



Strategic Compensation Studies

Isles of Scilly Breeding Seabird Habitat Assessment

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Further information can be found via the [Strategic Compensation Studies](#) webpage.

Purpose of this Report: This report forms part of the SCS Predator Reduction work package and aims to assess the potential for habitats on the Isles of Scilly to support breeding seabirds in the absence of rats. Recommendations are also made for additional management required to ensure the habitat remains suitable for breeding seabirds, in addition to the ongoing biosecurity and monitoring necessary following a rat eradication.



Isles of Scilly Breeding Seabird Habitat Assessment

**RSPB report to the Offshore Wind Industry Council
October 2025**

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Executive summary

The Isles of Scilly Seabird Recovery Project is in development, which looks to build on the successful eradication of rats from St Agnes and Gugh, through delivery of a rat eradication across the remaining off-islands and provide long-term biosecurity and management to support seabird recovery. The project is exploring the role that a rat eradication on the Isles of Scilly off-islands can play in supporting the development of strategic compensation measures supporting offshore wind consenting.

As part of this project development, a critical need has been identified to assess the potential for habitats on the Isles of Scilly to support breeding seabirds in the absence of rats. Funding was provided by OWIC (Offshore Wind Industry Council) to complete this work as part of a wider agreement through the Isles of Scilly Seabird Recovery Project.

Field-based assessments were carried out in June 2025, involving comprehensive visual assessments of the available breeding habitat for all 13 regularly breeding seabirds on the Isles of Scilly. Habitat assessments were completed across 71 sites on 50 islands. Particular attention was given to habitat availability for Guillemot and Razorbill, both subject to current specific compensation considerations. This report summarises the results and conclusions from this work.

An estimated 505 ha of 'rat-free' suitable breeding habitat would become available following a rat eradication of St Martin's, Tresco, Bryher and the associated islands. This would bring the total rat-free potential breeding habitat available on the Isles of Scilly to 619 ha, supporting an estimated 40,000 breeding pairs of seabirds if other factors were not limiting (Table 1). Overall, the impact of the potential new rat-free habitat could strengthen the Isles of Scilly's national and potentially international significance for breeding seabirds.

Specific breeding seabird locations are described in the report, with the potential numbers of birds that rat-free habitat could support provided as estimates, based on evidence from the Isles of Scilly and other seabird colonies, alongside expert judgement. Recommendations are made for additional management required to ensure habitat remains suitable for breeding seabirds, in addition to the ongoing biosecurity and monitoring necessary following a rat eradication.

Potential breeding habitat for seabirds on the Isles of Scilly encompasses a range of habitat types, including bare rocks, boulder beaches, and maritime heath grassland and scrub. The extent to which individual seabird species could benefit from a rat eradication varies. For species most vulnerable to predation by rats, nocturnal burrow nesters such as Manx Shearwater and Storm Petrel, this could be transformative in providing larger areas of suitable breeding habitats. The Isles of Scilly has the potential to support tens of thousands of breeding pairs of these species, including a Manx Shearwater population of global significance. For Guillemot and Razorbill, rat eradication would free up new areas of suitable breeding habitat, though the overall habitat availability for these species is more restricted due to the limited availability of undisturbed rocky habitats. Ongoing management would be required for several species, for example vegetation management for Lesser Black-backed Gull.

To fully assess the suitability of rat eradication as a compensatory measure for offshore wind, further viability work is required to determine other factors which may impact the utilisation of this breeding habitat and the rate of seabird population recovery. Potential factors include prey availability, additional pressure (e.g. bycatch), and impacts of climate change on the wider environment. Quantifying probable population increases in seabirds following rat eradication, and potential timescales for recovery, requires consideration of these other factors.

Table 1. Summary of habitat availability (including currently rat-free islands) and estimated breeding seabird populations following rat eradication on the Isles of Scilly.

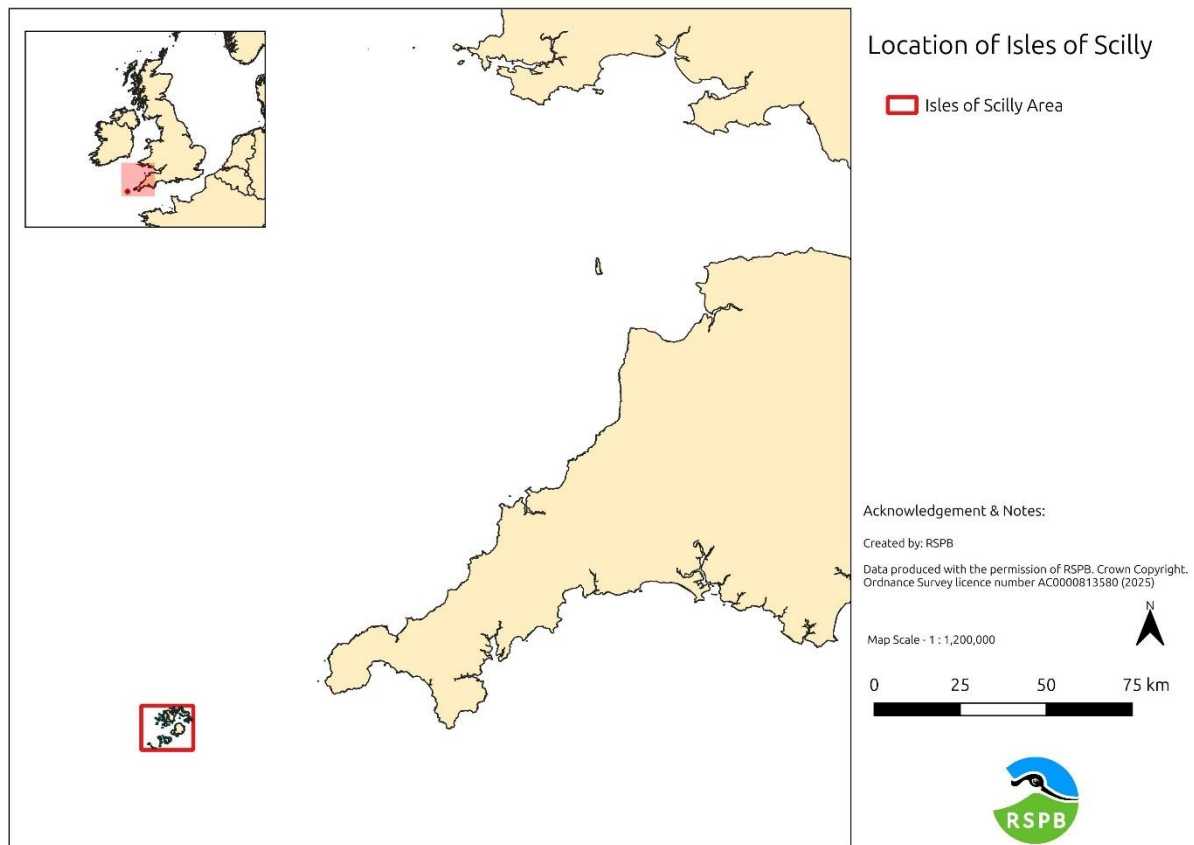
Species	Potential rat-free habitat area	Potential population band (breeding pairs)	Habitat availability and additional requirements
Fulmar	Not recorded	101-500	Not limiting for the numbers of birds involved. Widespread.
Manx Shearwater	266.3 ha	>10,000	Extensive and widespread. Additional 134.8 ha could be made suitable with habitat management.
Storm Petrel	181.4 ha	>10,000	Extensive and widespread. Additional 65.6 ha could be made suitable with habitat management
Cormorant	Not recorded	51-101	Not limiting for the numbers of birds involved.
Shag	Not recorded	1,001-2,000	Widespread and not limiting for number of birds involved. Potentially some management of public access required.
Lesser Black-backed Gull	178.19 ha	2,001-5,000	Extensive and widespread. Additional management of vegetation and access required.
Herring Gull	207.27 ha	501-1,000	Extensive and widespread. Additional management of vegetation and access required.
Great Black-backed Gull	176.6 ha	501-1,000	Extensive and widespread. Additional management of vegetation and access required.
Kittiwake	Not recorded	101-500	Not limiting for the numbers of birds involved. Focused protection and management required.
Common Tern	Not recorded	101-500	Not limiting for the numbers of birds involved. Focused protection and management required.
Guillemot	789 m ²	1,001-2,000	Restricted to few suitable islands.
Razorbill	9,519 m ²	2,001-5,000	Widespread. Some management of access required.
Puffin	9.86 ha	1,001-2,000	Widespread. Some management of access and habitat required.

1. Introduction

The Isles of Scilly are one of the most important breeding seabird sites in England, with 13 regularly occurring breeding seabirds (listed in Table 2, alongside their conservation status). These seabird populations are significantly constrained, however, by the presence of Brown Rat *Rattus norvegicus* on the Isles of Scilly (Heaney et al. 2008). The location of the Isles of Scilly is shown in Map 1.

An Isles of Scilly Seabird Recovery Project¹ is in development, which builds on past work including the successful eradication of Brown Rat from St Agnes and Gugh in 2006. The proposed Seabird Recovery Project includes the eradication of rats from a large part of the archipelago, and the ongoing biosecurity and management of the archipelago required following such a rat eradication, to support long term seabird recovery. As part of this project development, there is a critical need to assess the potential of the breeding habitat for seabirds, when their presence is not constrained by the presence of rats. In particular, there is a need to identify whether a lack of available habitat is a constraint on seabird recovery.

Map 1. Location of the Isles of Scilly.



¹ The Isles of Scilly Seabird Recovery Project involves a partnership of the Isles of Scilly Wildlife Trust, Duchy of Cornwall, RSPB, Tresco Island Limited, Natural England, the Isles of Scilly Bird Group, Trinity House, the Council of the Isles of Scilly, Isles of Scilly Farmers and Growers, Royal Society of Wildlife Trusts, and the support of the Isles of Scilly National Landscape alongside local communities.

Table 2. Regularly breeding seabird species on the Isles of Scilly and their Birds of Conservation Concern 5 (BoCC5) and Great British regional IUCN (GB IUCN) assessment status (Stanbury et al. 2024).

Common name	Scientific name	BoCC 5 status	GB IUCN assessment
(Northern) Fulmar	<i>Fulmarus glacialis</i>	Amber	Critically Endangered
Manx Shearwater	<i>Puffinus puffinus</i>	Amber	Least Concern
(European) Storm Petrel	<i>Hydrobates pelagicus</i>	Amber	Least Concern
(Great) Cormorant	<i>Phalacrocorax carbo</i>	Green	Least Concern
(European) Shag	<i>Gulosus aristotelis</i>	Amber	Vulnerable
Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber	Least Concern
Herring Gull	<i>Larus argentatus</i>	Red	Endangered
Great Black-backed Gull	<i>Larus marinus</i>	Red	Critically Endangered
(Black-legged) Kittiwake	<i>Rissa tridactyla</i>	Red	Endangered
Common Tern	<i>Sterna hirundo</i>	Amber	Vulnerable
(Common) Guillemot	<i>Uria aalge</i>	Amber	Vulnerable
Razorbill	<i>Alca torda</i>	Amber	Vulnerable
(Atlantic) Puffin	<i>Fratercula arctica</i>	Red	Critically Endangered

Funding was provided by OWIC (Offshore Wind Industry Council) to the Wildlife Trusts and RSPB to support the commencement of project development work. As part of the agreement, the RSPB was responsible for delivering a habitat assessment to determine the potential extent of breeding habitats for seabirds on the Isles of Scilly. Field-based assessments were carried out in June 2025, involving comprehensive visual assessments of the available breeding habitat for all 13 regularly breeding seabirds. An interim report was provided to OWIC as part of this agreement in July, with this final report summarising the results of that assessment.

2. Rationale for habitat assessment

The presence of invasive rats is widely considered a primary inhibitor of seabird recovery on the Isles of Scilly (Heaney et al. 2008). In addition to rat presence, there are other wider factors that may limit population recovery, such as the availability and suitability of breeding habitat, foraging resource availability, other potential influences on breeding productivity and potential for immigration from other sites.

This study provides an assessment of the available breeding habitat to support seabird species on the Isles of Scilly if rats were successfully eradicated. We use expert judgment, alongside appropriate evidence from the Isles of Scilly and other breeding seabird sites, to provide an indication of how many breeding seabirds the Isles of Scilly could potentially support if this habitat was managed appropriately. This assessment was completed for all 13 species of regularly breeding seabirds across the whole archipelago (excluding St Mary's, where there are very few breeding seabirds and it is not considered feasible to eradicate rats).

This study does not provide an assessment of the timescales over which this could be achieved or the likelihood of recovery to this level. This would require further modelling and potentially a wider understanding of the other pressures limiting seabird productivity.

We also identify additional management measures that may be required to support seabird recovery alongside the rat eradication, for example habitat management, access and disturbance management, and additional artificial nest site provision. These measures could be built into future phases of the development of the Isles of Scilly Seabird Recovery Project and other ongoing management work on the Isles of Scilly. In addition, it is important to note that following rat eradication interventions, ongoing biosecurity and monitoring are required.

3. Aims

- Provide an overview of habitat availability for all 13 regularly breeding seabirds on the Isles of Scilly, once the pressure from rats is removed.
- Identify additional management measures required (in addition to ongoing biosecurity and monitoring following a rat eradication) to support the recovery of seabirds on the Isles of Scilly.
- Provide specific information on habitat availability, following rat eradication, for Guillemot and Razorbill, and any additional management measures required, to inform current compensation discussions.

4. Methods

All key sites (current, former, and potential) for all 13 regularly breeding seabirds were visited to carry out detailed habitat assessments, consisting of:

- Visual assessment, viewing all currently occupied and potential areas of habitat to determine suitability for breeding birds.
- Recording occupancy and future potential.
- Undertaking photographic assessment and mapping of areas and key habitats.

Field work was carried out between 12 and 21 June 2025 by RSPB technical experts familiar with seabirds on the Isles of Scilly, through boat-based and land-based assessments. This allowed close access to islands for recording, but no landing on uninhabited islands occurred. Land-based assessments were undertaken for inhabited islands and those islands most easily viewed from land.

Habitat availability for Manx Shearwater and Storm Petrel was informed by previous habitat assessments for St Agnes and Gugh (Heaney & St Pierre 2012) and for St Martin's, Treco, Bryher and uninhabited islands (Knott Nixon & St Pierre 2023).

Field work followed all appropriate health and safety protocols. Support and advice was provided by the Isles of Scilly Wildlife Trust. St Agnes Boating provided boating services. A map detailing the individual island groups of the Isles of Scilly referred to throughout this report is shown in Appendix 1. An example site recording form, as used for the habitat assessments, is shown in Appendix 2.

5. Results

In total, the habitat assessments covered 71 sites across 50 islands. These comprised St Martin's, Tresco Bryher and the uninhabited island groups, which are included in the proposed rat eradication area covered by the Isles of Scilly Seabird Recovery Project, alongside the rat-free islands in the St Agnes/Gugh/Annet group (see map in Appendix 1).

An assessment form was completed for each site (see example in Appendix 2). This included field notes of habitat features, and photographs taken during the June 2025 visit.

Notes were made of numbers of breeding birds using the sites at this time. The first auk chicks were observed on the water from 9 June 2025, meaning that some breeding auks would have already departed breeding sites, whilst some non-breeding birds may also have been present at potential sites at this time. It should therefore be considered that counts recorded in the field visit window will not represent accurate counts of breeding numbers.

The recorders noted that it was difficult to map accurately the available habitat for the boulder nesting species (Guillemot and Razorbill) when viewing only from boat, due to the nature of the habitat with, for example, hidden crevices and cavities. We therefore suggest treating the area of habitat mapped for Guillemot and Razorbill as indicative. We are, however, confident that we have identified the key islands that support suitable habitat and the relative extent of these habitats. Exploring the use of drones to provide more detailed assessment of this habitat type, including the identification of additional areas of suitable habitat, especially between boulders, is recommended if further detail is required.

The results of the habitat assessments have been used to estimate the total areas of habitat suitable for each of the 13 regularly occurring breeding species, within both rat-free islands and islands where rats are present. We have examined changes in occupancy of different areas with reference to Isles of Scilly seabird survey data and reports (e.g. Heaney et al. 2024) to assess whether the habitat is likely to be limiting recovery for each species.

6. Habitat assessments

6.1. Overview

The land area of the Isles of Scilly is approximately 1,600 hectares (ha). Of this, the current rat-free area (St Agnes/Gugh/Annet, the Western Rocks and other islets) is 180 ha, and the proposed rat eradication project covering St Martin's, Tresco, Bryher and the associated uninhabited islands would cover 762 ha. This would bring the total rat-free land area on the Isles of Scilly to 942 ha.

This land area includes large areas of enclosed land that is unsuitable for breeding seabirds such as buildings, gardens, enclosed pasture, and bulb fields. These should therefore not be considered as part of the total potential breeding habitat available. Excluding this enclosed land, the area of unenclosed land within the rat-free St Agnes/Gugh/Annet area is 114 ha, and for the proposed rat eradication area 505 ha, bringing the total area rat-free potential seabird breeding habitat to 619 ha (David Mawer, Duchy of Cornwall, pers. comm.).

Most of the land area suitable for breeding seabirds is flat or gently sloping bracken-, bramble-, and honeysuckle-dominated maritime grassland and heath. Most islands are typically fringed with boulders and rock outcrops with cavities and fissures. Some of the outer islands comprise

bare rock, with some rock stacks and low cliffs. Overall, these habitats provide excellent opportunities for all 13 regularly breeding seabirds on the Isles of Scilly to flourish in a rat-free environment.

Areas were assessed as not suitable for breeding seabirds if they were observed to be currently dominated by rank vegetation and scrub, had unrestricted public open access and regular disturbance, or are on very thin soils (and not suitable for burrow nesters).

Below we report on the habitat assessments for each of the 13 regularly breeding seabird species on the Isles of Scilly. For each species we broadly assess the current available breeding habitat, potential new available habitat ‘released’ through the eradication of rats and identify any additional management measures that might be required to support longer term recovery. We also assess historic data and recent trends to provide an indication of the populations that these habitats could support in the future, following rat eradication. Where relevant, we refer to data from the four seabird breeding censuses of Britain and Ireland². It should be noted that in some locations there may be competition for space between certain species (discussed further in the relevant species accounts).

In assessing rat status, all islands are assumed to have rats except the following:

1. St Agnes/Gugh/Annet /Western Rocks complex, from which rats were eradicated in 2013.
2. Other remote islands with no vegetation to support rats – specifically Men-A-Vaur, Hanjague, Seal Rock, Scilly Rock, and Maiden Bower.

The results are summarised in Table 3 below. Each regular breeding species is discussed individually below. Given the current focus on Guillemot and Razorbill as compensation species, these species are dealt with first and in more detail. The areas of current and potential breeding habitat are illustrated in Maps 2-14.

² Operation Seafarer (1969-70), 1985-88 Seabird Colony Register Census (SCR Census), Seabird 2000 (1998-2002) and Seabirds Count (2015-2021) (see Burnell et al. 2023).

Table 3. Summary of habitat availability (including current rat-free islands), additional management required and potential breeding populations for the 13 regular breeding species on the Isles of Scilly following rat eradication.

Species	Potential habitat area	Habitat availability comment	Additional management required	Potential population (breeding pairs)*	
				Band	Estimate
Fulmar	Not recorded	Not limiting for numbers of birds involved. Widespread.		101-500	Up to 300
Manx Shearwater	266.3 ha	Extensive. Widespread.	Additional area of 134.8 ha could be made suitable with habitat management	>10,000	20,238 (+ 10,245 on additional area under suitable management)
Storm Petrel	181.4 ha	Extensive. Widespread.	Additional area of 65.6 ha could be made suitable with habitat management	>10,000	16,000 (+ 5,806 on additional area under suitable management)
Cormorant	Not recorded	Not limiting for number of birds involved.		51-101	100 (maintenance)
Shag	Not recorded	Not limiting for number of birds involved. Widespread.	Potentially some management of access.	1,001-2,000	1,500 – 2,000
Lesser Black-backed Gull	178.19 ha	Extensive. Widespread	Areas require additional management of vegetation and access	2,001-5,000	3,000
Herring Gull	207.27 ha	Extensive. Widespread.	Areas require additional management of vegetation and access	501-1,000	1,000
Great Black-backed Gull	176.6	Extensive. Widespread.	Areas require additional management of vegetation and access	501-1,000	Up to 1,000
Kittiwake	Not recorded	Not limiting for number of birds involved.	Require focused protection and management to recover vulnerable population.	101-500	200
Common Tern	Not recorded	Not limiting for number of birds involved.	Require focused protection and management to recover vulnerable population.	101-500	200
Guillemot	789 m ²	Restricted to few suitable islands.		1,001-2,000	1,578–1,972
Razorbill	9,519 m ²	Widespread.	Some management of access required.	2,001-5,000	1,904–4,759
Puffin	9.86 ha	Widespread.	Some management of access and habitat required.	1,001-2,000	651-1875

*Potential population figures are provided in population bands alongside detailed estimates based on evidence from the Isles of Scilly and other seabird breeding sites (see species accounts).

6.2 Guillemot

Summary

- Suitable breeding habitat restricted to a few suitable islands.
- Rat eradication would release 341 m² of habitat which could support 681-852 pairs.
- Including existing rat-free habitat, the potential habitat could hold an estimated 1,578-1,972 breeding pairs.

Habitat requirements

- Colonial breeders often at very high densities.
- Preferred nesting habitat comprises ledges on sea cliffs, also occurring on boulder scree and a variety of rocky habitats on rocky islands (Tuck 1960; Parslow 1996).

Habitat on the Isles of Scilly

On the Isles of Scilly, Guillemots nest on a limited number of uninhabited rocky islands. Nesting on open ledges on cliff faces is rare or absent. This is in part due to the lack of this habitat, but occupancy of this habitat may have declined (Heaney pers. comm.), which could be linked to rock surface temperatures (Olin et al. 2023) and/or predation. The decline in use of this habitat has also been observed in some Welsh colonies. Most nest under or around large boulders, or on ledges tucked into gullies or overhangs, usually on bare rock or bare earth (Figure 1). They often use sites that overlook deeper water and face into the archipelago, with these locations likely to provide shelter from storms and cooling benefits.

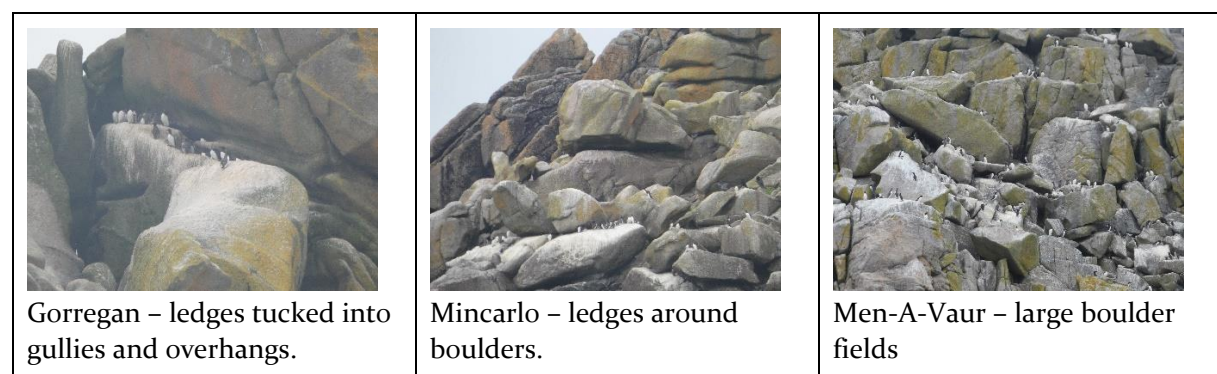


Figure 1. Examples of Guillemot habitats on the Isles of Scilly.

Historic numbers

There is archaeological evidence of Guillemot and Razorbill from several sites on the Isles of Scilly (Turk 1971; Turk 1984). Guillemots were reported to have once ‘nested in great profusion’ (Clark and Roddy 1906), though Robinson (2003) queries this, given other reports of far lower numbers and refers to Smart (1885-86) naming only Men-A-Vaur, Scilly Rock and Hanjague as breeding sites, with an estimated total population at 30 pairs or fewer.

Guillemots had become scarce by the late nineteenth century, with, for example, just one egg found at that time on Scilly Rock and three eggs on Gorregan, both recent strongholds. Several observers also note that Guillemot was far less widespread and abundant on the Isles of Scilly than Razorbill. As with Razorbill, their use of boulder habitat also makes counting precise numbers difficult. Robinson (2003) refers to many birds as ‘subterranean’.

In the 1960s, Penhallurick (1969) suggested a total of 50 pairs were present, with 25 on Men-A-Vaur, eight on Scilly Rock and 17 on Gorregan. From the start of organised systematic seabird counts, numbers have therefore been in the region of 50 pairs.

Trends since 1970s

There has been a gradual increase in numbers since the 1970's but Guillemots remain concentrated on very few islands. There has been a significant increase since 2015 (Figure 2).

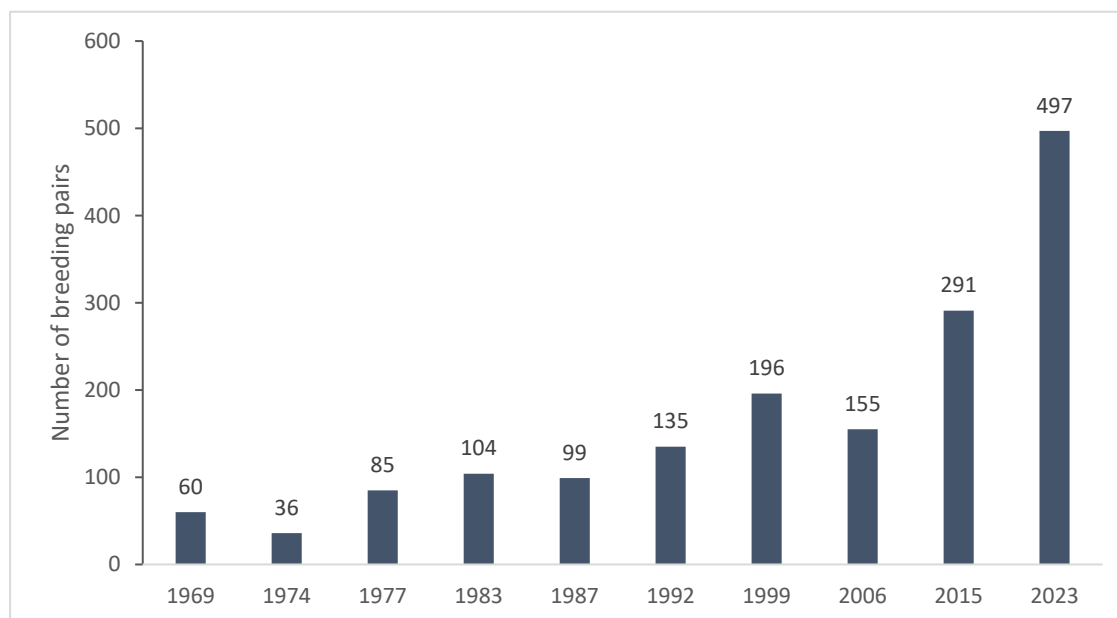


Figure 2. Numbers of breeding Guillemot on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

Current distribution and available habitat

Breeding Guillemot are currently restricted to only seven islands with most of the Isles of Scilly population of 497 pairs breeding on Gorregan with 343 pairs (69%), Men-A-Vaur with 60 pairs (12%) and Mincarlo with 80 pairs (16%). Changes in numbers of breeding pairs on individual sites on the Isles of Scilly between 1999 and 2023 are shown in Table 4.

Table 4. Change in number of breeding pairs of Guillemot on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Colony Site	1999	2006	2015	2023	% Change since 2015
Men-A-Vaur	117	95	110	60	-46%
Gorregan	39	31	99	343	+247%
Scilly Rock	39	29	60	1	-98%
Mincarlo	1	0	20	80	+300%
Melledgan	0	0	2	0	Abandoned
Round Island	0	0	0	5	New site
Hanjague	0	0	0	1	New site
Rosevear	0	0	0	1	New site
Total	196	155	291	497	+71%

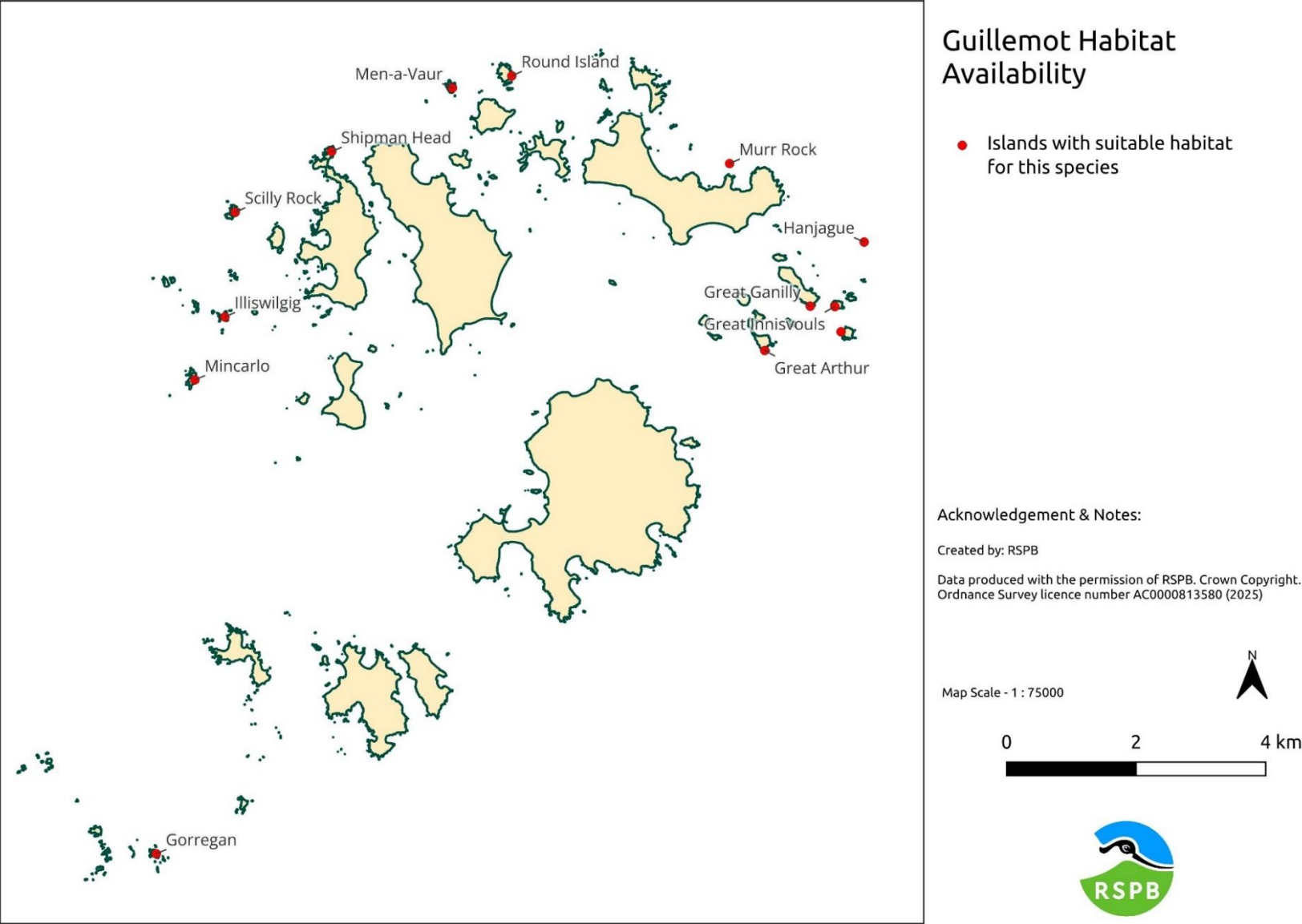
Potential habitat exists on these currently occupied islands and on a limited number of additional islands. Rat eradication would provide additional rat-free areas (Table 5), though Guillemots are already concentrated on those islands less likely to be impacted by rats because of their isolation and lack of vegetation to sustain rats.

Table 5. Estimated area of potential habitat for Guillemot for each island.

Island name	Island group	Area available for Guillemot (m ²)	Rat status
Shipman Head	Bryher + satellites	133.03	Rats
Great Ganilly	Eastern Isles	67.22	Rats
Great Innisvoul	Eastern Isles	39.72	Rats
Hanjague	Eastern Isles	8.24	No rats
Menawethan	Eastern Isles	13.14	Rats
Mincarlo	Norrard Rocks	69.29	Rats
Scilly Rock	Norrard Rocks	113.93	No rats
Men-A-Vaur East	St Helen's group	20.56	No rats
Men-A-Vaur mid	St Helen's group	42.87	No rats
Men-A-Vaur West	St Helen's group	92.54	No rats
Round Island	St Helen's group	18.25	Rats
Gorregan	Western Rocks	170.15	No rats

Islands with suitable habitat for Guillemot are shown in Map 2, with example images from these islands in Figure 3.

Map 2. Guillemot habitat availability on the Isles of Scilly.



		
Shipman Head	Great Arthur	Great Ganilly
		
Great Innisvouls	Hanjague	Menawethen
		
Illiswilsgig	Mincarlo	Scilly Rock
		
Men-A-Vaur	Murr Rock	Round Island

Figure 3. Sites on the Isles of Scilly with Guillemot breeding habitat.

In total it is estimated that there is 788.94 m² of potential habitat available for Guillemot. This comprises 448.29 m² of habitat within the current rat-free area, and 340.65 m² that could be released through a rat eradication (Table 6).

Table 6. Summary of available habitat for Guillemot on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (m ²)	448.29	340.65	788.94
Additional area of habitat requiring additional management (m ²)	0	0	0
Total (m ²)	448.29	340.65	788.94

Current and potential densities of breeding birds

Guillemots typically breed in higher densities than Razorbill. However, on the Isles of Scilly Guillemots do not breed at high densities as there are few of their preferred cliff ledges, with birds instead nesting amongst boulders and rock crevices. Birkhead (1977) describes nesting densities of Guillemot on Skomer as ‘dense’ when reaching above 10 pairs/m², as ‘medium’ at 5.5 pairs/m² and ‘sparse’ at 2.5 pairs/m² density. Given the atypical habitat on the Isles of Scilly, we consider that even this ‘sparse’ density (2.5 pairs/m²) may be too high to use for estimating potential.

The highest breeding density of Guillemot currently found on the Isles of Scilly is the 2 pairs/m² found on Gorregan (343 pairs within 174 m² of habitat), which is a rat-free, undisturbed island. We therefore recommend estimating numbers based on reaching potential densities ranging from 2–2.5 pairs/m².

Potential of habitats to support breeding Guillemot

Across Britain and Ireland, overall increases in populations have been observed since the Operation Seafarer census of 1969–70, up to the Seabird 2000 census, followed by a slight decrease since then but still an increase in number of breeding sites overall. In Wales and the south-west of England the population is still increasing, including a notable breeding population increase on Lundy post rat eradication (from 2,321 pairs in 2004 to 12,202 pairs in 2025, Price et al. in prep.). Prospects for supporting an increasing population on the Isles of Scilly are positive, but as the area of suitable habitat is limited, the potential increase in the numbers of birds is unlikely to be high. Quantitative population estimates from the past are very limited, and those available do not indicate that the Isles of Scilly supported very large numbers of Guillemots previously.

Potentially suitable habitat was noted on 10 islands, including two locations not currently occupied. Small numbers of Guillemots could additionally occur outside of these areas within boulder areas supporting Razorbills. There is potential for competition with Razorbills for the same space.

With 788.94 m² of potential habitat, the potential number of breeding Guillemot could rise from the current level of 497 pairs to 1,578–1,972 pairs (2–2.5 pairs/m² respectively). This includes 340.65 m² potential habitat (43% of the total area) on islands with rats that could be freed up through rat eradication, supporting 681–852 pairs (at 2–2.5 pairs/m²). 57% of the potential habitat is on islands that are already rat-free.

No other additional management was identified to support Guillemot recovery, as they are most likely to occupy the more remote unvegetated islands that do not require any vegetation management or management of disturbance.

6.3. Razorbill

Summary

- Less restricted in distribution than Guillemot.
- Rat eradication would release 4,260 m² of habitat which could support 852-2,132 breeding pairs.
- Including existing rat-free habitat, the potential habitat could hold an estimated 1,904-4,759 breeding pairs.
- Additional habitat and access management required to safeguard populations.

Habitat requirements

- Nest on boulder beaches and on ledges and crevices on coastal cliffs, often associated with Guillemots.
- Due to the cryptic nature of breeding habitats, nests are often hidden in crevices between boulders making them a difficult species to census.
- Significantly different nesting habitat requirements to Guillemot, preferring enclosed spaces to open-topped ledges, and usually nest at much lower densities than Guillemot (Birkhead 1978; Harris & Wanless 1989; Hipfner & Dussureault 2001).

Habitat on the Isles of Scilly

Razorbill nest in boulder beaches, larger scree, and boulder “chokes” in gullies, under or behind larger boulders and in the cracks, worn joints and crevices in exposed granite cliffs and slopes on outcrops adjacent to the sea (Figure 4). Sites are located on uninhabited rocky islands and islets.



Figure 4. Examples of Razorbill habitat on the Isles of Scilly.

Historic numbers

Razorbills were reported as nesting in ‘extraordinary’ and ‘countless’ numbers by the late nineteenth and early twentieth century (Clark & Rodd 1906), particularly on the Western Rocks and islands to north of Bryher. Penhallurick (1969) reported that Razorbill outnumbered Guillemots 3:2 but earlier estimates put this at a remarkable 20:1. Razorbills were clearly more abundant and widespread than Guillemot on the Isles of Scilly, but because of their habitat preference counting precise numbers was difficult (Robinson 2003).

Trends since 1970s

Razorbills are currently found at 16 sites and are the most abundant and widespread of the three auk species. The bulk of pairs nest on three islands; Mincarlo, Men-A-Vaur and Gorregan. Over the last nine years the number of pairs breeding on the Isles of Scilly has increased by 12%, with increases in birds breeding on the Scilly Rock, Eastern Isles and at Shipman Head, Bryher (Figure 5).

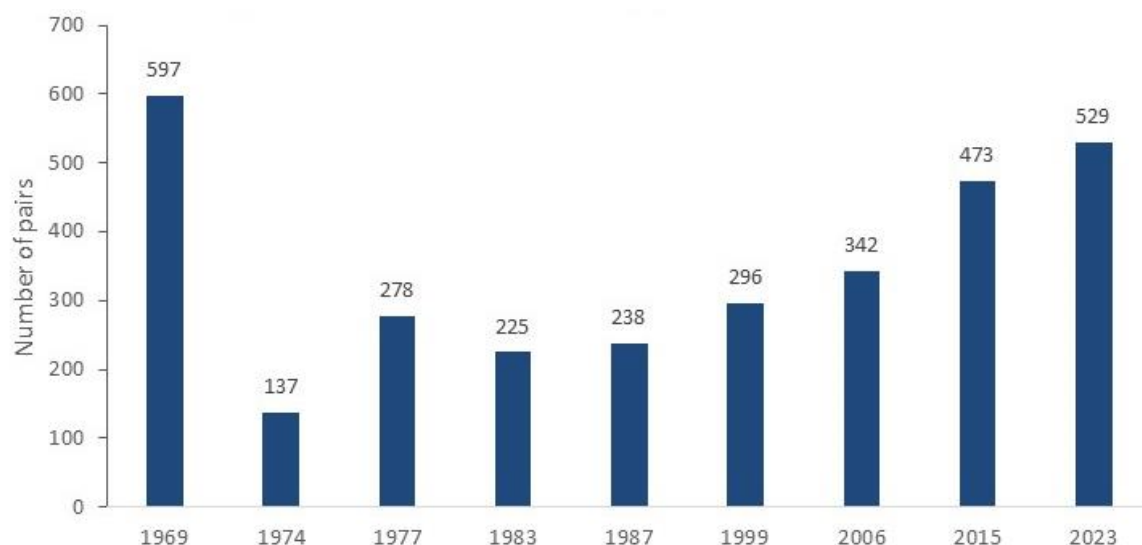


Figure 5. Numbers of breeding Razorbill on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

Current distribution and available habitat

Until 2000, Razorbills were largely restricted to the same islands supporting most of the Guillemots – Gorregan, Mincarlo and Men-A-Vaur – but are now spreading into new areas and are much less restricted in distribution than Guillemot. The change in numbers of breeding pairs on individual sites on the Isles of Scilly between 1999 and 2023 is shown in Table 7.

Table 7. Change in number of breeding pairs of Razorbill on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Colony Site	1999	2006	2015	2023	% Change since 2015
Norrard Rocks	103	129	232	226	-3%
Western Rocks	85	107	109	116	+6%
Men-A-Vaur	101	90	88	100	+14%
Eastern Isles	3	12	37	51	+38%
Annet	4	4	5	3	-40%
Shipman Head, Bryher	0	0	2	30	1400%
St Agnes	0	0	0	2	New site
Round Island	0	0	0	1	New site
Total	296	342	473	529	+12%

Potential future breeding habitat exists on these currently occupied islands and on a limited number of additional islands, including potential on the inhabited islands (Table 8a and Table 8b). Islands with suitable breeding habitat for Razorbill are shown in Map 3, with images from a some of these sites in Figure 6.

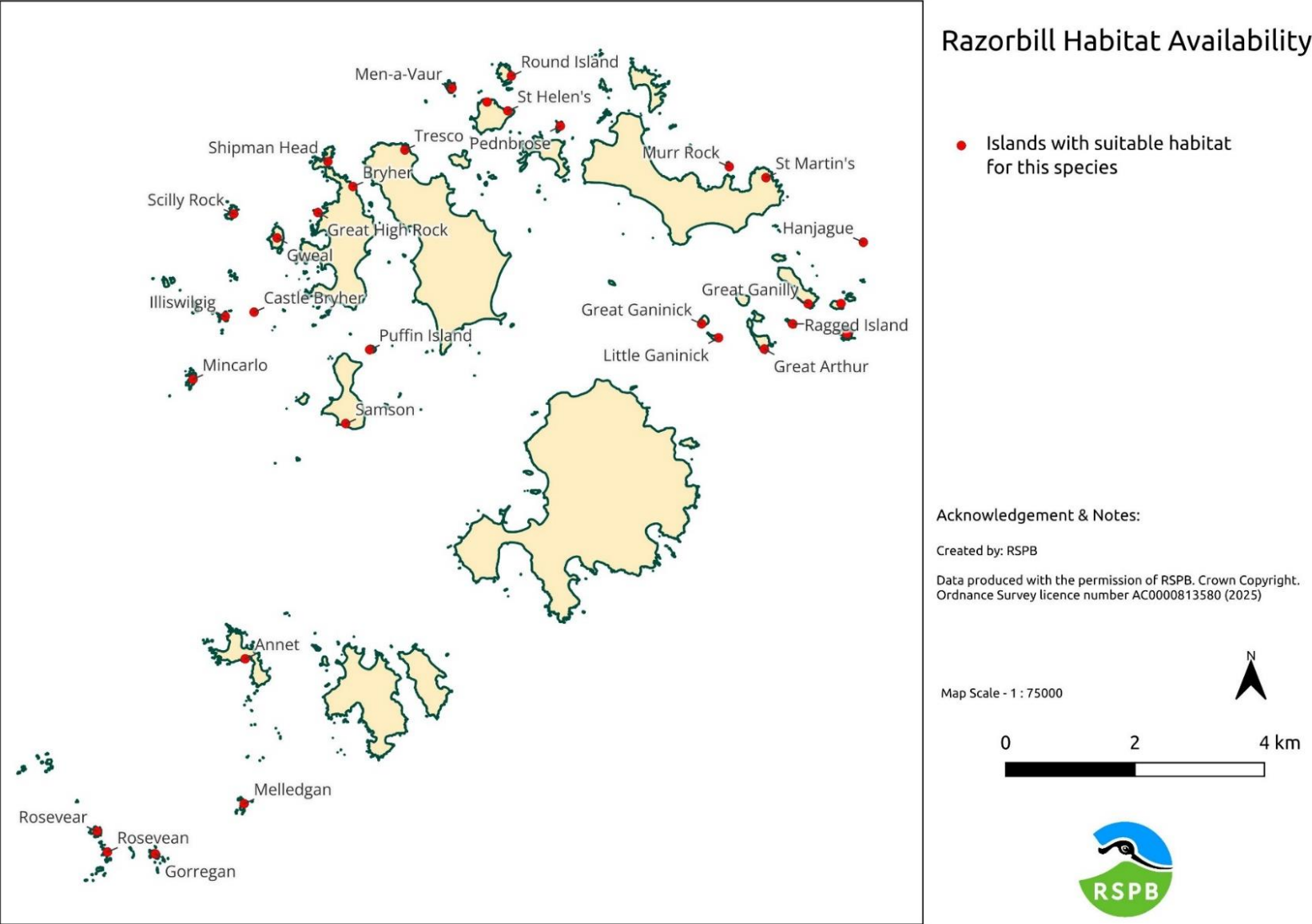
Table 8a. Estimated area of potential habitat for Razorbill for each island.

Island	Island group	Area available for Razorbill (m ²)	Rat status
Annet	Annet	158.09	No rats
Shipman Head	Bryher + Satellites	562.19	Rats
Great Arthur	Eastern Isles	114.13	Rats
Great Ganilly	Eastern Isles	163.66	Rats
Great Ganinick	Eastern Isles	25.04	Rats
Great Innisvouls	Eastern Isles	685.24	Rats
Hanjague	Eastern Isles	3.80	No rats
Little Ganinick	Eastern Isles	165.33	Rats
Little Innisvouls	Eastern Isles	37.48	Rats
Menawethan	Eastern Isles	160.30	Rats
Ragged Island	Eastern Isles	179.17	Rats
Castle Bryher	Norrard Rocks	179.14	Rats
Gweal	Norrard Rocks	726.23	Rats
Illiswilgig	Norrard Rocks	340.08	Rats
Mincarolo	Norrard Rocks	701.37	Rats
Scilly Rock	Norrard Rocks	703.19	No rats
Puffin Island	Samson + Satellites	10.28	Rats
Men-A-Vaur	St Helen's Group	939.70	No rats
Round Island	St Helen's Group	18.25	Rats
St Helen's	St Helen's Group	25.82	Rats
Murr Rock (St Martin's)	St Martin's + Satellites	27.03	Rats
St Martin's	St Martin's + Satellites	139.45	Rats
Gorregan	Western Rocks	987.79	No rats
Melledgan	Western Rocks	1,069.70	No rats
Rosevean	Western Rocks	158.60	No rats
Rosevear	Western Rocks	1,238.23	No rats

Table 8b. Estimated total area of potential habitat for Razorbill on the Isles of Scilly.

Total Area (m ²) for Razorbill	
No Rats	5,259.04
Rats	4,260.19
Total	9,519.23

Map 3. Razorbill habitat availability on the Isles of Scilly.





Melledgan



Gorregan



Rosevean



Rosevear



Annet



Mincarlo



Gweal



Illiswilsgig



Castle Bryher



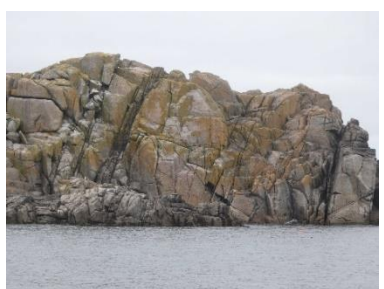
Scilly Rock



Bryher



Great High Rock



Shipman Head



Men-A-Vaur



Round Island

		
St Helen's	St Martin's Head	Great Ganilly
		
Great Ganinick	Great Innisvoul	Hanjague
		
Little Ganinick	Little Innisvoul	Menawethan
		
Great Arthur	Ragged Island	

Figure 6. Sites with Razorbill habitat on the Isles of Scilly.

In total it is estimated that there is 9,519.23 m² of potential habitat available for Razorbill. 4,260.19 m² of this would be released through a rat eradication, including an additional 500 m² requiring additional management (Table 9).

Table 9. Summary of available of habitat for Razorbill on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (m ²)	5,259.04	3,760.19	9,019.23
Additional area of habitat requiring additional management (m ²)	0	500	500
Total (m ²)	5,259.04	4,260.19	9,519.23

Densities

Razorbills typically nest at much lower densities than Guillemots. The highest nesting densities for Razorbill recorded by Elisseou (2020) and Legard and Davoren (2025) were 0.65 birds/m² and 0.86 birds/m², respectively (Natural England 2025).

The highest density of breeding Razorbills is currently found on Scilly Rock, with 81 pairs on 703 m², Gorregan with 80 pairs on 987 m² of habitat and Men-A-Vaur with 100 pairs on 939.7 m². All three sites hold a breeding density of 0.1 pairs/m². We suggest that a density of 0.2 birds/m² could be used, though consider that densities of up to 0.5 pairs/m² may be achievable.

Potential of habitats to support breeding Razorbill

Overall numbers of Razorbill have increased in Britain and Ireland over recent decades. Although declines have been observed in Scotland, there are significant increases in the south-west of England and Wales. Numbers on Lundy have increased from 841 to 4,508 pairs in 2025 following rat eradication in 2004 (Price et al. in prep). The recent trends on the Isles of Scilly are positive and in line with the regional trend. Also, unlike Guillemot, eradication of rats would make significant additional suitable breeding habitat available, with the potential to establish new colonies on new islands, and for some existing small colonies to increase.

With 9,519 m² of potential habitat, at a density of 0.2 pairs/m², the potential number of breeding pairs could rise from the current level of 529 to 1,904. At a density of 0.5 pairs/m² this could reach 4,759 pairs. 4,260 m² of this habitat (45% of the area) is on 'rat present' islands and would be made available through the rat eradication project. This could support between 852 and 2,132 pairs (at density of 0.2 and 0.5 pairs/m² respectively). Potential habitat was noted at 24 sites around Scilly indicating the potential for Razorbill to expand its range.

As potential Razorbill habitat occurs on some islands that do not currently have seasonal access restrictions, including inhabited islands on St Martin's and Bryher, some management of access to these key areas would be required to enable Razorbills to colonise this otherwise suitable habitat.

Potential disturbance issues at some other sites would need to be monitored where more accessible areas may be subject to disturbance during the breeding season. As with Storm Petrel, the lowest lying boulder beach habitat could be vulnerable to sea level rise, especially on the Western Rocks (for example on Gorregan).

6.4 Fulmar

Summary

- Breeding habitat widely distributed and unlikely to be limiting.
- Estimated population of up to 300 breeding pairs.
- Recent declines may be at least partly driven by national scale issues such as bycatch and food availability.

Habitat requirements

- Widely distributed species with the largest numbers on offshore islands or large multi-species cliff colonies
- Nest sites can vary from bare rock of cliff faces, on old building ruins and walls, flat ground at the base of stone walls and even sand dunes (Burnell et al. 2023).

Habitat on the Isles of Scilly

Mainly nest on cliffs but also on the ground next to rock faces, from where they can fly direct over the sea. Breeds in small numbers on many islands, including the inhabited islands of St Martin's, Bryher and St Agnes.

The area of breeding habitat was not mapped in detail, but suitable breeding habitat is widely distributed (see examples in Figure 7). Habitat which supported peak numbers of Fulmar in the early 2000s is still present and available for the breeding birds. The available habitat is therefore not thought to be limiting for the potential numbers of breeding Fulmar likely to occur on the Isles of Scilly.



Figure 7. Examples of Fulmar habitat on the Isles of Scilly.

Historic numbers

First bred on the Isles of Scilly in 1944 and numbers steadily increased since then.

Trends since 1970s

Numbers increased between 1999 and 2015, bucking the national declines, though numbers on the Isles of Scilly have since declined (Figure 8). The largest colonies are found on Annet, Menawethan and St Martin's Daymark.

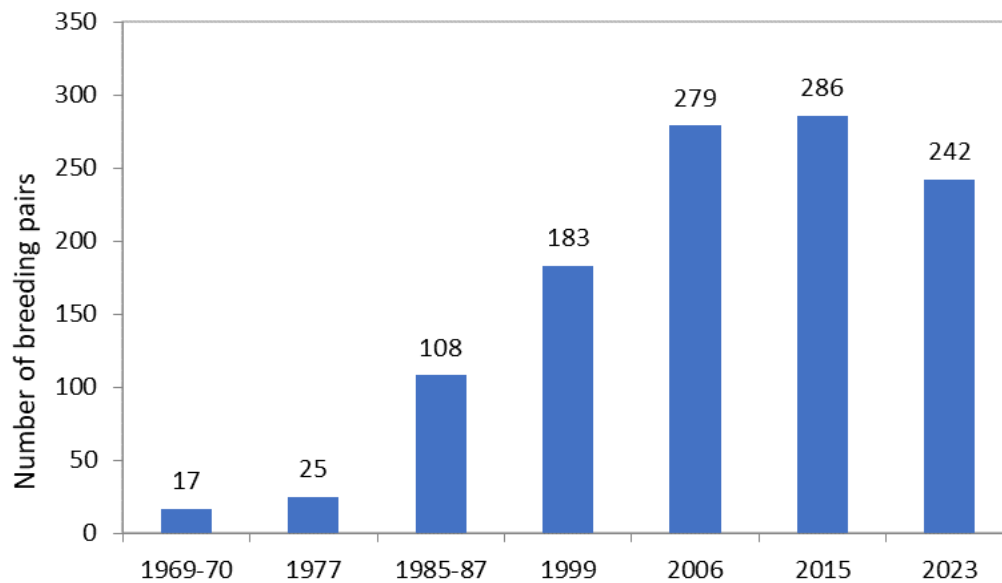


Figure 8. Numbers of breeding Fulmar on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

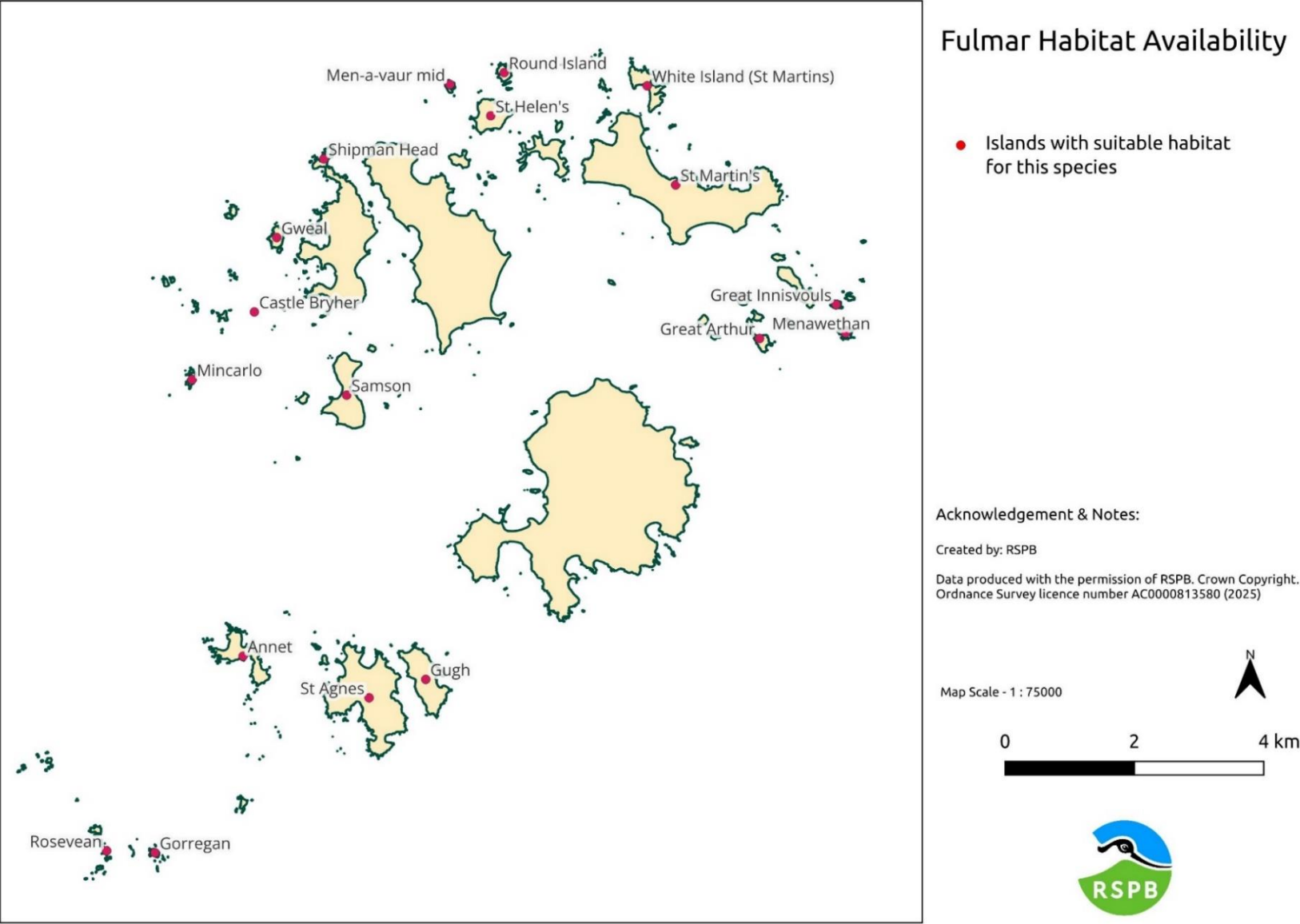
Potential of habitats to support breeding Fulmar

Potential habitat exists throughout the Isles of Scilly, with the current extent of habitat availability not limiting breeding numbers. It is unclear to what extent rats may be impacting on breeding Fulmar but as they breed in habitats favoured by rats, the presence of rats may deter Fulmars from breeding. Rats may also predate eggs and small chicks. Rat eradication would therefore likely create many more areas of rat-free habitat in which to nest as a result, seeing a significant expansion in the availability of suitable nesting habitat.

The benefits of rat eradication may be partially offset by the ongoing national decline of 37-38% over the past two decades (Burnell et al. 2023; Harris et al. 2024). It is unclear if the recent decline in numbers of Fulmar in the Isles of Scilly is being primarily driven by local or national scale factors (e.g. bycatch mortality and reductions in discard availability), though poor productivity observed on the Isles of Scilly is likely to be a contributory factor (Heaney pers. comm.). Therefore, there remains uncertainty what the impact of rat eradication releasing breeding site limitations might be, and further work is required on assessment of the local and national scale factors impacting on breeding populations.

Given the increase in available rat-free breeding opportunities, there should be potential to at least maintain numbers, potentially up to 300 breeding pairs, if numbers are not limited by wider issues such as food availability. Islands with suitable habitat for Fulmar are shown in Map 4.

Map 4. Fulmar habitat availability on the Isles of Scilly.



6.5 Manx Shearwater

Summary

- Suitable breeding habitat extensive and widespread.
- Rat eradication would provide 211 ha of rat-free habitat that could support an estimated 16,000 breeding pairs.
- Including existing rat-free habitat, the potential habitat could hold an estimated 20,238 breeding pairs.
- Additional habitat management across 134.8 ha would support an estimated 10,245 breeding pairs. This includes 103 ha released by rat eradication, supporting 7,828 breeding pairs.

Habitat requirements

- Nest in burrows or under rocks on islands in the North Atlantic where they fly to their colonies under the cover of darkness to evade aerial predators.
- Young and eggs particularly vulnerable to rats.
- Whilst the adults may be taken, they are much bigger than Storm Petrel and more able to defend themselves.
- Adults may persist and occupy sites where their breeding success is be very low or unsuccessful in terms of maintaining a viable population (as is the case on many islands within the Isles of Scilly).

Habitat on the Isles of Scilly

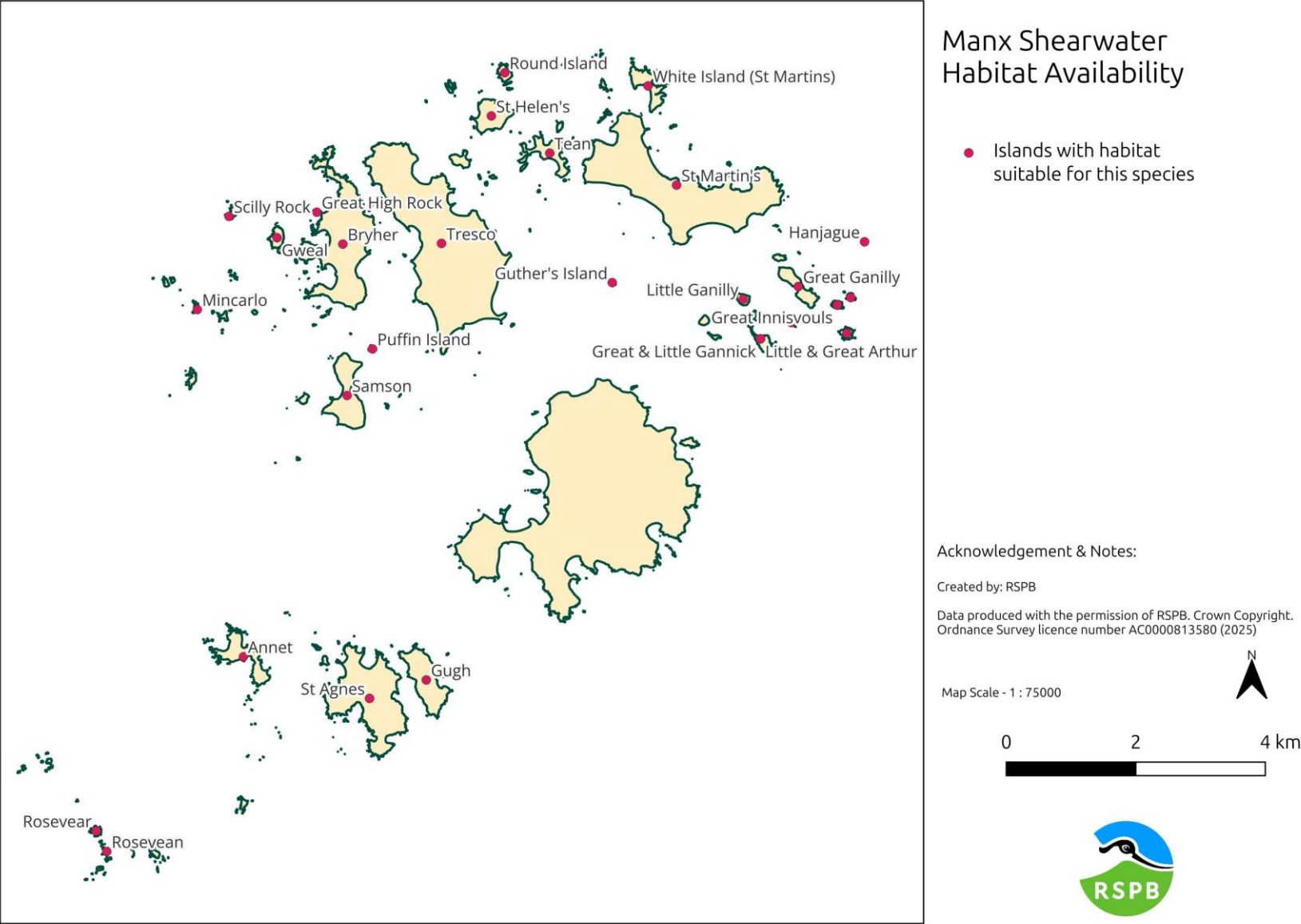
On the Isles of Scilly, Manx Shearwater normally occupies burrows excavated in soil. Burrows are often associated with stands of hummock-forming thrift or deep soil associated with cairns or rocky outcrops. Manx Shearwaters are also known to use the long cracks between or under large rocks that form as part of the weathering of granite or the construction of prehistoric features e.g. in burial chambers (Heaney & St Pierre 2012). Nests also occur in burrows along the very low cliffs made up of consolidated sands or earth, associated with the coastal heaths. The presence of rabbits indicates that suitable soil depth is present for burrowing, whether this is on peaty heath or in stone-faced earth banks. Manx Shearwaters have also been recorded in burrows excavated under the mat of introduced species such as Sour Fig *Carpobrotus edulis* (Heaney & St Pierre 2012). Adults require a clear flight path to the sea. Breeding birds are present on inhabited and uninhabited islands, but current distributions are clearly limited by the presence of rats.

Habitat mapping for Manx Shearwater and Storm Petrel has already been completed for most of the Isles of Scilly (excluding St Mary's where eradication is currently considered unfeasible). St Agnes and Gugh were previously mapped in 2012 (Heaney & St Pierre 2012) and St Martin's, Tresco, Bryher and uninhabited islands during October 2022 (Knott Nixon & St Pierre 2023). In 2025, these earlier assessments were subject to ground-truthing and areas not previously included (Annet and the Western Rocks) were assessed for both Manx Shearwater and Storm Petrel. Examples of Manx Shearwater habitat is shown in Figure 9, and islands with suitable habitat in Map 5.

		
Gugh	Bryher	Shipman Head
		
St Helen's	Gweal	Tresco
		
St Martin's	Great Ganilly	Menawethan
		
Ragged Island	Great Arthur	Nournour

Figure 9. Examples of Manx Shearwater habitat on the Isles of Scilly.

Map 5. Manx Shearwater habitat availability on the Isles of Scilly.



The results of the assessments indicate that potentially suitable habitat is not a limiting factor to support breeding of Manx Shearwater on the Isles of Scilly, with 266.3 ha of suitable habitat identified, including the currently rat-free areas. A further 134.8 ha habitat could be restored through the removal of scrub, particularly bramble and honeysuckle, along field boundaries and around both natural and man-made stone structures. Across the archipelago there is a total of 401.1 ha of potentially suitable habitat including areas that require additional management (Table 10). Further areas could be made suitable with the provision of nest boxes including in non-designated abandoned field systems.

Table 10. Summary of available habitat for Manx Shearwater on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (ha)	55.3	211	266.3
Additional area requiring additional management (ha)	31.8	103	134.8
Total (ha)	87.1	314	401.1

Historic numbers

Manx Shearwaters have long been associated with the Isles of Scilly. Their remains have been found in prehistoric sites and medieval records suggest the use of ‘puffins’ (a term referring to young shearwaters; Lockwood 1984), to pay land rents as far back as 1337 (Turk 1971). Estimates of numbers in the nineteenth century range from 200 to 150,000 pairs (Robinson 2003). Up to 1937, thousands were reported on Annet alone. More recent breeding numbers have been unclear, given the lack of a clear count methodology, with estimates often based on rafting birds or catch rates in mist nets. Numbers have declined significantly from the thousands that were present 100 years ago (Heaney et al. 2008).

Trends since 1970s

Prior to Seabird 2000 (the first attempt at a quantitative census for Manx Shearwater) overall numbers and colony trends are unclear. All-island surveys for seabirds of the Isles of Scilly in 2000 and 2006 found that the majority of the Manx Shearwater population were on the uninhabited islands of Annet and Round Island (Heaney et al. 2007). Birds have also been recorded occupying a limited number of burrows on St Agnes, Gugh and Bryher, and in 2010 on St Mary’s. The population declined by 15% between 2000 and 2006. Since eradication of rats on St Agnes and Gugh in 2013, the first chicks in living memory were recorded in 2014 and the population had recovered to 199 occupied burrows by 2023 (Heaney et al. 2024).

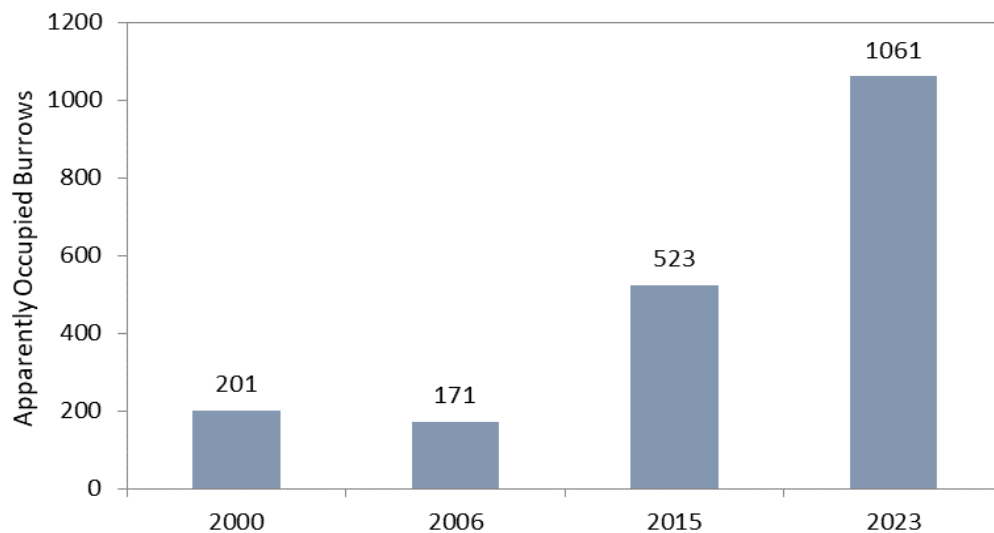


Figure 10. Numbers of breeding Manx Shearwater on the Isles of Scilly 2000-2023 (from Heaney et al. 2024).

Potential of habitats to support breeding Manx Shearwater

The upward trend across the Isles of Scilly (Figure 10) is in line with wider trends showing an increase of 174% in the UK population since Seabird 2000 (Burnell et al. 2023). The only other site in England where Manx Shearwater breed is Lundy, and this has seen a spectacular increase from fewer than 600 pairs in 2001 to 12,638 pairs in 2023, following rat eradication in 2002-04. On Lundy, breeding Manx Shearwater are concentrated into 166 ha of maritime cliff and slope. Not all this area is occupied but this would be at an average density of 76 pairs/ha.

At this average density, the 266.3 ha of currently available habitat on the Isles of Scilly could support 20,238 pairs of Manx Shearwater. If the additional 134.8 ha of habitat was managed appropriately this could support a further 10,245 pairs. The numbers and trends on Lundy show that, given the extent of suitable habitat, the Isles of Scilly has the potential to hold a breeding population in the tens of thousands of pairs.

With a global population estimated at between 74,4700 and 1,222,500 breeding pairs, anything over 12,225 pairs would represent at least 1% of the global population and therefore be considered as globally important (Burnell et al. 2023). The restoration and ongoing management of habitats on the Isles of Scilly can therefore make a significant contribution to the conservation of this species at a national and international level.

Manx Shearwater is the species likely to benefit most significantly from rat eradication on the Isles of Scilly, and the impact of the eradication could be transformative for this species. The potential size of the colony and scale of habitat available also provides the possibility of other shearwater species colonising (see Section 8).

6.6 Storm Petrel

Summary

- Suitable breeding habitat extensive and widespread. Possibility of new colonies developing on rat-free islands.
- Rat eradication would release 128.2 ha of rat-free habitat that could support 11,346 breeding pairs.
- Including existing rat-free habitat, the potential habitat could hold an estimated 16,000 breeding pairs, based on current densities on Annet.
- Additional habitat management across 65.5 ha would support an additional estimated 5,806 breeding pairs. This includes 34.2 ha released by rat eradication, supporting 3,027 breeding pairs.

Habitat requirements

- Mostly breed mostly on small uninhabited islands.
- Use burrows excavated by other species, crevices in cliffs, scree slopes and boulder beaches, and in human structures like walls, cairns and ruined buildings.
- Strictly nocturnal at breeding colonies to avoid predation.
- Presence of mammalian predators such as domestic/feral cats, brown and black rats is the principal factor in determining where they breed (DeLeon et al. 2006).
- Adults, young and eggs are all taken by rats making this species particularly vulnerable.

Habitat on the Isles of Scilly

The main population is found on Annet, where the birds occupy the stable part of boulder beaches, usually characterized by a grey lichen species (see Figure 11). Birds have also been recorded in cracks in granite outcrops, and in man-made features, e.g. stone walls on Round Island. In addition, Storm Petrels are known to nest in other bird or animal burrows, cracks in peat, ledges in caves and under mature heather.

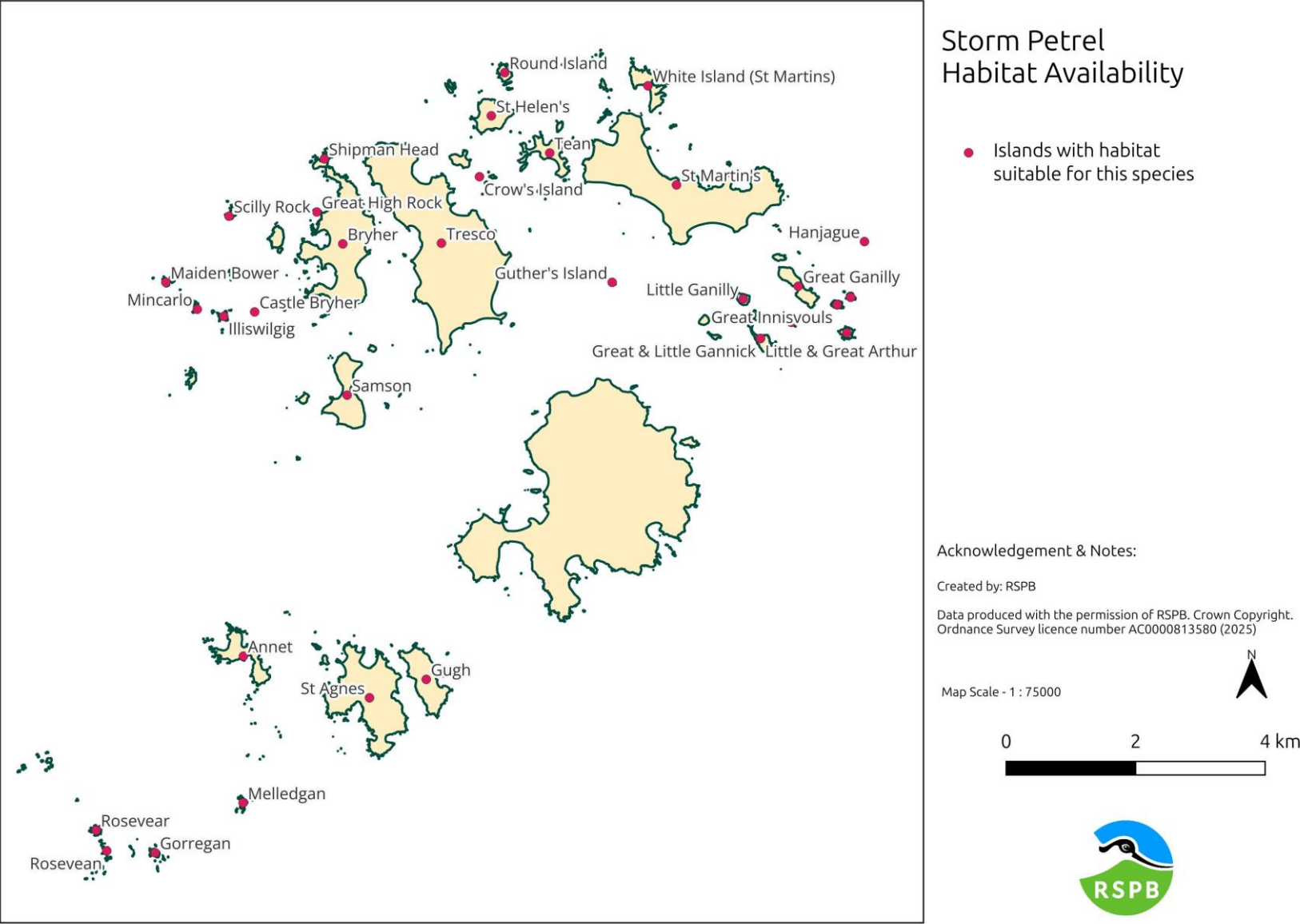


Figure 11. Examples of Storm Petrel habitat on the Isles of Scilly.

As with Manx Shearwater, suitable habitat has been documented in habitat assessments for St Agnes and Gugh (Heaney & St Pierre 2012) and for St Martin's, Tresco, Bryher and uninhabited islands (Knott Nixon & St Pierre 2023).

In 2025, these earlier assessments were subject to ground-truthing and areas not previously included (Annet and the Western Rocks) assessed for both Storm Petrel and Manx Shearwater. The combined results of these assessments clearly show the extent of suitable habitat around the archipelago and the potential benefits should rats be removed (Map 6).

Map 6. Storm Petrel habitat availability on the Isles of Scilly.



The results of the assessments indicate that potentially suitable habitat is extensive and widespread, with 247 ha of suitable habitat identified, 162.4 ha of which would be released through rat eradication (Table 11).

Table 11. Summary of available habitat for Storm Petrel on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (ha)	53.2	128.2	181.4
Additional area requiring additional management (ha)	31.4	34.2	65.6
Total (ha)	84.6	162.4	247

Historic numbers

Possibly overlooked because of their nocturnal habits and small size, Storm Petrels were not recorded from the Isles of Scilly until the mid-nineteenth century, after which they were then reported to breed in their thousands (Robinson 2003). They were first documented as breeding on Annet in 1903 and subsequently found on other south westerly islands. However, historic estimates are generally vague with no quantitative data until systematic monitoring with playback techniques first used during Seabird 2000. Therefore, no comparable previous estimates from the Isles of Scilly or elsewhere are available (Heaney et al. 2008).

Trends since 1970s

All-island surveys of seabirds in the archipelago in 2000, 2006, 2015 and 2023 (Heaney et al. 2024) found that populations of Storm Petrel were limited to a few uninhabited islands, most notably Annet, Norrard, Western Rocks, and Round Island (Figure 12). These all have a long history of being rat-free, but rats were recorded for the first time in 2004 on Annet (Mawer 2007) and subsequently successfully eradicated, and Round Island in 2021/22, indicating how vulnerable these key islands are. Storm Petrel has re-colonized St Agnes and Gugh since rat eradication and increased significantly since 2015/16 on Annet (Heaney et al. 2024).

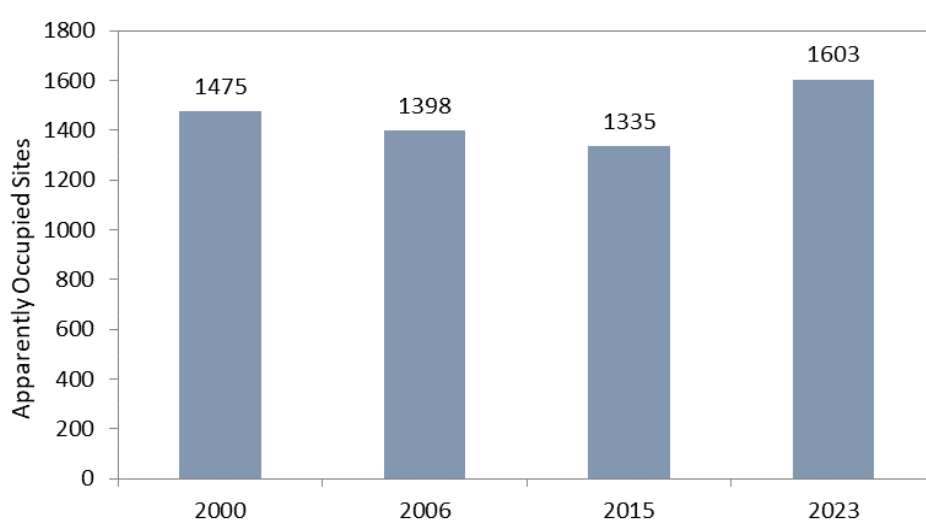


Figure 12. Numbers of breeding Storm Petrel on the Isles of Scilly 2000-2023 (from Heaney et al. 2024).

Potential of habitats to support breeding Storm Petrel

With 181.4 ha of suitable habitat spread around many islands, there is plenty of potential breeding habitat for Storm Petrels on the Isles of Scilly. The proposed rat eradication would provide 128.2 ha of suitable habitat, in addition to the 53.2 ha of habitat that is currently available within the current rat-free area.

Given post rat eradication trends on the Isles of Scilly, and the example of seabird colonisation of Lundy following rat eradication, the prospects of a very significant increase in the Storm Petrel population are high. On Annet, the most established colony on a currently rat-free island, 1,053 pairs were recorded in 2023 on 11.9 ha, a density of 88.5 pairs/ha. If this density is reached across all the currently suitable area, the habitat could support a population of 16,000 pairs.

In addition, there is an estimated 65.6 ha that could be made suitable with additional habitat management to remove dense vegetation. Here, further nesting opportunities could be created through the provision of nest boxes in areas that lack natural cavities and burrows. This 65.6 ha of habitat would support an additional estimated 5,806 breeding pairs, including 34.2 ha of habitat released by rat eradication, supporting 3,027 breeding pairs.

One issue that could limit occupancy is the potential impact of sea-level rise and storm events which could restrict the suitability of the lowest lying boulder habitats. For example, a storm event in 2014 removed all boulders from a beach on Annet that previously supported 50 breeding sites. We recommend that this risk is assessed over the next five years.

With the potential for more than 10,000 breeding pairs to be supported through rat eradication, and with the possibility of new colonies developing on new rat-free islands, the Isles of Scilly could feasibly hold the largest colony of Storm Petrels in the UK. The size of the colony and scale of habitat available also provides the possibility of other petrel species colonising (Section 8).

6.7 Cormorant

Summary

- Extent of suitable breeding habitat not limiting.
- Potential population of 51-101 breeding pairs, maintaining current breeding population.

Habitat requirements

- Historically largely coastal in Britain and Ireland until the 1980s when the 'sinensis' population started to colonise inland areas.
- In general, the 'carbo' population is primarily ground nesting in coastal locations such as cliffs, stacks and offshore islands, whereas the 'sinensis' population nests in trees adjacent to fresh water.
- All Irish colonies are carbo and include tree nesting on inland loughs. Both sub-species will also use artificial structures.

Habitat on the Isles of Scilly

Offshore rocky islands with birds concentrated on relatively few sites. Habitat not mapped specifically but Cormorants clearly prefer more remote, less disturbed sites. Islands with suitable habitat are indicated in Map 7.

Historic numbers

The peak number is a tentative estimate of 100 pairs in 1903, when the population concentrated on Inner Innisvouls, Melledgen and Rosevear. Historically persecuted, but no recent evidence of persecution.

Trends since 1970s

The population has been remarkably stable since 1945 at around 50 breeding pairs, with colonies split between Northern Rocks, Western Rocks, and Eastern Isles (Figure 13).

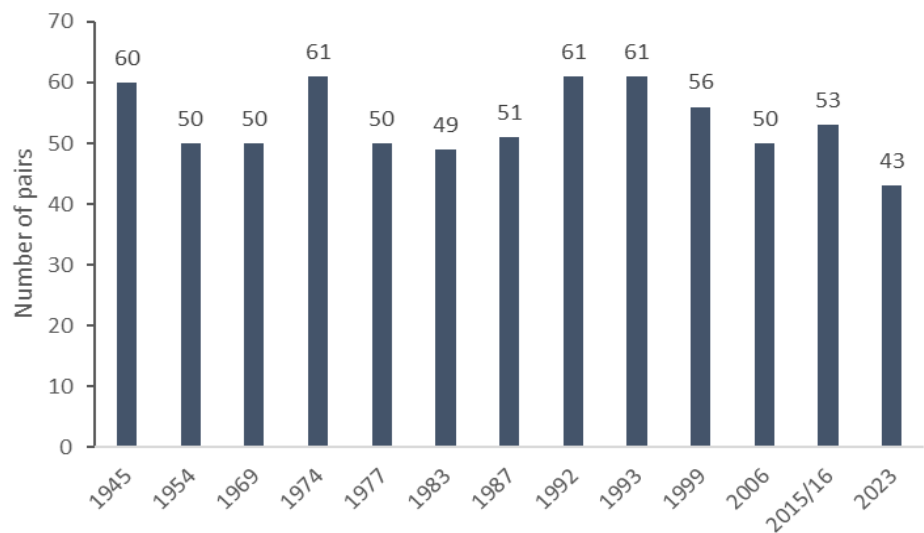


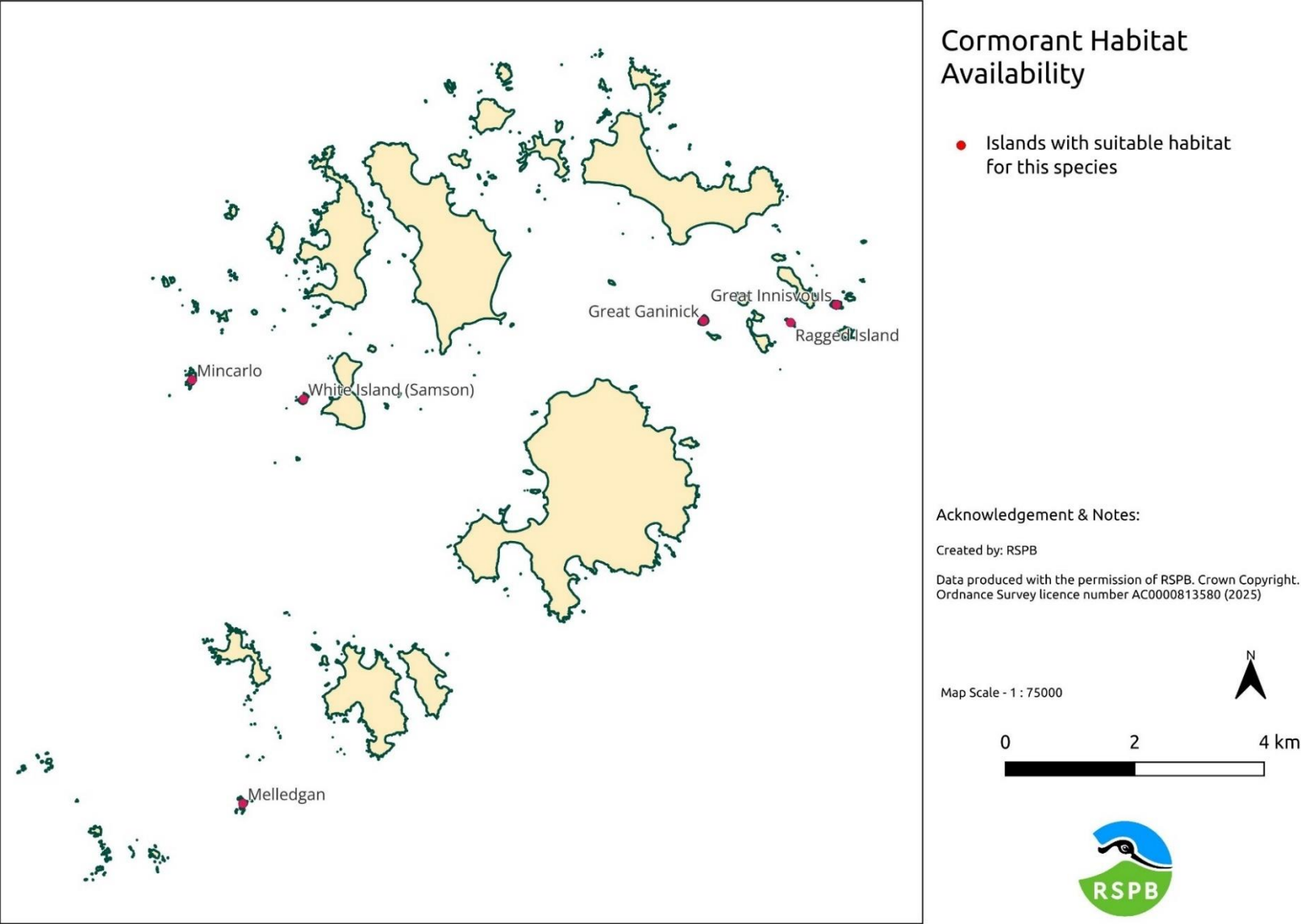
Figure 13. Cormorant breeding numbers on the Isles of Scilly 1945-2023 (from Heaney et al. 2024).

Most recently, the main colonies have been on White Island and Melledgen. Colonies have moved between sites, e.g. the abandonment of Mincarlo in 2015. The reasons for this are unclear (Table 12).

Table 12. Change in number of breeding pairs of Cormorant on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Island	1999	2006	2015	2023	% change since 2015
White Island (Samson)	1	9	38	27	-29% (likely due to previous increase in 2015 as a result of birds relocating from Mincarlo)
Melledgan	16	13	10	11	+10%
Great Ganinick	0	0	5	5	New site in 2015
Mincarlo	25	18	0	0	Site abandoned - last recorded 2013
Ragged Island	12	10	0	0	Site abandoned
Great Innisvouls	2	0	0	0	Site abandoned
Total	56	50	53	43	-19%

Map 7. Cormorant habitat availability on the Isles of Scilly.



Potential of habitats to support breeding Cormorant.

Habitat is not thought to be limiting for breeding for such a small population, so the population should be maintained at the current level or potentially increase to return to the high of 100 breeding pairs. Cormorant has always been a more restricted breeder on the Isles of Scilly and although additional nesting would be made available following rat eradication, the level of benefit that this will provide is uncertain. Cormorants favour the more remote, less disturbed islands so it is important to maintain controls on access to these preferred islands.

6.8 Shag

Summary

- Suitable breeding habitat is widespread and not limiting.
- Estimated populations of 1,500-2,000 breeding pairs.
- Ongoing management of public access required.

Habitat requirements

- Rocky coasts including islands, rocky boulder fields, on ledges on cliffs or caves, or broad open ledges.
- Colonial but colonies usually number in the 10-100s range.

Habitat on the Isles of Scilly

Shags are a widespread breeder on offshore islands, occupying boulder beaches, ledges, crevices, and caves, but they are absent from the inhabited islands. Currently the largest colonies of 100 or more pairs are on Rosevear and Melledgen, with around 50 pairs on Annet also notable (Heaney et al. 2024).

Habitat was not mapped specifically but suitable habitat is widespread, occurring on almost every uninhabited island, and around the coastline of the inhabited islands. The lack of birds on the inhabited islands is likely due to disturbance and colonisation of suitable habitat here is unlikely without management of access. On the uninhabited islands the plentiful habitat should support at least the peak numbers of 1,296 pairs observed in 2006. Islands with suitable habitat are indicated in Map 8.

Historic numbers

The status over 100 years is little changed. Shags were persecuted historically in the first half of 1800s but no recent evidence of persecution.

Trends since 1970s

2023 figures show sharp decline from 1,296 breeding pairs in 2006. This follows UK wide trend of 24% decline since Seabird 2000 (Figure 14).

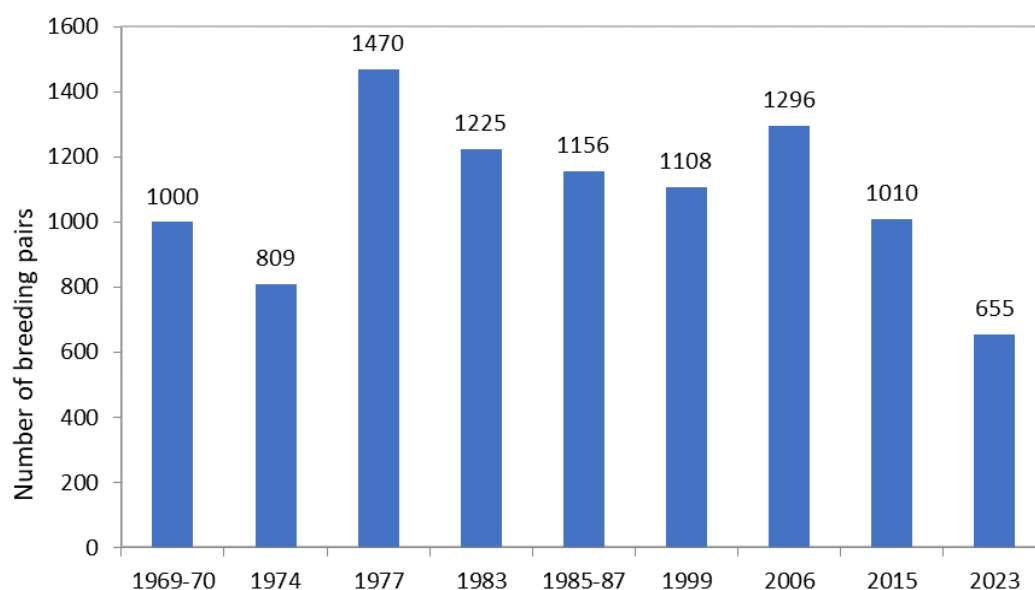


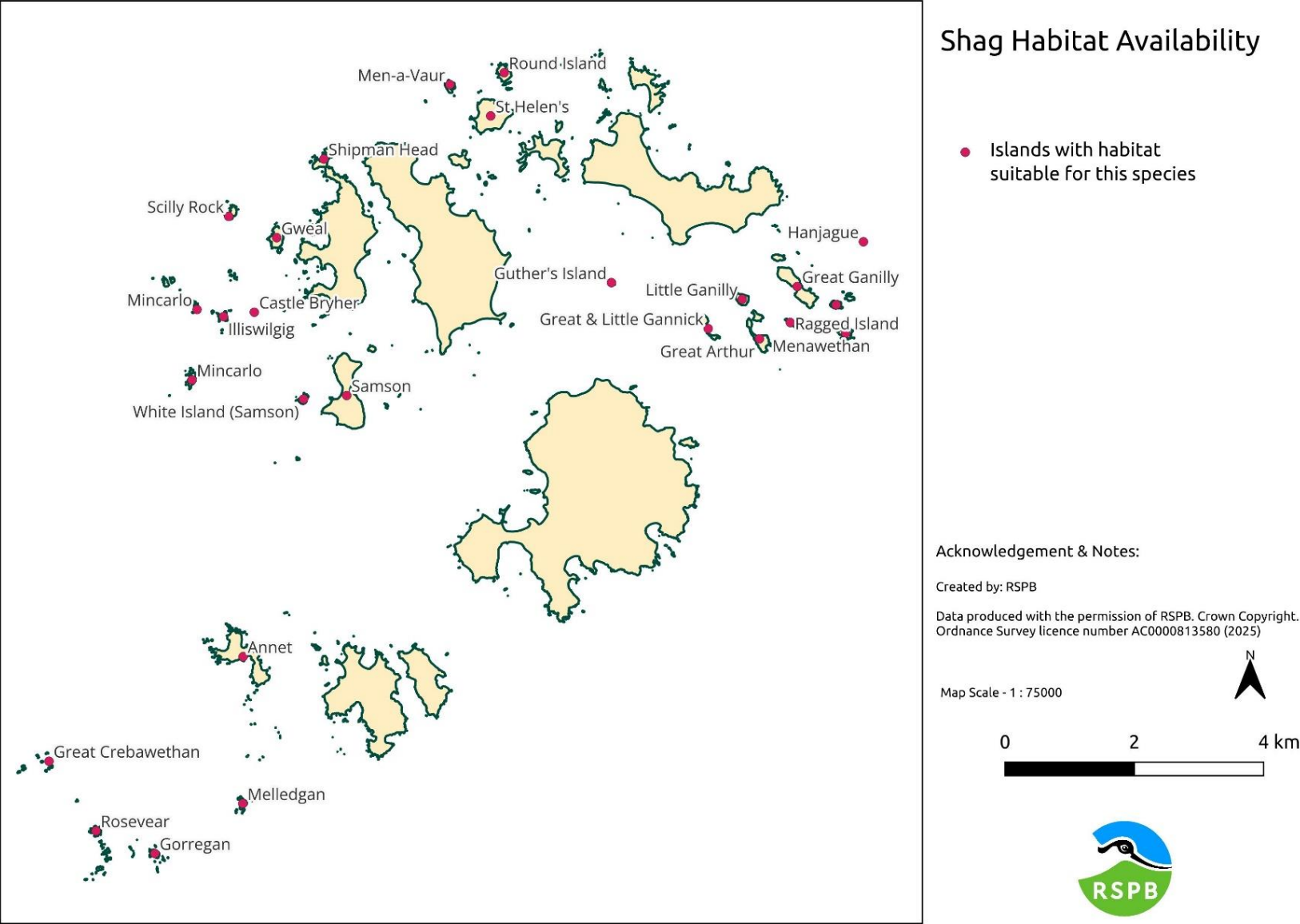
Figure 14. Numbers of breeding Shag on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

Changes in numbers of breeding pairs of Shag on individual sites on the Isles of Scilly between 1999 and 2023 is shown in Table 13.

Table 13. Change in number of breeding pairs of Shag on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Island	1999	2006	2015	2023	% Change since 2015
Western Rocks	331	392	350	235	-33%
Eastern Isles	221	330	276	158	-43%
Norrard Rocks	273	312	188	144	-23%
Annet	209	177	85	53	-38%
St Helen's (incl. Men-A-Vaur)	24	38	31	8	-74%
Samson (incl. White & Puffin Island)	43	35	49	30	-38%
Round Island	2	7	16	9	-44%
St Martin's satellites (Pernagie & Guther's Island)	1	1	11	7	-37%
Shipman Head (Bryher)	4	4	19	11	-42%
Total	1,108	1,296	1,025	655	-36%

Map 8. Shag habitat availability on the Isles of Scilly.



Potential of habitats to support breeding Shag

The area of breeding habitat is not thought to be limiting for the potential numbers involved, as the habitats that supported the peak of nearly 1,500 pairs in the 1970s are still present. As breeding occurs in habitats likely to be frequented by rats, the eradication of rats could have a significant positive impact on Shag numbers and distribution. We are not aware of evidence to suggest that Shags are not normally rat-restricted in range in the UK but on the Isles of Scilly we note that they are mainly found in rat-free areas.

Shag have been in decline in the Isles of Scilly in recent years and increased habitat availability is likely to be beneficial to the Shag population. At least a modest increase could be expected following rat eradication, similar to that seen on Lundy where suitable habitat is more limited (from 63 pairs in 2004 to 115 pairs in 2025; Price et al. in prep.). Therefore, a population of 1,500-2,000 breeding pairs could be supported by the available habitat. Ongoing management of public access to current and potential sites will be required.

6.9 Lesser Black-backed Gull

Summary

- Suitable breeding habitat extensive and widespread.
- Estimated populations of 3,000 breeding pairs.
- Numbers constrained by wider unknown factors.
- Additional ongoing management of vegetation and public access required.

Habitat requirements

- Typically nest colonially with Herring Gulls in natural and anthropogenic habitats.
- Semi-natural sites include offshore islands, inland lakes and reservoirs, coastal cliffs and slopes, dunes, salt marshes and moorland.
- Usually on flat or gently sloping ground, sometimes with taller vegetation than preferred by Herring Gulls.
- Form colonies in urban environments on large flat roofed industrial or commercial buildings (Burnell et al. 2023).

Habitat on the Isles of Scilly

Larger colonies on bracken covered grass/heath and more sparsely amongst heath/grassland rocks of offshore islets. Usually in mixed colonies with smaller numbers of Herring Gulls.

Suitable breeding habitat for Lesser Black-backed Gulls (and associated Herring and Great Black-backed Gulls) is widespread and extensive on Scilly (Map 9). They could breed almost anywhere on the uninhabited islands amongst bracken, heath and rocks. On the inhabited islands, although the natural habitats are still widespread, most areas were not considered suitable because of human access and disturbance. On the inhabited islands, areas were mapped as suitable where they currently support, or very recently supported, breeding colonies and have some access restrictions in place, e.g. Gugh, and White Island, St Martin's.

In total, 178.19 ha of suitable habitat was identified as potentially suitable for breeding Lesser Black-backed Gull (Table 14). However, it should be noted that ongoing management of vegetation and access would be required for these areas to be made and kept suitable for

breeding gulls. Plans for habitat and access management will need to be drawn up to ensure key areas for gulls are managed appropriately.

Table 14. Summary of available habitat for Lesser Black-backed Gull on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (ha)	32.85	145.34	178.19

Historic numbers

Scarce until a substantial increase in the 1890s. In the 1900s large colonies noted on Annet, Shipman Head (Bryher), and Samson.

Trends since 1970s

The first comprehensive survey of gulls took place in 1969/70. The three large gull species have increased since then, to a peak in late 1970s and early 1980s, before subsequently showing declines. Large colonies were established on Gugh, Samson, St Helen’s and Annet, associated with bracken covered grassland/heath, with smaller numbers on the smaller islands (Heaney et al. 2008). Since 2000, a rapid decline with colony abandonment of several smaller colonies and large declines in numbers of birds within the major colonies (Figure 15). The only colony where the decline has halted is Gugh, which could indicate a positive impact of rat eradication (Heaney et al. 2024).

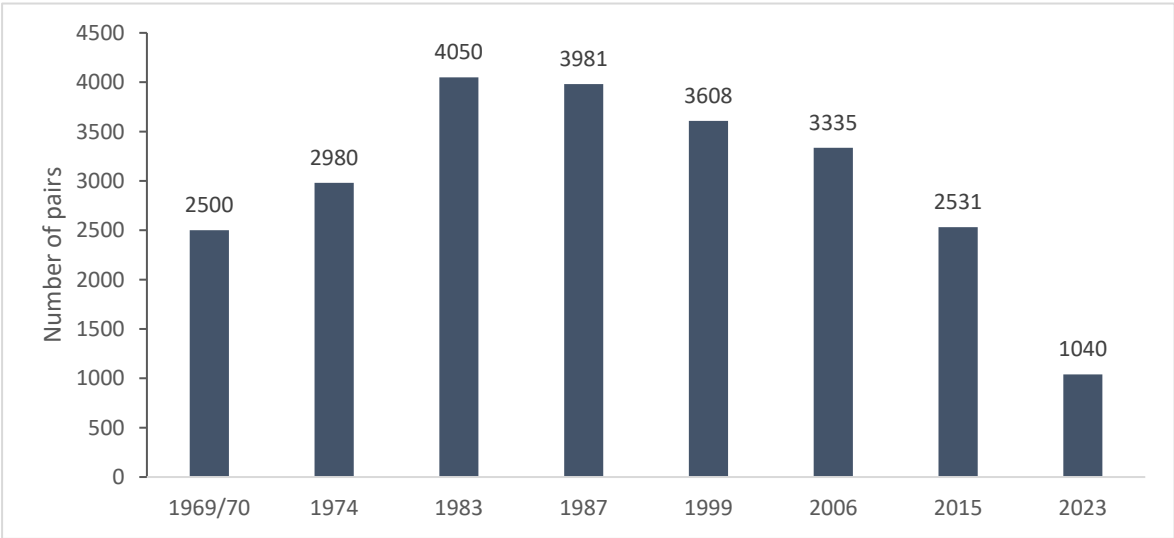
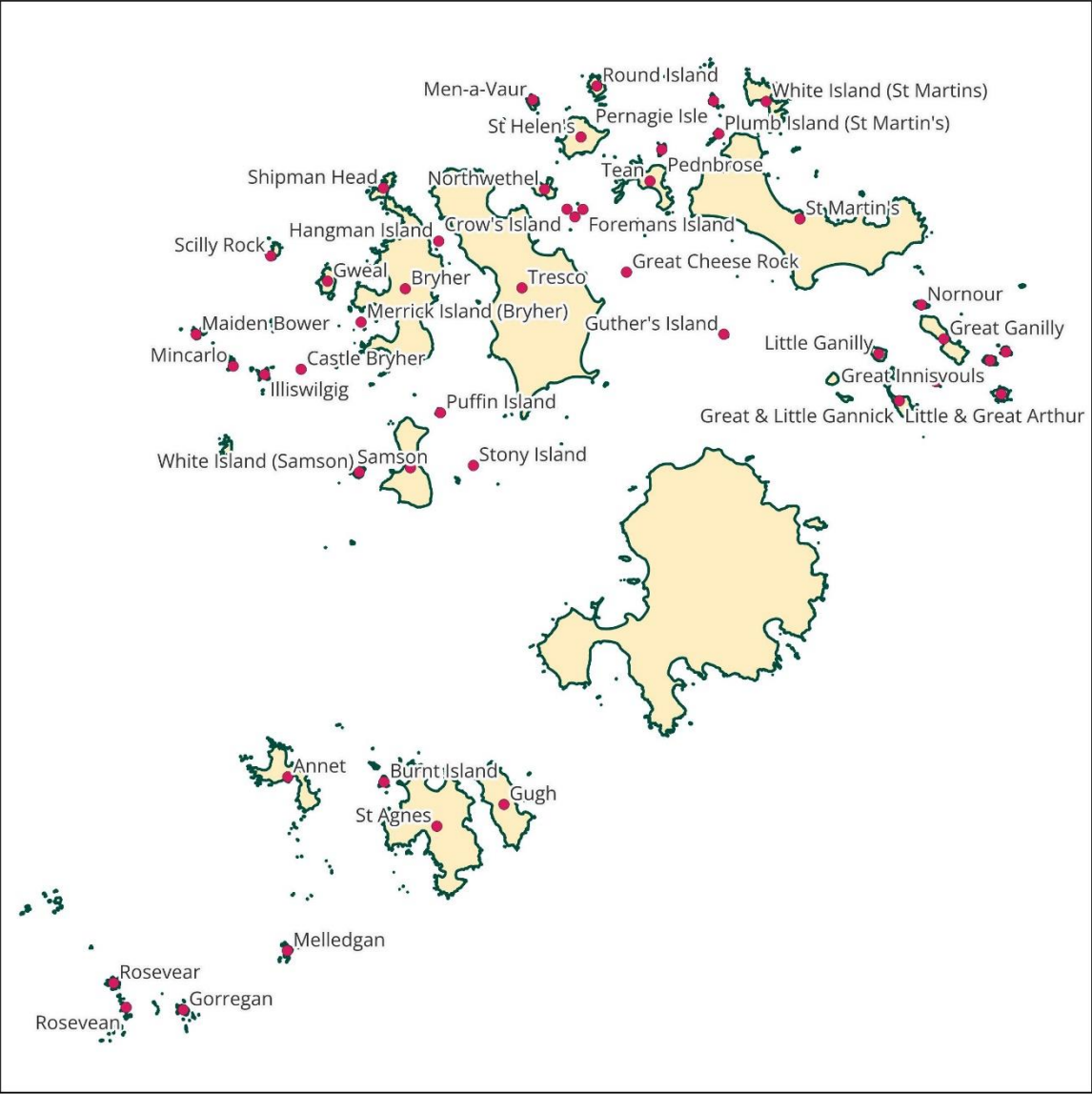


Figure 15. Numbers of breeding Lesser Black-backed Gull on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Lesser Black-backed Gull on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 15.

Map 9. Lesser Black-backed Gull habitat availability on the Isles of Scilly.



Lesser Black-backed Gull Habitat Availability

- Islands with habitat suitable for this species

Acknowledgement & Notes:

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Table 15. Change in number of breeding pairs of Lesser Black-backed Gull on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Island	1999	2006	2015	2023	% Change since 2015
Samson (incl. White & Puffin Is.)	1,197	1,223	1,027	167	-84%
St Helen's (incl. Men-A-Vaur, Norwethel & Crow's)	543	722	553	78	-86%
Gugh	1,123	875	419	464	+11%
Eastern Isles				160	Not calculable
Teän (incl. Pednbrose & Old Man)	24	5	136	17	-88%
White Island (St Martin's)	28	187	106	109	+3%
Norrard Rocks	13	6	37	14	-62%
Bryher	50	8	17	14	-18%
Western Rocks	4	1	5	1	-80%
Chapel Down (St Martin's) & Satellites (Guther's)	58	8	8	2	-75%
Annet	517	281	1	5	main sub-colony deserted 2007 onwards
Tresco	29	4	1	3	+200% Gimble Porth abandoned 2014
St Agnes	2	0	14	0	Sub-colony loss
Round Island	1	1	2	6	+200%
Total	3,608	3,335	2,485	1040	-58%

Potential of habitats to support breeding Lesser Black-backed Gull

Nationally there have profound changes in breeding numbers of Lesser Black-backed Gull over last 50 years. Abundance increased in the late twentieth century, but since 2000 there has been a shift away from natural habitats to urban and inland breeding. The semi-natural population has massively declined and reasons for this are unclear, though may be linked to food availability (Burnell et al 2023). On the Isles of Scilly, the situation has followed the national trend (Heaney et al. 2006; Heaney et al. 2024).

The impact of rats is uncertain, though rats may impact through predation of eggs and young chicks. The eradication of rats could therefore provide benefits to Lesser Black-backed Gulls. Since the eradication of rats on Gugh in 2013, the decline of the Gugh colony has stabilised and numbers in 2025 are the highest since 2006 (Heaney et al. in prep.). This may indicate a positive outcome of the rat eradication and a situation which could be replicated elsewhere on the Isles of Scilly. Rat eradication would provide large areas of potential rat-free habitat on the Isles of Scilly, in which Lesser Black-backed Gulls could breed more successfully in future.

There is a large area of potentially suitable habitat, estimated at 178 ha, distributed across many islands, which could theoretically support thousands of gulls. However, this would require ongoing habitat and public access management. As the area of unmanaged vegetation is so extensive, we recommend targeting management to key areas likely to be most beneficial to gulls, for example those areas currently important or formerly important for gulls and areas identified as having the greatest potential for Manx Shearwater and Puffin.

Although Lesser Black-backed Gulls do prefer some longer grass, none of the large gull species will nest in dense bracken or brambles. This vegetation may need annual cutting, followed by heavy grazing prior to the start of the breeding season to create and maintain open areas.

Given the wider background of national declines, prospects for the Isles of Scilly are difficult to assess. Current densities of colonies on the Isles of Scilly range from approximately 85 nests/ha in the larger dense colonies to only 1 or 2 nests/ha on small rocky islands. With additional targeted management, there is enough habitat on the Isles of Scilly to support the approximately 3,000 pairs recorded by Seabird 2000.

6.10 Herring Gull

Summary

- Suitable breeding habitat extensive and widespread.
- Estimated population of 1,000 breeding pairs.
- Numbers constrained by wider unknown factors.
- Additional ongoing management of vegetation and public access required.

Habitat requirements

- Breed in a wide variety of natural and urban habitats.
- These include coastal cliffs, moorland, freshwater margins and islands, dunes and saltmarshes.

Habitat on the Isles of Scilly

Breeds on boulder beaches, rocky islands and amongst bracken/heath with Lesser Black-backed Gulls. Herring Gulls generally prefer to nest on cliffs, with a preference for shorter vegetation than Lesser Black-backed Gulls, but otherwise the nesting habits are very similar, with the same vulnerabilities to disturbance and dense vegetation, and again this would need to be managed to ensure that otherwise suitable habitat is available for nesting gulls.

Around 207.27 ha of potential suitable Herring Gull habitat exists across the islands (Table 16), but realistically a much smaller area under targeted management is required to support the current population to secure recovery to the Seabird 2000 population levels. Islands with suitable habitats for Herring Gull are shown in Map 10.

There is a small increasing roof-nesting population on St Mary's of 18 pairs. As roof-nesting has not been noted elsewhere on the Isles of Scilly, only semi natural habitats have been considered here.

Table 16. Summary of available habitat for Herring Gull on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (ha)	58.56	148.7	207.27

Historic numbers

Herring Gull has been a numerous and widespread breeder on the Isles of Scilly since the 1800s but there were no early counts until coordinated counts started in 1969/1970, when 1,000 pairs were recorded.

Trends since 1970s

Herring Gulls are the most widespread breeding seabird on the Isles of Scilly, found on 33 islands in 2023. The number of islands supporting Herring Gull has declined from 47 in 2015, however, whilst numbers have also reduced with most islands now supporting only a few pairs. Since a peak of 2,249 pairs in 1974, Herring Gull numbers have been declining steadily to the current count of just 336 pairs in 2023, representing a loss of 40% in the last 8 years, and 63% since SPA designation (Heaney et al. 2024). Nearly all sites have shown large losses of breeding pairs in the last 8 years, continuing the downward trend (Figure 16).

The declines seen in Herring Gull on the Isles of Scilly mirror the national trend. Between Seabird 2000 and the Seabird Count (2015-2021) the numbers of Herring Gull nesting in England decreased by 60%, and there was a decrease in numbers of 44% across the UK as a whole (Burnell et al. 2023).

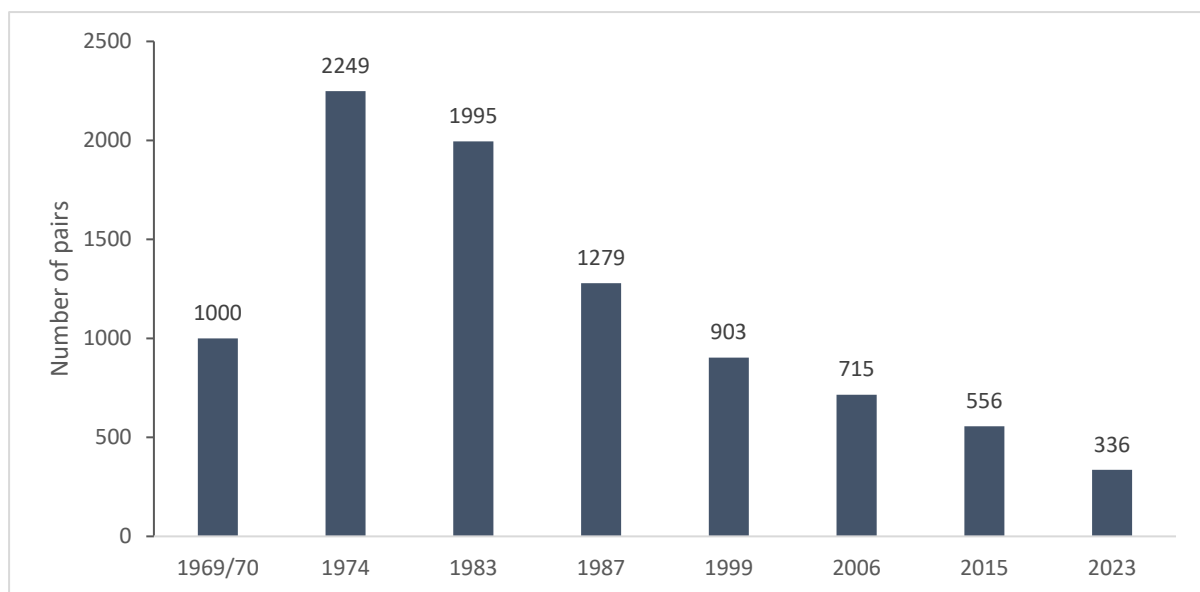


Figure 16. Numbers of breeding Herring Gull on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Herring Gull on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 17.

Map 10. Herring Gull habitat availability on the Isles of Scilly.

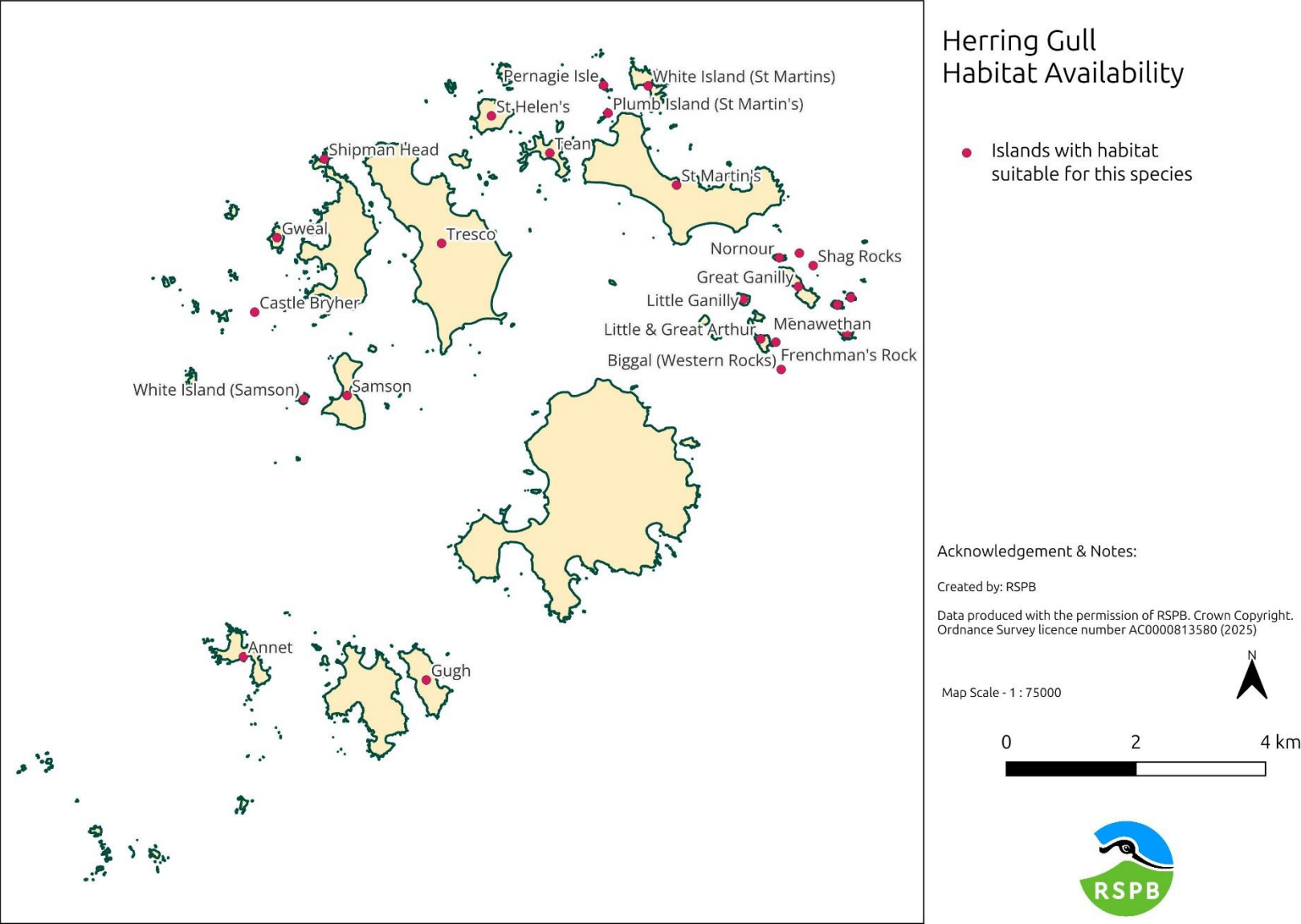


Table 17. Change in number of breeding pairs of Herring Gull on the Isles of Scilly 1999-2023 (Heaney et al. 2024).

Island	1999	2006	2015	2023	% Change since 2015
Samson (incl. White & Puffin Is.)	230	189	144	73	-49%
Eastern Isles	49	34	73	48	-34%
St Helen's (incl. Men-A-Vaur, Norwethel & Crow's Is.)	82	116	59	29	-51%
Teãn (incl. Pednbrose & Old Man)	62	51	57	24	-58%
Bryher	23	25	53	28	-47%
St Martin's & Satellites (incl. Guthers)	42	37	32	15	-53%
Gugh	159	69	30	40	+33%
Tresco	102	87	25	27	+8% Lost from Gimble Porth
Annet	42	24	20	5	-75%
White Island (St Martin's)	34	32	15	5	-67%
Norrard Rocks (incl. Gweal)	41	19	15	18	+20%
St Mary's	2	3	15	18	+20% Hugh Town – cf. 3 pairs first recorded breeding here 2006
St Agnes	25	15	11	1	-91%
Western Rocks	2	11	5	4	-20%
Round Island	8	3	2	1	-50%
Total	903	715	556	336	-40%

Potential of habitats to support breeding Herring Gull

Nationally there has been 41% decline in the national breeding population since 2000 in Britain and Ireland, mirrored by large increases in the urban population (Burnell et al. 2023). This is reflected on the Isles of Scilly, where most sites have lost large numbers of gulls. As with Lesser Black-backed Gull, the reasons for the decline are uncertain but may be linked to food availability.

Suitable breeding habitat for Herring Gull is widely available and not limiting for this species. It is therefore difficult to assess the prospects of Herring Gull on the Isles of Scilly, and specifically whether the benefits provided by rat-free breeding opportunities, and targeted habitat and access management, will outweigh the wider drivers of population decline. Of note, Gugh which has been free of rats since 2016, supports one of the larger remaining colonies and one of the few that has recently increased (Heaney et al. 2024).

Given the increase in available rat-free breeding opportunities and targeted management, there could be potential to increase the Herring Gull population to their Seabird 2000 population levels of almost 1,000 pairs, based on the area of habitat available.

6.11 Great Black-backed Gull

Summary

- Suitable breeding habitat extensive and widespread.
- Estimated population of up to 1,000 breeding pairs.
- Numbers constrained by wider unknown factors.
- Additional ongoing management of vegetation and public access required.

Habitat requirements

- Rocky coasts and islets, open low-lying coastal grassland and wetlands.
- Small numbers of urban rooftop nesters (Burnell et al. 2023).

Habitat on the Isles of Scilly

Uses rocky islands and rock outcrops. Nesting singly or in small loose colonies on undisturbed sites and islands. Nesting birds often use the high points within landscape, nesting around prominent rock outcrops.

Habitat is widespread, as with the other large gulls (Map 11). 176.6 ha of suitable habitat was identified during this survey (Table 18), though a much smaller area under targeted management is required to support the current population and secure recovery to Seabird 2000 population levels.

Table 18. Summary of available habitat for Great Black-backed Gull on the Isles of Scilly.

	Within current rat-free area	Within potential new rat-free area	Total
Area of habitat (ha)	30.5	146.1	176.6

Historic numbers

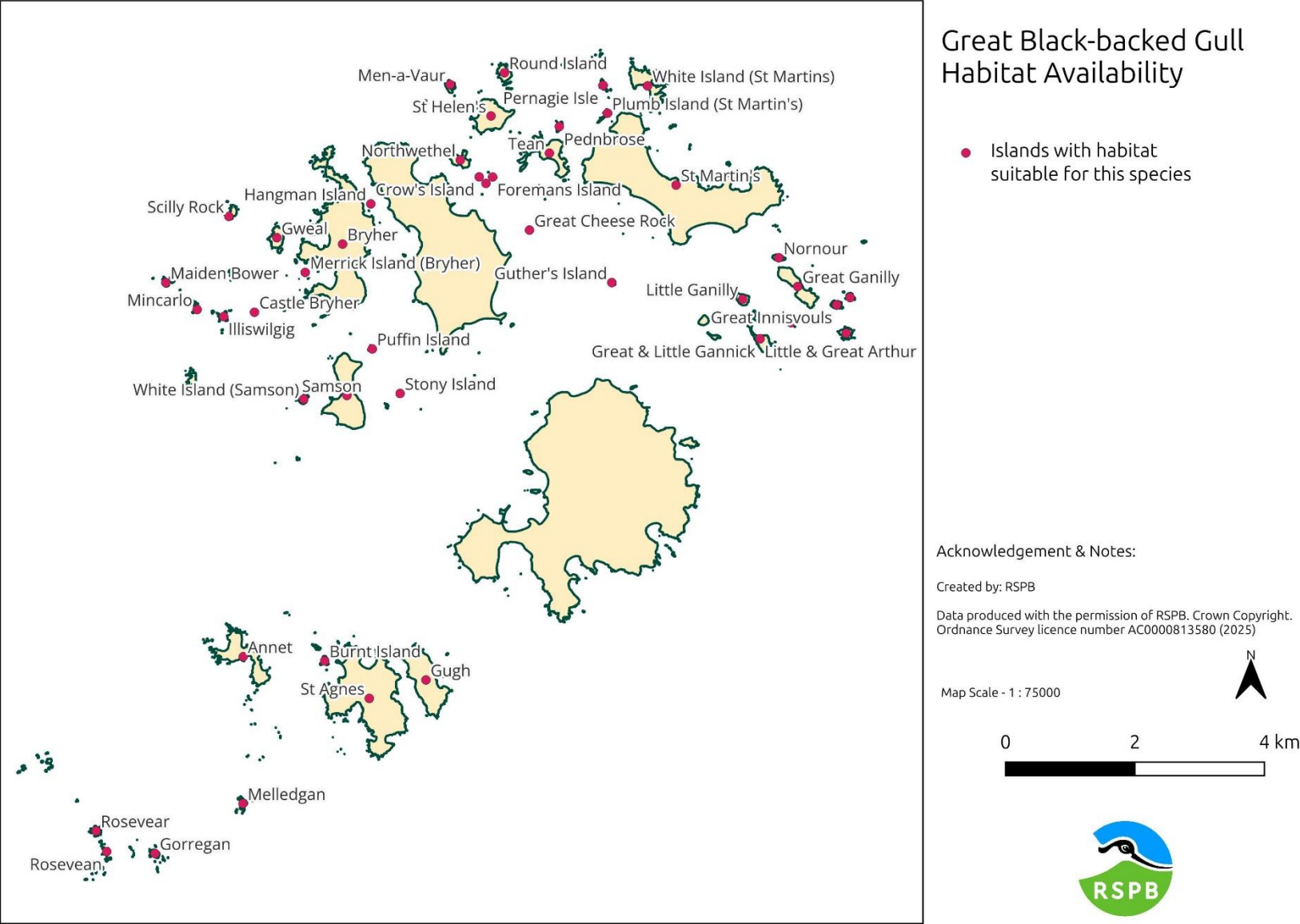
Noted as resident in limited numbers in the early 1900s, increasing to 200 pairs by the 1920s. Numbers continued to increase to 1,200 pairs in 1969/70 (Robinson 2003).

Trends since 1970s

From a peak of 1,583 pairs in 1974, after which a cull was carried out by the Nature Conservancy Council, the number of Great Black-backed Gulls breeding on the Isles of Scilly has been in steady decline since the mid-1970s (Robinson 2003; Flood et al. 2007). Birds are widespread across 34 islands, with most holding a few pairs and a few islands supporting larger colonies, notably Annet, Rosevear and the Eastern Isles. Previously, breeding colonies were spread across 45 islands in 2015.

Between Operation Seafarer (1969-70) and Seabird 2000 (1998-2002), the UK Great Black-backed Gull population declined by approximately 10%. Since then, this decline has accelerated with a further 52% decline recorded by Seabird Count (2015-2021) for the whole of the UK (Burnell et al. 2023). See Figure 17.

Map 11. Great Black-backed Gull habitat availability on the Isles of Scilly.



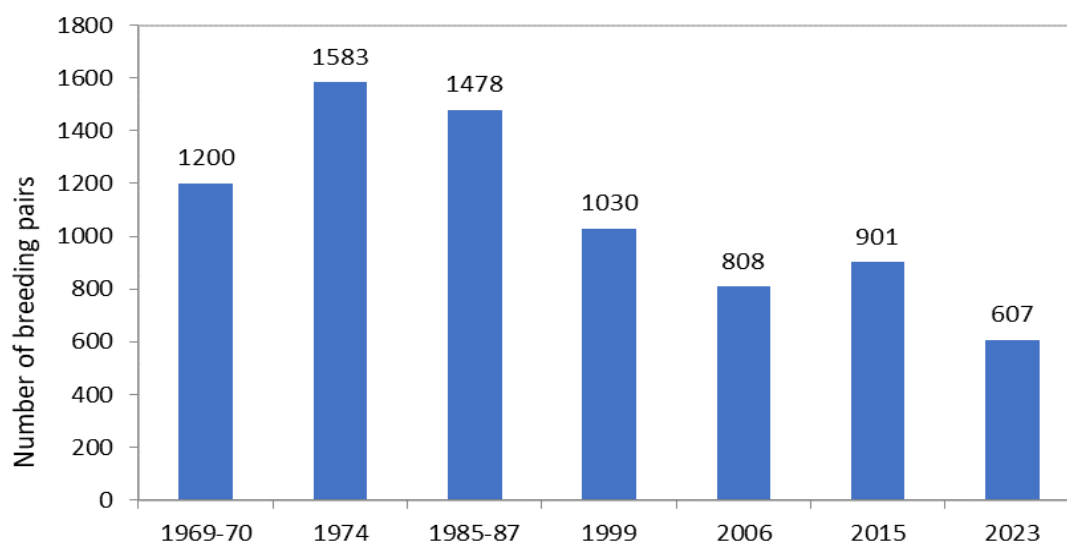


Figure 17. Numbers of breeding Great Black-backed Gull on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Great Black-backed Gull on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 19.

Table 19. Change in number of breeding pairs of Great Black-backed Gull on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Island	1999	2006	2015	2023	% Change since 2015
Eastern Isles	286	265	310	203	-35% Largest colonies Menawethan, Great Arthur, Ganilly & Innisvouls
Annet	137	187	235	151	-36% Large colony at Carn Irish
Western Rocks	124	157	136	80	-41% Rosevear & Melledgan
Norrard Rocks (incl. Gweal)	101	106	125	66	-47% mostly from Gweal
Samson (incl. White & Puffin Is.)	46	73	42	26	-38%
St Martin's & Satellites (incl. Guther's & White Is.)	47	46	43	20	-52%
St Helen's (incl. Men-A-Vaur, Norwethel & Crow's Island)	30	28	31	19	-39%
Teän (incl. Pednbrose & Old Man)	16	18	28	17	-39%
Round Island	5	9	20	13	-41%
Gugh	3	4	6	7	+17%
Bryher	13	7	5	4	-20%
St Agnes	0	1	2	0	Lost
Tresco	0	0	1	1	No change
Total	808	901	984	607	-38%

Potential of habitats to support breeding Great Black-backed Gull

Habitat is present across all the uninhabited islands and the less disturbed areas of the inhabited islands. Therefore, as with the other large gull species, rat eradication could make available large areas of rat-free habitat which could be beneficial to Great Black-backed Gulls. As a predator of other seabirds, increases in the populations of other species could also support larger populations of Great Black-backed Gulls.

The area of potential habitat is estimated at 176.6 ha. As for the other large gull species, ongoing management of vegetation and access is required for the full benefit of this habitat to be fulfilled for Great Black-backed Gull. With ongoing vegetation and access management, numbers could rise towards 1,000 pairs.

6.12 Kittiwake

Summary

- Suitable breeding habitat not limited.
- Estimated potential population of 200 breeding pairs.
- Ongoing targeted wardening and habitat management required.
- Impacts of climate change and food availability may be limiting.

Habitat requirements

- Prefers narrow ledges on vertical cliffs or other man-made structures
- Colony sizes vary from a few pairs to tens of thousands (Burnell et al. 2023).

Habitat on the Isles of Scilly

Nesting on low cliffs on inhabited and uninhabited islands. Areas of habitat were not mapped in detail, but the habitat which supported larger populations in the recent past remains. Map 12 shows all sites occupied since 1999. Sites occupied in the previous 30 years include Annet, Men-A-Vaur and Gorregan.

Historic numbers

Numbers have fluctuated. Large numbers breeding in the 1880s, but lost by the 1900s. recolonising in 1938, and steadily increasing to 1,400 pairs in 1969/70 (Heaney et al. 2008).

Trends since 1970s.

Gradual decline in line with national trends, probably driven by food availability (Figure 18). However, the rate of decrease has accelerated in recent years, with several sub-colonies lost. In 2006, the breeding population was spread between six sub-colonies, but since 2015 all pairs have nested at just one location, on Gugh.

With very few birds, and recent breeding limited to just a single location, Kittiwake have also been vulnerable to local predation and disturbance effects. Predation by large gulls, Peregrine and corvids have all been noted or suspected (Heaney et al. 2024). The impact of rats is uncertain but given the nest locations are in areas favoured by rats, their presence could also be a factor. In 2025, 32 pairs fledged just three young, indicating that the future of this species on the Isles of Scilly is very uncertain. The impact of rat eradication on future trends is dependent on the influence of other local and national factors, such as climate change impacts.

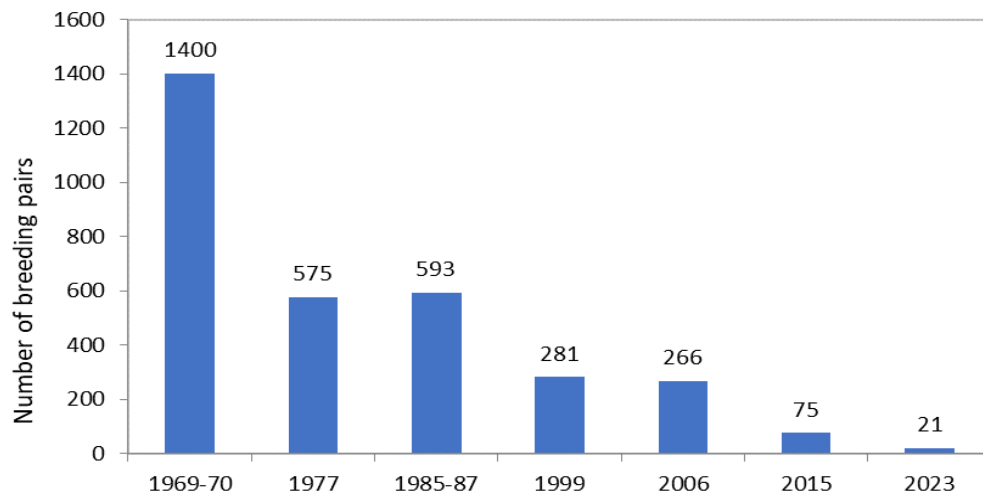


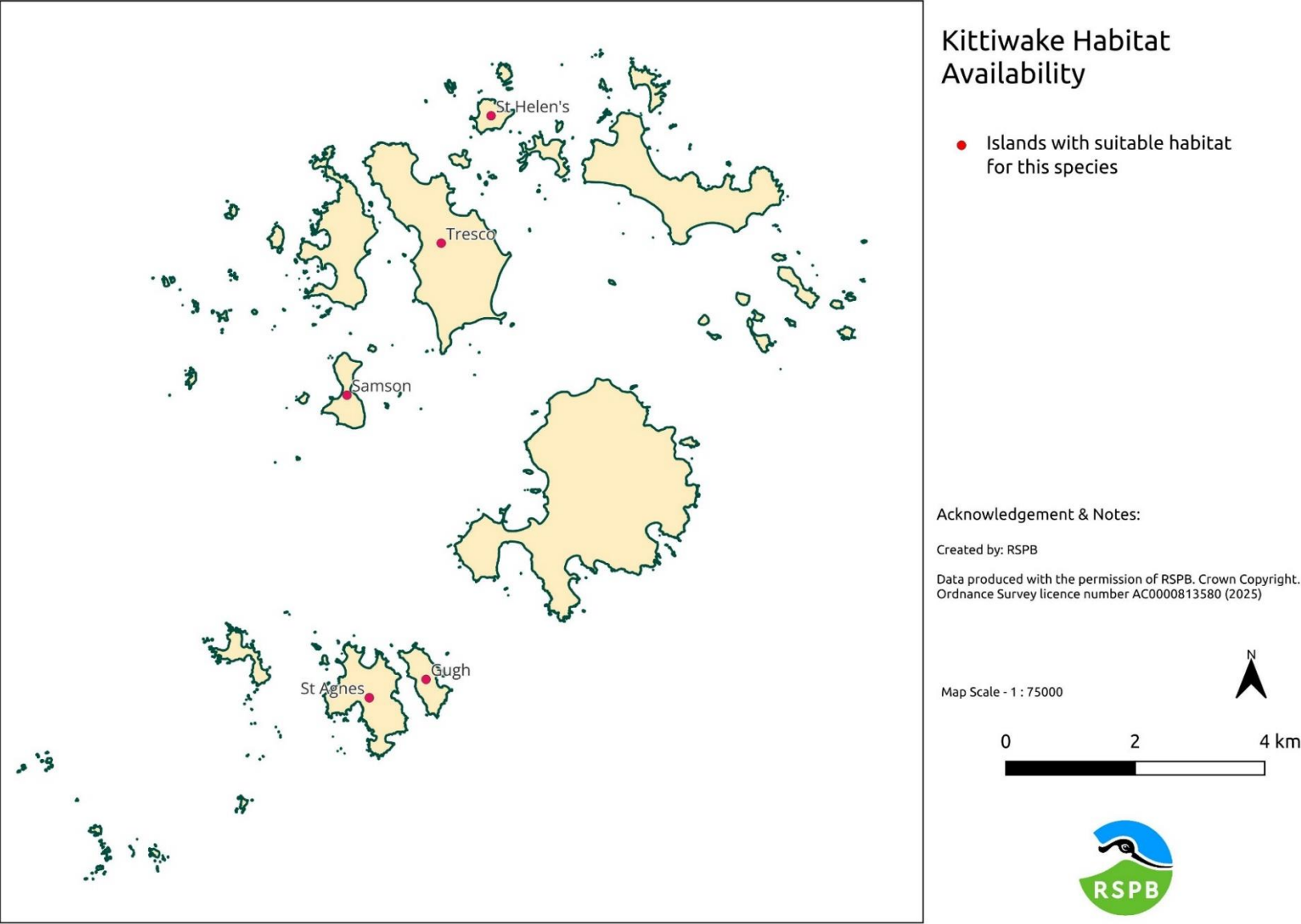
Figure 18. Numbers of breeding Kittiwake on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Kittiwake on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 20.

Table 20. Change in number of breeding pairs of Kittiwake on the Isles of Scilly 1999-2023.

Colony site	1999	2006	2015	2023	% Change since 2015
Turk's Head (St Agnes)	0	0	75	0	Occupied 2009-2016
Daymark (St Martin's)	27	15	0	0	Site abandoned 2014
Gugh	155	131	0	21	Unoccupied 2011-17, currently the only breeding site
Gimble Porth (Tresco)	54	37	0	0	Site abandoned 2010
St Helen's	7	36	0	0	Site abandoned 2011
Samson North Hill	28	25	0	0	Site abandoned 2010
Samson South Hill	10	22	0	0	Site abandoned 2009
Total	281	266	75	21	-72%

Map 12. Kittiwake habitat availability on the Isles of Scilly.



Potential of habitats to support breeding Kittiwake

As a small-bodied surface feeder with a short foraging range, Kittiwakes are strongly affected by local changes in prey abundance or availability. Kittiwake numbers in the southern part of the range have shown sustained breeding failure due to poor food supply (Hamilton et al. 2016). However, on Lundy the species has both persisted and increased (from 148 pairs in 2004 to 238 pairs in 2017), in contrast to a 66% decline in population, and a loss of 58% of nesting colonies, across southern England in the same period (Hamilton et al. 2016). This may have involved birds from moving from other colonies to Lundy. Since 2017, numbers on Lundy have increased further.

On the Isles of Scilly, the habitat that supported over 1,000 pairs in the 1970s is still present. The eradication of rats from some of the former breeding areas may improve conditions for breeding. However, given the negative trends at the edge of its range, regaining these former population levels for Kittiwake may be constrained by climate change impacts and food availability. In the short term, wardening to provide protection to current colonies is essential. Supporting successful breeding may prevent the population from being lost in the next few years and provide a platform for longer term recovery.

In summary the potential population is likely to be constrained by factors other than the extent of available habitat, but a population of 200 pairs could be secured if these factors are not found to be significantly limiting.

6.13 Common Tern

Summary

- Suitable breeding habitat is not limiting.
- Estimated population of 200 pairs.
- Rats likely significantly limiting current breeding opportunities. Ongoing wardening and access management required.

Habitat requirements

- Widely distributed around the coast and increasingly inland on freshwater lakes, reservoirs, gravel pits and river valleys.
- Nest on man-made structures such as docks, barges, purpose-built rafts and occasionally rooftops.
- Prefer open, well-drained ground on sand shingle, with limited vegetation cover (Burnell et al. 2023).

Habitat on the Isles of Scilly

Common Terns have used a wide range of open well-drained habitats, either sparsely vegetated amongst rocks and shingle or within short heath/grass vegetation. The key factors influencing site selection appear to be flooding, disturbance, predation and habitat availability. In the 1970s-1990s, breeding terns favoured low-lying and relatively sheltered islets within the channels between Bryher, Tresco and St Martin's, e.g. Peashopper Island and Green/Skirt Islands Tresco. These sites have become increasingly affected by high tides and flooding, and are susceptible to disturbance and predation (Robinson 2003). Attempts have been made to attract Common Terns to safe nesting areas of heathland on Samson, however, Common Tern

subsequently abandoned Samson, probably due to disturbance (Lascelles 2005) and the recent breeding attempts have been largely limited to the upper area of pebbly beach on Annet. The impact of rats on site selection and productivity is unknown but could be an important factor.

Areas of habitat were not mapped and measured specifically, but Map 13 shows all the locations used by breeding Common Tern since 1999. A wide range of potential sites exist but most have issues that need management. The low-lying islets have not been included, as these are considered unsuitable given their increasing vulnerability to flooding.

Historic numbers

In 1878, Common Tern was considered to be less numerous than Arctic and Roseate Terns (Robinson 2003), but became more numerous than Arctic Tern in the 1900s. High counts were 150 pairs on Green Island, Samson in 1943 and 150 pairs on Annet in 1946.

Trends since 1970s

The first all-islands estimate was 150 pairs in 1969/70. Numbers increased into the 1980s but have steadily declined since 1983 (Heaney et al. 2008).

Common Terns repeatedly choose to nest on low-lying islands which are frequently inundated by the sea, reducing their chance of breeding success. The increase in storminess exacerbates the problem and makes these former low-lying sites unsuitable. Attempts to lure birds to safe alternative sites nearby have failed, not helped by the presence of rats on islands like Samson and reported disturbance (Lascelles 2005). Currently the only breeding is on Annet, and the future of the population is uncertain. However, in 2025, 18 pairs fledged 19 young (Heaney et al. in prep), showing some signs that they could persist. The numbers of breeding tern species on the Isles of Scilly between 1969 and 2023 is shown in Figure 19.

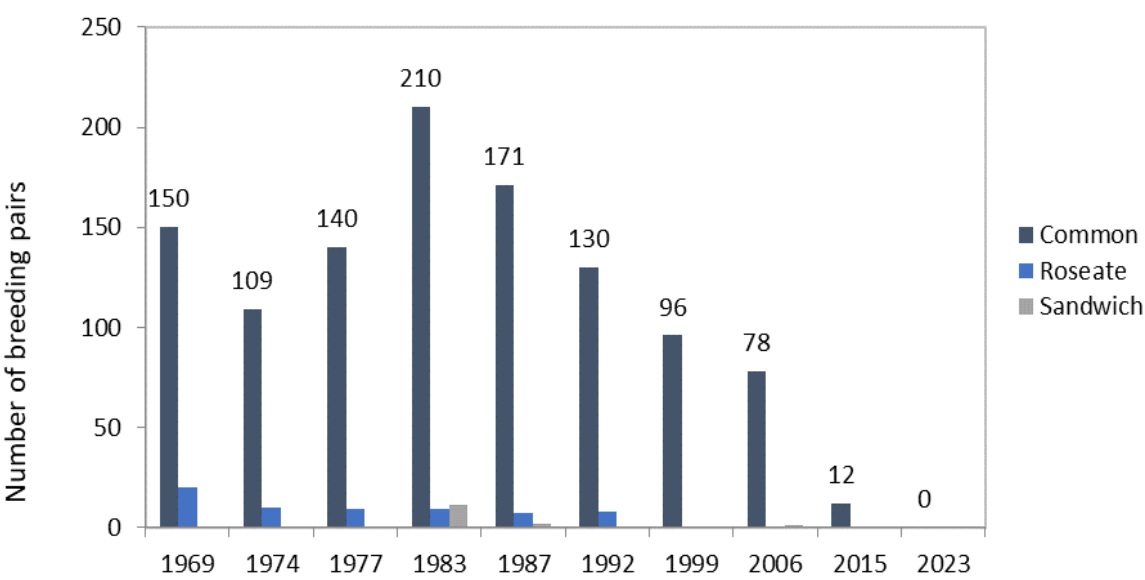


Figure 19. Number of breeding terns on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Common Tern on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 21.

Map 13. Common Tern habitat availability on the Isles of Scilly.

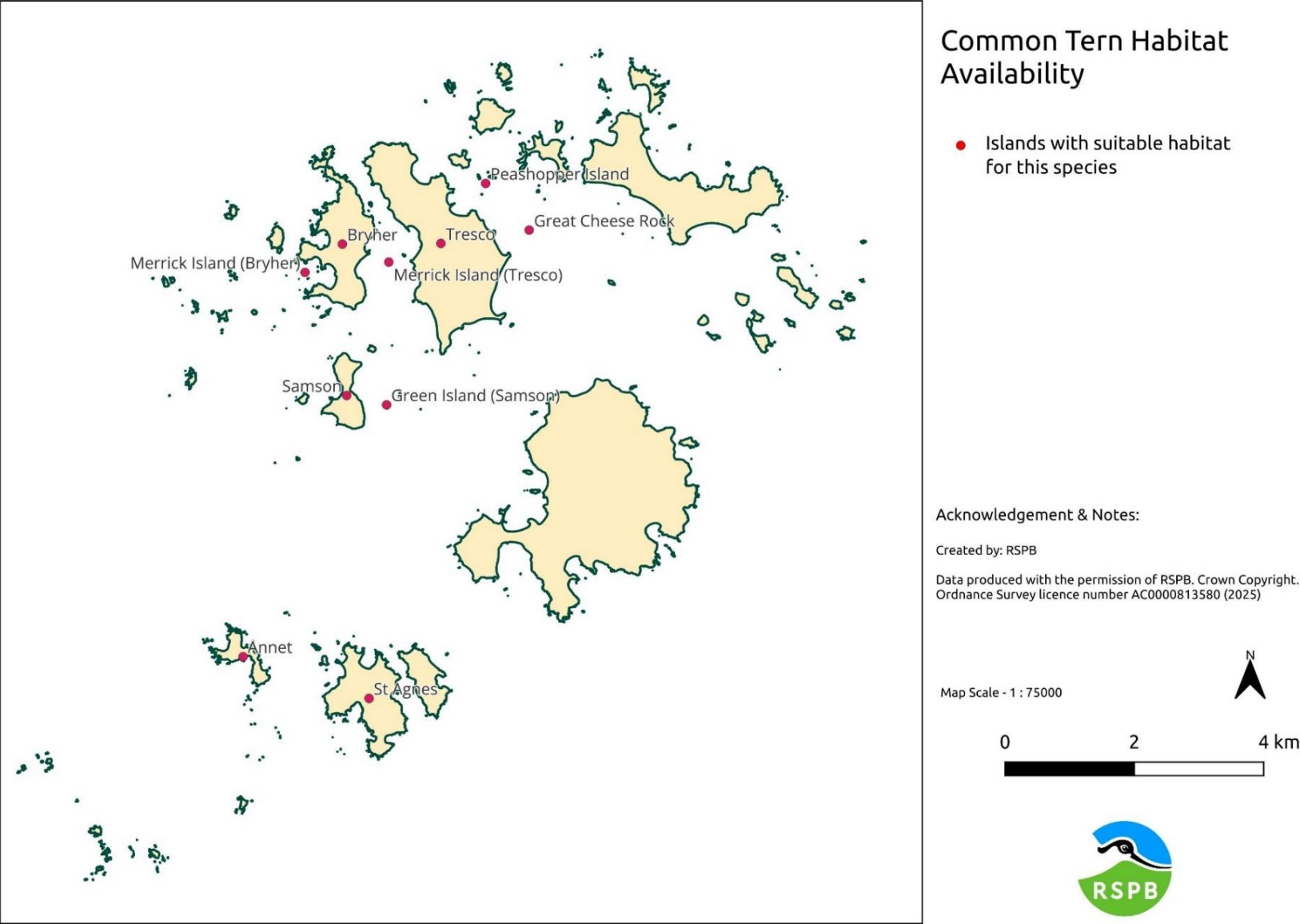


Table 21. Change in number of breeding pairs of Common Tern on the Isles of Scilly 1999-2023 (Heaney et al. 2024).

Colony site	1999	2006	2015	2023	% Change since 2015
North Hill, Samson	11	3	10	0	Last used 2015
Annet	1	1	2	0	Last used 2015-17 & 2021
Green Island (Samson)	7	56	0	0	Last used 2014
Peashopper Island	1	13	0	0	Site abandoned
Green Island (Tresco)	1	4	0	0	Site abandoned
Merrick Island (Tresco)	0	1	0	0	Last used 2016
Merrick Island (Bryher)	13	0	0	0	Site abandoned
Appletree Banks, Tresco	39	0	0	0	Site abandoned
Castle Down, Tresco	13	0	0	0	Site abandoned
Great Cheese Rock	5	0	0	0	Site abandoned
Browarth, St Agnes	3	0	0	0	Site abandoned
Colvel Rock, Bryher	1	0	0	0	Site abandoned
Teän	1	0	0	0	Site abandoned
Total	97	78	12	0	Lost as a breeding species*

*Whilst lost as a breeding species in 2023, 18 pairs since returned to breed on Annet in 2025.

Potential of habitats to support breeding Common Tern

The eradication of rats would create many nesting opportunities for terns on various habitats on several islands, supporting the re-establishment of regular breeding by terns. At present, terns are excluded from most of the archipelago by rats, and it is possible that the presence of the Great Black-backed Gull colony on Annet is a deterrent from regular successful nesting here. Although birds still prospect in most years, and attempt to breed in some (most recently in 2025), the national decline in Common Tern numbers, which was ongoing before the impact of Highly Pathogenic Avian Influenza (HPAI) in 2022 and 2023, has greatly reduced the pool of potential re-colonists.

The Isles of Scilly are also relatively isolated from other Common Tern colonies, with the nearest being in Dorset, the south coast of Ireland, North Wales and Brittany. Therefore, a recolonisation event may take some time to occur. The nearest colonies of 100 pairs or more are Lady's Island Lake, Wexford and Brownsea Island, Poole Harbour both about 220 km from the Isles of Scilly.

Once re-established, however, there is enough habitat to support a significant population. Colonisation by Common Tern is likely to be the necessary pre-cursor event to the re-establishment of other tern species, with Arctic Tern being close to the edge of its climatic range and Roseate Tern being in the early stages of a population recovery in England (albeit set back by HPAI). The return of species that have been former breeders here, like Roseate and Arctic Tern, depends on the maintenance of a strong colony of Common Tern as a 'carrier species' on the archipelago (Piec et al. 2021).

To encourage recolonisation and recovery of terns on the Isles of Scilly, more focus is required on providing suitable habitat in safe nesting areas away from high tides and disturbance, and ideally away from high concentrations of large gulls. Whilst some of this can be planned and focused on current and past breeding sites, efforts need to react to where terns are attempting to breed and provide the best conditions for them to breed successfully, wherever this is. During the early 2000s a tern warden was employed by the Isles of Scilly Wildlife Trust, and a similar role to protect breeding terns and other vulnerable breeding species could be considered.

Although potential sites are widespread, very focused and ongoing habitat management may be required in addition to rat eradication to provide optimal conditions, such as suppressing vegetation growth, using nest boxes and covers, and closing potential areas from access in the spring ahead of terns arriving. We would recommend the provision of rafts on Tresco Great Pool and Abbey Pool to provide alternative potential nesting areas.

Without rat eradication and targeted access management effort to secure breeding terns, the small population on the Isles of Scilly could be lost in the near future and make longer-term recovery much more uncertain. However, if this small population can be secured, prospects are good for Common and other terns on the Isles of Scilly. A population of 200 pairs of Common Tern could be established under positive management.

6.14 Puffin

Summary

- Suitable breeding habitat widespread, restricted to a few suitable islands.
- Rat eradication would provide 4.86 ha of rat-free habitat that could support 320-923 breeding pairs.
- Including existing rat-free habitat, the potential habitat could hold an estimated 651-1875 breeding pairs.
- Some ongoing management of access and habitat required.

Habitat requirements

- Favour offshore islands or predator free areas of mainland coast.
- Nests in burrows dug into soil or amongst crevices between boulders.

Habitat on the Isles of Scilly

On the Isles of Scilly Puffin nest in boulder beaches, boulder scree, rock crevices and in burrows along the top of low cliffs in burrows into peat and thrift tussocks (Burnell et al. 2023). Examples of potential habitat are shown in Figure 20. Islands and other areas with suitable breeding habitats are shown in Map 14.

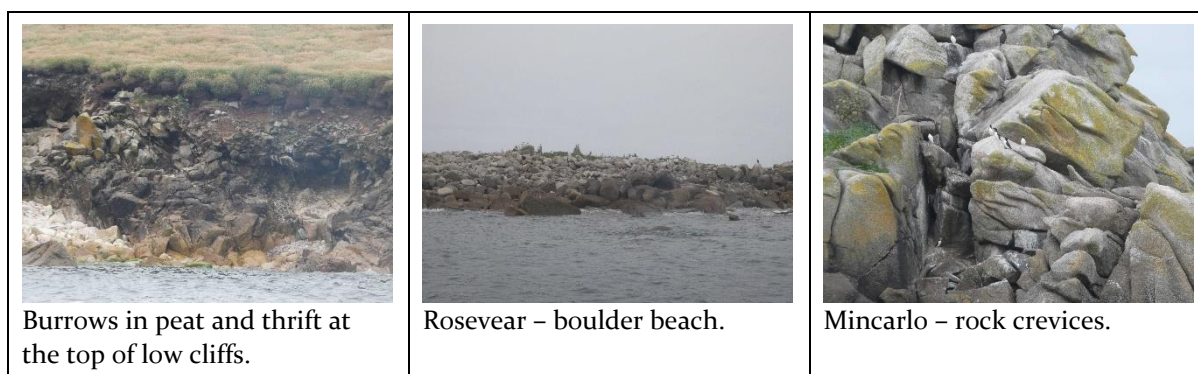


Figure 20. Examples of potential Puffin habitat on the Isles of Scilly.

Habitat assessments found that potential suitable habitat was estimated at 98,699 m² in 21 locations (see Table 22a and 22b).

Table 22a. Summary of potential suitable habitat locations on the Isles of Scilly for Puffin.

Island Name	Island Group	Area available for Puffin (m ²)	Rats
Annet	Annet	46,307.65	No rats
Shipman Head	Bryher + Satellites	1,768.21	Rats
Great Ganilly	Eastern Isles	3,221.59	Rats
Great Ganinick	Eastern Isles	212.76	Rats
Great Innisvouls	Eastern Isles	251.46	Rats
Ragged Island	Eastern Isles	525.15	Rats
Castle Bryher	Norrard Rocks	96.65	Rats
Gweal	Norrard Rocks	21,316.61	Rats
Mincarlo	Norrard Rocks	425.84	Rats
Scilly Rock	Norrard Rocks	335.13	No rats
Puffin Island	Samson + Satellites	53.51	Rats
Men-A-Vaur	St Helen's Group	928.94	No rats
Pednbrose	St Helen's Group	2,303.56	Rats
St Helen's	St Helen's Group	7,751.40	Rats
St Martin's	St Martin's + Satellites	6,673.59	Rats
Samson	Samson + Satellites	2,419.38	Rats
Gorregan	Western Rocks	481.25	No rats
Melledgan	Western Rocks	1,069.70	No rats
Rosevean	Western Rocks	122.95	No rats
Rosevear	Western Rocks	888.93	No rats
Tresco	Tresco + Satellites	1,544.36	Rats

Map 14. Puffin habitat availability on the Isles of Scilly.

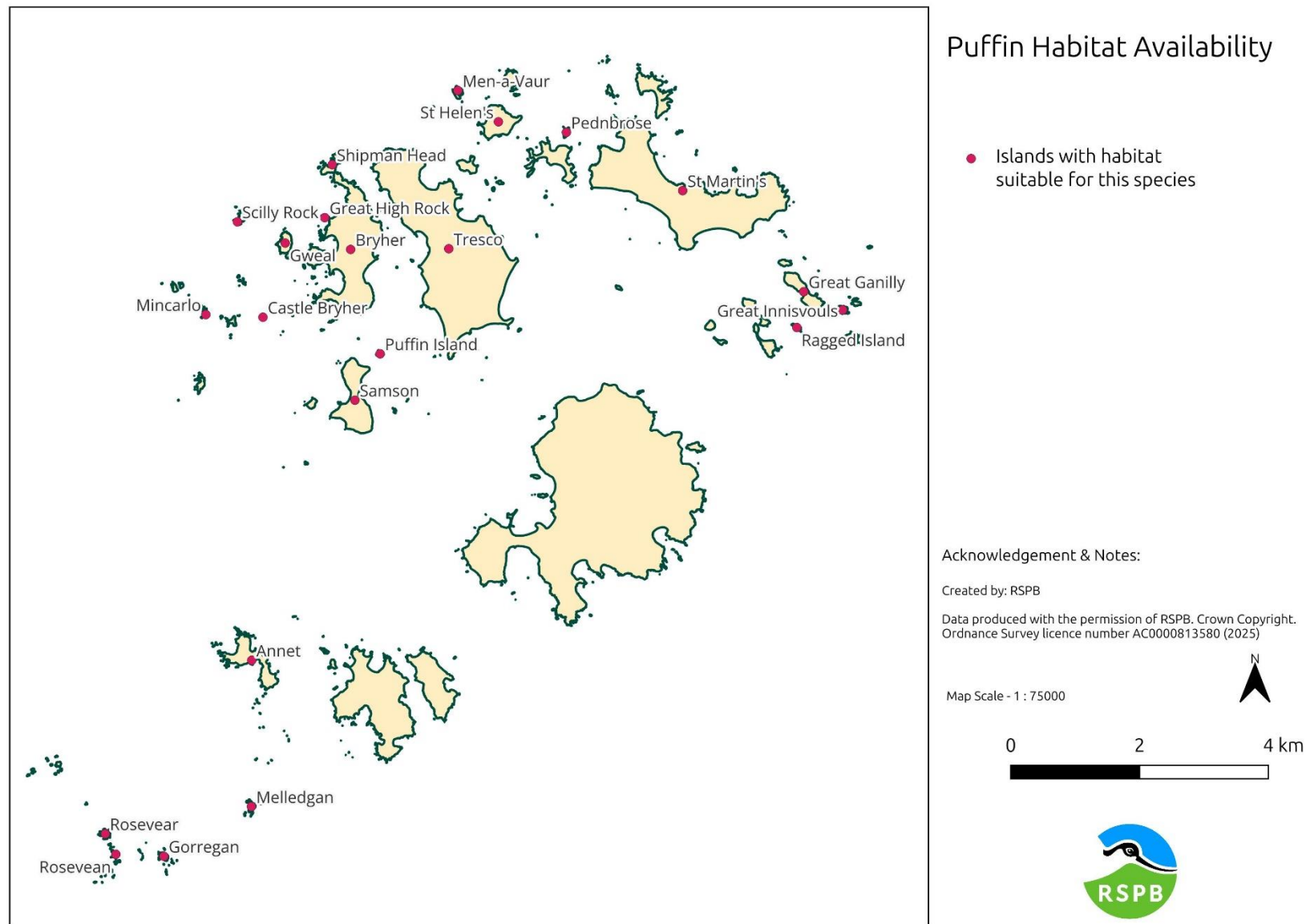


Table 22b. Total potential suitable habitat on the Isles of Scilly for Puffin.

	Within current rat-free area	Within potential new rat-free area	Total area
Total Area of habitat (ha)	5,01	4.86	9.87

Historic numbers

The clearest picture comes from Clark & Rodd (1906), who described Puffins breeding in thousands along with Manx Shearwaters on Annet, providing a graphic account of an island riddled with burrows. They also mention Puffins breeding on other islands including Rosevear and Melledgen in the Western Rocks, Mincarlo, Castle Bryher and Round Island, and several of the Eastern Isles.

However, there was a massive decline in the early to mid-twentieth century. Parslow (1967) described Puffins on Annet declining from 100,000 breeding pairs in 1908 to fewer than 100 by the mid-1960s. The introduction of Brown Rat, the impacts of oil pollution and predation by gulls have all been suggested as reasons for the decline. The first organised Puffin count, in 1967, following the wreck of MV Torrey Canyon, showed there to be between 90-140 pairs on nine islands, with Annet the stronghold (Parslow 1967).

Trends since 1970s

As a burrow-nester, not being responsive to play back calls, Puffin is a difficult species to census, and so trends are uncertain. However, counts of birds show broadly similar numbers, with a gradual increase to 187 pairs spread across nine sites in 2023 (Heaney et al. 2024). See Figure 21.

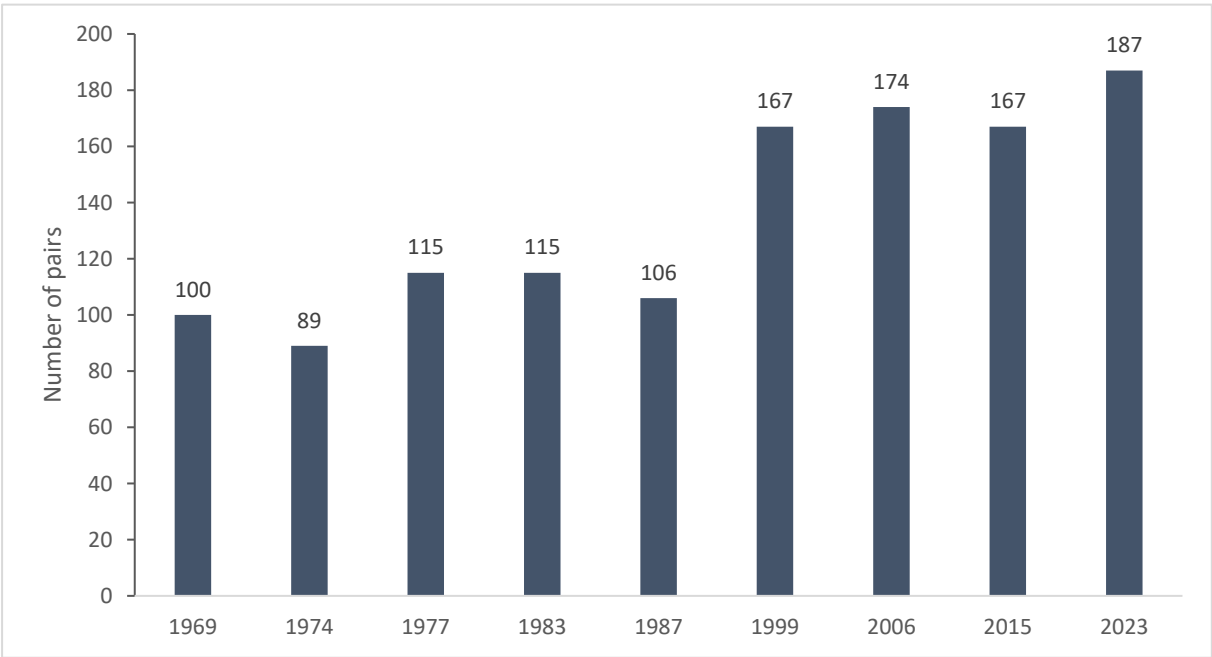


Figure 21. Number of breeding Puffin on the Isles of Scilly 1969-2023 (from Heaney et al. 2024).

The change in numbers of Puffin on individual sites within the Isles of Scilly between 1999 and 2023 is shown in Table 23.

Table 23. Change in number of breeding pairs of Puffin on the Isles of Scilly 1999-2023 (from Heaney et al. 2024).

Colony Site	1999	2006	2015	2023	% Change since 2015
Mincarlo	53	38	51	80	+57%
Annet	47	50	31	38	+23%
Scilly Rock	25	36	35	3	-91%
Rosevear	3	14	14	38	+171%
St Helen's	11	13	11	10	-9%
Melledgan	2	13	13	6	-54%
Men-A-Vaur	25	6	5	4	-20%
Rosevean	0	4	0	0	Site abandoned
Gorregan	1	0	2	4	+100%
Round Island	0	0	1	0	Site abandoned
Eastern Isles (Menawethan, Great Ganilly)	0	0	4	4	No change
Total	167	174	167	187	+12%

Potential of habitats to support breeding Puffin

As Puffin is one of the species most impacted by rats, it is also potentially one of the species to benefit the most from any eradication. Rat eradication will make available areas of potentially suitable breeding habitat and extend breeding opportunities onto several additional islands, with the potential for new sub-colonies to be established. This also has the advantage of providing optimal breeding habitat away from the principal colonies of Great Black-backed Gulls and enabling greater breeding success and survival. Most of the potential areas of habitat for Puffin will require ongoing management of public access and in some areas, vegetation management is required to allow them to remain suitable for Puffin and support colonisation.

The long-term decline of Puffin on Annet has been attributed to vegetation change and specifically the development of a tussocky sward favouring breeding gulls over Puffins (Allen 1974; 1976). It is uncertain whether active management of vegetation is required on Annet to allow the site to reach its full potential for Puffin. As with Razorbill and Storm Petrel, Puffin using boulder beach habitats are likely to be vulnerable to sea level rise, providing a risk to breeding success.

As a species at the edge of its climatic range, the scale of recovery is less certain for Puffin than for Manx Shearwater and Storm Petrel. However, the ongoing recovery of Puffin on Lundy suggest recovery is possible, with numbers on Lundy increasing since rat eradication in 2004 from 5 to 1,317 individuals in 2025 (Price et al. in prep.).

On Burhou, a predator-free island off Alderney, Channel Islands, at the southern edge of range, Puffin numbers have trebled in the past 20 years to 330 breeding pairs. Here Puffins occur at an estimated density of 66 pairs/ha within the suitable areas of the island. In the densely populated northern colonies in the UK, densities reach 3100 pairs/ha on Coquet, with lower

densities of 190 pairs/ha recorded on Fidra in Forth Islands (Seabird Monitoring Programme³ data).

With the Isles of Scilly at the edge of Puffin breeding range in the UK, we suggest an estimated population range based on the density figures of Burhou (66 pairs/ha) and Fidra (190 pairs/ha). We have estimated 9.87 ha of potentially suitable habitat on the Isles of Scilly, which could support populations of 651 (based on Burhou density) or 1,875 based (on the Fidra densities). This includes a potential new rat-free area of 4.86 ha, which could support between 320 and 923 pairs using these densities.

Some of this would require additional habitat and access management. There is potentially plenty of habitat for Puffin, and the potential to reach greater numbers if climatic factors and food availability are not limiting.

7. Additional considerations

7.1 Additional management requirements

A successful rat eradication would make available more extensive rat-free breeding areas for seabirds. It is important to note, however, that the potential of these areas can only be realised if additional ongoing management of these areas is provided to ensure that they are in a condition suitable for breeding birds. There are two principal management recommendations which would need to be delivered alongside the rat eradication to ensure that the benefits of the rat-free areas can be maximised: vegetation management and access management.

Vegetation management

The vegetation on the uninhabited islands and unenclosed land on the inhabited islands is largely unmanaged. This has seen progressive growth of bracken, honeysuckle and bramble as well as the expansion of invasive species, at the expense of more open maritime heath and grassland. Proactive management of vegetation would be required to maintain areas currently suitable for breeding seabirds and open up potential new areas of breeding habitat for these species. The large gulls are those seabirds currently most impacted by vegetation change but this could also significantly impact on the potential for Manx Shearwater and Puffin if left unmanaged.

Access management

Tourism is a vital part of the local economy but there is a need for visitor management to ensure that there is no adverse impact on wildlife from recreational disturbance. Access to current seabird islands is managed. The most important seabird breeding islands are permanently closed e.g. Annet, and some areas are closed during the breeding season e.g. gull colonies on Samson, White Island and Gugh. However, with the eradication of rats the seabirds have the potential to breed in additional locations but will only do so if access is managed in these new areas and disturbance does not deter breeding seabirds from otherwise suitable habitat.

³ The Seabird Monitoring Programme is a Scheme funded jointly by the British Trust for Ornithology and Joint Nature Conservation Committee, in association with the Royal Society for the Protection of Birds, with fieldwork conducted by both non-professional and professional surveyors.

Plans for the management of vegetation and access should be developed alongside the rat eradication so that the full benefit of the eradication is reached. Ongoing biosecurity to prevent the reinvasion of rats is also essential to maintain this habitat in suitable condition for breeding seabirds.

7.2 Potential for additional breeding seabirds

The current 'core' seabird assemblage is the 13 species described throughout this report (see Table 1). However, there is the potential for the Isles of Scilly to support additional breeding seabird species. The increased area of safe nesting habitat following rat eradication would be attractive to a range of other seabird species and present multiple breeding benefits.

Additional breeding seabirds may arise through natural recolonisation by former breeding species, such as Roseate Tern and Arctic Tern, or natural colonisation by species that are not known to have previously nested, such as Gannet. This could potentially be aided by using conservation interventions such as decoys, lures and nest boxes.

8. Conclusion

This report has considered the potential for habitats on the Isles of Scilly to support breeding seabirds in the absence of rats. The extent to which individual seabird species will benefit from rat eradication on the Isles of Scilly depends on four key factors:

1. the extent that current populations are constrained by rats and therefore have the potential to strongly recover in their absence,
2. the extent of available habitat and whether this is limiting for the population levels expected to occur,
3. the size, productivity and proximity of founder populations,
4. the extent to which other factors such as food availability may limit recovery even if terrestrial conditions are optimal.

Through field-based habitat assessments for all 13 regular breeding seabird species, across 71 sites on 50 islands, we have attempted to answer the first two questions, provided some information on the third based on local population trends and indicated where we think wider climate change or food availability may be a constraint on recovery.

We consider that a successful rat eradication increasing habitat suitability, alongside associated conservation management, delivered through the proposed Seabird Recovery Project, will enable the habitats on the Isles of Scilly support an overall seabird population in excess of 50,000 pairs of seabirds. This would be, by a long way, the highest population of seabirds on the Isles of Scilly since they have been systematically counted.

The impact of a successful rat eradication is expected to differ according to species, and will also require additional management actions to be deployed for several species to ensure suitable habitat is maintained. For Manx Shearwater and Storm Petrel, which are currently heavily impacted by rats and have responded to rat eradication elsewhere, and do not appear to be limited by food availability, there are large areas of potentially suitable habitat for these species to use. This makes the potential impact of rat eradication transformative for these. For example, we have found that the available habitat could support >10,000 pairs of Manx Shearwater, which would comprise around 1% of the global population and thus make the Isles

of Scilly globally important for this species. For some species like the large gulls which are experiencing population wide declines it is difficult to predict whether the potential positives of rat eradication and associated management can halt or offset the wider declines. In addition, eradication of rats alone will not produce ideal breeding habitat for large gulls unless this is also supported by targeted habitat and access management.

For Guillemot, which has always been restricted to a handful of islands with suitable habitat, although recovery is expected in line with regional trends, the numbers of birds that the Isles of Scilly could support is constrained by suitable habitat.

For Razorbill which nest mostly in boulders on the Isles of Scilly, a habitat which is widespread around the archipelago, recovery is less constrained by habitat, and the Isles of Scilly could support higher numbers of breeding birds.

Overall, therefore, a successful rat eradication, in combination with additional conservation actions, has the potential to bring significant conservation benefits for the seabird assemblage, and for some species it could be transformative. The resulting increased seabird population would make the Isles of Scilly globally important for Manx Shearwater and nationally important for Storm Petrel, Shag, Great Black-backed Gull, and potentially Razorbill.

Island restoration is now an established and proven measure for seabird conservation and recovery. This involves the eradication of invasive non-native species and the subsequent management of biosecurity and ecosystem recovery. The Isles of Scilly Seabird Recovery Project aims to carry out the eradication of rats from large areas of the archipelago and provide the platform for long term seabird recovery through ongoing biosecurity and management. The Isles of Scilly Seabird Recovery Project has the potential to be a global exemplar of Island restoration, enabling the Isles of Scilly to develop into one of the most important seabird colonies in the north-east Atlantic.

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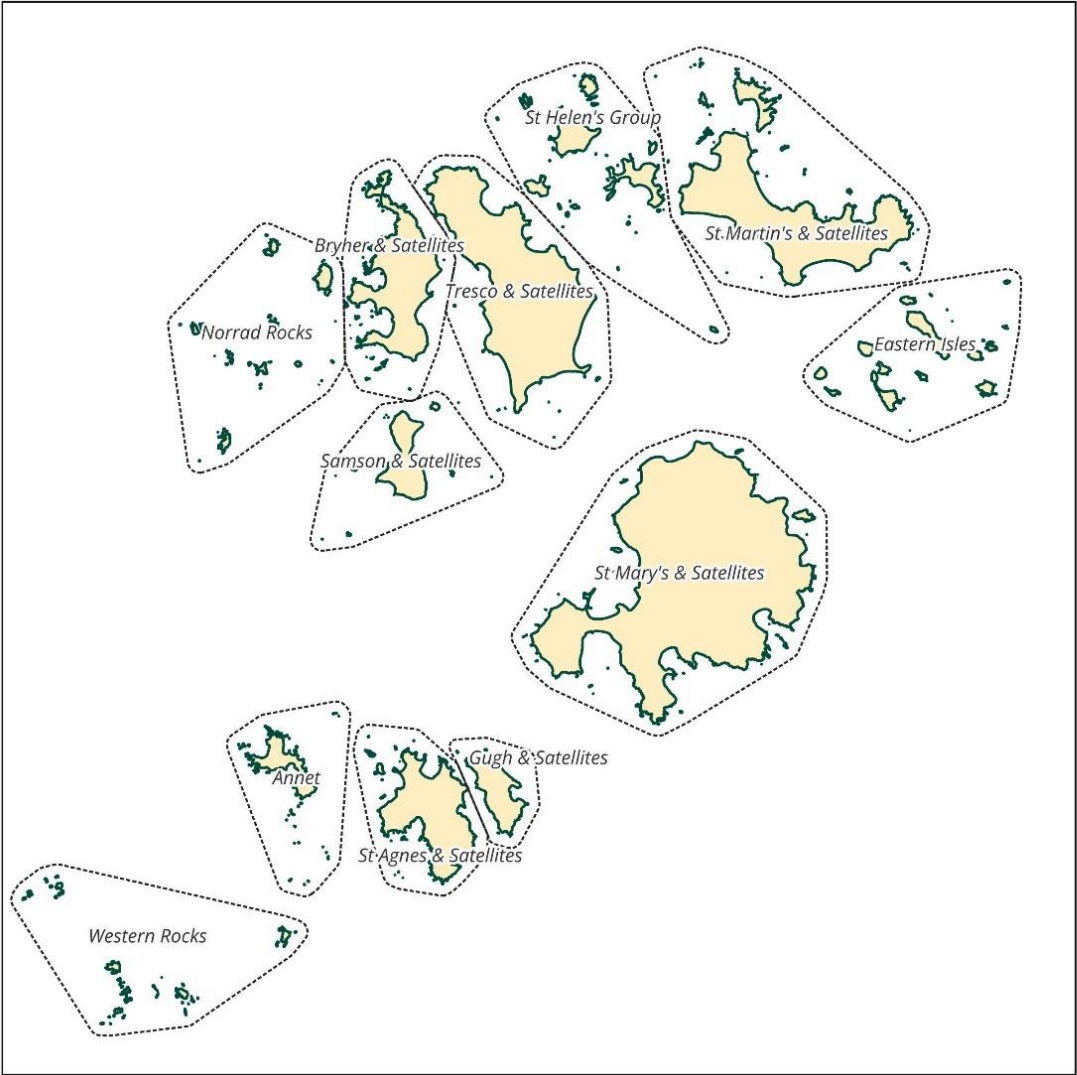
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Appendices

Appendix 1: Island groups of the Isles of Scilly



Island Groups

Acknowledgement & Notes:

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Appendix 2: Example Site Recording Form

Island Group	Western Rocks		
Island	Recorders	Date	Time
Melledgan			

SPECIES RECORDING: FUL = Fulmar (AON), MX = Manx Shearwater (AOB), SP = Storm Petrel (AOB), COR = Cormorant (AON), SH = Shag (AON), LB = Lesser Black-backed Gull (AON), HG = Herring Gull (AON), GB = Great Black-backed Gull (AON), KIT = Kittiwake (AON), COT = Common Tern (AON), GUI = Guillemot (I), RAZ = Razorbill (I), PUF = Puffin (I)

SPECIES	FUL	MX	SP	COR	SH	LB	HG	GB	KIT	COT	GUI	RAZ	PUF
2000			140	16	105		0	28					
2023			40	11	100		1	17					
2025													

Photographs			
Location	Date	Time	Notes/ Species relevance

Island Group	Western Rocks		
Island	Recorders	Date	Time
Melledgan			

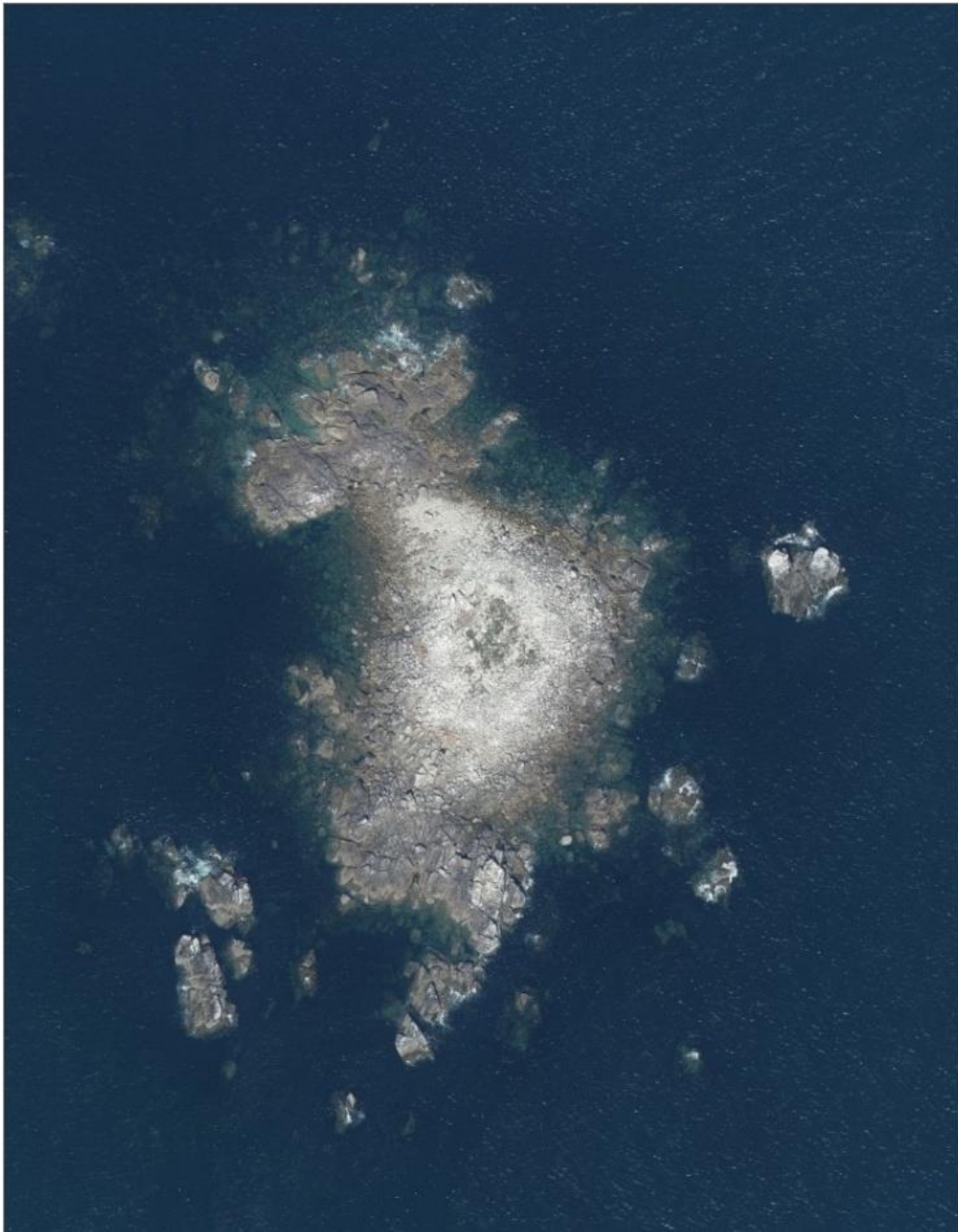
HABITAT RECORDING: Current habitat used (CH), Potential ledges (PL), Potential Boulders (PB), Cliff & slope (PCS), Grassy heath (PGH), Peaty heath (PPH) Boulder beach (PBB), Pebbly beach (PPB), RAM cliff (PRC), Burrows (PBU), Rocky outcrops (PRO), Flat rock (PFR), Stonewalls (PS)

RAZ	CH, PL, PB	LB	CH, PCS, PGH, PBB	FUL	CH, PL
GUI	CH, PL, PB	GB	CH, PCS, PGH, PBB, PRO	SH	CH, PB
PUF	CH, PBU, PCS	HG	CH, PCS, PGH, PBB	COR	CH, PRO, PBB
SP	CH, PBU, PRO, PS	MX	CH, PBU	COT	CH, PGH, PPH, PFR, PBB
KIT	CH, PRC, PL				

MAP



IMAGE



NOTES

e.g. boat observation/ from land/etc