From: [redacted]
To: Dogger Bank South
Cc: [redacted] SM-Defra-Correspondence Section (MCU); SM-Defra-offshorewind (DEFRA)
Subject: Secretary of State Consultation letter - Dogger Bank South Offshore Wind Farms
Date: 18 December 2025 08:44:12
Attachments: IoS eradication - quantification of benefit v3 FINAL 1225.pdf

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Dear [redacted]

Further to your letter of 6 November re the RWE Renewables Dogger Bank South Offshore Wind Farms proposed development, I have now received Natural England's quantification of projected seabird benefits for the Isles of Scilly predator eradication project.

I attach a copy for your consideration.

Thanks

[redacted] | Offshore Wind strategic compensation - predator reduction | DEFRA | 2 Marsham Street, London, SW1P 4DF

Isles of Scilly – Estimated Rates of Seabird Recovery Following Brown Rat Removal

Summary

In order to inform Marine Recovery Fund (MRF) planning Natural England, at the request of Defra and the Defra-chaired Strategic Predator Reduction Working Group (which includes representation from Defra, DESNZ, the Offshore Wind Industry Council, NE, RSPB and the Royal Society for Wildlife Trusts), have reviewed site assessments associated with the planned brown rat eradication on the outer islands of the Isles of Scilly in order to identify anticipated recovery populations. This review draws heavily on four sources:

- Donato (2025) Isles of Scilly rat eradication: potential for seabird recovery as a contribution to Marine Recovery Fund objectives. Unpublished report for Defra.
- Lock, L., St Pierre, P., Dalrymple, S. & Shurmer, M.P. (2025). Isles of Scilly Breeding Seabird Habitat Assessment. RSPB report to the Offshore Wind Industry Council. The Royal Society for the Protection of Birds and The Wildlife Trusts.
- RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited, (2025) Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment (Hereafter RWE (2025))
- DBS (2025) Dogger Bank South Offshore Wind Farms Project response to the Isles of Scilly Breeding Bird Habitat Survey Report (Hereafter DBS (2025))

It also uses the most recent full archipelago SPA breeding bird assessment as a baseline from which to judge likely change:

- Vickie Heaney, Jay Cowen, Paul St Pierre & Hester Odgers (2024) The status of seabirds breeding in the Isles of Scilly 2023.

In reaching its conclusions NE have drawn on the expertise of Vickie Heaney, Hester Odgers, Leigh Lock and Paul St. Pierre in their capacity as seabird experts familiar with the Isles of Scilly, noting that their views in this capacity may or may not represent those of their host organisations.

This work seeks to form a reasonable consensus view to seabird population change as a direct consequence of liberation from the pressure of rat predation within a post-eradication 30-year time-horizon for the purposes of informing the MRF process. While the focus is on recovery directly resulting from the removal of rat predation, where additional recovery might be secured though additional measures such as targeted habitat management or proactive facilitation of species colonisation these measures are flagged. For a number of species additional actions are likely to be beneficial if the opportunity offered by rat removal is to be maximised. However, in the short term, once habitat is liberated of rats, population demographics are likely to be the primary determinant of population growth and, for all likely beneficiary species, there will be a lag before additional measures are likely to add to the population. If future management interventions to enhance outcomes were to be instigated these could potentially form either additional 'like-for-like' compensation measures or strategic compensation measures, but their relationship with any strategic compensation package that has provided the rat removal will need to be carefully established to avoid the risk of 'double counting' gains.

It should be recognised that uncertainty is inherent in these assessments as the ecosystem re-sets and recovers following the removal of pressure from invasive species. As such the estimated population sizes should, whilst based on best available evidence, only be seen as indicative. To this end population estimates are categorised with confidence levels to guide thinking. These confidence estimates identify the author's view on the likelihood of meeting or exceeding the population uplift figure quoted. To further inform these confidence assessments; understand how the recovery is proceeding; identify where additional interventions (such as habitat management) may be warranted; and to keep an audit on recovery, it is recommended that in tandem with post-eradication biosecurity monitoring, population and productivity monitoring of species breeding is undertaken to allow ongoing assessments of response.

Summaries for the thirteen seabird species currently breeding in the archipelago are presented, but it should be acknowledged that there may be potential for the establishment, or re-establishment, of additional seabird species of MRF interest in the islands once the pressure of invasive rats is removed.

Table 1. Summary of concluded impacts from rat eradication (noting that all figures are expert led predictions and should be caveated as such).

Species	**Current population (pairs) - based on 2023 census unless otherwise indicated**	**Anticipated uplift (pairs) in 30-year timeframe**	**Confidence level uplift will be met or exceeded**
Fulmar	242	10	H
Manx shearwater	1,061	19,000	H
European storm petrel	1,603	14,400	H
Cormorant	43	5	H
Shag	655	1,350	M
Lesser black-backed gull	1,040	1,500	M
Herring gull	336	250	H
Great black-backed gull	607	390	M
Kittiwake	21	125	M
Common tern	18 (2025)	230	H
Guillemot	497	2,500	H
Razorbill	529	4,230	H
Puffin	187	2,300	H
Total		**46,290**	

Species: Fulmar (*Fulmarus glacialis*)
Current population (2023 survey): 242 pairs
Pressures (known): No certain pressures identified Pressures (suspected): Marine food supplies, invasive brown rat; HPAI; bycatch
Anticipated post eradication population (within 30-year timeframe): 250 pairs Population uplift: 10 pairs Confidence: High
Reasoning: There is a high degree of alignment between the conclusions of Donato (2025) (250 pairs) and Lock et al (2025) (Up to 300 pairs). Given the wider population status and a lack of evidence surrounding population limitation by rat population, stability is viewed as the most likely outcome. It should be noted that securing population stability would represent an uplift compared to current (local and national) population trajectories. Despite wider regional declines, fulmar populations on Lundy saw significant growth between rat eradication and the arrival of HPAI but have since declined. The population however remains well above baseline levels.
Uncertainties and potential limiters of recovery: Fulmar are currently declining across their North Atlantic range, with nesting resource not thought to be a contributory factor. More research is needed both on wider pressures and on measures (local and regional) that may compensate for drivers of decline.
Additional potential measures to facilitate recovery: None identified. While the wider population is in decline, poor recruitment is likely to be contributing to this trend locally and research into the low productivity levels may lead to the identification of interventions that could support both existing and new populations at a local scale.

Species: Manx Shearwater (*Puffinus puffinus*)
Current population (2023 survey): 1,061 pairs
Pressures (known): Invasive brown rat Pressures (suspected): No additional pressures identified
Anticipated post eradication population (within 30-year timeframe): 20,000 pairs Population uplift: 19,000 pairs Confidence: High
Reasoning: The estimate in Donato (2025) of 100,000 pairs is likely to be ambitious, as much of the habitat released by the removal of rats is likely to be of low quality (e.g. thin soils over rock will limit accessibility, with quality habitat restricted to areas with deeper soils or boulders with spaces underneath. Full recovery will also take longer than 30 years to realise. As a result, the conclusion in Lock et al (2025) of 20,238 pairs should be adopted. It is likely that colonisation by shearwaters (and other seabirds post eradication) will lead to a vegetation response supportive of an increasing nest resource over time, supporting ongoing population growth for an extended period.
Uncertainties and potential limiters of recovery: Soil depth is an unknown in many areas of potential habitat and locally may limit habitat adoption. It is likely that some areas of potentially suitable habitat are currently inaccessible due to surface vegetation such as bramble scrub and bracken.
Additional potential measures to facilitate recovery: Lock et al (2025) identify potential for an additional 10,245 pairs on additional areas subject to suitable habitat management being secured. This includes bracken management, invasive scrub management, and burrow creation. Further locally beneficial measures could include recreation management and transactions to facilitate colonisation of new sites. Integration of nest boxes into new infrastructure such as sea defence embankments as nature-inclusive design may offer new opportunities. As with a number of species, Manx shearwater can be impacted by disturbance around colonies in particular foot access risking damage of nest burrows. Having a resourced access strategy may enhance recovery in areas of possible interaction and enhance stakeholder engagement with seabirds.

Species: European Storm Petrel (*Hydrobates pelagicus*)
Current population (2023 survey): 1,603 pairs
Pressures (known): Invasive brown rat, feral cats Pressures (suspected): Disturbance sensitive, climate change – sea level rise, climate change – summer storms, house mice
Anticipated post eradication population (within 30-year timeframe): 16,000 pairs Population uplift: 14,400 pairs Confidence: High
Reasoning: Donato (2025) suggested a post eradication population of around 10,000 pairs with Lock et al (2025) suggesting 16,000 pairs (plus 5,806 pairs on additional areas under suitable management) While optimal habitat (boulders with gaps and holes in shallow cliffs/rock) is more limited in extent than initially scoped in Donato (2025), densities within this habitat are likely higher than initially assumed (Donato *pers obs* based on site visits in August 2025). For example, the 1,053 pairs on Annet are largely restricted to approximately 2.7 hectares of quality habitat with a consequent density of about 390 pairs/hectare. If other islands support similar densities, in time the population estimate of Donato (2025) is likely to be found to be conservative. In addition, some pairs are known to nest at low density in sub-optimal habitats which will further increase populations. The Lock at al figure is therefore adopted.
Uncertainties and potential limiters of recovery: Known to be disturbance sensitive (Watson et al 2014) but key boulder-beach habitat is not attractive for recreation. Cats may be a limiter of recovery on inhabited islands, and house mice (if present). Summer storms, which are considered likely to become more frequent with climate change, may impact on nesting success of birds on boulder beaches, while sea level rise may limit habitat. However, winter storms may create additional habitat through washing out of inter-boulder material on the upper shore. Improved understanding of potential habitat at and above the current high water mark would be helpful. Differing densities in different habitats are not well documented though some data on this exists (Heaney *pers comm*). The presence of house mice may limit recovery in areas where they are present, as they can be a predator of storm petrel eggs. The status of mice on the Isles of Scilly is unclear. Mice are present on some islands that will be subject to eradication, but at least some of these populations are wood mice, as opposed to house mice (Hart et al, 2022), which are thought to pose a lower threat to seabirds.
Additional potential measures to facilitate recovery: Burrow making and storm petrel boxes/walls above the high water mark; limitation of cat pressure on inhabited islands and removal of any cats that occupy uninhabited islands;

habitat management; house mouse removal may be beneficial if recovery on islands with house mice is not seen post rat removal.

Integration of nest boxes into new infrastructure such as sea defence embankments as nature-inclusive design may offer new opportunities.

Recreation management may be locally helpful while transaction or audio attraction may assist with colonisation of liberated habitat.

Species: Cormorant (*Phalacrocorax carbo*)
Current population (2023 survey): 43 pairs
Pressures (known): None known Pressures (suspected): None known
Anticipated post eradication population (within 30-year timeframe): 50 pairs Population uplift: 5 pairs Confidence: High
Reasoning: Both Donato (2025) (50 pairs) and Lock et al (2025) (100 pairs) suggest that dramatic population change post eradication is unlikely. The species is not known to be rat limited and has always been limited in its breeding range on Scilly. The predominantly coastal breeding sub-species *carbo*, which is presumably the dominant race on the Isles of Scilly, is also showing a national decline, the causes of which are unknown. Marine ecosystem recovery associated with seabird recovery may be beneficial, but this is highly uncertain. Therefore, a conservative estimate of future population has been adopted.
Uncertainties and potential limiters of recovery: None known
Additional potential measures to facilitate recovery: None known

Species: Shag (*Gulosus aristotelis*)
Current population (2023 survey): 655 pairs
Pressures (known): No certain pressures identified Pressures (suspected): Invasive rats; Food supply and storms affecting productivity and survival (research ongoing); disturbance; climate change – summer storms; bycatch in Cornish waters Note that some suspected pressures may be interdependent, such as storminess affecting visibly and encouraging birds to forage in areas where they at increased bycatch risk; weather can also influence pair bonding which may in turn impact productivity.
Anticipated post eradication population (within 30-year timeframe): 2,000 pairs Population uplift: 1,350 pairs Confidence: Medium
Reasoning: Consistent conclusion in both Donato (2025) and Lock et al (2025) that there will be a population recovery following rat eradication linked to removal of the suspected, but not confirmed, pressure from rats.
Uncertainties and potential limiters of recovery: The species is known to be sensitive to disturbance which may limit opportunity, especially on inhabited and regularly visited islands. The primary nesting location on Scilly is on the upper shore - above the high-water mark, but in the area washed by storms - rendering them vulnerable to predicted climate change impacts. Some anecdotal evidence suggests that breeding may be affected by winter food; better understanding of residency vs seasonal movement of breeding birds is needed. Winter mortality, especially of first winters, is known to be high and this may affect local survivorship if dispersing young birds are moving to areas where they are at risk of pressures such as bycatch. Population recovery may result in increased emigration of first winters if food resources in the islands become limiting and preferentially accessed by adults.
Additional potential measures to facilitate recovery: Recreational disturbance management, particularly associated with upper shores on rocky and boulder coasts, might support further recovery.

Species: Lesser Black-backed Gull (*Larus fuscus*)

Current population (2023 survey): 1,040 pairs

Pressures (known):

Pressures (suspected):
Invasive brown rat; Food supply, Avian predation

Anticipated post eradication population (within 30-year timeframe): 2,500 pairs
Population uplift: 1,500 pairs
Confidence: Medium

Reasoning:
While the population of lesser black-backed gulls has shown a long-term decline on the islands, the most recent monitoring suggests a levelling of decline at least on the study colony on Gugh. It is also noted in 2025 that productivity of the monitored colony was good, and, as noted in Lock et al (2025) the population is now biased towards rat-free islands.

With the increase in available nesting habitat it is likely that an increase in population will result; however, other pressures such as food resources may limit the scale of recovery. Tracking studies currently being undertaken may allow a clearer understanding of nesting season dependencies in future years. Large gull numbers have continued to decline post rat-eradication on Lundy. However, to what extent that population was formerly supported by anthropogenic food sources, as nearby colonies such as Steep Holm and Flat Holm have been, is unknown. It may be population change on Lundy more closely reflects change in availability of food supplements (though direct reduction or increased competitor with urban breeders) than changes on-island.

On the Isles of Scilly terrestrial food supplements are likely to have played a smaller role in population support, though fishing discards may have been significant, and populations are more likely to have been influenced by local factors. The intertidal zone on Scilly is more extensive than on steep-sided Lundy, and this may prove to be an additional local resource for breeders if food competition from rats is reduced.

Recognising that the decline seems to have levelled off, and that both additional habitat provided and likely additional food resources will be made available by the reduction in competition by rats, a population recovery is anticipated. However, this seems likely to be modest, for the reasons discussed above. Therefore, a more modest figure of 2,500 pairs, compared with that in Lock et al (3,000 pairs), is suggested.

Uncertainties and potential limiters of recovery:
To what extent rat predation and food availability are the dominant pressure limiting numbers is uncertain, and how, in the absence of rats, food availability may constrain the population.

Additional potential measures to facilitate recovery:
Investigations are ongoing at mainland sites in NW England into how productivity of wild-nests can be enhanced through measure such as supplementary feeding of chicks and provision of chick-shelters to safeguard young. These may offer interventionist routes to improve colony productivity in the future.

As with a number of species, gulls can be impacted by access at and around colonies, affecting behaviour and resulting in accidental damage of nests and chicks. Disturbed chicks entering the territories of other gull pairs can be attacked and killed. Conversely, managed access to colony areas can allow for close interaction with birds with minimal risk. Having a resourced access strategy may enhance recovery and stakeholder engagement with seabirds. Managing access appears to be an effective approach on Gugh and this could be extended to other areas.

Species: Herring Gull (*Larus argentatus*)
Current population (2023 survey): 336 pairs
Pressures (known): Pressures (suspected): Invasive brown rat; Food supply
Anticipated post eradication population (within 30-year timeframe): 750 pairs Population uplift: 250 pairs Confidence: High
Reasoning: Herring gull have been in a general decline in the islands, with the recovery recorded in the most recent census reflecting the adoption of urban nesting on St. Mary's. The reason for the decline in birds nesting in natural situations is uncertain. Although they are likely to benefit from extra habitat, it is not clear if rat predation is currently the regulating pressure on the population. With the development of urban nesting, which appears to be associated with improved productivity, there is likely to be an increase in the island population in future years as young birds recruit into the population, independent of any benefit of the eradication. Nonetheless some increase is likely to result from the removal of rats allowing resources on the off-islands, including reestablishing seabird populations and reduced competition for strandline foodstuffs to support breeding. A future population of 750 pairs is estimated, an average of the estimates of Donato (2025) (500pr) and Lock et al (2025) (1,000pr). However, a proportion of this is assumed to be urban nesters and so independent of the rat status, leaving a reduced uplift.
Uncertainties and potential limiters of recovery: Urban nesting birds are assumed to largely rely on anthropogenic supplements as food during the breeding season. Beyond these anthropogenic resources, food availability is widely considered to be a limiter of breeding populations.
Additional potential measures to facilitate recovery: Investigations are ongoing at mainland sites in NW England into how productivity of wild-nests can be enhanced through measure such as supplementary feeding of chicks and provision of chick-shelters to safeguard young. These may offer interventionist routes to improve colony productivity in the future.

Species: Great Black-backed Gull (*Larus marinus*)
Current population (2023 survey): 607 pairs
Pressures (known): No certain pressures identified Pressures (suspected): Invasive brown rat; Food supply
Anticipated post eradication population (within 30-year timeframe): 1,000 pairs Population uplift: 390 pairs Confidence: Medium
Reasoning: Both Donato (2025) and Lock et al (2025) suggest that recovery to around 1,000 pairs is likely, driven particularly driven by increased availability of avian prey in the breeding season.
Uncertainties and potential limiters of recovery: Currently in decline throughout its North Atlantic range with the drivers of decline uncertain.
Additional potential measures to facilitate recovery: None identified

Species: Kittiwake (*Rissa tridactyla*)
Current population (2023 survey): 21 pairs
Pressures (known): Invasive brown rat Pressures (suspected): Food supply
Anticipated post eradication population (within 30-year timeframe): 150 pairs Population uplift: 125 pairs Confidence: Medium
Reasoning: An average of the conclusions of Donato (2025) (100 pairs) and Lock et al (2025) (200 pairs) has been taken. While the species has been suffering a general decline in the region, part of the pressure on Scilly is likely to be linked to the presence of rats limiting nesting to sub-optimal locations. Recovery contra the regional trend has been seen on Lundy (Hamilton et al 2016), but recovery levels are likely to be modest given edge-of-range status and the declines seen widely across Southern England. The breeding range has extended much further south than the UK in recent years (Coulson, 2019), suggesting that even with the pressure of a shifting climate the species will not be out of its niche-space in a 30-year time frame.
Uncertainties and potential limiters of recovery: Pressures away from the breeding sites are poorly understood in the Celtic Sea area and may include breeding season food supply. This may become an overriding pressure. Thermal stress has been suggested as a pressure on some cliff-nesting seabirds at the southern edges of their range and has been identified as a constraint for kittiwake at the southern edge of their range (Coulson, 2019). This could be an added pressure in areas such as the Isles of Scilly. It is known that the southernmost colonies in Iberia referred to by Coulson were situated in locations that were sheltered and north facing. The aspects of former and potential sites in the Isles of Scilly have not been documented.
Additional potential measures to facilitate recovery: None Identified

Species: Common Tern (*Sterna hirundo*)
Current population (2023 survey): 0 pairs (Recolonisation in 2024 with 18 pairs in 2025)
Pressures (known): Invasive brown rat Pressures (suspected): Disturbance sensitive, climate change – sea level rise, climate change – storms
Anticipated post eradication population (within 30-year timeframe): 250 pairs Population uplift: 230 pairs (based on 2025 population) Confidence: High
Reasoning: Common terns reestablished a breeding presence in the Isles of Scilly on Annet in 2024, giving a much higher likelihood that they will respond to the provision of additional available habitat. Both Donato (2025) (250 pairs) and Lock et al (2025) (200 pairs) anticipate a recovery of this species (and the potential of establishment of other tern species) as a consequence of the rat eradication, with significant areas of potential nesting habitat becoming available. However, many of the areas of potentially suitable habitat area also currently subject to recreational use, which may influence the scale of recovery, and as a whole the European population has been suppressed in recent years by HPAI. A conservative estimate of 250 pairs is adopted.
Uncertainties and potential limiters of recovery: Recreational pressure may prove an influence on common tern recovery.
Additional potential measures to facilitate recovery: Terns are known to respond to the use of visual and sonic decoys as an aid to promote re-establishment. With the re-establishment of breeding birds on Annet in 2024 the need for attractants to promote recolonisation may be reduced. Annet likely represents sub-optimal habitat for terns in Scilly, but many areas of physically better habitat are subject to recreational use and measures to influence this may enable a greater population recovery to occur. As with a number of species, terns can be impacted by disturbance around colonies including waterborne recreation and access at colonies affecting behaviour and resulting in accidental damage of nests and chicks. Conversely, where managed, access to colony areas can allow for close interaction with birds with minimal risk. Having a resourced access strategy may enhance recovery and stakeholder engagement with seabirds. Both uninhabited islands (e.g. St. Helens, Tean) and potentially some inhabited islands could benefit from a resources approach.

Species: Guillemot (*Uria aalge*)

Current population (2023 survey): 497 pairs

Pressures (known):
Bycatch in Cornish inshore areas, invasive brown rat.

Pressures (suspected):
Invasive brown rat, disturbance sensitive, availability of optimal nesting resource (quality and exposure), avian predation, food resources, pollution which may drive wrecks.

Anticipated post eradication population (within 30-year timeframe): 3,000 pairs
Population uplift: 2,500 pairs
Confidence: High

Reasoning:

Estimates of potential:

- Donato (2025): 1,500 pairs
- Lock et al (2025): 1,578 pairs (at 2pr/m^2) – 1,972 (at 2.5pr/m^2) pairs
- RWE (2025): 24,296 - 55,880 pairs (combined guillemot and razorbill)
- DBS (2025): 3,037 pairs (at 2.5pr/m^2) – 55,881 (at 46pr/m^2) (again both species)

Of all the seabird species breeding on Scilly guillemot are arguably the most habitat constrained. While well known for nesting at high density on open cliff ledges, birds on the Isles of Scilly are currently restricted to nesting in spaces in boulder beds and as a result are present at low density. NE have recommended the use of a range of densities to evaluate potential including a conservative lower limit density estimate of 2.5 pr/m^2. This appears broadly consistent with current densities.

Habitat assessments by Lock et al (2025) and RWE (2025)/DBS (2025) have reached different conclusions on overall extent of their currently utilized habitat, as result of different interpretations of potential based on observation of current sites. Some sites considered suitable in the RWE reports for a combination of guillemot and razorbill are felt by Lock et al to be unsuitable for guillemot specifically due to combinations of aspect, shallow angles of slope, extensive intertidal frontage. Even if they were to be occupied, densities in such locations would likely be minimal. The resultant estimates of 1,578-1,972 pairs (Lock et al 2025) and 3,037 pairs (DBS 2025) respectively flow directly from these different interpretations of habitat extent.

Within the current distribution all occupied rat-free habitat available can be ascribed to boulder areas (as opposed to open cliffs with ledges). However, there are areas of more conventional guillemot habitat - large open ledged and flat-topped rocks with an enclosing wall - that will be made available by the eradication. These areas, such as Scilly Rock and Shipman Head, have the potential to support much higher densities for guillemot. Despite their limited extent even at moderate guillemot densities, such as 10 pr/m^2, these areas have the potential to significantly enhance the population of guillemots on the islands, potentially allowing growth into the 10,000s of pairs. There however, remains uncertainty as to whether these areas would be adopted by a growing guillemot population, as population expansion into these areas would likely depend on there being a great enough density of foundation-birds to communally defend against avian predators, which are likely to present a greater threat in these exposed locations.

The scale of guillemot recovery is also likely to be constrained by guillemot demographics. Although the species is currently increasing on Scilly, it is not increasing at as fast a rate as Lundy is. Comparison of documented populations against population increase rates suggests that the guillemot population increased at roughly 3.5% per annum from 1969-2015 but has since increased its growth rate to approximately 6% per annum. Assuming the continuation of growth rates at 6% per annum forwards would give a population of around 3,200 pairs after 30 years, and if better quality habitat was adopted it might be expected that the rate would increase slightly if there was less constraint arising from habitat quality. A rate of increase comparable with that achieved on Lundy post-rat would give a population in the order of 6,400 pairs over 30 years (Donato, 2025).

However, although there is space for populations of this size to be accommodated on the more extensive flat ledges - should they be colonised - it needs to be recognised that Scilly represents sub-optimal breeding habitat overall, and as a result productivity and consequent population levels are likely to be less than those achievable on Lundy. As a result, we conclude that a post-eradication population of around 3,000 pairs is a conservative but reasonable estimate for recovery in a 30-year timeframe, hence the attribution of high confidence to this value.

NE notes that there are a number of inherent uncertainties in this assessment, and recommend that the response of guillemot to the removal of rats is closely monitored to enable more refined benefit estimates to be made in the future once habitat has been freed and recovery initiated.

Uncertainties and potential limiters of recovery:
Scilly is towards the southern edge of guillemot range and it may be that productivity is better in areas that are not subject to the levels of heat stress that may be seen on south facing bare rocky surfaces. This risk may be exacerbated where birds are subject to disturbance and liable to being flushed leaving eggs and/or chicks in more exposed situations. In Alderney, which is on a similar latitude to the Isles of Scilly, recovery has been biased to north facing cliffs with thermal exposure implicated as a driver of distribution, this may influence site suitability to support recovery.

During the early recovery phase avian predation, in particular by raven and great back-backed gull, may influence population growth through pressuring the birds to nest in more sheltered and isolated locations until potential densities are sufficient to allow communal defence of eggs and chicks.

Productivity monitoring of auks and population size in boulder situations, where many nests are inaccessible, is known make accurate population assessment challenging. This provides an element of uncertainly in current population estimates which is likely to continue into the future.

At present the low-density nesting of guillemot is likely to offer a degree of isolation from diseases such as HPAI, this may alter if higher density nesting becomes more common.

Additional potential measures to facilitate recovery:
While NE is not aware of similar work having been attempted, facilitating the adoption of open flat ledges through the use of decoys and audio attractants, could in theory enhance the likelihood of adoption of areas of potential high-density habitat and thereby increase the rate of population growth.

Species: Razorbill (*Alca torda*)
Current population (2023 survey): 529 pairs
Pressures (known): Bycatch in Cornish inshore areas Pressures (suspected): Invasive brown rat, disturbance sensitive, Food resources, Pollution which may drive wrecks
Anticipated post eradication population (within 30yr timeframe): 4,760 pairs Population uplift: 4,230 pairs Confidence: High
Reasoning: The survey work reported by Lock et al (2025) represents a more accurate assessment of habitat availability than that of Donato (2025) and consequently forms a better benchmark for population recovery. It should also be noted that the population estimate of 7,500 pairs identified by Donato (2025) would have required a greater population growth rate with a 30-year timeframe than has been seen on Lundy which may be an overly ambitious. A figure of 4,759 pairs is consequently adopted. It is however recommended that these predictions are revisited after the eradication has happened to refine them in the light of observed responses. While covered in the RWE (2025) report on habitat availability for auks, the conclusions for guillemot and razorbill were pooled. Given that the habitat primarily assessed for that report was coastal boulders and densities in such habitats are likely to reflect the 2.5pr/m^2 considered appropriate for low-density guillemot, then an inferred razorbill population derived from that work would also be around 3,000 pairs. However, this should be caveated both by the recognition that guillemot and razorbill would not be able to occupy the same space simultaneously, and the recognition that density in boulder is hard to accurately estimate and may be higher, or lower, than this density. Given these uncertainties it is felt that this report largely concurs with the conclusions reached.
Uncertainties and potential limiters of recovery: Habitat extent – boulders utilized by razorbill are often closer to sea level than guillemot which may be a consequence of habitat resource or competitive exclusion, given climate change predictions of increased storminess it may that future populations are influenced by the relationship between nesting habitat and storm reach. Productivity monitoring of auks and population size in boulder situations, where many nests are inaccessible, is known make accurate population assessment challenging. This provides an element of uncertainly in current population estimates which is likely to continue into the future.
Additional potential measures to facilitate recovery: While NE is not aware of similar work having been attempted, facilitating the adoption of liberated habitat using decoys and audio attractants, could in theory enhance the likelihood of adoption of areas of potential high-density habitat and thereby increase the rate of population growth.

Species: Puffin (*Fratercula arctica*)
Current population (2023 survey): 187 pairs
Pressures (known): Invasive brown rat Pressures (suspected): Disturbance sensitive, avian predation, habitat availability, climate change - storms; food supply.
Anticipated post eradication population (within 30yr timeframe): 2,500 pairs Population uplift: 2,300 pairs Confidence: High
Reasoning: Currently puffin are constrained to a small number of largely sub-optimal sites by rat pressure. On Annet evidence of predation by great black-backed gulls has also been recorded (Donato *pers obs*). Recovery is likely to be significant generated both by renewed access to better habitat and enhanced separation from avian predators. However, access to optimal habitat may prove to be a limiting factor on Scilly. Where healthy food resources and good breeding habitat align population increases can be dramatic. For example, recovery rates on Lundy in the 20 years since rat eradication have approximated 35% per annum while some of the more established south Wales colonies have seen increases of over 5% per annum between seabird census periods. The upper bounds of the Lock et al (2025) recovery figure, of 1,875 pairs, equates to an approximately 6.5% per annum increase in population, which is reasonable if populations are self-reinforcing. However, the Lundy growth rate suggests that recruitment from other colonies may be occurring there and could presumably happen on Scilly, which could result in a much larger population response. A slightly higher population recovery rate of 2,500 pairs is therefore suggested. Areas likely to see recolonisation include Gweal and the west facing slopes of Samson.
Uncertainties and potential limiters of recovery: Accessibility of good habitat for burrowing may prove limiting, at least in the short term.
Additional potential measures to facilitate recovery: In the event of a higher recovery rate than predicted being realised then habitat resource available may become a limiting factor. In this event management of areas currently dominated by bracken to promote more open 'thrift lawns' could encourage recolonisation of deserted areas of habitat, as could the use of decoys and lures. If the Lundy recovery rate were to be realised and sufficient habitat were available then a population in the 10,000's of pairs is possible. As with a number of species, puffins can be impacted by disturbance around colonies including waterborne recreation disturbing maintenance activities and access at colonies affecting behaviour and risking damage of nest burrows. Conversely, where managed, access to puffin colonies can allow for close interaction with birds with minimal risk. Having a resourced access strategy may enhance recovery and stakeholder engagement with seabirds with Shipman Head, Bryher, St. Helens and Daymark, St. Martins possible focal sites.

Sites such as Easter Egg Rock in Maine, USA have shown that puffins can be attracted back to liberated habitat through the use of decoys, though at that site there was an interrelationship with tern recolonisation providing predator protection. Such facilitated approaches might enable facilitated recovery and could be combined with access provision.

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