the Top Tank and, of four subsequently checked for rings, only one was marked (an additional nine eggs and seven tiny chicks were located, although these almost certainly did not go on to fledge); it is thus predicted that the 60 pairs produced 16 fledglings, giving a productivity figure of 0.27. This was the lowest estimate of the last three years, however it almost matched the 2005-2018 mean (0.26 ±se 0.05). Although fledglings at North Pond could potentially have come from anywhere on Skokholm (and possibly elsewhere), a maximum of 59 on 28th July was down on the 65 of 27th July 2018, the 133 of 1st August 2017 and was the lowest peak total from this site during the last six years (it should be remembered that the breeding population has fallen considerably during the same period).

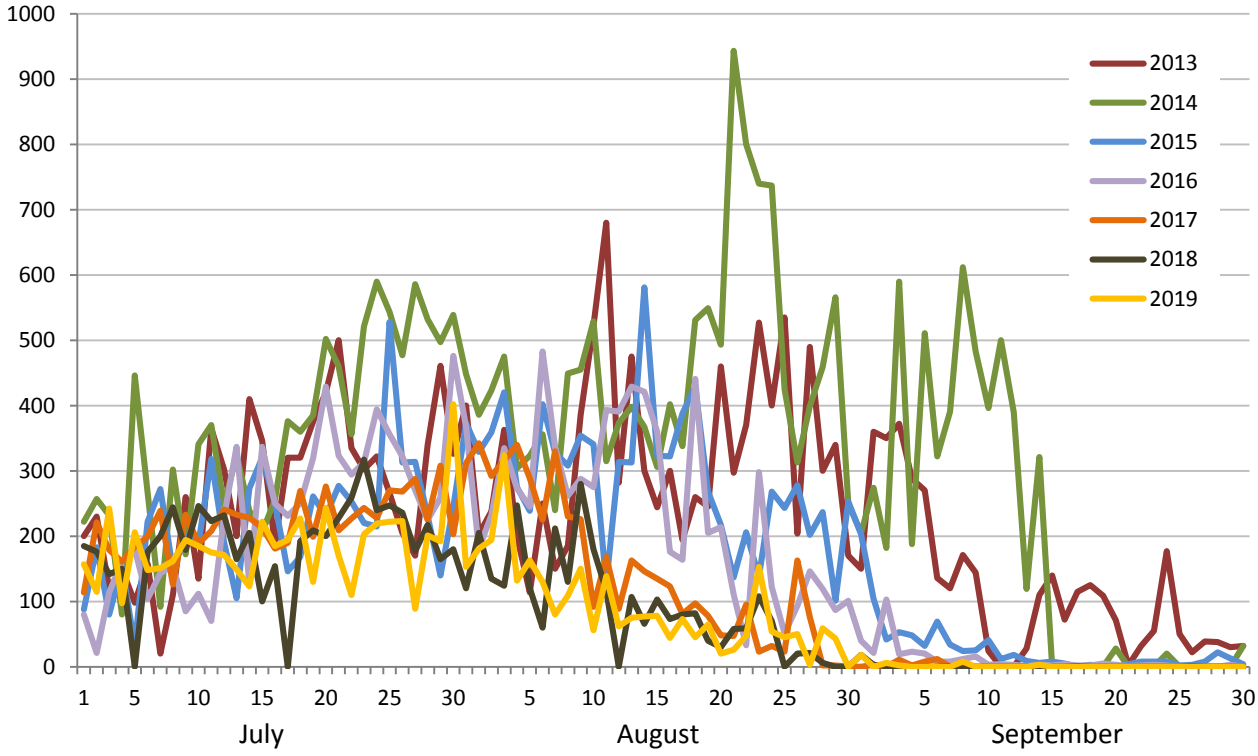
The coastal slope to the east of Purple Cove was investigated for a third year as this discreet subcolony, with very short sward or rocky substrate, is seemingly suitable for an accurate fledgling count using only a telescope; here 15 pairs produced a minimum of ten fledglings, giving a productivity figure of 0.67 fledglings per pair (14 pairs produced 17 fledglings in 2018, giving a productivity figure of 1.21 and 18 pairs produced 20 fledglings in 2017, giving a productivity figure of 1.11). That productivity is consistently higher in a smaller, coastal subcolony fits ad hoc observations made in recent years and perhaps supports the theory that birds in larger colonies are struggling in part due to intraspecific predation. Given that recent productivity estimates have been based on samples of inland colonies, it seems plausible that there will have been an underestimation for Skokholm as a whole; nevertheless considerably more pairs nest in the main inland colonies than on the coastal slopes, suggesting that the actual figure would not change radically.

Lesser Black-backed Gull productivity estimates.

2004	2005	2008	2011	2012	2013	2014	2015	2016	2017	2018	2019
0.07	0.27	0.27	0.03	0.16	0.16	0.30	0.15	0.23	0.38	0.63	0.27

Between the 7th and 10th May, five adult birds were trapped for an examination of their visual fields by visiting researcher Jennifer Cantlay of the Royal Holloway University of London (NRW licence S085854/1). The birds were securely held in a dark room apparatus for between 45 and 60 minutes, during which time the extent of their visual fields were assessed using an ophthalmoscope. It is hoped that, when analysed alongside data collected from other seabird species susceptible to bycatch (including Storm Petrel and Herring Gull on Skokholm), it will be possible to ascertain how various visual field characteristics influence how seabirds interact with potential anthropogenic threats. A knowledge of their sensory ecology should help improve mitigation in areas where birds are at risk (for example around fishing nets, underwater turbines, wind turbines and power lines).

The number of Lesser Black-backed Gulls roosting on North Plain and in the vicinity of North Pond 2013-2019.



As is typically the case, the number of birds using traditional roost sites increased during July; North Plain and the area around North Pond again proved to be the usual site for the largest post-breeding

roost, with smaller numbers congregating around the coast and at South Pond. Although the July roost peaked at 402 birds, the highest total of the last three years and 26.8% up on last year, the 2019 peak was still 31.9% down on a 2014 high of 590 and a cumulative 5660 roosting birds logged during the month was the lowest total of the last seven years. Whereas roost counts between 2013 and 2017 peaked in August, the last two years have seen a more rapid departure of birds from the Island; this year saw an August peak of 324, a total 15.7% up on last year but 65.6% down on the 2014 maximum, and a bird-days total of 2695, this also the lowest of the last seven years. September again proved exceedingly quiet, with only 19 roosting birds logged during the entire month; the last five years have seen very small September roosts, quite the contrast to 2013 and 2014 when counts were still regularly in the hundreds. A small number of birds visited Skokholm in October, with 46 logged over 14 dates and highs of nine adults on the 23rd and 28th. In November there were sightings on 22 dates, totalling 191 birds and including highs of 29 on the 12th, 28 on the 19th and 43 on the 27th when a North Pond roost was again present; the November peak was the highest of the last three years, albeit less than half the 2015-2016 mean. Five birds on the 2nd was the only December record prior to the departure of staff on the 3rd.

Ringing recovery MADRID 6101133 (orange darvic with black T015)
Originally ringed as a first-winter, CTRU GOMECELLO, SALAMANCA, SPAIN 21st February 2010
Previously recovered as a third-winter, COLMENAR VIEJO LANDFILL, SPAIN 18th December 2011
Previously recovered as a third-winter, VRSU ALCAZAR DE SAN JUAN, SPAIN 21st January 2012
Previously recovered as an adult, COLMENAR VIEJO LANDFILL, SPAIN 10th March 2013
Previously recovered as an adult, COLMENAR VIEJO LANDFILL, SPAIN 9th February & 2nd March 2014
Previously recovered as an adult, THE LIZARD, CORNWALL 17th March 2014
Recovered as an adult, HOME MEADOW, SKOKHOLM 3rd and 19th July 2014
Subsequently recovered as an adult, COLMENAR VIEJO, SPAIN 17th January & 28th February 2015
Subsequently recovered as an adult, COLMENAR VIEJO, SPAIN 30th January & 20th February 2016
Subsequently recovered as an adult, SEO SALAMANCA, SPAIN 13th January 2019
Days since ringed 3249
The further movements of a bird seen on Skokholm in 2014

Ringing recovery CHANNEL ISLANDS D9123 (black darvic with white 5FA2)
Originally ringed as a second-winter, CHOUET LANDFILL, GUERNSEY 13th May 2015
Recovered SKOKHOLM 26th August 2018 (sic)
Finding condition Colour ring read in field
Distance travelled 312km at 322 degrees (NW)
Days since ringed 1201

Ringing recovery GR98292
Originally ringed as an adult, HOME MEADOW GULL TRAP, SKOKHOLM 16th June 2014
Recovered SINTRA, LISBON, PORTUGAL 20th January 2020
Finding condition Found injured and euthanased
Distance travelled 1469km at 193 degrees (SSW)
Days since ringed 2044

The birds previously carrying GPS tags, along with an additional 48 non-tagged controls, were all fitted with yellow darvic rings with a black alpha-numeric code (number/letter:W e.g. 5A:W) in 2014. The colour ring is on the left leg and a BTO metal ring on the right. The darvic rings have yielded a fantastic number of field resightings; the 73 ringed birds have produced 164 separate resightings of 35 different individuals away from Skokholm. Nevertheless the number of resightings logged each year is unsurprisingly dropping. The following table summarises resightings received since similar tables were published in the 2014-2018 Seabird Reports. As has been shown by the British Trust for Ornithology GPS tracking project on Skokholm, and at other British Trust for Ornithology tracking

sites (Ross-Smith, *pers. comm.*), Lesser Black-backed Gulls show a high degree of wintering site fidelity. This is also reflected in the colour ringing data, with 17 birds having been resighted at the same location in successive winters; records of returning birds have come from several sites in Portugal and Spain (including 8C:W and 9J:W in 2019), along with two in France and one in Morocco.

Darvic	Ring	Location	Country	Date
7N:W	GR98240	Old Sarum Pig Farm	UK	03/02/19
8A:W	GR98247	Colmenar Viejo Landfill, Madrid	Spain	11/10/19
8C:W	GR98248	Caleta de Velez, Malaga	Spain	23/12/19
9J:W	GR98265	Malaga Harbour	Spain	17/02/19, 19/11/19, 15/12/19

Sandwich Tern *Sterna sandvicensis* **Morwennol Bigddu**
Uncommon although Scarce in all but one year between 2006 and 2012
Earliest 29th March 1984 (30th March 2019) **Latest** 25th October 1967 (13th October 2019)

The sole spring record was of one flying west off the Lighthouse, early on the morning of 30th March; this was only the second sighting in this month following two birds on the 29th in 1984. There were four spring bird-days last year and three in 2017, whilst 31 in 2016 was the second highest spring total to date, only down on the 33 logged in 1989. The first of the autumn was a single heading west along the south coast on 3rd August; there was no July record for the first time since 2011. Two were off the Lighthouse on 19th August and eight were there five days later; the latter was the highest August daycount since 12 were logged in 1994, albeit well down on a high of 32 counted in 1983. The only sightings during a somewhat below average September were of 15 southeast off the Lighthouse during a one hour seawatch on the 25th and of one on the 29th. The last of the year was a single in Broad Sound on 13th October; there are only five later records tallying 22 bird-days, the most recent of which was a group of seven on the 17th in 1990. An autumn bird-days total of 28 was the lowest since 2016 and well down on highs of 110 in 1966, 107 in 1983 and 102 in 1994.

Arctic Tern *Sterna paradisaea* **Morwennol y Gogledd**
Uncommon sometimes Scarce, although unidentified 'commic' terns Uncommon or Fairly Common
Earliest 18th April 2018 **Latest** 27th October 2017 (10th August 2019)
1936-1976: 3 trapped

There were no spring records this year; a total of 35 spring bird-days have been logged since the first in 1938, including just six this century (with one in 2001, four in 2016 and one last year). There were however sightings of birds too distant from the Lighthouse to allow for a confident identification, with May records of one on the 6th, nine on the 7th and three on the 9th; spring 2002 was the last with more 'commic' terns logged. Three Arctic Tern west off the Lighthouse on 10th August was the only confirmed sighting this year, although a tern calling after dark on the 23rd was thought to be this species; the bird-days total was the lowest since 2014, massively down on autumn highs of 149 in 1997, 84 in 2016 and 90 last year. There were 'commic' terns noted on an additional seven dates this autumn, with a single on 5th July, August sightings of two on the 10th (the same day as the confirmed Arctics), four the following day, one on the 19th and five on the 30th and October sightings of one on the 7th and four on the 11th (the latter two records coming from Broad Sound); again their distance from the Island precluded the separation of Common and Arctic Tern. An autumn total of 18 'commic' tern bird-days was down on the 196 of last year and the lowest tally since 2014.

Great Skua *Stercorarius skua* **Sgiwen Fawr**
Uncommon sometimes Scarce and much more regular in autumn
Earliest 4th April 2015 (18th July 2019) **Latest** 15th November 2015 (16th October 2019)

The first of the year went west on the evening of 18th July, this 13 days earlier than the first of last

year; following records of up to three birds in each of the springs between 2014 and 2017, this was the second consecutive year without a spring sighting. It nevertheless went on to prove by far the most productive year yet. There were August sightings on six dates from the 13th including daycounts of three on the 22nd and 30th; although there were daycounts of four in both 1988 and 1989, an August bird-days total of 12 was the highest to date, up on the eight of 1988. Following two birds logged on both the 2nd and 11th (the latter daycount including a moulting bird over Western Plain), there were daily September counts between the 23rd and 29th including highs of nine on the 23rd, at least 11 on the 25th and 12 on the 29th; although down on the 14 noted amongst a Broad Sound Kittiwake flock on 28th September 1978, the three peak daycounts were otherwise the highest to be logged in any month, whilst a bird-days total of 42 was also the highest of any month, up on the previous record of 30 set last September. Records on nine October dates to the 16th, including highs of five on the 8th and 11th, four on the 9th and three on the 10th and 12th, led to a bird-days total of 26; the previous October records were a daycount of four in 1989 and a bird-days total of six in 1970 and 1989. An annual bird-days total of 81 more than doubled the record of 38 set last year.

Arctic Skua *Stercorarius parasiticus* **Sgiwen y Gogledd**
Uncommon sometimes Scarce
Earliest 9th April 1996 (22nd August 2019) **Latest** 26th October 1967 (14th October 2019)

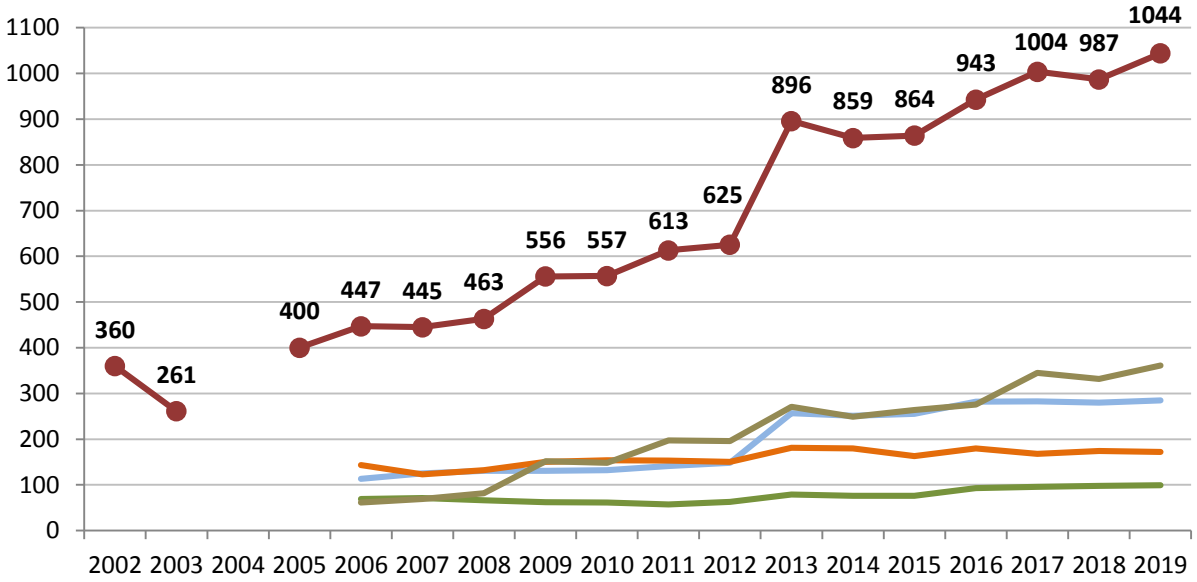
There was no spring record for the second time since 2014 and for a second consecutive year. A pale bird heading east through Broad Sound on 22nd August was thus the first of the year, this the latest autumn arrival since one on 9th September 2014. The only September record was of a single on the 28th, this the poorest September tally since 2015 and well down on a recent high of 21 bird-days logged in 2017. Numbers did however increase in October, with a single on the 4th, an impressive ten on the 8th (a six hour 15 minute seawatch the following day failed to locate any), five on the 11th, two on the 12th and a single on the 14th which was the last of the year; the peak daycount equalled one made on 15th September 1993 as the second highest in any month to date, only being down on an astonishing 63 logged on 5th September 2004 (which included a 'flock of 33 birds'), whilst a bird-days total of 19 was more than double the previous October high of seven noted in both 1981 and last year. An annual bird-days total of 21 was only down on the 30 of last year, the 36 of 1993, the 51 of 1980 and the 67 of 2004 (the latter of which came courtesy of that remarkable daycount).

Guillemot *Uria aalge* **Gwylog**
Abundant Breeder
1 pullus trapped
1936-1976: 1023 trapped, 2013-2018: 4 pulli trapped, 17 controls

A single off the north coast on the 1st, seven there on the 2nd and six at sea on the 5th were the only sightings between 28th February and 5th March. There followed 12 March daycounts of 19 or less,

including a further six dates without a record, however highs of 2239 on the 8th, 3835 on the 19th and 2783 on the 27th hinted at what was to come; the peak was the highest March daycount to date. Customary departures for the sea continued in April, with no birds seen at all on the 14th and 15th and six further counts of less than 600 (just eight mass departures in April was down on the 16 of 2018, the 13 of 2017, 2016 and 2015 and the 19 of 2014 and 2013). A minimum of 2834 birds were counted on 17th April and confirmation of an early breeding season came the following day when the first egg of the year was located at Middlerock. An 18th April egg is seemingly the earliest yet recorded in Wales (Birkhead, *pers. comm.*) and was perhaps the result of unusual March sea surface temperatures which were up on the previous four years (the Skokholm South Haven mean of 9.51°C was 2.02°C warmer than in the same period in 2018 and 0.98°C warmer than the 2015-2018 average (Burton, M., 2019)); the first egg of 2018 was logged on 4th May, the first of 2017 was on 29th April, the first of 2016 on 5th May, the first of 2015 on 2nd May and the first of 2014, following the prolonged storms and significant auk wrecks of the preceding winter, was on 15th May. Early eggs are likely to be at risk during spring storms. On the night of 26th April Storm Hannah brought wind speeds of up to 80.5mph; only 496 adults were counted the following day, leaving those incubating birds which managed to protect their eggs from the storm more exposed to predators. The 18th April egg was incubated until neighbouring pairs had small chicks, after which it was abandoned. A heavily oiled bird was seen on 5th May and one with oil flecked underparts was logged three days later.

The total number of adult birds in all six study plots 2002-2019 (as an average from ten visits) and the totals from the four largest plots (as an average from ten visits).



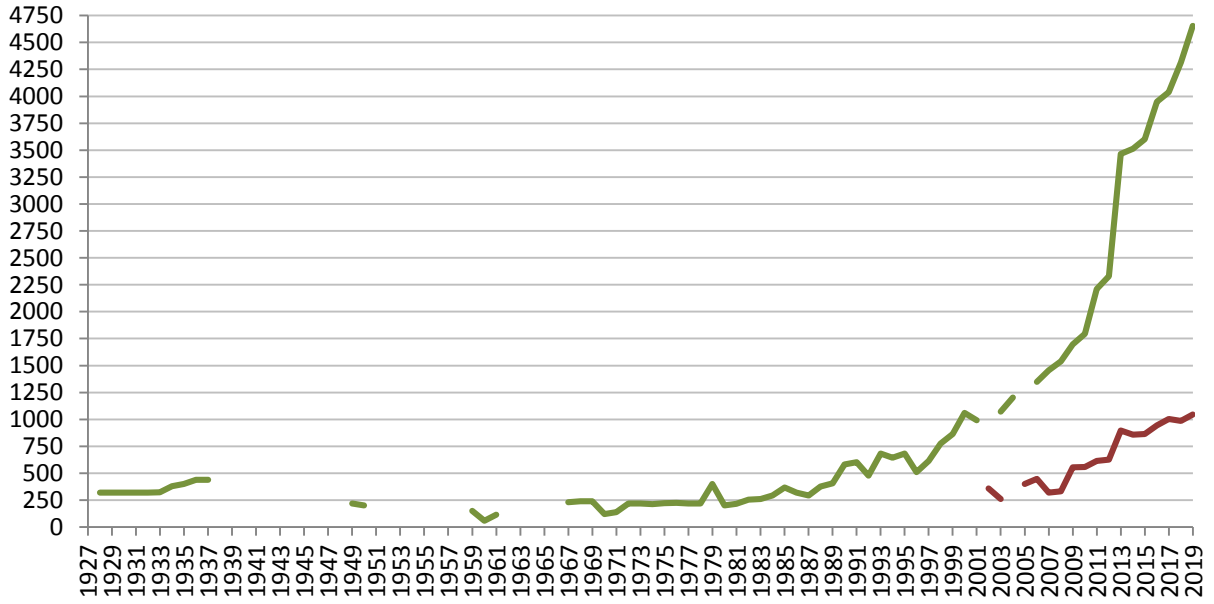
The six study plots were counted on ten dates between 24th May and 10th June. The mean total from all plots was 1044 adults on ledges; this was 5.8% up on the 2018 total and 24.4% up on the 2010-2019 mean (839.2 ±sd 177.21). Recent seabird reports have suggested that some of the study plots are seemingly close to capacity, perhaps in part due to an increase in Fulmar numbers; it seems possible that Fulmars will halt any further expansion of auks along their current ledges and may be excluding birds from previously occupied areas. Although Fulmar-free ledges apparently suitable for colonisation by cliff nesting auks are present within the Twinlet study plot boundaries, these were not utilised this year, indeed the Guillemot Cliff mean dropped from 174 to 172 adults and the Middlerock mean remained at 55. The Steep Bay and Little Bay plots also appear to be close to capacity, with mean increases of just five and one taking the totals to an all-time record 285 and 99 adults on ledges respectively. There were larger increases at North Gully, where there was a mean of 29 extra adults (an 8.73% rise), and at the slope to Purple Cove where there were 23 extra adults (a 47.92% rise); increases at these two sites are driving the increase seen across the plots as a whole. Remarkably the plots now contain more than twice the number of adults than they did in 2008,

whilst the lowest of the ten 2019 counts exceeded the highest 2015 count. The 2019 survey period proved to be an unsettled one, this in contrast with the previous season when high pressure dominated and more similar to 2017 when counts were also delayed due to inclement weather. It is possible that some higher counts, and thus the higher standard deviation observed in 2017 and this year (see table below), were due to ameliorating rough weather encouraging more birds to the cliffs; there is seemingly a trend for the highest plot counts to occur following rough non-survey days.

The whole Island totals, mean plot totals and the percentage of the Island totals made up of study plot birds 2010-2019. Also the range of plot counts since 2012 and the standard deviation observed over the ten plot visits since 2013. (*includes a boat-based count)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Island	1795	2212*	2330	3466*	3512*	3603*	3949*	4038*	4316*	4654*
Plots	557	613	625	896	859	864	943	1004	987	1044
Range			530-746	824-949	797-947	756-939	887-1003	939-1144	937-1060	982-1140
±SD				39.20	54.25	58.30	40.25	57.45	37.38	54.40
Plot %	31.0	27.7	26.8	25.9	24.5	24.0	23.9	24.9	22.9	22.4

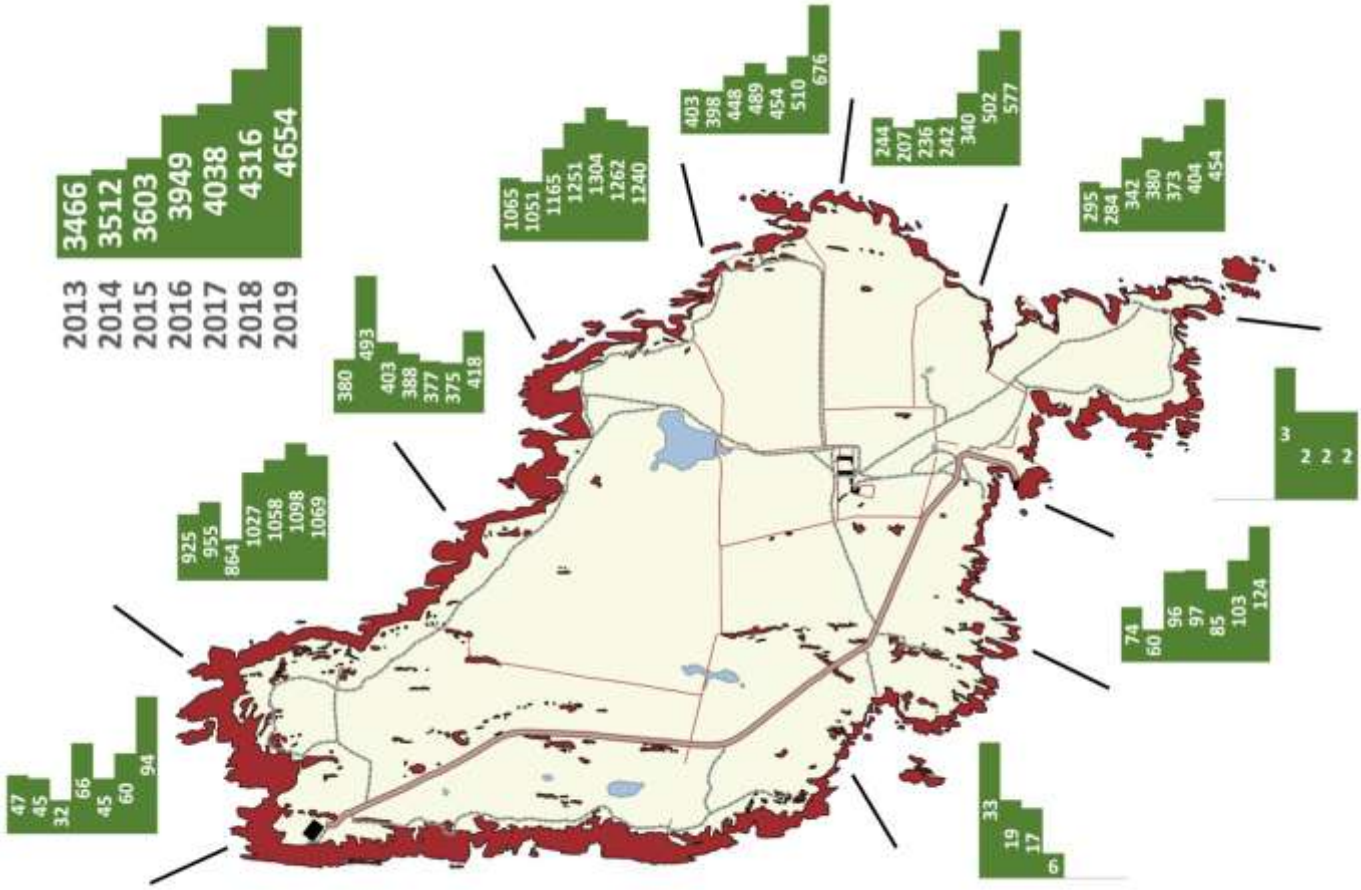
The total number of Guillemots (adults on ledges) recorded on Skokholm since 1928 and the number of birds within the study plots since 2002.



Whole Island counts were made from the land between 24th May and 7th June and calm seas allowed for a boat-based count divided between the 6th and 9th June. Boat-based surveys allow some areas to be monitored which cannot be viewed from on the Island and enable closer access to some areas which can normally only be viewed at a distance. A mean total of 4654 adults in suitable breeding habitat was a 7.8% increase on the 2018 count and the highest total yet recorded on Skokholm. Although down on the 2010-2019 average of 11.4% growth per year, the increase was the largest since 2016 and the fourth largest of the last ten years. The proportion of the whole Island count made up of study plot birds (22.4%) was down on the 2010-2019 mean of 25.4% and the lowest yet recorded, perhaps suggesting that some of the factors influencing the more intensively studied plots (discussed above) are not impacting the whole Island population in the same way. Additionally the Island count is based on fewer visits and only one boat-based survey, meaning that the total is more likely to be further from the actual mean. As can be seen from the below map, the largest numerical increase occurred around Little Bay Point where there was an average of 166 more adults on ledges (a 32.5% increase), although the area around the Quarry saw a 56.7% jump in the population (34 more birds). The area around Near and Far Bays saw a mean increase of 75 adults on ledges, the

population in this area having now increased by 138.4% in three years; the reason for such rapid growth in some areas compared with the rest of the Island is unclear, although it may reflect the availability of previously unoccupied habitat. The only declines were logged around the Bluffs and North Gully, although drops of 2.6% and 1.7% were not significant. These counts of individuals on ledges potentially include incubating adults, some of their partners, failed breeders, non-breeding adults and younger birds yet to breed; a correction factor is thus sometimes adopted to convert the count to an estimate of breeding pairs (Harris *et al*., 2015). A 2015 survey on Skokholm found the correction factor to be 0.64, a figure close to the 0.67 widely adopted in previous studies (see the Skokholm Seabird Report 2015); the latter correction factor predicts the Skokholm breeding population to be in the region of 3118 pairs, 226 more than last year.

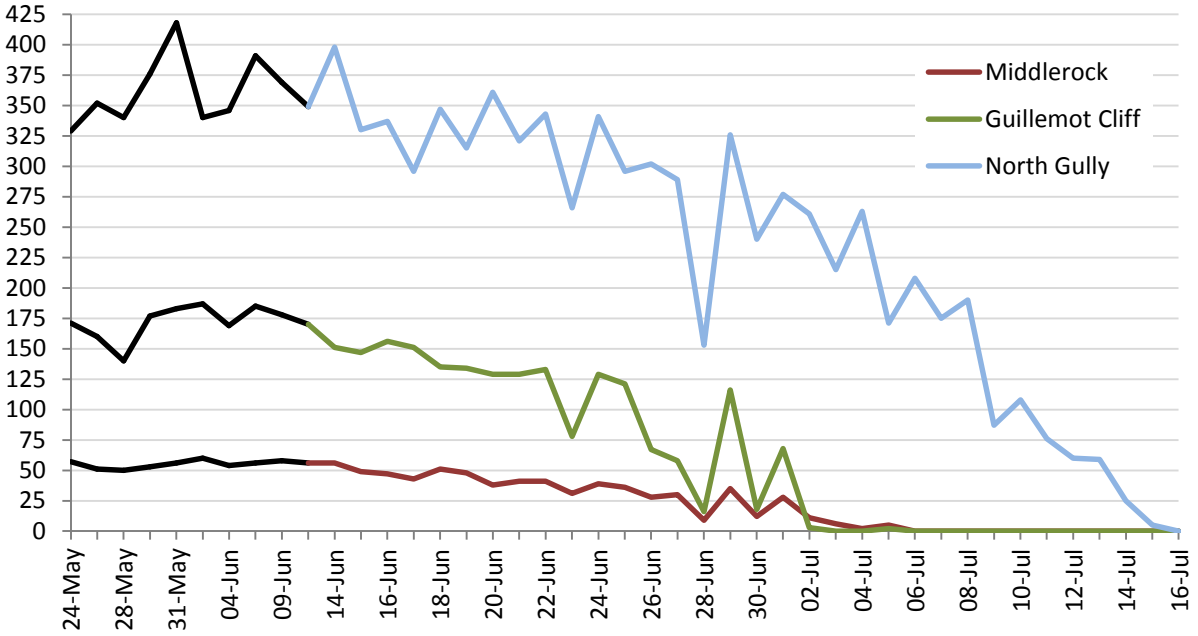
The distribution of Guillemots on suitable breeding ledges 2013-2019.



Two birds were watched arriving with fish on 20th May, but the first chick was not seen until the 23rd, 12 days earlier than the first of last year; the first chick in the period between 2018 and 2015 was logged between the 2nd and 7th June and the first of 2014, the year following the severe winter wrecks, was on 13th June. Productivity, calculated at between 0.55 and 0.61 chicks per pair in 2013 and 0.6 in 2007, was not assessed in 2019 following recommendations from the Islands Conservation Advisory Committee. Chicks were jumping from mid-June and the number of adults recorded in the three regularly monitored plots dropped steadily from 605 on the 14th to 517 on the 22nd before sharp drops to 375 on the 23rd and 178 on the 28th (see chart below). A late spike in numbers on 29th June saw 477 birds logged, an increase observed across the Island as a whole and which was also seen in the number of Razorbills present; similar late season returns occur each year. There followed a steady departure, with 373 counted on 1st July, 221 on the 3rd, 208 on the 6th and 87 on the 9th (the total had dropped to 92 on the 13th in 2018 and to 92 on the 9th in 2017). The last birds had left Guillemot Cliff by 3rd July (the 14th in 2018 and the 5th in 2017), Middlerock by the 6th (the 17th in

2018 and the 9th in 2017) and North Gully by the 16th (the 20th in 2018 and the 17th in 2017); this was the sixth year running in which birds were later to depart from North Gully, although this may in part reflect the larger breeding population at this site (although for the last three years birds have left Guillemot Cliff before Middlerock, this despite the larger population at the former). Whole Island counts mirrored those made at the plots, with two at the Dents on 16th July the last to be seen ashore (20th July in 2018, the 18th in 2017, 23rd in 2016, 25th in 2015 and 24th in 2014). There were sightings at sea on a further nine dates to the end of the month, totalling 105 birds, and in August there were records on 23 dates, totalling 1129 individuals and with peaks of 126 on the 14th, 327 on the 15th and 156 on the 27th; although well down on last August, when a peak daycount of 1414 took the monthly bird-days total to 3841, the 2019 counts were up on any other year (a daycount of 70 and a monthly total of 178 were the pre-2018 maximums, although a boat trip four miles offshore during August 2017 revealed hundreds of rafting Guillemots).

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



September counts were the lowest of the last seven years, with daily records of up to 12 birds to the 5th and singles on the 17th and 29th; September 2018 saw the highest tally to be logged in this month, with sightings on all but two dates totalling 1419 birds. October proved similarly quiet with records on just six dates, including a high of 22 on the 10th which took the monthly total to 30, the lowest of the last four years. However 1570 distant, unidentified auks were logged during the same period, this the highest total since the 2055 of 2016 and the second highest October tally, perhaps suggesting that Guillemots were still lingering close to Skokholm. Indeed it went on to prove the most productive November on record, with sightings on 18 dates and highs of 508 on the 17th, 785 on the 19th and 717 on the 25th which took the bird-days total to 3441. Although a return of Guillemots to the breeding ledges in early winter is to be expected, there was no record of this behaviour on Skokholm between 2000 and 2014, despite the fact that staff did not depart until 24th November in 2014 and 16th November in 2013. Although November 2015 saw up to 540 birds return to the cliffs over five dates and 2016 saw up to 216 birds, again over five dates, there were no 2017 landings prior to the 9th November staff departure. Between four and 315 birds returned to the cliffs on 11 dates between the 6th and 25th in 2018. This season saw four birds ashore opposite the Jogs on 1st November, this the earliest landfall since 1999 when birds were at Steep Bay on 27th October. There were landfalls on a further 13 November dates including peaks of 225 on the 13th, 269 on the 18th, 728 on the 19th and 700 on the 25th; the vast majority of returning birds were to be found opposite the Jogs, although the largest two counts included birds at several of the bigger colonies.

There were 91 ashore on 3rd December. Such a return to the colony outside of the breeding season, with the risk of being predated, must have a substantial benefit; it has been suggested that the return may be to secure the best breeding ledges and thus secure the best mate (Harris *et al*., 2006), but birds ashore may also use less energy than those at sea (Humphreys *et al*., 2007).

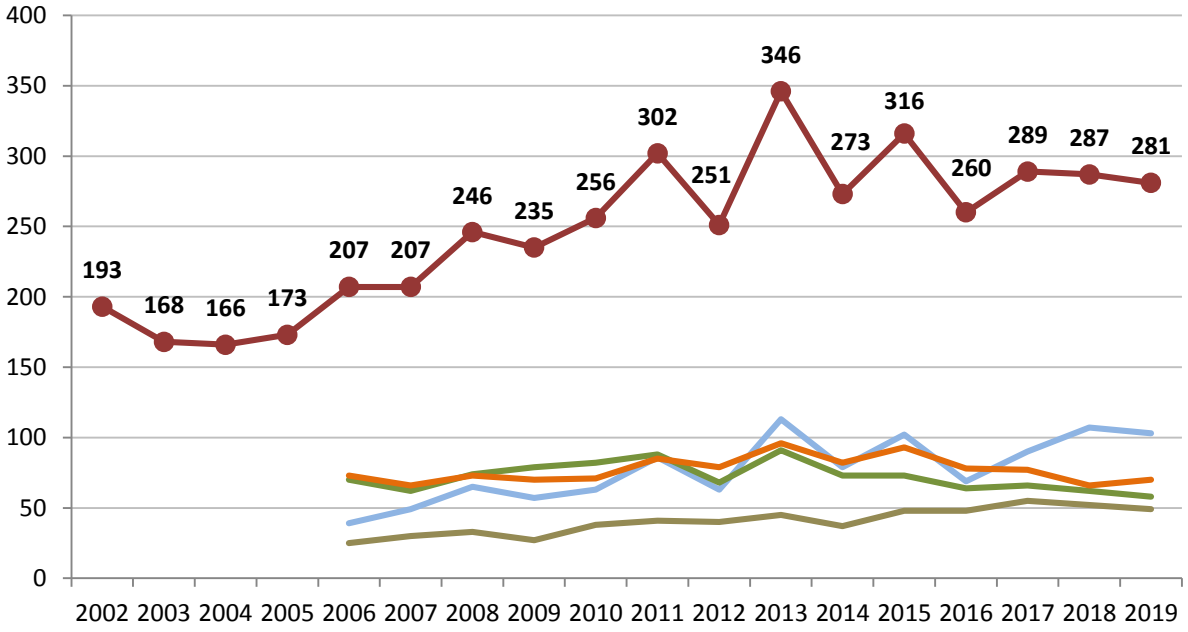
Ringing recovery X38966
Originally ringed as a pullus, SKOMER ISLAND, PEMBROKESHIRE 29th June 1997
Recovered SKOKHOLM 16th September 2019
Finding condition Metal ring only
Distance travelled 4km at 163 degrees (SSE)
Days since ringed 8114

Razorbill *Alca torda* **Llurs**
Abundant Breeder
46 trapped (including 45 pulli), 2 retrapped
1936-1976: 9220 trapped, 2013-2018: 197 trapped, 4 retrapped, 4 controls

There were low counts from the return of staff on 28th February, although 263 on 1st March and 386 on the 2nd were still the second highest totals yet recorded on these dates (though staff are regularly absent). There followed 14 March dates with fewer than 100 birds logged, including eight without a sighting, but highs of 1669 on the 18th, 2993 on the 19th and 1545 on the 21st, the peak being the

second highest March daycount behind a remarkable 3712 recorded in 2018. Numbers continued to fluctuate during early April, with highs of 1800 on the 7th and 1797 on the 9th but lows of just nine on the 14th and 13 on the 15th when the cliffs were empty. Numbers steadily increased from 16th April and an early egg was being incubated at Middlerock on the 19th; between 2015 and 2018 the first egg was seen on either the 26th or 27th April, whilst the first of 2014 was not found until 13th May (probably again a consequence of the winter storms preceding that breeding season). Such an early 2019 breeding season was perhaps the result of unusual March sea surface temperatures which were up on the previous four years (the Skokholm South Haven mean of 9.51°C was 2.02°C warmer than during the same period in 2018 and 0.98°C warmer than the 2015-2018 March average (Burton, M., 2019)). Nine of 16 birds present in the Neck study plot on 5th May showed some black flecking to their underparts, seemingly the result of oiling; a check of neighbouring colonies failed to locate any further oiled birds and there were no further instances recorded in Razorbills this year.

The total number of adult birds in all six study plots 2002-2019 (as an average from ten visits) and the totals from the four largest plots (as an average from ten visits).



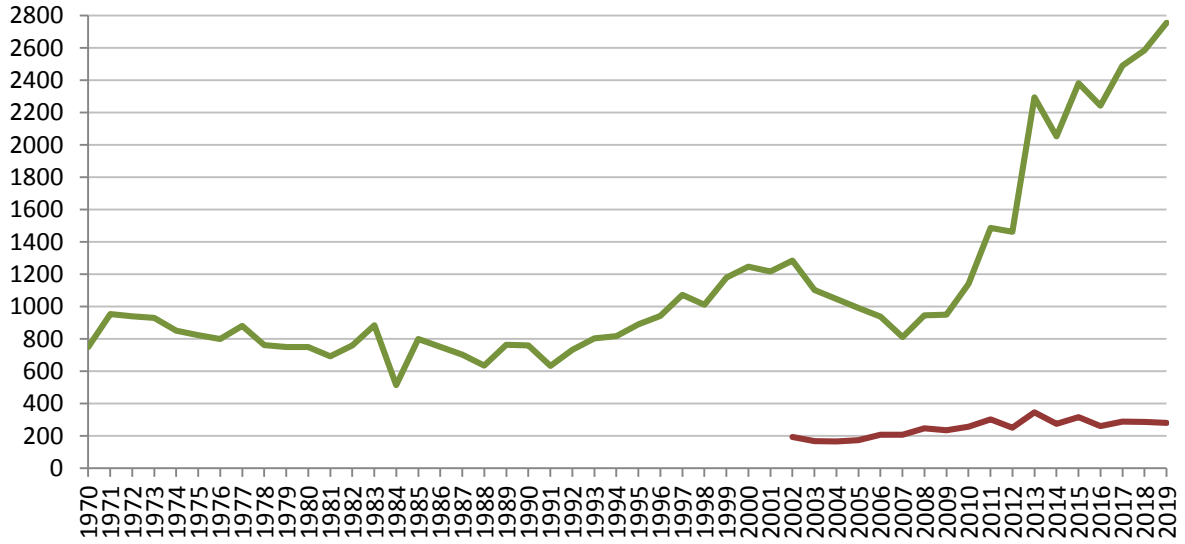
Six study plots, established in 2002, were visited on ten dates between 24th May and 10th June when every adult in suitable breeding habitat was counted. The mean single visit total of 281 adults on ledges was six down on that logged last year, the sixth lowest total of the last nine years and 1.8% down on the 2010-2019 mean (286.2 ±sd 29.3). Guillemot Cliff was the only plot which saw an increase in the mean number of birds present, with four more than last year; nevertheless a total of 70 adults on ledges equalled the third lowest total since 2006 for this site. Although there were four fewer birds in Little Bay, a mean of 103 adults on ledges was the third highest to be logged here; the total has increased by 164.1% since 2006 (the blue line on the above graph), growth which drove the combined plot total upwards. The North Gully mean dropped by three birds to 49, however this was also the third highest total to date; although not as marked as at Little Bay, a 96.0% increase since 2006 has also driven the overall plot total upwards (the grey line on the above graph). There were four fewer birds at Middlerock, this a 36.3% decline on the 2013 peak which took the total to the lowest on record. Quite why the Twinlet plots (Guillemot Cliff and Middlerock) have declined in recent years, particularly given the general upwards trend seen at Little Bay, North Gully and across the Island as a whole, is unclear. A possible factor is that the study plots, particularly those at Twinlet, are areas shared with both Guillemots and (perhaps more importantly) Fulmars, species currently increasing on Skokholm as a whole. The number of apparently incubating Fulmar in the Middlerock and Guillemot Cliff plots has almost doubled since 2013, perhaps leading to competition

with Razorbills for space within the confines of the plot boundaries. The plot counts are affected by the weather in some years; in the unsettled June of 2012 counts fluctuated between 164 and 338 birds, whereas the 2018 counts, made during a prolonged period of high pressure, fluctuated between 263 and 309 (with the lowest standard deviation of the last six years (see table below)). The 2019 survey period proved to be an unsettled one, no doubt leading to the widest spread of counts since 2012. It is possible that some higher counts, and thus the higher standard deviation observed this year, were due to ameliorating rough weather encouraging more birds to the cliffs; there is seemingly a trend for the highest plot counts to occur following rough non-survey days.

The whole Island totals, mean plot totals and the percentage of the Island totals made up of study plot birds 2010-2019. Also the range of plot counts since 2012 and the standard deviation observed over the ten plot visits since 2013. (*includes a boat-based count)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Island	1140	1486*	1463	2294*	2052*	2382*	2242*	2491*	2585*	2755*
Plots	256	302	251	346	274	316	260	289	287	281
Range			164-338	301-397	254-315	291-346	236-324	253-334	263-309	230-351
±SD				30.54	19.96	15.78	26.58	25.61	13.25	40.82
Plot %	22.5	20.3	17.2	15.1	13.4	13.3	11.6	11.6	11.1	10.2

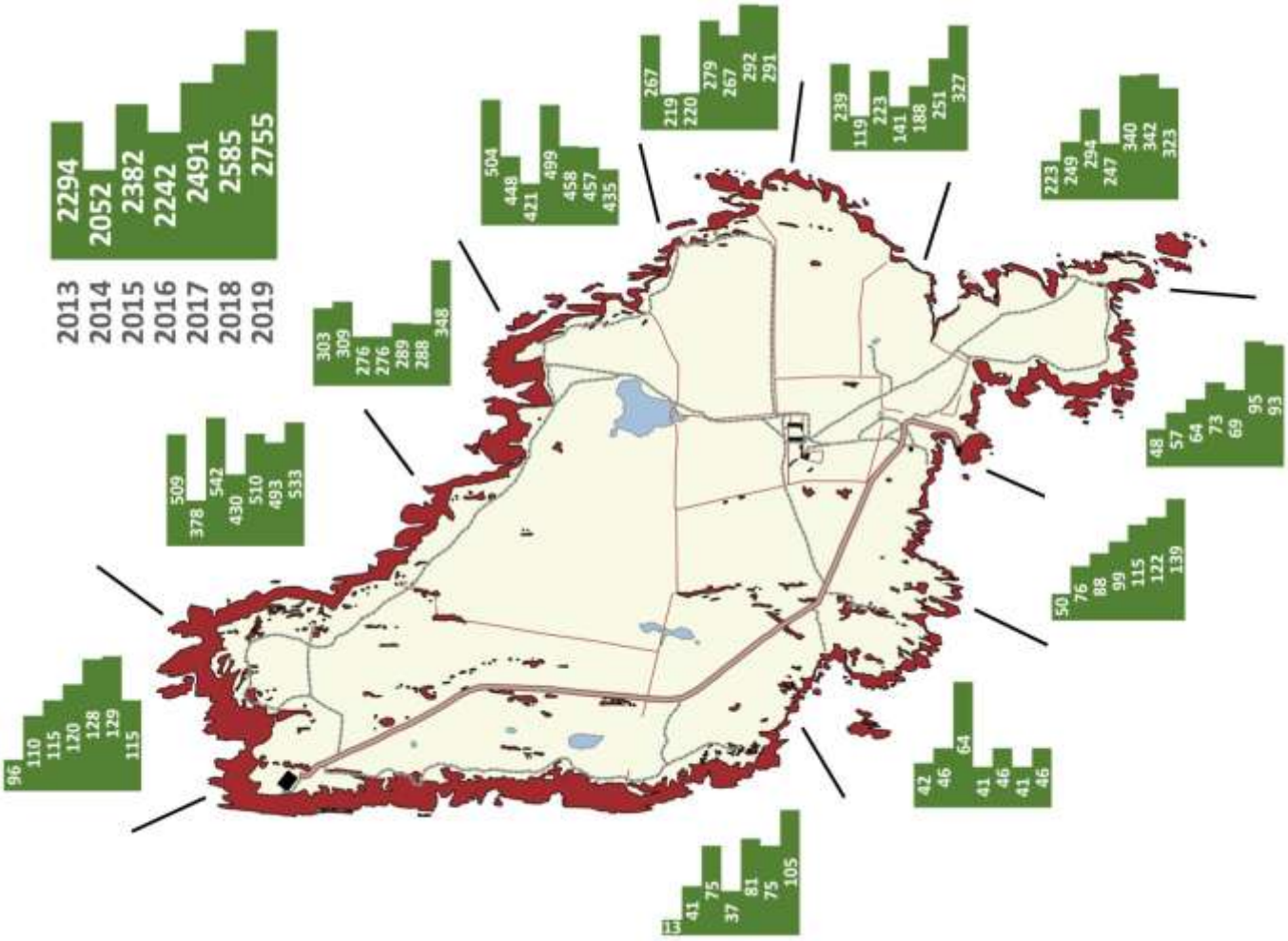
The total number of Razorbills (adults on ledges) recorded on Skokholm since 1970 and the number of birds within the study plots since 2002.



Whole Island counts were made from the land between 24th May and 7th June, whilst a boat-based count was divided between the 6th and 9th June. This was the seventh year running in which access to a boat had been available, inevitably leading to higher but more accurate whole Island counts; in 2012 rough seas meant that there was no opportunity for a boat-based count and it was concluded that 'there remains a section of North Coast that was missed, while other parts of the North Coast and Bluffs were counted less accurately at a distance' (Gillham and Yates, 2012). A 2019 whole Island mean of 2755 adults in suitable breeding habitat was 6.6% up on the 2585 logged in 2018 and the highest total yet recorded on Skokholm (31.9% up on the 2010-2019 mean of 2089.0 ±sd 543.64). The rapid population growth witnessed between 2007 and 2013 has seemingly slowed, although the population is still increasing at a rate similar to that observed between 1991 and 2002. The proportion of the whole Island total made up of study plot birds was the lowest since the plots were initiated in 2002, suggesting that the plot limiting factors outlined above, particularly competition for space in the Twinlet plots, are not affecting the Island as a whole. As can be seen from the map below, the largest increases came along Near and Far Bays (76 more birds), between Twinlet and Purple Cove (60 more) and around the Bluffs (40 more); of these areas, only the ledges around Near

and Far Bays saw an increase in the number of Guillemots present. There were declines in five areas, with mean drops of 19 birds along the north coast of the Neck and 22 birds between the Dents and the Jogs being the largest numerically.

The distribution of Razorbills on suitable breeding ledges 2013-2019.



Productivity monitoring was undertaken for a seventh consecutive year. There are some concerns among ICAC members that recent Pembrokeshire productivity estimates have been quite low (on Skokholm ranging between 0.21 in 2015 and 0.69 in 2018), perhaps lower than what actually occurred given the continued growth of the population and certainly too low to maintain the expansion. One explanation for low productivity estimates could be that the plots, particularly the exposed Neck plot where predation levels are often quite high, are not representative of the Island as a whole; with this in mind an additional cliff plot was established at North Gully in 2017. There were thus three survey areas this year, one a cliff below the Neck Razorbill hide where 27 incubating pairs were mapped by 26th May, one on ledges around North Gully where 34 pairs were mapped by 20th May and one a site among the Bluffs boulders where 46 egg sites were marked on 18th May.

At the Neck there were just three failures at egg stage, however seven chick stage failures (including the infanticide documented below) was quite a contrast to 2018 when all hatched chicks went on to jump. There were thus 17 young which reached jumping age at the Neck; the resulting productivity figure of 0.63 was unsurprisingly down on the record 0.86 of last year, however it was well up on the 0.14 recorded in 2017, the 0.03 of 2016, the 0.17 of 2015 and the 0.36 of 2014. The North Gully cliff site saw six failures at egg stage (one of which was seemingly incubated throughout the period between 26th May and 15th July, a duration far longer than typically seen before the abandonment of

an egg) and four failures at chick stage, all of which went missing. There were 24 chicks which reached jumping size; the resulting productivity value of 0.71 jumplings per pair was up on the 0.62 logged at this site in 2018 and the 0.58 logged in 2017. The combined productivity estimate for cliff nesting pairs was 0.67, a figure only exceeded by the 0.74 of last year and the 0.77 of 2013.

The development of a Razorbill chick near Frank's Point. The photographs were taken at three day intervals, starting at three days of age. Wing lengths are shown for 12, 15 and 18 days of age.

Among the Bluffs boulders eight pairs failed at egg stage; in all instances this year, the eggs went missing. A further 13 pairs failed with chicks, only one of which was found dead and abandoned rather than going missing. There were 25 pairs which produced a jumping-sized chick; the resulting productivity value of 0.54 jumplings per pair was down on the 0.60 logged last year, the 0.74 of 2016 and the 0.55 of 2013, but up on the 0.48 of 2017, the 0.29 of 2015 and the 0.44 of 2014. For a seventh year running the last of the breeding attempts within the boulders were concluded before the last of the attempts on the cliffs; this perhaps reflects a tendency for large chicks among the boulders to move away from the egg site, whilst cliff chicks have little room for movement.

Combining the productivity figures for the cliff plots and the boulder plot to give an indication of overall productivity on Skokholm can be achieved in two ways, either by averaging the final values obtained for the three sites, as recommended in the Seabird Monitoring Handbook (Walsh *et al*., 1995), or by combining all the data from the three plots (that is to say by dividing the total number of jumplings at all sites by the total number of monitored sites). The former, preferred, technique

produces a productivity estimate of 0.63 jumplings per pair and the latter 0.62; although down on the 0.69 of last year and the 0.66 of 2013, the 2019 estimate was up on the 0.40 of 2017, the 0.39 of 2016, the 0.21 of 2015 and the 0.40 of 2014. Whereas predatory gulls and corvids are typically blamed when chicks go missing, other explanations are available; on 9th June a ledge usurping adult in the Neck productivity plot was watched as it attacked the head of an incubated chick before throwing it off the cliff (below photograph).

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

In an effort to ascertain the pattern of colony attendance during the remainder of the breeding season, daily counts at three of the plots were continued beyond the normal study period (see chart above). There were again fluctuating numbers in all three subcolonies and regular peaks when the totals were presumably augmented by the return of failed adults, successful females or non-breeding birds; interestingly these peaks were again broadly consistent between subcolonies, and to a lesser extent coincided with Guillemot arrivals, suggesting that the returning birds respond to the same environmental cues. The first jumpling had departed the productivity plots by 9th June, 13 days earlier than the first of 2018 and 2016, 11 days earlier than in 2017 and 17 days earlier than in 2015. The number of adults within the plots dropped steadily during the second half of June, with only

double-figure counts logged from the 30th (10th July in 2018, the 11th in 2017, the 14th in 2016, the 8th in 2015 and the 17th in 2014) and single-figure counts from 9th July (the 18th in 2018, the 22nd in 2017 and 2015, the 25th in 2016 and the 27th in 2014). Whereas all of the Bluffs study chicks had departed by 27th June, five cliff plot youngsters remained on 7th July (seven remained on the 7th last year) and the chick of a pair which laid on 9th June remained until the night of 27th July. Despite the very early 2019 breeding season, at least five adults were still ashore on 24th July (the date on which, between 2015 and 2017, the last adults were seen on cliffs) and the last was at North Gully on 1st August (one day later than the last of a late 2014 season but one day earlier than the last of 2018). An adult circled North Gully with fish on 2nd August, however it returned to sea without making landfall.

There were sightings of Razorbills at sea on 20 August dates, totalling 158 birds and with highs of 21 on the 22nd and 20 on the 31st; although down on last year, when a peak daycount of 114 took the total to 388, this was otherwise the most productive August to date (the bird-days total being up on the pre-2018 high of 108 logged in 1962). However September counts were significantly down on recent years, with sightings of up to 23 birds on 13 dates taking the bird-days total to just 79; the maximum 2018 daycount was 127 and the monthly total 575, whilst a record daycount of 1148 in 2017 took the September total to a record 1708. Sightings on 14 October dates, including highs of 149 on the 9th, 763 on the 10th and 105 on the 11th, produced a bird-days total of 1224; both the maximum daycount and the bird-days total were new October records, the former being up on the 320 of 1961 and the latter up on the 689 of 2014. Sightings of up to 58 birds on 11 November dates led to a rather typical 111 bird-days being logged. There were no Razorbills seen ashore for a seventh successive November, this seemingly an auk behaviour confined to Guillemots during the early winter period. Further large auks were present at sea during the autumn but they remained unidentified due to their distance from the Island; there were 149 in September, 1570 in October, 3985 in November and 709 in the first three days of December; a peak of 930 on 17th November was a new autumn daycount record.

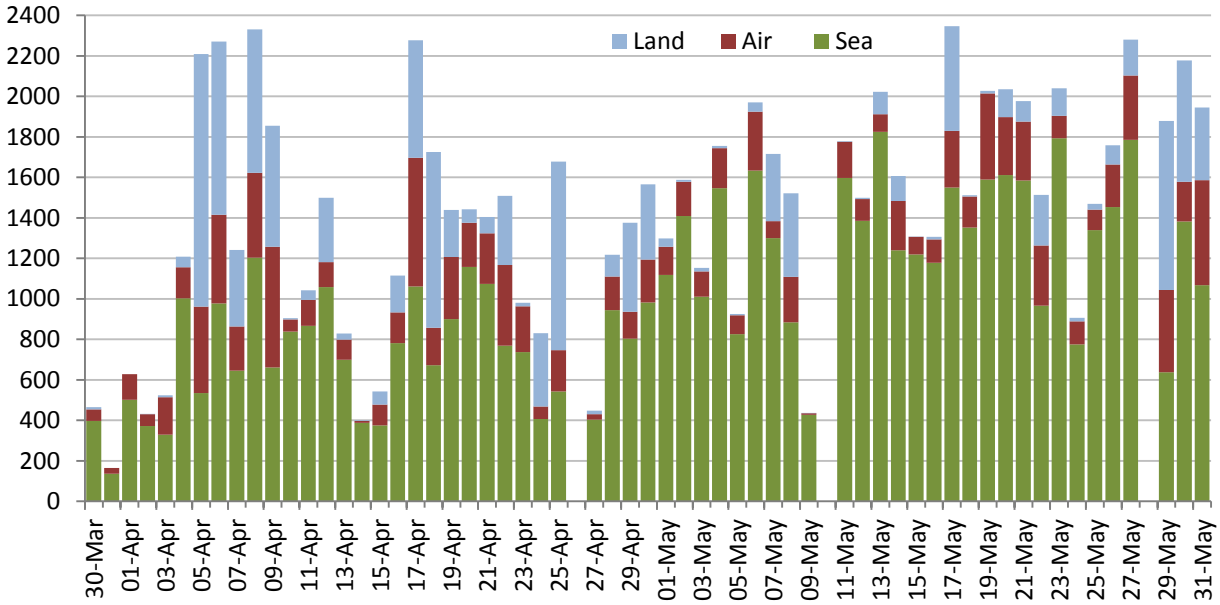
Ringing recovery K30814
Originally ringed as an adult, THE BLUFFS, SKOKHOLM 21st June 2013
Recovered CROYDE BAY, DEVON 30th May 2019
Finding condition Freshly dead on beach
Distance travelled 96km at 132 degrees (SE)
Days since ringed 2169

Puffin *Fratercula arctica* **Pâl**
Very Abundant Breeder
32 trapped, 3 retrapped
1936-1976: 5411 trapped, 2011-2018: 550 trapped, 21 retrapped, 1 control

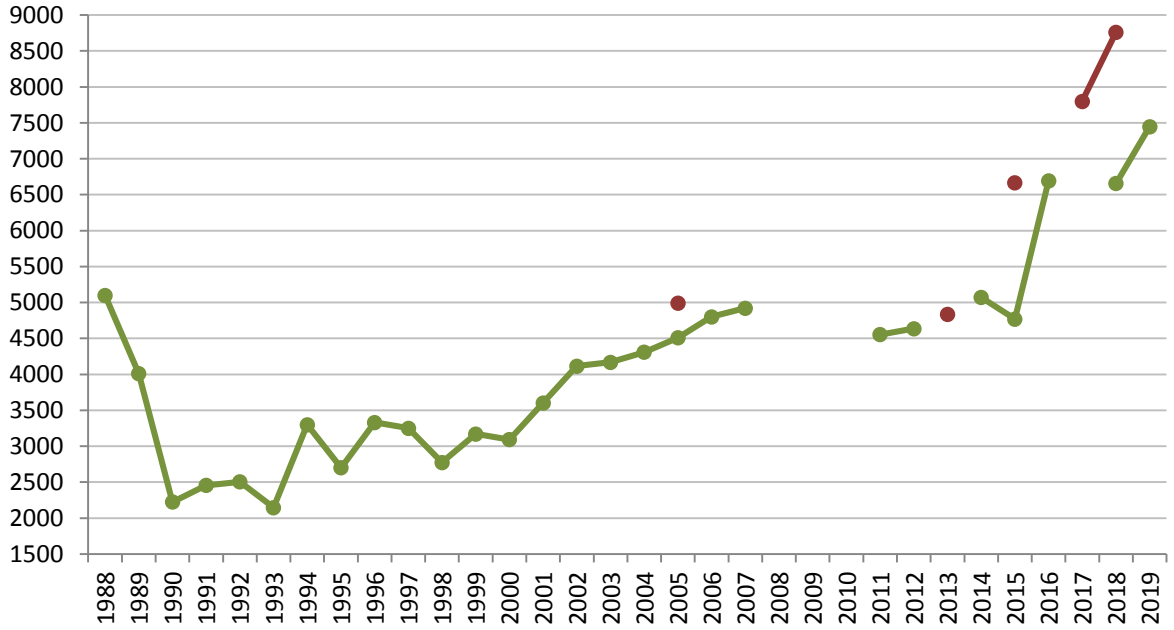
A lone Puffin swimming to the north of the Neck on 1st March was an exceptionally early sighting and a harbinger of what was to follow; although an oiled bird was found on 22nd January 1929 and a remarkable 26 were logged on 2nd February 1983, this was otherwise the earliest Skokholm record. There followed four off South Haven on the 6th and 23 offshore on the 8th, birds all earlier than the pre-2019 March record of four on the 12th in 1982. A single was off Crab Bay on the 14th, two were rafting with north coast auks on the 15th, 118 were at sea on the 16th and, following an absent day, 1019 were counted on the 18th; the latter was the earliest ever four-figure daycount. Over 500 birds made landfall on the 19th, this the earliest ever return to the cliffs (one day earlier than six birds seen ashore in 2012 and three days earlier than 28 birds last year). The same day saw a whole Island count of 7447 Puffins, this the highest ever March total by a considerable margin, well up on the 4308 logged on the 27th in 2004 (to the north there were 1178 on the sea and six in the air, to the south 3604 on the sea and 57 in the air and around the Neck 2484 on the sea and 118 in the air). Birds were ashore for the following three days, this an unprecedentedly early and lengthy return to

the land. Daily sightings to the end of the month produced a March bird-days total of 23,633, a tally massively up on the previous high of 12,074 logged in 2012. Daily counts were again made from around the Neck each evening, from 30th March until 31st May, to record the pattern of colony attendance (see chart below). April counts varied far less dramatically than in previous years and the mean April daycount was over 300 birds up on the previous 2015 high, all observations indicative of a much earlier return and breeding season in 2019.

The number of Puffins seen from the Neck between 30th March and 31st May 2019. The transect again began from a line due north of North Haven and finished at Peter's Bay. The count on 26th April was abandoned due to the weather and counts on the 10th and 28th May were abandoned for other survey work.



The maximum Puffin daycount recorded each spring during the period 1988-2019. Green points represent counts made during March and April, maroon points counts made in May.



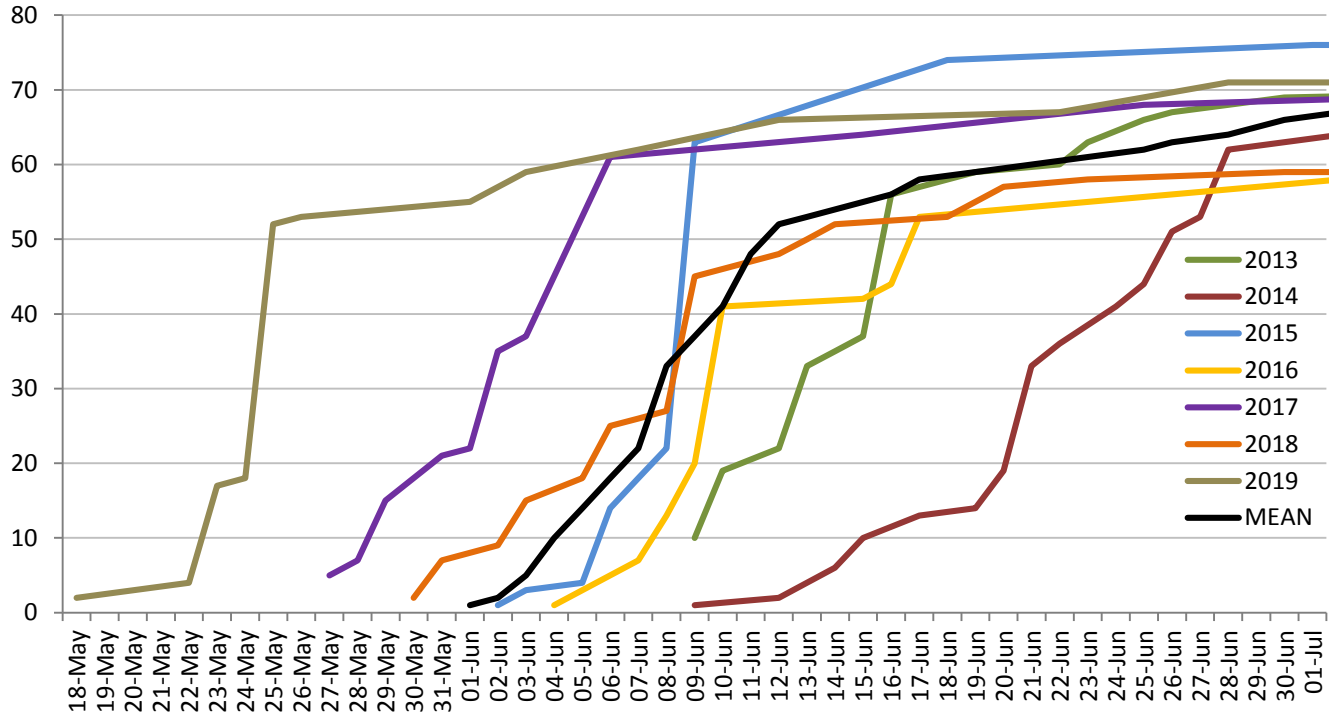
A further whole Island count on 6th April coincided with the third highest April Neck count and produced a total of 7060 birds (to the north there were 1102 on the sea, 14 in the air and 263 on land, to the south 1268 on the sea, 117 in the air and 2026 on land and around the Neck there were

977 on the sea, 438 in the air and 855 on land); although numbers are still down on Lockley's pre-War spring estimates of approximately 40,000, this was the highest April count since 10,000 were logged on the 22nd in 1953 and a tally 6.1% up on the 6656 counted on the 9th last year. Although the whole Island counts provide a relatively consistent long-term method for monitoring the trend in numbers, how the totals reflect the Skokholm breeding population is difficult to ascertain. The Crab Bay total on the evening of the 19th March peak 2019 count was 1851 birds, however more focused monitoring at this site revealed a study population of 75 active burrows in an area which comprises approximately 10% of the colony and where less than half of occupied burrows were study burrows; we might thus predict a very rough minimum of 1500 pairs for Crab Bay (as active burrow distribution is apparently quite even) and expect over 1000 more birds to be using this area of sea than were logged during the peak whole Island count.

A productivity plot established at Crab Bay in 2013 was used for a seventh season. The majority of the 100 burrows individually numbered in 2013 were again used this year, although a small number of posts were repositioned due to either winter losses or subsequent excavations making it difficult to tell which hole was marked. Of these, 75 were seen to be occupied and were visible throughout the season (61 in 2018); productivity estimates are based on observations of these burrows. Five active burrows (6.67%) were not seen to be provisioned with fish and it is assumed that these failed at egg stage (3.28% in 2018, 5.80% in 2017 and 7.58% in 2016). There were four fish deliveries on an exceptionally early 14th May (21st May in 2018, 24th May in 2017, 29th May in 2016, 31st May in 2015, 3rd June in a post-wreck 2014 and 30th May in 2013); these were seemingly the earliest deliveries ever witnessed on Skokholm. It was not until 18th May that fish were seen to be brought to the study plot, this 12 days before the first of last year and 14 days before the seven year mean (see below graph for the first plot delivery dates logged in previous years). The cumulative total of provisioned burrows increased rapidly; nearly 70% of burrows had been provisioned within a week of the first fish arriving, all of these with chicks prior to the earliest first delivery date of the previous six years. The 2019 chick feeding period was over three weeks earlier than in 2014 (the breeding season which followed the most severe winter storms recorded during this study).

Although the study plot was visited for a minimum of one hour most days, it certainly cannot be assumed that the first and last fish provisioning was seen for each burrow. Indeed the daylight hours Puffin watches highlight how some burrows are provisioned infrequently (see table below). Additionally it proves difficult to standardise ad hoc recording effort between years. It was thus decided in 2016 that a three visit method would be used to calculate productivity on Skokholm, but that five visits and ad hoc records would still be collected to allow further comparisons to be made in the future (see second table below and the 2016 Seabird Report for more details). This is more in line with the Seabird Monitoring Handbook (Walsh *et al.*, 1995) which states that, when monitoring Puffin productivity in colonies where the nest is inaccessible and the colony is shared with Manx Shearwaters, the most appropriate technique is 'When birds are feeding large chicks, make a few watches to determine which burrows/crevices have fish taken down them'. Establishing which burrows contain large chicks is inevitably the main issue with this technique, necessitating earlier watches to detect chick hatching dates (which since 2013 have varied by as much as a month).

The number of study burrows which had been provisioned with fish by a particular date.



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

No. of deliveries	0	1	2	3	4	5	6	7	8	9	10	11	12	13
No. of burrows 25 May		10	7	6	10	4	5	2	4	2	1	1		
No. of burrows 12 June	3	8		5	7	14	8	9	2	4	1			
No. of burrows 22 June	1	19	10	15	5	6	4							
No. of burrows 28 June	5	20	9	3	4	1	1	1	1			1		
No. of burrows 7 July		10	5	2	1	3	1							1

Puffins can fledge having spent a minimum of 34 days as a burrow-bound chick, although this is more typically 38 days and can be anything up to 60 days (Ferguson-Lees *et al.*, 2011). A flaw with the three visit technique is that some chicks could potentially be counted as fledged when they had reached as little as 17 days old. However it would be incorrect to assume that only those provisioned on all three watches went on to fledge; early hatchers could potentially have departed by the third watch whilst others may have hatched after the first watch. Although this three visit technique is more standardised than the ad hoc recording, the 2013 to 2019 productivity estimates of between 0.73 and 0.80 fledglings per pair certainly include birds which did not fledge. For example a bird

counted as fledged in 2017 was known to die of an apparent eye injury at approximately 25 days old, whilst this year at least some of the 15 large chicks seen to be taken from the plot by Great Black-backed Gulls between 19th June and 7th July were already counted as having fledged. Nevertheless this more standardised monitoring method suggests that 2019 productivity of 0.76 was in line with recent years, indeed it almost matched the seven year mean (0.75 ±se 0.01). If the ad hoc records are included and it is assumed that a chick seen to be provisioned for 31 days or more was of fledging size, then the 2019 data suggests that, of the 75 monitored breeding attempts, perhaps as few as 41 (54.7%) were potentially successful (55.7% in 2018, 56.5% in 2017, 63.6% in 2016, 55.0% in 2015, 50.0% in 2014 and 49.4% in 2013), although at least 54 attempts saw a chick reach a minimum of 26 days (72.0%, see second table below).

Calculating productivity using only three daylight watches. The first watch was between 25th May and 28th June (dependent on the date of first fish delivery that year), the second between 12th June and 8th July and the third between 28th June and 24th July. Chicks are assumed to have fledged if fed on a minimum of two watches. Ad hoc productivity is based on a chick reaching 31 days.

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

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

Days	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-51
No. of burrows	5	3		5	3	13	21	6	8	6

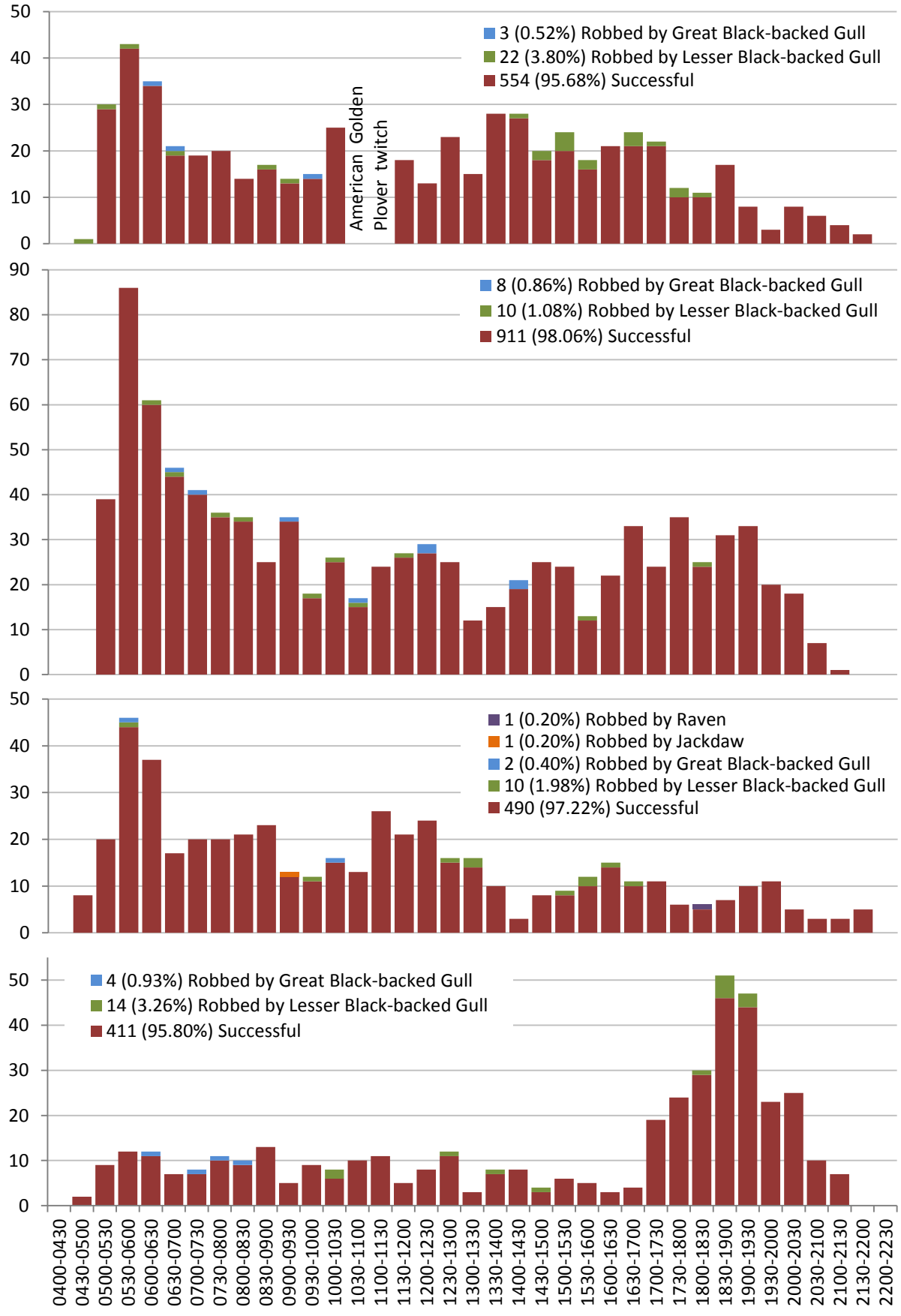
The five daylight hours watches (made on 25th May, the 12th, 22nd and 28th June and on 7th July), were also used to monitor kleptoparasitism by gulls. The study plot was again confined to the area of the 100 numbered burrow stakes at Crab Bay. On 25th May 579 Puffins arrived to the study area with fish and of these 25 (4.32%) were successfully robbed. On 12th June 929 birds arrived and 18 (1.94%) were robbed. On 22nd June 504 birds arrived and 14 (2.78%) were robbed. On 28th June 429 birds arrived and 18 (4.20%) were robbed. On 7th July 228 birds arrived and five (2.19%) were robbed. It should be noted that these figures do not take into account the number of fish lost to gulls at sea or on the approach to the colony. In terms of the proportion of deliveries lost over the study plot, a five visit mean of 3.00% was the third lowest of the last seven years, with the last three years having been the lowest. The actual number of deliveries stolen matched last year as the second lowest to date. The highest levels of kleptoparasitism to be logged so far occurred in 2013. This general decline in kleptoparasitism is perhaps in part due to a reduced Lesser Black-backed Gull population (which has declined by 30.4% in the same seven years), although an increase in Great Black-backed Gull numbers may at the same time be having an effect, with the more aggressive large gulls keeping the

Herring and Lesser Black-backed Gulls from the study area. There has been an increase in corvids kleptoparasitising Puffins; there were no records between 2013 and 2016, a Crow stole one delivery in 2017, Jackdaws stole single deliveries in 2018 and this year and a Raven stole a delivery this year.

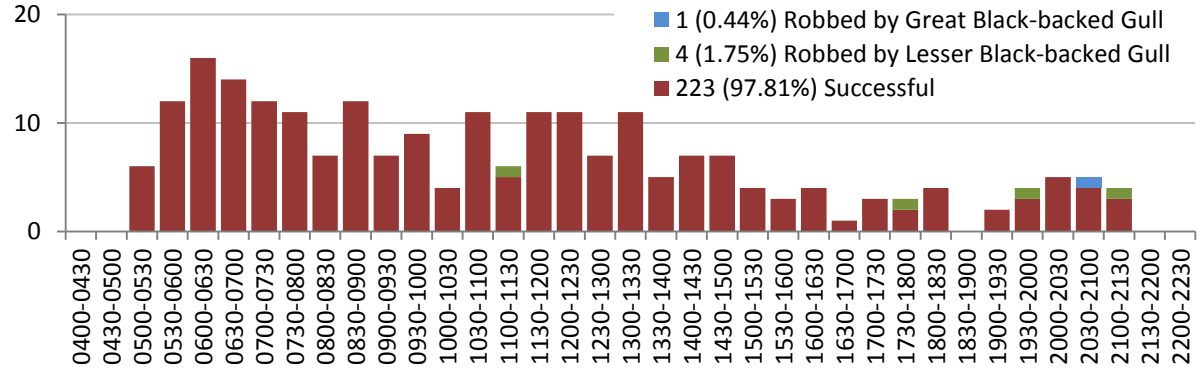
The number of fish deliveries made to the study plot during each daylight hours watch, the number of Puffins which lost fish over the plot and the percentage which lost fish.

		Watch 1	Watch 2	Watch 3	Watch 4	Watch 5	Total
2019	Number of deliveries	579	929	504	429	228	**2669**
	Number parasitised	25	18	14	18	5	**80**
	Percentage parasitised	4.32	1.94	2.78	4.20	2.19	**3.00**
2018	Number of deliveries	701	852	527	511	359	**2950**
	Number parasitised	19	12	8	8	33	**80**
	Percentage parasitised	2.71	1.41	1.52	1.57	9.19	**2.71**
2017	Number of deliveries	844	991	1100	527	177	**3639**
	Number parasitised	30	11	3	7	5	**56**
	Percentage parasitised	3.55	1.11	0.27	1.33	2.82	**1.54**
2016	Number of deliveries	421	733	889	489	525	**3057**
	Number parasitised	20	45	35	10	28	**138**
	Percentage parasitised	4.75	6.14	3.94	2.04	5.33	**4.51**
2015	Number of deliveries	699	927	916	521	123	**3186**
	Number parasitised	43	34	23	10	4	**114**
	Percentage parasitised	6.15	3.67	2.51	1.92	3.25	**3.58**
2014	Number of deliveries	262	513	643	670	179	**2267**
	Number parasitised	28	37	29	3	1	**98**
	Percentage parasitised	10.69	7.21	4.51	0.45	0.56	**4.32**
2013	Number of deliveries	413	684	610	107		**1814**
	Number parasitised	76	40	32	11		**159**
	Percentage parasitised	18.40	5.85	5.25	10.28		**8.77**

The number of chick provisioning attempts during daylight on 25th May and the 12th, 22nd and 28th June 2019, along with the number of times that gulls and corvids successfully robbed the fish. The unusual pattern of deliveries on 28th June was attributed to an ameliorating morning gale.



The number of chick provisioning attempts during daylight on 7th July 2019, along with the number of times that gulls successfully robbed the fish.



Survival in adult Puffins. An average survival figure for each year is based on the number of birds ringed in the preceding year plus the number of previously ringed birds known to be still alive, for example 215 birds (93.48%) are now known to have been alive in 2015, of a 2014 total of 230 (57 ringed in 2014 plus 173 (93+40+40) ringed previously and known to be alive). Survival after a one year establishment period means that birds have been seen within the study area before (and are therefore assumed to be located in visible positions); birds ringed in the preceding year are therefore excluded from the calculations as they may be occupying hidden areas of the colony.

	2011	2012	2013	2014	2016	2017	2018	Total	Survival after one year
Total Ringed	128	58	51	57	23	24	31	372	
Seen in 2012	72							72	
Alive in 2012	114							114	
% survival	89.06							89.06	**No data**
Seen in 2013	103	52						155	
Alive in 2013	111	55						166	
% survival	97.37	94.83						96.51	**97.37**
Seen in 2014	86	36	37					159	
Alive in 2014	93	40	40					173	
% survival	83.78	72.73	78.43					79.72	**80.12**
Seen in 2015	79	37	35	50				201	
Alive in 2015	86	39	37	53				215	
% survival	92.47	97.50	92.50	92.98				93.48	**93.64**
Seen in 2016	68	34	32	43				177	
Alive in 2016	78	37	35	47				197	
% survival	90.70	94.87	94.59	88.68				91.63	**91.63**
Seen in 2017	72	35	31	44	19			201	
Alive in 2017	77	36	32	44	19			208	
% survival	98.72	97.30	91.43	93.62	82.61			94.55	**95.94**
Seen in 2018	70	34	28	40	19	20		211	
Alive in 2018	73	35	30	40	19	22		211	
% survival	94.81	97.22	93.75	90.91	100.00	91.67		94.40	**94.71**
Seen in 2019	66	33	27	36	17	20	21	220	
Alive in 2019	66	33	27	36	17	20	21	220	
% survival	90.41	94.29	90.00	90.00	89.47	90.91	67.74	88.00	**90.87**

A colour ringing project was begun at Crab Bay in 2011 to allow an estimate of adult survival to be made each year. There were 128 birds ringed in the first year, 166 between 2012 and 2014, 78 between 2016 and 2018 and a further 28 were added to the scheme this year. The table above

summarises the resighting data collected so far. What is apparent is that some birds are not seen every year, perhaps because they have not returned to the study plot or perhaps because their colour rings have not been seen, indeed 13 birds were not seen for two years (including two which have gone missing for two years twice) and seven birds were not seen for three years. We now know, for example, that the 155 birds seen in 2013 was only 93.37% of the number actually alive. The survival estimates for more recent years are thus likely to be modified in the future, to take into account birds which have not yet been seen. Nevertheless, with eight years of resighting data now available, we can start to look at fluctuations in survival over time. The proportion of birds surviving the winter during the period 2011 to 2019 has varied between 79.72% (in 2014) and 96.51% (in 2013), with only the 2014 return rate being below 88%. A flaw with this survivorship estimate is that colour marks were added to Puffins caught in flight, individuals potentially resident in areas not visible to researchers; a better estimation of survival may therefore come from looking for birds previously seen in the field (thus discounting individuals in the year after ringing). The resulting survival estimates range from 80.12% (in 2014) to 97.37% (in 2013), with only the 2014 return rate being below 90%. Clearly the most striking feature of these estimates is the substantial drop in survival noted after the severe 2013 to 2014 winter wrecks; it remains to be seen how often such drops in survival can occur before the spring raft counts show a decline in overall numbers.

Puffin EX83523 (Black and White stripe over BTO, Yellow over Black), ringed as an adult in 2011 and seen in subsequent years to be a typically plumaged bird, arrived in 2017 with predominantly white feathers in the throat, nape and mantle. The extent of the white plumage has however not seemingly changed between the 2017 and 2019 breeding seasons. This 'progressive greying', which could be mistaken as leucism were it not for a knowledge that the bird previously appeared normal, is caused by a loss or failure of pigment cells with age.

Ad hoc records mirrored the whole Island count in suggesting that the number of birds on Skokholm is increasing; a bird walking along the Lighthouse Track below Tattenham Hill on 30th May and singles south over the Top Tank and east over Gull Field on 23rd June were all novel observations for the last seven years. Although there were no complete Island counts, several daycounts in excess of 5500 were logged in July when large numbers of young adults arrived. It was perhaps one of these less

experienced birds which was eaten by a Great Black-backed Gull at Rat Bay on the 16th; although Puffins are regularly taken during the spring, we rarely record adults being eaten during the chick fledging period (there was only one record last year). There was a distinct change in behaviour from 8th July, with lots more head waving within the plot and mass wheeling displays, although it was not until the 23rd that the majority of birds stopped returning to land (raft counts remained in the hundreds until 2nd August). There were 12 Crab Bay fish deliveries in two hours of observations on 27th July and the last fish deliveries to this area were logged on the 30th (when four burrows were still active). Although an adult was seen departing the slope near the replica Alice Williams on 7th August, the last observed fish delivery to this site, and indeed to anywhere on the Island, was logged on the 4th; this was six days earlier than the last 2018 deliveries (which were also to the slope near Alice), six days earlier than the last of 2017, nine days earlier than the last of 2016, 12 days earlier than in 2015 and 18 days earlier than in 2014 (the latest breeding season in recent years). Two were off the Bluffs on the 9th, four off the Lighthouse on the 10th and one there the following day was the last record of the breeding season. Three flying at sea on 26th September was a typical autumn sighting; there have been September records in 38 previous years including five of the last eight.

Red-throated Diver *Gavia stellata* **Trochydd Gyddfgoch**
Scarce passing at sea from September to May, not recorded every year but occasionally Uncommon

One west through Broad Sound on 11th September was the first of the year, this 12 days earlier than the single 2018 record (BD). One flew southeast over the west of the Island on 28th November; although Great Northern Divers are watched cutting over Skokholm on occasion, indeed one went over at the same time as this bird, this was the first Red-throated Diver to be seen above the Island for at least a decade. Two southeast during one hour of observation on 2nd December was the last record of the year, this part of what was a remarkable diver passage by Skokholm standards. An annual bird-days total of four was down on highs of 14 in 2016, 15 in 1992 and 19 in 1990, but up on the 2010-2019 mean of 3.2 (there were no sightings at all in four of those years) and the 1946-2019 mean of 2.3 (with no sightings in 35 years). Inevitably the number of bird-days logged is impacted by both seawatching effort and how long staff remain on the Island towards the end of the year.

Great Northern Diver *Gavia immer* **Trochydd Mawr**
Scarce passing at sea from August to May, not recorded every year but occasionally Uncommon
Earliest 11th August 1991 (**3rd August 2019**) **Latest** 30th May 1983

A first-summer found close in under the south coast cliffs on 3rd August was eight days earlier than the only previous August record (VM *et al*.). What was probably the same bird drifted east with the tide the following day. There were no further records until 9th October when one was tracked as it flew west, first past South Haven and then the Lighthouse. There were three singles logged in November, with one north over the Well on the 7th, one north through the western reaches of Broad Sound on the 15th and one southwest over the west of the Island on the 28th. A one hour seawatch on the morning of 2nd December logged an unprecedented 16 birds, including a loose flock of nine, all flying southeast; two, heading west off the Lighthouse that afternoon, were considered to be additional to the morning count. The previous daycount record is the four logged on 12th November

2015 and 22nd September 1930, with the Lockley observation seemingly coming from so close to Jack Sound that the birds would now be outside of the Skokholm recording area.

Storm Petrel *Hydrobates pelagicus* **Pedryn Drycin**
Abundant Breeder a 2016 whole Island survey predicted 1910 occupied sites
784 trapped (including 23 pulli), 49 retrapped, 41 controls
1936-1976: 18,526 trapped, 2011-2018: 4092 trapped, 321 retrapped, 162 controls

Despite the sizable Skokholm breeding population and the significant amount of time dedicated to seawatching, Storm Petrels typically prove a rare sight at sea. The only at sea sightings this year concerned a single off the Lighthouse on the evening of 16th June, 12 west off the Lighthouse during four hours of observation on 10th August and one during a five hour, 45 minute watch on 8th October. With the exception of a small number of incubating adults visible in shallow crevices or in nest boxes, all other 2019 sightings came at night, although birds occasionally called from holes during the day and vocal responses were elicited for monitoring purposes. A minimum of eight birds watched after dark on 18th April were the first to be seen this year, this 18 days earlier than the first of last year and two days earlier than the first of 2017. Two singing males were recorded in the Petrel Station four nights later. The first diurnal record was of a male singing on 15th May, seven days later than the first of last year. Nights in May saw small numbers logged at various locations around the Island and infrared viewing equipment allowed counts to be made at the Quarry of at least 100 on the 23rd and 120 on the 31st. There were further peak counts from the Quarry of at least 150 on the 6th and 22nd June and of at least 120 on 27th June.

Four playback transects established at the Quarry in 2010, along with plots in North Haven Gully and along two of the walls which radiate from the Farm, potentially provide a sound method for monitoring changes in the Skokholm population. Between 65 and 91 responses were elicited using MP3 playback at these sites in each of the years between 2010 and 2018, although a substantial rock slide in 2016 significantly reduced the area which could be surveyed that year; Quarry transect two, which holds between eight and 21 responding birds, was almost entirely destroyed in 2016 and Quarry transect one was undercut on its southern edge, rendering both transects too dangerous to survey (see the 2016 Seabird Report for photographs and further details). It would seem from the records that the 2016 Quarry rock fall was by far the largest such event for over 30 years. Visits to the Quarry in 2017 established that there had been no further significant slides on any of the transects and the decision was made to reinstate transect one entirely and to use the upper section of transect two, a situation which remained the same in 2018 and this year. It was decided in 2017 that all of the data previously collected for transects one and two would be compared directly with future years; no adjustments have thus been made for the fact that transect two was shorter during the last three years and that transects one and two were missed in 2016.

The total number of apparently occupied crevices (located over ten visits) responding to a recording of male song at each of the seven study sites. Numbers in parenthesis are the totals from the 2m wide Quarry transects (as stipulated in the project guidelines) as opposed to the more wayward crevices monitored since the project's inception. The mean is that from 2010-2019.

Year	North Pond Wall	Little Bay Wall	North Haven Gully	Quarry transect 1		Quarry transect 2		Quarry transect 3		Quarry transect 4		Quarry total		Total	
2019	10	23	12	18	(7)	18†	(9)†	13	(8)	44	(20)	93	(44)	138	(89)
2018	6	13	11‡	15	(5)	15†	(10)†	12	(8)	49	(30)	91	(53)	121	(83)
2017	7	20	14‡	15	(5)	13†	(7)†	10	(9)	47	(27)	85	(48)	126	(89)
2016	6	15	17	9*	(4)*	**	**	11	(8)	41	(26)	61	(38)	99	(76)
2015	7	17	17	14	(5)	21	(9)	12	(7)	42	(25)	89	(46)	130	(87)
2014	9	12	13‡	14	(5)	18	(9)	18	(12)	37	(22)	87	(48)	121	(82)
2013	8	15	22	14	(4)	15	(8)	10	(7)	46	(27)	85	(46)	130	(91)
2012	5	9	21	12	(5)	8	(4)	10	(5)	33	(17)	63	(31)	98	(66)
2011	7	5	19	11	(5)	13	(8)	10	(7)	25	(14)	59	(34)	90	(65)
2010	4	9	18	8	(5)	15	(12)	11	(8)	30	(17)	64	(42)	95	(73)
Mean	**6.9**	**13.8**	**16.4**	**13.0**	**5.0**	**15.1**	**8.4**	**11.7**	**7.9**	**39.4**	**22.5**	**77.7**	**43.0**	**114.8**	**80.1**

* Transect 1 was only visited on four occasions in 2016 due to safety concerns.
** Transect 2 was not visited in 2016 due to a rock fall.
† Transect 2 was shortened in 2017 due to the 2016 rock fall.
‡ There was substantial scouring in the winters of 2013-14 and 2016-17 and in October 2017.

We were again joined by a Storm Petrel researcher this year, with Jodie Henderson accompanying staff and long-term volunteers to allow the survey work to be completed in the usual period. Ten visits were made to the study areas between 15th June and 8th July. An MP3 recording of male song was played into every crevice encountered along the transects, both numbered (and therefore used previously) and unmarked, with each active crevice being recorded and marked if new. It was first noted in 2013 how some marked crevices no longer fell within the two metre wide transects, an observation which prompted regular checks to assess the drift caused by (typically) small scale rock movements (and almost certainly in a small number of cases by erroneous measurements early in the project); it should be noted in future surveys that marked crevices which were once within the two metre transects now lie outside of the survey area. There were 13 numbered sites found to have moved between five and 65cm between this survey period and the last, primarily around transect four where there had been some small scale rock slides during the winter; ten of these movements took suitable crevices from within the transect (and nine of these were still found to be

active sites). The playback census this year again focused on the area delineated by marked burrows, although the results were then divided into those which fell within the two metre transects and those which fell just outside (see table below).

There is a general consensus that the number of pairs utilising the 18th century herringbone walls on Skokholm has declined (Vaughan and Gibbons, 1996; Vaughan, 2001; Thompson, 2003; Sutcliffe, 2010), perhaps due to a loss of suitable nest sites as vegetation and soil fills gaps in the collapsing walls. Standardised survey work over the last ten years suggests that there have been no further declines, although clearly there is some variation in the number of responses elicited each year (perhaps in part due to fluctuations in the number of transient, non-breeding birds as much as fluctuations in the number of breeding pairs (Brown and Eagle, 2017)). This year saw a significant increase in the number of responses elicited over ten visits, an increase which more than reversed the declines observed last year. Indeed the number of responses along both North Pond Wall and Little Bay Wall were at a ten year high and the combined total was 59.4% up on the 2010-2019 mean (20.7 ±sd 6.6). It would seem that the walls population can still be cautiously regarded as stable.

The number of crevices which have at some point been occupied over the ten year study (a total of 334), subdivided to show how many years the crevices have been apparently occupied for and the percentage of crevices occupied for a particular number of years. Crevices in the lower half of transect two, not visited after the 2016 rock fall, are not included in this table.

	Quarry Transects	The Walls	North Haven Gully	Total	% of total
1 year of apparent occupancy	54	34	29	**117**	35.03
2 years of apparent occupancy	32	8	18	**58**	17.37
3 years of apparent occupancy	19	7	5	**31**	9.28
4 years of apparent occupancy	14	7	14	**35**	10.48
5 years of apparent occupancy	19	8		**27**	8.08
6 years of apparent occupancy	14	3	2	**19**	5.69
7 years of apparent occupancy	12	1	1	**14**	4.19
8 years of apparent occupancy	14	3		**17**	5.09
9 years of apparent occupancy	6	1		**7**	2.10
10 years of apparent occupancy	7	1	1	**9**	2.69
Total	**191**	**73**	**70**	**334**	

The huge swell generated by Storm Ophelia in October 2017, the remnants of the easternmost major Atlantic hurricane on record, caused yet another scouring event in North Haven Gully. Nest boxes installed by Whittington in 2014, the access ladder to the lower portion of the slope and the central section of boulder scree which traditionally held many active crevices were all destroyed, whilst the painted marker stones were again moved from their original locations. This was the third major change to the North Haven landscape in five years, a series of events which almost certainly contributed to a 38.9% decline in the number of occupied crevices located between 2010 and 2018. No further significant changes to the North Haven landscape were observed this year. An assessment of breeding site availability suggests that new crevices have not opened up as others have been destroyed, with recent weather events releasing soil from further up the gully which has seemingly reduced the number of open fissures. This assessment was supported by the 2019 survey work which located just 12 active sites, one more than last year but the second lowest total of the last ten years. How such a loss of available nest sites affects the Skokholm population as a whole is unclear; it would seem likely that nest sites are available away from North Haven and that the birds were not directly affected (as they were predominantly absent during the scouring events), however the impact of looking for new nest sites on adult survival is something of an unknown.

The ephemeral nature of Storm Petrel nest sites was also evident at the Quarry where there were

further small scale movements, particularly along transect four. As mentioned above, these rock movements did not seemingly affect the number of crevices available overall, although they did perhaps reduce the number of crevices available along the transect. It was thus no surprise that the transect four total dropped by ten active sites (although perhaps in part a coincidence, this was just one more than the number of active sites found outside of the transect which had previously been positioned within the two metre wide strip). Nevertheless a total of 20 transect four responses was only slightly down on the 2010-2019 mean (22.5 ±sd 5.3). The number of responses within the other three Quarry transects was also close to the ten year mean; the transect one total was seven, a new high for an area which has seen a consistent number of responses over the years (there have been five responses in seven of ten survey years and the ten year mean stands at 5.0 ±sd 0.8), the transect two total was down one (almost matching the ten year mean of 8.4 ±sd 2.2) and the transect three total matched last year (and the ten year mean of 7.9 ±sd 1.8). The overall Quarry total of 44 was the lowest since 2016 (when a major rock fall reduced the survey area) and was otherwise the lowest since 2012, however it still fell very close to the ten year mean of 43.0 ±sd 6.8.

Overall there were 89 responses elicited this year, six more than last year (the loss of nine sites at the Quarry being more than offset by 15 more sites across the walls and North Haven). The total was the second highest to date, matching 2017 and 11.1% up on the ten year mean (80.1 ±sd 9.6). It still seems likely that, over the last decade at least, the Skokholm study population has been stable, a conclusion which is probably applicable to the Island population as a whole. This is positive news following what may have been a significant population decline between 1996 and 2010 (Sutcliffe and Vaughan, 2011; Wood *et al*., 2017). One of the most important variables highlighted this year was again nest site availability within the study areas; birds can only react to the changing landscape and maintain a stable population if further nest sites open up as others are lost. It is clear that some Storm Petrel nest crevices are short lived (as shown in the table above, just over a third of those found over the course of this study have only been occupied during a single year), however stable sites are also in existence; over a quarter of the active crevices located during the last ten years have shown signs of occupancy in five or more years and 2.69% of crevices have contained a calling bird in every year. Although changes in the positioning of rocks will mean that some crevices were only available for a single year, it is tempting to suggest that some of the crevices only occupied once are perhaps unsuitable nest sites (although they contained a calling bird, such sites may have never actually supported a breeding attempt).

The percentage of known active crevices which responded to male song during any single visit, averaged across all visits (the resulting correction factor is given in parenthesis).

Year	The walls	North Haven	Quarry	Rock fall	Average
2019	31.2 (3.20)	35.8 (2.79)	30.1 (3.23)	30.8 (3.24)	30.9 (3.24)
2018	22.6 (4.42)	31.8 (3.14)	32.6 (3.06)	32.5 (3.07)	31.0 (3.23)
2017	21.9 (4.58)	30.9 (3.23)	28.1 (3.55)	28.5 (3.51)	27.1 (3.69)
2016	40.0 (2.50)	25.9 (3.86)	23.3 (4.30)	23.9 (4.18)	27.7 (3.61)
2015	28.7 (3.48)	37.4 (2.68)	28.9 (3.46)	30.4 (3.29)	30.1 (3.33)
2014	36.2 (2.76)	40.0 (2.50)	26.2 (3.82)	26.4 (3.79)	28.1 (3.56)
Mean	**30.1 (3.49)**	**33.6 (3.03)**	**28.2 (3.59)**	**28.8 (3.51)**	**29.2 (3.44)**

The proportion of known active crevices which respond to a recording of male song during any single visit unsurprisingly fluctuates; there are several reasons for this, including the chance presence of birds of different sexes, individual variation in response rate, nest site positioning (which will influence how occupants hear the stimulus) and breeding status (non-breeders are perhaps more likely to leave a crevice unattended, to occupy multiple crevices during the study period or to respond at a different rate to breeding birds, whilst breeding status could also change during the survey period). The walls saw an average of 10.3 (31.2%) of the 33 active sites respond on any single

visit, although the actual number varied between five and 15. At North Haven a mean of 4.3 (35.8%) of 12 active sites responded each visit, although the actual number was between two and seven. At the Quarry a mean of 28.0 (30.1%) of 93 active sites responded, but this was between 19 and 41 on any particular date. Despite this significant variation between dates, the mean response rates at all three sites fell within the relatively tight ranges observed between 2014 and 2018 and close to the six year means (see table above). The use of these response rates to produce a correction factor remains the best way to predict the number of birds present in a large area when ten visits are not logistically feasible (for example during the whole Island census). Based on the data collected over the last six years, the number of active sites present in an area is likely to be in the region of 3.44 times more than the number encountered on a single visit. However the variation seen in this year's figures is a reminder of how difficult it is to assess the population of a species which usually cannot be seen.

There is an obvious need to know what responding birds are actually doing; it is unclear how many of the 1910 active sites predicted during the 2016 whole Island census were actually occupied by breeding birds. Previous attempts to use an endoscope in natural sites have failed to locate a sufficiently large sample size for monitoring purposes, a failure which was repeated last year. One way to improve our knowledge is to encourage petrels to occupy accessible artificial nest sites. With this in mind a study wall containing 119 nest holes was created during the 2016 season (with the final inspection hatches and endoscope holes being added in April 2017). Whereas attempts to lure birds towards the 'Petrel Station' were made during the previous two years, there were no such efforts this season. Ad hoc infrared observations during nocturnal guided walks revealed birds entering the Petrel Station this spring, however no close inspection was made until the standard survey period when an MP3 playback census was conducted on the same dates as the Quarry transect visits. The ten visits elicited responses from eight boxes and a mean of 1.8 responses per visit (a response rate within the range observed elsewhere, fractionally higher than that recorded at Quarry transects one and three). Confirmatory checks during the chick provisioning period revealed discrepancies between the playback results and the box contents. Four (50%) of the boxes found to be active during the survey did not contain any signs of a breeding attempt (the remaining four contained an egg stage failure, a chick stage failure and two chicks which went on to fledge, these the first youngsters to fledge from the Petrel Station). Surprisingly five additional boxes contained egg stage failures, all sites which had not been detected during the playback survey; this has obvious implications for the whole Island census as evidently some active sites were not detected over ten visits (which would perhaps suggest that the Skokholm population is larger than estimated in 2016).

It should however be remembered that the Petrel Station is probably not yet representative of the Island as a whole, primarily as the majority of occupants are likely to be younger, first-time breeders. This theory is supported by the productivity estimate; of nine boxes which definitely contained breeding attempts, only two fledged young (a productivity value of 0.22 chicks per pair is well below what is expected on average (see below), as might be predicted for younger, less experienced pairs). Of the four boxes which failed at egg stage last year, only one was occupied this year (an attempt which proved successful).

An additional, albeit probably small, issue with the 2016 whole Island census came to light on the night of 4th July this year. It was an unusually still night, calm enough for Storm Petrel song to reach the Lighthouse Track from an area to the west of Dip Gully. An inspection of this fragile ground that night revealed birds calling from three burrows. Although occupancy of earthen burrows has been documented in the past, a 2016 diurnal playback census of 1000m^2 failed to locate any birds on the plateau above the Quarry and no birds had been met in this habitat type during the previous six years of regular nocturnal activities. No burrow nesters are included in the whole Island estimate.

Sound recording equipment, funded by monies donated during the 2013 Western Orphean Warbler twitch, was installed in eight Petrel Station boxes prior to the spring 2019 arrival of the birds and a functioning infrared camera, sponsored by the British Birds Charitable Trust, was installed in a single box. Long-term goals include an analysis of adult vocalisations in an attempt to recognise birds as individuals (which would potentially allow for an annual assessment of adult overwinter survival). The results of this passive surveillance will be reported upon in due course, however a short video clip from inside a Petrel Station box is available here: www.youtube.com/watch?v=KbtAuOAdPeI

On the night of 2nd August a leucistic or progressively greying individual was taken from the South Haven mist net; it had white throat feathering and a thin white breast band. This follows a bird taken on 25th July last year which had a white throat, a broken white breast band and a white nape patch. Of over 4500 birds handled since 2013, these are the only two to show more than a single aberrant feather. Although such individuals are clearly unusual, similar white patches are documented on occasion; a comparable bird photographed on Filfla, Malta in 2001 was recorded in a paper which mentions a few other incidences in Storm Petrels (Sultana and Borg, 2002).

In 2013 a thermal imaging camera recorded a Short-eared Owl hunting Storm Petrels in the Quarry, an event which has subsequently been shown to be quite regular. The remains of six petrels were found that year, with 16 in 2014, 18 in 2015, 51 in 2016, 98 in 2017 (the only year on record in which Short-eared Owls have been proven to breed) and 31 last year; the majority of all these remains were thought to be the victims of Short-eared Owls, usually due to the presence of feathers or pellets (five of the 31 found last year were attributed to predation by gulls). There were only 25 Short-eared Owl bird-days logged this season, the third lowest tally of the last seven years, whilst the remains of only five Storm Petrels were located (two adults and two fledglings were taken by Short-eared Owls and one fledgling had seemingly failed to extricate itself from a dense patch of Common Nettle *Urtica dioica*). A Little Owl logged on 17th March last year was fortunately not seen again; this introduced species is a well-documented Storm Petrel predator, for example the Skokholm Bird Observatory report of 1936 includes details of a Little Owl nest containing the

remains of nearly 200 Storm Petrels. A House Mouse *Mus musculus* was watched via a live infrared camera feed as it entered Petrel Station burrow 64 on the night of 18th September; it was seen to walk to the end of the entrance tunnel but did not drop down into the chamber or interact with the Storm Petrel chick, indeed neither seemingly reacted to the other's presence (Davison, *pers*. *comm*.).

There were 19 sites discovered this season where an incubating bird was evident early enough in the nesting period to allow a productivity estimate to be made (20 sites in 2018, 14 in 2017, 12 in 2016, 20 in 2015 and 13 in 2014); the Petrel Station birds were again not included as it was felt that the sample could be biased towards younger, less experienced birds. Although some early egg stage failures may have been missed, the study is biased towards birds in shallow crevices or boxes and the sample size is far from great, these visible birds provide a rare opportunity to estimate productivity on Skokholm. Away from these study sites, the first eggshell fragments indicative of a hatched chick were found along Quarry transect one on 29th June, seven days earlier than the first of last year, four days earlier than the first of 2017 and three days earlier than the first of 2016. Of the 19 monitored nests only one, in the Gantry, definitely failed at egg stage (the egg was later found to be damaged), two failed at either egg or small chick stage (but neither could be located), two failed at chick stage (one in an exposed Quarry site perished within a week of being left unattended whilst one in a North Haven crevice was nearly a month old) and 14 fledged young. Productivity was thus calculated to be 0.74 fledglings per pair, the highest estimate of the last six years (there were 0.55 fledglings per pair in 2018, 0.50 in 2017, 0.58 in 2016, 0.55 in 2014 and 0.69 in 2014).

Although only small numbers of accessible chicks are ringed each year on Skokholm, tape luring of adult birds in South Haven is giving some indication as to their post-fledging survival. Of 32 chicks ringed between 2013 and 2015, seven (21.9%) have been mist netted in South Haven in subsequent years (at between one year, 323 days and three years, 344 days later) and an eighth bird, ringed as a chick in October 2015, was controlled at Gwennap Head, Cornwall in 2018; thus at least eight (25.0%) of the 32 survived a minimum of two winters. Intriguingly 12 of the 32 were ringed at either the Quarry or Wall's End and have not been encountered again; although this may be due to chance or differing survival rates, it is perhaps possible that young non-breeders return to sites close to their natal crevice, in this instance sites far enough from the South Haven MP3 lure that birds are not attracted. If the Quarry and Wall's End birds are removed from the equation, eight of 20 birds (40.0%) have been reencountered. If only the 2014 data is used, three of seven chicks have survived for at least one year, 323 days since being ringed (42.9%). However, of the six chicks ringed in 2016, the seven ringed in 2017 and the ten ringed last year, only singles from 2016 and 2017 had been reencountered by the end of this year (one of which was mist netted on the nearby mainland).

Adult Storm Petrels were lured to the traditional South Haven netting site on 13 nights between 15th July and 26th August, one fewer night than last year but four more than in 2017, five more than in 2016 and two more than in 2015. Along with generating some fantastic data, these nights also proved very popular with guests to the Island. The largest catch was of 169 birds on the night of 15th July; although up on the peak of 142 logged last year, the total was well down on the 252 of 24th July 2017 and the 247 of 22nd July 2016. Of 846 adults handled in South Haven this year, 10.2% were already wearing a ring (11.4% in 2018, 12.9% in 2017, 6.8% in 2016, 12.3% in 2015 and 7.5% in 2014), there were single retraps from 2013, 2015 and 2016, three from 2017 (including a bird ringed as a pullus), nine from 2018 and 41 (4.85%) had been ringed elsewhere (3.58% in 2018, 4.02% in 2017, 3.03% in 2016 and 3.45% in 2015). Additional to the birds listed below, we received news of 13 birds ringed at Wooltack Point (4km to the NNE) retrapped on Skokholm (with one retrapped after 30 days, two after 22 days, two after 21 days, one after 20 days, two after 12 days, three after eight days, one after seven days and one retrapped the following day), three birds ringed on Skokholm and retrapped at Wooltack (one ringed as a chick in 2016 which was retrapped after 1024 days and further birds retrapped after 336 and 324 days) and two birds ringed on Skomer Island (4km to the NNW) retrapped on Skokholm (one which was ringed in 2012 and retrapped after 2557 days and one

retrapped after 340 days). Since ringing fully recommenced in 2013 we have now received news of 312 Storm Petrels either ringed on Skokholm and found elsewhere or ringed elsewhere and controlled on Skokholm; of these 193 have been exchanged with sites more than 10km away from the Island (see map below). Unless stated otherwise, all of the following recoveries were of birds deliberately mist netted.

Ringing recovery 2582865
Originally ringed as an adult, RUMPS POINT, NEAR POLZEATH, CORNWALL 19th July 2004
Previously recovered SOUTH HAVEN, SKOKHOLM 23rd July 2014
Recovered SOUTH HAVEN, SKOKHOLM 5th August 2019
Distance travelled 127km at 349 degrees (N)
Days since ringed 5495
At over 16 years of age, this was the oldest individual encountered this year.

Ringing recovery 2607359
Originally ringed as an adult, HOT POINT, THE LIZARD, CORNWALL 6th June 2019
Recovered SOUTH HAVEN, SKOKHOLM 15th July 2019
Recovered SOUTH HAVEN, SKOKHOLM 24th July 2019
Distance travelled 193km at 358 degrees (N)
Days since ringed 39 and 48

Ringing recovery 2619192
Originally ringed as an adult, COPELAND ISLAND, DOWN, NORTHERN IRELAND 20th August 2016
Recovered SOUTH HAVEN, SKOKHOLM 28th July 2019
Distance travelled 332km at 178 degrees (S)
Days since ringed 1072
Additionally 2619643, ringed as an adult at Copeland on 28th July 2018, was controlled in South Haven on 17th July 2019 after 354 days. These are the first two birds to arrive from the Copeland Bird Observatory since ringing recommenced on Skokholm.

Ringing recovery 2637141
Originally ringed as an adult, ST JUSTINIAN, ST DAVIDS, PEMBROKESHIRE 25th June 2019
Recovered SOUTH HAVEN, SKOKHOLM 23rd July 2019
Distance travelled 21km at 174 degrees (S)
Days since ringed 28
Additionally 2637147 was controlled in South Haven on 31st July 2019 after 27 days, 2637148 was controlled on 17th July after 13 days and 2637159 was controlled on 31st July after 26 days.

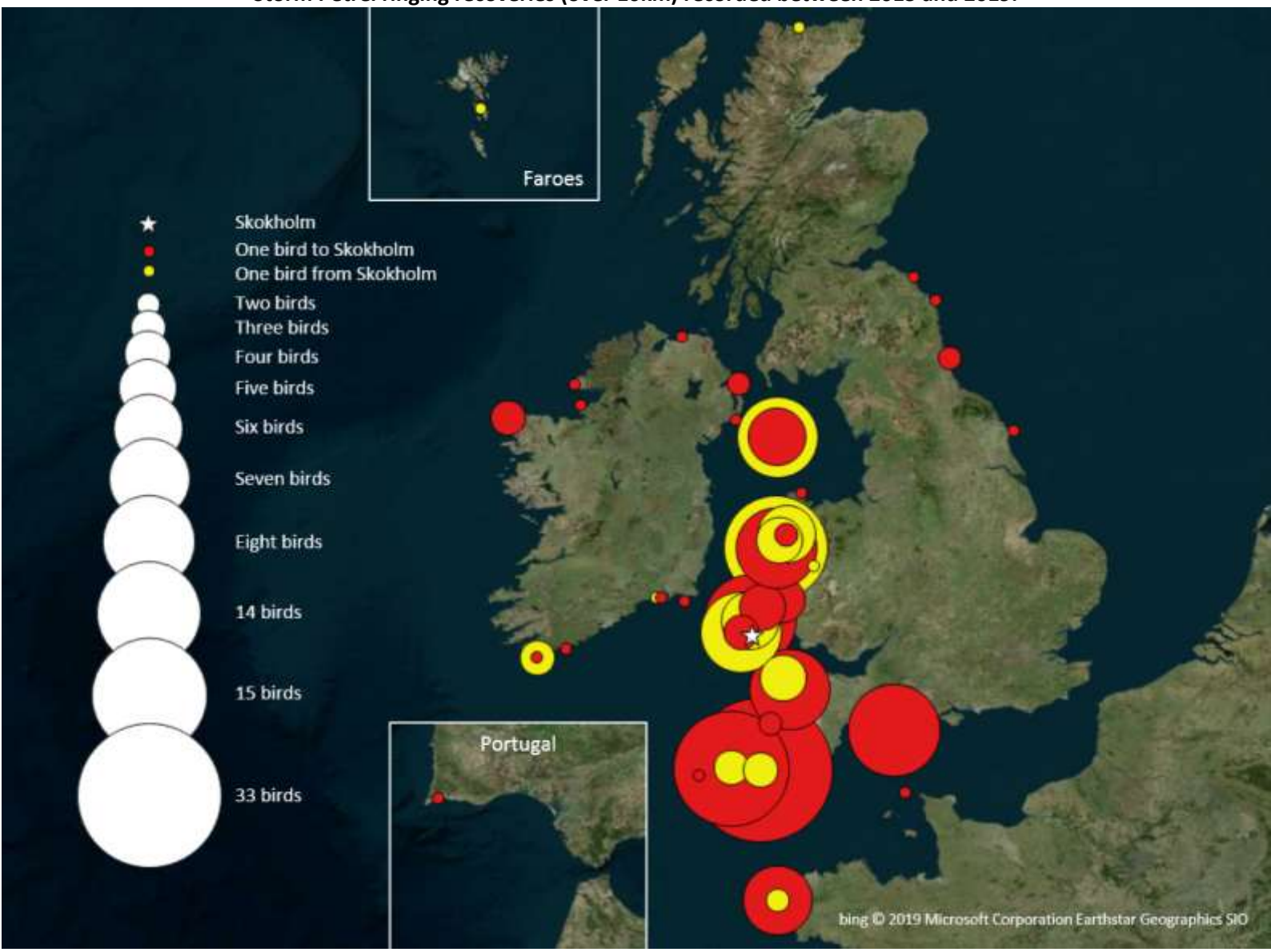
Ringing recovery 2647806
Originally ringed as an adult, BARDSEY ISLAND, GWYNEDD 26th July 2017
Previously recovered SOUTH HAVEN, SKOKHOLM 15th July 2018
Recovered SOUTH HAVEN, SKOKHOLM 28th July 2019
Distance travelled 122km at 197 degrees (SSW)
Days since ringed 732
Additionally 2738141, ringed at Bardsey as an adult on 2nd July 2019, was controlled in South Haven 26 days later on 28th July.

Ringing recovery 2650987
Originally ringed as an adult, SHEEPLAND HARBOUR, DOWN, NORTHERN IRELAND 22nd July 2011
Recovered SOUTH HAVEN, SKOKHOLM 16th July 2019
Distance travelled 288km at 177 degrees (S)
Days since ringed 2916

Intriguingly this is a third 2019 control of a bird ringed in Down, a county with which we have not previously exchanged a bird (see above for the Copeland Bird Observatory controls).

Ringing recovery 2683482
Originally ringed as an adult, GWENNAP HEAD, PORTHGWARRA, CORNWALL 26th July 2018
Recovered SOUTH HAVEN, SKOKHOLM 16th July 2019
Distance travelled 188km at 9 degrees (N)
Days since ringed 355
Additionally 2754614, 2754617, 2754647 and 2754666, all ringed as adults at Gwennap Head on 6th July 2019, were controlled on 24th July, 15th July, 16th July and 13th August after 18, nine, ten and 38 days respectively. 2754804, 2754815 and 2754882, all ringed at Gwennap Head on 2nd July 2019, were controlled on 24th August, 23rd July and 23rd July after 53, 21 and 21 days respectively. In the period between 2013 and 2019 there have been 15 Gwennap Head ringed birds controlled on Skokholm, more than from any non-Pembrokeshire site bar The Lizard.

Storm Petrel ringing recoveries (over 10km) recorded between 2013 and 2019.



Ringing recovery 2685366
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 19th July 2014

Recovered CALF OF MAN, ISLE OF MAN 10th June 2019
Distance travelled 263km at 7 degrees (N)
Days since ringed 1787
Additionally 2722965 and 2740573, ringed as adults in South Haven on 13th July and 4th August 2018, were controlled at the Calf on 5th July 2019 after 357 and 335 days respectively.

Ringing recovery 2685874
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 30th July 2014
Recovered LUNDY ISLAND, DEVON 28th August 2019
Distance travelled 70km at 144 degrees (SE)
Days since ringed 1855
Additionally 2746457, ringed as an adult in South Haven on 2nd August 2019, was controlled at Lundy Island on 26th August after 24 days.

Ringing recovery 2703519
Originally ringed as an adult, MALIN BEG, GLENCOLUMCILLE, DONEGAL, IRELAND 3rd July 2019
Recovered SOUTH HAVEN, SKOKHOLM 16th July 2019
Distance travelled 404km at 145 degrees (SE)
Days since ringed 13
This is the first Skokholm recovery of a bird ringed in Donegal.

Ringing recovery 2705970
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 22nd July 2016
Recovered HOT POINT, THE LIZARD, CORNWALL 6th June 2019
Distance travelled 193km at 178 degrees (S)
Days since ringed 1049

Ringing recovery 2706842
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 25th July 2017
Recovered BANNEG, LE CONQUET, FINISTÉRE, FRANCE 13th June 2018 (sic)
Distance travelled 366km at 177 degrees (S)
Days since ringed 323

Ringing recovery 2715260
Originally ringed as an adult, WHITBURN COUNTRY PARK, TYNE AND WEAR 10th July 2018
Recovered SOUTH HAVEN, SKOKHOLM 4th August 2019
Distance travelled 445km at 216 degrees (SW)
Days since ringed 390
This is the second Storm Petrel ringed in Tyne and Wear to reach Skokholm since 2013, more than from any other east coast county.

Ringing recovery 2718170
Originally ringed as an adult, CALF OF MAN, ISLE OF MAN 5th July 2019
Recovered SOUTH HAVEN, SKOKHOLM 15th July 2019
Distance travelled 263km at 187 degrees (S)
Days since ringed 10
Additionally 2718195, ringed as an adult at the Calf on 20th July 2019, was controlled in South Haven on 27th July after seven days.

Ringing recovery 2722829
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 22nd July 2018
Recovered CAPE CLEAR, CORK, IRELAND 17th August 2019

Distance travelled 294km at 265 degrees (W)
Days since ringed 391
This is the third Skokholm ringed Storm Petrel to reach Cape Clear in the last two years.

Ringing recovery 2722880
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 22nd July 2018
Recovered NAN RON, HIGHLAND, SCOTLAND 2nd August 2019
Distance travelled 764km at 5 degrees (N)
Days since ringed 376
This is the first recovery of a Skokholm ringed Storm Petrel in the highlands of Scotland.

Ringing recovery 2722970
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 13th July 2018
Recovered PORTH YSGADEN, TUDWEILIOG, GWYNEDD 14th August 2018 (sic)
Distance travelled 140km at 18 degrees (NNE)
Days since ringed 32
Additionally there were late reports of 2740528, 2740536 and 2740710, ringed as adults in South Haven on the 3rd, 3rd and 7th August 2018 and controlled at Porth Ysgaden on the 8th, 13th and 8th August 2018 after five, ten and one day respectively (the latter movement being particularly swift).

Ringing recovery 2726235
Originally ringed as an adult, HOT POINT, THE LIZARD, CORNWALL 1st August 2017
Recovered SOUTH HAVEN, SKOKHOLM 3rd August 2019
Distance travelled 193km at 358 degrees (N)
Days since ringed 732
This was one of two Lizard ringed individuals controlled on Skokholm this year, taking the total to 33 (more than twice the number which have arrived from any other non-Pembrokeshire site).

Ringing recovery 2740004
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 14th July 2018
Recovered PORTH IAGO, LLANGWNNADL, GWYNEDD 6th July 2019
Distance travelled 134km at 17 degrees (NNE)
Days since ringed 357
Additionally there was a late report of 2740578, ringed as an adult in South Haven on 4th August 2018 and controlled at Porth Iago on 13th August 2018 after nine days.

Ringing recovery 2740254
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 19th July 2018
Previously recovered SKOMER ISLAND, PEMBROKESHIRE 29th August 2018
Recovered ST JUSTINIAN, ST DAVIDS, PEMBROKESHIRE 4th July 2019
Distance travelled 21km at 354 degrees (N)
Days since ringed 350
Additionally 2740404 and 2740752, ringed as adults in South Haven on 25th July and 9th August 2018, were controlled at St Justinian on 5th July and 25th June 2019 after 345 and 320 days respectively. 2746227, ringed as an adult in South Haven on 23rd July 2019, was controlled at St Justinian on 1st August after nine days.

Ringing recovery 2740449
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 26th July 2018
Recovered GWENNAP HEAD, PORTHGWARRA, CORNWALL 2nd July 2019
Distance travelled 188km at 189 degrees (S)
Days since ringed 341

Ringing recovery 2740735
Originally ringed as an adult, SOUTH HAVEN, SKOKHOLM 9th August 2018
Recovered BARDSEY ISLAND, GWYNEDD 29th May 2019
Distance travelled 124km at 17 degrees (NNE)
Days since ringed 293
Whilst the majority of Storm Petrels controlled on Skokholm have been ringed to our south, primarily in Cornwall and Dorset, the majority of birds ringed on Skokholm are controlled to our north. There have now been 14 Skokholm ringed birds controlled on Bardsey Island, with seven on the Calf of Man being the second highest tally.

Ringing recovery POL N06784
Originally ringed as an adult, PONTA DE ALMADENA, FARO, PORTUGAL 11th June 2018
Recovered SOUTH HAVEN, SKOKHOLM 21st July 2018 (sic)
Distance travelled 1651km at 10 degrees (N)
Days since ringed 40
Full details of the first Portuguese ringed Storm Petrel to be controlled on Skokholm.

Ringing recovery FRP SE33760
Originally ringed as an adult, LE CONQUET, FINISTÉRE, FRANCE 15th June 2019
Recovered SOUTH HAVEN, SKOKHOLM 31st July 2019
Distance travelled 375km at 355 degrees (N)
Days since ringed 46
This is the sixth individual ringed in this region of France to be found on Skokholm since 2013. The commune of Le Conquet is home to Banneg, the largest Storm Petrel colony in France, an island thought to be home to just under a thousand pairs which primarily nest in abandoned Rabbit burrows. Interestingly this nesting habitat was not found to be in use on Skokholm during the 2016 whole Island census (but see above for an intriguing 2019 observation).

Fulmar *Fulmarus glacialis* **Aderyn-drycin y Graig**

Fairly Common Breeder first bred in 1967
1 pullus trapped
1936-1976: 34 trapped, 2017-2018: 4 pulli trapped

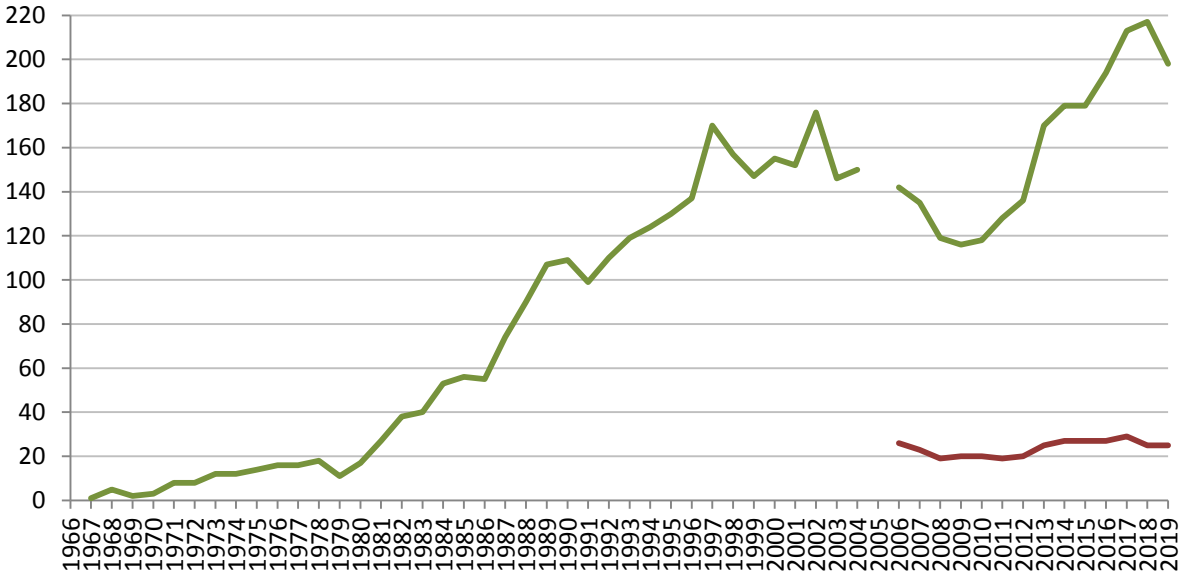
Birds were ashore upon the return of staff on 28th February, however March saw far fewer return to the cliffs than were observed in 2018; whereas over 100 birds were ashore on ten March dates during 2018, counts of 177 on the 1st and 113 on the 2nd were the only three-figure tallies this year. Seawatching in March contributed to seven fewer three-figure daycounts than in 2018, with highs of 201 on the 1st, 154 on the 2nd and 155 on the 6th failing to match peaks of 207 and 183 logged last year. There was however only one date when no birds came ashore at all, two fewer dates than last year, and only three dates when fewer than 20 were logged, also two fewer than last year. April saw regular departures from the cliffs, with lows of between 16 and 54 noted on three dates (nine dates in 2018 and five in 2017) but three-figure counts logged on 17 (11 dates in 2018 and eight in 2017). On 23rd April a Fulmar was watched as it fed around a Great Black-backed Gull breaking up a Manx Shearwater; this was the first observation during the last seven years of a Fulmar seemingly eating shearwater. The pre-laying exodus was less marked this year; following an already depleted 3rd May total of 81, there were ten dates with 70 or fewer birds logged, including a low of 27 on the 4th, but unseasonable highs of 96 on the 11th and 90 on the 13th. The first egg was seen at Rat Bay on 16th May, three days earlier than the first of 2018 and 2017, two days earlier than the first of 2016 and five days earlier than the first of 2015; the first egg of 2014, following prolonged and severe winter storms, was on the 28th.

The whole Island totals (apparently incubating adults), mean plot totals, the range of totals over ten study plot visits, the standard deviation observed over the ten visits since 2013 and the percentage of the Island total made up of study plot birds. (*includes a boat-based count)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Island	118	128*	136	170*	179*	179*	194*	213*	217*	198*
Plots	20	19	20	25	27	27	27	29	25	25
Range	(17-24)	(16-22)	(16-25)	(22-28)	(23-29)	(26-29)	(25-29)	(26-31)	(23-27)	(23-27)
±SD				2.07	1.79	1.14	1.26	2.00	1.26	1.35
Plot %	17.0	14.8	14.7	14.7	15.1	15.1	13.9	13.6	11.5	12.6

The six study plots counted annually since 2006 were visited on ten dates between 24th May and 11th June, a period during which counts were regularly delayed by poor visibility and winds well in excess of the Beaufort force four cut-off. Up until the 2017 season only three of these plots had contained Fulmars, however an apparently incubating bird occupied a niche in the top third of the North Gully auk colony for five dates from 1st June that year; although Fulmars were only found in the usual three plots last year (at Little Bay, Middlerock and Guillemot Cliff), this year again saw an apparently incubating adult in the North Gully plot (although, unlike in 2017, a single record on 9th June did not influence the overall mean). A 2019 mean of 25 apparently incubating birds matched last year, a tally four down on the 2017 record. The mean total for each of the three regularly occupied plots was the same as last year; the Guillemot Cliff total remained at five for a sixth successive year, six Middlerock sites equalled the record set in 2018 and 2016 and the Little Bay tally remained at 14 (this a plot where the number of occupied ledges has steadily declined from a high of 19 in 2013 to 18 in 2014 and 2017, 17 in 2015, 16 in 2016 and 14 in 2018). Quite why the number of apparently incubating adults is declining at Little Bay is unclear, however, given the close proximity of the Little Bay nest ledges to each other, the intraspecific interactions noted in recent years may have had an impact (see below). The number of apparently incubating adults was consistent between visits, with a range of five matching last year and 2016 as the second-tightest spread to date, only one up on a range of four logged 2015.

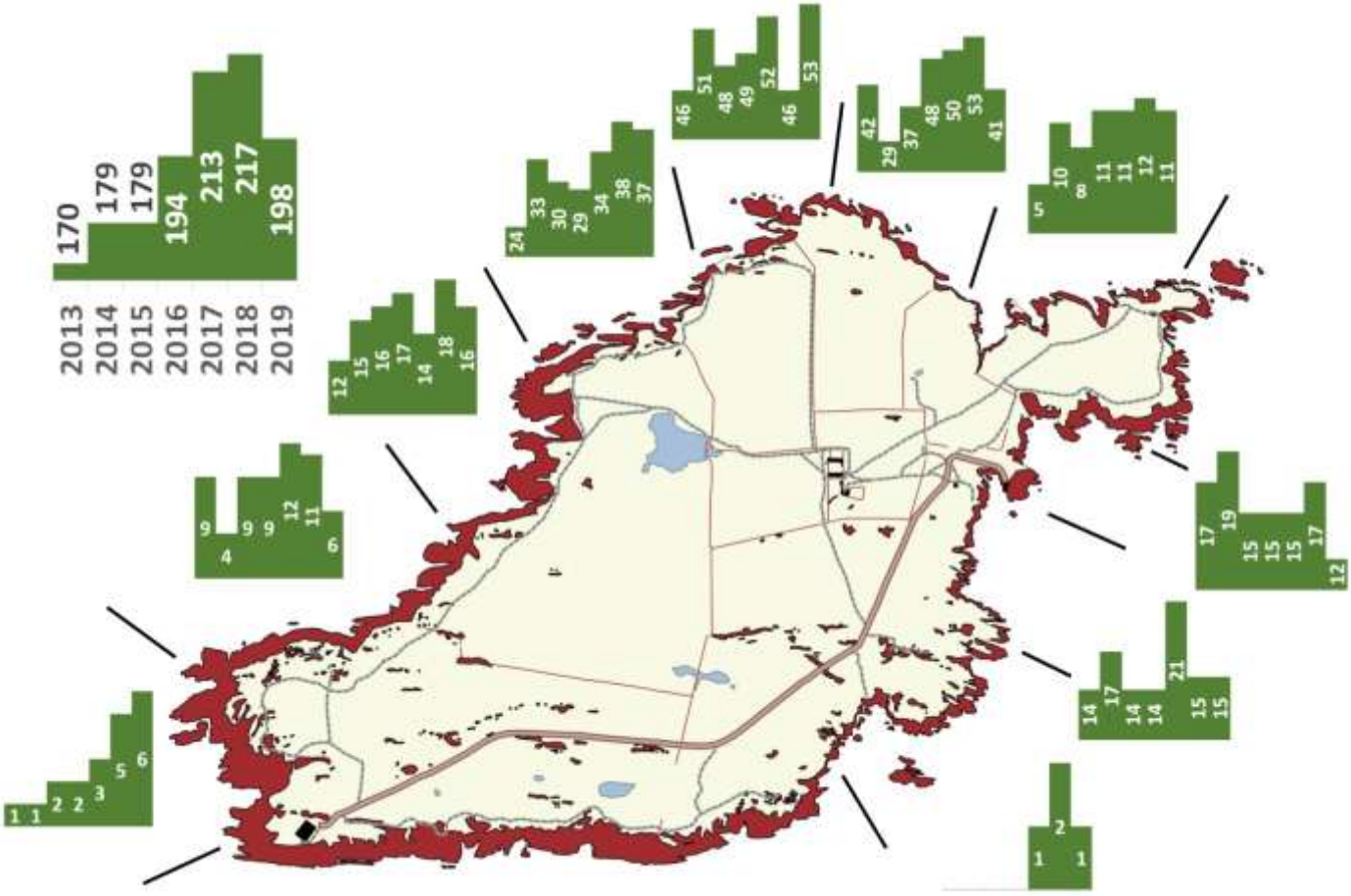
The total number of apparently incubating Fulmar recorded on Skokholm since breeding began in 1967 and the number within the study plots since 2006.



The whole Island count undertaken between 24th May and 7th June yielded an average of 198 apparently incubating adults, this an 8.8% drop on the Skokholm record of 217 counted last year but still the third highest tally to date and a total 14.3% up on the ten year mean (173.20 ±sd 35.12). The largest decline was noted along Near and Far Bays where there were 12 fewer apparently incubating adults; although this is a substantial drop, it should be noted that this is the area of Skokholm where counts are most dependent on a boat-based survey, a single visit which is inevitably prone to more error (as it is not based on an average from multiple visits and requires an accurate assessment of what is an apparently incubating adult from a moving boat). There were declines of five apparently incubating adults at the Bluffs and Peter's Bay, the latter a site which has been prone to particularly poor productivity (see below). There were further declines of between one and two in four survey areas and the Hog Bay tally remained the same as in 2018. There was however an increase of seven apparently incubating adults in the vicinity of Little Bay Point, an increase which reversed the decline logged last year, and an additional site near the Quarry took the tally for that area to six (a new record for this westerly portion of the Island).

The 2019 whole Island count includes approximately 30 pairs which would be difficult or impossible to see from the Island itself (birds seen from a boat north of North Gully, north of Wreck Cove, on the Little Neck and in hidden crevices between Smiths Bay and Little Bay Point). The drop in numbers observed between 2006 and 2012 may perhaps thus be linked to a lack of boat access, although the study plots broadly mirrored the dip in the Island total. The proportion of the Island total made up of study plot birds increased to 12.6% this year; this was, however, still the second lowest recorded since the plots were begun (only up on the 11.5% logged last year) and probably an indication that the study plots are not representative of the Island as a whole (due to a lack of space for expansion).

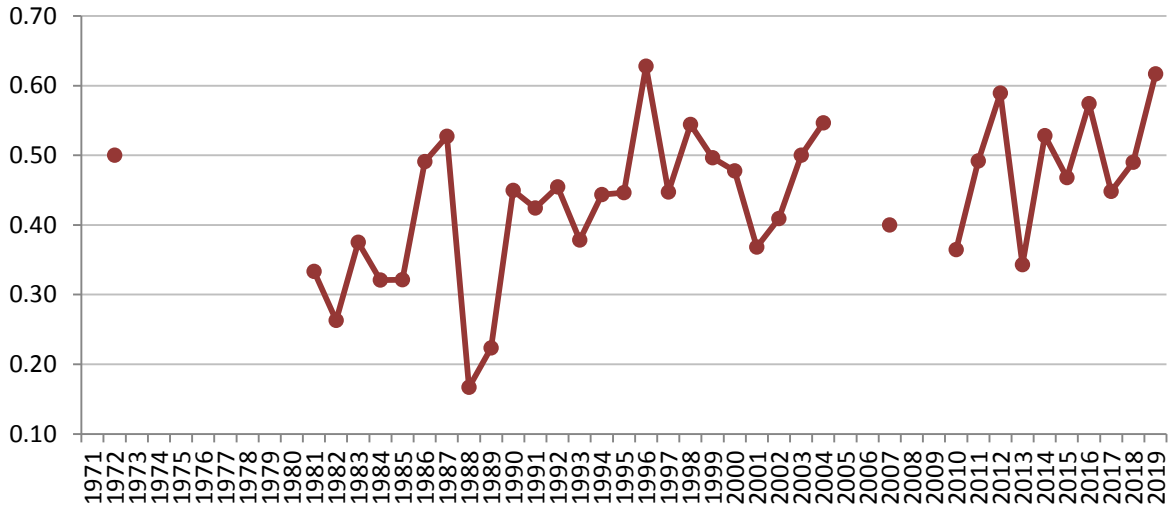
The distribution of apparently incubating Fulmar 2013-2019.



On 18th May 47 incubating adults were selected for productivity monitoring (six at Twinlet, six at North Gully, 20 around Little Bay Point, five at Rat Bay and ten at Peter's Bay); birds seen with eggs or those apparently incubating for ten consecutive days from this date were included in the sample (more birds were initially monitored but were soon discovered not to be incubating). It was again found that eggs were easier to see following heavy rain as energetically preening adults were more likely to reveal their nest scrape. There were four early egg stage failures, after approximately nine, 11, 16 and 18 days, whilst further attempts failed at egg stage after 26 and 37 days respectively. An additional 11 failures became apparent at the time that the eggs of neighbouring pairs were hatching, however the nest sites were found to be empty; although an egg had been seen at one of the nests the day prior to it going missing, none of the 11 failed sites were seen to contain abandoned eggs, hatched eggshell or dead chicks (the contents were thus removed by either the parents, by other Fulmars visiting abandoned ledges, by predators or by scavengers). There was only one definite chick stage failure this year, with an accompanied youngster at Rat Bay perishing at less than a week of age (adults, which accompanied the corpse for four days, were still present on the fifth day when the chick was missing). There were none of the large chick failures observed in 2014, 2015 and 2018.

Of the 47 monitored breeding attempts, 29 (61.70%) were successful; a productivity estimate of 0.62 fledglings per pair is 26.5% up on last year, 40.9% up on the post-1972 average of 0.44 ±se 0.02 and the second highest productivity estimate to date, only down on the 0.63 of 1996. The last six years have seen above average productivity, with a 2013 estimate of 0.34 chicks per pair the last to fall below the mean. A high productivity estimate, coupled with the third highest number of apparently incubating adults to date, leads to a predicted 122 Skokholm fledglings in 2019, this a new high following predicted tallies of 111 in 2016 and 106 last year. Poor productivity at Peter's Bay in 2013, 2014, 2015, 2017 and 2018 influenced the overall figures for those years; Peter's Bay productivity in 2013 was 0.06 (compared with an overall figure of 0.34), in 2014 it was 0.33 (compared with 0.53), in 2015 it was 0.18 (compared with 0.47), in 2017 it was 0.31 (compared with 0.45) and in 2018 it was 0.36 (compared with 0.49). The 2016 season saw 0.54 fledglings per pair, a total virtually identical to the overall value of 0.57. Six of the ten pairs monitored at Peter's Bay were successful this year, the productivity value of 0.60 chicks per pair matching the 0.62 seen overall. The reason for this near annual discrepancy is still unclear, as is what linked the more successful 2016 and 2019 seasons; neither environmental factors, predation pressure nor the behaviour of the birds themselves have been obviously different at this site.

Fulmar productivity (total number of fledged chicks per monitored pair) for each year that it has been calculated between 1972 and 2019. The 1972-2019 mean is 0.44 ±se 0.02 fledglings per pair.



It is likely that the larger Fulmar population of recent years will have affected other species; observations during the last few years have included both adult and young Herring Gulls oiled by nesting Fulmars, adult Fulmars sat on Herring Gull nests, Razorbill adults and chicks evicted from ledges by prospecting birds and an oiled juvenile Peregrine. More intraspecific interactions were noted in 2017, with a heavily oiled adult at Little Bay and birds at both Middlerock and North Gully oiled by aggressive neighbours; in both the latter cases the egg was lost early in the breeding season (prior to the whole Island census). On 22nd April this year, two heavily oiled birds occupied ledges at the eastern side of Middlerock; one of these was the same ledge from which an egg was lost during a similar aggressive encounter in 2017. On 16th May a heavily Fulmar-oiled bird was in Far Bay, sat very close to an agitated individual which was attempting to defend its ledge. A Raven breeding attempt to the east of North Gully failed during the incubation stage; although no interactions were witnessed, the ledge adjacent to the Raven nest was regularly visited by two Fulmar and, following their desertion, one of the Ravens seemingly had oiled plumage.

The first fledglings of the year left natal ledges in Little Bay and at the Neck on 18th August, three days earlier than the first of last year and four days earlier than the first two of 2017 and the first single of 2016 (the first departures were on the 20th in 2015, the 23rd in 2014 and the 25th in 2013). The first three of the chicks monitored for the productivity estimate had departed on 23rd August,

whilst the remaining 26 departed over the following 15 days; 13.8% had fledged by 24th August (20.8% in 2018 and 38.5% in 2017), 51.7% by 29th August (50.0% in both 2018 and 2017), 72.4% by 1st September (83.3% in 2018 and 80.8% in 2017) and 82.8% by 2nd September (95.8% in 2018 and 96.2% in 2017). The last study chick fledged on 7th September, three days later than the last of 2018 and four days later than the last of 2017 but one day earlier than the last of 2016 and three days earlier than the last of 2015. The number of birds around the cliffs again dropped rapidly as the fledglings departed, although there were offshore counts of 64 on 29th August, 96 on 1st September and 63 on 4th September which led to highs of 105, 113 and 102 respectively. Daycounts then dropped steadily from 75 on the 7th to 42 on the 10th, 29 on the 12th and 23 on the 15th, although offshore rafts of 58 and 17 took the total for the 13th to 86. The last bird was seen ashore on 15th September, two days later than last year and nine days later than in 2017. There followed at sea counts of up to seven birds on seven further September dates, totalling 31 bird-days.

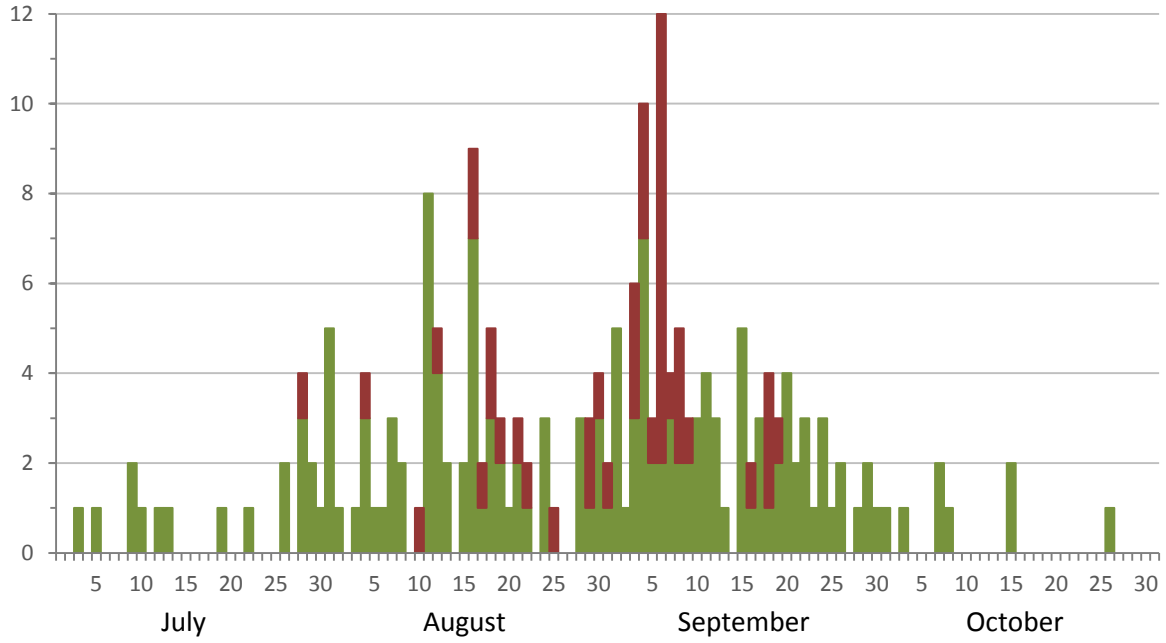
Seawatching during October produced the second lowest bird-days total of the last seven years; despite a cumulative 38 hours and 25 minutes spent seawatching between the 4th and 14th, singles on the 8th and 12th were the only birds logged during the period, whilst six close in around Near and Far Bays on the 25th were the only other Fulmar noted during the month. There were November records on all but two dates from the 4th, although the number of birds present varied considerably; there were eight three-figure counts during the month, including highs of 219 on the 13th, 184 on the 25th and 283 on the 28th (the latter the highest ever November daycount, eclipsing the 227 logged in 2016) but lows of five or less on six dates in addition to the two days on which birds were absent. A single was back on the cliffs on 4th November, two days earlier than the first single of 2018 and the first 33 to return to shore in 2017, six days before the first five of 2016 and seven before the first single of 2015. There were birds ashore on 19 further November dates, including peaks of 122 on the 13th, 127 on the 24th, 141 on the 25th, 128 on the 27th and a record 189 on the 28th. Daily sightings continued until the departure of staff on 3rd December, with birds ashore on all three December dates and a high of 173 on the 2nd, 101 of which were ashore.

Sooty Shearwater *Ardenna grisea* **Aderyn Drycin Du**
Scarce recorded most autumns from July onwards and occasionally Uncommon
Earliest 3rd July 1968 (10th August 2019) **Latest** 26th October 1994 (30th August 2019)

One heading southeast on 10th August was the first of the autumn, this six days earlier than the first of last year but two weeks later than the first of 2017. There were further August singles logged on

the 16th, 18th, 22nd, 25th, 29th and 30th. An annual bird-days total of seven matched that of 1966 and 1993 as the eighth highest to date, albeit well down on peaks of 19 in 1987, 16 in 1989 and 22 in 2011. This southern hemisphere breeder remains a surprisingly scarce Skokholm species, with this year's records taking the 21st century total to just 50 bird-days, only 21 of which have come in the last seven years.

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



Manx Shearwater *Puffinus puffinus* **Aderyn Drycin Manaw**
Very Abundant Breeder a 2018 census estimated 88,945 pairs (95% CI: 21,892). 2012-13 est. 63,980
2041 trapped (including 119 pulli), 1017 retrapped, 1 control
1936-1976: 169,895 trapped, 2011-2018: 10,232 trapped, 4059 retrapped, 22 controls

One west off the Lighthouse on the afternoon of 3rd March was the earliest Skokholm record since one on 27th February 2000. A further 16 went west during late afternoon on the 12th, three did likewise on the 14th, 226 were offshore on the 16th and a single was logged the following day. Although an eaten bird had been found on 15th March, it was not until the 21st that their raucous calls were heard ashore after dark, this seven days later than the first of 2018 and two days later than the first of 2017. Numbers increased quickly but, as in the previous four years, seawatching during April produced some surprisingly small counts. Nevertheless the passage of Storm Hannah on 26th April coincided with a significant increase in the number present offshore, indeed the three highest April daycounts of the last decade were logged; there were 21,600 counted on the 26th and 13,733 the following day, whilst calmer southeasterlies on the 29th saw 19,880 logged. Calm weather during May led to lower daycounts than last year, although peak raft counts of 14,500 on the 18th, 14,000 on the 29th and 12,020 on the 31st were close to the seven year May mean. Prolonged heavy rain and near gale gusts on 16th June brought the highest daycount of the year, with up to 600 birds a minute passing the Lighthouse and a minimum of 72,000 logged; this was, despite the rather unremarkable conditions, the highest daycount ever recorded on Skokholm (although more than twice this number are thought to breed on the Island and ten times this number use the waters around the Pembrokeshire islands). The peak July counts were the lowest of the last three years, with 21,338 offshore during gale force gusts on the 21st and 23,990 offshore during a strong breeze on the 30th; these were two of only four five-figure July counts, this three fewer than last year. There were seven five-figure August daycounts, the same number as last year but four fewer than in 2017,

and highs of 33,410 on the 4th, 42,868 on the 9th and 53,684 on the 16th, the latter of which was the highest August daycount since the 60,140 of 2013; all three peak counts coincided with days of heavy showers or rain, the former two with near gales and the latter with storm force southerlies.

The number of Manx Shearwaters breeding in the study plots which were encountered the following year and the number to have been found by 2019 (which were thus actually alive the following year).

	Birds found the next year		Birds found by 2019	
Birds breeding in 2018	247 of 296	83.45%		
Birds breeding in 2017	236 of 309	76.38%	244 of 309	78.96%
Birds breeding in 2016	238 of 287	82.93%	263 of 287	91.64%
Birds breeding in 2015	230 of 283	81.27%	247 of 283	87.28%
Birds breeding in 2014	215 of 278	77.34%	236 of 278	84.89%
Birds breeding in 2013	116 of 141	82.27%	125 of 141	88.65%

Three areas of study burrows, that is to say natural burrows where a paving slab covers a manmade access point to the nest chamber, were established in 2012 and 2013; all birds encountered within the burrows are ringed. Of 296 breeding adults bearing rings in 2018, 247 were found this year (83.45%); this was the highest next year return rate of the last six years. However this figure is not an accurate estimate of adult survival as there was little searching for marked birds in neighbouring, non-study burrows; the number of birds known to be alive will thus be revised upwards as they are discovered in future years. For example 82.27% of 2013 adults were encountered in 2014, but we now know that at least 88.65% of birds were alive (see above table). There is a discrepancy in return rates dependent on the breeding success of the previous year; of 217 birds successful with their 2018 breeding attempt, 191 were found in 2019 (88.02%), whereas only 55 of 79 unsuccessful birds returned (69.62%). Of 67 birds which went missing in 2019, 41 (61.19%) had either failed with their 2018 breeding attempt or had been found without an egg in a burrow in which they had previously bred. Assuming that not all of the failures were due to the death of a bird, it could be concluded that some of the missing birds have rather opted for more suitable nesting sites. It was noted in 2017 that Storm Ophelia had caused considerable damage to the Lighthouse Study Plot, a destruction of burrows which no doubt led, at least in part, to the reduced number of recaptures in 2018; although eight of the missing birds were found in 2019, the return rate of 2017 breeders remains the lowest of the last six years. Ultimately the study burrows give a better insight into burrow fidelity and show

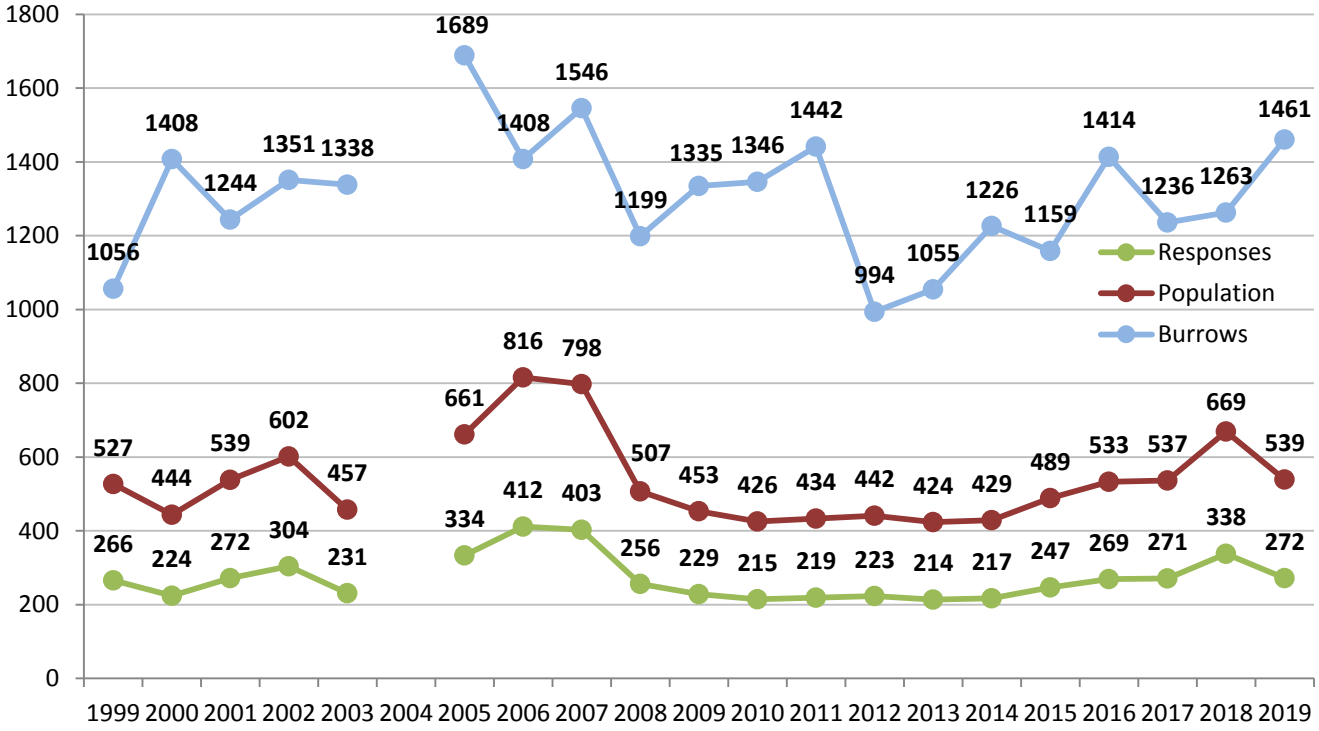
an interesting correlation with the stability of the colony; in the fragile Lighthouse colony 22 of 107 marked birds were in the same burrow this year as that in which they bred in 2013 (20.6%), whereas in the more stable Crab Bay and Quarry Track colonies 26 of 55 birds (47.3%) and nine of 18 birds (50.0%) were still in their 2013 burrows respectively. The fragile nature of the Lighthouse colony, along with the high density of burrowing birds and occasional storm events, sees the structure of the breeding tunnels change annually; clearly some lose their suitability as nest sites.

A Manx Shearwater ringing transect was established in 2013. It was defined as the track between the Observatory and the Lighthouse and the length of a landing net to either side; ringers were not to deviate from the track. The aim was to see whether, by ringing birds on the surface in this defined area, the retrap data could be interpreted to provide large sample size estimates of adult survival and the recruitment of juveniles to the breeding population. This is still a project in its infancy which is producing a substantial amount of data, data which is currently difficult to examine in any detail as the British Trust for Ornithology changes its recording system from IPMR to DemOn (the latter of which still lacks the reporting capabilities of the former). Of the 8625 birds ringed along the transect between 2013 and 2019 (3308 of which were ringed as fledglings), 2066 have been retrapped or found dead on Skokholm subsequently (with these recaptured individuals accounting for 3471 separate handlings).

The study burrows facilitate an accurate assessment of breeding success on Skokholm. There were 128 burrows at the Lighthouse occupied by a pair which produced an egg, 11 burrows contained an egg along the Quarry Track and 20 pairs produced an egg inland of Crab Bay. There were thus 159 burrows this year from which productivity could be assessed (156 in 2018 and 159 in 2017). Of these 12 definitely failed at egg stage and 17 failed at egg or very small chick stage (but neither eggs nor dead chicks were found). Although an additional 15 attempts failed at chick stage, only four dead chicks were present (one of which was recently hatched and others with wing chords of 32mm, 51mm and 132mm); the remaining 11 chicks went missing, probably as the result of having been located by Great Black-backed Gulls. This year saw a significant increase in the number of Great Black-backed Gulls observed digging chicks out from burrows, indeed it seemed likely that a small

number of birds were specialising in this form of hunting (although they were not ringed, making it impossible to confirm individuals, they worked the same areas of burrows from day to day); it was thus no surprise that all of the missing chicks were from the Lighthouse plot, this being one of the areas in which a gull was regularly seen digging. For a chick to be assumed to be of fledging size it was required to reach a wing length in excess of 200mm (although not ready to fledge, we have shown that chicks larger than this size may swap to a different burrow and therefore go undetected). There were 115 chicks which reached this size in 2019. Productivity was thus 0.72 fledging-sized chicks per breeding pair (72.33% of pairs produced a fledging-sized chick). This was fractionally up on the 0.70 logged last year and the 2013-2018 mean of 0.71 ±se 0.02, albeit down on the 0.80 of 2017 which was the most productive of the last seven years. It should be noted that this is the number of chicks which attained fledging size and does not reflect the number of fledglings which are lost to Great Black-backed Gull (and to a lesser extent corvid) predation as they exercise their flight muscles and make their first flights. Having said that, only one of the 115 fledglings ringed in the study plots was found eaten this year (none of the 114 fledglings were found in 2018 and only two of 135 were found eaten in 2017).

The total number of burrows, responses and the corrected population estimate for the 7000 square metres sampled annually since 1999.

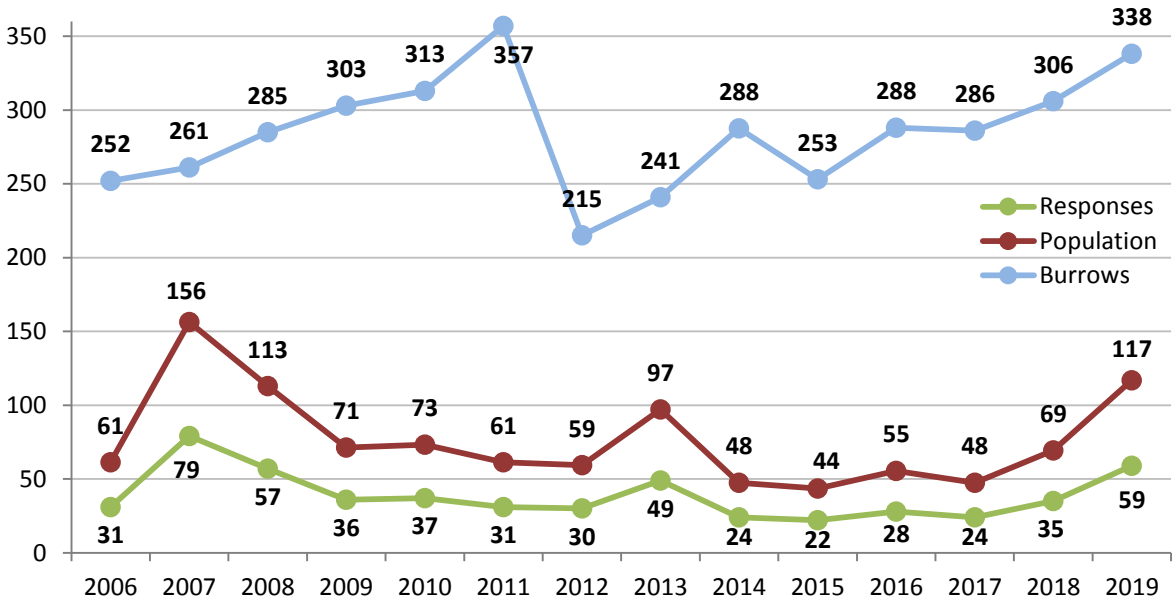


In 1999 nine study areas, each a circle of 1000 square metres, were established to allow a reasonable subset of the Skokholm Manx Shearwater population to be monitored from year to year. Two of these plots were discontinued, one in 2006 and one in 2007, as the survey work was disturbing the Lesser Black-backed Gull colonies. New plots were established in 2006 and 2015 to maintain a good sample area, however only seven plots have been sampled for a full 20 years. On each annual visit the number of burrows within the area is counted, along with the number of burrows from which a response is elicited when the call of a male bird is played down them. The standard correction factor (1.98) is then used to estimate the population within the area (see the 2013 and 2014 Seabird Reports for checking of the correction factor).

The drop from 2007 numbers (see graph above) was previously attributed to the collapse of many burrows in the more fragile areas of Skokholm, particularly near the Lighthouse which was at one

time the densest area of breeding Manx Shearwaters on the Planet (Smith *et al.*, 2001). Although this may certainly have played a role, it seems unlikely that it would be a major factor as there are considerably more burrows than pairs and the number of burrows appears to fluctuate independently of the number of tape playback responses. The eighth sample plot, begun in 2006, shows nicely the apparent lack of connectivity between the number of burrows and the apparent number of breeding pairs (see graph below); a 39.8% decline in the number of burrows between 2011 and 2012 coincided with virtually no change in the number of apparently occupied burrows, whereas a 154.8% increase in the number of responses between 2006 and 2007 coincided with an increase of just nine burrows. These discrepancies may be attributable to the number of burrows frequently being altered by Rabbits, the weather, in some areas by Puffins and perhaps most markedly in some places, the digging of non-breeding Manx Shearwaters.

The total number of burrows, responses and the corrected population estimate for the 1000 square metre plot sampled annually since 2006.



The overall number of responses across 8000m^2 was the second highest since 2007 and 7.9% up on the 2006-2018 mean (608.08 ±sd 152.52), albeit 11.1% down on last year (see table below). This was the result of a drop of between one and ten responses in five plots, a drop of 33 responses in the Quarry Track plot, no change in one plot and an increase of 24 responses in the Western Plain plot. Although a decline of 33 responses in 1000m^2 is substantial, the same area had seen a remarkable increase of 67 responses during the previous year; these fluctuations are probably explained in part by variability in the response rate rather than genuine significant changes in the number of occupied burrows. It would appear that the Skokholm breeding population can still be cautiously regarded as stable, although the observed variance in the percentage of birds which respond to the playback on any given date highlights both the degree of error in these numbers and the importance of continued monitoring (see Brown and Eagle, 2013 and 2014). That the number of pairs producing eggs in the study burrows is also rather constant supports the conclusion that the population is stable (see above).

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

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
869	954	620	525	499	495	501	521	477	533	588	585	738	656

Whereas the annual plots are visited using cassette tapes of male song to elicit responses from occupied burrows, the latest whole Island census utilised a .WAV recording of a duetting pair as it

has been shown that a dual-sex recording achieves a higher and less variable response rate (Brown and Eagle, 2018; Perkins *et al*., 2017). Bearing this in mind, along with the fact that the cassettes and playback devices are becoming harder to maintain and replace, it was felt that it was time to begin the process of changing the annual plot methodology from the use of cassettes to the use of .WAV playback. This changeover will occur over the course of several years to ensure that the data collected over the last 20 years remains comparable with that collected in the future. This year saw each of nine plots visited twice between 28th May and 13th June, five of which were first visited with the tape and four of which were first visited with the .WAV; the second playback method was used on the same day, but with a gap of at least two hours between visits, and the total number of burrows was counted on both visits to assess the repeatability of the count.

The number of responses elicited using tape and .WAV playback at the nine annual plots and the difference in the population estimate if the standard corrections are applied.

Plot	Tape			.WAV			Difference in burrow counts	Difference in the estimate
	Burrows	Responses	Estimate*	Burrows	Responses	Estimate*		
B**	107	14	28	107	16	22	**0**	**6**
C**	182	19	38	184	28	39	**-2**	**-1**
D†	235	6	12	229	16	22	**6**	**-10**
F**	42	9	18	38	8	11	**4**	**7**
H†	127	35	69	131	46	64	**-4**	**5**
I†	458	129	255	454	170	236	**4**	**19**
J**	310	60	119	310	85	118	**0**	**1**
K**	338	59	117	348	67	93	**-10**	**24**
L†	202	34	67	191	50	70	**11**	**-3**
Total	**2001**	**365**	**723**	**1992**	**486**	**675**	**9**	**48**

* the tape playback estimate is based on the standard correction factor of 1.98 (see Brown and Eagle, 2014) and the .WAV estimate is based on the Skokholm correction factor of 1.39 established during the 2018 whole Island census (the combined Skokholm and Skomer figure was 1.65).
** the tape playback visit came before the .WAV visit.
† the .WAV playback visit came before the tape visit.

The number of burrows counted on each visit was reassuringly similar, lending support to the conclusion that the often significant differences seen in the number of burrows between years (above two graphs) are genuine. Although, as anticipated, the .WAV dual-sex recording elicited more responses (as females also called back), the use of the 2018 whole Island correction factor of 1.39 led to a lower population estimate than that produced using the tape playback and standard 1.98 correction; it was predicted that there were 48 fewer occupied burrows, a 6.6% drop in the population estimate. A correction of 1.49 would need to be applied to the number of .WAV responses to predict the same number of occupied burrows as using the tape methodology. The combined Skokholm and Skomer correction of 1.65 used during the whole Island surveys predicts 802 occupied burrows, 79 more than the tape playback prediction and 127 more than the Skokholm specific 1.39 corrected total.

In the period between 1957 and 1997 the number of dead Manx Shearwaters located on Skokholm was recorded in the daily census log. The corpses were either stored or thrown into the sea to ensure that birds were not counted more than once. The practice was stopped in 1997 as it was felt that the removal of corpses would be impacting the species reliant on this food source. However, with a Great Black-backed Gull population more than twice the size it was when the counting was stopped, the study was begun again in 2014. To limit the impact on the scavenging community, the birds were left in situ but their wings were painted with stock marker so that they were not double counted. This year, as in the previous four, corpses were marked by neatly slicing the flight feathers

of both wings with a pair of scissors (using scissors has the added advantage that it makes it easier to check for rings in tightly inverted corpses). Although the vast majority of Manx Shearwater kills are made by Great Black-backed Gulls, a small number are also taken by Peregrines and Ravens.

The number of Manx Shearwater corpses found between 1957 and 1983 from Gynn (1984) plus data from 1984 to 1991 and 2014 to 2019. The number of Great Black-backed Gull breeding pairs is also included for each year.

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

As might be expected with a larger Great Black-backed Gull breeding population, the number of corpses marked over the last six years has been the most ever. However the average number of corpses per Great Black-backed Gull pair was lower this year than in all years except 1959 and 1970. One possible explanation for this reduction in kills per pair is that the breeding gulls were routinely disturbed between 1949 and 1985 which, while reducing the number of breeding pairs, probably inflated the non-breeding flock which would still be taking shearwaters. However we do not currently have an explanation as to why the number of kills per pair has fallen steadily from 50.8 in 2014 to 31.5 this year (see below table). There was a significant drop in the number of adult corpses found this year, with the total 27.4% down on last year and 44.8% down on 2014 (which was the highest total to date). Given that the Manx Shearwater population is seemingly stable or increasing (see above), this decline almost certainly does not reflect a drop in the number available to the gulls. It is often suggested that the majority of predated shearwaters are younger, less experienced non-breeders, those which spend longer on the surface as they prospect for burrows and mates; a reduction in corpses may thus reflect a drop in abundance of these more vulnerable birds, a decline which would perhaps not be obvious during the playback and study burrow surveys but which could

have an effect on the future growth of the population. However the 54 ringed adults found eaten this year do little to support this theory (see below table); although several more years of ringing data would be helpful and there is no information on the breeding status of those eaten (so they could perhaps still have been unpaired or burrowless birds spending longer on the surface), there is no evidence that the birds being eaten are younger. Other factors which may impact predation rates are vegetation heights, the number of gulls specialising in shearwaters (Westerberg *et al*., 2018), the complexities of the weather and moon cycle influencing hunting, the availability of food away from the Island and the size of the Rabbit population (Rabbits being the other main prey item on Skokholm). The prevalence of puffinosis may affect juvenile losses (see below).

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

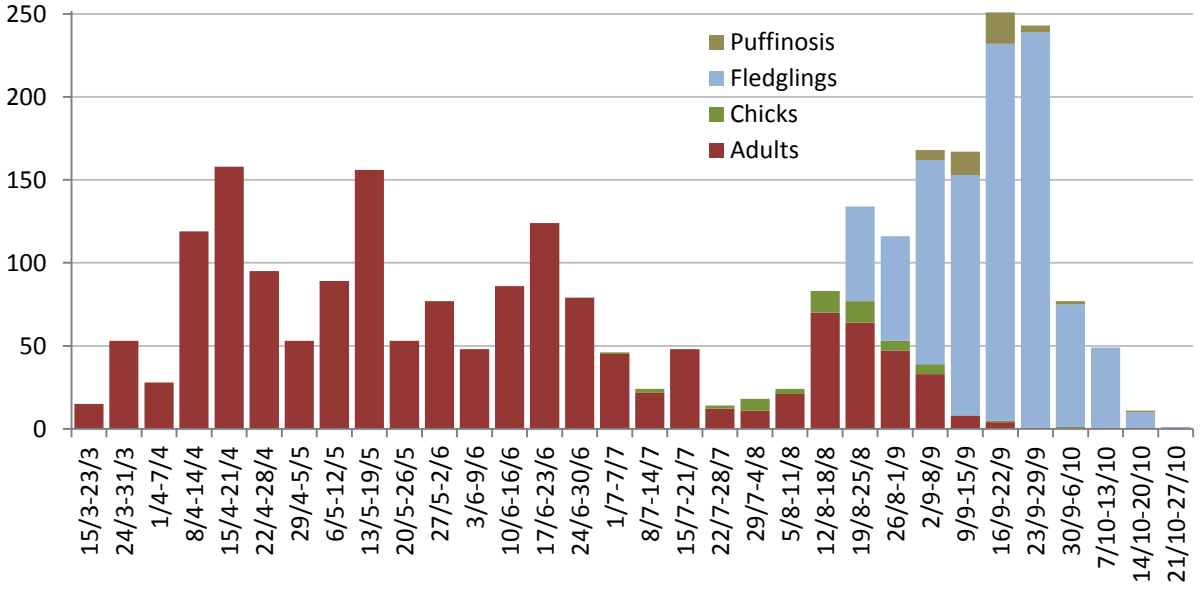
	2014	2015	2016	2017	2018	2019
Adults	2931	2702	2299	2071	2228	1618
Juveniles	1287	1324	1398	1289	971	1043
Puffinosis	53	97	85	89	71	46
Total	**4271**	**4123**	**3782**	**3449**	**3270**	**2707**

When the 54* marked adults found eaten in 2019 were ringed. Note that the pre-2013 bird was a control ringed elsewhere and that intensive ringing on Skokholm recommenced in 2013.

Fledged 2008	Adult 2013	Fledged 2013	Adult 2014	Fledged 2014	Adult 2015	Adult 2016	Adult 2017	Adult 2018	Adult 2019
1	7	3	13	1	8	3	7	10	1

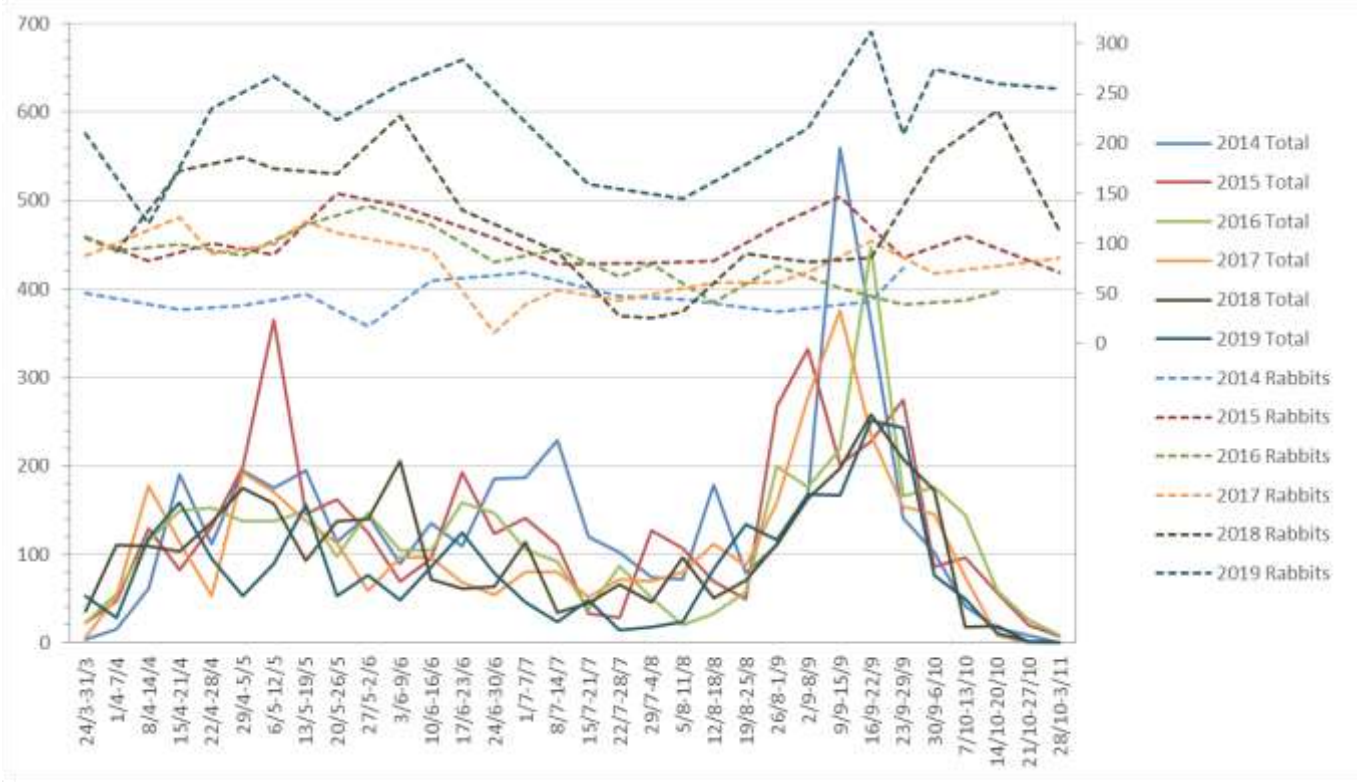
* there were also 54 ringed adults found eaten in 2018.

The number of corpses found during each week from 15th March until 27th October.



The data from the last six years lends some support to the theory that Rabbit numbers influence Manx Shearwater predation, with the North Plain Rabbit population being considerably lower in 2014 when adult shearwater mortality was at its highest. Likewise the increase in the Rabbit population witnessed this year, which saw the highest counts of the last six years, coincided with the lowest carcass totals logged during the same period. One potential issue with this comparison is that North Plain Rabbit counts are probably not representative of the Island as a whole, with the effects of Viral Haemorrhagic Disease seemingly differing in different parts of the Island at different times. Another crash in Rabbit numbers linked to an increase in dead shearwaters should however be enough to confirm this apparent relationship.

The total number of Manx Shearwater carcasses found each week 2014-2019 and the number of Rabbits counted in the North Plain census plot during the same period.



A fledgling found near the Sugarloaf on the night of 13th September exhibited extremely short inner toes (below photographs). The same bird was found eaten on the morning of 17th September.

The first three fledglings were encountered on the evening of 18th August, nine days earlier than the first of last year, three days earlier than the first of 2017 and 2015, five earlier than the first of 2016 and 2013 and seven earlier than the first of 2014. The first fledgling showing signs of puffinosis was found on the night of 25th August, seven days earlier than the first of last year but one later than the first of 2017. Puffinosis is a mysterious affliction which, possibly due to the actions of a virus which leads to bacterial infection, sees the development of conjunctivitis, blistered feet and problems with limb control; it is often fatal. The number of puffinosised birds found dead and intact has been

relatively consistent over the last six years, with between 46 and 97 corpses attributed to the disease (see above table); the low came this year and coincided with the lowest survey total of the last five years (see below table). However considerably more infected birds are seen than found dead; unlike predated birds, which are usually taken to open areas, puffinosised birds may die deep in the Bracken and go unfound. In an attempt to achieve a better understanding of how puffinosised birds are distributed across Skokholm during the course of the autumn and of how the number of infected individuals changes from year to year, a transect walked by Island staff over eight September nights was established in 2015 (the 2015 report gives details of the route). The position of each fledgling is recorded using a GPS unit before they are inspected for signs of puffinosis.

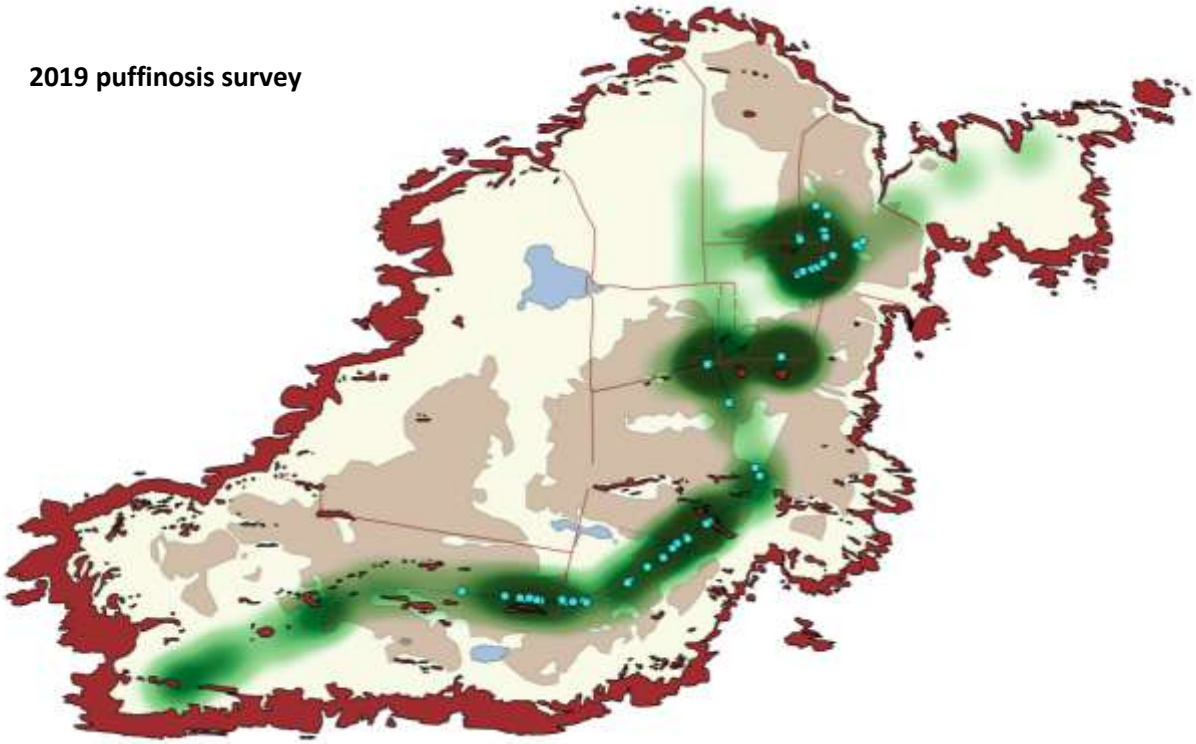
The number of fledgling Manx Shearwaters encountered along the transect between 2019 and 2015, the number which showed signs of puffinosis and the proportion of encountered birds made up of those showing signs.

2019	1st-2nd	4th-5th	7th-8th	11th-12th	13th-14th	16th-17th	18th-19th	20th-21st	Total
Birds	120	182	100	70	55	81	34	49	691
Puffinosised	6	2	11	16	9	9	6	6	65
% Puffinosised	5.0	1.1	11.0	22.9	16.4	11.1	17.6	12.2	9.4
2018	1st-2nd	4th-5th	7th-8th	9th-10th	12th-13th	15th-16th	18th-19th	21st-22nd	
Birds	72	142	139	197	155	167	88	48	1008
Puffinosised	2	3	11	16	23	21	10	2	88
% Puffinosised	2.8	2.1	7.9	8.1	14.8	12.6	11.4	4.2	8.7
2017	1st-2nd	4th-5th	8th-9th	11th-12th	14th-15th	17th-18th	20th-21st	23rd-24th	
Birds	44	77	100	115	66	43	42	21	508
Puffinosised	4	13	16	10	4	16	14	1	78
% Puffinosised	9.1	16.9	16.0	8.7	6.1	37.2	33.3	4.8	15.4
2016	2nd-3rd	5th-6th	8th-9th	11th-12th	14th-15th	17th-18th	20th-21st	23rd-24th	
Birds	110	194	159	88	42	33	43	51	720
Puffinosised	20	18	22	13	8	5	5	6	97
% Puffinosised	18.2	9.3	13.8	14.8	19.1	15.2	11.6	11.8	13.5
2015	1st-2nd	4th-5th	7th-8th	10th-11th	13th-14th	16th-17th	19th-20th	21st-22nd	
Birds	54	164	219	155	162	101	58	41	954
Puffinosised	3	29	63	31	55	55	32	10	278
% Puffinosised	5.6	17.7	28.8	20.0	34.0	54.5	55.2	24.4	29.1

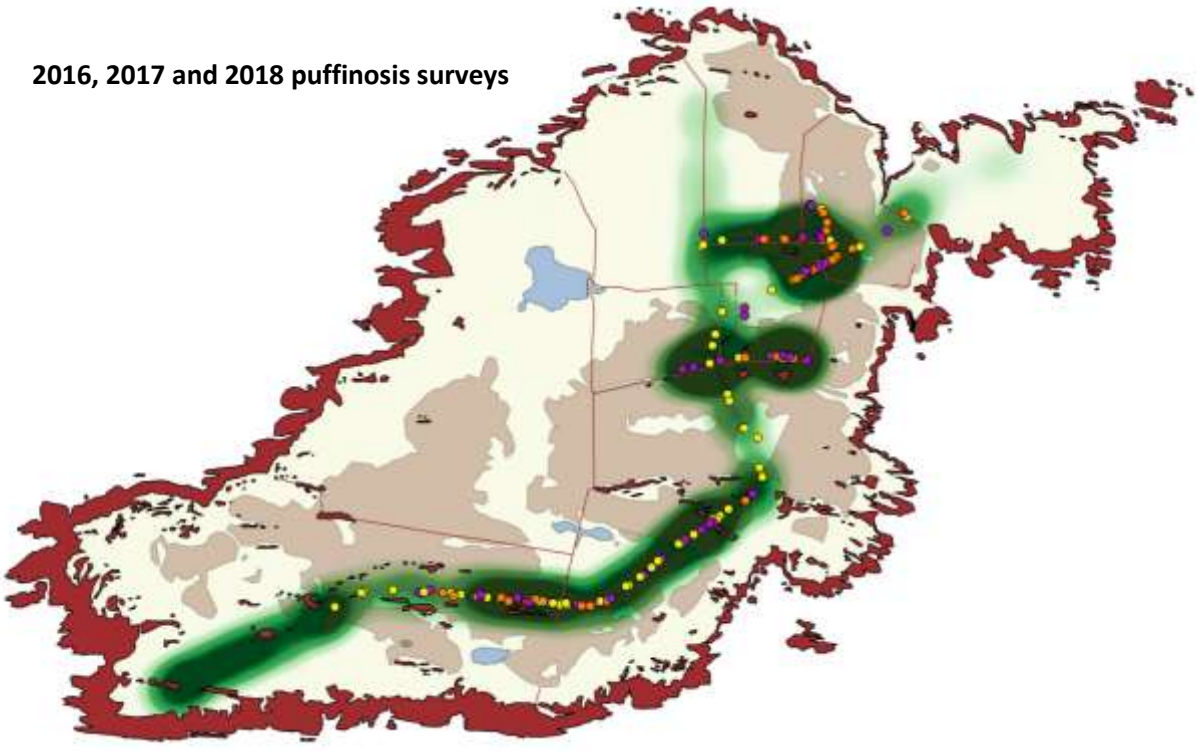
The number of Manx Shearwater fledglings located along the transect is likely to be different between years, not just because of fluctuations in productivity, but more critically due to differences in the weather and moon cycle which influence their surface behaviour. In total over the eight visits there were 317 fewer fledglings encountered this year than in 2018, with a total of 691 being the second lowest yet recorded. Although the number of apparently infected birds was the lowest of the last five years, the proportion of birds showing signs was fractionally up on the 8.7% of last year. As in previous years, puffinosised birds were primarily distributed in the wetter areas of Skokholm, away from more exposed aspects which also typically lack Bracken (see below maps). Given that there is seemingly a link between wet areas and diseased birds, one possible explanation for the low proportion of puffinosised individuals encountered during the last two years is that both proved to be exceptionally dry breeding seasons. That the proportion of infected birds has been lowest in the last two years, the same two years which have seen the lowest two totals of predated juveniles, is intriguing (see above); it is quite probable that puffinosised birds are easier for Great Black-backed Gulls to catch, potentially leading to higher mortality in high puffinosis years (it would usually be difficult to tell that an eaten bird had been suffering from disease). However the number of juvenile corpses located in 2015, the worst puffinosis year of this five year study, was not significantly higher than in 2016 and 2017 when the proportion of puffinosised birds was lower.

The 2019 and 2016-2018 puffinosis surveys. Manx Shearwater fledgling density is shown in green, with the darker areas holding more birds. Each puffinosised bird encountered over the eight visits is marked by a circle, blue in 2019, yellow in 2018, orange in 2017 and purple in 2016. The 2018 Bracken distribution is also shown.

2019 puffinosis survey



2016, 2017 and 2018 puffinosis surveys



It was an early breeding season; survey work on 11th September revealed that 90% of youngsters had departed their study burrows, this compared with 56% on the same date in 2018. Of 1215 fledglings ringed this year, only one disorientated individual was found on the mainland, a bird at

Freshwater West on 6th September which was released back to sea unharmed. The last adult bird to be encountered along the study transect was trapped on 18th September, four days earlier than the last of 2018 and two days earlier than the last of 2017 (although birds were heard calling on the evening of the 23rd). Unsurprisingly, given their earlier departure, September seawatch counts were down on the previous five years, with highs of 474 on the 3rd and 408 on the 4th well down on the 20,115 counted on the 8th last year (when a minimum of 18,000 were in Broad Sound); recent September daycounts have peaked at 2260 in 2017, 732 in 2016, 645 in 2015 and 9523 in 2014. Seawatch daycounts from 5th September did not exceed 40 and 15 hours of seawatching over the last seven days of the month produced only 35 birds. The only at sea records in October were of four in one hour on the 1st, 31 during nearly 24 hours of observations between the 8th and 11th and four west in 50 minutes on the 16th; seawatches for over 12 hours between the 3rd and 6th and for five hours between the 12th and 14th failed to locate a bird. Low numbers of fledglings were seen after dark in October, with two partially downy birds on the 22nd the last of the year. Additionally birds were heard calling nocturnally on the 5th, 12th and 22nd October. A single was off the Lighthouse on 7th November, one went west through Broad Sound on the 12th, four were there on the 14th, one was off the south coast on the 15th, two were in Broad Sound on the 16th and one there on the 20th was the last of the year; there have only been November records in ten years since 1927, including five of the last six, whilst the only later records came in 2016 and 1991 (with one on the 26th in 1991 the latest Skokholm sighting).

Ringing recovery EA11825
Originally ringed as a juvenile, SKOKHOLM 17th September 2018
Recovered PRAIA DA RIBANCEIRA, IMBITUBA, BRAZIL 26th November 2019
Finding condition Dead on beach (no information as to how long for)
Distance travelled 9852km at 206 degrees (SSW)
Days since ringed 435

Ringing recovery FB23130
Originally ringed as a juvenile, FRESHWATER WEST, PEMBROKESHIRE 12th September 2008
Recovered MANX SHEARWATER TRANSECT, SKOKHOLM 26th August 2019
Finding condition Dead, eaten by Great Black-backed Gull
Distance travelled 16km at 291 degrees (WNW)
Days since ringed 4000
Several previous Skokholm Seabird Reports have included examples of how disorientated fledglings can go on to reach maturity if returned to the sea; here is yet another.

Ringing recovery FB46740
Originally ringed as a chick, QUARRY TRACK STUDY PLOT 8, SKOKHOLM 19th August 2019
Recovered FRESHWATER WEST, PEMBROKESHIRE 6th September 2019
Finding condition Collected by ringer and released to sea
Distance travelled 16km at 111 degrees (ESE)
Days since ringed 18
Given the above recovery of FB23130, and others like it, there is no reason to believe that this individual could not go on to reach breeding age. Of 1215 fledglings ringed this year, this was the only bird to be found on the mainland (two of 1498 were found in 2018, both also returned to sea).

Ringing recovery FV86526
Originally ringed as a chick, QUARRY TRACK STUDY PLOT 4, SKOKHOLM 14th August 2018
Recovered MARICA, RIO DE JANEIRO, BRAZIL 23rd March 2019
Finding condition Dead on beach (more than a week old)
Distance travelled 9078km at 204 degrees (SSW)
Days since ringed 221

Ringing recovery FV86667
Originally ringed as a fledgling, MANX SHEARWATER TRANSECT, SKOKHOLM 11th September 2017
Recovered SEVERN BEACH, SOUTH GLOUCESTERSHIRE 5th February 2020
Finding condition Ring only
Distance travelled 181km at 96 degrees (E)
Days since ringed 877

Balearic Shearwater *Puffinus mauretanicus* **Aderyn Drycin y Baleares**
Scarce to Uncommon first recorded in 1960
Earliest 15th May 1997 (4th August 2019) **Latest** 29th October 1990 (**14th November 2019**)

One heading northwest off the Lighthouse during a light southeasterly on 4th August was the first of the year, this two weeks earlier than the first of last year but eight days later than the first of 2017. Further singles went west off the Lighthouse in light to moderate winds on the 22nd and 30th. The morning of 10th October saw birds heading into a near gale westerly at 0755, 0805 and 0850hrs; although there have been daycounts of three on nine previous occasions, there have only been four higher totals, most recently with four and five logged in September 2016 and with a maximum of ten on 14th September 2011. One in Broad Sound during a northerly gale on 14th November was the first to be seen in this month, this 16 days later than a single in 1990. An annual total of seven bird-days was two up on last year but down on the recent high of 15 in 2016 and the record 29 logged in 2011.

Gannet *Morus bassanus* **Hugan**
Very Abundant but Uncommon between November and March

Considering the presence of roughly 36,011 breeding pairs on Grassholm (JNCC, 2015), only 14km to our west and the third largest Atlantic gannetry, it is perhaps a surprise that the number seen from Skokholm is so small. However studies using GPS tracking devices on Grassholm birds have shown that the majority head west and south from the gannetry before returning by a similar route (Morgan, 2013). Skokholm counts followed the same general pattern as seen in previous years, with numbers steadily increasing until an early autumn high, however the 2019 peak was earlier, with the two highest daycounts coming in August. Four of the five peak daycounts, namely 429 on the 9th and 700 on 15th August, along with the September maxima of 633 on the 23rd and 438 on the 26th, occurred on days with winds gusting force seven or above; however the 704 logged on 21st August, the highest daycount of the year, occurred on a day of light southwesterlies. The cumulative year total of 15,495 bird-days was well down on the 20,558 of last year and was the lowest total since the 12,992 of 2015. There were more birds seen ashore than in any other year this century; one was in the spray zone at Little Bay Point on both the 28th and 29th April (with what was thought to be the same bird swimming close in to South Haven the following day), on 30th August a seemingly healthy adult was sat at the top of the Lighthouse cliff, a juvenile was on Oystercatcher Rock on the 11th and 12th October and an adult rested at the Jetty on 21st October. Unusually one flew over Winter Pond

on 16th May, two were over the south coast on 1st June, one headed between the Bluffs and Winter Pond on 27th July and one went south over the Sugarloaf on 7th September; flyovers are rare, with the two logged last year being an above average total.

The total number of Gannets logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2015 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	207	505	1048	1084	1687	6002	3911	865	159
2018	68	360	1203	1777	3340	5395	7830	478	107
2017	60	443	762	1326	2841	4239	8619	176	12
2016	85	945	1425	1458	2161	3552	6694	437	227
2015	119	391	1632	566	3094	3415	3324	345	106
2019	31	69	150	145	212	704	633	207	41
2018	21	58	144	230	620	479	641	122	55
2017	13	65	118	290	383	496	951	35	5
2016	22	348	435	186	345	710	1003	51	47
2015	19	69	279	93	830	320	455	61	41
	1st	27th	8th	8th	25th	21st	23rd	10th	8th

Shag *Phalacrocorax aristotelis* **Mulfran Werdd**

Common Resident and Irregular Scarce Breeder last attempted to breed in 2013
2018: 1 control

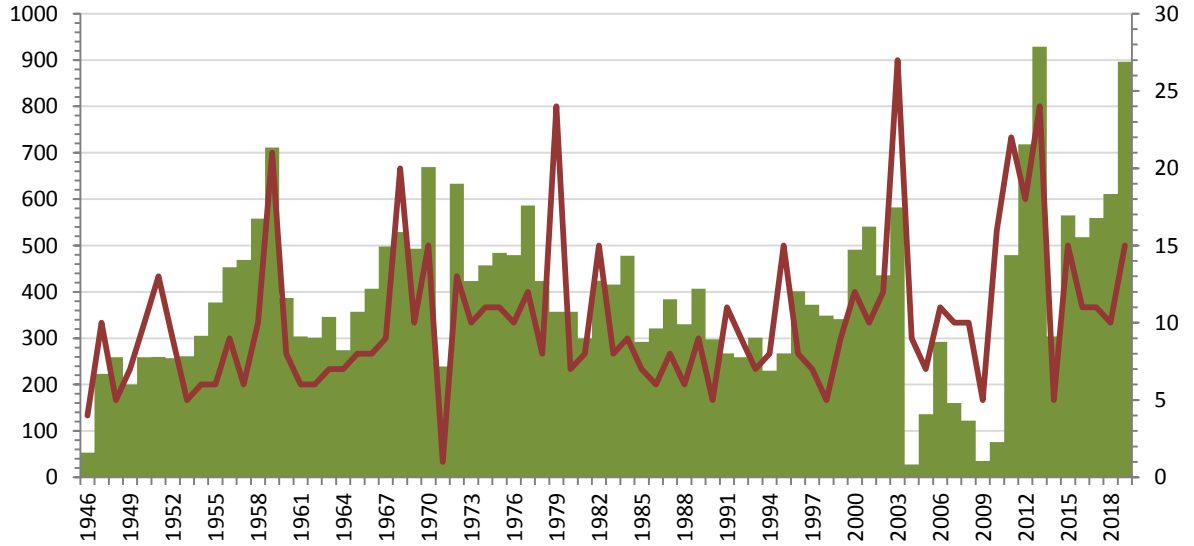
Shag numbers were heavily impacted by prolonged and severe storms in the winter of 2013-2014, with the bird-days total logged in 2014 being 67.3% down on the record set in 2013. The first half of 2015 provided little evidence of a comeback, indeed counts during March, April and June 2015 were even lower than in 2014, however a significant increase in numbers that autumn reflected a better than average breeding season at the Middleholm colony. Disappointingly a continued recovery was not apparent, with the peak daycount between 2016 and 2018 failing to exceed 11 and the annual bird-days total for the same period ranging between 516 and 611 (the 2015 total was 565 and the 2013 total 929). There were signs early this year that the situation had improved, with a peak April daycount of nine being the highest since ten were logged in 2011 and otherwise the highest since a record 11 were counted in 1979. Although the May peak was down on the previous two years and the June peak down on or equal to the previous nine years, counts increased significantly in autumn. There was again no indication of a breeding attempt this season, with the Smith's Bay site last used

unsuccessfully in 2013 showing no signs of occupation; Shag last bred successfully in 1987 when a pair fledged two young. The July, September and October bird-days totals were the highest since 2013 and the August total the highest since 2015. The peak daycounts logged in July, September and October were also the highest to be recorded since before the 2013-2014 winter crash and the August peak matched that made in 2015. The eight birds noted on 24th November was the highest daycount to be made in this month. Not all birds seen around Skokholm are associated with the Middleholm colony; a juvenile found in the Lime Kiln last November had been ringed on Ynys Gwylan-Fawr, Gwynedd and this year a bird with a green ring was found on 11th May, although unfortunately the latter was too distant to allow the inscription to be read.

The total number of Shags logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2013 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	29	89	150	32	82	152	168	102	88
2018	18	50	100	40	55	130	124	55	39
2017	12	64	69	24	61	108	125	79	17
2016	5	67	74	28	57	114	83	57	31
2015	8	24	66	32	40	171	127	55	42
2014	12	38	37	35	35	47	42	39	19
2013	84	86	104	63	90	147	189	146	20
2019	3	9	9	3	9	15	13	12	8
2018	4	5	10	5	8	9	9	5	6
2017	2	7	11	3	6	10	9	6	5
2016	1	6	5	4	7	11	7	4	4
2015	1	3	5	5	6	15	10	6	5
2014	2	5	5	5	5	4	5	5	3
2013	7	8	12	7	13	17	24	17	5
	4 dates	28th	3rd	26th	18th	11th	7th & 29th	4th	24th

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



Cormorant *Phalacrocorax carbo* **Mulfran**
Common Visitor particularly in late August and September

Although not recorded every day, Cormorants were again common around Skokholm, with the majority of non-passage records being of loafing birds on the Stack, between Mad Bay and North

Haven and in Crab Bay. Unlike Shag, which were severely impacted by the winter storms of 2013-2014 and which have taken several years to recover, there was no indication that this species was affected (perhaps due to their readiness to move inland during the winter). As is typically the case, spring passage was not as pronounced as that which is observed in autumn, with only seven days when birds were obviously on the move; all groups were heading north or northwest and were of four or less, with the exception of five on 23rd March and 15 on 1st May. The latter group contributed to the highest spring daycount since 20 were recorded in March 2012; although well down on a record 36 logged on 10th April 1982, the 18 birds noted on 1st May equalled the ninth highest spring count to date.

The total number of Cormorants logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2015 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	33	67	99	44	105	158	258	67	33
2018	14	56	104	66	77	118	202	57	31
2017	10	51	58	46	93	117	66	67	23
2016	10	39	38	27	102	98	174	42	12
2015	15	55	50	41	52	133	179	56	10
2019	6	5	18	5	11	12	36	21	8
2018	3	11	9	5	7	27	23	15	6
2017	2	7	5	4	8	17	14	24	6
2016	3	5	4	3	21	13	57	11	4
2015	2	5	5	6	4	15	28	19	3
	23rd	3 dates	1st	26th & 29th	11th	13th	17th	1st	16th

There were 17 dates between July and September when birds were noted high over the Island, one more date than last year and two fewer than in 2017, however the number of birds logged during this period was up. The vast majority of passage birds were again heading in a southeasterly direction, as previously noted by both Betts (1992) and Thompson (2007). The largest movements occurred during September, with 24 on the 5th, 16 the following day, 19 on the 8th and 33 on the 17th; additionally a flock of 16 circled the Island before heading southeast on 1st October. The post-June bird-days total was the highest to be logged in any year and the September tally was higher than that logged in any previous month of Skokholm recording, however the peak daycount of 36 on 17th September was down on five post-2000 counts, most notably the 57 of 13th September 2016, the 97 of 28th September 2013 and the record 107 of 12th September 2003. Whereas the majority of birds seemingly head inland for the winter months, three were still loafing at the Stack on 2nd December.

Night-heron *Nycticorax nycticorax* **Crëyr y Nos**
Vagrant no previous records

Two adults and a juvenile were watched by multiple observers as they flew west over the Courtyard on the afternoon of 30th May. Having circled North Pond they flew east along the north coast, this route provoking the breeding gulls into a barrage of attacks which caused the herons to split up; one adult circled the Neck, flew west over South Haven and briefly landed on the Hills before it headed out over Broad Sound in the direction of Wooltack Point, whilst the other two birds seemingly grounded below the cliffs at Far Bay. Given that youngsters remain with their parents for a period of 'post-fledging learning', it is tempting to think that this was a family party, although whether they originated in northern France or closer to home will never be known. Of the 20 previous Pembrokeshire records, only two have concerned this many birds or more; three Night-herons, one of which was shot on 12th May, were found roosting in a tree 'within 30 yards of St. Davids

Cathedral' in 1876, whilst four birds frequented the Teifi Marshes in April 1990 during what was a significant influx of this species into southwest Britain (there were records of one or two birds at an additional six Pembrokeshire sites during that March and April) (Donovan and Rees, 1994). The most recent pre-2019 Pembrokeshire record is of an adult at the Ritec, near Tenby on 25th May 2013.

Grey Heron *Ardea cinerea* **Crëyr Glas**
Uncommon but in some years Scarce

As has been the case in four of the last seven years, the first birds of the year were not logged until June; one heading northeast on 18th June was five days earlier than the first four of last year but five days later than the first eight of 2017. Further singles on the 22nd and 26th led to the lowest June total of the last three years, a tally well down on the June record of 14 logged in 2017. The July total was the lowest of the last four years, with the only sightings being of one heading west at sea on the 23rd, one on the south coast rocks on the 30th and one over the Island and then west at sea on the 31st. August proved more productive with one calling at 0100hrs on the 2nd, two west on the 3rd, two adults and four juveniles on both the 25th and 26th and two at the Lighthouse on the 27th; both the peak count and bird-days total were the highest in August since 1990 when a daycount of nine took the total to 20. Singles on five September dates to the 14th, along with a minimum of two on the 18th, led to the highest total in this month since 2016. Three heading southwest together on 14th October was the highest daycount to be made in this month; a daycount of two has been noted in five previous years. Further singles on the 15th and 22nd took the October bird-days total to five, equalling the record set in 2017. A cumulative 2019 total of 35 bird-days was 14 up on last year and

the sixth highest total yet recorded, albeit down on the 37 of 2017 and highs of 41 in 1988 and 42 in 1981.

Great White Egret *Ardea alba* **Crëyr Mawr Gwyn**
Vagrant no previous records

One arrived from the northwest and flew low over the Courtyard on the morning of 5th July; having briefly headed back west it soon gained height and flew out over Broad Sound in the direction of Wooltack Point (AE, IB, *et al*.). The first for Pembrokeshire was not logged until 12th April 1988, this a bird found near St. Davids (Donovan and Rees, 1994). The next was a colour-ringed bird at Newport in August 2003 and the third a bird at Strumble Head in September 2006, the latter arriving in the year after this species was dropped from the list assessed by the British Birds Rarities Committee. Following a further single in 2008, there have been annual Pembrokeshire records since 2011 including ten sightings of up to four birds last year; this increase in records has been mirrored elsewhere in Wales, meaning that Great White Egret no longer fits the assessment criteria of the Welsh Birds Rarities Committee either. It was only a matter of time before one made it to Skokholm.

Sparrowhawk *Accipiter nisus* **Gwalch Glas**
Uncommon Visitor occurring in all months, but more frequent outside of the breeding season
2 trapped
1936-1976: 10 trapped, 2013-2017: 7 trapped, 1 retrapped

The only spring record was of a first-winter female mist netted at the Well on 28th March, this 12 days earlier than the sole spring record of last year; although never a common species at this time of year, with recent spring highs of only eight bird-days in 2016 and 2015 and nine in 2014, a lone sighting is, equal with 2018, 2009 and 2005, the lowest spring tally this century. A male and a female both present on 13th August were the first of the autumn, these ten days earlier than the first of last year. A male ate a Meadow Pipit at Orchid Bog before departing the Island on 19th August and records of up to two birds on nine further dates to the end of the month included sightings of both

an adult and a juvenile female. As is typically the case, numbers peaked in September with sightings on 22 dates, all of singles bar two on the 18th when the only male of the month was logged; a September bird-days total of 23 was the highest of the last four years and the fourth highest to be recorded in this month, only down on peaks of 26 in 2015, 28 in 2014 and 30 in 2000. Notable September records included a bird hunting through the Bracken by foot on the 12th, a female eating the head of a puffinosised Manx Shearwater on the 13th and a female with a Water Rail on the 25th. A female noted each day between the 3rd and 5th October was joined by what was perhaps the same juvenile male on the 3rd and 5th, a female was again present on the 15th, a juvenile male was trapped in the Wheelhouse Heligoland on the 16th and a female on the 20th was the last of the year; the latter was 15 days earlier than the last of 2018 and five days earlier than the last of 2017. Given the mobile and often secretive nature of this species, daycounts of multiple individuals are usually due to differences in the age or sex of the birds concerned; rarely is it possible to prove the presence of two birds of the same age and sex, an uncertainty which no doubt leads to undercounting.

Hen Harrier *Circus cyaneus* **Bod Tinwen**
Scarce Winter Visitor but no records between 2004 and 2011 inclusive
Earliest 5th September 2012 (27th October 2019) **Latest** 17th April 2016 (**21st April 2019**)

Sightings of a ringtail on the 26th and 29th March, along with a first-summer bird logged on 21st April, were the only spring records; the latter was the latest spring bird to date. There have now been birds in 11 springs, including six of the most recent eight. It proved the first year since 2016 without a September sighting, indeed the first two of autumn were not logged until 27th October; this was the latest autumn arrival since 2014 when the first was not seen until 7th November. One of the two birds present on 27th October was a spectacular adult male; the only previous adult males noted in the database were logged on the 13th and 14th November 1992 and on 21st November 1989.

Following a visit from what was presumed to be the same adult male on 4th November, there were daily sightings of a ringtail between the 6th and 18th; whenever the latter was seen well, it proved to be a juvenile male (above photograph). A second ringtail was watched heading north through the

Broad Sound gull flock on 16th November and one was noted on the 28th. A juvenile male was again present on 1st December, whilst the following day saw what was perhaps the same ringtail hunting over the Bog as another headed south to sea off the Lighthouse. A 2019 bird-days total of 24 was down on the record of 46 logged last year and the lowest total of the last four years, however it also equalled the 1990 tally as the sixth highest to date.

Marsh Harrier *Circus aeruginosus* **Bod y Gwerni**
Scarce recorded in every month from March to November but with only one adult male
Earliest 10th March 2015 (8th August 2019) **Latest** 4th November 2018 (13th October 2019)

The first of the year was a northbound juvenile on 8th August, this 13 days later than the first of last autumn. The only other 2019 sighting was of a juvenile on 13th October which visited South and North Ponds before also heading north; the six previous October bird-days were all logged last year. Two 2019 bird-days was down on the record of 13 set last year and the 2010-2019 mean of 3.1. There have now been sightings in 22 years, including eight of the last ten and totalling at least 37 birds, however probable repeat visits by cream crowns lingering at nearby Marloes Mere have made an accurate count of individuals difficult. Birds in the springs of 1987 and 2001 remain the only definite males to be recorded.

Red Kite *Milvus milvus* **Barcud Coch**
Rare only 11 previous records of up to two birds, but becoming Scarce

One present on the morning of 25th March arrived on the same date as the first of last year, whilst a second spring bird headed northeast over North Pond on 7th April; there have only been four previous spring records, all logged in either March or April.

The first of the autumn was a juvenile present for most of the morning of 17th September, a period during which it visited several Manx Shearwater corpses; this was the earliest autumn arrival to date, three days earlier than a juvenile in 2016 and 11 days earlier than a minimum of two birds present last year. A flyover on the morning of 19th October was perhaps the same bird watched the following day, although on each occasion the kite in question was seen to depart for the mainland. A total of five 2019 bird-days matched the record set last year, although it again proved difficult to

ascertain the number of individuals which were visiting. An increase in the Pembrokeshire breeding population is inevitably going to lead to an increase in the number of Skokholm sightings, although an open sea crossing to the Island is seemingly not appealing to a species which is much more regular on the mainland and islands just offshore.

Buzzard *Buteo buteo* **Bwncath**
Scarce Breeder and Uncommon Visitor
1936-1976: 11 trapped, 2013-2018: 8 pulli trapped

Although a pair yet again held territory in Wreck Cove from March and toured widely, this proved an unobtrusive species which was not recorded every day. There were seven spring dates when the daycount exceeded the two Skokholm breeders; three were sat around the Wheelhouse on 28th February, three were seen on two dates in March, five were logged on 25th March (when the breeders circled above their nest site as three drifted along the north coast) and three were noted on three dates in April. The peak daycount matched those made in April 2013 and March 1974 as the second highest in spring since 1955, totals only down on the six logged in April 2015 and April 1988; there were occasional higher spring daycounts prior to the late 1950s, with peaks of ten in May 1955 and 12 in April 1940. The rocky shelf which held the nest in each year between 2013 and 2018 was eschewed in favour of a narrower ledge on a taller section of near vertical cliff. The three eggs hatched and all three large chicks had departed the nest ledge by 11th July, although it was not confirmed that all three had fledged successfully until 2nd August. Perhaps the switch in nest site implies that one of the adults was a new individual, however the result was a positive one; although this was at least the seventh successive year in which a Wreck Cove pair have managed to fledge young, only in 2015, when two fledged, have they produced anything more than a singleton. Whereas there are typically more autumn daycounts in excess of the Skokholm breeders and their offspring than are logged in spring, all autumn records this year could be attributed to the Wreck Cove birds; the three juveniles were together at Spy Rock on 28th August and the family of five were together at Howard's End on 8th September, after which no more than three were logged on each autumn date bar the four noted on the 22nd and 23rd October.

Short-eared Owl *Asio flammeus* **Tylluan Glustiog**
Uncommon described in 1936 as a 'rare visitor', listed by Thompson as Scarce and has bred once
1936-1976: 5 trapped, 2017: 3 pulli trapped

It proved the third successive March with a record, with singles on the 6th and 15th taking the all-time bird-days total for this month to 50. Two together over Gull Field on 3rd April sparked hopes that this site, which was used for the successful 2017 breeding attempt, would again prove attractive, however records of singles on seven further April dates were not indicative of breeding; breeding was obvious in April 2017 as the pair aggressively pursued other birds passing close to the nest. Although a regular breeder on nearby Skomer, where the fluctuating population is supported by Bank Voles, the successful 2017 attempt remains the only confirmed breeding of Short-eared Owl on vole-free Skokholm. The only breeding season records were of singles on 2nd May and 8th July, the latter pursued by Swallows, gulls, Ravens and Oystercatchers as it headed out over Broad Sound in the direction of Skomer. In August one was at North Pond on the 4th and a freshly dropped primary found there on the 21st heralded records of singles on four further dates to the end of the month; six bird-days were also noted in 1975, with 11 in 1961 being the only higher August tally. The next was not logged until 31st October when a lone bird was watched hunting at North Pond. Singles were present on the 1st, 8th, 18th, 26th and 29th November, one of which ate a Blackbird at South Pond; the November bird-days total was the highest of the last three years, albeit well down on peaks of 18 in 2014 and 27 in both 1998 and 1989. A 2019 bird-days total of 25 was five up on last year but otherwise the lowest since the 19 of 2013. A reduced owl presence no doubt benefited Skokholm's breeding Storm Petrels, indeed only four of the five petrel corpses found this year (two adults and

two juveniles) were owl victims; of the 31 petrel corpses found last year, 26 were taken by owls, whilst the remains of 98 petrels were found it 2017 (the only year in which Short-eared Owl bred). There were 51 Storm Petrel corpses located in 2016, 18 in 2015, 16 in 2014 and six in 2013.

Kingfisher *Alcedo atthis* **Glas y Dorlan**
Rare 14 previous records, all of singles
1936-1976: 1 trapped

One watched flying west off Howard's End on 28th June was the first since one in South Haven on 17th August 2015 and the first June Kingfisher for Skokholm (JH). With the exception of one on 29th September 1975, all previous records have occurred between 6th July (1963) and 28th August (2000).

Wryneck *Jynx torquilla* **Pengam**
Scarce Migrant regular in autumn, rare in spring with only nine records
Earliest 3rd April 1995 (25th August 2019) **Latest** 12th November 2014 (17th September 2019)
1936-1976: 11 trapped, 2013-2018: 5 trapped, 2 retrapped

One found in the Boundary Hill Elder on 25th August was six days earlier than the first of last year but two days later than the sole 2017 sighting (JMH *et al*.); this was just the fifth Skokholm record in this month, however there has now been one in each of the last three Augusts. There followed sightings in the same area on five of the ten dates to 4th September; although it showed well on occasion, particularly in the evening, the days without an observation saw up to 70 minutes of fruitless searching logged. A bird found in Crab Bay on 16th September (12 days later than the last Boundary Hill sighting), was presumed to be the same as one in the Boundary Hill Elder the following day, this a bush which has harboured a disproportionately high percentage of the Wryneck logged in recent years (GE *et al*.); it was deemed unlikely that the latter bird was that which arrived in August, although records of a ringed individual in 2014 showed that it had been going unobserved for up to nine consecutive days. There have now been 219 bird-days logged since the first in May 1938, all in 39 years and including at least 13 individuals accounting for 60 bird-days in the last seven years.

Kestrel *Falco tinnunculus* **Cudyll Coch**
Uncommon recorded in all months but more regular during the post-breeding period
1936-1976: 8 trapped, 2013: 1 trapped

Despite a productive spring and summer, it ultimately proved a poor year for records of a species

which often breeds on the nearby mainland but which is yet to nest on Skokholm. The first of the year was present on 30th April, this 13 days later than the first of 2018. Singles on the 3rd, 15th and 16th led to an above average May tally which matched that logged last year, whilst records of singles on eight dates between the 10th and 26th June produced the highest bird-days total in this month since the 16 of 1973. Records of singles on 12 July dates included sightings of both a male and a female; the bird-days total equalled that of 1966 as the sixth highest to be made in this month, albeit down on peaks of 19 logged last year and 22 in 2002. At least two birds accounted for records of singles on six August dates from the 13th, the total matching that logged last year as the second highest in this month since 2003. As is typically the case, numbers increased in September with sightings of up to two birds on 14 dates to the 18th taking the monthly bird-days total to 16; this was the lowest September tally since the 13 of 2011, well down on the recent high of 52 in 2014 and the record 73 of 1975. Whereas counts have peaked in October in five of the last six years (with a 2013-2018 mean of 39.2 bird-days, a high of 51 bird-days in 2016 and a low of 32 in 2017), a male on the 31st was the only bird present this year; although the October weather was frequently rough, it was not significantly different to previous years, suggesting that this substantial drop in numbers may reflect a genuine decline in this corner of Pembrokeshire. Despite a staff presence throughout the month, there was no November sighting for the first time in seven years (the 2013-2018 November mean is 15.3, with a high of 25 in 2015 and a low of nine in 2017). A total of 47 bird-days were thus logged in 2019, this the lowest total since the 43 of 2012 and well down on the 2013-2018 mean of 106.83 ±sd 15.37. The largest Skokholm daycounts to date remain the five noted in September 1975, August 1989 and September 2014, whilst the biggest monthly totals are the 73 of September 1975 and the 69 of September 1992.

Merlin *Falco columbarius* **Cudyll Bach**
Uncommon recorded in every month but with only three June and seven July records
1936-1976: 9 trapped, 2013-2017: 4 trapped

An adult male and a first-year female potentially accounted for records of singles on 11 March dates and the two birds logged on the 14th; although down on the 14 of last year and the 16 of 2017, a bird-days total of 13 equalled the fifth highest March tally to date.

April proved similarly productive, with singles on 18 dates and two birds on an additional six dates taking the bird-days total to 30; at least three different individuals were present, with a second-year male, a first-year female and a second unaged female all noted. The April bird-days total matched that of April last year and that of October 1967 as the highest to be logged in any calendar month. Lone females found on the 1st, 4th and 5th May were potentially the same individual, a bird aged on the 4th as a first-year; although there have only been May sightings in 26 previous years, the last of the spring was 18 days earlier than the last of 2018 and 14 days earlier than the last of 2017.

It proved the second successive year without an August record, the first of autumn not arriving until 25th September (one day later than the first autumn bird of last year). A male on the 29th was the only other September sighting, the bird-days total being down on the six of last year and the five of 2017. Records on 24 October dates included sightings of two birds on four dates and three birds on five dates; a monthly bird-days total of 38 was unprecedented, eclipsing the three totals listed above. A first-winter male, a first-winter female and a second unaged female potentially accounted for all of the sightings, indeed on the five occasions that three birds were confirmed the distribution of the sexes matched, however birds were also seen well out over the sea; daycounts of three have only been noted on six previous occasions, with a record four logged on 23rd October 2018 and 7th October 1968. Sightings of up to two birds on 15 November dates were attributable to at least three different males (a first-winter, a second-winter and a full adult) and two females; a bird-days total of 18 matched that of 2017 as the highest to be logged in this month. Three of the four highest annual bird-days totals have come in the last four years; a 2019 total of 104 bird-days was the third highest to date, up on the 84 of last year but down on the 105 of 2017 and the 118 of 1968. The UHF radios were again essential when confirming the presence of multiple birds feeding in different areas.

Hobby *Falco subbuteo* **Hebog yr Ehedydd**
Rare recorded in each month between April and October

One heading south over the Well on 23rd April was the earliest spring record to date (six days earlier than a bird in 1988), and the first since one which lingered between the 4th and 9th October 2012 (GE, BB). A second 2019 bird was seen on two occasions during 16th May (CB, EW, *et al*.). There have been sightings in 14 previous years, all but three of which have occurred since 1986 (the further singles logged in 1959, 1975 and 1982). Prior to this year there had been one record in April, five in May, four in June, one in July, four in both August and September and one in October; all sightings were of singles and all were noted on just one date with the exception of (presumed) two-day stays logged in the Junes of 2003 and 2005 and the bird present on the 4th, 5th, 8th and 9th October 2012.

Peregrine *Falco peregrinus* **Hebog Tramor**
Scarce Breeder and Uncommon Visitor resumed breeding in 1988 following a 56 year absence
2013-2016: 4 pulli trapped

At least one individual of an apparent pair was seen near the traditional Bluffs breeding site on 17 dates during March, although a pair of Great Black-backed Gull loafed at last year's nest ledge on the 27th and 28th. Given that a Great Black-backed Gull had been responsible for the death of at least one chick last year, it was perhaps surprising that Peregrine were still around the Bluffs on at least 12 April dates and that on one occasion the female chased a Buzzard from the area. The female was apparently incubating on a typical ledge from mid-May, however when accessed under a Schedule One Licence on the 17th it was found to be empty (although two neat scrapes were present). She continued to return regularly to one of the scrapes and was apparently incubating during the latter half of the month, but a second check on 3rd June again found the site to be empty. There was no evidence that eggs were produced this year, although it would seem likely that they were before being lost to predators. It has been postulated in recent reports that an increase in the number of Peregrine present on Skokholm may be impacting productivity by increasing the time that the

breeding birds spend away from the nest; following an increase in the number of non-breeding birds present in addition to the resident pair during the 2014 and 2015 seasons, two pairs attempted to nest for the first time in 2016 and did so again in 2017, this unsurprisingly leading to an increase in the number of aggressive interactions logged. Although it is possible for a seabird island the size of Skokholm to support two pairs (despite the considerably lower seabird numbers, Bardsey Island in Gwynedd occasionally holds two successful pairs), time spent interacting with neighbours perhaps resulted in the significant drop in productivity witnessed since 2014. This season saw an extra female noted on two March, six April and one May date and an extra male logged on one March and four May dates, whilst an unsexed bird was present on an additional three dates in April and four dates in May; aggressive interactions were again seen on occasion.

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

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

Sightings in June could all be attributed to the breeding pair, birds which continued to frequent the Bluffs until the 25th before beginning to range more widely. Two males and a female were seen during July, records which took the bird-days total to 27; although up on the 17 of last July, this was otherwise the lowest total of the last nine years. August was similarly quiet, with a bird-days total of 23 matching last year as the lowest to be logged during the same period; at least four individuals included the first mainland juvenile noted on three dates from the 26th, this just over a month later than the first incoming juvenile of last year. Following sightings of a juvenile on three September dates to the 17th, the only record prior to the staff departure which could not be attributed to the breeding pair was of a sub-adult female present on 10th November. A September bird-days total of 27 was the lowest since 2012 (the 2011-2018 mean is 43.0 with a high of 60 in 2016), an October total of 13 was the lowest of the last eight years (the 2012-2018 mean is 36.3 with a high of 56 in 2015) and the November total of 18 was well down on recent highs of 40 bird-days in 2016 and 42 in 2014 (earlier staff departure dates have resulted in a lower total in some recent years).

Red-backed Shrike *Lanius collurio* **Cigydd Cefngoch**
Rare 11 spring and 17 autumn records
Earliest 9th April 1966 (6th September 2019) **Latest** 20th October 2004 (7th September 2019)
1936-1976: 10 trapped, 2016: 2 trapped

An elusive juvenile found on 6th September frequented the Bracken between Isthmian Heath and Orchid Bog (BB *et al*.); it was last seen the following day. This was the first since 2016, when there were singles in both spring and autumn, and just the fifth 21st century record for Skokholm. Of 17 previous autumn singles, all logged between 5th August and 20th October, only five have lingered for more than a day; two day stays were recorded in September 1960 and August 2016, whilst one remained for five days in September 1966, one for eight days in October 1981 and one for nine days in September 1955. Of the 11 spring singles, all noted between 9th April and 30th June, only two have lingered; a male was present for three days in May 1988 and a female for two days in June 1987.

Red-eyed Vireo *Vireo Olivaceus* **Telor Llygatgoch**
Vagrant only one previous record
1936-1976: 1 trapped
1 trapped

A juvenile found in the Courtyard on the afternoon of 12th October was later trapped and ringed (JMH *et al*.). This was the second for Skokholm following one on 14th October 1967, a bird which was the first for Wales and fourth for Britain (following two on the Scillies in 1962 and one there in 1966).

The 2019 bird was the sixth of 11 reported in the United Kingdom between 29th September and 19th October, this part of an exceptional influx which also saw 11 reported in Ireland, one on Sicily which was the first for Italy, one in Utsira which was the third for Norway and further birds in West Flanders and France. Although this is the North American passerine most regularly recorded on this side of the Atlantic, there have only been six previous Welsh birds (with one on Anglesey in 2001 the most recent) and two Pembrokeshire records (with one at Porth Clais in 1995 additional to the first Skokholm bird). The last Skokholm record occurred during an exceptional ten days which saw the second Rose-breasted Grosbeak and sixth Baltimore Oriole for the United Kingdom arrive on 2nd October and the first live Western Palearctic record of Swainson's Thrush arrive, along with the vireo, on the 14th; sadly the legendry fall of 1967 was not repeated this year, although the five people who got to enjoy this year's vireo were not complaining.

Chough *Pyrrhocorax pyrrhocorax* **Brân Goesgoch**
Scarce Breeder and Uncommon Visitor bred in 1928 and then annually since 1992
1936-1976: 1 trapped

There were only two breeding pairs for a sixth consecutive year, with territories around the Dip and Steep Bay again being occupied. The Steep Bay pair were watched mating on 31st March and the Dip pair were nest building in early April. There were very regular breeding season counts in excess of the four Skokholm breeders, with additional birds noted on 15 dates in March, 27 dates in April and 30 dates in May; a peak March daycount of nine equalled the fourth highest to be made in this month, whilst a bird-days total of 145 was a new March record (up on the 122 of 2013), peak April daycounts of 11 on the 19th and 23rd were a new record, as was an April bird-days total of 205 (well up on the 120 of 2013), a peak May daycount of 14 was the second highest to date (only down on the all-time spring record of 24 logged in May 2017) and a May bird-days total of 233 was another new record (up on the 171 of last year). Although the freezing conditions prevalent during late February and March 2018 led to a decline in the number of birds present on Skokholm, and in the SPA as a whole (Hodges, 2019), it is pleasing to see that they have seemingly bounced back. Up to six non-breeding birds were present on 26 June dates, whilst three young fledged the Steep Bay site on the 17th and two fledged the Dip site on the 26th (leading to a peak daycount of 15 on the 27th); the peak daycount was a new June record, up on the 14 logged in 2011, and a bird-days total of 257 was also a new high, up on the 179 of last June. The Steep Bay pair were not seen with young until 8th July last year (following the bitter early spring), although in 2017 fledglings were noted on 14th June and in 2016 they were also noted on 17th June. The Dip pair failed last year but had fledged young by 16th June in 2017 and 17th June in 2016. A total of five 2019 fledglings equalled the second highest total of the last 16 years, whilst a productivity figure of 2.5 chicks per pair was up on the 2004-2019 mean (1.76 ±se 0.25) and equalled the third highest total logged during the same period.

The number of Chough pairs, the total number of fledged young and productivity 2004-2019.

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	1	1	2	2	2	2	2	3	3	2	2	2	2	2	2
2	3	1	5	4	3	2	4	0	2	3	2	5	8	2	5
2	3	1	2.5	2	1.5	1	2	0	0.67	1.5	1	2.5	4	1	2.5

There were 15 July dates when the daycount exceeded the four breeding birds and their five offspring, including a peak of 14 logged on the 2nd, 10th and 31st; a bird-days total of 292 was a new July record, whilst the peak was only down on a July high of 15 logged on the 7th in 1992. Skokholm continued to support good numbers of non-breeding birds during August, with 13 counts of ten or more (two more counts than last year) and a peak daycount of 21 together on the 1st; although down on the remarkable 2017 bird-days total of 411 (which included a daycount of 30 on the 29th, the second highest to be logged in any month behind the 32 of 28th September 1965), a 2019 total of 281 was the second highest August tally to date and the peak count equalled the fourth highest in

this month (all of the higher daycounts were made in 2017). The September total was by contrast the lowest of the last five years, with a bird-days total of 160 including 14 daycounts of six and a high of eight on the 25th; between 2015 and 2018 the September bird-days total ranged between 163 and 317 and the peak count between nine and 22. Counts increased slightly in October with six or more present on 17 dates and a high of 12 on the 23rd taking the bird-days total to 186; although there have been 21 higher October daycounts, the total was the second highest to date (only down on the 193 of last year). November was similarly productive with 13 daycounts in excess of the four breeders, peaks of 13 on the 9th and ten on the 13th and a bird-days total of 144; the peak count matched the November record set last year and the bird-days total was a new high, up on the 138 of last year. No more than four were noted during the first three days of December.

Jackdaw *Corvus monedula* **Jac-y-Do**
Uncommon Breeder and Fairly Common Visitor
15 trapped, 6 retrapped
1936-1976: 83 trapped, 2011-2018: 93 trapped, 18 retrapped

The number of breeding Jackdaw on Skokholm has always proven difficult to assess due to semi-colonial nesting, their secretive habits and hidden nests. Following their establishment as a breeding species in 1965, numbers rose to between 50 and 60 pairs between 1974 and 1976, dropped to 16 to 20 pairs between 1982 and 1988, dropped again to between six and 14 pairs from 1989 to 1996 and were most recently estimated at between 15 and 22 pairs during the period 2011 to 2018. This year saw a minimum of 22 pairs with the majority nesting colonially in the crevices and burrows of South Haven and the Quarry, but with further pairs again in Rat Bay, Peter's Bay, Hog Bay, Crab Bay and near Little Bay Point. Additionally there were three active burrows above Dumbbell Bay, this a site which had not been used since 2015, and one at Twinlet, a site not used for at least six years. Daycounts again suggested that there were more birds present during the breeding season than were proven to be nesting, although regular movements from the mainland were noted and perhaps accounted for some of the larger totals. There were three birds retrapped during the breeding season which had been ringed in previous years, most notably EZ16514 which was ringed as an adult on 30th July 2015 and retrapped on 15th July after 1447 days; the current British longevity record

stands at 6231 days (17 years, 22 days). Additionally EZ17824, ringed as an adult on 10th August 2016, was retrapped on 31st May and EZ53573, ringed as an adult on 4th August 2017, was retrapped on 18th May.

The total number of Jackdaw logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2015 to 2018 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	874	1201	1279	1716	1869	1313	301	1382	254
2018	1621	1242	1256	1425	1968	1460	570	1902	234
2017	661	809	1118	1545	1533	1438	431	986	554
2016	1155	920	1063	1434	1483	1501	366	1215	408
2015	916	937	986	1584	1669	2271	818	806	70
2019	115	66	62	107	148	95	48	381	94
2018	108	104	83	80	120	137	110	185	104
2017	69	46	57	81	88	100	62	123	189
2016	101	68	51	72	116	102	49	140	74
2015	84	79	62	134	180	120	112	115	43
	31st	11th	19th	19th	24th	13th	17th	20th	18th

There were considerably fewer Jackdaw present in March this year, with a mean of 28.2 birds per day being less than half of the 62.3 logged last year and the lowest mean of the last eight years; nevertheless a flock of 115 over South Haven on the 31st was the largest March gathering to date (the previous peak March daycounts being of 108 last year and 110 in 1993). Pairs were seen collecting nest material from 27th March and nest lining from the 30th. No more than 66 were logged on each April and May date, this a typical drop in peak counts noted whilst birds are incubating. There were however eight flocks of 35 or more during the period, birds which were perhaps non-breeders; flock counts peaked at 60 on the 4th and 35 on the 6th and 18th April and at 37 on the 7th, 40 on the 25th and 38 on 31st May. Chicks were first heard in South Haven on 17th May, one day earlier than the first of last year and up to seven days earlier than in each of the three years prior to that. The first chicks to be seen outside of the nest were in South Haven on 4th June (six days later than last year), but it was not until the 9th that fledglings were well away from their nest holes; fledging dates are remarkably consistent, with the first fledglings logged on the 8th in 2018, 2016 and 2015 and on the 9th in 2017. It again proved impossible to assess the number of fledglings present in the mobile and nervous post-breeding flocks, although minimum counts of 18 between South Haven and the Well, four on the Neck, one at Twinlet and two at Little Bay Point were made; the total was six down on last year and one down on 2017. Slowworms were again seen to be a regular prey item during May and June. A daycount of 107 on the 19th was the second highest to be made in June, whilst a daycount of 148 on the 24th was the second highest in July (both only down on 2015 tallies of 134 in June and 180 in July). The lowest August bird-days total of the last eight years was followed by the customary departure for the mainland; no more than 18 were noted each day between 28th August and 14th September (including ten dates when two or fewer were present). Subsequent arrivals were sporadic, with nine further September dates, 13 October and 22 November dates when five or fewer birds were present (including 36 blank days), but with calm morning highs, all in October, of 381 on the 20th, 173 on the 23rd, 130 on the 27th and 165 on the 28th; the peak autumn count was the second highest to date, only down on the 500 of 24th October 1993.

Rook *Corvus frugilegus* **Ydfran**
Scarce daycounts of up to 25 in 66 previous springs and of up to 21 in 33 previous autumns

A lone flyover on 19th April was the first of the year, this 14 days later than a flyover single last year and 15 days later than the first of 2017 (the latter a very approachable bird which lingered until 16th May when it was eaten by a Great Black-backed Gull). Another vocal single over on 21st April was the

only other spring Rook this year. The only autumn sighting was of five birds heading west on 21st October; this matched a record from last November as the highest daycount since the seven of 16th October 2003, however it was some way off the Island record of 25 logged on 10th April 1953. Seven individuals in a year was down on the eight of last year and the 12 of 2016 but was up on the five of 2017 (when, in addition to the doomed long-stayer, there were three east on 22nd April and a second bird on 5th May), the two flyovers of 2014, the lone bird of 2012 and the six blank years logged between 2008 and 2015 inclusive.

Carrion Crow *Corvus corone* **Brân Dyddyn**
Uncommon Breeder and Uncommon Visitor
3 pulli trapped
1936-1976: 152 trapped, 2013-2016: 8 pulli trapped, 1 retrapped

There were ten nesting pairs mapped this season, the same number as last year, one more than in 2017 and 2016 and two more than in each year between 2013 and 2015. There were thus more pairs than in all but one of the previous 50 years; although prior to 1963 there were up to 12 pairs nesting on Skokholm, this had declined to just two by 1982, there was no breeding at all in 1984, 1985 and between 1991 and 1995 and there were only between two and five pairs from 1996 to 2012. Similar territories to last year were held near Warden's Rest, at Little Bay, opposite the Devil's Teeth, in Peter's Bay, in Theatre Cove and east of the Dip. Pairs were lost from Fossil Bay, North Gully, south of the Little Neck and the Tabernacle, but there were nests below Wallsend and in Purple Cove for the first time in at least seven years, a nest to the west of Frank's Point for the first time since 2014 and a nest on the Hills for the first time since 2017. There were again, on occasion, more birds present during March and April than were found to be breeding; there were six March and three April counts in excess of 20, including highs of 34 on the 23rd, 28 on the 30th and 27 on 31st March. The peak daycount, which included groups of nine and 19, was a new spring record, up on the 32 logged in 2017 and 1959, whilst the largest murder was of 24 birds on 30th March (two more than in the largest gathering of last spring). The pairs at Warden's Rest, Purple Cove and opposite the Devil's Teeth each fledged two, whilst the Hills pair fledged one (despite having their nest and three chicks destroyed by a predator, a singleton was fed on the ground at the base of the crag). The resulting productivity value of 0.70 fledglings per pair was fractionally up on the 0.60 of last year but down on the 2013-2018 mean of 1.17 ±se 0.19 and the recent high of 1.88 in 2015. A Neck juvenile found dead on 17th August was a typical post-fledging casualty. Crows were regularly seen commuting to and from the mainland during the autumn, leading to 40 daycounts of less than ten between 2nd August and 3rd December, but seven counts during the same period in excess of the 26 extant Skokholm birds. There were post-breeding highs of 31 on 18th September and 4th November, 32 on 14th September and 33 on 13th September and 2nd October; although down on three higher daycounts in October last year, a count of 34 in November 2017 and the Island record daycount of 48 logged on 9th November 2014 (a tally which included a record murder of 44), the two 2019 autumn maxima were otherwise the highest to date.

Hooded Crow *Corvus cornix* **Brân Lwyd**
Rare 16 previous records of up to two birds, with singles in 1952 and 2018 the only ones in autumn

A bird with a distinctive primary pattern which frequented North Plain on 25th March was the first in what proved an unprecedented year for records of a species which breeds only 50km away in County Wexford (below photograph); the primary pattern matched that of a bird which had spent much of the preceding winter around the Gann Estuary. A different dark-winged individual was at the Table on 4th April and the pale-patched bird returned on the 7th and 9th. Further singles on the 19th and 23rd April and on 19th May were not the overwintering bird. Of the 14 previous spring sightings, 11 have come in the period between 22nd March and 21st May, with further singles on 31st May and on the 14th and 15th June. There have now been sightings in three consecutive years, a

regularity of occurrence not logged previously; indeed there have been several large gaps between records, with no sightings between April 1939 and May 1951, September 1952 and April 1959, April 1959 and May 1970, May 1970 and April 1978, June 1982 and May 1994 and May 1994 and April 2012.

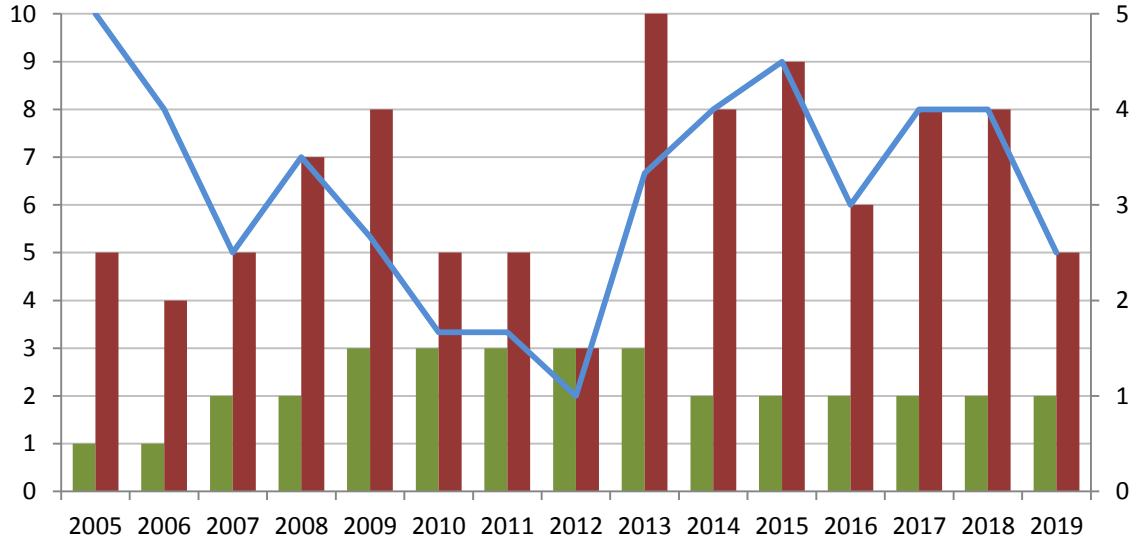
Raven *Corvus corax* **Cigfran**
Scarce Breeder and Uncommon Visitor
1936-1976: 67 trapped

Two pairs attempted to breed for a sixth consecutive year, both initially on the same ledges occupied in 2018; the west facing crevice on the eastern side of Steep Bay and the hidden ledge on the eastern side of North Haven were again used. With the exception of the two pairs which nested in 1966, only one pair of Raven was recorded in each year between 1928 and 2006, however this season became the 14th in which two or more pairs have bred (see graph below). The only spring records of birds additional to the Skokholm breeders were of three which flew north to Skomer on 11th March, two which came in from Skomer on 23rd March, an additional four at the Lighthouse on 1st April and an extra single on 12th April. The North Haven pair had young out of the nest on 12th May (two days later than last year) and four fledglings were logged three days later, however it was not until the 28th that the full complement of five fledglings was confirmed. Hatched eggshell was found along the North Coast on 21st March, however the Steep Bay pair began nest building in North Gully on the 31st (dead chicks were not visible in the first nest); nest material taken from the abandoned Steep Bay nest was supplemented with dead heather taken from the site of the old Rabbit exclosure and twigs snapped from the willows at North Pond. The new nest was completed by 7th April and a lining of fur was added the following day; although a pair of Fulmar occasionally took up residence on the same ledge from the 10th, a Raven was incubating from the 18th. The North Gully nest was abandoned on 10th May, the adults returning to the area around Purple Cove. By 16th May a third 2019 nest was nearing completion on the western side of Steep Bay, a nest which was lined but contained no eggs on the 24th; there was no indication that a third 2019 clutch was produced. Good views of one of the adults on 30th May revealed that it had oiled plumage; it is possible that an interaction with the Fulmars adjacent to the North Gully nest led to the failure of the second attempt, although this was not confirmed.

An average of 2.5 fledged young per breeding pair was the lowest to be recorded since 2012, when three pairs only managed to fledge three, and matched 2007 as the poorest productivity recorded in

a year when two pairs attempted to breed. Mean productivity between 2009 and 2013, when three pairs nested on Skokholm, was 2.07, with 1.67 or fewer fledglings per pair being logged in three of those years; it is tempting to conclude that a higher density of breeding birds may impact productivity. Food items seen to be taken this year included the eggs of both auks and Manx Shearwaters, Mallard ducklings, a live Rabbit, a live Puffin and seabird corpses; with the exception of Rabbit, the availability of all of these items is seemingly increasing. On 1st May one of the North Coast pair was dissecting a dropped Raven feather, probably its own; the rachis was carefully split and the inner walls pealed and eaten. On 26th June three of the juvenile Raven proved themselves already adept at stealing fish from Puffins. The breeders and their offspring potentially accounted for all records from 1st June until staff departed on 3rd December, however two birds seen flying to Skomer on 18th July and two flying to the mainland ten days later were perhaps additional. Although they regularly dispersed, the family of seven were seen together on the 12th, 21st and finally on 25th July. More than four birds were logged on 13 August and eight September dates to the 18th, from when there were only four or fewer noted (seemingly the breeding pairs), with the exception of six on the 5th and eight on 12th October, eight on 9th November and five on 2nd December.

The number of Raven breeding pairs (green) and the number of fledged young between 2005 and 2019, along with productivity (blue and secondary axis).



Skylark *Alauda arvensis* **Ehedydd**

Uncommon Breeder and Common Visitor

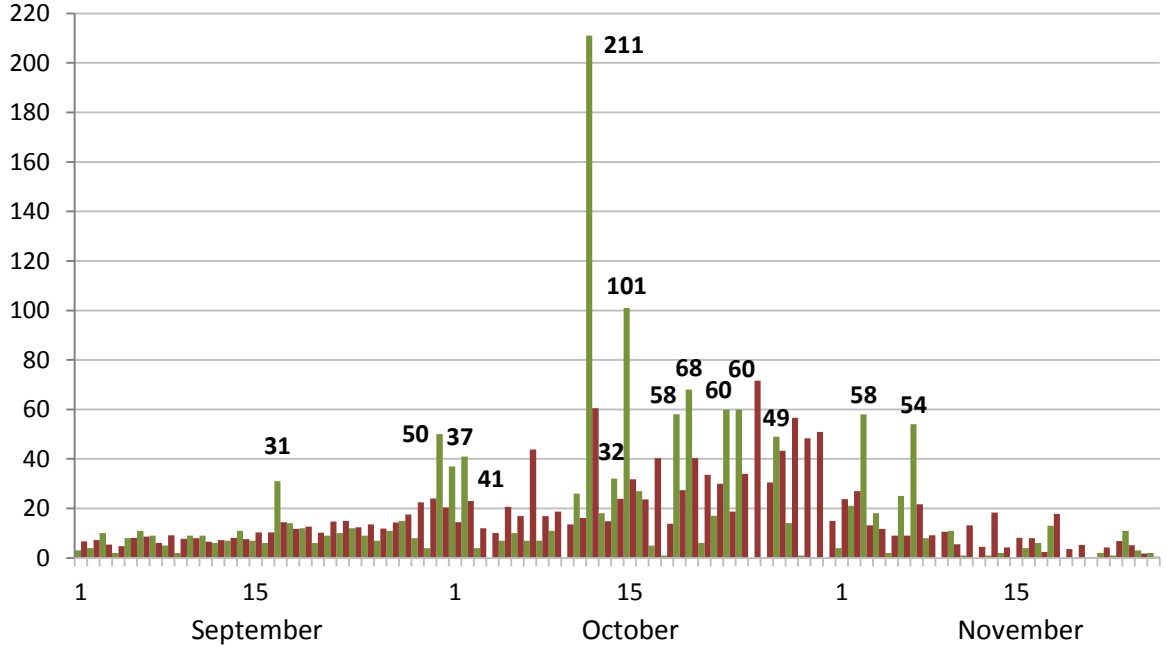
1 trapped, 2 retrapped

1936-1976: 299 trapped, 2015-2018: 16 trapped (including 4 pulli), 1 retrapped

A total of 14 territorial males registered regularly during April and May was five fewer than recorded in 2018, seven fewer than in 2017 and two fewer than in 2016, albeit up on the number plotted between 2002 and 2015 which ranged between three and 12; historically numbers were higher, with between 16 and 29 territories mapped between 1978 and 1996, 38 territories mapped in 1971 and a high of 48 breeding pairs logged in the 1960s. Although Skylark regularly insert mimicry into their songs, a notable record on 30th April was of a bird incorporating an excellent Manx Shearwater impression. There was again little evidence of a spring passage, with maximum daycounts of 20 in March, 17 in April and 20 in May being down on last year and attributable to the Skokholm breeders. Adults were collecting food from 28th May, although it was not until 22nd June that the first fledged young were seen, this 16 days later than the first of last year and one day earlier than the first of 2017. Given the number of overlapping territories and the secretive nesting habits of this species, it proved impossible to accurately assess productivity, however young were noted at eight sites (two more than last year). The number of birds logged each day declined during the post-breeding moult,

with no more than 15 noted on each date between 1st July and 16th September. Moulting adults retrapped on the 21st and 23rd August had both been ringed on 8th September last year.

The number of Skylark logged on each day of autumn (green) compared with the 2013-2019 average. 2019 counts of above 30 are labelled.



Given that no more than 11 had been logged during the first 16 days of the month, a total of 31 on 17th September perhaps included birds arriving from elsewhere (although the Skokholm breeders and their offspring could account for the tally). A flock of 33 birds on 30th September contributed to a daycount of 50; although down on the 58 of last year and the 56 of 2013, this otherwise equalled the highest September count since 1959. There were ten or fewer noted on 15 October dates (14 dates last year), including six days from the 4th without a sighting (the first blank day last year was on the 12th). The first substantial passage of the season came on 12th October when a minimum of 211 birds included 66 heading north or west to sea; although there have been four higher October daycounts in the last seven years, namely 231 on the 7th and 223 on the 30th last year, 273 on the 28th in 2016 and 292 on the 25th in 2015, this was the seventh largest daycount to have been recorded this early in the month (with the early October highs being of 301 on the 7th in 1959, 250 on the 3rd and 8th in 1952 and 231 on the 7th last year). There were 101 logged on the 15th but no more than 68 during the last 11 days of the month, this the period in which Skylark passage has recently peaked (see above chart); this is also the period which produced record daycounts of 700 on the 20th in 1988 and 1200 on the 21st in 1956. The 2019 October bird-days total was 878, this down on the 2013-2018 October mean of 920.8 and the lowest tally of the last four years. There were sightings on all but eight November dates, with highs of 58 on the 3rd and 54 on the 7th but no more than 13 logged each day from the 8th. No birds were seen at all between 29th November and the departure of staff on 3rd December.

Short-toed Lark *Calandrella brachydactyla* **Ehedydd Llwyd**
Vagrant nine previous records, six of which have been logged in spring
1936-1976: 1 trapped

A mobile and often elusive bird found feeding around Western Plain on 22nd June was the first to be confirmed since a minimum of two were logged in the October of 1995 (RDB *et al.*); the same individual was present the following day and was relocated on the 26th and 27th when it occasionally flew south towards the Lesser Black-backed Gull colony (an area which cannot be birded during the

breeding season without causing significant disturbance). This species was encountered more regularly in the 1950s and 1960s; the previous Skokholm records concern lone birds seen daily between the 9th and 13th April 1952 (the first for Wales), on nine dates between the 10th and 20th April 1956, on the 27th and 28th June 1964, daily between the 10th and 14th May 1967, on the 17th and 18th May 1968, on 1st September 1969, on 1st June 1970 and on the 10th, 13th and 16th October 1995 (when at least two different birds were present).

Sand Martin *Riparia riparia* **Gwennol y Glennydd**
Fairly Common and Common in some years with daycounts of up to 400 in spring and 500 in autumn
Earliest 8th March 2000 (19th March 2019) **Latest** 25th October 1997 and 1971 (29th September 2019)
3 trapped
1936-1976: 8 trapped, 2018: 8 trapped

Although a large arrival into Britain during early March had led to a few Pembrokeshire sightings, the first four Skokholm birds were not logged until the 19th; the first four of last year were not seen until 4th April, whilst during the five previous years the first was noted between the 17th and 23rd March (only in 2000, 1997 and 1983 were there birds prior to 17th March). Counts of up to 13 on seven further March dates took the monthly bird-days total to 40, a tally only exceeded in 1965 when 41 were noted. Records on 17 April dates were all of ten or less bar 16 on the 1st and 34 on the 17th, the latter being the second highest April daycount of the last eight years; an April bird-days total of 118 was the 14th highest to date, albeit well down on peaks of 311 in 1990, 327 in 1954 and 380 in 1951. Following 19 on the 1st, no more than three were present on 11 May dates to the 22nd; a bird-days total of 37 was the lowest of the last five years and down on the 2012-2018 mean of 59.6. The only June sightings were of singles on the 1st and 28th; although there have been up to seven in the last three Junes, there have only now been 27 June bird-days this century and 327 since 1929.

The total number of Sand Martin logged each month (2018 to 2016 in parenthesis), along with the monthly maximum (2018 to 2016 in parenthesis) and the date(s) on which the 2019 peak was recorded.

March	April	May	June	July	August	September	October
40	118	37	2	4	27	191	0
(0, 9, 22)	(61, 189, 67)	(144, 40, 70)	(7, 2, 0)	(14, 211, 94)	(309, 125, 74)	(72, 109, 14)	(0, 0, 3)
13	34	19	1	2	9	108	0
(0, 2, 15)	(14, 73, 12)	(57, 9, 17)	(6, 2, 0)	(9, 185, 75)	(235, 64, 29)	(51, 27, 3)	(0, 0, 3)
31st	17th	1st	1st & 28th	15th	25th & 26th	7th	

July saw singles on the 3rd and 27th and two on the 15th, the tally being the lowest since the single of 2015 and well down on the 211 bird-days of 2017 and the 94 of 2016 (the two highest July totals to date). Sightings of up to nine birds on eight August dates to the 26th led to a monthly total of 27, this the lowest of the last six years; although there were more than twice the number of birds logged by the 26th than had been seen by the same point last August, a further 298 were counted during the last three days of the month in 2018 (none were seen during the same period this year). This would perhaps suggest that this year saw a later autumn passage than in 2018, an observation supported by the September tally which proved to be the highest since 2007; records on 12 September dates, including peaks of 108 on the 7th and 40 on the 8th (three of which were ringed), led to a bird-days total of 191, the 11th highest to be made in this month (albeit well down on highs of 554 in 2002, 492 in 1997 and a remarkable 1455 in 1967). One east on 29th September was the last of the year, this two days later than the last three of last year and four days later than the last three of 2018, but three days earlier than the last of 2016.

Swallow *Hirundo rustica* **Gwennol**
Scarce Breeder and Very Abundant Migrant
Earliest 11th March 2000 (24th March 2019) **Latest** 28th November 1932 (24th October 2019)
138 trapped (including 16 pulli), 14 retrapped
1936-1976: 238 trapped, 2011-2018: 587 trapped (including 88 pulli), 76 retrapped, 11 controls

Despite a substantial influx into Britain during late February, two northbound singles on 24th March were the first Skokholm birds (this ten days earlier than the first two of last year); perhaps surprisingly there have only been ten earlier Swallows, most recently with two on the 12th in 2017. The only other March sightings were of eight on the 30th and 34 on the 31st; the latter daycount and a bird-days total of 44 were new March records, both up on those set in 1958 when 18 on the 30th took the monthly total to 27. Sightings on all but three April dates, including highs of 136 on the 17th, 188 on the 18th and 193 on the 30th, took the bird-days total to 1023; although the previous decade had seen two fractionally higher April daycounts, the bird-days total was the ninth highest in this month to date (with 1184 in 2017 and 1319 in 1990 the only higher tallies since the 1036 of 1960). Birds were prospecting at a traditional nest site from 28th April, six days later than in 2018 and four days later than in 2017, however birds collecting nest material on 20th May were nine days earlier than the first of last year. Five pairs took up residence, one more than in six of the last nine years and the same as in 2013, but one down on 2015 and two down on the 2007 record. There were May highs of 861 on the 1st, 103 on the 12th and 82 on the 15th which took the monthly bird-days total to 1794; although the bird-days total was only 24.8% up on the 2012-2019 mean of 1437.3, the peak daycount was the sixth highest to be made in this month (albeit well down on highs of 1500 in 1997, 3000 in 1989 and 2000 in 1953). There were only three June daycounts in excess of the ten Skokholm breeders, with a high of 12 noted on the first two days of the month.

A pair on one of the purpose built ledges in the Red Hut gas store had three eggs by 31st May, these the earliest eggs of the last five years. Only a single egg was being incubated by 6th June and the nest was empty nine days later, presumably due to Jackdaws. A pair nest building in the South Haven sea cave from 31st May were seen regularly until 20th June and were surprisingly nest lining on 23rd June, however there was no activity thereafter. Rather pleasingly, on 3rd June a pair were building in the nest box installed on the southerly end of the North Pond hide in 2018; five eggs were present on 27th June, eggs had hatched by 4th July and four fledged on 23rd July. A pair on the north side of Officer's Mess had four eggs by 14th June, had hatched at least three by 24th June and fledged three on 15th July. The unusual Courtyard site was again used this year, with the nest hidden behind a thick screen of Sycamore and Elder; this pair had produced one egg by 28th June, had four eggs on 20th July, had hatchlings on 27th July and fledged four on 17th August. A pair prospecting at the traditional Lighthouse Smoke Room site on 26th June did not linger; it was the first time in at least eight years that this old store shed, which has been used regularly since 1928, was not occupied. Two pairs

made second attempts, one more than last year but one less than in 2017 and 2016. The Red Hut pair, which had been unsuccessful with their first attempt, had an unlined nest on 7th July, two unbrooded eggs on the 12th, four eggs on the 17th, hatchlings on the 27th and fledged four on 18th August. The North Pond nest box pair had four eggs on 4th August, at least one chick on the 22nd and fledged one on a rather late 9th September. The five pairs thus fledged 16 young, the same number as fledged by four pairs last year and three more than fledged in 2017. The resulting productivity value of 3.20 fledged young per pair was the lowest of the last four years and down on the 2013-2019 mean of 3.53 ±se 0.39 (the high during the same period was 5.75 in 2016 and the low 2.00 in 2014). Two returning birds were encountered this year; S957680, a male ringed as one of four chicks in the Smoke Room on 3rd July 2018, was retrapped in the Wheelhouse Mist Net on 18th May alongside female S957975, a bird ringed as a (non-Skokholm) juvenile on 21st August 2018.

The total number of Swallow logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2014 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	44	1023	1794	237	360	649	5565	1898	0
2018	0	611	1265	287	397	1343	12847	218	0
2017	6	1184	1163	298	488	927	18018	707	0
2016	9	771	2457	349	576	1062	2720	624	0
2015	0	907	1570	360	317	942	11446	729	0
2014	0	946	1220	329	416	454	30693	753	0
2019	34	193	861	12	29	160	1164	1105	0
2018	0	71	265	16	36	478	5308	62	0
2017	3	194	141	17	40	153	12979	136	0
2016	5	184	313	18	74	210	698	292	0
2015	0	112	203	24	15	77	5403	141	0
2014	0	198	176	26	46	45	12000	199	0
	31st	30th	1st	1st & 2nd	15th	25th	18th	6th	

A minimum of 29 on 15th July was the first obvious arrival of the autumn and the first non-Skokholm juvenile was ringed the following day; four further daycounts in excess of 20 took the bird-days total to 360, the lowest of the last four Julys. No more than 26 were logged on each August date to the 23rd, after which there were highs of 160 on the 25th and 59 on the 27th (but a low of just three on the 30th); although down on a record 478 last August, the peak daycount was the sixth highest to be

recorded in this month, however a bird-days total of 649 was the lowest of the last five years and well down on the record of 1343 set last year. There were 25 or fewer noted on 13 September dates, including a blank day on the 23rd, but 11 counts of at least three-figures including highs of 697 on the 8th, 654 on the 13th, 1164 on the 18th and 579 on the 29th; the peak daycount was the second lowest September maxima of the last eight years, well down on the all-time records of 12,000 and 12,979 logged in 2014 and 2017 respectively. The September bird-days total of 5565 was less than half of that recorded last year, the second lowest tally of the last eight years and well down on the 2012-2019 mean of 12,305.4. As noted for the preceding species, a series of late records was perhaps indicative of a later running breeding season; sightings on 18 October dates to the 24th included highs of 303 on the 2nd, 143 on the 5th and 1105 on the 6th (but no more than 20 after the 13th). There have only been four higher October daycounts (with 2500 in 1952 the maximum) and seven higher October totals (including a record 4047 in 1998). Two west on 24th October were the last of the year, these two days earlier than the last of 2018, three days earlier than the last of 2017 and seven days earlier than the last of 2016; there have been 272 later October bird-days along with 18 in November.

Ringing recovery S957664
Originally ringed as one of five chicks, WHEELHOUSE, SKOKHOLM 20th June 2018
Recovered as an adult female, SKOMER ISLAND, PEMBROKESHIRE 23rd July 2019
Finding condition Intentionally taken
Distance travelled 4km at 343 degrees (NNW)
Days since ringed 398

House Martin *Delichon urbicum* **Gwennol y Bondo**
Common Migrant with record daycounts of 330 in April 1948 and 710 in September 2013
Earliest 20th March 1988 (1st April 2019) **Latest** 29th October 1975 (7th October 2019)
1 trapped
1936-1976: 17 trapped, 2015-2018: 12 trapped

Five on 1st April were the first of the year, these three days earlier than the first single of last year and the earliest Skokholm birds since one on 21st March 2000; there have been 14 House Martins seen in March including the first in 1949. Sightings of up to nine birds on a further 16 April dates took the bird-days total to 74, a tally well up on the post-1927 mean of 20.9 and the fourth highest to be logged in this month (down on the 81 of 2017, the 118 of 2016 and the 357 of 1948). There were records on all but one May date, with highs of 27 on the 1st and 23 on the 5th contributing to a total of 293 bird-days; the peak count was up on an all-time mean of 20.8 but the lowest of the last four years, whilst the total was the fifth highest to be recorded in May (down on highs of 315 in 1948, 361 in 2016 and 313 last year). No birds were seen at the Lighthouse nest boxes this year; these woodcrete cups, installed in the autumn of 2014, are still to be used. June proved typically quiet with sightings on 11 dates but, following five on the 2nd, no more than three seen each day; a total of 19 bird-days was close to the post-1927 mean of 21.7. Two on 3rd July, along with singles on the 6th and 10th, took the 21st century July total to 54 and the all-time total to 218. The only August sightings were of two on the 8th and singles on three dates from the 25th; an August bird-days total of five was the lowest since 2011, well down on the 2012-2019 mean of 21.3 and a high of 51 logged in 2015. Autumn passage again peaked in September with records on ten dates between the 6th and 19th and on each day between the 27th and 29th; peak daycounts of 33 on the 8th, 19 on the 13th and 24 on the 18th took the bird-days total to 121. Both the peak September daycount and bird-days total were the lowest of the last seven years; the average peak count during the same period is 205.4 and the monthly mean 341.3, with the all-time records occurring in 2013 when a daycount of 710 took the September total to 782. It proved the poorest October of the last eight years, with up to three birds noted on five dates to the 7th and a bird-days total of eight (the 2012-2019 mean is 40.5); there have been 742 later birds since 1929 including 178 this century.

Long-tailed Tit *Aegithalos caudatus* **Titw Cynffon-hir**
Vagrant just ten previous records, all bar one between 7th October and 9th November
1936-1976: 1 trapped

One heading east along the south coast cliffs on the morning of 10th November was approximately a metre off the ground and calling constantly (RDB); this was the first since four seen between Crab Bay and Orchid Bog on 8th November 2017 and the latest Skokholm sighting. The nine additional records are of five on 1st November 2015, one on 12th October 2004, three on 24th October 1993, one on 9th November 1980, three on the 7th and a single on the 24th and 25th October 1975, eight on 28th October 1973, three on the early date of 22nd August in 1969 and two on 11th October 1957.

Yellow-browed Warbler *Phylloscopus inornatus* **Telor Aelfelyn**
Scarce Autumn Migrant the first for Wales was found on 2nd October 1959. Rare until 2013
Earliest 23rd September 2015 (6th October 2019) **Latest** 3rd November 2017 (14th October 2019)
1 trapped
1936-1976: 2 trapped, 2013-2018: 15 trapped, 3 retrapped

The first of the year was a first-winter trapped in the Well Heligoland on 6th October (RD *et al*.); there have been eight earlier Skokholm birds. The only other sighting was of one around the Farm on 14th October (BD *et al*.). Two birds in an autumn matched last year and was up on singles in 2017 and 2014, but was down on the five of 2016 and the four of 2015 and 2013; there have now been 19 individuals in the last seven years. Although clearly still a Skokholm scarcity, this species has become commoner in recent times, primarily due to its continued breeding range expansion to the west of the Ural Mountains which has mirrored an increase in the number of birds wintering in western Europe. Nevertheless there have still only been approximately 37 Skokholm individuals since the first for Wales found in 1959, although recent ringing has shown that records on consecutive dates, assumed in the past to be the same individual, may have actually referred to more than one bird.

Willow Warbler *Phylloscopus trochilus* **Telor yr Helyg**
Abundant Migrant although only Common in some years
Earliest 13th March 2007 (26th March 2019) **Latest** 31st October 1954 (13th October 2019)
434 trapped, 91 retrapped
1936-1976: 11,665 trapped, 2011-2018: 4900 trapped, 584 retrapped, 10 controls

One in the Courtyard on 26th March was the first of the year, this four days earlier than the first three

of last year but three days later than the first five of 2017; there have only been 33 birds seen before the 26th including the first in 1972. An analysis of the recently digitised Birdlog data reveals that the first individual of spring is arriving significantly earlier than it did only six decades ago (see chart below). Sightings of up to eight birds on a further four March dates took the monthly bird-days total to 23, a tally which matched 2014 as the highest since the 50 of 2007. Records on all but five April dates included 12 counts of fewer than ten but highs of 38 on the 8th, 31 on the 9th and 30 on the 18th; both the peak spring daycount and the April bird-days total of 322 were the lowest for over a decade, the former down on a 2012-2018 mean of 159.4 and the latter down on a 2012-2018 mean of 723.3. Half of the birds counted this spring had gone through by 20th April, one day later than last year and on the same day as the mean bird of both 2017 and 2016; an analysis of the Birdlog data again suggests that the mean spring bird is passing through earlier than it did in the early post-War years. A good candidate for a *P. t. acredula* was at North Pond on 9th April and one was trapped 12 days later. Sightings on all but two May dates to the 19th included a high of 32 on the 1st but no more than 14 on each date thereafter; whereas the peak daycount almost matched the 2012-2018 mean of 33, a bird-days total of 101 was down on a 2012-2018 mean of 139. Up to four birds on 12 dates took the June bird-days total to 17, the second highest to date behind the 26 of 2013. As noted in the previous six reports, the vast majority of spring birds moved through quickly; of 198 ringed during the period, only three were retrapped subsequently (two in early May lingered for two days and a male, ringed on 23rd June, remained until at least 26th July).

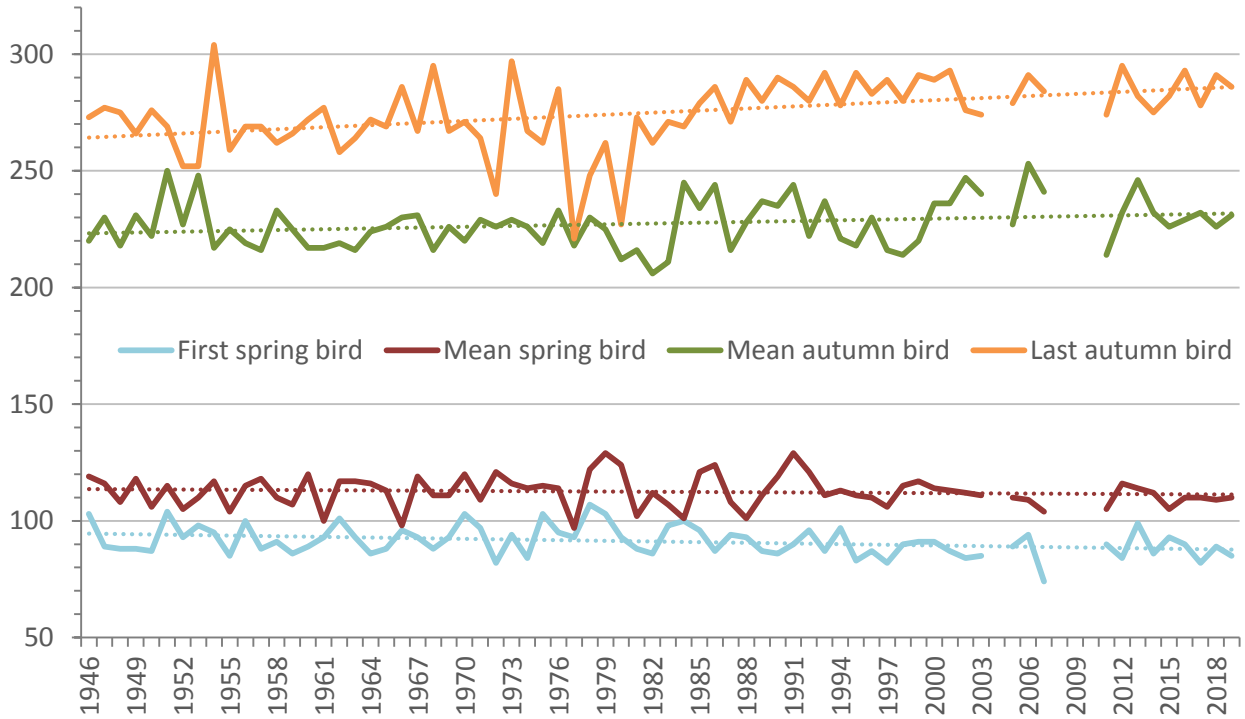
The total number of Willow Warbler logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2015 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	23	322	101	17	105	312	173	14	0
2018	4	429	122	6	101	785	184	3	0
2017	12	954	160	6	100	402	70	10	0
2016	4	496	93	0	104	441	116	4	0
2015	0	952	66	7	72	719	282	5	0
2019	8	38	32	4	31	32	29	3	0
2018	3	80	42	2	27	159	28	1	0
2017	5	263	25	4	15	60	10	6	0
2016	4	61	36	0	20	34	13	1	0
2015	0	180	9	2	21	113	61	1	0
	30th & 31st	8th	1st	26th	31st	4th	7th	3 dates	

The lingering male was joined by a second adult on the 5th and 7th July and the first juvenile arrived on the 10th; the latter was four days earlier than the first of last year and 2016 but six days later than the first of 2017. Birds were logged on all but two subsequent July dates, tallying 105 bird-days and with highs of 16 on the 27th and 31 on the 31st; the bird-days total was remarkably similar to the last three years and the maximum daycount the highest since a post-1963 record of 101 were logged in 2014. As has been the case for the previous five years, there were daily records in August, with fewer than ten noted on 22 dates but highs of 26 on the 1st, 32 on the 4th and 25 on the 12th taking the bird-days total to 312; both the peak count and bird-days total were the lowest of the last six Augusts, down on respective 2012-2018 means of 74.9 and 464.7 and a record 3938 bird-days in 1948 (which included a record-equalling daycount of 3000). There were September counts on all but five dates, with less than ten noted on 18 dates but highs of 22 on the 1st, 29 on the 7th and 20 on the 8th which took the bird-days total to 173; although the maximum daycount was the highest of the last four years, both the peak count and bird-days total were down on the post-2012 mean (primarily due to the productive September of 2014 when a peak daycount of 134 took the bird-days total to 550). Sightings on six October dates to the 13th included a high of three on the 1st, 2nd and 13th; although there have been 36 later birds seen on Skokholm, there have only been four higher

October tallies. The mean autumn passage bird went through on 19th August, five days later than that of last year but one day earlier than in 2017 (during the last six years the mean autumn bird has been logged in a seven day period between the 14th and 20th); the digitised Birdlog data reveals that the date on which the mean autumn Willow Warbler goes through has been getting significantly later, a trend which mirrors the shift in the date on which the last bird is logged. Documented changes in phenology linked to climate change frequently cite earlier spring arrival dates, however the Skokholm Willow Warbler data suggests that it is departure dates which are changing more rapidly (see below chart). As was noted in the previous six seasons, autumn birds frequently lingered for longer periods; of 236 ringed during the autumn, five were present for a further two or three days, a further five were present for between four and eight days, five remained for between nine and 12 days, four stayed for between 14 and 18 days and singles lingered for 20, 34 and 42 days.

The number of days into the year that the first and last Willow Warblers were logged 1946-2019 and the number of days after which the mean spring and autumn birds went through.



Ringing recovery KYN356
Originally ringed as a juvenile, WELL 9 MIST NET, SKOKHOLM 30th August 2018
Recovered as an adult, LUNDY ISLAND, DEVON 29th April 2019
Distance travelled 74km at 145 degrees (SE)
Days since ringed 242

Chiffchaff *Phylloscopus collybita* **Siff-saff**
Abundant Migrant although only Common in some years. Bred successfully for the first time in 2015
Earliest 19th February 1998 (20th March 2019) **Latest** 14th December 2000 (18th November 2019)
291 trapped, 69 retrapped, 3 controls
1936-1976: 2565 trapped, 2011-2018: 2047 trapped, 855 retrapped, 11 controls

Although there is a possibility that early birds may have come and gone prior to the arrival of staff on 28th February, the first three of the year were not logged until 20th March; this was the latest arrival of the last nine years, with one on the 5th in 2013 and four on the 9th in 2014 the earliest noted during that period. Despite the late arrival, numbers increased rapidly, with daily sighting during the remainder of the month including highs of 27 on the 21st, 29th and 30th and 29 on the 22nd;

both the peak count, and a bird-days total of 195, were the second highest to be recorded in March, only down on 1989 when a daycount of 60 contributed to a bird-days total of 207. A silent bird on 22nd March looked a decent candidate for *P. c. tristis*, although views were not sufficiently good to allow it to be confirmed. Perhaps unsurprisingly given the early peak in numbers, both the maximum April daycount and bird-days tally were the lowest of the last five years (although the total was still the seventh highest to date); sightings on all but two April dates included 19 counts of less than ten but highs of 21 on the 1st and 19 on the 6th (the April records were set last year when a daycount of 94 took the monthly total to 575). Chiffchaff were seen on all but four May dates, with highs of 16 on the 1st and seven on the 8th taking the total to 107; although there have only been higher May daycounts in four years, the total was the lowest of the last six (a period which has seen the five highest May totals to date). A combination of ringing and field observations suggested that at least 12 individuals accounted for sightings of up to three birds on 14 June dates; although both were fractionally up on the post-1946 mean, the bird-days total and peak count were the lowest of the last seven years (well down on a record 2018 when a daycount of 14 took the total to 225). A recent increase in spring numbers, coupled with maturing Well vegetation, has led to breeding (although there was no suggestion of such this year); in 2014 a pair lingered between May and October but were not successful with any nest attempt, in 2015 a pair successfully fledged at least one, in 2017 a bird observed nest building was not known to progress beyond that stage and in May 2018 birds were building in two locations (there was no indication that young, or even eggs, were produced).

The total number of Chiffchaff logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2015 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	195	226	107	20	7	16	251	113	3
2018	18	575	307	225	102	93	232	292	48
2017	169	248	197	50	25	71	208	164	23
2016	57	251	177	24	17	1	88	135	14
2015	18	369	164	97	32	19	178	253	112
2019	29	21	16	3	2	4	65	9	1
2018	5	94	24	14	7	6	16	19	5
2017	27	26	16	5	2	17	49	21	6
2016	14	46	12	6	2	1	15	25	2
2015	3	72	9	8	3	2	41	57	12
	22nd	1st	1st	26th	4th	25th	18th	4 dates	3 dates

Sightings of up to two birds on six July dates were probably attributable to just four individuals; the total was again the lowest of the last seven years, down on a 2013-2018 mean of 35.7 and a record 102 logged last year. The first juvenile of the year was watched at the Well on 6th August, with sightings of up to four birds on a further ten dates taking the bird-days total to 16; there have only been higher August daycounts in eight years and higher totals in 11 years, however both were well down on records set in 2017 and 2018. Chiffchaff were logged on every September date, with fewer than ten noted on 24 occasions but highs of 17 on the 7th, 65 on the 18th and 21 on the 19th taking the total to 251; there have only been three higher daycounts and four higher totals in September (the two most productive Septembers came in 2013 and 2014 when peak daycounts of 128 and 133 took the totals to 404 and 482 respectively). Records on all but three October dates included highs of nine on the 1st, 2nd, 6th and 7th; the maximum daycount was the lowest of the last eight Octobers, down on a recent high of 57 in 2015 and an all-time high of 80 in 1989, whilst a bird-days total of 113 was the lowest of the last seven years, down on a 2013-2018 mean of 224.8 and records of 307 in 2014 and 292 last year. A Siberian Chiffchaff ringed on 27th October was the only record this year; although several *P. c. tristis* have been described on Skokholm in the past, including three in autumn 2018 and birds in each of the last six years, only individuals present on 2nd November 2014, 22nd October and 1st November 2015, 15th November 2016 and between the 28th and 31st May 2017 have

been confirmed using mitochondrial DNA analysis. Different singles logged on the 9th, 10th and 18th were the only November records this year; the total was by far the lowest of the last seven years, down on a 2013-2018 mean of 55.2 and highs of 109 in 2014 and 112 in 2015. An absence of staff during the winter months and an increase in the number of birds overwintering in Wales have inevitably reduced the relevance of the early and late dates recorded for this species.

Ringing recovery CIJ 186708
Originally ringed as a first-year, LONGIS RESERVE, ALDERNEY, CHANNEL ISLANDS 10th April 2016
Recovered as an adult, COTTAGE HELIGOLAND, SKOKHOLM 17th April 2019
Distance travelled 311km at 316 degrees (NW)
Days since ringed 1102

Ringing recovery DAV411
Originally ringed as a juvenile, DEER PARK, HARLOW, ESSEX 27th August 2019
Recovered as a juvenile, WELL HELIGOLAND, SKOKHOLM 19th September 2019
Distance travelled 369km at 270 degrees (W)
Days since ringed 23
This is the second consecutive autumn in which we have registered a somewhat intriguing record of a north or west bound juvenile.

Ringing recovery KYN381
Originally ringed as a juvenile, WHEELHOUSE HELIGOLAND, SKOKHOLM 5th September 2018
Recovered as an adult, SHERPA MARSH, VELATOR, BRAUNTON, DEVON 7th April 2019
Finding condition Intentionally taken
Distance travelled 103km at 131 degrees (SE)
Days since ringed 214

Greenish Warbler *Phylloscopus trochiloides* **Telor Gwyrdd**
Vagrant six previous records
Earliest 4th June 2003 (**31st May 2019**) **Latest** 31st August 1960, 1961 and 1976
1 trapped
1936-1976: 3 trapped, 2013-2018: 1 trapped

One found in the Cottage Garden on 31st May was later trapped in the Heligoland there (RDB *et al*.).

Upon release it showed well as it fed in the Courtyard, but there was no sighting the following day. This was the first since one on 18th June 2013 which was also found outside of the Cottage before being trapped in the Wheelhouse Heligoland. The first three Skokholm birds were all found in autumn, coincidentally all being present on the same date; they were logged on 31st August 1960, the 30th and 31st August 1961 and on 31st August 1976. The latter four records have occurred in spring, with birds present on 23rd June 1997 and the 4th and 5th June 2003 in addition to the 2013 and 2019 individuals.

Sedge Warbler *Acrocephalus schoenobaenus* **Telor yr Hesg**
Common Migrant and Uncommon Breeder previously a Scarce Breeder
Earliest 6th April 1961 and 2005 (10th April 2019) **Latest** 17th October 1957 (**2nd November 2019**)
172 trapped, 97 retrapped
1936-1976: 1977 trapped, 2011-2018: 1083 trapped, 566 retrapped, 15 controls

One found at the Dip on 10th April was the first of the year, this nine days earlier than the firsts of 2018 and 2017; there have only been two earlier birds, with one on the 6th in 1961 and one present for three days from the 6th in 2005. There were no further records until one sang in the Cottage Garden on the 19th, from when daily sightings to the end of the month included highs of eight on the 24th and seven on the 30th which took the bird-days total to 39; the only higher April bird-days total is the 46 logged in 2011. Daily records in May, including highs of 24 on the 1st and 17 on the 8th, produced a monthly total of 365, the third highest on record for May behind the 575 of 1953 and the 376 of 1967. There were 18 ringed birds which were known to return this year, three more than in both 2018 and 2017 and the most recorded since ringing was reinstated on Skokholm. Nine of the returning birds were adults, this three fewer than were recaptured last year but five more than in 2017; three had been ringed as adults in 2018 (and had thus survived at least two winters), two had been ringed as juveniles in 2017 (and had thus survived two winters), two had been ringed as adults in 2017 (and had thus survived at least three winters), one had been ringed as a juvenile in 2016 (and had thus survived three winters) and one, D295081, had been ringed as an adult on 1st May 2013 and retrapped twice in both 2015 and 2016 before being reencountered on 21st May this year (this bird had thus survived at least seven winters, two fewer than the current British record). There were nine returning birds which had been ringed as juveniles in the preceding year, this six more than last year but two fewer than in 2017.

The number of Sedge Warbler breeding pairs 2004-2019.

2004	2005	2006	2007	2008-09	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
5	7	3	4	-	4	13	4	8	9	7	11	13	15	15

There were a minimum of 15 occupied territories, the same number as last year and the most to date; seven territories included areas of fresh water, whilst pairs at the Hills, Boundary Hill, the Top Tank, the Knoll, to the south of Home Meadow, above Smiths Bay, on Isthmian Heath and north of the Lime Kiln occupied drier areas. Birds were first watched nest lining at the Well on 20th May, adults were first seen to be provisioning chicks on Isthmian Heath on 20th June and the first fledgling to be seen was at the same site on 5th July; the first 2018 fledgling was logged on 26th June and the first of 2017 on 1st July. There were 35 juveniles ringed during July (this compared with 68 in 2018, 52 in 2017, 42 in 2016, 34 in 2015 and 47 in 2014), however productivity proved impossible to calculate, primarily due to youngsters frequenting dense cover, closely positioned territories and the early arrival of fledglings from elsewhere. Skokholm breeders were still feeding young on 30th August, 11 days later than the last observed food delivery of 2018. Although the appearance of birds in unusual locations and a steady turnover of unringed individuals suggested that birds were on the move during August, peak daycounts of 22 on the 1st and 17 on the 4th were the lowest of the last four years and not indicative of significant falls; an August bird-days total of 243 was likewise the lowest of the last four years, well down on the all-time record of 409 logged last year. No more than

four were noted each day from 28th August to 4th September, the latter date the first of autumn without a record. Sightings on a further ten September dates between the 5th and 18th included highs of three on two dates and eight on the 8th, whilst a single was at East Bog on the 22nd and one was in the vicinity of the Red Hut for three days from the 28th; a September bird-days total of 30 was one down on last year and the second lowest of the last seven years (down on the 2013 all-time record of 75). Following a typically blank October (there have only been 34 October bird-days, all logged in 16 years), a metal ringed bird was present in the same area of South Pond on the 1st and 2nd November (GE, RDB); a juvenile trapped on 17th October 1957 was the latest Skokholm record prior to this remarkably late bird. Interestingly a Sedge Warbler was also found at Portland Bill, Dorset, on 1st November. There were 101 juveniles ringed during the autumn, this compared with 199 in 2018, 101 in 2017, 107 in 2016, 79 in 2015, 86 in 2014 and 70 in 2013.

Ringing recovery AJH1156
Originally ringed as a juvenile, WELL 6 MIST NET, SKOKHOLM 1st August 2019
Recovered as a juvenile, MARS-OUEST, SANT-PHILBERT-DE-GRAND-LIEU, FRANCE 24th August 2019
Finding condition Intentionally taken
Distance travelled 572km at 153 degrees (SSE)
Days since ringed 23
A juvenile in 2018 made a very similar movement in 23 days of 540km at 155 degrees.

Ringing recovery S147781
Originally ringed as a juvenile, WELL 6 MIST NET, SKOKHOLM 27th July 2018
Recovered as an adult, SKOMER ISLAND, PEMBROKESHIRE 6th and 19th May and 1st and 10th June 2019
Finding condition Intentionally taken
Distance travelled 4km at 343 degrees (NNW)
Days since ringed 283, 296, 309 and 318

Ringing recovery S957916
Originally ringed as a juvenile, STREAM NET, SKOKHOLM 9th August 2018
Recovered as an adult, BARDSEY ISLAND, GWYNEDD 10th May 2019
Finding condition Intentionally taken
Distance travelled 124km at 17 degrees (NNE)
Days since ringed 274

Reed Warbler *Acrocephalus scirpaceus* **Telor y Cyrs**
Uncommon Migrant previously Scarce. Bred for the first time in 2016, fledging at least three
Earliest 17th April 2015 (30th April 2019) **Latest** 30th October 1997 (5th October 2019)
10 trapped, 7 retrapped
1936-1976: 15 trapped, 2011-2018: 70 trapped (including 4 pulli), 45 retrapped, 2 controls

The first of the year, a bird singing on the evening of 30th April, marked the second latest spring arrival of the last six years; nevertheless there had only been 18 previous April bird-days, including seven logged between 2014 and 2017 and eight last year. At least two different individuals (ringed on the 10th and 16th) accounted for records of singles on 11 May dates to the 19th, whilst one singing at North Pond on the 24th and one at the Well on the 31st were almost certainly different birds; a May bird-days total of 13 was the second highest to date, only down on the 42 of 2017. Singles at the Well on each date between the 2nd and 5th June were perhaps all the male ringed on the 2nd, a second June bird was ringed on the 14th and a male singing on the 17th was probably the bird ringed on the 18th and retrapped on the 19th (during which time it increased in weight from 11.2 to 11.7g); a June bird-days total of eight was the third highest to date, only down on the 30 of 2016 (when Reed Warbler bred for the first time) and the 25 of 2017 (when the 2016 male lingered at the Well). A male singing at the Well on the 1st made this just the seventh year with a July record.

One in Crab Bay on 2nd August was perhaps the bird at Boundary Hill two days later, whilst a juvenile in the West Knoll bushes on the 25th was the only other bird to be seen during the month; there have been higher August bird-days totals in nine previous years, including six of the last seven. One present at the Well on the 1st and 2nd September was perhaps the juvenile ringed on the 3rd and retrapped on the 5th, a second juvenile ringed on the 5th was retrapped on the 8th (there having been no records in the intervening period), a different juvenile ringed on the 8th was perhaps the single logged on the 10th and seen to be ringed on the 11th and what was presumably a different bird was in the Courtyard on the 22nd. One was at the Well on 24th September, two were there the following day and one was seen on the 26th, with single juveniles ringed on the latter two dates still being present on the 30th (neither of which were noted between the 27th and 29th); a September bird-days total of 16 matched last year and 2016 as the highest to date. The juvenile weighing 10.7g when ringed on 26th September, weighed 11.9g when retrapped on the 30th, was still present on 1st October and, having gone missing for three days, weighed 13.4g when retrapped on the 5th; the latter recapture was the last Reed Warbler record of the year (there have been 15 previous October bird-days, including 11 later bird-days logged over six years). Four of the five highest autumn bird-days totals have come in the last four years.

Grasshopper Warbler *Locustella naevia* **Troellwr Bach**
Uncommon Migrant occasionally absent in autumn
Earliest 30th March 1981 (20th April 2019) **Latest** 7th November 1968 (6th May 2019)
7 trapped
1936-1976: 298 trapped, 2011-2018: 53 trapped

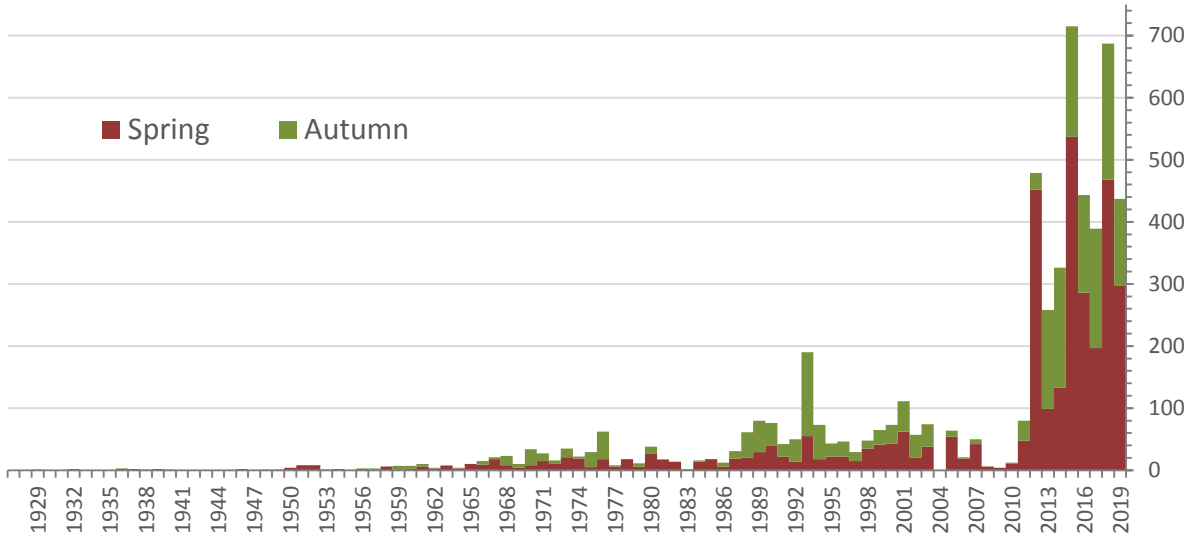
Singles trapped in the Well Heligoland and the Courtyard Mist Net on 20th April were the first of the year, these one day later than the first singles of last year and 2017. Two different birds were logged the following day, with one trapped in the Well Heligoland and a male singing near the Hills. Although up on two of the last three years, an April bird-days total of four was down on the 2011-2018 mean of 11.5, the recent high of 25 logged in 2017 and the record 80 counted in 1967. Three birds ringed on 1st May, two from the Well Heligoland and one from the Courtyard Mist Net, potentially included the two singing males heard earlier that day; there have only been four higher May daycounts since 1979, although up to 30 have been logged historically (in 1960 and 1970). One trapped in the Well Heligoland on 6th May was the last of the spring; a May bird-days total of four equalled that of 2015 as the highest since the ten of 2001 (there have been 23 double-figure totals, with highs of 54 in 1970, 38 in 1967 and 73 in 1960). There were no autumn birds for the first time since 2012; the mean 2013-2018 autumn bird-days total is three, a tally down on counts of between eight and 39 logged in six autumns and well down on a remarkable 99 found in the autumn of 1970.

Blackcap *Sylvia atricapilla* **Telor Penddu**
Common but recorded by both Thompson and Betts as Uncommon and Scarce prior to the 1960s
Earliest 9th March 1997 (22nd March 2019) **Latest** 2nd December 1996 (9th November 2019)
191 trapped, 17 retrapped
1936-1976: 211 trapped, 2011-2018: 1326 trapped, 205 retrapped, 2 controls

A male trapped in the Well Heligoland on 22nd March was 13 days earlier than the first eight of last spring; there have only been two earlier spring records, with singles logged on the 9th in 1997 and the 15th in 2012. There followed sightings of up to eight birds on five further March dates, taking the bird-days total to 14; prior to this year there had only been 26 March bird-days (with a high of six in 2012) and a peak March daycount of three (also in 2012). Following four birds on the 1st, there were records on all but two April dates from the 6th, including highs of 32 on the 19th, 35 on the 20th and 31 on the 25th which took the bird-days total to 236; although down on last year, when a record daycount of 164 took the April total to a record 413, there have only been higher daycounts in four Aprils and higher totals in three Aprils. Sightings on all but three May dates to the 13th included highs

of 19 on the 1st and four on the 5th, whilst a lone male on the 25th and two males on the 31st took the monthly total to 42; there have been two higher May daycounts, with 20 logged in 1993 and 50 in 2012, and four higher May totals (all logged between 2012 and 2016, with a peak of 170 in 2012). Sightings on four June dates comprised a singing male on the 4th, a female in the Courtyard on the 23rd, two males on the 26th and two on the 27th which included the first juvenile of the year; the only previous June juvenile was ringed on the 20th in 2014, whilst the first youngster of last year was found on 1st July. There have been three higher June totals and 70 previous June bird-days, 47 of which were logged between 2013 and 2018. As noted for other species, Blackcaps typically moved through quickly during spring; of 121 ringed during the period, the only known lingerers were singles present for two and three days, two birds present for four days and two birds present for six days.

The total number of Blackcap bird-days logged in each spring and autumn since 1927.



The total number of Blackcap logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2015 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	14	236	42	6	5	1	84	42	7
2018	0	413	41	14	11	0	65	127	16
2017	4	164	27	2	1	3	75	107	6
2016	0	151	122	13	0	0	41	101	15
2015	0	469	63	5	8	5	53	103	9
2019	8	35	19	2	1	1	12	13	3
2018	0	164	8	3	2	0	10	20	4
2017	2	68	7	1	1	2	21	19	3
2016	0	17	19	3	0	0	6	18	4
2015	0	129	13	4	1	2	8	12	4
	31st	20th	1st	26th & 27th	5 dates	25th	10th	13th	9th

A juvenile trapped in the Cottage Heligoland on 5th July was seen at the Well on the 8th and retrapped there on the 11th, whilst juveniles at the Well on the 15th and in the Courtyard on the 17th took the bird-days total to five; there have been 45 previous July bird-days and three higher July totals. August was typically quiet with a male on the 25th the only bird noted; a total of 26 previous August bird-days includes 15 logged between 2013 and 2017 (there were no August sightings last year). Records on all but seven September dates included highs of 11 on the 5th, 12 on the 10th and eight on the 30th; the peak daycount was two up on last September and the second highest in this month to date (only down on the 21 of 2017), whilst a bird-days total of 84 was a new record, up on the 80 of September 2013. October proved to be surprisingly quiet, with sightings on 17 dates and a

high of 13 on the 13th the only daycount in excess of four; although still the ninth highest October total to date, a bird-days tally of 42 was the lowest of the last seven years, well down on the 2013-2018 mean of 103.7 and a record 127 logged last year. Four different birds accounted for records of singles on four November dates to the 6th, whilst three on the 9th were the last of the year; there have been nine higher November totals and 76 later bird-days (including 23 later bird-days logged during four of the previous six years). Although late (and possibly even overwintering) birds could be going undetected due to an absence of staff in the winter months, there were no sightings between 10th November and 3rd December. Of 70 birds ringed during the autumn, two were present for at least four days, one was present for five days and one remained for a week.

Garden Warbler *Sylvia borin* **Telor yr Ardd**
Uncommon Migrant although Scarce between 2005 and 2012, in 2017 and in 2018
Earliest 6th April 1966 (5th May 2019) **Latest** 2nd November 1968 (30th September 2019)
2 trapped
1936-1976: 172 trapped, 2013-2018: 24 trapped, 6 retrapped

Singles at the Lime Kiln and in the Well Elders on 5th May arrived on the same date as the first of last year, six days earlier than the first of 2017 and three days earlier than the first of 2016; there have been 105 earlier Skokholm bird-days, with one on 24th April 2015 the most recent. Further singles logged on four dates between the 8th and 15th May took the spring bird-days total to six; six bird-days matched that logged in five previous springs and was down on a further 25 spring totals (all ranging between seven and 16, bar the 20 of 1988 and the 62 of 1993). Singles on the 5th, 18th and 30th September were the only birds seen during the autumn; although three autumn bird-days was an improvement on the last two years and matched 2016, there have been recent autumn highs of 13 in 2015 and 17 in 2014 and all-time highs of 22 in 1968, 26 in 1969 and 31 in 1971.

Lesser Whitethroat *Curruca curruca* **Llwydfron Fach**
Scarce Migrant not recorded every year
Earliest 20th April 2016 (30th April 2019) **Latest** 3rd November 1927 (13th October 2019)
3 trapped
1936-1976: 31 trapped, 2011-2017: 17 trapped, 7 retrapped

One trapped in the Wheelhouse Heligoland on 30th April was the first of the year; there have only been eight earlier bird-days, most recently with one on the 20th in 2016 which remains the earliest

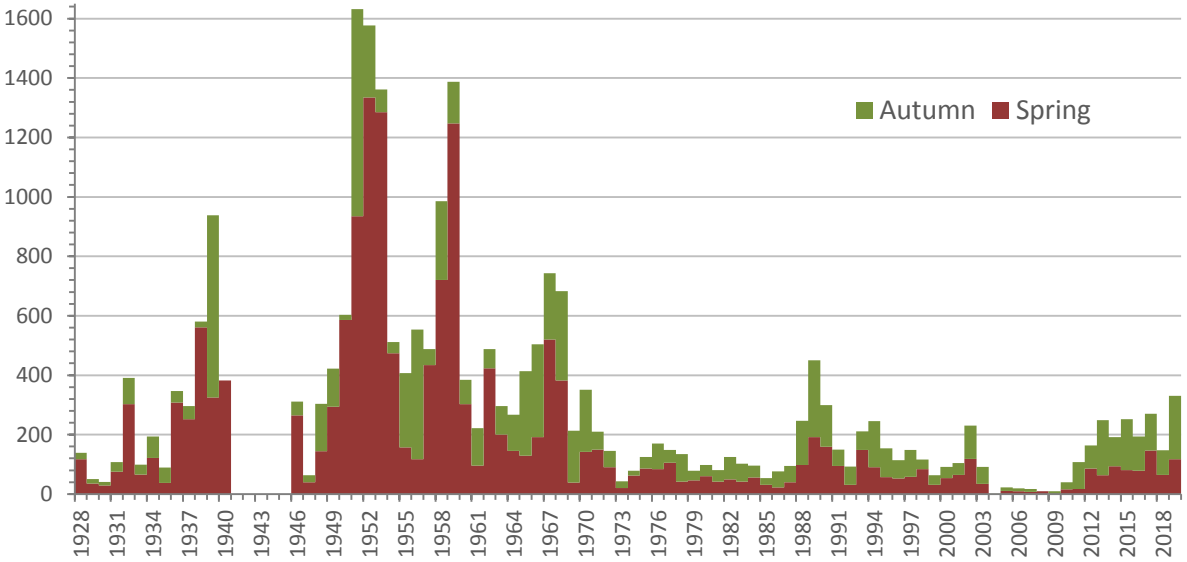
Island record. A bird trapped in the Well Heligoland on 7th May was perhaps the individual seen at Orchid Bog the following day, whilst a male trapped in the Wheelhouse Heligoland on the 27th was the last of the spring. Four spring bird-days matches that logged in five previous years (all between 1984 and 2016), a total only down on the five of 2002 and the six of 1990 (four individuals probably accounted for each of the latter two totals). The first of autumn, and the sole September bird, lingered around the Courtyard for three days from the 24th (below photograph); there have been 36 previous September bird-days, all logged in 14 years and with two in 2014 the most recent. The last of a typical autumn, found on the North Haven cliffs on 13th October, appeared a strong candidate for Siberian Lesser Whitethroat *C. c. blythi*, however it remained frustratingly distant. Even good field views can be misleading; an apparent Siberian Lesser Whitethroat found in October 2017 proved in the hand to have the tail pattern and wing formula typical of *C. c. curruca* (and was later confirmed as such using mitochondrial DNA analysis). The only confirmed Siberian Lesser Whitethroat for Skokholm and Pembrokeshire was ringed on 5th October 2014, whilst a feather sample from an October 2016 candidate (which promisingly had a second primary roughly equal in length to the seventh and white tips to the second-outermost tail feathers) currently resides with Professor Martin Collinson at the University of Aberdeen.

Whitethroat *Curruca communis* **Llwydfron**
Fairly Common Migrant previously Common and has bred in eight years (most recently in 1998)
Earliest 5th April 1966 (18th April 2019) **Latest** 30th October 1968 (25th September 2019)
64 trapped, 39 retrapped, 5 controls
1936-1976: 5898 trapped, 2011-2018: 405 trapped, 91 retrapped, 2 controls

The first of the year in each of the previous six seasons arrived between the 17th and 20th April; this year proved no exception, with three on the 18th arriving two days earlier than the firsts of last year, 2017 and 2016, but 13 days later than the earliest Island record. There followed daily April sightings, with highs of five on the 19th, 24th and 29th which took the bird-days total to 38; although there have been five higher April daycounts since 1968, the bird-days total was the highest to be logged during the same period (there were typically more April birds prior to 1969, with daycounts of up to 200 contributing to monthly totals of up to 288). Records on 19 May dates to the 21st were, bar 21 on the 1st, eight on the 8th and 9th and six on the 17th, all of four or less; the peak May daycount was the highest since 60 were logged in 2002 and the fourth highest since 1976, although a bird-days total of 66 almost matched a 2012-2018 mean of 64.3 (May totals were historically much higher, with daycounts of 500 in 1952 and 1959 leading to bird-days totals of 1215 and 1223 respectively). June saw lone males logged on the 5th and 13th, with a different first-summer male arriving on the 14th (a

bird which had been ringed on Skomer Island on 6th May); the latter was probably responsible for records of a song flighting male seen between the Well, the Farm and Orchid Bog over the next six days. Following an eight day absence, a male was logged on the 29th, whilst three birds on the last day of June included the Skomer ringed male, an adult female and the first mainland juvenile of the year; the latter was 11 days earlier than the first juvenile of last year and 14 days earlier than the first of 2017. Up to seven birds logged on 26 July dates included the Skomer ringed male, the adult female and a minimum of seven juveniles from elsewhere. The adult birds were seen with food at Orchid Bog on 22nd July and both were watched feeding two fledglings in Billy's Dyke on the 27th and 28th; although territorial males built cock-nests in 2017, 2015 and 2014, this was the first confirmed breeding on Skokholm since 1998.

The total number of Whitethroat logged in each spring and autumn since 1928.



The August bird-days total was bolstered by regular sightings of the breeding adults and at least one of the Skokholm fledglings (a bird ringed on 31st July and still present on 26th August), whilst arrivals from elsewhere produced peak daycounts of 17 on the 25th and eight the following day; the peak August daycount was the highest since 1968 (albeit down on earlier daycounts of up to 500) and a bird-days total of 117 was the highest since the 125 of 1989 (but well down on an August record of 595 logged in 1939). September proved disappointing by comparison, with the only birds logged being singles on seven dates to the 25th; the bird-days total was down on a 2013-2018 mean of 35.2 and matched 2011 as the quietest September since 2006 (September counts peaked in 1951 when a daycount of 250 took the monthly total to 682). The last bird of the year was a day later than that recorded in both 2018 and 2017, but a day earlier than the last of 2016; there have been 170 later bird-days.

Ringing recovery AKA3606
Originally ringed as an adult, SKOMER ISLAND, PEMBROKESHIRE 6th May 2019
Recovered as a first-summer male, COTTAGE HELIGOLAND, SKOKHOLM 14th June 2019
Recovered as a first-summer male, COURTYARD NET, SKOKHOLM 30th June 2019
Recovered as an adult, WELL 9 MIST NET, SKOKHOLM 17th July 2019
Distance travelled 4km at 163 degrees (SSE)
Days since ringed 39, 55 and 72

Ringing recovery AKF6118
Originally ringed as a juvenile, SKOMER ISLAND, PEMBROKESHIRE 23rd August 2019
Recovered as a juvenile, REEDBED NET, SKOKHOLM 26th August 2019

Distance travelled 5km at 149 degrees (SSE)
Days since ringed 3

Ringing recovery AVD1711
Originally ringed as a juvenile, NANJIZAL, LANDS END, CORNWALL 4th August 2018
Recovered as an adult, COTTAGE HELIGOLAND, SKOKHOLM 8th May 2019
Distance travelled 186km at 10 degrees (N)
Days since ringed 277

Firecrest *Regulus ignicapilla* **Dryw Fflamben**
Scarce Migrant recorded in 41 years since 1949, including 24 since 1988. More regular in autumn
1 trapped, 1 retrapped
1936-1976: 23 trapped, 2013-2018: 19 trapped, 12 retrapped

There was no spring record for the first time since 2017 and for the third time since 2013. The first of the year, found along the Lighthouse Track on 20th September, was perhaps the first-winter bird trapped in the Well Heligoland on the 22nd and logged on each subsequent day to the 29th (TW *et al*.); it is unusual for a bird to linger this long in September (indeed a bird-days total of nine was the highest to be logged in this month), this stay perhaps triggered at least in part by the weather prevalent during the period (near constant moderate to strong winds coupled with very regular heavy rain). The only other 2019 sighting was of an unringed bird at the Well on 3rd October. A total of at least two autumn individuals accounting for ten bird-days was an improvement on the one day single of last autumn and matched the two individuals logged in 2016 and 2014; there have been recent autumn highs of ten birds in 2017 (when there were 20 bird-days) and 11 in 2015 (when there were a record 39 bird-days), whilst a record daycount of seven was logged in October 1967.

Goldcrest *Regulus regulus* **Dryw Eurben**
Common but only Fairly Common in some years
127 trapped, 29 retrapped
1936-1976: 438 trapped, 2011-2018: 647 trapped, 165 retrapped

Following the arrival of two birds on the 22nd, there were sightings on all but two subsequent March dates, including highs of nine on the 26th and six the following day; the peak daycount was the fifth highest in March this century (down on an all-time March high of 24 logged in 2017), whilst a bird-days total of 28 was fractionally up on a 2012-2018 mean of 24.6 (a record 124 March bird-days

were logged in 1974). In April there were two birds present on the 2nd, singles on the 7th and 9th, four on the 10th and two on the 18th and 29th which were the last of the spring; a bird-days total of 12 was well down on the 84 of last April (the third highest April total to date) and down on a 2012-2018 mean of 25.3. There were no May Goldcrest for the first time since 2015 and for only the second time in eight years. As is typically the case, spring individuals seemingly moved through quickly; none of the four birds ringed during the period were seen or retrapped on a later date.

At least two birds arrived on 20th August, these ten days earlier than the first autumn bird of last year but between one and seven days later than those noted between 2014 and 2017. Records of up to two birds over the following three days took the August bird-days total to six, a tally down on the 2017 record of 31 but close to a 2010-2018 August mean of 9.1. Daily September sightings included 15 double-figure counts and highs of 27 on the 7th, 28 on the 10th and 30 on the 30th; although there have been nine higher daycounts since 1992, eight of these were logged in 2017 (including a September record of 121), whilst a bird-days total of 355 was the fourth highest September tally to date (down on 458 in 1988, 494 in 1989 and 728 in 2017). Records on all but three October dates included seven double-figure daycounts and highs of 22 on the 2nd, 23 on the 12th and 28 on the 22nd; an October bird-days total of 225 was the third lowest of the last seven years but the 12th highest to date. Up to six were seen on all but one November date to the 12th, the peak daycount equalling that of 1980 as the second highest in this month (albeit well down on the 16 of 2015); a bird-days total of 31 was also the second highest to date, only down on the 56 of 2015. Birds lingered for longer in autumn than they had in spring; of 123 Goldcrest ringed during the autumn, ten remained for at least one or two more days, three stayed for three or four more days, three stayed for five or six more days and one lingered for ten days.

Ringing recovery KYN475
Originally ringed as a first-winter female, WHEELHOUSE HELIGOLAND, SKOKHOLM 1st October 2018
Recovered as a first-winter female, CALF OF MAN, ISLE OF MAN 29th and 30th March 2019
Finding condition Intentionally taken
Distance travelled 263km at 7 degrees (N)
Days since ringed 179 and 180

Wren *Troglodytes troglodytes* **Dryw**
Fairly Common Breeder only noted as a Common Winter Visitor prior to first breeding in 1988

72 trapped, 63 retrapped
1936-1976: 876 trapped, 2011-2018: 619 trapped, 444 retrapped

The 69 territorial males mapped this year included 66 registered on multiple visits and three singing in discreet areas but only noted on one of four survey dates; this was a new high, a tally six up on the record set last year. The last nine years, all with over 50 mapped territories, are remarkable for the fact that the previous peak in breeding numbers was the 19 territories located in 1994 (six years after breeding was first recorded); the most recent survey prior to the renovation period located only ten territories in 2007. The reason for this substantial increase in the number of territorial males is unclear. The first fledglings were logged on 3rd June, four days later than the first of last year, one day earlier than the first of 2017 and one day later than the first of 2016.

The total number of Wren logged each month 2019-2017. Note that the March and November recording periods are different each year.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	1165	1422	1395	1288	1037	653	652	818	677
2018	763	1129	1451	1337	975	930	701	945	591
2017	768	1322	1090	910	818	1047	860	1111	293

Prior to the establishment of Wren as a Skokholm breeding species, this was considered a common winter visitor (with a substantial arrival noted each October); a smaller arrival was perhaps again evident in the daily census figures this year (see above table), although it is possible that birds are also more active during this post-moult period. Of 12 retrapped in 2019 which had been ringed in previous years, six ringed as juveniles in 2018 had survived their first winter, two ringed as juveniles in 2017 had survived their second winter and three ringed as juveniles in 2016 had survived a third winter. HJT664, ringed as a juvenile on 29th September 2015, was retrapped on 23rd May after three years, seven months and 25 days (four winters); the oldest known British Wren wore a ring for seven years, three months and six days, whilst the oldest Skokholm bird reached five years and three days.

Starling *Sturnus vulgaris* **Drudwy**
Very Abundant bred from 1946, peaking at 53 pairs in the 1960s, with the last known pair in 2006
5 trapped
1936-1976: 1082 trapped, 2013-2018: 75 trapped

A minimum of 64 present when staff returned on 28th February was the sixth highest count on this

date. There were daily sightings to 28th March, although the number of birds gradually declined; following highs of 99 on the 1st and 89 on the 4th, no more than 79 were logged to the 11th, there were no more than 44 to the 17th, no more than 25 to the 24th and there were only single-figure counts from the 25th. A March bird-days total of 1129 was the fourth highest this century, down on a high of 2151 logged last year, whilst there have been 32 higher daycounts during the same period, including a peak of 210 in 2003 (the all-time March daycount record is the 1500 logged in 1947). Singles were noted on five April dates between the 7th and 16th, whilst two on the 17th, 18th and 19th included a singing male; any hopes of a breeding attempt soon faded, with singles on three further April dates, along with the 2nd and 13th May, being the only other spring birds. Sightings on seven dates between 25th June and 4th July included a high of five on the 26th when a juvenile accompanied four adults; the youngster, which was present for the following three days, was only the third juvenile-plumaged bird to be logged since 2015 (this a sad reflection of the Pembrokeshire breeding population which saw a 90% decline in numbers between 1988 and 2007 (Rees, 2012)).

A single on the 5th was the only August sighting; although there have been no August birds in four of the last eight years, daycounts of up to 60 were made as recently as 2006, whilst an August daycount record of 500 was logged in 1994 (the 1985-2007 August bird-days mean is 2070.7). September proved similarly quiet, with what was probably the same bird noted on each date between the 20th and 23rd; a September daycount record of 400 was recorded in both 1994 and 1987. Following six on the 14th, there were sightings on all but four October dates, including six three-figure counts from the 21st and highs of 358 on the 28th, 540 on the 29th and 357 on the 30th; although a bird-days total of 2039 was down on the 2846 of last year, the peak was the highest October daycount since a minimum of 1000 were logged in 1995 (albeit well down on the October 1959 daycount record of 3000). Daily November sightings included three-figure tallies on all but five dates and highs of 820 on the 6th and 15th, 922 on the 17th and 885 on the 24th; a bird-days total of 10,368 was down on the 12,099 logged by the 26th last year and the peak daycount was down on that made in four of the previous six Novembers (well down on record daycounts of 5000 in 1968 and at least 10,000 on 5th November 1970). Although a winter presence would see more logged, the drop in numbers of this red-listed species has been dramatic.

Ring Ouzel *Turdus torquatus* **Mwyalchen y Mynydd**
Scarce previously Uncommon and more regular in spring
Earliest 15th March 1955 **Latest** 21st November 1989 (30th October 2019)
1936-1976: 51 trapped, 2015: 2 trapped, 3 retrapped

Despite the fact that spring typically sees more Ring Ouzel logged, it proved the second successive year without a sighting in this period; there have been spring records in 73 previous years, totalling 635 bird-days, this compared with autumn records in 48 previous years totalling 214 bird-days. The only autumn bird was west of the Hills on 30th October, this the first autumn sighting since 2017 and just the sixth autumn bird in eight years (GE); there have only been nine later Skokholm bird-days, including eight in November. Historically daycounts of up to ten (in April 1967) led to annual bird-days totals of up to 44 (in 1974); the decline in Skokholm records has mirrored the status of this species nationally, with a 43% drop in the number of British breeding pairs occurring over 40 years and an 11% drop in the Welsh population occurring between 1999 and 2012 (Bladwell *et al*., 2018).

Blackbird *Turdus merula* **Mwyalchen**
Common Visitor and Scarce Breeder peaking at nine pairs in 1990 but recently seven pairs or fewer
74 trapped, 30 retrapped
1936-1976: 1718 trapped, 2011-2018: 443 trapped (including 16 pulli), 301 retrapped, 2 controls

Although spring daycounts again failed to exceed the total number of breeding birds, there was evidence that migrants were passing through; given that the majority of the Skokholm breeders and

first-winters were already ringed, it would seem likely that most, if not all, of the eight birds ringed between 2nd March and 5th May were passage birds (none of them were encountered subsequently). Of six individuals known to have survived from previous years, one male ringed as a juvenile in 2018 survived its first winter, a male and a female ringed as juveniles in 2017 survived their second winters, a female ringed as an adult in 2017 survived what was at least its third winter and female LH16008, ringed as a first-winter in March 2013 and subsequently retrapped 14 times, survived its seventh winter; the latter bird has worn a ring for six years, seven months and nine days, this still some way off the British longevity record of 14 years, 285 days. Additionally a female ringed as an adult in November 2018 was retrapped on 4th March, although it is possible that this was an overwintering individual rather than a Skokholm resident. There were six breeding territories mapped this year, the same as in 2018 and 2017 but one fewer than in 2016 and 2015; pairs bred near the Wheelhouse, the Cottage, the Well, Isthmian Heath, Boundary Hill and South Pond. The first fledglings were in the Courtyard on 23rd May, these the latest of the last four years (11 days later than the first of last year and 16 later than the first of 2017). Productivity again proved difficult to calculate due to overlapping territories, second broods and potentially the arrival of youngsters from elsewhere, however fledglings were seen in all six territories, 14 were trapped before 1st September (eight in 2018, 11 in 2017, nine in 2016, seven in 2015, 12 in 2014 and 14 in 2013) and eight further juveniles were logged in the southern territories; productivity was thus estimated at 3.67 fledglings per pair, this the highest of the last seven years (up on the 3.33 of last year and minimums of 2.83 in 2017, 2.29 in 2016, 1.29 in 2015, 2.17 in 2014 and 2.80 in 2013).

As was noted by Betts, Thompson and in recent reports, the number of sightings declined steeply during the period of adult post-breeding moult in August and September; there were monthly totals of 55 and 146 respectively (64 and 107 last year). Although a peak October daycount of 25 on the 28th was the lowest of the last five years, a bird-days total of 262 was the third highest this century (albeit well down on highs of 1075 in 1993, 1136 in 1975 and 2314 in 1964). The first unringed adult arrived on 22nd October (three days earlier than the first of last year) and bigger, presumed northern birds were first logged on the 28th (including a bird with a wing chord of 142mm). There were daily counts in November, with 15 or fewer noted on 18 dates but highs of 27 on the 4th, 40 on the 6th and 25 on the 8th which took the bird-days total to 422; the November total was the highest since the 474 of 2015, although a later than average staff departure increased a tally which was well down on record highs of 587 in 1990, 793 in 1967 and 843 in 1939.

Ringing recovery LH16447
Originally ringed as an adult female, WELL HELIGOLAND, SKOKHOLM 28th October 2018
Recovered unidentified, BREDBYN, VÄSTERNORRLAND, SWEDEN 27th July 2019
Finding condition Dead for more than a week, taken by cat
Distance travelled 1900km at 47 degrees (NE)
Days since ringed 272

Ringing recovery LH16464
Originally ringed as a juvenile male, WHEELHOUSE NET, SKOKHOLM 30th October 2018
Recovered as a first-summer male, SKOMER ISLAND, PEMBROKESHIRE 24th June 2019
Distance travelled 4km at 343 degrees (NNW)
Days since ringed 237

Ringing recovery LL37528
Originally ringed as a juvenile, WHEELHOUSE HELIGOLAND, SKOKHOLM 10th July 2019
Recovered as a juvenile female, SKOMER ISLAND, PEMBROKESHIRE 22nd October 2019
Distance travelled 4km at 343 degrees (NNW)
Days since ringed 104
The above two mist netted recoveries suggest that some Skokholm fledglings do not travel far.

Fieldfare *Turdus pilaris* **Socan Eira**
Uncommon Winter Visitor listed as Fairly Common by both Betts and Thompson
Earliest 14th September 1977 (22nd October 2019) **Latest** 13th June 1980
1936-1976: 7 trapped, 2016-2018: 3 trapped

There were no spring birds for the third time in nine years; daycounts of up to 250 in 67 previous springs have totalled 1305 bird-days, although there have only been 113 in the last 20 springs. Two birds on North Plain on 22nd October were the first of the autumn, three days later than the first six of last year; there have been 1001 earlier autumn bird-days, including four in September and 40 in the last six years. Four together on the 25th, along with singles noted each day between the 27th and 31st, took the October tally to 11; there have been six higher October totals this century, including a high of 105 in 2004 (earlier totals peaked at 154 in 1993, 330 in 1971 and 282 in 1966). Counts on 12 November dates, including highs of six on four dates and nine on the 6th, produced a bird-days total of 55, the seventh highest tally in this month (down on peaks of 146 in 2015 and 332 in 1967). A single on 2nd December was the last of the year.

Redwing *Turdus iliacus* **Coch Dan-aden**
Common Winter Visitor
Earliest 20th September 2001 (5th October 2019) **Latest** 18th June 1979 (15th April 2019)
12 trapped
1936-1976: 157 trapped, 2013-2018: 123 trapped, 7 retrapped

Following four on 28th February, there were sightings on 14 March dates which included highs of five on the 1st and seven on the 2nd, two *T. i. coburni* ringed on the 2nd and a singing bird on the 22nd; although down on a 'Beast from the East' generated high of 258 last year and the 87 of 2016, a bird-days total of 27 was otherwise the highest in March since the 66 of 2001 (the March record is the 852 logged in 1965). Singles on four April dates to the 15th were the last of the spring, the latter three days earlier than the last of spring 2018; the only higher April bird-days totals since 1991 are the 15 of last year and the all-time record of 78 counted in 2013.

Two around the West Knoll on 5th October were the first of the autumn, six days earlier than the first of last year and the earliest autumn arrival since one on 28th September 2007. Following a minimum of one logged after dark on the 14th, there were sightings on all but one October date from the 19th

including highs of 15 on the 21st, 14 on the 25th and 24 on the 28th; both the peak daycount and a bird-days total of 104 were the lowest of the last five years, down on respective 2012-2018 means of 188.0 and 332.4 (a record daycount of 1124 in October 2017 increases both means significantly). Records on all but eight November dates included highs of 16 on the 6th, ten on the 8th and 14 on the 14th which took the bird-days total to 116; despite the fact that staff were present throughout the month, the maximum daycount was the lowest of the last seven years (the 2013-2018 mean is 40.2 and the all-time high 200 in 1994) and the bird-days total the second lowest during the same period (the 2013-2018 November mean is 202.5 and the all-time high 915 in 1968). Between two and five were noted on each of the first three days of December.

Song Thrush *Turdus philomelos* **Bronfraith**
Common Visitor but breeding has not been recorded
47 trapped, 3 retrapped
1936-1976: 465 trapped, 2013-2018: 252 trapped, 19 retrapped

Following five on 28th February, there were records on 15 March dates to the 26th including highs of four on the 1st and 2nd and five on the 4th; this produced a March bird-days total of 30 which, although well down on last year (when the 'Beast from the East' led to daycounts of up to 37 and a total of 104), was nevertheless the fifth highest this century and the 14th highest to date (albeit massively down on the 1965 record of 961 which included a record daycount of 350). A strikingly grey bird present at the Well on 16th March appeared very similar to one which lingered for four days last March and unlike those breeding on mainland Britain. Singles on four dates between the 6th and 18th took the April total to four, a tally down on the 2011-2018 mean of 7.6 and a record 34 logged in 2015. One at the Lighthouse on the 1st was the first May record since 2014 and just the 43rd bird-day to be noted in this month. The first of the autumn was at East Bog on 2nd October, this the latest autumn arrival since 2012. Following a further single on the 8th, there were sightings on all but one October date from the 12th including six double-figure counts and highs of 22 on the 27th, 41 on the 28th and 51 on the 29th which took the bird-days total to 214; although the peak count was down on a record 142 logged in 2017 and only matched a 2013-2018 mean of 51.8, the bird-days total was the third highest this century and the 17th highest to date (the October bird-days record is the 962 logged in 1993). Daily November sightings included 13 daycounts of 30 or more and highs of 51 on the 4th, 53 on the 6th and 49 on the 17th; although the peak count fell marginally below a 2013-2018 mean of 57.7, the November bird-days total of 788 was a new record (up on the 614 of 1967, a year in which staff were also present throughout the month). An adult retrapped in the Well Heligoland on 12th November had been caught in the same trap as a first-winter on 18th November 2018; ringing suggests that a small number of birds return here in successive winters (although their breeding grounds remain unknown). Daycounts on the first three days of December were of 31, 43 and 21.

Spotted Flycatcher *Muscicapa striata* **Gwybedog Mannog**
Fairly Common Passage Migrant
Earliest 19th April 1966 (8th May 2019) **Latest** 23rd October 1968 and 2001 (7th October 2019)
31 trapped, 1 retrapped
1936-1976: 1613 trapped, 2011-2018: 205 trapped, 12 retrapped

Although they arrived on the same date as the firsts of both 2013 and 2014, three logged on 8th May were otherwise the latest spring arrivals since 2011. Records on a further 17 May dates, including highs of six on the 9th, 11th and 20th, seven on the 17th and eight on the 19th, took the bird-days total to 57; although the peak May daycount was the lowest of the last five years, down on recent highs of 12 in 2018 and 2016 and an all-time high of 40 in 1958, the bird-days total was the third highest since 1997 and up on the post-War May average of 43.85 (albeit well down on highs of 133 in 1962 and 145 in 1967). Sightings of up to four birds on 12 June dates to the 27th produced a bird-days total of 23, a June tally only down on the 29 of 1971, 1977 and 1991 and the 35 of 2015. Of 29 birds

ringed during the spring, only one was retrapped; a bird weighing 13.5g on the morning of 20th May was retrapped during the evening of the 21st when it weighed 14.9g.

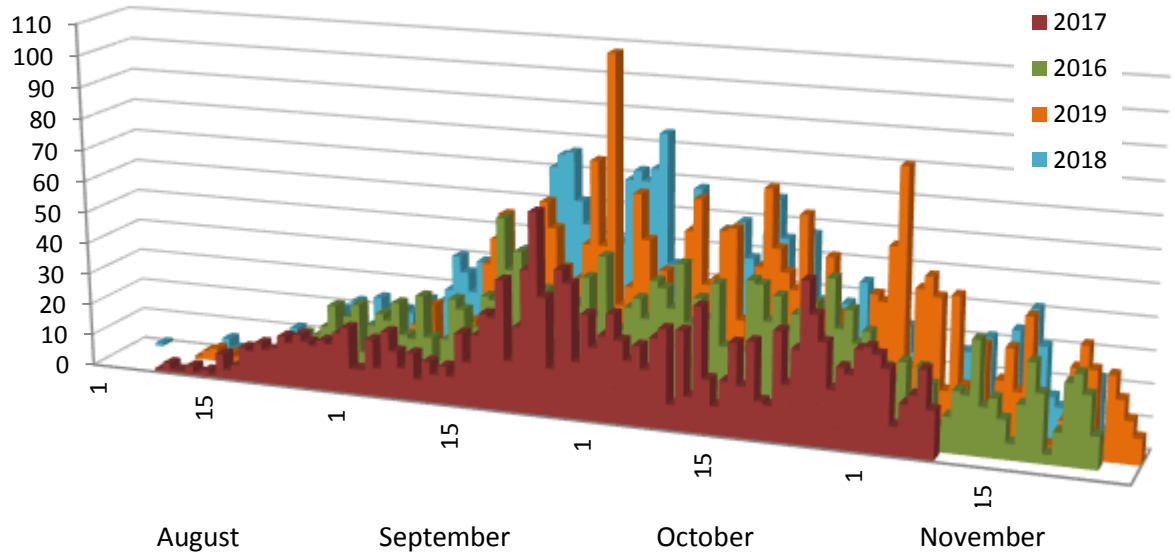
The first of the autumn was at the Well on the 1st and 2nd August, this the earliest autumn arrival since an adult on 15th July 2016; six further singles have been logged on 1st August since 1937, whilst there have been a total of 80 July bird-days (including ten this century). Following three on the 12th, there were daily August sightings from the 24th including a high of four on the 26th; although the peak daycount was fractionally down on the 21st century August mean and the second lowest of the last five years, a bird-days total of 23 was the fourth highest August tally this century (albeit well down on record highs of 87 in 1964 and 85 in 1971). September sightings on 11 dates to the 24th were all of two or less, bar four on the 1st and three on the 7th; the maximum daycount was down on the 15 of last year, a 21st century mean of 6.1 and a record 30 logged in 1969, whilst a bird-days total of 20 was down on the 21st century mean of 26.5 and September highs of 166 in 1969 and 91 in 2013. The last of the year was around Home Meadow on 7th October; there have been 31 later Skokholm bird-days, with one on the 16th in 2012 the most recent.

Robin *Erithacus rubecula* **Robin Goch**
Abundant Winter Visitor and Passage Migrant bred in 1939, 1940 and 1980
46 trapped, 57 retrapped
1936-1976: 717 trapped, 2011-2018: 653 trapped, 533 retrapped, 3 controls

Daily sightings from 28th February to 27th March included two birds which had seemingly spent the winter, individuals both ringed as juveniles in September 2018; two spring retraps was up on the single of last year, but down on the three of 2017, 2015 and 2014 and the eight of 2016. The lack of over-wintering birds was reflected in the March bird-days total, with highs of six on the 2nd and eight on the 5th taking the tally to 82; both the peak daycount and bird-days total were down on the 2012-2018 March means (the peak daycount has averaged 8.6 with a high of 15 in 2016, whilst the bird-days total has averaged 94.9 with a high of 198 in the same year). Following a 12 day absence, there were sightings on all but four April dates from the 9th, including counts of three noted on five dates from the 21st; there have only been six April totals up on the 32 of this year, including highs of 54 in 2013 and 132 in 2015. A male ringed on 25th April was probably the same individual seen on 11 May dates to the 13th; the only years with more May bird-days are 2012 and the three in which Robin bred, however there was nothing to indicate that this bird had paired. One was calling in Crab Bay on 12th June, whilst a female trapped 12 days later had already bred; there have only been June records in 15 previous years, totalling 44 bird-days (with 23 of these occurring in the three breeding years).

A single at Spy Rock on 11th August was the first of the autumn, this a week later than the first of last year and two days later than the first of 2017. Sightings of up to nine birds on a further 16 August dates took the bird-days total to 64, the lowest tally in this month since 2013 (the 2014-2018 mean is 152.2 with a high of 193 logged in 2015 and 2017). The September bird-days total of 852, which included daily sightings and highs of 57 on the 19th, 62 on the 24th and 76 on the 30th, was the fourth highest to date, only down on the 1019 of 2018, the 1198 of 2015 and the 1649 of 2014. However Robin were routinely under recorded in the past, just being noted as present in the Log following quiet or average days; the peak daycount is perhaps thus more informative. There have been 12 higher September daycounts logged during five previous years, with highs of 150 on two dates in 1994 and 128 counted on the 28th in 2014. As is typically the case, numbers peaked in October with highs of 109 on the 2nd, 67 on the 5th and 12th and 72 on the 20th taking the bird-days total to 1378, the fourth highest tally on record behind the 1394 of last year, the 1485 of 2015 and the 1638 of 2014. However, for the reason stated above, it is probably more relevant that the peak daycount was also the fourth highest to date, down on highs of 150 logged twice in 1994 and 118 counted on the 2nd in 2014. There were fewer birds noted on each November date, with highs of 58 on the 3rd and 82 on the 4th, but 41 or less on each day from the 10th; a bird-days total of 813 was a new record for this month, whilst the peak daycount was only down on the 91 logged in 2015. Five birds handled during the autumn had been encountered on Skokholm previously; the two which had been retrapped in spring (see above) returned for a second winter, whilst an additional three birds ringed as juveniles in 2018 also returned in September for a second winter.

The number of Robin recorded on each autumn day between 2016 and 2019, arranged with the quieter years to the fore.

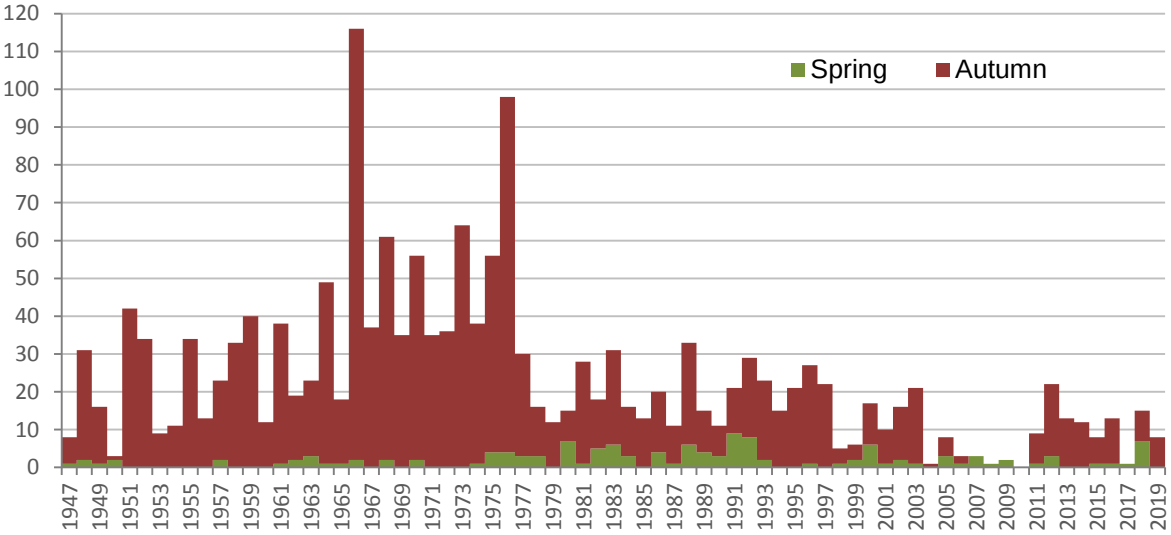


Pied Flycatcher *Ficedula hypoleuca* **Gwybedog Brith**
Uncommon Migrant more frequent in autumn and sometimes absent in spring
Earliest 10th April 1993 **Latest** 17th October 1988 (30th September 2019)
1 trapped
1936-1976: 393 trapped, 2011-2018: 33 trapped, 3 retrapped, 1 control

There were no spring sightings for the first time since 2014, this particularly disappointing given that seven spring bird-days were logged last year (at least six of which concerned different individuals); this species has nearly always proven scarce at this time of year, with only three spring bird-days logged between 2013 and 2017, 34 noted this century and all-time highs of seven in 1980 and 2018, nine in 1991 and eight in 1992. Two on 25th August were thus the first of the year, these 20 days later than the first of last autumn. A first-year ringed on the 29th was the only other August bird,

whilst September saw singles on the 14th and 22nd and three on the last day of the month (when one was at the West Knoll and two were around the Neck cliffs); there have been 34 later bird-days, with two on 8th October 2016 the most recent. Although an improvement on the blank autumn of 2017, a total of eight autumn bird-days matched last year's tally as the third lowest of the last eight years, down on recent highs of 19 in 2012 and 13 in 2013; historically autumn totals peaked at 114 in 1966 and 94 in 1976, whilst the record daycount is the 30 logged on 30th August 1952.

The total number of spring and autumn Pied Flycatcher bird-days logged between 1947 and 2019.



Red-breasted Flycatcher *Ficedula parva* **Gwybedog Brongoch**
Rare Migrant records in 22 previous years totalling 33 birds and 49 bird-days. Only three in spring
Earliest 18th May 2001 (14th October 2019) **Latest** 13th November 2014 (22nd October 2019)
2 trapped
1936-1976: 9 trapped, 2014-2016: 5 trapped, 1 retrapped

A first-winter trapped in the Wheelhouse Heligoland on 14th October was the first since a bird logged on the 28th and 29th October 2016 (RD *et al*.). A second first-winter was trapped in the Reedbed Mist Net eight days later (below photograph), making this just the seventh year with multiple individuals (RDB, GE). One day stays such as these are the norm; of the 33 previous birds, singles in spring have been present for two and three days respectively, whilst in autumn two have lingered for two days, two for three days and two for six days. There have now been records in six of the last eight years,

with a total of ten individuals present; one of these, ringed in 2015, was controlled eight days later in a pub garden at Kilbaha, County Clare, Ireland (a 328km journey at 288 degrees).

Black Redstart *Phoenicurus ochruros* **Tingoch Ddu**
Uncommon Migrant has probably overwintered on occasion
3 trapped
1936-1976: 100 trapped, 2013-2018: 13 trapped, 2 retrapped

Two ringed on the morning of 22nd March were the first of the year, two days later than the first of last year and six days later than the firsts of 2017 and 2016. Only one of the three seen the following day was ringed, whilst three individuals probably accounted for the two logged on the 24th and 25th. A fine adult male on the last day of the month took the bird-days total to ten, the highest March tally since the ten of 2013 and the 17th highest to date (albeit well down on the 1948 record of 241).

The only April sightings were of a male at Twinlet on the 6th and a female above the Quarry on the 7th and 8th; the bird-days total was down on the 11 of last April and equalled the lowest tally of the last five years (the 2012-2018 mean is 4.7). Although there have been sightings in all but one of the last seven Mays, a female in Winter Gully on the 18th was just the 67th bird-day to be logged in this month. An adult female, around the Observatory buildings on the 10th, was only the sixth bird to be seen in July following singles in five previous years (including three of the last nine). A male in South Haven on 28th October was between 11 and 14 days later than the first autumn birds noted between 2018 and 2016 (and two days later than those of 2015 and 2014). A female-type bird in the Quarry on the 30th was the only other October sighting; although there were no October birds in 2013 and two were also seen in 2018 and 2015, there have been up to 18 logged in recent Octobers and historical highs of 86 in 1988, 92 in 1975 and 243 in 1968. A female-type bird at Warden's Rest on the 3rd was perhaps the same individual seen at the Lighthouse on five November dates between the 4th and 11th; a November bird-days total of six matched last year and the 2013-2018 mean, but was down on the recent high of 12 logged in 2015 and the record 38 counted in both 1992 and 1968.

Redstart *Phoenicurus phoenicurus* **Tingoch**
Uncommon Migrant
Earliest 1st April 1991 (2nd April 2019) **Latest** 2nd November 1968 (7th October 2019)
6 trapped, 1 retrapped
1936-1976: 394 trapped, 2013-2018: 33 trapped, 2 retrapped

A male in South Haven on 2nd April was one day earlier than the first of last year and the first to be seen in Wales this year; the only earlier Skokholm record concerns a female found on the 1st in 1991, whilst a male and a female were both also present on the 2nd in 1956. A first-year male was ringed on the 12th, an adult female weighing 12.7g on the 13th was retrapped on the 16th weighing 13.3g, a male was in North Haven the following day and a first-year female ringed on the 25th took the April bird-days total to six; although one down on last year, the total was up on a 2011-2018 April mean of 4.1. A first-year male ringed on the 8th was the only May record and took the spring bird-days total to seven; the spring total was down on the 11 of last year, the 2011-2018 mean of 8.0 and highs of 36 in 1991 and 55 in 1966.

An adult female ringed on 8th September was the first of the autumn; although there have been 127 earlier autumn bird-days, including five in July and 71 in August, this was the earliest arrival since one on 2nd September 2014. A juvenile female ringed on the 20th was perhaps the bird along the Lighthouse Track the following day and was probably the ringed bird seen around the Farm on the 22nd, a record which took the September total to four; the 2013-2018 September mean is 3.3, a tally

well down on highs of 37 in 1988 and 25 in 1972, 1967 and 1966. One at the Gap on the 7th was the sole October sighting and the last of the year, a bird one day later than the last of 2018. An autumn bird-days total of five matched the 2013-2018 mean; although never common, this species was, as noted for that other denizen of Welsh woodland the Pied Flycatcher, previously more regular with monthly totals of up to 51 and a maximum daycount of 20 noted on 21st September 1988.

Whinchat *Saxicola rubetra* **Crec yr Eithin**
Uncommon previously Fairly Common
Earliest 8th April 1997 (26th August 2019) **Latest** 2nd November 2014 (1st October 2019)
1 trapped
1936-1976: 326 trapped, 2013-2018: 17 trapped, 4 retrapped

There were no spring Whinchat for the first time since 2012. Between two and 13 bird-days had been logged in each of the previous six springs, with a mean of 5.3, whilst previously double-figure spring totals were the norm; all of the 43 bird-days logged during the record spring of 1989 occurred in May, whilst maximum spring daycounts of seven were counted in the Mays of 1960 and 1989. Three on 26th August were thus the first of the year, four days earlier than the first three of last autumn but 14 later than the first of autumn 2017. There were no further records until September, with sightings during the month being of one above Purple Cove on the 8th, one at East Bog on the 12th, one at the Table on the 15th, one at North Pond on the 22nd and 23rd and one between Isthmian Heath and Orchid Bog on the 27th and 28th which was perhaps the same as seen at North Pond on each date between the 29th and 1st October; the latter was the last of the year and the earliest autumn departure of the last seven years. An autumn bird-days total of 13 was down on the 26 of last year, the 31 of 2017 and the recent high of 63 logged in 2014; earlier counts peaked at 128 in the autumn of 1968, a total which included a record daycount of 40 on 10th September.

Stonechat *Saxicola rubicola* **Clochdar y Cerrig**
Fairly Common bred in 1928 and 1932
15 trapped, 3 retrapped
1936-1976: 336 trapped, 2013-2018: 78 trapped, 2 retrapped

March saw sightings of the same female on the 1st, 5th and 6th and of up to three birds on all but one date between the 20th and 25th (with at least three different females and a male showing features of

S. r. rubicola being present); a March bird-days total of 13 was down on three of the previous four years, a 2013-2018 mean of 23.2 and record highs of 52 in 2016 and 105 in 1958. There were no April birds for just the second time in five years, but for the 16th time since 1999, and no May birds for the second time in four years and for the 17th time since 1999. An adult accompanied the first juvenile of the year on 18th June; the only earlier records of non-Skokholm fledged youngsters are of two on the 16th in 2017, three on the 3rd in 1931 and of at least two on the 7th in 1927. There were further sightings of a lone juvenile on the 21st and on each day between the 24th and 29th, with two additional youngsters also logged on the latter date; a June bird-days total of 11 was only down on the 32 of 2017, the 29 of 2008 and the 53 of 1931. Records on eight July dates between the 3rd and 22nd were, bar the two present on the 21st, all of singles; a July bird-days total of nine was only down on the 13 of 2017 and the 15 of 1990.

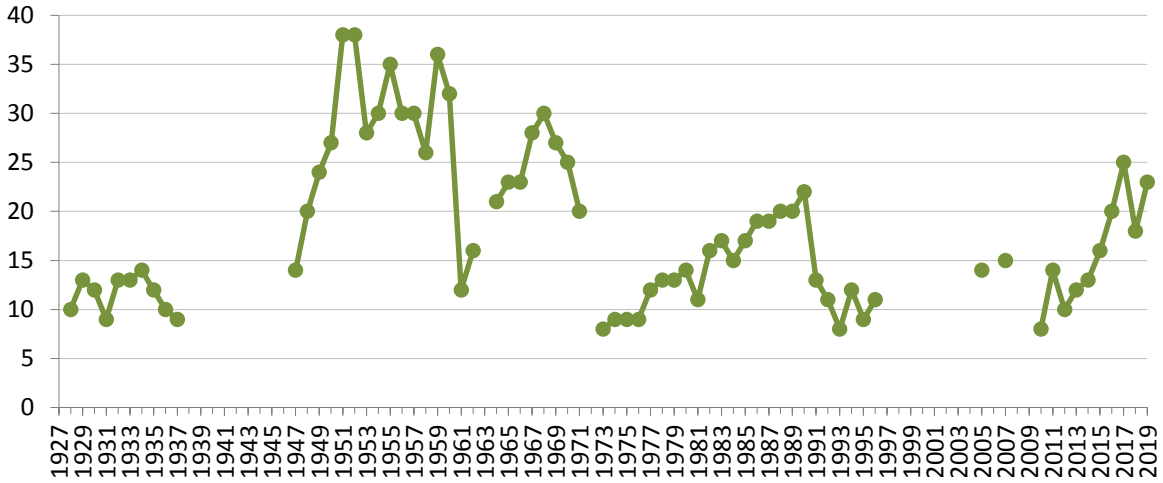
August singles on three dates from the 27th, along with two logged on the 28th, took the bird-days total to five; this equalled the highest August tally since a record of nine were counted in 1974. Counts on 17 September dates were all of three or less bar the five logged on the 22nd and 29th and the 13 present on the last day of the month; the peak daycount matched one made on the same date in 2016 as the fourth highest in September (a high of 18 was noted in 1957), whilst a bird-days total of 47 was fractionally up on a 2013-2018 mean of 44.0 (a record 87 were logged in 2016). The 15 birds counted on 1st October equalled the fifth highest daycount to be made in any month, a tally down on October highs of 18 in 1975 and 25 in 1961. Sightings on all but three October dates, including further highs of ten on the 23rd and nine the following day, took the bird-days total to 108; there have been six higher October totals including peaks of 163 in 2014 and 185 in 2016, the latter the highest bird-days total of any month to date. Stonechat were seen on 19 November dates, with highs of five on the 1st, 4th and 8th and six on the 7th taking the total to 50; the only higher November tallies are the 71 of 2016, the 83 of 2014 and the 61 of 2001. Three were logged on 1st December and a ringed female the following day was the last prior to the staff departure on the 3rd. It would seem likely that many of the birds logged during the autumn were lingering, however the only evidence of such was a first-winter male ringed on 18th September and retrapped on 22nd October.

Wheatear *Oenanthe oenanthe* **Tinwen y Garn**
Abundant Migrant and Uncommon Breeder
Earliest 2nd March 2003 (18th March 2019) **Latest** 13th November 1999 (21st October 2019)
95 trapped (including 12 pulli), 84 retrapped/resighted, 1 control
1936-1976: 3578 trapped, 2011-2018: 321 trapped (including 6 pulli), 142 retrapped/resighted

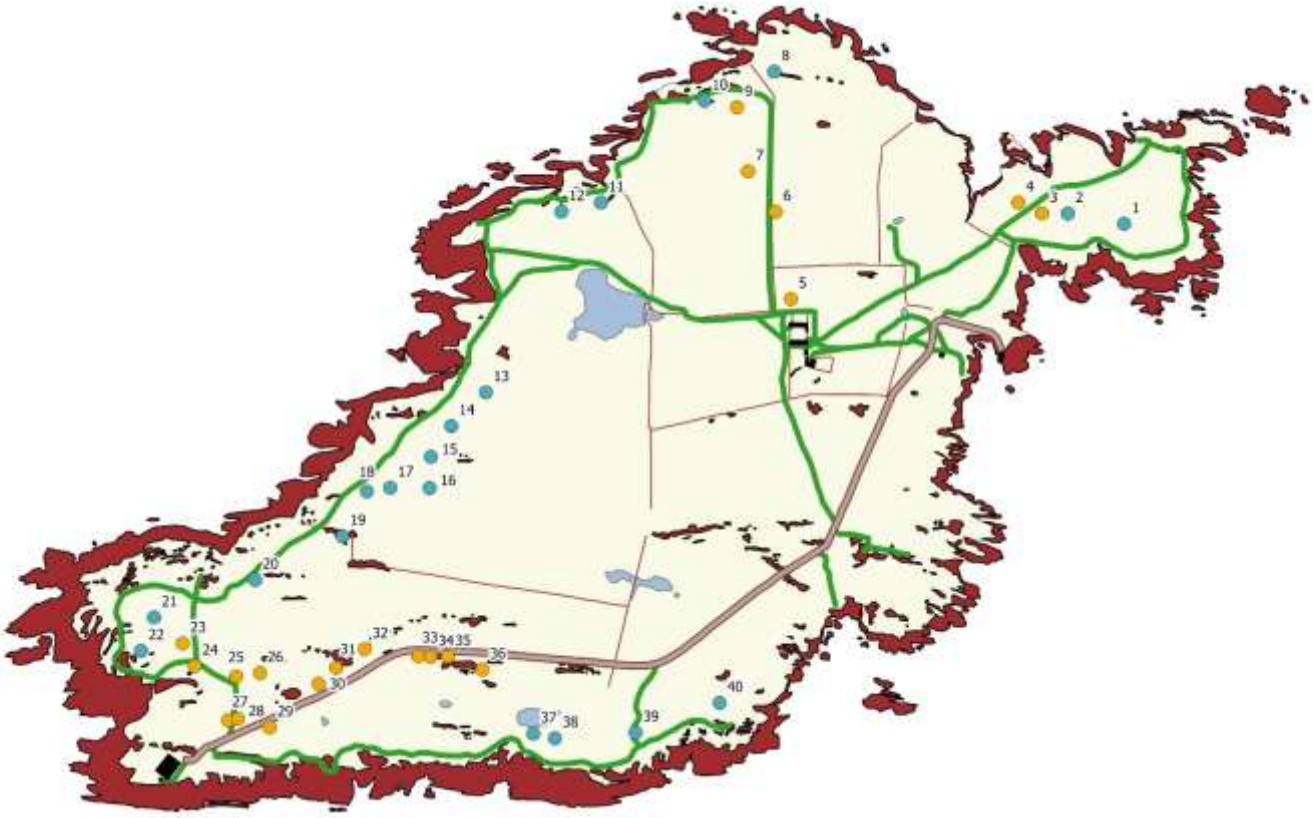
Although Wheatear had reached the northwest of England by 27th February and three sites in Wales by 1st March, staff had to wait 19 days for the first to arrive to Skokholm; male A14 appeared at the Kitchen Wall on 18th March, this the latest spring arrival of the last eight years (there have been 88 earlier bird-days during that period, including one on the 5th in 2013 which is the third earliest to date). Despite the late arrival, numbers increased quickly, with sightings on all but one subsequent March date and highs of 26 on the 24th, 23 on the 26th and 32 on the 31st which took the bird-days total to 197; the peak daycount was the highest in March since 40 were logged in 1989 (albeit well down on highs of 200 in 1930 and 150 in 1958), whilst the total was the second highest this century, only down on the 205 of 2017. There were 790 bird-days logged during April, 148 more than last year and 65 more than the 2012-2018 mean, but a tally well down on a recent high of 1197 in 2015. Peak April daycounts of 39 on the 19th and 44 on the 20th were the lowest of the last six years, counts well down on record highs of 151 in 2016, 165 in 1999, 250 in 1954 and a remarkable 1200 in 1938. The majority of early migrants were definitely nominate, with the first Greenland-type bird noted on 5th April; this was the earliest northern bird since one in 2006. There followed 25 *O. o. leucorhoa* bird-days logged over 15 dates to 1st May, with a high of five noted on the latter date; numbers peaked at 44 on 30th April last year and at 25 on 18th April in 2017. Survey work during the spring revealed 23 breeding pairs, five more than mapped last year and a total up on the 1928-2019

mean (18.04 ±sd 8.07); there have been more territories located in 17 previous years, with the 38 of 1951 and 1952 the maximum. Additionally three males and a female lingered, but did not pair. Birds were again nest building from mid-April, however many sites were seemingly abandoned following the passage of Storm Hannah on the night of the 26th.

The number of Wheatear breeding territories located each year 1928-2019 (where data exists).



The positions of 40 Wheatear nest boxes installed in the summer of 2019. Yellow circles were boxes installed between the 10th and 20th July, allowing more of the birds present this year to explore them. Blue circles were boxes installed after 14th August (when the majority of Skokholm birds had departed).



Nest building recommenced for the majority of pairs from 29th April, although clearly some clutches had been produced earlier and survived the storm; the first female collecting chick food was at Sugar's Delight on 13th May, the same date on which hatched eggshell was found at the Bluffs (chicks

were first seen to be provisioned on the 14th last year and on the 15th in 2017). Although youngsters were seen above ground on the 19th, the first fledgling was not logged until 28th May; the first fledgling was noted on the 26th in 2016, the 27th last year and on the 29th in 2017 and 2015. There were 17 second brood territories mapped, 15 of which were held by pairs which remained together following their first attempts. At least 43 first brood and 42 second brood fledglings were recorded, the total of 85 being 15 up on that produced by 18 pairs last year. The resulting productivity figure of 3.70 fledglings per pair was down on the 3.89 of last year and a recent high of 4.00 in 2015, but up on the 2013-2019 mean (3.20 ±se 0.27). A total of 70 Skokholm fledglings were colour ringed (63 last year), birds which were shown to be exceedingly mobile; several colour ringed youngsters spent time at the opposite end of the Island to their natal territory. The amount of time it takes to trap fledglings outside of the nest is substantial, effort necessitated by the fact that the majority of sites are inaccessible (the chamber either being too far back or the entrance being too narrow to allow access). There were 11 pulli colour ringed in three accessible nests this year, all of which went on to fledge successfully; the ease with which this was accomplished resulted in a desire to increase the number of accessible nest sites. Wooden nest cavities with top mounted access hatches were thus installed at 40 locations (see above map), boxes which were soon inspected by both the breeding adults and the 2019 fledglings; birds were seen leaving boxes 5, 29 and 32 (an unringed bird, A10 and B94 respectively), whilst birds also stood on or at the entrance of an additional 11 boxes. It has been suggested that Wheatears inspect potential nest sites prior to their autumn migration.

It again proved difficult to detect early autumn migrants, primarily due to the number of breeding birds and their mobile offspring, however an adult female ringed on 4th July was not a Skokholm breeder, an arrival of six unringed birds was noted on 23rd July and early August peaks of 49 on the 1st and 6th included up to 12 unringed birds from elsewhere. Although the peaks were down on two of the last five years, an August bird-days total of 860 was one up on that of 2018 and the highest of the last eight years. Ringed birds were outnumbered by unringed migrants on all but one date from 20th August and a colour ringed bird on 3rd September was the last known Skokholm individual logged (one day later than the last of 2018). Counts on all but one September date were of 15 or less, with the peaks (logged on the 7th, 17th and 18th) being the lowest of the last seven years; this was the fifth year in a row without a large autumn daycount, the highs being massively down on the 123 of 6th September 2014, the 121 of 6th September 2013 and the Island record 207 counted on 9th September 1951. Despite the low daycounts, a September bird-days total of 261 was the highest of the last three years (albeit down on highs of 612 in 2013, 728 in 1958 and 1078 in 1951). Sightings

on 15 October dates included peaks of 12 on the 1st and 11 on the 2nd, no more than four each day from the 6th and singles on four dates between the 16th and 21st; although a bird-days total of 52 was down on four of the last seven years and an all-time high of 290 logged in 2013, there have only been higher daycounts in 13 previous Octobers (with a peak of 70 in 1976). The last of the year was three days earlier than the last of 2018; there have been 176 later bird-days since 1927. Obvious *O. o. leucorhoa* were only noted on eight dates between 7th September and 14th October, with three peak daycounts of three taking the autumn bird-days total to 15 (there were 40 in 2018).

Ringing recovery left tarsus red with white C6A, right tarsus ADB1080
Originally ringed as a juvenile, CALF OF MAN CROW TRAP, ISLE OF MAN 24th June 2018
Previously Resighted as an adult, RAMSEY ISLAND, PEMBROKESHIRE 21st April 2019
Resighted as a first-year male, THE KNOLL, SKOKHOLM, 23rd April 2019
Subsequently resighted as an adult, BOTALLACK, CORNWALL, 11th May 2019
Finding condition Colour ring read in field
Distance travelled 263km at 187 degrees (S)
Days since ringed 304

House Sparrow *Passer domesticus* **Aderyn y To**
Scarce although not recorded every year. Most recently absent in 2016 and 2010
1936-1976: 20 trapped, 2013-2018: 6 trapped

A female which spent 20 minutes in the Courtyard, late on the morning of 12th May, was the only House Sparrow this year and the first May record since 2008. There were just eight Skokholm individuals prior to 1957, then sightings in all but two years until 1978, birds in ten of the years between 1979 and 2004 and 18 records of up to three birds in 11 subsequent years. Last year saw lone females on the 15th and 19th October, two females on 24th October and a male on 13th November; a bird-days total of five was the highest since the 11 of 1977.

Dunnock *Prunella modularis* **Llwyd y Gwrych**
Fairly Common Winter Visitor previously a Scarce or Uncommon Breeder with up to 12 pairs
7 trapped, 9 retrapped
1936-1976: 304 trapped, 2011-2018: 51 trapped, 77 retrapped, 1 control

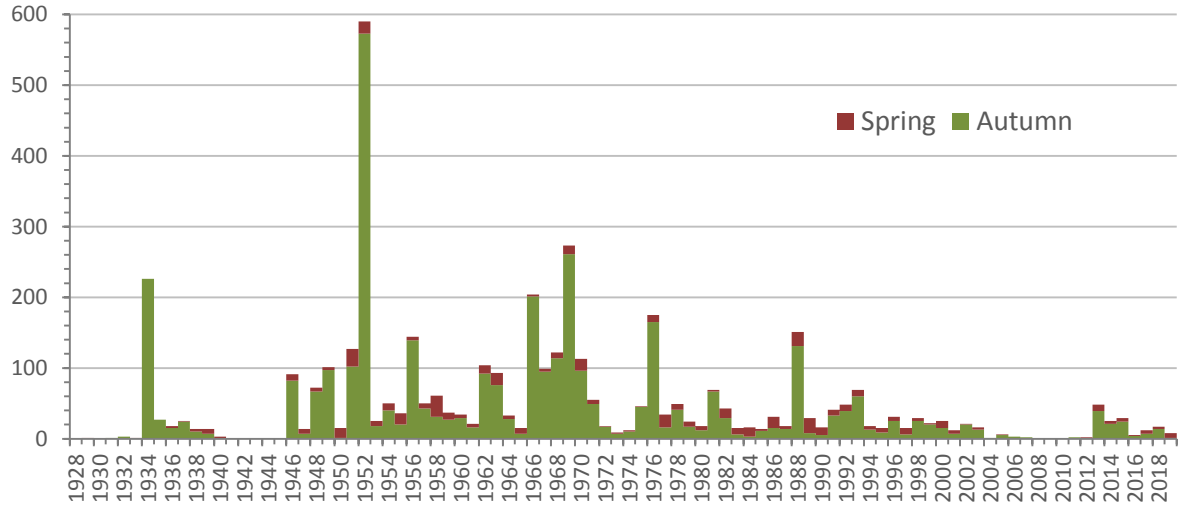
A minimum of two birds overwintered, with two first-years ringed on 3rd October 2018 still being present on 19th March and between the 2nd and 21st March respectively. Sightings on 19 March dates were all, bar the three logged on the 24th, of two or less and largely attributable to the ringed birds;

although the peak daycount matched the 2011-2018 March mean, a bird-days total of 28 was down on five of those years and recent highs of 74 logged in 2015 and 2016. The only April sightings were of one at the Cottage on the 4th and a first-year trapped at the Well on the 12th; the April bird-days total matched the second lowest of the last eight years, a tally down on the 22 of last year and recent highs of 35 in 2015 and 128 in 2012 (the latter the last year in which Dunnock bred, with three pairs mapped and at least two young fledged). There were no further sightings until August, when what may have been the same individual was found at East Bog on the 16th and in Crab Bay on the 19th; August sightings are rare in a non-breeding year, with three in 2015 the only recent birds. Following one at Isthmian Heath on the 15th, a single on 30th September heralded the autumn arrival. Counts of up to 11 on all but four October dates took the bird-days total to 84; although the peak daycount matched the second highest since a record 50 were logged on three occasions in 1994, the bird-days total was down on three of the previous five years and virtually matched a 2012-2018 mean of 87. There were sightings of up to six birds on all but two November dates, with a bird-days total of 75 being two down on last year but the sixth highest to date. Daily December sightings prior to the departure of staff on the 3rd included a peak of five on the 1st, this the highest December daycount since 20 were logged in 1932 (despite a staff presence in at least 15 subsequent Decembers). Adult TX22063 was retrapped on 22nd October having been ringed as a juvenile on 26th September 2017 and retrapped on 10th March 2018; this was just the third occasion on which a bird has been shown to return to Skokholm after at least one summer away (additionally one ringed in October 2013 was retrapped in September 2014 and TX22013, ringed as a juvenile in October 2014, returned after at least two of three breeding seasons until it was last seen in November 2017).

Yellow Wagtail *Motacilla flava* **Siglen Felen**
Uncommon previously Fairly Common, or Common on occasion, and more regular in autumn
Earliest 10th March 1966 (23rd April 2019) **Latest** 18th November 1967 (11th October 2019)
1936-1976: 79 trapped, 2013-2015: 2 trapped

Two on 23rd April, one of which was a fine male *M. f. flavissima*, were 12 days earlier than the first of last year; there have been 52 earlier bird-days, including two in March and most recently one on the 14th in 2015. A female at South Pond on the 25th took the bird-days total to three, the highest April tally since nine were logged in 2000. A male *M. f. flavissima* was present on 15th May, whilst two flyovers four days later took the monthly total to three; although down on the six of 2013, the total matched that recorded in three of the previous five Mays. The last of the spring frequented the Neck on 8th June; there have only been 45 previous June bird-days, including five this century. Although down on the nine of 2013, a total of seven spring bird-days was otherwise the highest since the ten of 2000; there have been 30 higher spring totals, including a record 30 in 1958.

The total number of Yellow Wagtail bird-days logged in each spring and autumn since 1928.



One which flew over South Haven and then North Plain on 11th October was the only autumn record; the last birds of 2018 and 2016 were also logged on the 11th, whilst the last of 2017 was taken by a Merlin on the 15th (there have been 21 later autumn bird-days, with one on 5th November 1992 the most recent prior to the 2017 fatality). A lone autumn bird-day was the poorest total since a blank 2012, a tally well down on a recent high of 39 logged in 2013 and a, now almost unimaginable, record of 573 logged in 1952. Although numbers fluctuate markedly between years and historical highs were probably in part due to the presence of livestock tempting passage birds down to feed, there are clearly far fewer Yellow Wagtail passing Skokholm than there were 50 years ago.

Grey Wagtail *Motacilla cinerea* **Siglen Lwyd**
Uncommon Visitor Scarce in spring but occasional double-figure daycounts in autumn
1936-1976: 8 trapped, 2013-2018: 2 trapped, 1 control

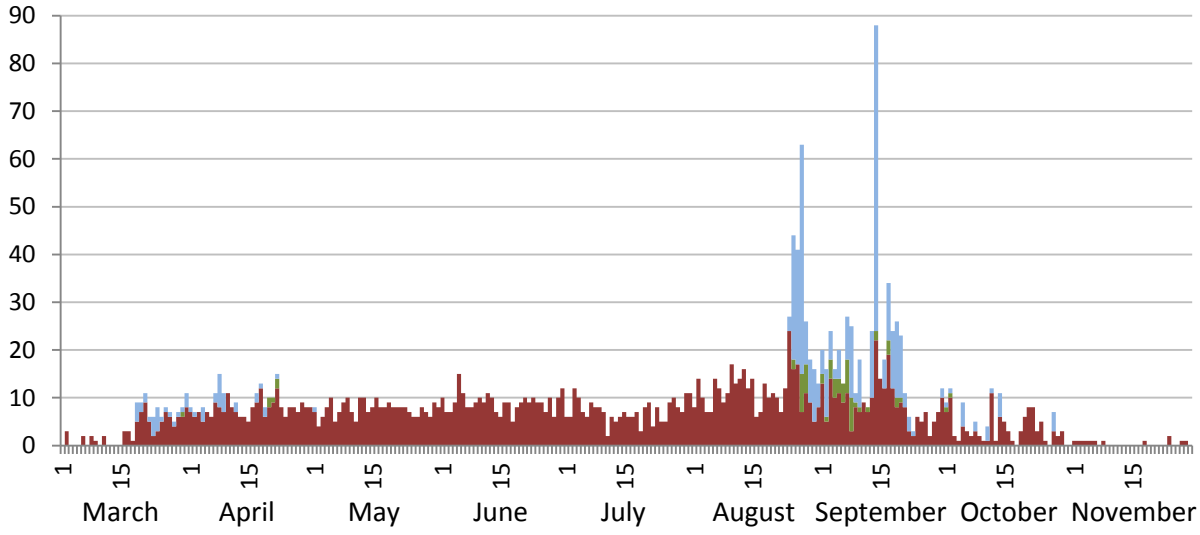
There were no spring birds for the first time since 2015; there have only been 77 previous spring bird-days, with 20 this century and counts of up to five in five of the last seven years. One in South Haven on 26th August was three days earlier than the first three of autumn 2018 and on the same date as the first three of autumn 2017. A lone August bird was the lowest tally in this month for five years; there have been 140 previous August bird-days counted over 34 years, with 18 since 2015 and a high of 30 in 1952. Records on 14 September dates, including highs of six on the 8th, five on the 10th and seven on the 30th, took the bird-days total to 40; although the peak daycount was the second lowest of the last seven years, down on a recent high of 12 in 2014 and a record 25 in 1960, the total was the seventh highest September tally to date (albeit down on a 2013-2018 mean of 50.7 and a record 110 logged in 2014). Sightings on 11 October dates were all of singles bar two on the 1st, four on the 2nd and three on the 5th; a bird-days total of 17 matched that of 1988 as the fifth highest on record, a tally down on the 24 of last year and peaks of 32 in 2015 and 39 in 2016. November saw singles on the 6th and 16th, two on the 24th and a final single on the 25th which took the bird-days total to a record five; there have only been 18 previous November bird-days, including six between 2014 and 2018. This was an above average showing for a species described in 1939 as a 'curiously rare visitor' and by Thompson (2007) as usually providing only 'a handful of autumn records each year'; indeed there have only been seven higher annual totals, five of which were recorded between 2014 and 2018 (including a record 126 in 2014).

Pied Wagtail *Motacilla alba* **Siglen Fraith**
***M. a. yarrellii* Scarce Breeder and Fairly Common Visitor**
***M. a. alba* Common Migrant** flyovers unassigned to race are also Common
***M. a. alba* Earliest** 11th March 1997 (30th March 2019) **Latest** 29th October 1988 (2nd October 2019)
32 trapped (including 9 pulli), 10 retrapped
1936-1976: 349 trapped, 2011-2018: 166 trapped (including 28 pulli), 77 retrapped, 3 controls

Early spring again saw a sporadic presence indicative of birds making regular visits from the mainland but rarely roosting; there were sightings of up to three birds on five dates between 28th February and 15th March including a singing male on the 8th. There followed daily sightings from the 16th, with a peak March daycount of nine matching that of 2016 as the highest since 2006. The first White Wagtail of the year was at the Lighthouse on the 30th, this three days later than the first of last year but a week earlier than the first of 2017. Two on 20th April, along with a single on the 21st and two the following day, were the only other nominate birds noted this spring; a White Wagtail spring bird-days total of six was the lowest since 2011, well down on recent highs of 49 in 2016 and 75 in 2013 (the only spring tallies higher than that of 2013 are the 80 of 1988 and the 122 of 1989). Pre-breeding counts of 11 on the 10th and 12 on the 18th and 22nd April were the only indication that non-Skokholm breeding *M. a. yarrellii* were present. Pied Wagtail were first observed nest building on 23rd April, four days later than in 2018 and 2016 and six days later than in 2017. Five breeding pairs were subsequently mapped; this matched the last two years and the Skokholm record, was one

more than in 2016 and two more than in each year between 2015 and 2013. The only breeding bird retrapped this season was a male ringed in August 2015 which had survived at least five winters and worn a ring for three years, nine months and 25 days; the longevity record for a British ringed Pied Wagtail is eight years, nine months and one day.

The number of Pied Wagtail *M. a. yarrellii* (maroon), White Wagtail *M. a. alba* (green) and unraced *M. alba* wagtail (blue) logged during the 2019 season.



Three hatched eggshells near the Cottage on 23rd May were the first indication that chicks had emerged, whilst the following day saw the provisioning of young both here and at the Smoke Room; chick provisioning was first noted on the 28th last year and on the 23rd in 2017. The first four fledglings of the year left the Cottage nest on 5th June, four days earlier than the first of last year. A pair nesting at Twinlet (which typically fed to the north of the Wheelhouse), fledged three a few hours later, the Smoke Room pair fledged two the following day, the Crab Bay pair fledged three on the 11th and the North Haven pair fledged two on the 20th. Four pairs definitely attempted second broods, whilst there was no indication of such at Crab Bay. The Cottage pair fledged a second brood of four on 20th July, the Twinlet pair relocated to the Courtyard Wall and fledged five on 2nd August and the North Haven pair had fledged three by 7th August. The Smoke Room pair, which were seen to be feeding young from 26th July, were alarming on 4th August; the nest was destroyed and there was no sign of the young, this most likely due to Jackdaw depredation. A total of 26 fledglings was eight up on last year and seemingly the most yet produced on Skokholm. The resulting productivity

figure of 5.20 fledglings per pair was up on the 3.60 logged in 2018 and 2017, the 4.33 of 2015, the 3.67 of 2014 and the 5.00 of 2013, whilst virtually matching the 5.25 achieved by four pairs in 2016.

Although there was some evidence of an early autumn passage, with flyovers occasionally seen well enough to assign them to the British race, the peak August daycount of *M. a. yarrellii* (the 24 logged on the 24th), totalled less than the number of Skokholm breeders and their offspring. Daily September counts were typically of 14 or less prior to the 19th and of ten or less thereafter, although there were highs of 22 on the 14th and 19 on the 17th when *M. a. yarrellii* arrived from elsewhere. The first two White Wagtail of the autumn, together at North Plain on 26th August, arrived three days later than the firsts of 2018 and 2017 and eight days later than the first of 2016. There were a further 60 *M. a. alba* logged during the autumn, including highs of eight on 27th August and seven on the 7th and 8th September; the peak White Wagtail daycount was the lowest of the last nine years, whilst the bird-days total, although close to the 64 of last year, was the third lowest logged during the same period (there were recent highs of 266 in 2015 and 199 in 2013 and all-time highs of 1134 in 1991 and 1712 in 1988). There were an additional 346 unraced flyovers noted during August and September this year, with highs of 48 on 27th August and 64 on 14th September; although up on the 124 of 2017 and the 81 of 2016, the total was down on the 439 of last year and recent highs of 506 in 2014 and 730 in 2013. A lone White Wagtail on 2nd October was the last of the year, this five days later than the last of 2018 and the latest since birds on the 3rd in 2016 and 2015. Pied Wagtail numbers declined during October, with daycounts of up to 11 on all but four dates and a mean of 3.4 birds per day. The only November records were of a single logged on seven dates to the 8th, one over on the 18th, two on the 24th and singles on the 27th and 28th; a total of 12 November bird-days was the third highest to date, a tally only down on the 19 of 2016 and the 20 of 2013.

Meadow Pipit *Anthus pratensis* **Corhedydd y Waun**
Very Abundant Visitor and Uncommon Breeder
237 trapped, 59 retrapped
1936-1976: 4102 trapped, 2011-2018: 1002 trapped (including 5 pulli), 353 retrapped

The season began in typically quiet fashion, with no more than 26 noted on each date between 28th February and 16th March. Daycounts increased from the 17th, with a mean of 91.3 birds per day and highs of 171 on the 21st, 121 on the 22nd and 183 on the last day of the month; the peak March daycount was the highest since the 200 of 2011, whilst a bird-days total of 1536 was the highest since the 2879 of 1990 (which included a record March daycount of 350). The ringing recovery listed below hints at where some of the mobile flocks may have been heading. Four three-figure April daycounts, including highs of 107 on the 6th and 18th, were indicative of further passage, whilst nest building was observed from the 5th. Survey work during April and May revealed 32 breeding territories and an additional singing male which was encountered on only one of four visits; the total number of territorial males was down on the 40 logged in each year between 2016 and 2018, but up on the 30 of 2015 and the 28 of 2014 and 2013. The drop in the number of breeding birds was reflected in the monthly tallies logged between May and August, totals which were largely down on recent years (see table below). Adults were first seen carrying food on 19th May, one day earlier than the first of last year but six days later than in 2017, whilst the first fledgling was at the Red Hut on the 31st; this was the earliest fledgling since one on the same date in 2016. Youngsters were still being fed until at least 13th August, this eight days earlier than the last 2018 sighting and nine days earlier than the last of 2017. There were 19 birds retrapped which had been ringed on Skokholm in previous seasons, this compared with 31 last year, 15 in 2017 and 16 in 2016 and 2015; nine birds had survived their first winter, five had survived two winters and five had survived three winters.

As is typically the case, numbers increased in August, however highs of 113 on the 27th and 100 on the 31st were the only three-figure daycounts logged; there were eight such daycounts last year, including an August record of 205 on the 30th. There were 17 September daycounts in excess of 100

individuals, with highs of 380 on the 17th, 290 on the 19th and an impressive 931 on the last day of the month (when, in addition to the grounded birds, a minimum of 597 flew southeast); there have only been four higher counts, namely the 1353 of 27th September 2013, the 1080 of 21st September 1990, the 1000 of 30th September 1988 and the 2000 of 3rd October 1972. A September bird-days total of 4474 was up on the recent high of 4184 logged in 2014 and a 2013-2018 mean of 3432.2. There were October highs of 154 on the 1st, 175 on the 2nd and 123 on the 15th, but 25 or fewer on 14 dates from the 7th and no more than 42 from the 21st; the peak daycount and a bird-days total of 1340 were down on 2013-2018 October means of 182.3 and 1412.8 respectively. Counts on all but six November dates to the 29th were of nine or less, bar the 45 of the 3rd and the 21 of the 4th; there have been higher November daycounts in four previous years, most recently with 60 in 1990 and with a high of 70 in 1989. There were no sightings between 30th November and 3rd December.

The total number of Meadow Pipit logged each month, along with the monthly maximum and the date on which the 2019 peak was recorded. Counts from 2018 to 2016 are included for comparison.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019	1536	2142	1327	1163	1601	2099	4474	1340	147
2018	728	1294	1793	1256	1780	2748	3252	1428	200
2017	1046	1380	1230	1007	1772	2636	3559	1261	17
2016	1251	1919	1373	1410	1631	1676	2985	1191	89
2019	183	107	72	57	68	113	931	175	45
2018	84	90	90	61	103	205	228	176	35
2017	93	73	79	57	107	179	305	160	6
2016	98	109	81	87	78	121	198	203	15
	31st	6th & 18th	5th	14th & 30th	28th & 31st	27th	30th	2nd	3rd

Ringing recovery AZC5638
Originally ringed as a first-year, COTTAGE HELIGOLAND, SKOKHOLM 21st March 2019
Recovered as an adult, BOORA, OFFALY, IRELAND 24th May 2019
Finding condition Freshly dead road casualty
Distance travelled 239km at 316 degrees (NW)
Days since ringed 64
It should be borne in mind that road casualties are not always discovered where they were hit.

Tree Pipit *Anthus trivialis* **Corhedydd y Coed**
Uncommon although Scarce between 2004 and 2012 and more regular in autumn
Earliest 16th March 1966 (8th April 2019) **Latest** 13th October 1959 (17th September 2019)
1936-1976: 122 trapped, 2013-2018: 6 trapped, 1 retrapped

One north on 8th April was 21 days earlier than the first of last year, but seven days later than the first of 2017; there have only been eight earlier bird-days, including the 2017 individual and three very early birds in March 1966. There followed further singles on the 23rd and 29th April, whilst in May there were singles on the 3rd and 11th, three on the 12th and one on the 14th which was the last of the spring; the only higher spring daycounts are the four birds counted in 1987, 1970 and 1938. A spring bird-days total of nine was up on a 2012-2018 mean of 5.4, but down on the recent high of 17 logged in 2015 and the record 34 of spring 1964. Two flyovers on the morning of 20th August were two weeks later than the first of last autumn, but on the same date as the first of 2017. Two went over on the 25th, five did likewise the following day and a single on the 27th took the August bird-days total to ten, a tally down on a 2013-2018 mean of 12.3 and the 29 logged last year (the latter was only down on August highs of 33 in 1976, 30 in 1966 and 45 in 1959). Singles on the 7th, 8th, 14th and 17th led to the lowest September tally of the last seven years; there have been 22 double-figure September totals, most recently with 13 in 2013 and 2014 and with highs of 37 in 1969 and 39 in

1958. The last of the year was 23 days earlier than the last birds seen in 2018 and 2017; there have been 128 later bird-days, including 21 noted in October.

Rock Pipit *Anthus petrosus* **Corhedydd y Graig**
Scarce Visitor and Uncommon Breeder with a high of 67 pairs (1959) and a low of 17 pairs (1983)
15 trapped
1936-1976: 2593 trapped, 2011-2018: 262 trapped (including 2 pulli), 89 retrapped

There were no spring birds resembling Nordic breeding *A. p. littoralis* for a fifth consecutive year, indeed there was again no indication that the birds logged this spring were anything other than the Skokholm breeders; there are records of *A. p. littoralis* logged in seven previous years, most recently with one on 22nd March 2014. Following the 32.8% decline in the number of breeding pairs recorded in 2018, a drop perhaps brought about by the freezing conditions and extreme weather prevalent early in that year, this season saw a 19.5% increase; a minimum of 49 mapped territories was up on the 41 of last year and the 2012-2018 mean (42.86 ±sd 10.76), but down on recent highs of 61 in 2017 and 53 in 2016. There was also an increase in the number of pairs holding territory on the plateau of the Island, perhaps due to increased crowding around the coastal reaches; there were five pairs located away from the coast this year, three more than last year but two fewer than in 2017. Although the majority of pairs were not provisioning chicks until 17th May, two days earlier than the first of last year, an early attempt at Hump Bay had fledged at least one by 21st May; this was the earliest fledgling of the last four years and 13 days earlier than the first of 2018, but one day later than the first of 2015 and seven days later than a very early 2014 fledgling. Second broods were seemingly attempted in some territories, with adults still feeding young along the south coast on 15th August (16 days later than the last food delivery witnessed in 2018). Daycounts increased during the autumn as birds made their customary move up onto the plateau, peaking at 104 on 30th September and 135 on 2nd October; although up on the 2018 maximum of 78, no doubt due in part to the increase seen in the size of the breeding population, the peak was down on that recorded in each autumn between 2014 and 2017, including the recent high of 165 logged in September 2014 (a Skokholm record of 400 was recorded in September 1934).

Chaffinch *Fringilla coelebs* **Ji-binc**
Fairly Common to Abundant listed by both Betts and Thompson as Common to Very Abundant
3 trapped, 12 retrapped
1936-1976: 255 trapped, 2013-2018: 68 trapped, 3 retrapped

A flock of 36 flew towards the Lighthouse on the morning of 19th March, with what were perhaps the same birds subsequently heard returning towards the mainland; there have only been seven higher spring daycounts, most recently with a record 430 logged on 22nd March 1976 (five of the remaining peaks were of between 40 and 90, with 220 on 13th March 1960 the other standout total). At least one went over the following day, whilst grounded females on the 23rd, 25th and 31st took the March bird-days total to 40; there have been 11 higher March tallies, most recently with 69 in 2006 (when the peak daycount was of six). Females logged on the 1st, 3rd and 10th, along with a flyover on the 20th, led to a typical April total; the 2011-2018 April bird-days mean is 5.25, with a peak during that period of 22 in 2013 (the fifth highest April tally). A first-year female which arrived on 19th May was seen on each subsequent day to the end of the month and was ringed on the 23rd; although there have been May sightings in 33 previous years, the only higher bird-days tally was logged in 1994 when a female also lingered. There followed an unprecedented stay, with the same female retrapped 12 times and seen on 25 dates in June (records in six previous Junes peaked at two bird-days), 23 dates in July (records in four previous Julys peaked at three bird-days), 25 dates in August (records in eight previous Augusts peaked at four bird-days) and 28 dates in September (although there have been sightings in 27 previous Septembers, including four of the last five, there were no additional birds noted this year). Although she typically frequented the area between the Farm and

the Well, she was regularly found between the Bluffs, the Quarry and the Lighthouse. The ringed female was seen on each October date to the 12th, whilst two additional birds were present on the latter date; these were the latest autumn arrivals since 2011, two weeks later than the first of 2018. The female, which was alone again on the 13th, was last seen at the Hills on the 14th when an additional bird flew over; it was unclear whether she was one of the three mobile Chaffinch logged on the 15th. There were no further records until 19th October, from when daily sightings to the end of the month peaked at 27 on the 20th, 16 on the 27th and 77 on the 28th; a bird-days total of 183 was the lowest of the last four Octobers, down on a 2012-2018 mean of 322.6 and a recent high of 1100 logged last year (the latter was the highest total in any month since the 1627 of October 1993 and the 11th highest monthly total to date). Sightings on all but seven November dates were of ten or less, bar 20 on the 3rd and 15 the following day; despite a staff presence throughout the month, a bird-days total of 117 was the lowest of the last five Novembers, down on recent highs of 427 in 2018 and 804 in 2017 (the latter is the fourth highest November tally, albeit down on a remarkable 3267 logged in 1968). A single on 1st December was the last sighting prior to the staff departure.

Brambling *Fringilla montifringilla* **Pinc y Mynydd**
Uncommon although Scarce on occasion and with records in only 16 springs
Earliest 25th September 1976 (22nd October 2019) **Latest** 27th April 1949
1936-1976: 5 trapped, 2013-2017: 4 trapped

There were no spring sightings this year; there have only been 33 previous spring bird-days, most recently with singles on 13th April 2018 and 17th April 1997. The first of the year, found near the Cottage on the afternoon of 22nd October, was seven days later than the first of last autumn and the latest autumn arrival of the last eight years; between 2012 and 2018 the first of autumn appeared between the 10th and 20th October (with a mean of the 15th). The only other October birds were three flyovers on the 28th; although the peak daycount matched a 2012-2018 mean of 3.4, the bird-days total was the lowest of the last four Octobers, down on a recent high of 24 logged last year and a 2012-2018 mean of 9.1. The only post-1975 October bird-days total higher than that of 2018 was the 27 of 1993, although there were seven higher totals prior to this, including peaks of 223 in 1973 and 1382 in 1966 (the latter included remarkable daycounts of 800 on the 22nd and 375 on the 24th). Singles on the 8th and 10th November were the last to be logged; both the peak daycount and November bird-days total were the lowest since a blank 2014 (when staff departed on the 24th), down on a recent high of 20 bird-days logged in 2017 (when the peak daycount was of ten). The only November bird-days totals up on that of 2017 are the 25 of 1970, the 42 of 1968 and the 108 of 1967.

Common Rosefinch *Carpodacus erythrinus* **Llinos Goch**
Rare 62 bird-days, including 18 in spring, logged over 21 previous years
Earliest 3rd May 1970 (23rd September 2019) **Latest** 12th October 1995 (1st October 2019)
1 trapped
1936-1976: 4 trapped, 2011-2015: 5 trapped, 1 retrapped

A juvenile, found in the vicinity of the Courtyard on the evening of 23rd September, arrived seven days later than a juvenile found below the Knoll last year (SW *et al*.). It was trapped in the Wheelhouse Heligoland the following day and was still present around the Observatory buildings on the 25th. Following four days of gales from the westerly quarter, regular heavy rain and a calmer 30th September which again saw heavy showers, a ringed bird was found at East Bog on a drizzly but calm 1st October. This mirrored sightings in 2018, when what was probably the same individual went missing for up to four days during rough weather, only to reappear at East Bog. There has now been a minimum of seven birds in nine years, with singles between the 16th and 27th September 2018, on 11th June 2015, between the 5th and 10th September 2014, on 8th June 2013, between the 27th and 29th August 2012 and between the 2nd and 11th September 2011 in addition to this year's bird. Prior to these the most recent sightings were of a single on 25th May 2003 and an Island daycount record

of three on 11th October 2001. Interestingly the last three spring records have all been of one day birds, whereas the last five autumn individuals have all lingered; a similar pattern is exhibited by commoner migrants on Skokholm.

Greenfinch *Chloris chloris* **Llinos Werdd**
Uncommon but recorded by both Betts and Thomson as Fairly Common or Common
1936-1976: 93 trapped, 2011: 4 trapped, 1 retrapped

The first of the year was singing at the Farm on 7th April, this one day earlier than the sole spring bird of 2018. A bright male on the 12th was the only other April sighting and just the sixth spring record of the last seven years; although there were no spring birds in nine post-1946 years, up to 36 bird-days have been noted in a single spring during the same period. A flyover on 19th October was the first of the autumn, 13 days later than the first of 2018 but one day earlier than the 2014-2018 mean. Four together on 24th October matched daycounts logged in 2018 and 2017 as the highest of the last eight years (daycounts peaked at 300 in October 1939, 189 in October 1957 and 270 in October 1966). Lone flyovers on 27th October and the 8th and 15th November took the autumn bird-days total to eight; the autumn tally was down on the ten of last year, a 2011-2018 mean of 8.8 and a high during that period of 23 logged in 2011. Although historical counts have fluctuated, there have been 12 autumn totals in excess of 200, most recently the 251 of 2003, and highs of 422 in 1976, 525 in 1966 and 581 in 1939. Since the eight birds noted in 2005, there have now been records in 11 years totalling only 103 bird-days. This significant decline is likely linked to the spread of trichomonosis which led to a 59% drop in the British population in just ten years (Massimino *et al*., 2017).

Linnet *Carduelis cannabina* **Llinos**
Common bred in 1929, 1997 and 1998
1936-1976: 63 trapped, 2011-2018: 43 trapped

A single on 19th March was one day earlier than the first of last year; the first record in each of the last six years has arrived during the period between the 14th and 20th March. Sightings of up to eight birds on a further nine dates took the bird-days total to 38, the highest March tally since the 199 of 1996 and the seventh highest total to date. There were records on all but six April dates, including highs of 13 on the 9th and 12 the following day; although the resulting bird-days total of 152 was down on the 226 of last year and three of the previous four Aprils, it was up on a 2012-2018 mean of 143.7 and a post-1946 mean of 80.3 (the peak during the latter period was the 333 bird-days logged in April 1960). Records on eight May dates were all of singles bar two on the 1st, 13th and 15th; a bird-days total of 11 was down on five of the last six Mays, a 2012-2018 mean of 33.2 and a post-1946

mean of 36.3. Singles on four dates in June, sightings of up to two birds on three dates in July and a lone bird at the Lighthouse on 7th August led to totals typical of the summer months. Following four on the 8th, there were birds on six further September dates from the 15th including highs of ten on the 17th and 33 on the 30th; both the peak daycount and a bird-days total of 54 were the lowest of the last six years and down on respective 2012-2018 means of 59.9 and 132.9 (a period which included all-time September daycount highs of 82 last year and 137 in 2015). October counts were similarly down on the recent mean, with records on 24 dates and highs of 63 on the 2nd, 41 on the 11th and 45 on the 21st taking the bird-days total to 357; the peak daycount was down on a 2012-2018 October mean of 102.3 (the maximum during that period being 239 in 2016, a count only down on the 250 of 1967), whilst the bird-days total was down on a 2012-2018 mean of 445.3 (the maximum during that period being 892 in 2018, an October total only down on the 939 of 1975 and the 911 of 1959). Records of up to 12 birds on 11 November dates took the bird-days total to 50, the highest in this month since the 188 of 2016; there have been 11 higher November totals, of which the 2016 tally is the maximum. Two were at the Lighthouse on 1st December.

Lesser Redpoll *Carduelis cabaret* **Llinos Bengoch Leiaf**
Uncommon recorded by both Betts and Thompson as Scarce
1936-1976: 16 trapped, 2013-2018: 14 trapped

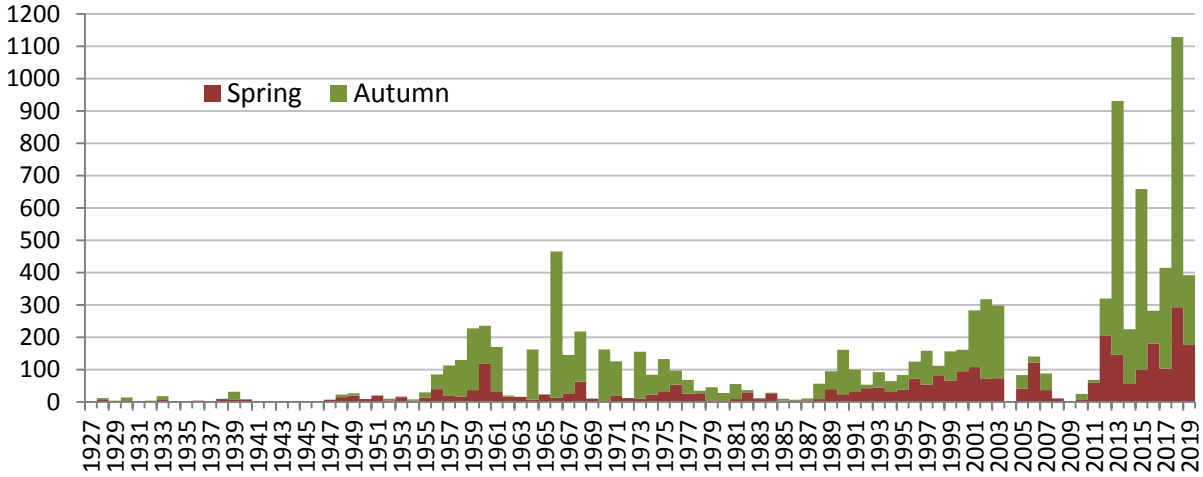
A vocal flyover on 19th April arrived on the same date as the first two of last year, four days later than the first of 2017 and five days later than the first of 2016. A lone male was present the following day, whilst a single over on the 21st took the April bird-days tally to three; there have only been 45 previous April bird-days, 18 of which were logged between 2016 and 2018. Another flyover single on 21st May was surprisingly the last of the year; there have been 201 previous May bird-days, 98 of which were logged since 2013 (including a high of 54 in 2016). It proved the third year since 2012 without an autumn sighting, this the period which has of late seen fewer records; whereas the post-1928 data includes 298 redpolls logged prior to 1st July and 315 after, the data from 2013 onwards includes 131 bird-days in the first half of the year and 96 in the latter (with 2015 the only year since 2011 without a spring bird).

Goldfinch *Carduelis carduelis* **Nico**
Common but recorded by both Betts and Thomson as Fairly Common
12 trapped, 1 control
1936-1976: 65 trapped, 2011-2018: 133 trapped, 5 retrapped, 2 controls

One at the Tabernacle on 22nd March was the first of the year, this four days earlier than the first of last year and two days earlier than the first of 2017. Records of up to five birds on four further March dates took the bird-days total to ten; although the tally was down on that recorded in six previous years, the peak daycount was a new March record. There were birds on 23 April dates, with five or fewer noted on 16 days but highs of nine on the 21st and 23rd and 14 on the 28th which took the bird-days total to 98; both the maximum daycount and monthly total were the third highest to be logged in April, down on respective 2018 highs of 21 and 116. Sightings on 20 May dates were all of four or less bar 14 on the 1st and seven on the 3rd; the peak count was the fourth highest to be logged in May (down on a high of 23 counted last year), whilst a bird-days total of 53 was the seventh highest to date (down on a 2012-2018 May mean of 70.0 and a high of 136 logged last year). Up to two birds were seen on ten June dates, however there was again no indication of a breeding attempt; Goldfinch are yet to nest on Skokholm although, given the increase in the number of spring sightings, it will perhaps not be long until they do. The only July records were of a single on the 1st and two on the 16th which included the first juvenile of the year; there have been 46 previous July bird-days, 26 of which occurred since 2014 and a record 12 of which were logged last year (when the first juvenile arrived on the 9th). There have only been August sightings in five previous years, a tally which was not added to this year. Singles on three dates between the 24th and 28th, along with three

on the 30th, produced the lowest September bird-days total of the last eight years, a tally 92.5% down on a 2012-2018 mean of 79.6; the four September totals in excess of 20 have been logged since 2012, with highs of 120 in 2017 and 237 last year. Observations on 18 October dates included 12 daycounts of four or less but highs of 39 on the 2nd, 20 on the 6th and 24 on the 20th which contributed to a bird-days total of 147; although there have been higher daycounts in 13 previous Octobers, including a peak of 285 in 2013, there have only been eight higher October totals, four of which occurred since 2013 (including highs of 746 in 2013 and 582 last year). Goldfinch were present on 16 November dates, with highs of ten on the 10th and 18 on the 24th; there have been five higher daycounts (with 30 in 1968 the peak) and six November totals up on the 56 of this year (with a record tally of 138 logged in 2015). Four were at the Lighthouse on 2nd December.

The total number of Goldfinch bird-days logged in each spring and autumn since 1927.



Ringing recovery AJH1011
Originally ringed as a first-year male, WELL 9 MIST NET, SKOKHOLM 6th June 2019
Recovered as a first-year male, SKOMER ISLAND, PEMBROKESHIRE 10th June 2019
Finding condition Intentionally taken
Distance travelled 4km at 343 degrees (NNW)
Days since ringed 4

Ringing recovery S190919
Originally ringed as a juvenile, SKOMER ISLAND, PEMBROKESHIRE 28th June 2018
Recovered as a first-year male, WHEELHOUSE NET, SKOKHOLM 18th May 2019
Distance travelled 4km at 163 degrees (SSE)
Days since ringed 324

Ringing recovery S957590
Originally ringed as an adult female, WELL 9 MIST NET, SKOKHOLM 26th May 2018
Recovered as an adult female, BUTTERCOMBE BARTON, WEST DOWN, DEVON 21st March 2019
Finding condition Intentionally taken
Distance travelled 99km at 128 degrees (SE)
Days since ringed 299

Siskin *Carduelis spinus* **Pila Gwyrdd**
Uncommon sometimes Scarce and with records in just 11 previous springs
1936-1976: 37 trapped, 2017: 1 trapped

Three on 20th April were 11 days later than the first of last year; this was the highest April daycount yet recorded. Singles on the 21st and 22nd took the April bird-days total to five, the highest to be

logged in any spring month (matching the May 2012 tally); there have only been 26 previous spring bird-days, 16 of which have been this century. A minimum of three on 15th October were the first of the autumn, these 12 days later than the firsts of 2018 and 2017. There were records on a further seven October dates, all of seven or less bar the 62 logged on the 20th; the latter was the highest daycount since 180 were noted in October 1993, indeed there have only been higher counts in four previous years. An October bird-days total of 86 was the eighth highest on record, down on a recent peak of 111 in 2017 and record totals of 210 in 1975, 405 in 1993 and 2156 in 1988 (the latter of which included remarkable daycounts of at least 1200 grounded by fog on the 26th and 800 the following day). The only November sightings were of three on the 3rd, at least one on the 4th and two on the 24th which took the bird-days total to six; both the peak daycount and bird-days total were the lowest of the last five Novembers, although there have only been eight higher totals in this month. Siskin have now been logged in 41 years since the first 11 for Skokholm were found in 1949.

Snow Bunting *Plectrophenax nivalis* **Bras yr Eira**
Scarce but with records in only six springs
Earliest 17th September 1999 (21st October 2019) **Latest** 25th April 1959
1936-1976: 6 trapped, 2014: 1 trapped

The first of the year worked its way east along the south coast on 21st October; this was the earliest autumn bird since one on the 6th in 2014. The only other October sighting was of one feeding along the south coast cliffs on the 24th. November saw a flyover on the 4th, a male at the Little Neck on the 7th (below photograph) and lone flyovers at the Dip on the 8th, North Plain on the 10th, the north coast on the 17th and Twinlet on the 29th. A 2019 bird-days total of eight was the highest since the 15 of 1999 and, equal with that of 1977 and 1974, the eighth highest tally to date; the highest Skokholm totals are the 26 of 1975, the 44 of 1961, the 63 of 1967 and the 128 of 1968, whilst the record daycounts are of 17 in 1961, 15 in 1967 and 12 in 1968.

Lapland Bunting *Calcarius lapponicus* **Bras y Gogledd**
Scarce but only recorded in 47 previous years and with just five spring records, most recently in 2017
Earliest 30th July 1957 (2nd October 2019) **Latest** 8th June 1963
1936-1976: 1 trapped, 2017: 1 trapped

The first of the year, a single over the Bluffs on 2nd October, was two days earlier than the first of last year but three days later than the first of 2017. A bird flushed from South Pond on the 23rd took the October total to two, the highest since the three of 2000. Three were logged on 3rd November, with two at the Lighthouse and one at Orchid Bog; there have been higher daycounts in five previous

years, most recently with four on 19th November 2016 and with a high of 11 on 20th October 1993. The only other sighting was of a flyover single on 23rd November, a bird which took the autumn bird-days total to six; the autumn tally was up on the single of last year and was the highest since the 13 of 2016. The only autumn counts higher than that of 2016 are the 45 of 1993, the 14 of 1973, the 17 of 1960, the 15 of 1957 and the record 56 of 1956.

Reed Bunting *Emberiza schoeniclus* **Bras y Cyrs**
Scarce Breeder and Scarce Visitor bred in 1960, in most years 1967-1980 and since 2005
4 trapped, 4 retrapped
1936-1976: 174 trapped, 2011-2018: 87 trapped, 148 retrapped

As noted in the majority of recent years, the breeding population was seemingly absent during the early spring, although a small number of birds made occasional returns during fine weather; the only records between 28th February and 17th March were of a singing male on the 1st, a pair in the vicinity of the Well on the 9th and a vocal bird the following day. There were daily sightings from 18th March, all of four or less bar the seven logged on the 19th (which included two birds high over Winter Pond); the peak count was the only indication this year that birds logged during the spring and summer were anything other than the Skokholm breeders. There were only three territories mapped, with pairs at Isthmian Heath, the Well and Hog Basin; this was one down on last year and four down on the Island record of seven pairs mapped in each year between 2015 and 2017. Only one ringed adult was retrapped this year, this one less than last year and six fewer than in 2017; a male ringed on 22nd April 2017 had survived at least three winters. Two ringed females were also present, one with darker ear coverts than the other, however neither was retrapped; none of the five birds ringed as juveniles in 2018 were thus encountered this year. The drop in the retrap rate has mirrored the decline in the breeding population, with the largest fall probably linked to extreme weather impacting survival in early 2018. Chick provisioning was first logged on 4th June, seven days earlier than last year and one day earlier than in 2017, however this attempt on Isthmian Heath seemingly failed. The first fledgling appeared at the Well on 26th July (the first was noted on the 14th last year); this was one of two fledglings seen in this territory, one of which was ringed on 1st August and lingered until at least 6th September (five youngsters were trapped around the Well and Farm before the end of August in 2018, with seven in 2017, six in 2016 and eight in both 2015 and 2014). There was no indication that the Hog Basin attempt produced young, indeed the female was not seen after 13th May. The Isthmian Heath pair were again feeding young on 24th July, although this attempt also seemingly failed. Productivity was thus a minimum of 0.67 fledglings per pair, a value down on each of the last six years, the 2013-2018 mean (2.00 ±se 0.13) and a recent high of 2.50 in 2018.

In the years in which Reed Bunting did not breed, they were considered a scarce visitor; low counts were logged most Octobers. Such small scale arrivals are difficult to detect now that a breeding population has again established, however immigration was confirmed this autumn when three different first-winters were ringed between 30th September and 22nd October (this being more than the number of unringed Skokholm fledglings). Flyovers noted on six dates between 30th September and 24th October (all singles bar two on the 15th and 20th), were probably also indicative of passage, whilst the peak autumn daycount of five logged on 21st October included three birds at South Pond (well beyond the breeding territories). Counts again dwindled during the autumn, with the only records between 5th November and 3rd December being of singles at South Pond on the 16th and 17th.

Escapes and Exotica

Black Swan *Cygnus atratus* **Alarch Du**
Introduced Vagrant no previous records of this Australasian native

One of the more unusual, albeit distant 2019 sightings came from the Lighthouse, where four Black

Swan swam north with the tide on 26th March (RDB); they were seen arriving into Caerfai Bay near St Davids a little over four hours later. Three were seen both on the sea outside of Solva Harbour and north of Ramsey Sound the following day, whilst on the same date a single was on the shore at Aberporth, Ceredigion. Three birds had reached Ynys-hir, north or Aberystwyth, Ceredigion by the 30th. It is possible that the lone individual accounted for records at Broad Haven on 8th April, in Angle Bay between 24th July and 9th August, in the Teifi Estuary between 2nd September and 2nd November and again in Angle Bay from 3rd December. The origin of these birds is something of a mystery; in 2017 there were ten feral pairs reported as breeding wild in the UK, with six located across Dorset, Wiltshire, Hampshire, and Sussex which fledged at least 11 young (Holling *et al*., 2019), whilst lone birds were regularly sighted in Wales and a breeding pair resided on the Welsh side of the River Dee. It would seem that this is a species destined for Category C of the BOU British List, although these particular birds will not be an addition to the Skokholm list if and when such a move occurs.

The Non-avian Report

It was another fascinating season for records of non-avian species on Skokholm. Observations made during the daily census were supplemented by targeted surveys to produce an exciting list covering a range of taxa. Despite a long history of intensive field studies on the Island, 2019 again saw the discovery of species not encountered previously. Whilst many of these observations were notable in a Skokholm context, a Long-tailed Blue was also a first for Pembrokeshire and just the second to be found in Wales. The 2019 sightings are listed systematically below and, where appropriate, compared with the digitised historical records, Thompson (2007) and observations made since 2012.

Invertebrates

Dragonflies and Damselflies

Common Blue Damselfly *Enallagma cyathigerum* (Charpentier, 1840)
A single on 25th August was the only 2019 sighting, although two further 'blue' damselflies were seen too briefly to be identified. There have been records of this abundant mainland species in just three of the last seven years; two were observed in 2018 and an impressive 33 were logged in 2014 when North Pond held at least 15 on the 17th and 18th June. With the exception of 1994, when numerous adults and nymphs were found at North Pond, this species has remained an insect rarely encountered on Skokholm.

Blue-tailed Damselfly *Ischnura elegans* (Vander Linden, 1820)
A male at North Pond on 27th June was the first since a single observed near Crab Bay on 14th August 2014; there were no further sightings this season. This makes 2019 just the third of the last seven

years with a record, this following two singles in 2013. Blue-tailed Damselfly was seemingly always a scarce species on Skokholm; for the years prior to 2013, the digitised database contains six 1999 records and one 1997 record (although the list is almost certainly incomplete as members of this Order were historically noted in a card index rather than in the paper logs).

Migrant Hawker *Aeshna mixta* (Latreille, 1805)
A single found in North Haven on 26th August was the first in a poor year for records of this species; the first of 2018 was logged 17 days earlier. The next encounter was not until 2nd October, when one was in South Haven, whilst the only other sighting was of a single at East Bog on 3rd November; the latter was, by over three weeks, the latest record of the last seven years. Despite the significant mainland breeding range expansion observed recently, a 2019 Skokholm tally of three was the worst of the last six years; the total was 78% below the 2013-2019 mean (13.9 ±sd 12.1), this despite a complete absence in 2013 (there were nine logged in 2018, 21 in 2017, 13 in 2016, 36 in 2015 and 15 in 2014). Hawker dragonflies not seen well enough to confidently assign them to a species were recorded on eight occasions in July and on five occasions in August.

Emperor Dragonfly *Anax imperator* (Leach, 1815)
A female ovipositing in the Orchid Bog pool on 24th July was the first of the year, this over four weeks later than an early 2018 insect (below photograph); a single, observed briefly at the same site on the 28th, may well have been the same individual. A male at the Lighthouse on the 1st and another at Orchid Bog on the 25th were the only August records. September proved to be a frustrating month, with 'probables' logged on five dates, although there were confirmed sightings at Orchid Bog on the 5th, 6th and 8th, at the Top Tank on the 11th and finally at the Well on the 12th. A year total of nine was just short of the seven year average (10.0 ±sd 8.0), albeit 61% down on a bumper 2018 total of 23 (there were four in 2017, ten in 2016, 18 in 2015, six in 2014 and, as with the previous species, no records in 2013). Orchid Bog pool and the two small manmade ponds around the Farm are often the only permanent areas of standing water during the summer months; these sites thus tend to provide the majority of records, although in 2018 a female was watched ovipositing onto Thongweed floating on the sea in South Haven.

Red-veined Darter *Sympetrum fonscolombii* (Sélys, 1840)
A male hunting at Migration Rocks on 26th June was the first of the year and 26 days later than the only record of 2018. The following day saw two males at North Pond and a third male along the

Lighthouse Track. A male was again at Migration Rocks on the 28th, whilst on the 29th Skokholm ringed Wheatear B45 was watched feeding an ill-fated male to its young; this notable observation perhaps suggests that Red-veined Darter were more abundant than encounters were indicating. A male was found in the Well Heligoland on 2nd July and another was discovered resting next to the front door of the Lighthouse at 2330hrs the following evening. A pair were in tandem on both the 8th and 12th July, the female ovipositing into North Pond on both occasions; the latter sighting was the last of the year and took the annual dragonfly-days total to 12, the third highest tally to date. This is the seventh consecutive year in which this species has been recorded on Skokholm and the third time that egg laying has been observed; the two previous breeding years were 2017, when at least three mating pairs were logged, and 2015 when, among an influx of 31 insects, five pairs were in copula at North Pond. Red-veined Darter breed regularly in southern England, but these sites are still not thought to hold established populations and British-bred second generation adults are not on the wing until late summer (British Dragonfly Society, 2020); it is thus likely that the 2019 Skokholm records are of immigrants from the Continent.

Common Darter *Sympetrum striolatum* (Charpentier, 1840)
The only 2019 records were logged in August, with a single found on the 1st and a female at Isthmian Heath on the 26th. Unidentified *Sympetrum* were also recorded; there were singles in both June and July and two in September. During the last seven years this has proven a scarce Skokholm dragonfly, with a yearly mean of 1.9 insects and a peak tally of five in 2014. By contrast, it was historically one of the most commonly encountered species of Odonata on Skokholm; there are records of breeding in both 1997 and 1956, whilst an astonishing 923 were logged between July and September 1948.

Broad-bodied Chaser *Libellula depressa* (Linnaeus, 1758)
The first, in what was to prove a remarkable year for records of this scarce Skokholm species, were found on 22nd May; a female and an immature male present near the Wheelhouse Pond were seemingly very fresh, this prompting a search of the pond which located three nymphs (but no exuviae). The squat and short-legged nymphs exhibited dark longitudinal bands on the abdomen and a dorsal spine on segment eight which was absent on segment nine (thus ruling out otherwise similar species of skimmer), whilst the tips of the upward facing eyes extended above the top of the head; a combination of these features is diagnostic of Broad-bodied Chaser (Cham, 2007). There followed a spate of further sightings; an immature male was present in the Cottage Garden on the 25th, an immature female was found at the same site the following day, a female-type was seen briefly on the 27th and an immature male (with a mostly blue abdomen) was encountered on the

30th. There were no further records until 30th June when an immature male was seen in the Cottage Heligoland. A female-type was in the Courtyard on 2nd July and one in the Wheelhouse Heligoland on the 15th was the last of the year. These were the first Skokholm sightings of this common mainland species since 1994, whilst the nymphs were the first proof of breeding on the Island. As a semivoltine species, it requires a minimum of two years to complete its development, a timespan dependent on the availability of food and on water temperature. The nymphs found in the Wheelhouse Pond in May did not appear fully grown and were perhaps thus from eggs deposited last year, however the presence of very fresh immature insects implies that eggs were laid in 2017; that an ovipositing female was missed on one, and probably two, previous occasions hints at how many odonata must go unobserved on Skokholm.

Moths

As in the previous six years, the 2019 moth records listed here are the result of both nocturnal trapping and ad hoc field observations. An impressive diversity was again discovered, with 15 Island scarcities logged (moths with fewer than five previous records) and 17 additions made to the Island list (there were seven additions in 2018). Of the latter, perhaps the most exciting were the long distance immigrants **Bedstraw Hawk-moth** and **Small Marbled**, although species such as **Lichen Button**, **Red-green Carpet**, **Sharp-angled Peacock**, **Dotted Border** and **White-pinion Spotted** were also excellent finds. Following what was a disappointing year for encounters with many of the regular migrants in 2018, species such as **Rusty-dot Pearl** and **Rush Veneer** were more numerous in 2019; it was however another quiet year for records of **Vestal** and **Dark Sword-grass** and a poor year for **Silver Y**. Of the less frequently recorded immigrants, **Olive-tree Pearl** and **White-speck** were the only species to make it onto the list. Nocturnal trapping was carried out using the solar mains powered Skinner Trap and these records were augmented with occasional after dark netting. Within the following text 'Nationally Rare' refers to a species which occurs in 15 or fewer hectads (10x10km squares) in Great Britain, whilst a 'Nationally Scarce' species occurs in between 16 and 100 hectads.

1.004 **White-barred Gold** *Micropterix aruncella* (Scopoli, 1763)
A resplendent male, found in vegetation adjacent to North Pond whilst undertaking annual seabird census work on 13th June, was the first confirmed Island record of this widespread species (there was an unconfirmed report in 2016). Single females were subsequently located along Little Bay Wall

on the 21st and 23rd June. Moths of the genus *Micropterix* are unusual in that the adults have fully functioning mouthparts which allow them to feed on pollen.

3.001 **Orange Swift** *Triodia sylvina* (Linnaeus, 1761)
The first of the year was a single flying along the Lighthouse Track, at dusk on 12th August. A further ten were observed in the field during the remainder of the month, whilst a total of seven were taken from the light trap during sessions ending on the 21st, 25th and 26th. A single found resting inside the entrance hall of the Cottage on 19th September was the only record of the month and the last of the season. An annual total of 19 was down on the 25 of 2018 and the 27 of 2017.

3.002 **Common Swift** *Korscheltellus lupulina* (Linnaeus, 1758)
This season saw a total of 15 trapped between 16th May and 9th June, with a peak catch of five on the 1st. Perhaps in part due to the extended life cycle of this species, which sees the larva overwinter twice before maturation, the number of adults attracted to the light each year fluctuates; there were 47 in 2018 (with a peak catch of 13) and 20 in 2017 (with a peak catch of five).

3.003 **Map-winged Swift** *Korscheltellus fusconebulosa* (De Geer, 1778)
It was a disappointing year for records of this summer species, with a single on 4th July the only insect logged; there were 15 in 2018 and 17 in 2017. Although this moth is encountered in most years with a trapping effort, high counts are surprisingly rare, this despite an abundance of Bracken *Pteridium aquilinum*, the larval foodplant.

4.001 **Sorrel Pigmy** *Enteucha acetosae* (Stainton, 1854)
This Nationally Rare Nepticulid, one of the planet's smallest moths, was first recorded on Skokholm in 2014 when its distinctive larval mines were found on the leaves of Common Sorrel *Rumex acetosa* (on plants growing near North Pond hide and in a Manx Shearwater census plot adjacent to the pond). The mines have been encountered at the same locations in each subsequent year, including this season when a total of 13 separate spirals were found at the latter site; whilst the search is not exhaustive, the total was down on the 39 present there in 2018, but almost matched the 12 of 2017. Eight mines were found near North Pond on 26th May, whilst a minimum of 20 were alongside the track to the west of the pond on 5th August. These totals were eclipsed on 26th September when mines were discovered at a new site, in rough grassland to the west of the northern section of Little Bay Wall; a thorough search of the area revealed a remarkable 2139 mines on 687 eaten leaves.

4.045 **Golden Pigmy** *Stigmella aurella* (Fabricius, 1775)
A minimum of three mines were found on the leaves of Bramble *Rubus fruticosus* in North Haven on 6th October. Despite the fact that this is a widely distributed mainland species, this was the first record for Skokholm.

11.012 **Common Bagworm** *Psyche casta* (Pallas, 1767)
A single, on the wing at the Lighthouse on 27th June, was the only male to be logged this season. A minimum of 50 cases were found among the inspection slabs in the Lighthouse Manx Shearwater study plot and approximately 50 additional cases were attached to the exterior of the Lighthouse buildings. The winged but diminutive adult males (only seen previously in 2014, 2016 and 2017) are particularly unobtrusive, whilst the well camouflaged cases are easily overlooked; this may explain why this species was not documented on Skokholm until 2013. The majority of observations occur in the vicinity of the Lighthouse and Quarry, where seabird work sees observers working in close proximity to suitable substrate; it is likely that similar close inspection at other sites would reveal this moth to be more abundant and widespread than ad-hoc records during the last seven years suggest. Indeed the 2016 whole Island Storm Petrel census led to a minimum of 100 cases being found on loose scree, in a section of the west coast rarely examined in detail.

12.030 **Large Pale Clothes Moth** *Tinea pallescentella* (Stainton, 1851)
One found in the Lighthouse on 24th October was just the second for Skokholm following one on 5th November 2017. The 2017 individual, whose identification was confirmed by Robin Taylor via the dissection of its genitals, was a first for Pembrokeshire. It should be noted that this year's moth was released, the identification being based solely on size and appearance.

12.036 **Skin Moth** *Monopis laevigella* ([Denis & Schiffermüller], 1775)
A single trapped on 15th May was only the second record for the Island following one on 13th May 2017. The larvae feed during the winter on a variety of organic foodstuffs, items such as dead animals, pellets and the detritus found within old bird nests.

12.039 **Pale-backed Clothes Moth** *Monopis crocicapitella* (Clemens, 1859)
Three found in the Library on 7th October, along with one at the same location on the 22nd, were the only records of this rather inconspicuous moth; this becomes just the third year in which this micro has been identified on Skokholm, with the only previous sightings logged in 2016 and 2014. The sprinkling of yellow scales on the forewing helps distinguish this species from the cleaner looking *M. obviella*, a moth which is also less likely to be found in coastal habitats. Like other species in this genus, the larvae feed on dried animal and vegetable matter.

18.001 **Diamond-back Moth** *Plutella xylostella* (Linnaeus, 1758)
One found by day on 20th May was the first of the year, whilst a further two were encountered on the 22nd. There followed 40 diurnal moth-days in June (with a peak count of 14 on the 15th), three in July and six in August (including the last on the 13th). The first to be taken from the moth trap was logged on 16th June; further singles were attracted to light on 2nd July and 5th August. An annual total

of 55 moth-days, whilst an improvement on the five of 2018, was dwarfed by a 2016 tally of 4425; the latter were logged during what proved to be a nationwide eruption year for this species.

28.010 **Brown House Moth** *Hofmannophila pseudospretella* (Stainton, 1849)
A single taken from the light trap on 28th June was the only record of the year and the first since the two encountered in 2016. Although this species is almost certainly overlooked, it has only been noted in two further years; there was one in 2011 and 31 were taken over 24 summer trapping sessions in 2014.

32.031 **Brown-spot Flat-body** *Agonopterix alstromeriana* (Clerck, 1759)
One taken from the trap on 14th September was the only 2019 record of this distinctive moth. This is a reasonably common mainland species whose larvae feed on the flowers and leaves of Hemlock *Conium maculatum*, however on Skokholm it has proven to be scarce or overlooked; there were five in 2015, 16 in 2014 and three in 2013 which were the first Island records.

32.036 **Parsnip Moth** *Depressaria radiella* (Goeze, 1783)
Two attracted to light on 20th March were the first 2019 records of this abundant Skokholm species. A further 67 were taken from the trap between 9th April and 22nd October. A minimum of 51 were logged diurnally during September, 50 of which were found in North Pond hide during maintenance work, whilst a further six were logged by day in October. Caterpillars were again noted on several Common Hogweed *Heracleum sphondylium* flowers in the Courtyard and on the western side of Home Meadow, but the stems were not investigated for pupa.

32.039 **Dingy Flat-body** *Depressaria daucella* ([Denis & Schiffermüller], 1775)
A single disturbed from the Well hide on 7th October was seemingly a first for Skokholm. The larvae feed on the stems and flowers of, amongst other species, Hemlock Water Dropwort *Oenanthe crocata*, a plant which grows commonly at the Well. It is plausible that adults of this moth have been misidentified or overlooked previously, especially given the abundance of the similar *D. radiella*.

35.040 **Cinerous Neb** *Bryotropha terrella* ([Denis & Schiffermüller], 1775)
A total of five were taken from the moth trap over three dates between 1st June and 2nd July, these the first since 2017 when four were logged. This moth was first discovered on the Island in 2014, when 117 were trapped between July and August, however 2016 is the only other year with a sighting; as with some of the other non-descript micro moths, it is likely that this is an overlooked species on Skokholm.

35.130 **Coast Groundling** *Caryocolum vicinella* (Douglas, 1851)
Singles found in the South Haven hide and on the outside of the Red Hut on 3rd August were the first 2019 records of this attractive, Nationally Rare Gelechid. What may have been the same individual was present in the South Haven hide the following day, however there were no further sightings this season. Following the discovery of this species in 2014, there followed low annual counts and sightings from a range of locations (including South Haven, Crab Bay, the Lighthouse and North Gully). The peak count came in 2016 when 16 were encountered, 15 of which were in South Haven during late June. Low counts are in part due to the inconspicuous nature of a species which has a tendency to crawl under dense patches of vegetation, indeed given that the larval foodplant is Sea Campion *Silene maritima*, an abundant and widespread plant on Skokholm, it is likely that this coastal specialist has a population much larger than the records suggest.

35.146 **Large Groundling** *Teleiopsis diffinis* (Haworth, 1828)
This common and widespread mainland species was first documented on Skokholm in 2014 when eight were taken from the trap. It has since been logged almost annually, albeit in low numbers. This year saw two taken on 24th May and a single on 21st June. The larvae feed on Sheep's Sorrel *Rumex acetosa*.

38.004 **Swan-feather Dwarf** *Elachista argentella* (Clerck, 1759)
Two fresh individuals, photographed in vegetation at the top of North Haven on 26th June, were the first for Skokholm. This is a fairly commonly encountered species on mainland Pembrokeshire, with the larvae mining a variety of different grasses. It is unclear whether the 2019 records were drifters from the nearby mainland or a product of low-level breeding on the Island, however these moths could certainly go unnoticed among large swathes of rarely explored grasses.

41.002 **Dingy Dowd** *Blastobasis adustella* (Walsingham, 1894)
This species was introduced to Britain, but is now well established and widespread throughout. On Skokholm it is a common and active mid-Summer visitor to light, although a high proportion often depart prior to being counted. This season saw 104 individuals taken from the trap between 25th July and 4th October, with an additional five observed after dark during August.

45.037 **Dusky Plume** *Oidaematophorus lithodactyla* (Treitschke, 1833)
It was a poor year for records of this recently discovered (presumed) Skokholm breeder. Despite several searches of the larval foodplant (Common Fleabane *Pulicaria dysenterica*) growing along Well Stream and in Billy's Dyke, a lone individual on 5th August was the only moth to be found. There were 19 in 2018, 15 in 2017 and 22 in 2016 (the latter the year of the first report).

48.001 **Common Nettle-tap** *Anthophila fabriciana* (Linnaeus, 1767)
This diminutive nettle specialist can be overlooked on Skokholm, particularly when it occurs at low densities. This year saw four moth-days in May, including the first on the 24th, 25 in June, three in July, six in September and four in October (with the last of the year being logged on the 8th). Despite this low total being at least in part attributable to recorder effort, conspicuous numbers such as the 411 of September 2016 were seemingly not present.

49.025 **Barred Fruit-tree Tortrix** *Pandemis cerasana* (Hübner, 1786)
This common mainland species was not logged on Skokholm until 2016, however it has been encountered in each year since. Nevertheless a single attracted to the light trap on 9th July was the only record this season. Although this is primarily a woodland moth whose larvae feed on deciduous trees, and despite it only being trapped in low numbers (one in 2018, five in 2017 and one in 2016), their annual occurrence raises speculation that this could be a recent, low density colonist.

49.087 **Lichen Button** *Acleris literana* (Linnaeus, 1758)
A single found resting on the South Haven hide on 14th August was a first for Skokholm. Named due to its appearance rather than its foodplant, this is a woodland species with a mainly southern distribution. With the larvae feeding solely on Oak *Quercus* spp., this individual was certainly a wanderer from the mainland.

49.127 **Thistle Conch** *Aethes cnicana* (Westwood, 1854)
The only 2019 record was of a single trapped on 16th June. This marks just the second year that this thistle-eating species has been encountered on Skokholm; three logged in 2016 are the only other records. Given that this moth enjoys a fairly wide UK distribution and that there is an abundance of thistles *Cirsium* spp. on Skokholm, it is potentially an under recorded breeder; there were however only 30 records in the Pembrokeshire database up until 2016.

49.164 **Thyme Marble** *Celypha cespitana* (Hübner, 1817)
The first day-flying individual was noted on 19th June, whilst a further nine were encountered during the remainder of the month. A total of seven were taken from the moth trap between 12th August and 20th September. With the exception of 2018, this primarily coastal micro has been logged in each of the years following its discovery in 2014.

49.185 **Shore Marble** *Lobesia littoralis* (Humphreys & Westwood, 1845)
One on 14th June was the only individual reported this season. This coastal micro, whose larvae feed on Thrift *Armeria maritima*, is almost certainly more abundant than recent records suggest. A more

thorough 2016 survey of areas of the Island dominated by Thrift produced a total of 75 moth-days logged across two generations; the second wave were noted to be smaller and more subtly marked.

49.265 **Hoary Bell** *Eucosma cana* (Haworth, 1811)
One taken from the light trap on 6th July was the only record of the year and the first since three were logged on 22nd July 2017. There were 23 in 2016 and 12 in 2014 but, as with other species in this genus, the total recorded each year is likely to be an undercount.

49.269 **Marbled Bell** *Eucosma campoliliana* ([Denis & Schiffermüller], 1775)
This relatively distinctive moth, which was first found on Skokholm in 2014, has a mostly coastal distribution in the UK. The larvae feed on the seeds and stems of Ragwort *Senecio jacobaea*, the abundance and distribution of which varies markedly between seasons. Although this is probably a Skokholm breeder, one trapped on 26th June was the only record this year; there were five in 2017, two in 2016 and five in 2014.

49.285 **Thistle Bell** *Epiblema scutulana* ([Denis & Schiffermüller], 1775)
One trapped on 16th May was closely followed by a diurnal single at the Well on the 18th. There were just two further records, with June singles trapped on the 1st and found along North Pond Wall on the 16th. This is another moth which was only discovered on the Island in 2014 and which has been found infrequently since, although given that it is regular on the nearby mainland, this is perhaps a result of recorder effort. There were five in 2014, 14 in 2016 and ten in 2017.

49.294 **Bramble Shoot Moth** *Notocelia uddmanniana* (Linnaeus, 1758)
This species was first logged on 27th June 2016 when one was attracted to the light trap at the Well. Two were taken on 22nd July 2017, whilst singles on 26th June and 6th July 2019 make this just the third year with a Skokholm record. Given that this common and widespread species is easily identified, a paucity of Island records may suggest that this is a genuinely recent colonist, with low counts reflecting the limited number of mature Bramble patches on which the larvae could feed.

52.016 **Thrift Clearwing** *Pyropteron muscaeformis* (Esper, 1783)
Following the successful use of a pheromone attractant in 2018, this year saw an impregnated bung (purchased at the beginning of the season and stored in the freezer), used in the field during the main Thrift Clearwing flight season. It was deployed for a period of five minutes on days with suitable flying conditions; the peak count of males attracted to the bung was recorded. Four sites between Little Bay Point and North Gully were sampled on 6th June, this attracting a total of 31 males. Two sites at South Haven and one at Spy Rock were sampled on the 10th, however no moths were located. Sampling at two sites around North Gully on the 14th also produced a nil result.

The final deployment on 4th July sampled seven sites between Twinlet and the Lighthouse; a total of 15 were attracted between Twinlet and Steep Bay (where Thrift is particularly dominant), however the bung failed to attract a male at the remaining five sites. Singles at Spy Rock on 15th June, at Twinlet on 25th June and on the Neck on 15th July were the only records obtained without the use of a lure. A pheromone supplemented 2019 total of 49 moth-days is the highest of the last seven years; there were 38 in 2018, 17 of which were lured, whilst 43 were found without a lure in 2017.

54.010 **Five-spot Burnet** *Zygaena trifolii* (Esper, 1783)
The first 21 caterpillars of the year were found in the North Pond Manx Shearwater census plot on 13th June. A total of 18 were along Little Bay Wall between the 15th and 23rd and four were along North Pond Wall on the 17th. The first adult was on the wing at North Pond on 2nd July, this six days later than the first of 2018, whilst a further 148 were noted during the remainder of the month; the July moth-days total was the poorest of the last seven years, a tally 83% down on the 2013-2018 mean (898.5 ±sd 521.91). A typically low total of 25 adults were encountered between the 1st and 12th August; there were August totals of six in 2018 and 31 in 2017.

62.077 **Rosy Tabby** *Endotricha flammealis* ([Denis & Schiffermüller], 1775)
One attracted to light on 4th July was the first of three singles trapped during the month. Four were taken in August and an additional nine were observed in the field; this species, which exhibits an unusual resting posture, can be found feeding both diurnally and nocturnally on the nectar of plants such as Ragwort. An annual total of 16 moth-days was considerably down on a recent high of 214 logged in 2018; there were however just 35 noted in 2017, 56 in 2016 and ten in 2015.

63.018 **Elder Pearl** *Anania coronata* (Hufnagel, 1767)
A single, flushed from vegetation in the Wheelhouse Heligoland during the early evening of 5th July, was a first for Skokholm. The larval foodplant, Elder *Sambucus nigra*, is one of the more abundant species of tree growing on Skokholm, however, given that the majority of previous light trapping has occurred in close proximity to these trees but failed to locate an imago, it is perhaps more likely that this individual was a wanderer from the mainland.

63.025 **Small Magpie** *Anania hortulata* (Linnaeus, 1758)
The first of the season was attracted to light on 16th June, whilst further singles were taken from the trap on 26th June and 1st August. There were seven diurnal records in June and 13 in July which took the 2019 moth-days total to 23; the tally, although an improvement on the eight of 2018, the 14 of 2017 and the eight of 2016, was down on the 50 of 2015 and the 79 of 2014.

63.031 **Rusty Dot Pearl** *Udea ferrugalis* (Hübner, 1796)
It was a better year for records of this regular Skokholm immigrant. The first of the season was taken

from the trap on 1st June, whilst a single was found resting on the wall of the Lighthouse compound on the 15th. One was trapped in July, there were 25 in August (16 of which were trapped), eight in September (with two trapped) and 24 in October (with 14 trapped). Four logged in November included two attracted to the light of the Lighthouse living room on the 16th, these the last of the year. An annual total of 64 was up on the 14 of last year, but down on the 88 of 2017 and completely overshadowed by observations made in 2014 when, on 8th August alone, a minimum of 150 were flushed from a single patch of North Haven vegetation.

63.038 **Mother of Pearl** *Patania ruralis* (Scopoli, 1763)
This beautiful moth, one of the largest British species of microlepidoptera, is recorded infrequently on Skokholm. Singles taken from the trap on the 8th and 27th August were the only imagos encountered this season, this continuing a recent run of low annual totals; there were five in 2018, four in 2017, one in 2015, three in 2014 and one in 2013. Given that the larvae feed on Nettles, it is perhaps surprising that the only other years in which Mother of Pearl have been found are 1996, 1997 and 1999.

63.048 **Olive-tree Pearl** *Palpita vitrealis* (Rossi, 1794)
This is a widespread species in southern Europe, where its larvae feed on jasmine *Jasminium* spp. and on both the leaves and fruit of olive *Olea* spp. Its occurrence in the British Isles is sporadic and eruptive, although there has seemingly been a recent increase in the number found each year (an increase which has also been seen on Skokholm). Nevertheless, one trapped at the Well on 4th

October made this just the fourth year with a record; there were two in October 2018, one in August 2017 and one in October 2013.

63.050 **Long-legged China-mark** *Dolicharthria punctalis* ([Denis & Schiffermüller], 1775)
Although this species was first noted in 1998, it was not documented again until 2013; it has since been recorded annually, albeit in low numbers. A single found along the Lighthouse Track on 6th July was the first record of 2019. One was taken from the light trap three days later and a further three were observed nectaring on Ragwort in Crab Bay on the 17th. This distinctive, Nationally Scarce species is in Britain distributed along the south and west coasts, the larvae feeding in decaying plant matter.

63.052 **Rush Veneer** *Nomophila noctuella* ([Denis & Schiffermüller], 1775)
One found by day on 20th May was the first in what proved another quiet year for this instantly recognisable immigrant. Following a further May single, there were five diurnal sightings in June, eight in August, one in September and five in October. The first to be taken from the light trap was logged on 14th July; a further eight were trapped in August, with two in September and two in October. An annual total of 34 is the highest since 2016 when a more impressive 235 were logged.

63.066 **Meadow Grey** *Scoparia pyralella* ([Denis & Schiffermüller], 1775)
This distinctive micro is regularly encountered on the Island and is particularly conspicuous amongst Bracken during spring seabird monitoring. A minimum of ten noted along the Lighthouse Track on 21st May were the first of the year, whilst a further 83 were logged during the remainder of the

month. The first eight to be attracted to the light trap were taken on 1st June; there followed a further 22 over four June trapping sessions. A total of 250 were found diurnally during June, with a minimum of 100 logged on the 15th. There were four trapped in July and a singleton taken on 1st August was the last of the year.

63.069 **Narrow-winged Grey** *Eudonia angustea* (Linnaeus, 1758)
Seven taken from the light trap on 8th September were the first of the year, whilst a further two were trapped on both the 4th and 12th October. This is a seldom observed species on the Island, indeed an annual total of 11 is the highest to date. There were singles in both 2018 and 2017 and two in 2014. The only other Skokholm encounters were with a single in 1998 and with three in 1996. Given that the larvae feed on mosses, it is likely that this is an inconspicuous Island resident.

63.075 **Marsh Grey** *Eudonia pallida* (Curtis, 1827)
One attracted to light at the west end of the Central Block on 27th August was a first for Skokholm. This distinctive species, the palest of the Scopariinae, is widely distributed on the British mainland where it tends to inhabit damp areas such as marshes and fens. It is only met with infrequently in Pembrokeshire; there were just 16 county records up until the end of 2016.

63.080 **Garden Grass-veneer** *Chrysoteuchia culmella* (Linnaeus, 1758)
The first to be logged this year was taken from the light trap on 1st June. A further 19 were attracted to light during four June trapping sessions, with a peak catch of 14 on the 26th, and an additional 15 were found diurnally during the month. There were 14 trapped in both July and August, whilst three were logged after dark on 23rd August. This is one of the most commonly encountered, albeit still under-recorded, Crambids on Skokholm.

63.089 **Common Grass-veneer** *Agriphila tristella* ([Denis & Schiffermüller], 1775)
A total of eight were identified during five trapping sessions between 28th July and 25th August. This is a common species across much of the British Isles, whilst on Skokholm there were 26 logged in 2017, three in 2016, 11 in 2015 and 13 in 2014. Surprisingly, the only other mention of this distinctive grass-feeder in the digitised records is for the year 2000.

63.092 **Pale-streak Grass-veneer** *Agriphila selasella* (Hübner, 1813)
This largely coastal species is proving scarcer on Skokholm than the superficially similar *A. tristella*, although it is perhaps overlooked when encountering worn individuals. One trapped on 5th August was the sole 2019 record and just the third for Skokholm; two were logged in 2014.

63.093 **Straw Grass-veneer** *Agriphila straminella* ([Denis & Schiffermüller], 1775)
Singles taken at light on four dates between 28th July and 8th August were the only 2019 sightings. Although this species has been found in four of the last seven seasons, the only other years with a record are 1998 and 2000.

63.095 **Elbow-stripe Grass-veneer** *Agriphila geniculea* (Haworth, 1811)
This is the most commonly encountered member of this genus on Skokholm, although whether this reflects actual abundance or their propensity to come to light is unclear. Following the first on 9th July, a further 74 were taken during 12 trapping sessions including a peak catch of 23 on 25th August. The last of the year was attracted to light on 14th September.

69.004 **Convolvulus Hawk-moth** *Agrius convolvuli* (Linnaeus, 1758)
One taken from the light trap outside of Lockley's Cottage on 8th August was the first of the year. Another individual was trapped on the 25th, whilst one found after dark in the catching end of the Well Heligoland on 7th September took the year total to three. There has been a recent upsurge in the number of Skokholm sightings of this impressive immigrant, with one in 2018, three in 2017, nine in 2016 and singles in both 2015 and 2014; the only record prior to these was logged in 1940.

69.010 **Hummingbird Hawk-moth** *Macroglossum stellatarum* (Linnaeus, 1758)
Singles on the Neck and at Migration Rocks on 31st May were the first of the year; although two days later than the first of 2018 and four days later than one in 2017, they were over five weeks earlier

than the first of 2016. Moths at the Lighthouse, Twinlet and along the North Coast on 1st June began what proved to be an excellent month for sightings of this active immigrant; there followed a peak count of five on the 2nd, two on the 3rd, singles on the 4th, 5th, 6th, 20th and 24th, two on the 27th and one on both the 28th and 29th which produced a monthly total of 19 moth-days. There were six July singles and 12 diurnal observations in August (including a recently dead individual found hanging from a cobweb in the Wheelhouse); additionally one was taken from the moth trap on 25th August, this the first to be trapped since 2014. Lone moths on five dates between the 8th and 22nd September took the 2019 total to 45, ten more than were logged in 2018 and the highest moth-days tally since the 51 of 2015.

69.014 **Bedstraw Hawk-moth** *Hyles gallii* (Rottemburg, 1775)

One of the most exciting finds in the moth trap this year was a stunning Bedstraw Hawk-moth, taken on 3rd August; this was just the fifth for Pembrokeshire and a welcome addition to the Skokholm list. It arrived on the same night that County Moth Recorder Robin Taylor took one at the inland location of Hayscastle. In late July, Britain witnessed one of the largest influxes of Bedstraw Hawk-moth since 1973, with observations from the Continent and an analysis of the weather patterns prevalent at that time suggesting that the majority originated from Germany and Denmark. The first British arrivals were found along the east coast between Shetland and Northumberland. There followed several subsequent reports from the south and west, although it was unclear whether these were of insects drifting across the Country or if they were as a result of further arrivals from the Continent.

70.011 **Single-dotted Wave** *Idaea dimidiata* (Hufnagel, 1767)
One attracted to the light trap on 21st July was the first of the year. Seven were trapped in August, including a peak of four on the 8th, and an additional single was found resting in the Wheelhouse on the 3rd. A year total of nine equals the highest of the last six years and continues the recent run of encounters with this infrequent Skokholm *Idaea*. Following records in 1937 and 1960, there was a 54 year absence until six were discovered in 2014. Nine were noted in 2015, three were found in both 2016 and 2017 and two were logged in 2018. This is primarily a species of damp areas where its larvae feed during the autumn on Cow Parsley *Anthriscus sylvestris* and Burnet Saxifrage *Pimpinella saxifraga*; given that neither of these foodplants are known from Skokholm, the regularity of recent records is perplexing.

70.013 **Small Fan-footed Wave** *Idaea bislata* (Hufnagel, 1767)
Two trapped on 3rd August were the only records and the first since 2017 when ten were taken from multiple traps at various locations. Singles were trapped in both 2015 and 2014, whilst prior to this there are digitised records for 1937, 1960, 1968 and 1990. The larvae are known to feed on a variety of species such as plantains *Plantago* spp. and Bramble; it is thus plausible that this is a low-key Skokholm breeder.

70.016 **Riband Wave** *Idaea aversata* (Linnaeus, 1758)
Singles attracted to light on the 26th and 28th June were the only records this season, 2019 becoming the sixth year of the last seven in which this irregularly encountered Skokholm wave has been logged. A total of four were taken in 2018, there were singles in both 2017 and 2016, five in 2014 and one in 2013; the database includes records in six earlier years. Two distinct forms of Riband Wave are found in the British Isles, with one showing a dark band across all four wings and a plain ab. *remutata* which, instead of a dark band, has two narrow cross lines (UK Moths, 2019); although nationally the prevalence of both forms is approximately equal, only ab. *remutata* has been noted on Skokholm during the last seven years.

70.023 **Mullein Wave** *Scopula marginepunctata* (Goeze, 1781)
This species, which has a mainly coastal distribution in the British Isles, is now recorded almost annually on Skokholm, albeit in low numbers. It is double brooded in the south of its range, as is seen here; a first generation individual was trapped on 22nd May, whilst four second generation moths attracted to light between 3rd August and 8th September took the year total to five. There have now been records in six of the last seven years, with 2015 the only year without a sighting; the historical database contains sightings in nine further years.

70.038 **The Vestal** *Rhodometra sacraria* (Linnaeus, 1767)
A strikingly pink individual on the night of 30th August, found clinging to Bracken at the top of Crab Bay in windy conditions, was the first record of this continental migrant this year. The extent and intensity of the pink pigmentation is variable and somewhat dependent on the temperature experienced during pupal development; in general caterpillars which pupate in warmer climes become pink moths, whilst those which develop in colder temperatures become straw-coloured. A second, exceptionally worn, moth trapped on 4th October was the only other 2019 record. This remains a scarce visitor to Skokholm; there were two in 2018, one in 2017, an unprecedented 18 in 2016 and three in 2013. Prior to these, Vestal were logged in only five years, the most recent of which was the year 2000.

70.049 **Garden Carpet** *Xanthorhoe fluctuate* (Linnaeus, 1758)
One attracted to light on 24th August was the first since 2016 when five were recorded between 15th May and 17th June. Although common and widespread in the British Isles, this species shows a preference for suburban habitats; irregular recent appearances and a sporadic presence in the digitised database both support this observation.

70.052 **Dark-barred Twin-spot Carpet** *Xanthorhoe ferrugata* (Clerck, 1759)
Five on 15th May were the first to be taken. A further 51 were caught subsequently, with two in May (18 in 2018), eight in June (nine in 2018), one in July (ten in 2018) and 40 in August (61 in 2018); a single on the 27th was the last of the season. An annual total of 56, although down on the bumper year of 2018 when 101 were logged, almost matched the 58 of 2017 and the 57 of 2016.

70.059 **Yellow Shell** *Camptogramma bilineata* (Linnaeus, 1758)
This is one of Skokholm's most conspicuous day-flying macro moths, a species often flushed from Bracken during the summer months. The first of the season was logged on 5th June, four days earlier than the first of 2018 but five days later than the first of 2017. There followed totals of 110 during the remainder of June (91 in 2018, 89 in 2017, 149 in 2016), 147 in July (281 in 2018, 373 in 2017 and 381 in 2016) and 27 in August (117 in 2018, 71 in 2017 and 101 in 2016). Although the annual moth-days total has declined in each of the last five years, the peak 2019 daycount of 67, logged on 6th July and which included nocturnal observations of 15 at the Well and 40 along the Lighthouse Track, was up on the 36 of 25th July 2018.

70.074 **July Highflyer** *Hydriomena furcata* (Thunberg, 1784)
A single found resting in the Ringing Hut on 4th July was the first of the year. There followed a second moth, again in the Ringing Hut but believed to be a different individual, on the 15th. Surprisingly these are just the third and fourth records for Skokholm following two in July 2018. On the wing during July and August, this species is widespread and common over much of Britain where it shows a preference for hedgerows and woodland margins. Although it is likely that the Skokholm individuals strayed from the mainland, the *Salix* spp. present on the Island may prove suitable.

70.087 **Purple Bar** *Cosmorhoe ocellate* (Linnaeus, 1758)
One, taken from the light trap on 27th August, was the third for Skokholm and the first since 1960; the only other year with a record of this distinctive carpet is 1937. This is a fairly common mainland moth which produces two generations in the south of its range. The larvae feed on Bedstraws *Galium* spp., plants common on Skokholm, although given the dearth of previous records it is probable that this years' sighting was of a drifter from the mainland.

70.095 **Red-green Carpet** *Chloroclysta siterata* (Hufnagel, 1767)
The first Skokholm record of this attractive autumnal species came on 4th October when one was taken from the trap. Their stunning green and reddish brown camouflage is well suited to deciduous

woodlands where the larvae feed on oaks *Quercus* spp. and Rowan *Sorbus aucuparia*.

70.097 **Common Marbled Carpet** *Dysstroma truncata* (Hufnagel, 1767)
Although an abundant and widespread mainland moth, finding a Common Marbled Carpet on Skokholm is a scarce event, indeed a second generation individual found resting inside the window of the Lighthouse bathroom on 26th October was the only record of the year. There were two in each of the three years between 2018 and 2016, whilst the three logged in 2015 were surprisingly the first Island records of this species.

70.100 **Green Carpet** *Colostygia pectinataria* (Knoch, 1781)
The only 2019 record of this distinctive species was of a faded single taken from the light trap outside of Lockley's Cottage on 19th September. Although the larvae feed on Bedstraws, examples of which grow on the Island, records have only occurred in four previous years; there were two in spring 2018 and singles in October 2015, June 2013 and September 2000.

70.123 **Tissue** *Triphosa dubitata* (Linnaeus, 1758)
One found on the Bridge Toilet door, after dark on 31st July, was the first ever Skokholm sighting of this exciting moth. This is a scarce species in Pembrokeshire, indeed there are just 12 previous records; the Skokholm moth is just the second to be found in the county since 1991. It is believed that Tissue moths occurring outside of their breeding range are immigrants and thus all county records, including this one, should be regarded as such; the larvae feed on Alder Buckthorn *Frangula alnus* and Purging Buckthorn *Rhamnus cathartica*, neither of which are known from Pembrokeshire.

70.134 **Barred Rivulet** *Perizoma bifaciata* (Haworth, 1809)
The second for Skokholm was taken from the light trap on 21st July. The only other Island record is of one attracted to the Ringing Hut lights on 19th July 2013. This moth is generally restricted to England and Wales where it occurs locally, however given that the larvae feed on the seeds of Red Bartsia *Odontites verna* (a plant which does not occur on the Island), this individual was clearly a wanderer from the mainland.

70.138 **Sandy Carpet** *Perizoma flavofasciata* (Thunberg, 1792)
One trapped on 7th May was the first of the year. There followed a further two May encounters, with singles taken on the 9th and 20th, whilst one observed in the field on 2nd July was the last of 2019. This thus proved the most productive year to date for sightings of this Campion feeding species, a moth which is probably a Skokholm breeder; there were two in 2018, singles in 2015 and 2014 and further records in the years 1937, 1912 and 1910.

70.141 **Double-striped Pug** *Gymnoscelis rufifasciata* (Haworth, 1809)
One, taken from the light trap on 26th June, was the first of the year and the earliest example of this species yet seen on Skokholm. Singles were subsequently caught on 2nd July and 27th August, whilst a nocturnal observation of one along the Lighthouse Track on 22nd October was the last of the year. These records continue a recent run of Skokholm sightings; there were singles in 2018, 2017 and 2016, three in 2014 and one in 2013, whilst prior to 2013 this species had only been recorded in three years, with the first in 1990.

70.155 **Netted Pug** *Eupithecia venosata* (Fabricius, 1787)
One on 5th May, found resting on the exposed beams of the Common Room during evening log, was the first of the year. There followed three further May singles; one was located along the south coast on the 10th, one was taken from the moth trap on the 15th and the last was found resting on a white marker stone on the Neck on the 18th. This Nationally Scarce pug, whose larvae feed on Sea Campion *Silene maritima*, is almost certainly an under-recorded breeder on Skokholm; there were two logged in 2018 and 2017 and 11 in 2016.

70.173 **Lime-speck Pug** *Eupithecia centaureata* ([Denis & Schiffermüller], 1775)
It was a somewhat quieter year for sightings of this bird dropping mimic, with a total of 27 logged between 15th May and 8th September (23 of which were taken from the trap). There were 45 recorded in 2018 and 33 in 2017.

70.179 **Wormwood Pug** *Eupithecia absinthiata* (Clerck, 1759)
One trapped on 26th June was the first of the year. There followed a total of six late season adults taken during three trapping sessions between the 8th and 25th August. Like many of Skokholm's invertebrates whose breeding ecology relies on the presence of Common Ragwort, numbers in the trapping area probably fluctuate in accordance with plant abundance; there were six taken in 2018 and one in 2017, but an impressive 50 in 2014 when Ragwort was plentiful around the Farm buildings.

70.212 **Sharp-angled Peacock** *Macaria alternata* ([Denis & Schiffermüller], 1775)
A pristine individual, taken from the moth trap on 26th June, was a first for Skokholm. This is typically a species restricted to woodlands and sand dunes in the southern counties of England and Wales, its larvae feeding on Alder *Alnus glutinosa*, sallows *Salix* spp., Sea Buckthorn *Hippophae rhamnoides* and Blackthorn *Prunus spinosa*. Given the lack of previous records, and larval food being restricted to a few small examples of the latter plant, it is highly likely that this moth drifted from the mainland.

70.222 **Brown Silver-line** *Petrophora chlorosata* (Scopoli, 1763)
This fairly common Skokholm moth is regularly flushed from Bracken during late spring and early summer. Two trapped on 19th April were the first of the year, this over three weeks earlier than the first of 2018; a further four were taken during the remainder of the month. There followed 89 in May (16 of which were trapped), 33 in June (18 trapped) and 14 in July (four trapped). A year tally of 142 was up on the 83 of 2018 and the 48 of 2017 but down on the 203 of 2016.

70.226 **Brimstone Moth** *Opisthograptis luteolata* (Linnaeus, 1758)
Singles taken on the 8th and 19th September were the only records of this vibrant and unmistakeable moth this year. There were two in 2018 and singles in 2016 and 2013, whilst the only other years with a sighting are 1995, 1994, 1960 and 1937. This is a fairly common and widespread moth on the mainland where it utilises a large range of larval foodplants, particularly Hawthorn and Blackthorn. In the south of its range, it produces three overlapping broods each year.

70.240 **Scalloped Hazel** *Odontopera bidentate* (Clerck, 1759)
One found in the moth trap on 15th May was another first for Skokholm. This single brooded species is fairly common over most of the UK mainland where it is found in woodland, heath and suburban habitats. Its larvae feed on a variety of deciduous and coniferous trees, although none of the primary foodplants are present on the Island; it was thus almost certainly a visitor from the mainland.

70.255 **Dotted Border** *Agriopis marginaria* (Fabricius, 1777)
A male, trapped on 27th March, was yet another first for Skokholm. Although a common moth both in Pembrokeshire and in Britain as a whole, the females are flightless. This individual is thus likely to have been a visitor from the nearby mainland, although the early flight season of this species must be noted; males are on the wing between February and April, a period during which moth trapping effort is low on the Island due to power restrictions and weather conditions.

70.279 **White-pinion Spotted** *Lomographa bimaculate* (Fabricius, 1775)
Following a period of easterly winds, a stunning White-pinion Spotted was found resting by day at the Neck Turquoise Seagull Hut on 25th April. This Blackthorn-eating species was a first for Skokholm; although a few stunted examples of the larval foodplant grow in the shelter of North Haven and in the Cottage Garden, it was perhaps most likely a drifter from the mainland.

70.280 **Clouded Silver** *Lomographa temerata* ([Denis & Schiffermüller], 1775)
One attracted to light on 26th June shared the moth trap with other Skokholm rarities such as Sharp-angled Peacock and Clouded-bordered Brindle; this attractive individual was just the third Island record and the first since 25th May 1998. A single-brooded species which generally frequents woodland and suburban habitats where bushy vegetation is prevalent, the lack of previous records (along with the presence of other rare Skokholm immigrants in the moth trap that night), suggests that this too had crossed Broad Sound.

71.025 **Buff-tip** *Phalera bucephala* (Linnaeus, 1758)
An immaculate moth taken from the trap on 2nd July was just the second imago ever to be seen on Skokholm, the first being logged as long ago as 1992. On 5th August a minimum of 40, recently hatched, caterpillars were found feeding on a willow leaf along Well Stream. A second group of at least 41 were observed on a willow in the Wheelhouse Heligoland on the 11th; these were larger and assumed to be older than those at Well Stream. Both sites contained caterpillars into September, whilst on the 5th a large individual was found on the ground outside the Central Block, presumably searching for a suitable site at which to pupate in the soil. This becomes the third season in which a breeding attempt has been observed; caterpillars were noted on willows in the Well Heligoland in 2014 and at a similar location near the Well in 2011.

72.017 **Vapourer** *Orgyia antiqua* (Linnaeus, 1758)
Although there have been regular sightings of Vapourer larvae on Skokholm, albeit in low numbers, since 2013, records of adult males were rare until 2017 when nine were found. Last season was an unprecedented one during which 11 males were observed, as were the first two females to be seen here. Sightings of this species were even more regular in 2019. A larval case coated in eggs, found on vegetation near to the Knoll on 18th April, was the first record of the year. The first male was taken from the light trap on 21st July and single males were trapped on the 3rd, 8th and 25th August.

A caterpillar, found pupating on a wooden cabinet in the Cottage Toilet on 6th August, emerged as a flightless female on the 28th and soon started egg laying; this was just the third time that a female has been encountered on Skokholm. Further caterpillars were observed on the Wheelhouse

Heligoland on 15th September and on the buggy two days later. A lone male was taken from the light trap at the Well on 4th October, whilst males were subsequently recorded diurnally on five October dates (with two on the 5th, 9th and 11th, three on the 12th and one on the 13th which was the last of the season). A year tally of 16 adults is the highest to date and reflects what appears to be a genuine increase in the number of Vapourer breeding on Skokholm.

72.019 **Buff Ermine** *Spilosoma lutea* (Hufnagel, 1766)
The first of the season was taken on 15th May and a further 13 were trapped during the remainder of the month. There followed 22 in June, 63 in July and 75 in August, whilst five in September and one on 3rd October were assumed to be part of an unusual second generation emergence which was also observed in 2018 (when a single imago was trapped on 9th October). This typically proves a more abundant species on Skokholm than the White Ermine; there were 191 moth-days in 2015, 117 in 2016, 137 in 2017, 190 in 2018 and 180 this year.

72.020 **White Ermine** *Spilosoma lubricipeda* (Linnaeus, 1758)
It was a quiet year for records of this species, the first two of which were taken from the light trap on 19th May. Subsequent catches were small, with five on 26th June the highest tally. A single on 1st August was the last of the year and took the moth-days total to just 25; there were 84 in 2018, 56 in 2017, 93 in 2016, 22 in 2015 and 20 in 2014.

72.022 **Muslin Moth** *Diaphora mendica* (Clerck, 1759)
A total of 20 males were trapped over ten dates between 12th April and 24th May. This was an improvement on the six encountered in 2018, although 22 were logged in 2017 and 54 in 2016. Despite the rather average tally, 2019 becomes only the 13th year in which Muslin Moth has been documented on the Island. A large number of larval foodplants are available on Skokholm, for example Docks *Rumex* spp. and Chickweeds *Stellaria* spp..

72.024 **Ruby Tiger** *Phragmatobia fuliginosa* (Linnaeus, 1758)
The first sighting of the year was of a single near North Pond hide on 26th May; this was to be the only diurnal observation in 2019, although it was an improvement on 2018 when no individuals were found by day. The first to be attracted to the light trap was taken on 21st July, whilst a further 14 were logged over nine dates (including the last on 27th August). A moth-days total of 16 was up on the eight of 2018 and the 13 of 2016, although there were 23 in 2017 and 49 in 2015.

72.026 **Garden Tiger** *Arctia caja* (Linnaeus, 1758)
A fully-grown caterpillar found wandering across the Lighthouse Track on 26th June was the first record of the year, whilst the first adult was taken from the light trap on 21st July. A different imago

(identified as such using forewing patterning), was found resting on a Spear Thistle *Cirsium vulgare* outside of the Cottage on the 23rd. A further two were trapped on 25th July and a single on the 28th was the last of the year. A moth-days total of five matches that of both 2018 and 2017 and continues a run of more frequent encounters. Despite an abundance of Common Nettle *Urtica dioica*, one of the larval foodplants, Garden Tiger remains a scarce Island species; the digitised database holds only 18 records for the period 1910 to 2011, whilst there were five in 2014, nine in 2015 and a single dead insect in 2016.

72.031 **Cinnabar** *Tyria jacobaeae* (Linnaeus, 1758)
The first adult of 2019 was found along the South Coast Path on 18th May, this nine days later than the first of 2018, nearly four weeks later than the first of 2017 and a tardy beginning to what proved a poor season to come. Remarkably two adults taken on 6th May were the only moths to be trapped at night; this was a dramatic decline on the 237 trapped in 2018, the 125 of 2017 and the 258 of 2016. Diurnal observations also proved disappointing; there were a further 26 in May (296 in 2018, 482 in 2017), 66 in June (1010 in 2018, 1037 in 2017) and six in July including a lone imago on the 16th which was the last to be observed (63 in 2018, 124 in 2017). Peak daycounts were unsurprisingly also low, with maxima of eight being observed on both the 9th and 27th June; the 2019 peak was 87 on 9th June. Despite Ragwort being much more abundant in 2019 than during the preceding year, counts of caterpillars were low. The first 11 were noted along the Lighthouse Track on 6th July, however an examination of further plants in the same area on the 7th failed to find a caterpillar. There followed 14 counted on ten plants outside of the Cottage on the 11th, a peak of 49 on the 14th, a count of four from the Neck on the 16th, 17 on four plants along the Lighthouse Track on the 20th and 21 on 13 plants at East Bog on the 21st. A thorough survey of 80 plants on 11th August failed to locate a single larva. A poor Ragwort year in 2018 may have been responsible for the low number of adults this year, which would also at least in part explain the paucity of 2019 caterpillars. The highest 2018 caterpillar daycount was of 67 feeding across three plants on 9th July, whilst 2017 observations from the Neck alone produced estimates in the thousands.

72.044 **Dingy Footman** *Eilema griseola* (Hübner, 1803)
One taken on 1st August was the only record of 2019, but made this just the third year in which this species has been logged. The first Island record was of a single trapped as recently as 25th July 2014, whilst a catch of five were taken on 22nd July 2017. This is a common moth in the southern half of Wales where its larvae feed on a variety of lichens, including those growing on sea cliffs; it is thus plausible that this is a Skokholm breeder which could be found via more focussed coastal trapping.

72.046 **Scarce Footman** *Eilema complana* (Linnaeus, 1758)
Three trapped on 22nd July 2017 were the first Island records, whilst a single was logged on 6th August the following year. This year saw a lone insect taken from the light trap along the Cottage Garden wall on 3rd August. As with the closely related Dingy Footman, this species has a mainly coastal distribution in Wales, with the larvae feeding on a variety of lichens and mosses; it may also prove to be a moth encountered more frequently if trapping closer to the Skokholm coastline.

72.047 **Hoary Footman** *Eilema caniola* (Hübner, 1808)
One netted during a nocturnal walk between Orchid Bog and Home Meadow on 23rd August was the only record of the year and the first since 2017 (when four were trapped over two August dates). Despite this species being the most regularly recorded footman in the digitised database, this season's observation marks just the eighth year in which it has been encountered. Away from the home counties of England, this Nationally Scarce species is found chiefly in maritime habitats where it utilises cliff-top lichens as larval food.

72.073 **Small Marbled** *Eublemma parva* (Hübner, 1808)
A stunning individual found resting above the Quarry during the afternoon of a sunny 29th June was the first to be logged on Skokholm. There is only one other Pembrokeshire record, this of a single on Dowrog Common in May 2017. Small Marbled is a migrant species from southern Europe which only arrives occasionally to the UK, although records have been increasing over the past two decades. The Skokholm individual coincided with a small influx across the southern half of Britain, this seemingly a result of favourable weather conditions over the Continent.

73.001 **The Spectacle** *Abrostola tripartita* (Hufnagel, 1766)
It was another decent year for records of this pseudo-bespectacled moth. The first was taken from the trap on 15th May and a further two were logged during the remainder of the month. Three were trapped in June, whilst seven in both July and August included two on the 8th which were the last of the year. A total of 20 moth-days was down on the record of 32 logged in 2018 and the 25 of 2017; there were however only 18 in 2016, two in 2015, 11 in 2014 and a single in 2013.

73.012 **Burnished Brass** *Diachrysia chrysitis* (Linnaeus, 1758)
There were three examples of this unmistakeable and really rather stunning moth this year, with one taken from the light trap on 7th September and two trapped on the 19th. Both forms, *aurea* with a complete brown central cross-band (below photograph) and *junctata* with a central cross-band separated into two brown patches, were noted. The larvae feed on a variety of herbaceous vegetation, although there is a preference for Common Nettle; it is thus possible that this is a more

common Skokholm moth than the records suggest. There was only one last season, two in 2017, one in 2016 and 15 in 2014 (when a single night of trapping in North Haven produced 11 moths).

73.015 **Silver Y** *Autographa gamma* (Linnaeus, 1758)
This smart migrant was not logged until 24th June this year, four weeks later than the first of 2018 and over seven weeks later than the first of 2017. A further six were noted during the remainder of the month, all of which were found during the day; a June total of seven was a poor showing compared with the 299 of 2018, but on a par with the ten of 2017. There followed diurnal totals of nine in July (684 in 2018, 14 in 2017), 14 in August (224 in 2018, 33 in 2017), 82 in September (113 in 2018, 17 in 2017) and eight in October (three in 2018, four in 2017). The only records from the light trap were of a single on 2nd July and of three taken in September. A further four were found after dark in September, whilst a lone insect observed by day at Isthmian Heath on 19th October was the last of the year. An annual total of 128 moth-days was the second poorest of the last seven years; there were 1474 in 2018, 99 in 2017, 458 in 2016, 627 in 2015, 142 in 2014 and 542 in 2013.

73.045 **Knot Grass** *Acronicta rumicis* (Linnaeus, 1758)
One trapped on 1st May was the first of the year. There were a further eight during the remainder of May, three in June, seven in July, 36 in August and one on 14th September which was the only record of the month and the last of the season. An annual total of 56 moth-days was the best tally of recent times; there were 37 in 2018, 39 in 2017, 16 in 2016 and 11 in 2015. The distinctively marked caterpillars, which feed on a range of herbaceous plants, were noted at several locations around the Island; there were three reported in July, one in September and one in October (the latter two of which were the result of second generation pairings).

73.053 **Chamomile Shark** *Cucullia chamomillae* ([Denis & Schiffermüller], 1775)
It proved the best year on record for this scarce Skokholm moth. Two, taken from the light trap on 5th May, were the first of the year, whilst singles trapped on the 11th and 22nd took both the monthly and annual totals to four. These were the first records since 10th May 2017, making this just the fourth year since 1996 and the ninth year ever in which this species has been recorded. The larvae feed on a range of Compositae, with Sea Mayweed *Tripleurospermum maritimum* perhaps being the most likely foodplant on Skokholm.

73.055 **Star-wort** *Cucullia asteris* ([Denis & Schiffermüller], 1775)
It was an improved year for records of this Nationally Scarce coastal specialist. One taken on 16th June was the first of the year, a peak count of five was logged on the 26th and a further five were trapped during three July sessions (including one on the 21st which was the last this year). The first record for the Island came as recently as 1999 and there were no further observations until 2013, however this moth has since been encountered regularly; there were two moth-days logged in 2018,

with 19 in 2017, 25 in 2016, two in 2015, six in 2014 and two in 2013. The increase in records can be attributed to the expanding distribution of Goldenrod *Solidago virgaurea*, the larval foodplant.

73.085 **Marbled Green** *Nyctobrya muralis* (Forster, 1771)
Although a reasonably common maritime moth, this species remains a relatively scarce find on Skokholm. Two taken on 21st July were the first of the season and the first to be logged since 13th August 2017. A single trapped outside the Cottage Garden on 3rd August was the only other 2019 record. Whilst there were just singles noted in 2013 and 2015 and four in both 2014 and 2016, the use of multiple traps away from the Farm during late July 2017 produced a total of 13 moths; indeed this is probably a more abundant species on Skokholm than trapping suggests, with the caterpillars feeding on various lichens and the adults being well camouflaged when on lichen encrusted rocks.

73.099 **Vine's Rustic** *Hoplodrina ambigua* ([Denis & Schiffermüller], 1775)
Singles trapped on the 25th and 27th August were believed to be different individuals and were the first and second records for Skokholm. This is a common species in parts of southern Wales and England, although seemingly scarce in Pembrokeshire where there has been just a handful of mainland records since 2000. The larvae feed on a variety of low plants such as docks *Rumex* spp. and plantains *Plantago* spp. (which occur abundantly on Skokholm), however given that this is the first year with an Island record, the August moths were most likely drifters from elsewhere.

73.113 **Angle Shades** *Phlogophora meticulosa* (Linnaeus, 1758)
Counts of this fairly abundant Skokholm breeder were obtained via a combination of light trapping and ad-hoc nocturnal encounters. The first of the year was an adult found after dark on 31st March. There followed one in April, one in May, two in July, 20 in August, 31 in September (with mating observed on the 14th) and 15 in October (including one trapped on the 28th which was the last of 2019).

73.114 **Small Angle Shades** *Euplexia lucipara* (Linnaeus, 1758)
Despite the fact that its caterpillars feed on Bracken, this is a species encountered less regularly on Skokholm. Three trapped on 6th July were the first, there were two on the 28th and a single taken on 27th August was the last of the season. A total of six was rather typical of recent years; there were five last year, 15 in 2017, 24 in 2016, five in 2014 and four in 2013.

73.121 **Frosted Orange** *Gortyna flavago* ([Denis & Schiffermüller], 1775)
A stunning individual taken from the trap on 25th August provided a rare Skokholm encounter and was the first to be enjoyed since 2nd September 2017. Apart from one other 2017 observation (which was possibly of the same moth seen on the 2nd) and a single in 2013, the only records in the historical database are for 1912 and 1910; this is thus only the fifth year in which Frosted Orange, a fairly common species on the Welsh mainland, has made it onto the Skokholm list. Although plants present on the Island (such as thistles and burdocks) provide larval food, the paucity of records suggests that this is an occasional immigrant rather than an established Skokholm breeder.

73.123 **Rosy Rustic** *Hydraecia micacea* (Esper, 1789)
Although this common mainland moth has, of late, been recorded almost annually, it has always proven to be scarce; this was again the case in 2019, with a single trapped on 23rd August the only sighting. Recent counts have been of a single in 2018, four in 2017, five in 2016 and two in 2014, whilst prior to this Rosy Rustic were noted in nine years. Although the larvae will feed on a range of plants, they have a preference for docks; on Skokholm these are primarily distributed around the seasonal ponds and on cliffs.

73.131 **Flounced Rustic** *Luperina testacea* ([Denis & Schiffermüller], 1775)
It was a better year for records of this late-summer moth whose larvae feed underground in dry grassland. One trapped on 21st July was the first, a single was observed after dark on 23rd August and

a further eight were taken during six trapping sessions prior to the end of the month. There was just one trapped in 2018 and two in 2017, but 15 in 2016 and 11 in 2015.

73.134 **Large Wainscot** *Rhizedra lutosa* (Hübner, 1803)
This species has seemingly established itself as a Skokholm breeder in very recent times, although its larval stage is yet to be documented. One trapped on 3rd October was the first in what proved to be the first autumn in which multiple insects have been encountered. Four were taken on both the 4th and 12th October, whilst a single on the 13th brought the moth-days total to ten. The first for the Island was recorded on 23rd July 2011, however it was not until the Octobers of 2016 and 2018 that further singles were logged. The larvae feed in the bases and stems of Common Reed *Phragmites australis*, an extensive area of which is now present in the vicinity of the Well.

73.141 **Brown-veined Wainscot** *Archanara dissolute* (Treitschke, 1825)
During a nocturnal walk on the evening of 22nd August, the first three Brown-veined Wainscot for Skokholm were found resting on vegetation at the Well. Five were encountered at the same location the following evening. Although it is possible that the same individuals accounted for some of the moth-days, a total of eight suggests that this species has also recently colonised the Island. Light trapping at the Well is infrequent as it requires a portable power source, however it would seem likely that occasional sessions in recent years would have detected this species were it to have been present. As with the Large Wainscot, the larvae feed within the stems of Common Reed; it is possible that they are responsible for the relatively extensive patches of dead reeds seen this year.

73.144 **Small Wainscot** *Chortodes pygmina* (Haworth, 1809)
A total of seven came to light during six trapping sessions between 1st August and 8th September. This was an improvement on the single of 2018 and more on a par with the nine of 2017, the six of 2016 and the seven of 2014. The digitised records include sightings of this diminutive Noctuid in 12

additional years, the most recent of which was logged on 8th September 2000. Given that the larvae feed in the stems of sedges *Carex* spp., plants which grow abundantly in the wetter areas of Skokholm, these records probably reflect a low density breeding presence.

73.151 **Webb's Wainscot** *Globia sparganii* (Esper, 1789)
A single netted after dark on 23rd August and another taken from the moth trap that same evening were a sixth and seventh for Skokholm. There have now been sightings in four of the last six years; there was one in 2018 and two in both 2016 and 2014, a run of records which suggest that this scarce species is breeding, albeit in low numbers. This moth is typically associated with large reedbeds and marshland where the larvae feed within the stems of water-plants, particularly Yellow Iris *Iris pseudacorus*. It has been proposed that Webb's Wainscot were accidently imported to Skomer Island via introduced irises; this may well have also been the case on Skokholm, although colonisation from Skomer is also plausible.

73.156 **Clouded-bordered Brindle** *Apamea crenata* (Hufnagel, 1766)
A stunning individual trapped on 26th June was just the second for Skokholm following one on 18th June 2016. It arrived during light northeasterlies, weather conditions which were clearly favourable for an arrival of moths from the mainland; it shared the trap with the first Sharp-angled Peacock and the third Clouded Silver to be found here.

73.162 **Dark Arches** *Apamea monoglypha* (Hufnagel, 1766)
A total of 274 were taken from the light trap over 24 dates between 2nd July and 20th September, with a peak catch of 105 on 3rd August. An additional single, observed after dark on 29th September, was the last of the year and took the 2019 tally to 275. This is one of the most regularly encountered

species in the Skokholm moth trap; there were 211 last year, an impressive 578 in 2017, 205 in 2016 and 257 in 2015.

73.163 **Light Arches** *Apamea lithoxylaea* ([Denis & Schiffermüller], 1775)
Three on 9th July and one on 21st July were the only records this year of what is a scarce Skokholm find. There were eight trapped in 2018, none in 2017, eight in 2016, three in 2015 and four in 2014, whilst prior to these the most recent record was in 1996; there have only been sightings in four further years. This species is reputedly more likely to visit sugar than light, the former a sampling technique seldom used on Skokholm.

73.189 **Red-line Quaker** *Agrochola lota* (Clerck, 1759)
A single caught in the light trap at the Well on 4th October was just a third for Skokholm following two taken in October 2017. This is a common and widespread species in the British Isles and suitable larval foodplants are available on the Island, however a lack of records suggests that it is not established here.

73.193 **Lunar Underwing** *Omphaloscelis lunosa* (Haworth, 1809)
This highly variable species is relatively common in the southern half of Britain, whilst on Skokholm it is an increasingly regular find during autumn trapping sessions. This year saw 67 moth-days logged between 22nd September and 22nd October, with high counts of 15 on 29th September, 19 on 3rd October and ten the following night; this is the highest total of the last seven years (there were 43 in 2018, 26 in 2017, 30 in 2016, just three in 2015 and one in 2014).

73.235 **Feathered Ranunculus** *Polymixis lichenea* (Hübner, 1813)
This is primarily a coastal species, which on Skokholm probably uses Thrift as a larval foodplant. One trapped on 22nd September was the first of the year, however there were no further sightings during the remainder of the month. A total of 44 were taken during seven October sessions between the 3rd and 28th, with a peak catch of 13 on the 4th. An annual total of 45 was comparable with the 58 of 2018, the 62 of 2017 and the 40 of 2016; surprisingly there was only one individual noted in both 2015 and 2014, the latter a year of particularly intense autumn trapping effort.

73.236 **Black-banded** *Polymixis xanthomista statices* (Hübner, 1819)
This Nationally Rare, Thrift-eating moth is restricted to cliff-tops and beaches along the southwest coasts of England and Wales. A single trapped on 19th September was the only record of the year and the first since 2016 when one was taken on 1st September. There were two in 2015 but 16 in 2014, the latter a year during which a light trap was used at various coastal locations around the Island; it would appear that this species seldom wanders far from the areas in which it breeds.

73.237 **Large Ranunculus** *Polymixis flavicincta* ([Denis & Schiffermüller], 1775)
One was taken from the trap on 19th September and a further single was found resting in the Wheelhouse kitchen on the 28th. There were three last year, four in 2017, none in 2016, three in 2015 and 21 in 2014; given that in Wales this is a species of coastal cliffs, it was unsurprising that autumn trapping in cliff-top locations during the latter year produced a bigger total. Large Ranunculus were first recorded on Skokholm in 1992, with sightings in three further years prior to 2014. Nationally this is a southern moth which can prove locally common, however a 50% decline in abundance was observed between 1970 and 2016 (Randle *et al*., 2019).

73.249 **Hebrew Character** *Orthosia gothica* (Linnaeus, 1758)
This common mainland species is seemingly scarce on Skokholm, indeed one trapped on 12th May was the only record of the year and the first since 2017 when seven were noted. There were two in 2016 and one in 2015, whilst prior to these the most recent was logged on 7th May 2000; the historical database contains entries for just five further years. There has been an expansion in the distribution of this species across the UK, although a concurrent decrease in abundance has been recorded (Randle *et al*., 2019).

73.254 **Antler Moth** *Cerapteryx graminis* (Linnaeus, 1758)
It was a good season for records of this grass-eating species on Skokholm. Two trapped on 21st July were the first of the year. There followed a further single in July, an impressive 61 taken in August (including peak counts of ten on the 21st and 17 on the 23rd) and one trapped on 1st September which was the last. The 2019 tally of 65 moth-days is the best on record for what has proven a scarce species on Skokholm; there were seven in both 2018 and 2017, three in 2016, one in 2015 and two in 2014. An apparent increase in the distribution of rank grassland, as opposed to closely grazed turf, has been seen in recent years, an increase probably linked to disease triggered dips in the Rabbit population; this has perhaps benefited the Antler Moth.

73.267 **Bright-line Brown-eye** *Lacanobia oleracea* (Linnaeus, 1758)
This common Skokholm breeder is a regular find in the moth trap throughout the visitor season. This year there were 18 in May, 101 in June, 54 in July, 13 in August and eight in September. A

cumulative total of 194 moth-days was the second highest of the last seven years; there were 118 in 2018, 183 in 2017, 206 in 2016, ten in 2015 and 58 in 2014. In Britain and Ireland as a whole, this is a species which has declined significantly in abundance since 1970 (Randle *et al*., 2019).

73.271 **Broom Moth** *Melanchra pisi* (Linnaeus, 1758)
The first example of this common Skokholm resident was taken on 21st April. A total of 55 were recorded in May (54 in 2018), 49 were trapped in June (114 in 2018) and there were eight in July (three in 2018). Large caterpillars were found on Bracken during late July, whilst an unusual second brood emergence produced three adults in September and two in October (with the last of the year taken from the trap on the 22nd).

73.276 **Campion** *Hadena rivularis* (Fabricius, 1775)
A standard season for encounters with this common Skokholm breeder saw a total of 140 moth-days logged (there were 169 in 2018, 90 in 2017 and 256 in 2016). The first two came to light on 15th May, five days earlier than the first of 2018. Campion subsequently appeared in the moth trap on 22 dates to 8th September, with a peak catch of 33 taken on 3rd August.

73.281 **Lychnis** *Hadena bicruris* (Hufnagel, 1766)
This is a species which could potentially be overlooked amongst larger catches of Campion, especially when worn individuals of both species are present in the trap; in worn Campion which have lost their pinkish hues, assessing the pattern of the outermost cross-line and whether the oval and kidney are joined can be difficult. Nevertheless a minimum of 12 fresh Lychnis were identified over ten trapping nights between 22nd May and 8th August. There were nine in 2018, ten in 2017, two in 2016, four in 2015, two in 2014 and three in 2013; prior to these recent encounters, Lychnis has made it onto the Skokholm list in just four further years.

73.283 **Marbled Coronet** *Hadena confusa* (Hufnagel, 1766)
The first single of the year came to the light trap on 21st April, this the start of an excellent season for this coastal Noctuid. A total of 77 were taken in May, with highs of 27 on the 7th and 15 on the 24th. There were 26 trapped over five dates in June, 27 in July and two in August including one on the 27th which was the last of the year. An annual total of 133 is the second highest tally of the last seven years; there were 44 in 2018, 22 in 2017 and 196 in 2016.

73.286 **Pod Lover** *Hadena perplexa capsophila* ([Denis & Schiffermüller], 1775)
The first record of this coastal subspecies of Tawny Shears came on 9th April, this over six weeks earlier than the first of last year. A further two were logged in April, whilst there were 35 in May (including a peak catch of 15 on the 24th), 33 in June, 24 in July and ten in August (with the last on the 25th). An annual total of 105 moth-days is an excellent showing for this species; as with Marbled Coronet, the only higher tally of the last seven years came in 2016 (there were 34 in 2018, 25 in 2017, 174 in 2016 and 33 in 2015).

73.293 **Smoky Wainscot** *Mythimna impura* (Hübner, 1808)
Although this grass-eating species is widely distributed on the mainland and is almost certainly a Skokholm breeder, it is typically only encountered in small numbers. Two on the 3rd and singles on the 8th and 27th August took the year total to four; there were three in 2018, 24 in 2017 (when multiple traps were in use during late July), three in 2016 and five in both 2015 and 2014.

73.296 **White-speck** *Mythimna unipuncta* (Haworth, 1809)
One caught with a hand net at the Well, after dark on 29th September, makes 2019 just the fifth year in which this delightful immigrant has been recorded on Skokholm. This becomes the third consecutive season with a record following a single attracted to the window of the Lighthouse kitchen on 31st October 2018 and one taken from the moth trap on 1st September 2017. The most

recent records prior to these were in 2000 when a major influx into Britain produced a remarkable six Skokholm individuals between 4th September and 6th October. The only other Island records are from 1996.

73.300 **L-album Wainscot** *Mythimna l-album* (Linnaeus, 1767)
The first Island record of this distinctive Wainscot was of an extremely worn moth found resting on grass outside the Central Block on 25th October 2018. This year saw one taken from the light trap on 19th September and a further three trapped on the 20th, all of which were in good condition. This species colonised Cornwall and Devon in the 1930s and has since spread along the south coast of England. Since 1990 it has colonised Suffolk and south Wales, although the first Pembrokeshire record did not occur until 2007. There have now been multiple county reports, with the majority coming from Skomer Island and the Dale and Marloes Peninsulas.

73.307 **Pearly Underwing** *Peridroma saucia* (Hübner, 1808)
One attracted to light on 23rd October was the only record of the year and the first since 2017 when eight were logged. Pearly Underwing has only made it onto the Island list in three of the last seven years, although there are records in 11 years prior to these (with the next most recent being noted in 2000). Although numbers vary each year, the national moth recording data suggests that this regular immigrant to the UK has become significantly less frequent since 1980 (Randle *et al*., 2019).

73.312 **Square-spot Dart** *Euxoa obelisca grisea* (Tutt, 1902)
This Nationally Scarce coastal Noctuid is often one of the most commonly encountered species during late summer trapping sessions on Skokholm. A single taken from the light trap outside of the

Cottage on 3rd August was the first of the year. There followed a further 89 August moth-days, all logged during 11 trapping sessions and two nocturnal walks and including a peak catch of 37 on the 25th. A total of six were taken in September, with one on the 14th being the last of the season. An annual tally of 96 moth-days was the highest of the last seven years; there were 32 in 2018, 95 in 2017, 92 in 2016, 50 in 2015 and 82 in 2014 (the latter total including an impressive 68 trapped in a single session on 23rd August).

73.317 **Heart & Dart** *Agrotis exclamationis* (Linnaeus, 1758)
Given that this scarce Skokholm resident is an infrequent visitor to the light trap, the 28 moth-days logged this year was notable. The first came to light on 6th June, whilst a further 27 were encountered during ten trapping sessions to 3rd August (including a peak catch of seven recorded on 9th July). There was just one encountered in 2018, 2015 and 2013, nine in both 2017 and 2016 and seven in 2014; indeed the only tally higher than that of 2019 to be recorded in the database is the 57 logged in 1996.

73.319 **Turnip Moth** *Agrotis segetum* ([Denis & Schiffermüller], 1775)
It was a good year for records of Turnip Moth on Skokholm, this a species which is generally regarded as scarce. The first was found along the Lighthouse Track, after dark on 20th September. Another single was along the Lighthouse Track on the 22nd and two were logged there the following evening. One was netted at the Well on the 29th and another two were observed at a similar location on the last day of September. Two were on Home Meadow on 1st October, whilst the only moths to be taken from the trap were singles on the 3rd and 13th. An annual total of 11 moth-days is the highest on record; there were two in 2018, four in 2017 and singles in both 2016 and 2015.

73.324 **Crescent Dart** *Agrotis trux* (Stephens, 1829)
This moth of cliffs and rocky shores has a predominantly southwestern distribution in Britain, whilst on Skokholm it is a fairly common summer species. This year saw a total of 56 taken over 12 trapping dates between 4th July and 12th August, with a peak catch of eight on 25th July. This was a pleasing increase in numbers following what had seemingly been a gradual decline; there were 17 last year, 32 in 2017, 41 in 2016 and 76 in 2015.

73.327 **Dark Sword-grass** *Agrotis ipsilon* (Hufnagel, 1766)
The first record of this almost annual immigrant was of a single trapped on an early 20th March, however there were only a further 11 encountered during the remainder of the season and the peak catch failed to exceed three. One trapped at the Well on 4th October was the last in what was an uneventful year for this species. There were 24 in 2018 and an exceptional tally of 90 in 2017 (a year

which saw a significant spring influx into the UK), but just 14 in 2016 and four in 2015. Despite intensive autumn trapping effort, there were no Dark-sword Grass found in 2014.

73.329 **Flame Shoulder** *Ochropleura plecta* (Linnaeus, 1761)
A total of eight were caught between 22nd May and 25th August, with the peak catch failing to exceed two. This was a poor result compared with the 22 of 2018, the 52 of 2017 and the 31 of 2016, although it was up on the four of 2015. This is a widespread moth on the British mainland which has undergone a 65% increase in abundance since the 1970s (Randle *et al*., 2019).

73.334 **Small Square-spot** *Diarsia rubi* (Vieweg, 1790)
A total of eight were logged between 21st August and 15th September, this the lowest tally of the last six years. Trapping on Skokholm rarely produces big numbers, with the 66 logged in 1998 remaining the highest year total to date; there were 11 in 2018, 33 in 2017, 49 in 2016, 20 in 2015 and 48 in 2014. Although a widespread and often numerous species on the mainland, it has suffered a long-term decline in abundance (with national data suggesting a drop of 54% (Randle *et al*., 2019)).

73.336 **Red Chestnut** *Cerastis rubricosa* ([Denis & Schiffermüller], 1775)
Perhaps owing to its early spring flight season, Red Chestnut are encountered only infrequently on Skokholm. This year saw a total of four taken over three nights between 27th March and 19th April. There have now been records in four of the last seven years, with a late individual the only 2018 example but with 11 trapped in 2017 (nine of which occurred in March) and four in 2016. That this species has only made it onto the Island list in six further years may just reflect low early season effort, a lack of power and unsuitable trapping conditions.

73.342 **Large Yellow Underwing** *Noctua pronuba* (Linnaeus, 1758)
Two taken on 26th June were the first of the year, whilst a further single was noted during the remainder of the month. There followed 26 in July, an impressive 251 in August (which included a peak catch of 114 on the 25th), 100 in September and two on 4th October which were the last of the year. While historically this is one of the most frequently recorded Noctuids on Skokholm, numbers have been mediocre of late. An annual moth-days total of 382 is the best tally on recent record, up on the 140 logged in 2017; the poorest post-2013 showing was in 2014 when just 30 were taken, this despite increased trapping effort that year.

73.343 **Broad-bordered Yellow Underwing** *Noctua fimbriata* (Schreber, 1759)
The first Island record of this widespread species was of a single taken from the trap situated to the west of the Central Block on 25th August. Given its pale brown-buff colouring, it was probably a

female (the males are typically darker and richer in colour). Of the five common 'yellow underwings', this species is encountered least frequently in Pembrokeshire, although nationally its distribution has spread by 158% since the 1970s and its abundance has undergone an impressive 544% increase during the same period (Randle *et al*., 2019).

73.345 **Lesser Yellow Underwing** *Noctua comes* (Hübner, 1813)
One trapped along the Cottage Garden wall on 3rd August was the only record of the season and the first since 2017 when five were logged. This species is typically a scarce find in the trap, with sightings in six of the last seven years but annual totals failing to exceed single-figures; the highest tally in the historical database is the eight recorded in 1997.

73.357 **Square-spot Rustic** *Xestia xanthographa* ([Denis & Schiffermüller], 1775)
One taken from the trap on 8th August was the first of the year, whilst a further 21 were attracted to light between 24th August and 3rd October. The only catch to total more than two came on 24th August when eight were logged. This was nevertheless a relatively good showing in a Skokholm context, indeed the total was the third highest of the last six years; there were 24 in 2018, 27 in 2017, ten in both 2016 and 2015 and just one in 2014.

73.359 **Setaceous Hebrew Character** *Xestia c-nigrum* (Linnaeus, 1758)
It was an excellent season for this Nettle-eater on Skokholm, with a total of 33 moth-days being the highest tally of the last seven years. A lone moth trapped on 24th May was the first of the year and the only first generation insect to be encountered. The first five second brood moths were trapped on 25th August, after which a further 27 were logged (including peak catches of six on both the 8th and 19th September and five which were netted after dark). The last of the year was a single taken on 22nd October.

73.365 **Autumnal Rustic** *Eugnorisma glareosa* (Esper, 1788)
This attractive late autumn Noctuid was found for the first time on Skokholm in 1990; perhaps owing to its late flight season, it has been encountered in only nine subsequent years. This year saw a single trapped on 8th September, two taken on the 20th and one on 3rd October which took the moth-days total to four. The tally was surprisingly the highest to date; there was just one in 2018, three in 2017 and two in both 2016 and 2014, whilst one in 2000 is the only other sighting this century.

Aggregates and species groups

49.049x **Grey Tortrix agg.** *Cnephasia* agg.
Although many of the Grey Tortrix are common and widespread across the UK, members of this genus can only be determined with certainty via genital dissection. A single taken on 4th July was the only record of the year, although this was probably a reflection of effort; there were 65 in 2014 when micro moths were afforded more attention. The only two species of *Cnephasia* to be confirmed on Skokholm (via dissection) are Coast Shade *C. conspersana* (ten in 2017 and one in 2016) and Grey Tortrix *C. stephensiana* (two in 2016).

73.096x **Rustic/Uncertain** *Hoplodrina* agg. (Brahm, 1791)
Records of both Rustic *H. blanda* and Uncertain *H. alsines* were again lumped. The first eight of the year came to the light trap on 9th July, whilst a further four July catches peaked at 126 on the 28th. Seven catches in August produced 256 moths and included the 2019 maximum of 131 on the 3rd; this was the largest single catch of the last seven years. The 2019 moth-days total came to 486, a tally only bettered in 2014 when 499 were logged; there were 314 in 2018, 391 in 2017, 35 in 2016 and 155 in 2015.

73.169x **Common Rustic agg.** *Mesapamea* agg. (Esper, 1788)
It was a busier season for records of *Mesapamea*, with a total of 157 logged. Of these, 130 were taken from the trap over 15 nights between 9th July and 19th September (including a peak of 45 on 3rd August), whilst the remaining 27 were netted after dark. The moth-days total was the second highest of the last seven seasons; there were 49 in 2018, 235 in 2017, 55 in 2016, 44 in 2015 and 36 in 2014.

Butterflies

Whilst the bitterly cold, wintery conditions experienced in early spring 2018 no doubt led to the late appearance of many of Skokholm's butterflies that year, this year saw the UK facing its hottest February on record. The Subsequent mild spring was probably responsible for early records of **Small White** (63 days earlier than in 2018 and the earliest of the last seven years), **Green-veined White** (11

days earlier than in 2018), **Small Tortoiseshell** (29 days earlier) and **Small Copper** (19 days earlier). Other species appeared much later, particularly **Painted Lady** (39 days later than in 2018) and **Peacock** (35 days later). A national influx of **Painted Lady** during the summer produced a record breaking 5894 butterfly-days, this knocking **Meadow Brown** from the most abundant butterfly podium (a status which it has held since 2014). Totals of **Red Admiral** and **Peacock** were up on last year, with **Peacock** enjoying a 171% increase, whilst **Small White** seemingly had their second best year in recent history. Sadly, it was not all positive news; it was the second worst year of the last seven for numbers of **Large White**, **Green-veined White** and **Meadow Brown**. Indeed, the butterfly-days totals for seven of the nine most regular Skokholm butterflies came in below the seven year mean. The appearance of a **Long-tailed Blue** in late September was a first for Pembrokeshire and just the second for Wales, whilst other Island scarcities included **Clouded Yellow**, **Wall**, **Speckled Wood** and **Comma**. The historic butterfly data, now digitised and readily accessible, at times paints a rather gloomy picture, one which reflects the dire declines seen in both the abundance and distribution of many of Great Britain's common species; having this digital record makes it easier to put current observations into context.

Skokholm butterfly sightings were again noted in the daily Log and an account of each species recorded is listed systematically below. The Maximum Daycount refers to the highest number of individuals seen on any one day in a particular month and Butterfly-days are the cumulative number of butterflies seen in a defined period of time. The totals for the period 2014 to 2019 are listed in each table to allow for a comparison to be made. For each of the regularly occurring species, the earliest and latest records from the last seven years, the highest and lowest annual totals and the 2013-2019 mean are now listed below the species title.

The taxonomic order used in previous reports has been rearranged to comply with the most recent update of the Checklist of the Lepidoptera of the British Isles (Agassiz *et al*., 2020).

Large White *Pieris brassicae* (Linnaeus, 1758)
High 384 in 2018 **Low** 73 in 2015 **2013-2019 mean** 197.6 ±sd 101.91
Earliest 23rd April 2017 **Latest** 29th September 2018

One along the Lighthouse Track on 25th May was three days later than the first of 2018 and over a month later than the first of 2017; this, the only May record, began what proved to be the second poorest year of the last seven for this species. June is typically quiet for records of Large White, a pattern which continued in 2019; a single at the Quarry on the 26th was the only insect logged. July and August were the most productive months this year, with 63 butterfly-days logged in each; although the butterfly-days totals were equal, the July tally was 36% down on the 2013-2019 mean

(98.6 ±sd 67.9) whilst that of August was 31% up (48.0 ±sd 36.2). The July total included the highest daycount of the year, a minimum of 18 noted on the 23rd which included a small movement of insects watched arriving from the sea; the peak was well down on that of last year when 84 crossed the Island on 3rd July (the highest daycount of the last seven years, this in a year which also saw the highest monthly and annual totals to be recorded during the same period). September proved quiet, with just 18 logged over nine dates and two on the 22nd which were the last of the season. An annual total of 146 was 62% down on that of 2018, 26% down on the 2013-2019 mean and a sad reflection of the situation nationally (where a 42% decline was noted (Butterfly Conservation, 2020)).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	0	1	1	18	14	4	0	0
2018	0	0	2	4	84	9	25	0	0
2017	0	1	4	5	20	5	4	0	0
2016	0	0	2	1	18	5	9	0	0
2015	0	0	2	1	1	9	7	0	0
2014	0	0	0	1	25	3	34	0	0
2019 Butterfly-days Total	0	0	1	1	63	63	18	0	0
2018	0	0	6	6	219	49	104	0	0
2017	0	1	27	12	96	19	14	0	0
2016	0	0	6	2	97	34	14	0	0
2015	0	0	3	1	6	43	22	0	0
2014	0	0	0	2	64	9	105	0	0

Small White *Pieris rapae* (Linnaeus, 1758)
High 309 in 2013 **Low** 11 in 2017 **2013-2019 mean** 125.1 ±sd 104.1
Earliest 17th April 2019 **Latest** 13th October 2016

Two exceptionally early insects found along the Lighthouse Track and at the Farm on 17th April were the first of the season; these, the only Small White to be found during the month, were over nine weeks earlier than the first of 2018, 17 days earlier than one in 2017 and the first April butterflies since 2011 (the earliest to date was a single logged on 28th March 1990). May was typically quiet, with one at the Bluffs on the 12th the only sighting; this becomes just the second of the last seven years to see a butterfly arrive in this month. Following a blank June, there were 25 butterfly-days logged over eight July dates including a peak of seven on the 15th. Observations on 12 August dates included arrivals of 52 on the 24th and 77 on the 25th (the latter including a count of 55 from along the North Coast); the 25th August daycount was the highest in any month of the last seven years. These significant arrivals contributed to an August butterfly-days total of 154, a tally 215% up on the 2013-2019 August mean (48.9 ±sd 51.7) and the highest since the 368 of 1995; these totals were however dwarfed by the 984 butterfly-days logged in August 1983 (which included a daycount of 300 on the 10th). Counts plummeted in September, with records on just ten dates producing a total of 15. A single on 24th September was the last of the year and took the annual butterfly-days tally to 197, a total 31% up on that of 2018 and 59% up on the seven year average. In contrast to observations on Skokholm, this species fared poorly at a national level in 2019; as was seen for Large White, a 42% decline was recorded (Butterfly Conservation, 2020).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	2	1	0	7	77	3	0	0
2018	0	0	0	1	8	15	9	0	0
2017	0	0	1	0	1	2	1	0	0
2016	0	0	0	0	2	4	16	3	0
2015	0	0	0	1	0	3	2	7	0
2014	0	0	0	0	2	5	14	0	0

2019 Butterfly-days Total	0	2	1	0	25	154	15	0	0
2018	0	0	0	1	44	70	35	0	0
2017	0	0	1	0	1	4	5	0	0
2016	0	0	0	0	11	27	49	8	0
2015	0	0	0	1	0	8	3	12	0
2014	0	0	0	0	3	30	57	0	0

Green-veined White *Pieris napi* (Linnaeus, 1758)
High 187 in 2018 **Low** 35 in 2015 **2013-2019 mean** 84.0 ±sd 62.7
Earliest 21st April 2014 **Latest** 1st October 2015

Following three years of poor totals, last year proved to be the most productive of the last seven for records of Green-veined White. Disappointingly this season saw a return to low counts, with an annual tally of 39 butterfly-days being the second lowest of the last seven years, a total 54% down on the 2013-2019 average and 79% lower than that of last year. The first 2019 imago was found on the Neck on 23rd April, this 11 days earlier than the first of 2018. There were no further records until 10th May when a single was again logged. Following just two more May singles and a blank June, July saw a typical increase in numbers; although a monthly butterfly-days total of 27 was the highest of the year, it was 64% down on July 2018 and 31% down on the 2013-2019 July mean (39.1 ±sd 30.6). Five August butterfly-days was 80% down on the seven year average (25.6 ±sd 28.6) and the lowest August tally of the last seven years. September is traditionally a quiet month, however a total of three (including the last of the year on the 4th) was 70% down on the mean (10.1 ±sd 13.1).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	1	1	0	13	2	2	0	0
2018	0	0	3	5	10	15	1	0	0
2017	0	0	2	0	4	3	6	0	0
2016	0	0	1	0	7	7	2	0	0
2015	0	0	2	2	1	6	2	1	0
2014	0	1	3	1	20	5	14	0	0
2019 Butterfly-days Total	0	1	3	0	27	5	3	0	0
2018	0	0	9	15	74	88	1	0	0
2017	0	0	2	0	16	6	17	0	0
2016	0	0	3	0	18	24	4	0	0
2015	0	0	2	4	4	16	8	1	0
2014	0	2	11	1	82	25	37	0	0

Clouded Yellow *Colias croceus* (Geoffroy, 1785)

One found near the Sugarloaf during the afternoon of 13th September was the first of the year, whilst another was observed on Isthmian Heath the following day. Further singles were encountered at the Lime Kiln on the 16th, at Horse Bottom on the 17th and at North Gully on the 22nd, whilst one in South Haven on the 26th was the last of the year. Although up on the three logged in both 2018 and 2017 and a blank 2016, a 2019 total of six butterfly-days was down on the seven logged in 2015 and was only the fourth highest tally of the last seven years. As an immigrant from southern Europe and North Africa, numbers reaching the UK vary each year, with recent Skokholm highs being of ten in 2013 and 12 in 2014. These latest peaks were dwarfed by that of 1947; an impressive 246 butterfly-days were recorded between June and October that year, 170 of which arrived in August (including a peak daycount of 42 on the 21st). The same year saw an estimated 36,000 appear on UK shores, making 1947 one of the most famous 'Clouded Yellow Years' on record (UK Butterflies, 2020).

Wall *Lasiommata megera* (Linnaeus, 1767)

A pristine individual, found feeding on sheltered Goldenrod flowers at Isthmian Heath on 24th September, was the first since a single found at the Lighthouse on 28th August 2013. This is a scarce Skokholm butterfly, although it was more frequent historically; records exist for 35 pre-2013 years. This species has suffered severe declines in the UK over several decades (UK Butterflies, 2020a); the number and frequency of Skokholm records sadly reflect this. During the 1950s a total of 98 butterfly-days were noted over six years, but by the 2000s only 16 were tallied (with sightings in three years). The last decade has contributed just three further butterfly-days. The 2019 insect arrived during a period in which conditions must have been favourable for butterflies to reach Skokholm; a Long-tailed Blue was found along the same stretch just minutes later.

Speckled Wood *Pararge aegeria* (Linnaeus, 1758)
A single at the Well on 18th September and one found nearby on the 20th were possibly the same individual, these the first butterfly-days since August 2017. This is another scarce Skokholm species; although there have been records in five of the last seven years, it has historically occurred much less frequently. Prior to 2013 there were observations in just 11 years, with 83% of the 29 butterfly-days logged on Skokholm occurring from 1987 onwards. The highest year total was logged in 1987 when five butterfly-days were noted. The increase in Island records reflects population expansion on the UK mainland; the distribution of Speckled Wood has increased by 71% during the last four decades, whilst an 84% increase in abundance has occurred during the same period (UKBMS, 2020).

Meadow Brown *Maniola jurtina* (Linnaeus, 1758)
High 15288 in 2018 **Low** 2212 in 2013 **2013-2019 mean** 5639.0 ±sd 4395.9
Earliest 9th June 2016 **Latest** 18th September 2015

Following what was a phenomenal 2018 season (during which a new Skokholm butterfly-days record was set), this year proved much quieter for this underrated herald of summer. One at Isthmian Heath on 15th June was the first, this two days later than the first of 2018. Sightings were regular thereafter, although numbers remained low until the 26th; even then daycounts were far from sizeable when compared with those of recent years, with a maximum of 36 on the 30th being the lowest since 2016 and 55% down on the 2013-2019 mean June high (80.4 ±sd 88.3). The consistently low daycounts resulted in a June total of just 130 butterfly-days, this 84% down on that of 2018 and 46% down on the seven year mean (242.3 ±sd 275.2). For a seventh consecutive year, July proved the busiest month for observations and again included the highest daycount of the year (the 383 logged on the 16th); although massively down on the 1368 counted on 8th July 2018, the 2019 peak was only 17% below the 2013-2019 July mean (460.0 ±sd 420.1). A peak August daycount of 85 was logged on the 1st, this followed by daily double-figure counts until the 7th and low single-figure counts during the remainder of the month. A total of just 278 butterfly-days was the poorest August showing of the last seven years, this despite the maximum daycount being just 6% down on the seven year average (90.0 ±sd 34.7); the butterfly-days total was 50% below the 2013-2019 August mean (552.0 ±sd 270.8). Two September singles, including one on the 8th which was the last of the

year, took the 2019 total to 3468 butterfly-days; this was 39% lower than the seven year mean and 77% down on the exceptional 2018 tally.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	0	0	36	383	85	1	0	0
2018	0	0	0	265	1368	106	0	0	0
2017	0	0	0	60	381	80	1	0	0
2016	0	0	0	22	516	120	2	0	0
2015	0	0	0	80	220	140	10	0	0
2014	0	0	0	100	181	59	2	0	0
2019 Butterfly-days Total	0	0	0	130	3058	278	2	0	0
2018	0	0	0	833	13986	469	0	0	0
2017	0	0	0	207	5179	461	1	0	0
2016	0	0	0	86	3510	687	3	0	0
2015	0	0	0	159	3265	1102	34	0	0
2014	0	0	0	281	3115	412	3	0	0

Red Admiral *Vanessa atalanta* (Linnaeus, 1758)
High 3598 in 2014 **Low** 890 in 2015 **2013-2019 mean** 1477.3 ±sd 960.1
Earliest 10th March 2014 **Latest** 9th November 2013

One at Twinlet on 23rd April was the first of the year, this just one day later than the first of 2018 but over six weeks later than the early 2014 sighting. There were just two further April singles, the total equalling that of 2018. A May butterfly-days total of 49 was the second highest of the last seven years and 72% up on the 2013-2019 mean (28.4 ±sd 22.0). Sightings on 23 June dates included a monthly high of 37 on the 1st (a daycount 61% up on the 2013-2019 June mean (23.0 ±sd 14.9)), mating insects on the 27th and seven double-figure daycounts; this produced a total of 209 butterfly-days, the best June tally of the last seven years. The highest 2019 daycount came on 29th July when an obvious arrival of insects resulted in a total of 48; the increase in butterflies was relished by Skokholm's passerines, with the wings of several predated insects being found the following day. With encounters on every date, a July total of 229 was 3% up on last year and 29% up on the July mean (177.7 ±sd 55.0). For a second consecutive year, August saw more butterfly-days than any other month, although a total of 352 almost matched the mean (342.0 ±sd 78.8). September proved disappointing, with the total being 56% below the seven year mean (692.3 ±sd 891.4); it should be noted that this mean is inflated by a 2014 tally of 2705, a remarkable total which remains the highest of any month in recent times. The October peak was low for a third year, with a high of seven on the 13th taking the monthly total to 51 (a tally 57% down on the seven year October average). Three on 3rd November were the last of the year and took the annual butterfly-days total to 1200; the total was 21% up on that of last year but 19% down on the 2013-2019 mean.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	1	7	37	48	38	35	7	3
2018	0	3	6	13	19	33	21	4	0
2017	0	0	14	21	24	29	44	5	1
2016	0	1	23	7	37	56	204	70	0
2015	0	5	0	41	12	22	120	26	3
2014	4	1	1	36	20	45	409	42	0
2019 Butterfly-days Total	0	3	49	209	229	352	304	51	3
2018	0	3	25	100	223	371	240	32	0
2017	0	0	43	145	236	369	457	37	1
2016	0	1	56	44	163	406	473	336	0
2015	0	9	0	127	104	188	318	134	10
2014	6	1	3	147	178	415	2705	143	0

Painted Lady *Vanessa cardui* (Linnaeus, 1758)
High 5894 in 2019 **Low** 184 in 2013 **2013-2019 mean** 1333.0 ±sd 2037.0
Earliest 13th April 2015 **Latest** 22nd November 2014

Butterfly Conservation UK declared 2019 as the first 'Painted Lady Year' since 2009, an event which sees unusually high numbers of this stunning migrant reach the UK; such mass arrivals have been documented approximately once a decade (Butterfly Conservation, 2020). Close to half a million were seen nationally during the 2019 Big Butterfly Count between 19th July and 11th August, whilst on Skokholm a remarkable 5894 butterfly-days were logged during the season. The impressive Island total is the highest yet recorded, a tally 403% up on that of 2018 and 342% higher than the seven year mean; the 3228 butterfly-days logged in 2003 was the previous Skokholm record. Despite the huge counts which were to follow, the season began quietly with two on 31st May being over five weeks later than the firsts of 2018 and 2017. The first sizable wave of insects came ashore during late June, with 96% of the 942 butterfly-days logged during the month occurring in the week between the 24th and 30th; there were highs of 208 on the 27th, 191 on the 28th and 152 on the 30th. Daycounts ranged between 32 and 70 during the first nine days of July, with insects watched ovipositing on Nettles near the Ringing Hut on the 5th and the high on the 9th including 15 exceedingly worn individuals; numbers declined rapidly thereafter, with single-figure daycounts between the 15th and 30th. Caterpillars were found on Nettles near the Cottage on the 28th and a second wave of adults appeared on 31st July; the 72 counted on the last day of the month arrived at the beginning of what was to prove a huge westerly movement of insects from the east coast of the UK, butterflies which were thought to have originated in Scandinavia (Butterfly Conservation, 2020).

On 1st August a staggering 614 butterflies were counted, with 245 found along the North Coast and 275 observed between the Lighthouse and the Red Hut; although the total was almost certainly an undercount, it was nevertheless the highest on record (the previous maximum was of 600 logged on 26th September 2003). Three-figure counts were recorded on five of the next six days, there were double-figure counts on all but one date between the 8th and 25th and higher totals at the end of the month, including a peak of 192 on the 26th, probably at least in part reflected an emergence of Skokholm bred butterflies (one was extricating itself from a cocoon in the Wheelhouse on the 29th).

An August butterfly-days total of 2870 was unsurprisingly a new record, this 378% up on the seven year mean (600 ±sd 1017.5) and a figure 145% higher than that recorded during the whole of 2018. There were five further three-figure daycounts during the first two weeks of September, although there followed a sharp drop from 162 on the 14th to no more than 24 from the 16th; nevertheless a total of 1414 butterfly-days was the highest in September by a considerable margin (565 in 2003 was the previous record). Observations on just ten October dates, including a peak count of five on the 1st, led to an average total. Three of the four seen in November were logged on the 3rd, these the last in a remarkable year which was just the second of the last seven with a sighting in this month.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	0	2	208	72	614	218	5	3
2018	0	7	7	28	8	92	48	2	0
2017	0	5	8	13	16	18	26	12	0
2016	0	0	3	51	3	20	27	3	0
2015	0	5	4	29	11	19	13	6	0
2014	0	0	1	4	5	8	8	2	4
2019 Butterfly-days Total	0	0	2	943	639	2870	1414	22	4
2018	0	7	21	184	75	615	257	12	0
2017	0	5	46	56	65	209	146	22	0
2016	0	0	11	247	10	190	166	6	0
2015	0	13	27	227	125	154	127	32	0
2014	0	0	3	20	41	69	61	2	6

Peacock *Inachis io* (Linnaeus, 1758)
High 387 in 2015 **Low** 36 in 2013 **2013-2019 mean** 145.0 ±sd 125.2
Earliest 10th March 2015 **Latest** 3rd December 2019

A single on 17th April was five weeks later than the first of 2018, this the beginning of what was a better but still mediocre season for this unmistakeable species. There were a further 12 April butterfly-days; although there were no sightings in April 2018, a 2019 total of 13 fell short of the mean (17.1 ±sd 28.3). Only four butterfly-days were logged in May, however this was still the second highest tally of the last seven years, whilst a blank June mirrored four of the last seven. Two on 15th July were the first in what proved the best month of the last two years; regular records thereafter took the monthly total to 44 butterfly-days and included insects flying in off the sea on the 23rd (the tally was 214% up on last year but 30% down on the 2013-2019 July mean (62.9 ±sd 47.6)). The highest daycount of the year was the 12 logged on 1st August; although this was up on the average August high (7.9 ±sd 4.0) and one of two double-figure daycounts logged during the month, an August butterfly-days total of 27 was still 45% below the mean (49.0 ±sd 48.6). Sightings of up to two insects on six September and two October dates were rather typical for these months, whilst singles on three dates made this only the second of the last seven years with a November record. Despite a December staffing presence in many previous years, a single west past the Farm on the 3rd was the first butterfly of any species to be logged in this month. A 2019 tally of 103 butterfly-days was 171% up on the lean 2018 total, but 29% down on the seven year mean; this was disappointing given that nationally this species enjoyed its best summer since 2014 (Butterfly Conservation, 2020).

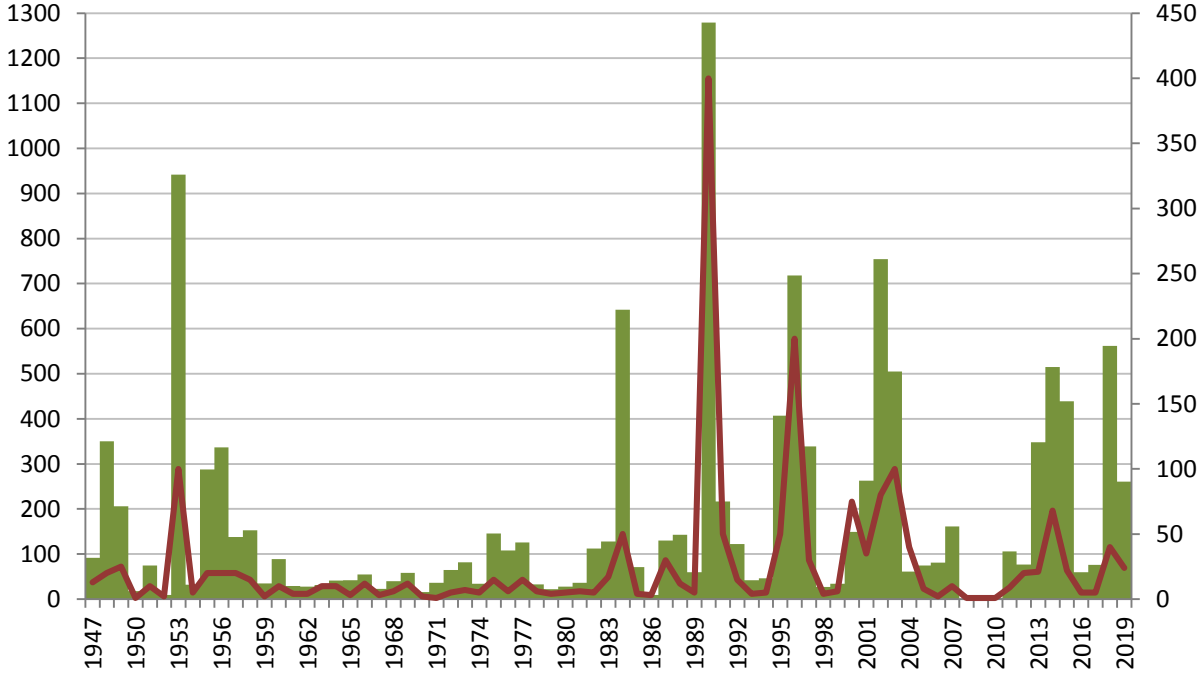
Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019 Maximum Daycount	0	4	3	0	11	12	2	2	1	1
2018	1	0	1	1	4	6	0	0	0	-
2017	0	1	1	0	12	5	4	2	0	-
2016	1	3	2	0	40	11	2	1	0	-
2015	2	22	3	1	16	13	3	1	3	-
2014	1	1	1	1	7	4	1	1	0	-

2019 Butterfly-days Total	0	13	4	0	44	27	7	4	3	1
2018	2	0	1	4	14	17	0	0	0	-
2017	0	3	2	0	95	25	20	3	0	-
2016	2	20	3	0	112	79	6	1	0	-
2015	2	79	5	1	130	148	23	3	3	-
2014	1	5	3	1	49	18	2	1	0	-

Small Tortoiseshell *Aglais urticae* (Linnaeus, 1758)
High 562 in 2018 **Low** 60 in 2016 **2013-2019 mean** 323.0 ±sd 200.9
Earliest 9th March 2014 **Latest** 14th November 2018

One in the Wheelhouse Heligoland on 24th March was the first of the year and over four weeks earlier than the first of 2018. A further three were logged during the month, resulting in the second highest March butterfly-days total of the last seven years. The only records during a typically quiet April were of one flying in off the sea at South Haven on the 1st and a single on the 17th (the seven year mean is 3.4 ±sd 2.8). The only May sighting was of one at the Well on the 14th, whilst five June butterfly-days were all noted during the last four days of the month; these monthly totals were 89% and 88% down on the corresponding 2018 tallies.

The total number of Small Tortoiseshell butterfly-days (green) and the maximum daycount logged in each year since 1947.



July, August and September are typically the most productive months for records of this species; this year was no exception, but the counts were generally unimpressive. A July total of 40 butterfly-days was 67% down on last year and 52% below the 2013-2019 mean (83.4 ±sd 71.0). Despite there being no sightings during the first 12 days of August, daycounts peaked this month; a total of 24 on the 26th was the highest daycount of 2019 and the fifth highest of the last five years (with the four higher daycounts all occurring in August last year). An August butterfly-days total of 124 was 58% lower than that of last year and 8% down on the seven year mean (135.0 ±sd 123.9) but 313% up on the 30 of 2016 (the worst August tally of recent times). Perhaps surprisingly, the 22 logged on the 7th was the highest September daycount of the last seven years, whilst sightings on 12 further dates took the monthly total to 84 (a tally 9% down on last season but 26% above the 2013-2019 September mean (66.4 ±sd 41.8)). One at Crab Bay on 6th October was the only record that month

and the last of the season; it took the 2019 butterfly-days total to 261, a figure 54% down on 2018 and 19% below the seven year mean. The UK population of this once ubiquitous garden visitor has declined by three quarters since the 1970s (Butterfly Conservation, 2020).

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	1	1	1	3	4	24	22	1	0
2018	0	2	3	11	14	40	15	1	1
2017	1	0	0	2	2	5	3	1	0
2016	0	1	2	1	1	5	4	0	0
2015	4	3	1	15	22	11	15	1	1
2014	2	1	1	12	8	68	5	0	0
2019 Butterfly-days Total	4	2	1	5	40	124	84	1	0
2018	0	3	9	40	122	294	92	1	1
2017	2	0	0	3	8	40	22	1	0
2016	0	2	4	2	2	30	18	0	0
2015	1	9	1	68	166	63	124	3	1
2014	9	3	1	68	75	327	32	0	0

Comma *Polygonia c-album* (Linnaeus, 1758)
A single seen in flight over Isthmian Heath on 13th September was probably the butterfly found at the same location the following day; these were the only encounters with this distinctive species this year. There were two 2018 individuals, although these were the first since one at the Well on 14th September 2016. There have only been records in 11 further years, the first of which were in 1950 when an Island record of six were seen; the maximum number found in any subsequent year has not exceeded two. Although once widespread in England, Wales and southern Scotland, this species suffered a severe decline during the middle of the 19th century, probably as a result of a reduction in the Hop *Humulus lupulus* farming which provided an important larval food source; the UK population became restricted to the Welsh border counties until an increased preference for Nettle as a foodplant allowed numbers to rise dramatically since the 1960s (UK Butterflies, 2020b).

Small Copper *Lycaena phlaeas* (Linnaeus, 1761)
High 5775 in 2013 **Low** 1124 in 2016 **2013-2019 mean** 2405.6 ±sd 1576.9
Earliest 19th April 2015 **Latest** 30th October 2018

The first of the year was found at the Gap on 23rd April, this 19 days earlier than the first of a bitter 2018 spring and just four days later than the early 2015 record; encounters in this month are unusual, indeed there have been sightings in only three of the last seven Aprils. The bulk of first generation adults typically emerge in May, with records on 25 dates this year taking the monthly butterfly-days total to 237; this figure was 155% up on last May and 24% higher than the seven year May mean (191.2 ±sd 162.7). Highs of eight on both the 1st and 9th June fell short of the average for this month (19.4 ±sd 18.2), whilst a June butterfly-days total of 57 was 51% down on the 2013-2019 mean (117.0 ±sd 91.3). Counts increased in July, with records on 23 dates and 94% of the total being logged after the 13th as the second brood emergence peaked; the maximum daycount was the 40 logged on the 29th, this 75% down on the 2018 high. A total of 345 July butterfly-days was 19% down on the 2013-2019 mean (427.3 ±sd 256.6). It was the quietest August of the last five years, with just eight double-figure totals during the first two weeks of the month and a sharp drop in counts from the 17th as second generation adults reached the end of their lifecycle; the resulting August tally of 260 was the second lowest of the last seven and 70% down on the 2013-2019 August mean (873.4 ±sd 1114.1). The emergence of a third generation was apparent from 5th September, indeed, for the third time in six years, this proved the peak month for sightings. The 241 logged on the 18th was the result of a whole-Island circuit and the highest ever September daycount. A further three three-figure daycounts contributed to an impressive total of 1285 butterfly-days, this the highest of the

last seven Septembers and 92% up on the seven year mean (670.1 ±sd 480.8). Counts dropped from mid-October, leading to a below average monthly total of 84 butterfly-days (an average inflated by the 350 logged in 2013). One at the Lime Kiln on 23rd October was the last of 2019, taking the annual total to a rather run-of-the-mill 2270 butterfly-days; the total was 18% down on that of 2018 and 5.6% below the 2013-2019 mean.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Maximum Daycount	0	1	21	8	40	30	241	22	0
2018	0	0	16	16	161	226	96	53	0
2017	0	1	74	57	42	47	19	11	0
2016	0	0	8	6	60	30	39	38	0
2015	0	12	47	18	18	98	15	10	0
2014	0	0	6	5	35	16	166	9	0
2019 Butterfly-days Total	0	2	237	57	345	260	1285	84	0
2018	0	0	93	92	767	941	665	198	0
2017	0	5	419	205	360	400	154	33	0
2016	0	0	48	31	289	295	360	101	0
2015	0	22	401	176	166	822	103	47	0
2014	0	0	45	13	250	94	1155	44	0

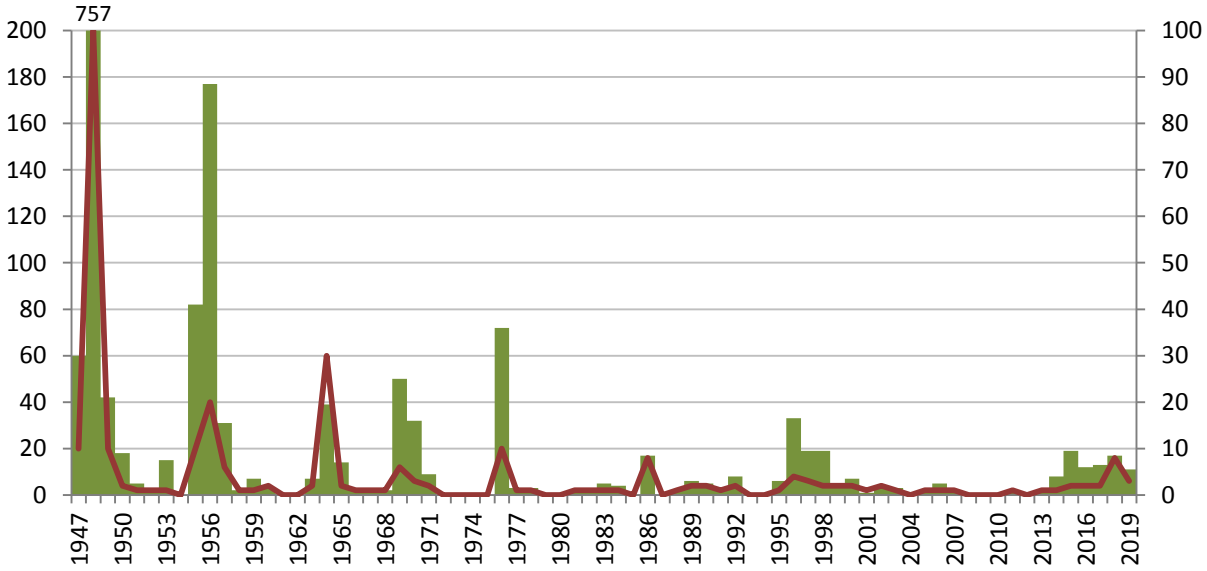
Long-tailed Blue *Lampides boeticus* (Linnaeus, 1767)
What was probably the most exciting non-avian record of 2019 was that of a Long-tailed Blue found nectaring on sheltered Goldenrod flowers along Isthmian Heath on 24th September. This remarkable encounter was a first for Pembrokeshire and just the second for Wales following an individual discovered at Kenfig National Nature Reserve, Glamorgan, on 23rd August this year. Both Welsh butterflies occurred during a period which saw an increase in records of this rare Mediterranean insect in the United Kingdom.

By the end of August over 50 butterflies had arrived from southern Europe to sites along the south coast of England. Eggs were found in several south coast counties during the month, meaning that insects in late September may have been the offspring of those which crossed the Channel first. It is thus possible that the Skokholm butterfly had emerged in the UK, although such individuals would

have made it difficult to detect further arrivals from southern Europe. Whilst the staff and volunteers all managed to enjoy this Pembrokeshire first, its time on Skokholm was short lived; as it flitted between Goldenrod plants it drew the attention of an east-bound Swallow, a bird which snapped up the rarity before heading out across Broad Sound.

Common Blue *Polyommatus icarus* (Rottemburg, 1775)
A late female on Home Meadow on 28th June was the first of the year, this 32 days later than the first of 2018 and the only record of the month. There were no July sightings, with a male at Billy's Dyke on 20th August the next to be seen; a lone male was at the same location for the next two days. There followed August counts of two on the 26th, three on the 27th (including two males in South Haven) and one at East Bay on the 29th which took the monthly total to nine; there were 16 butterfly-days logged in August last year, although this was noted as the best tally in any month since the 20 of August 1996. A lone insect on 13th September was the last of the year, taking the annual total to 11; although this was 35% down on the 17 of last year and the lowest total of the last five years, it was close to the seven year mean (11.6 ±sd 6.0) owing to lows of eight in 2014 and one in 2013. An increase in the extent of Greater Birds-foot-trefoil *Lotus corniculatus* in recent years may have provided an opportunity for this species to again establish itself on the Island; adults are regularly observed on the wing during both flight periods which adds some support to this theory. Although this species has been seen more regularly during the past six years than it was between 1999 and 2013, the digitised records show that it previously occurred in much larger numbers; there were 177 butterfly-days noted in 1956 and an Island record 757 butterfly-days in 1948.

The total number of Common Blue butterfly-days (green) and the maximum daycount logged in each year since 1947. Note that the 1948 peak of 757 is not accurately represented on this chart.



Amphibians

Common Frog *Rana temporaria*
Encounters with this amphibian on Skokholm have become exceedingly rare, indeed the presence of spring spawn has often been the only indication in recent times that frogs were still extant on the Island. However, for the last two years, March checks of the main water bodies have failed to find such evidence. Despite thorough searches of South Pond on the 2nd, 13th and 21st March and of the shallow pools around North Pond on the 24th, no spawn was found in 2019, this the third consecutive year without a record. A nocturnal walk through the boggy and wet areas of South Pond on 25th March failed to locate an adult by torchlight. Two adults were seen during the season however, the first among sedges at North Pond in the early hours of 21st August and the second

found on the Lighthouse Track near Migration Rocks, after dark on 6th October. This continues a run of low adult counts: there was a single at North Pond in 2018, three in 2017 and one in each year between 2013 and 2016 (with the 2015 record being of a dead frog). Although the low number of sightings and apparent lack of spawn imply that this species is struggling on the Island, spawning can occur as early as January in the southwest of Britain (Froglife, 2020); the Skokholm maritime climate, which typically sees ponds remaining ice-free during the early months of the year, may well mean that tadpoles and remnants of spawn have dispersed prior to the return of staff. The digitised records, although incomplete, suggest that numbers have also plummeted in the past; whereas 127 frogs were recorded in 1948, only six were found the following year. Adults can survive for up to 12 years; there is thus the potential for numbers to again increase if environmental conditions allow.

Mammals

European Rabbit *Oryctolagus cuniculus*

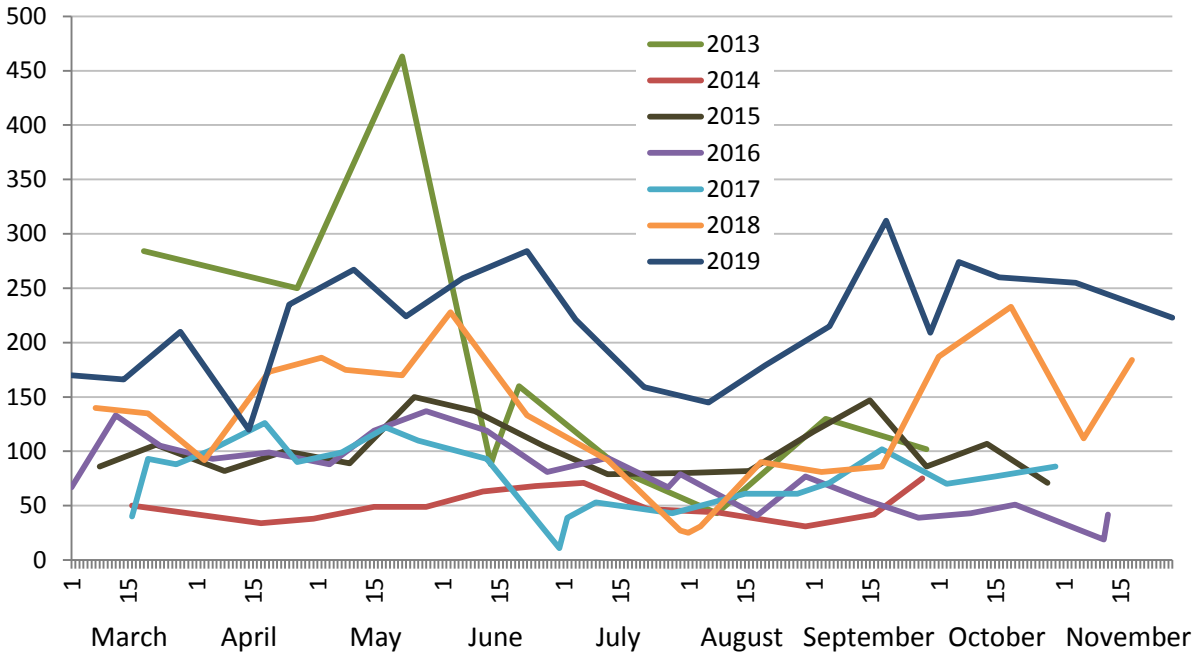
Rabbits within a 7ha plot were first monitored from a fixed point on the Knoll in the mid-1990s when an outbreak of Rabbit Viral Haemorrhagic Disease (RVHD) caused a significant decline in the Skokholm population. Monitoring of the same area has occurred ever since, although with varying degrees of regularity. Following the massive decline in numbers noted in 2013, a crash due at least in part to an outbreak of a new strain of RVHD (Westcott and Choudhury, 2015), a decision was made to increase the number of counts per month from one to two, this in order to gain more information on how numbers were changing during the year. Whilst both strains of RVHD are lethal to Rabbits, RVHD2 (present in the UK since 2013 and confirmed in two dead Skokholm animals that year) has a longer incubation period which allows the disease to spread more widely (RWAF, 2020).

Apparently diseased and non-depredated dead adults and juveniles were again found at various locations during the 2019 season. A small youngster in the Wheelhouse Heligoland on 9th April was the first sick animal to be logged, whilst an adult with respiratory difficulties outside of the Wheelhouse on the 21st was the only other sick individual to be noted during the month. The first dead Rabbit was found at the Well on 2nd May; there followed a further seven dead and ten sick individuals during the remainder of the month. Seven dead and seven sick animals were noted during June, whilst the July totals came to ten dead and five showing signs of illness; records came from across the Island, with sightings from the Quarry to the Neck. There were seven dead and one sick animal logged in August, one dead and one sick in September and one dead and two sick in October. The number of sick or dead Rabbits encountered in 2019 totalled 62, this 12.7% up on the 2018 figure; whilst there were 40% more sick Rabbits logged, the number of unmolested dead animals was almost identical to that of last year.

This year saw animals exhibiting symptoms commonly associated with both Myxomatosis (matted fur and fur loss, a lack of coordination, swollen faces, audible breathing difficulties and red, infected eyes) and of RVHD (partial or complete paralysis, seizures, breathing difficulties and death without external damage (typically within 24 hours of any visible symptoms)). Whilst there certainly continues to be a RVHD presence, it is also plausible that Myxomatosis has reached the Skokholm Rabbit population; although it has been suggested that the absence of the European Rabbit Flea *Spilopsyllus cuniculi* would prevent the spread of Myxomatosis on Skokholm (Thompson, 2007), the disease can be transmitted via several other arthropod vectors (Choudhury, *pers*. *comm*.). Animals suspected of suffering from Myxomatosis have not been tested.

Rabbits were censused in two adjacent North Plain plots on 21 evenings between 1st March and 2nd December, with the count commencing approximately 90 minutes before sunset when animals are typically more active (as stipulated by Thompson, 2007). The counts discussed below are the total number of animals recorded across both plots.

The total number of Rabbits logged during evening counts of the North Plain study area between 2013 and 2019.



The first 2019 survey on 1st March recorded 170 animals, this the highest March count since the population crash of 2013, a total 21% up on the first March survey of 2018 but 8% down on the final count of that year; this was the fourth spring since 2014 in which the first count has been lower than the last count of the preceding year. Numbers rose steadily throughout the spring, with the mid-April dip probably attributable to a run of poor weather impacting survey conditions rather than an actual drop in abundance; the mean April and May totals were the highest since 2013 and the 284 counted on 22nd June was the highest total in this month for seven years. Counts during the six previous years have revealed a regular dip in numbers during the summer (for example there were drops of 88% between 3rd June and 30th July 2018 and 91% between 18th May and 30th June 2017); the cause of this decline is unclear. A similar drop was seen this year, with numbers falling by 49% between 22nd June and 6th August; nevertheless the 145 logged on the latter date almost doubled the highest count to be recorded at a similar time during the previous six years. The monitored population increased rapidly during August and early September, with a total of 312 on 19th September being the highest this year, the highest count in any month since 22nd May 2013 and the highest autumn count of the last seven years. Numbers remained consistently high for the rest of

the season, with counts ranging from a low of 209 on 29th September to a high of 276 on 2nd December; the latter (not depicted on the above chart) was the last count of the year and the highest pre-staff departure tally of the last seven years.

Bats

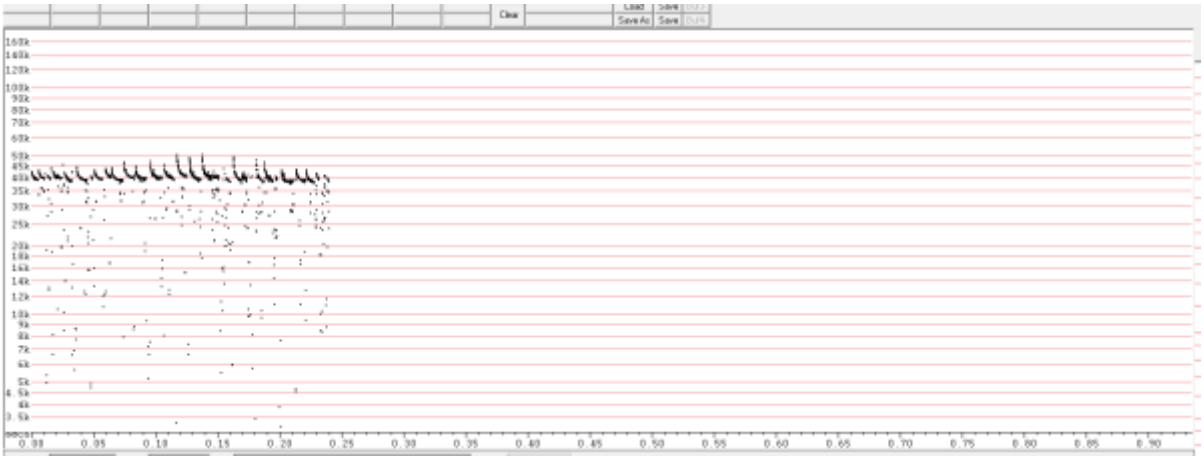
Bats have been surveyed on Skokholm since 2014 using an SM2 (an automated detector which is left in situ to record echo-locating bats which pass within its range). The use of such a device has allowed us to gather regular and systematic data, vastly improving our knowledge of the species which visit the Island. To maintain consistency with the previous five years, the SM2 was again located at the Well (housed in the Well hide and with the microphone facing due east). Since recording began here in 2014, the detector has been triggered by **Nathusius'**, **Soprano** and **Common Pipistrelles**, **Leisler's Bat**, **Noctule**, **Serotine** and **Greater Horseshoe**; additionally a ***Myotis* spp**. was also recorded, although this could not be identified to species. Although this set up has clearly yielded valuable information about the bats which have flown over the Well, it provides only a glimpse as to how these enigmatic mammals exploit the Island. Thus, with monies raised by Dave Astins competing in the Ironman Wales race, a second detector was purchased. This, an SM4, is a more portable and power efficient device; it was deployed on top of the North Pond hide where a more open habitat could be monitored. Additional records were obtained this year by regular Skokholm guest and bat expert Tina Wiffen of the Northumberland Bat Group; she used an AnaBat Express at various sheltered, coastal sites during late September.

Detectors were deployed at the Well on 8th April and at North Pond on 20th June; both remained in place until late October. The AnaBat Express was positioned above Purple Cove on 19th September, at Orchid Bog on the 20th, in the Quarry on the 22nd and 23rd, above North Haven on the 24th, 25th and 26th and in South Haven on the 27th, 29th and 30th September and on 1st October. In the following text a 'pass' refers to each occasion that the detector was triggered into recording.

A total of five species were identified this season, this a welcome improvement on the two of 2018. They included the first **Nathusius' Pipistrelle** since it was added to the Island list in 2014, the first **Soprano Pipistrelle** since 2015 and what was only the third Island record of **Serotine**. It also became just the third year in which **Greater Horseshoe** has been logged.

Nathusius' Pipistrelle *Pipistrellus nathusii*
The AnaBat Express placed at the Quarry on the night of 22nd September produced some exciting results. At 1932hrs a single pass was made by a Nathusius' Pipistrelle (below sonogram), this just the second Skokholm record following one logged at the Well on 18th September 2014. What was likely to have been the same animal triggered the detector a further four times in quick succession: twice at 1933hrs, once at 1934hrs and once at 1935hrs. In addition to these records, a total of 11 passes were attributed to '40kHz Pipistrelles', that is to say that it could not be determined whether the call was made by a Nathusius' or a Common Pipistrelle. When the detector was deployed at North Haven on the 25th, a single recording of a Nathusius' Pipistrelle at 2007hrs came during a period which saw 19 '40kHz Pipistrelle' passes. A total of six passes were thus logged in 2019, this a Skokholm record and a phenomenal result. The true status of this species in the UK remains unclear; it was first recorded as a vagrant in 1940, however an accumulation of records thereafter afforded it the status of winter migrant. A small number of UK maternity roosts have been found since the mid-1990s, confirming that this bat also breeds (Russ *et al*., 2001). In continental Europe, this species migrates from its breeding strongholds in the east, heading in a southwesterly direction to central and western Europe to overwinter. The appearance of individuals in the Shetland Islands and on oil platforms in the North Sea between September and November is regarded as evidence that breeding populations in Scandinavia also migrate in a southwesterly direction to avoid the harsh winter conditions there. Records of animals travelling in a northeasterly direction past North Sea oil

rigs in May further supports this theory, indeed it is now thought that Britain and Ireland occupy a region where resident bats are joined in winter by migratory individuals from the northeast of their range (Russ *et al*., 2001).



Soprano Pipistrelle *Pipistrellus pygmaeus*
This scarce Skokholm Pipistrelle was first recorded above Purple Cove at 2129hrs on 19th September (below sonogram). What was probably the same animal triggered the detector at 2130hrs and 2134hrs, whilst a fourth pass was recorded at 0003hrs on the 20th. Interestingly, neither the SM2 at the Well or the SM4 at North Pond picked up this species; perhaps it was feeding preferentially in the shelter of the north coast cliffs during what was a moderate southeasterly. These are the first recordings of this species since a single pass was logged at the Well on 15th September 2015. Single passes were detected at the Well on two dates in autumn 2014 and the first Soprano Pipistrelle for Skokholm was recorded in the Courtyard on 25th September 2013.

Serotine *Eptesicus serotinus*
A single pass recorded by the Well detector at 2340hrs on 14th September made this just the second year in which this species has been located on Skokholm. The first two records were obtained in 2016 when single passes were logged on 5th May and 20th September; the identification of these bats was confirmed by Steve Lucas, Wales Officer for the Bat Conservation Trust. Serotines are generally restricted to the south of the UK, mainly occurring to the south of a line drawn from the Wash to north Pembrokeshire.

Serotine/Leisler's Bat
Ten recordings were made where it could not be determined if the call was from a Serotine or a Leisler's Bat. There were no definite Leisler's Bats recorded this year.

Noctule *Nyctalus noctula*

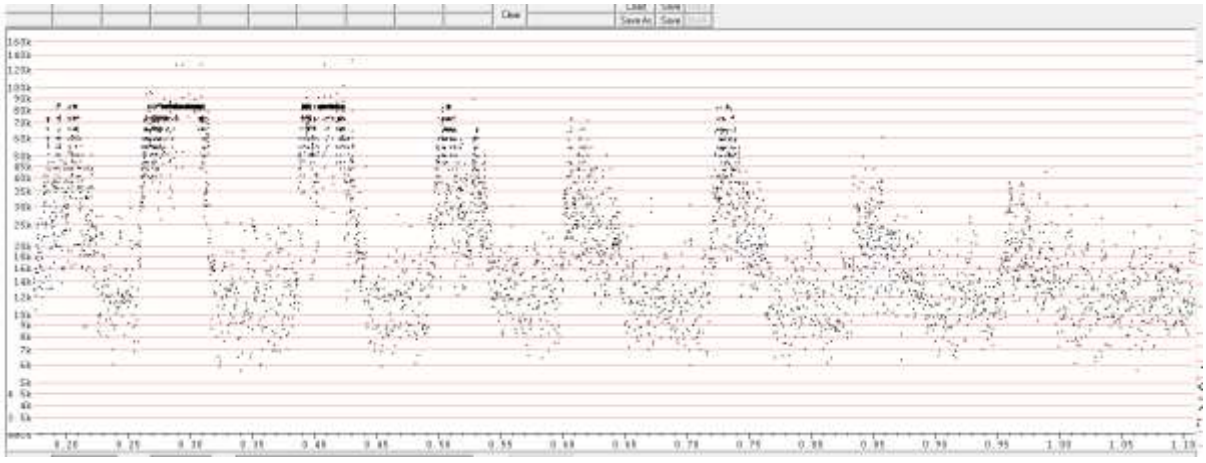
For a sixth consecutive year, Noctule was the most frequently recorded bat species on Skokholm. The first 12 passes were logged at the Well from 2057hrs on 8th April (the night that the detector was deployed); these were two weeks earlier than the first of last spring and it is possible that earlier passes were missed. A further 83 passes took the April total to 95 (there were just three in April 2018). There followed 83 in May (30 in 2018), 109 in July (13 in 2018), 90 in August (236 in 2018), 73 in September (13 in 2018) and 11 in October which included the last of the year, recorded at 1956hrs on the 21st. The 2019 total of 461 Well passes is the second highest tally of the last six years; there were 295 in 2018, 131 in 2017, 396 in 2016, 143 in 2015 and 621 in 2014. The device at North Pond was triggered by Noctules on 132 occasions in July, 48 times in August and three times in September, whilst the AnaBat Express logged three passes at Purple Cove on 19th September and eight at South Haven on 29th September. A combined 2019 tally of 655 was the highest number of Noctule passes yet recorded on Skokholm, although this clearly reflected effort and was close to that achieved by just the Well detector in 2014. Prior to the launch of passive bat monitoring on the Island in 2014, the only documented Noctule was a single logged in 1968. In the years between 2014 and 2016 peak activity at the Well occurred during September and October, the same period in which animals from northeast European populations migrate southwest (UNEP, 2015). That the Noctules logged over the Island could be long-distance migrants is an exciting idea, however no solid evidence exists at present to suggest that this is the case; the autumnal increase in numbers may just reflect the dispersal of juvenile and adult bats from the nearby mainland. Recordings made during the last three years have shown Noctule activity to peak in July or August, an arrival perhaps more indicative of dispersal from nearby.

Noctule/Leisler's Bat

A total of 45 passes were recorded at the Well where it could not be determined if the call had been made by a Noctule or a Leisler's Bat (19 in April, 12 in May, 13 in July and one in August). In 2018 there were 38 such passes.

Greater Horseshoe *Rhinolophus ferrumequinum*

The detector at the Well was triggered by a Greater Horseshoe at 0327hrs on 8th September (below sonogram). Remarkably a pass was also recorded at North Pond at 0501hrs on the same morning. Given that this is a species which rarely triggers the Skokholm detectors, it is tempting to think that it was the same individual at both sites; perhaps the animal was feeding in the sheltered areas around the Farm during the 1 hour, 34 minute period between recordings (which would be out of range for both devices), although clearly the presence of two animals cannot be ruled out.



Greater Horseshoes typically enter their roost at between five and 30 minutes before sunrise (Duvergé & Jones, 1994), which on 8th September 2019 occurred at 0635hrs. This raises the exciting

possibility that this individual was commuting to a sea cave roost when it was detected at North Pond. Droppings, found in one of the Purple Cove caves in 1993, were thought to be of this species (although it could not be confirmed at the time). Despite creating more questions than answers, the 2019 passes make this just the third year in which this species has been detected on Skokholm; in 2017 there were three passes on 6th April and single passes on 19th May and 3rd September, whilst the first definite Greater Horseshoes were in 2014 when two recordings were made on 2nd September and a single passed on the 23rd. Interestingly the September 2014 records also occurred relatively close to sunrise: at 0419hrs and 0512hrs on the 2nd and at 0542hrs on the 23rd.

Seals

Atlantic Grey Seal *Halichoerus grypus*

Grey Seals are present in the waters around Skokholm throughout the year. The rocks in South Haven and Crab Bay are the two main low tide haul-outs and it is here where the majority of non-breeding adults congregate. Both locations are part of the daily census route and are visible to overnight guests from the path network; a high proportion of the monthly totals are thus made up of counts from these areas (although visits do not always coincide with low tide). Daycounts are regularly supplemented by small numbers seen elsewhere around the Island, primarily off the Neck.

The pattern of attendance this year was typical of recent seasons. Counts were at their lowest in March, although a total of 48 was 92% higher than the 2013-2019 March mean (25.0 ±sd 12.7). Daycounts peaked during July, with frequently encountered large haul-outs taking the monthly total to 735; this was thus the sixth consecutive year in which the peak monthly total has been logged in July. Although the July tally was 9% down on that of last year (the highest total ever logged in a calendar month), it was 7% up on the seven year July average (686.6 ±sd 113.0). The number of Grey Seals observed around Skokholm is steadily rising; whilst a 2019 total of 3466 seal-days is 5% down on that of 2018, it is 46% up on the 2013 tally and 32% higher than the 2013-2019 mean (3061.9 ±sd 476.7). Three early December singles are not included in the table below.

The total number of Grey Seals logged during each recording month between 2014 and 2019, along with the maximum daycount recorded during each month.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
2019 Monthly Total	48	199	518	616	735	548	487	262	50
2018	34	105	505	662	806	767	464	245	50
2017	15	290	336	629	747	697	386	217	28
2016	25	254	507	514	724	503	428	151	14
2015	21	114	414	511	682	513	458	233	36
2014	10	85	284	486	658	458	357	132	31
2019 Maximum Daycount	9	24	37	37	47	42	35	25	11
2018	9	20	31	49	49	41	38	22	9
2017	2	22	29	42	60	32	32	18	11
2016	5	28	28	39	47	41	56	16	2
2015	7	16	36	38	45	35	43	17	6
2014	2	11	30	39	46	32	28	10	5

Pupping beaches are plentiful around the nearby mainland and on the islands of Skomer and Ramsey to our north, but suitable areas on Skokholm are few. As a result, pups are recorded in only very small numbers each autumn. The relatively sheltered and somewhat sandy coves of North Haven and Peter's Bay are seemingly the most frequently used and successful pupping beaches on the Island. Other bays, mostly around the Neck, are infrequently utilised and animals born in such exposed locations typically have less chance of survival. There are also a small number of caves around Skokholm where youngsters may go unrecorded.

On 25th September a heavily pregnant cow was observed in the eastern bay of North Haven. The following day, two afterbirth covered pups of the same size were found with the female who was also bloodied from the birth. It was strongly suspected that she had given birth to twins as there had been no other cows present; this is thought to be an extremely rare event among Grey Seals. Although females occasionally adopt second pups, both youngsters being fed by the same cow would add further support to the belief that they were indeed twins. An eight hour vigil from a hidden lookout on the 27th found that just one pup was feeding (the one distinguished by its darker snout), although the cow had presented her teats to both. A similar watch on the 28th witnessed the second, paler-faced pup being fed. It was suspected that the darker pup was feeding more regularly than the other; over the next few days a clear size difference developed. However from 4th October the skinnier animal was observed feeding more regularly and both looked well fed by the 9th. The dark faced pup was in heavy moult by the 10th and was apparently weaned by the 14th; the latter date saw its sibling, presumably underfed, crying repeatedly at the cow. Pleasingly, regular feeds were seen over the following days and an obvious weight gain resulted. The smaller pup was in heavy moult by the 17th and was seemingly weaned by the 20th. It thus took the female 25 days to successfully wean two pups; the average suckling period for one is 18-21 days (The Mammal Society, 2020). The first proven, wild born Grey Seal twins were at Horsey, Norfolk in 2015; the twins were confirmed via DNA testing by the Institute of Marine Research (having been taken into care when their mother had seemingly not fed them for 24 hours). There have since been a small number of possible cases, although, as with the Skokholm twins, these were not genetically confirmed.

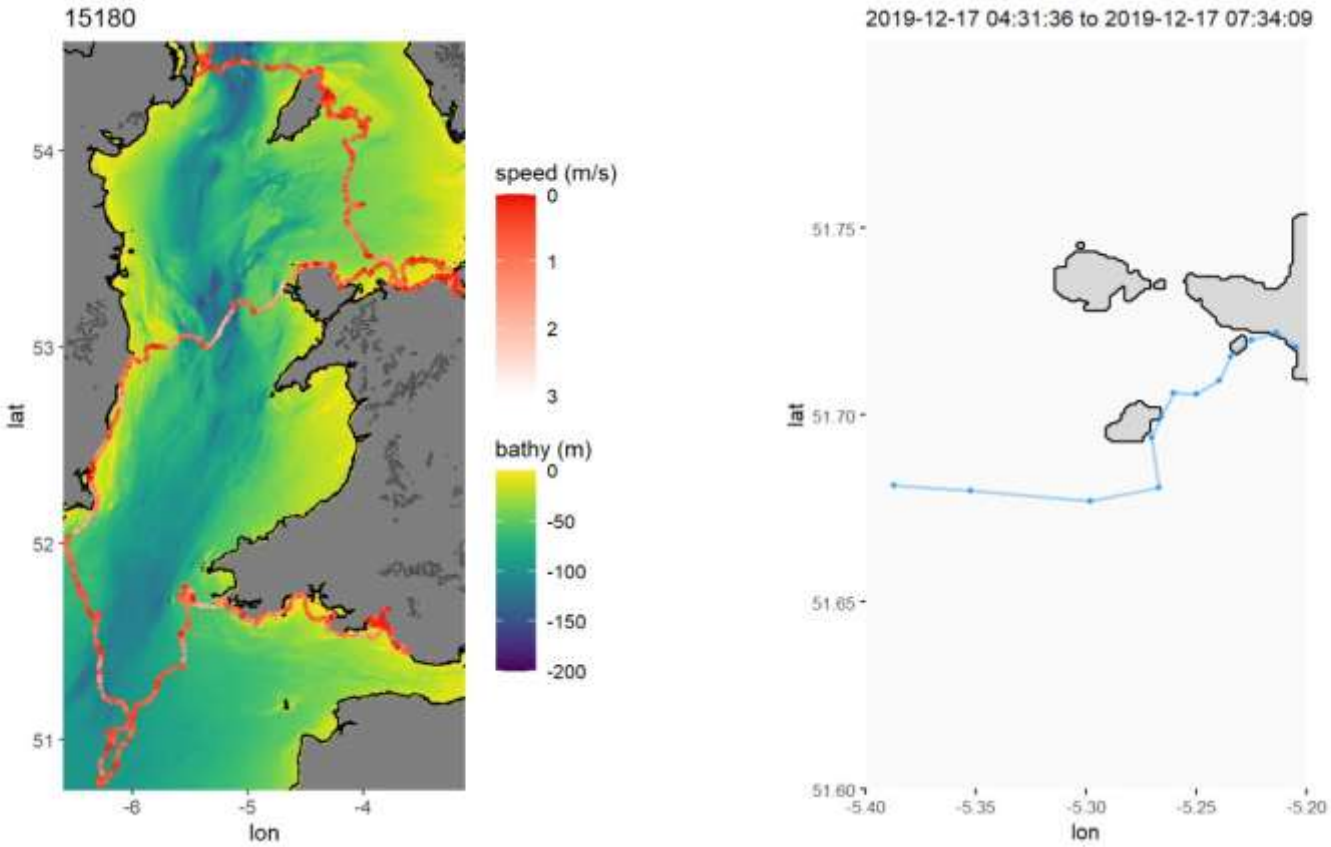
The first lone pup of the year was in North Haven on 19th September. A second was born at the same site on the 23rd and a third was found in Peter's Bay on the same date. On the 26th, the twins were born in North Haven and a sixth pup was found in Peter's Bay. On 2nd October pups seven and eight were in North Haven and South Haven, the latter of which was with a female in a difficult to observe position and had already begun its moult. The 6th saw a ninth pup in North Haven and a tenth in Peter's Bay. Another new pup at North Haven on the 13th was the 11th of the year and a new-born found at Dumbbell Bay on the 28th was the 12th and last of 2019. This is a remarkable total for Skokholm, the best count of the last seven years following what was regarded as an exceptional

2018 autumn (when ten were recorded). Only two pups were found in both 2017 and 2016, five were logged in 2015, there were two in 2014 and three in 2013; the 2019 total is thus 134% up on the seven year mean (5.1 ±sd 4.2).

Common Seal *Phoca vitulina*

A juvenile female Common Seal was removed from the wild and rehabilitated in the Exploris Aquarium in Northern Ireland during the 2019 breeding season (where it was named Merida). Along with another rescued animal named Ariel, it was fitted with a GPS tag by SeaMonitor, a collaborative environmental project led by the Loughs Agency and supported by eight leading marine research institutions. Both seals were released back into the wild on 17th November at Knockinelder Beach, Portaferry, Northern Ireland. The tracks revealed that on 17th December, Merida passed along the south coast of Skokholm, having spent time at nearby Grassholm Island the day before. British waters are estimated to hold approximately 55,000 Common Seals, this less than half a Grey Seal population currently estimated at 120,000 animals (Mammal Society, 2020a). The closest Common Seal breeding colonies and haul outs to Skokholm are in Northern Ireland, from where they extend in a clockwise direction from the southern Firth of Clyde, around the coast of Scotland and eastern England to the Thames Estuary (JNCC, 2020). Skokholm encounters with Common Seals are thus unsurprisingly rare, indeed this becomes just the second year with a record and the first since 1963 (when up to two animals were present on five September dates between the 2nd and 26th).

The movements of a juvenile female Common Seal, as revealed by a GPS tag.



Cetaceans

Harbour Porpoise *Phocoena phocoena*

Largely owing to their often infrequent and rather discreet surfacings, sightings of this diminutive cetacean are very much dependent on the suitability of sea conditions for viewing; although the Skokholm records would suggest that fewer animals are present early and late in the season, it is

possible that Porpoise are harder to see during these periods and that they are present around the Island throughout the year. Two animals off the Lighthouse on the 12th were the first in what proved an excellent March, the total equalling that of 2014 as the highest of the last seven; the bulk of the total was made up of the 11 seen off the south coast on the 26th (this the highest March daycount by some margin, up on the four of 8th March 2014). Despite the good start, it was a disappointing year for Porpoise, indeed there were sightings on only 43 dates during the season (this a figure 39% down on that of 2018 and 40% down on the 2013-2019 mean (71.6 ±sd 20.8)). Although seawatching effort was comparable with previous years, a complete lack of sightings during June clearly impacted this total (animals were seen on 12 dates last year), as did the low number of August and September observations. It was not only the number of encounters which was down this year; although a minimum of 12 on the 5th was the highest daycount of the last seven Julys, peak daycounts of two in August and four in September were both the lowest of the last seven years. An August porpoise-days total of nine was 81% below the seven year average (46.7 ±sd 24.8), whilst a September total of 12 was 74% down on the same period (45.6 ±sd 25.0). A single off the Lighthouse on the 18th made this just the fourth November of the last seven with a record, whilst a later staffing presence provided the first December record of recent times (this a single off the Lighthouse on the 2nd). Despite these late observations, a 2019 porpoise-days total of 125 was the lowest of the last seven years, a total 38% down on that of 2018 and 45% down on the 2013-2019 mean (228.4 ±sd 84.9). A typically low number of young were sighted this year, with single calves logged on 26th July and the 8th and 25th September; there was one in 2018, two in both 2017 and 2016, six in 2015 and eight in 2014.

The total number of Harbour Porpoise logged during each recording month between 2014 and 2019, along with the maximum daycount made each month and the number of days during each month on which there was a sighting.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019 Monthly Total	16	13	19	0	49	9	12	5	1	1
2018	1	14	17	54	27	43	38	5	1	-
2017	0	47	31	14	57	49	51	3	0	-
2016	2	21	41	13	42	55	40	8	0	-
2015	4	21	21	11	23	82	58	26	1	-
2014	16	39	35	46	86	66	91	12	0	-
2019 Maximum Daycount	11	5	5	0	12	2	4	3	1	1
2018	1	4	4	8	5	11	11	5	1	-
2017	0	10	14	7	11	13	23	2	0	-
2016	2	10	11	6	10	13	8	8	0	-
2015	3	5	5	3	8	16	20	15	1	-
2014	4	9	8	7	10	10	15	3	0	-
2019 No. of Days Recorded	3	5	8	0	12	5	6	2	1	1
2018	1	4	9	12	14	14	11	5	1	-
2017	0	12	8	5	21	14	9	2	0	-
2016	1	8	15	4	10	13	14	1	0	-
2015	2	8	10	6	10	21	13	5	1	-
2014	7	12	12	15	21	17	20	8	0	-

Risso's Dolphin *Grampus griseus*

A pod of five on 1st May, which included a small calf, were watched travelling northwest through Broad Sound between the Neck and Gateholm. These, the only animals of the season, made this the seventh consecutive year in which this distinctive and robust dolphin has appeared close to the Island (and the third of the last seven years with a record of a calf). There were sightings on three dates in both 2018 and 2016, on four dates in 2017 (one calf), 2015 and 2013 (three calves) and on one date in 2014. Whilst in recent times they have been encountered more regularly, earlier Skokholm sightings of this species proved erratic; there were records in 15 years between 1958

and 1998 but no documented observations in the 14 years between 1999 and 2012.

Short-beaked Common Dolphin *Delphinus delphis*

A minimum of six travelling west off the Quarry on 28th April were the first of the season and almost nine weeks earlier than the first of last year; this becomes the fourth year of the last seven with an April record. The next sighting was not until 6th June when two passed close to the Lighthouse (there have only been animals in two of the last seven Mays). A further three took the monthly total to five, the second poorest tally of the last seven Junes (69% down on the 2013-2019 mean (16.0 ±sd 13.7)). The frequency of encounters increased during July; sightings on six more dates than in July 2018 took the dolphin-days total to 57 (a 128% increase). By contrast the next two months proved disappointing. Although seawatching effort was comparable with previous years, there were 69% fewer August dolphin-days than in 2018 and the total of 95 fell 52% below the seven year August mean (199.14 ±sd 119.41); despite the drop, August still proved to be the peak month for sightings in 2019. The number of September encounters fell 48% below the mean (13.4 ±sd 4.0), whilst the resulting total of 77 dolphin-days was 52% down on that of 2018 and 63% below the seven year September average (207.3 ±sd 116.4). Sightings on two October dates produced a dolphin-days total of 20, this the best showing in this month of the last seven years; there have only been October encounters in three previous seasons. A pod of seven watched heading into the Wild Goose Race on 18th November and a minimum of 68 energetically feeding off the Lighthouse on 2nd December were the first sightings in these months for at least seven years, and perhaps ever (there are no records beyond October in the digitised log). The December observation took the annual dolphin-days total to 335 animals logged over 39 dates; despite the biggest daycount of 2019 occurring at a time without a 2013-2018 staffing presence, the tally was still the second lowest of the last seven years, 37% down on both the 534 of last year and the 2013-2019 mean (528.9 ±sd 191.7).

A small pod of three adults, off the Lighthouse on 20th August, contained the first echelon positioned calf of 2019. There was one further August calf sighting, two on two September dates and one in November. Whilst a total of seven calves was close to the six of 2018, it was a rather poor showing compared with 2017 when a minimum of 29 young were noted between April and September.

The total number of Short-beaked Common Dolphin logged during each recording month between 2014 and 2019, along with the maximum daycount made each month and the number of days during each month on which there was a sighting.

Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019 Monthly Total	0	6	0	5	57	95	77	20	7	68+
2018	0	0	0	23	25	309	161	16	0	-
2017	0	19	0	25	111	222	379	0	0	-
2016	0	10	3	40	91	114	122	0	0	-
2015	0	10	3	6	156	407	192	0	0	-
2014	0	0	0	3	101	134	359	6	0	-
2019 Maximum Daycount	0	6	0	3	10	16	28	10	7	68+
2018	0	0	0	14	10	45	21	8	0	-
2017	0	19	0	25	24	45	120	0	0	-
2016	0	6	3	32	20	42	40	0	0	-
2015	0	10	3	6	80	86	35	0	0	-
2014	0	0	0	2	29	30	50+	6	0	-
2019 No. of Days Recorded	0	1	0	2	11	14	7	2	1	1
2018	0	0	0	3	5	18	20	4	0	-
2017	0	1	0	1	10	19	15	0	0	-
2016	0	4	1	3	7	7	11	0	0	-
2015	0	1	1	1	8	24	13	0	0	-
2014	0	0	0	2	11	16	15	1	0	-

Fish

Common Thresher Shark *Alopias vulpinus*
A single fish was observed breaching twice, approximately 200m south of the Lighthouse at 1830hrs on 23rd July; this was the first sighting of this species from Skokholm. In 2017, whilst chumming for seabirds in the Celtic Deep (approximately 20 miles offshore), Island staff and guests aboard the Dale Nelson watched one energetically breaching. In 2015 a member of the Dale Sailing crew saw a breaching individual from a boat positioned half a mile to the west of Skokholm Lighthouse. It would appear that this spectacular shark is occurring more regularly in the waters around the Island.

Common Ocean Sunfish *Mola mola*
One drifting rapidly west past the Lighthouse on 1st August was the first of the year. Singles were off Howard's End on the 16th and 29th August, whilst one in Mad Bay on 23rd September was the last of 2019. Records of this strange pelagic fish from the waters around Skokholm are scarce and sporadic; a year total of four is thus a good showing and equals the second best tally of the last six years. One was found approximately one mile to the South of Skokholm in 2018 (from the Irish Ferry), there were four records in 2017, seven in 2016 and two in 2015. There were no sightings in either 2014 or 2013, although the period between 1992 and 2012 saw Sunfish logged in ten years.

Atlantic Bluefin Tuna *Thunnus thynnus*
The remarkable highlight of a 29th September seawatching session at the Lighthouse was the appearance of a breaching Bluefin Tuna, the largest and most globally endangered of the three Bluefin species. It was seemingly the first documented record in the waters around Skokholm and comes during a period which has seen an increase in the number of British sightings. Although the number seen in UK waters has fluctuated over the last two centuries, an increased presence since the early 2000s is thought to be due to hydroclimatic variability as a result of the Atlantic Multidecadal Oscillation (AMO) (Faillettaz *et al*., 2019). The AMO is a climatic cycle affecting the sea surface temperature of the North Atlantic; a negative phase causes temperatures to decrease and a positive phase causes temperatures to increase, the switch occurring approximately every 60 to 120 years. The number of warm blooded Atlantic Bluefin Tuna in British waters increases during positive phases; the AMO has been in such a phase since the mid-1990s (Faillettaz *et al*., 2019).

European Eel *Anguilla anguilla*
An individual measuring approximately 40cm was found in Well Stream on 27th March. Smaller eels were found at the same site on 1st April and on the 6th and 8th June. There were July sightings at the Well on the 30th and 31st, with a mature individual found at Orchid Bog on the latter date. Probably as a result of more regular observer effort, the frequency of encounters increased during August; a total of 13 logged at Orchid Bog over five dates included a peak of five on the 23rd, whilst three singles were at the Well. One at Orchid Bog on 2nd September was the only record of the month and a fish measuring approximately 20cm in Well Stream on 27th October was the last of the year. The cumulative total of eel-days is largely dependent on the frequency of nocturnal visits to the Well and Orchid Bog (the two sites on Skokholm which contain water throughout the summer); a 2019 total of 25 was down on the 91 of 2018 but up on the 15 of 2017, the singles logged in 2016, 2015 and 2014 and the three of 2013. Maximum daycounts are a more comparable measure between years; there was a peak of five in 2019, seven in 2018, three in 2017 and one in 2016, 2015, 2014 and 2013.

Lockley reported elvers wriggling up the cliffs at freshwater outfalls around the Island and mature adults have been noted in several ponds historically (Thompson, 2007). The digitised Log suggests that this species previously occurred, or at least was recorded, in larger numbers; high counts include the 74 logged in 1954 (with a peak daycount of 11 on 13th September) and an impressive 190 in 1955 (with a peak of 26 on 15th August). Sadly the European Eel has undergone catastrophic declines due to a range of threats faced at multiple stages of its life history. Over the last century

recruitment has fluctuated, but in the last 45 years it has declined by 90-95%, whilst the number of mature silver eels departing for the Sargasso Sea has declined by 50-60% in the same period; unsurprisingly this species is now Critically Endangered (SEG, 2018). The huge drop in recruitment is due in part to the food trade; despite it now being illegal to sell European caught eels outside of Europe, it is still legal within the EU and each year approximately 15 to 17 tonnes of youngsters are caught as they enter rivers (before being sent to aquaculture farms to grow on before sale). Furthermore there is illegal international trading; around 20 tonnes of young eels were illegally transported to Asia between 2015 and 2016 (SEG, 2018).

Plants

Grazed by a fluctuating Rabbit population and frequently battered by salt laden winds, the composition of vegetation on Skokholm is in a state of subtle but constant change. Two patches of **Rosebay Willowherb** *Chamaenerion angustifolium*, containing a total of 21 flower spikes, were discovered in an area of the Bog adjacent to South Pond in 2017; as the first Skokholm examples of this species, its appearance was met with concern by the Islands Conservation Advisory Committee as, should it spread, the dense woody stalks may impair the movements of our breeding Manx Shearwaters. A decision was made to pull up any future growth, however no plants were found in either 2018 or 2019. A **Common Gorse** *Ulex europaeus* bush in the Well Heligoland has struggled to survive since 2013; in recent years it played host to what was suspected to be a Honey Fungus *Armillaria* spp. This year the bush was found to be dead; Common Gorse is thus now extinct on Skokholm (it was planted in the Well Rabbit exclosure in the late 1980s where it flourished). Further monitoring is required as Honey Fungus has the potential to attack the roots of many woody and perennial plants. Following the 2018 confirmation of **Small Adder's Tongue Fern** *Opheoglossum azoricum* near the North Coast permanent vegetation quadrat 25, a single frond was found at the same site on 15th June this year; with the healthiest Rabbit population since spring 2013, grazing pressure was again high across the Island and no further plants were located. Following its discovery at Windmill Gully in 2017, **Bittersweet** *Solanum dulcamara* now appears to be well established along the track edge; whilst the number of plants were not counted this year, it was noticeably more widespread than it was when four plants were counted two years ago.

Observers, Photographers and Literature Cited in the Text

Observers cited in the text. Many other people provided records at the evening log, far more than can be listed here. We are hugely grateful to everybody who contributed during the 2019 season.

AE	Alice Edney	IH	Ishbel Hayes	RDB	Richard Brown
BB	Bryony Baker	JH	Jenni Hood	SIH	Simon Hooton
BD	Billy Dykes	JMH	Jodie Mae Henderson	SUH	Sue Hooton
CB	Chris Brown	KF	Kirsty Franklin	SV	Stephen Vickers
DB	Dorothy Blatcher	KO	Katie Oliver	SW	Stephen Westerberg
EW	Eric Wood	LP	Lucy Parkes	TW	Tina Wiffen
GE	Giselle Eagle	PB	Phil Blatcher	VM	Verity Miles
IB	Ian Beggs	RD	Richard Dobbins		

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