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Conservation Objectives Series

Blasket Islands SPA 004008

NPWS
An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra
National Parks and Wildlife Service

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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

004008	Blasket Islands SPA
A009	Fulmar *Fulmarus glacialis*
A013	Manx Shearwater *Puffinus puffinus*
A014	Storm Petrel *Hydrobates pelagicus*
A018	Shag *Phalacrocorax aristotelis*
A183	Lesser Black-backed Gull *Larus fuscus*
A184	Herring Gull *Larus argentatus*
A188	Kittiwake *Rissa tridactyla*
A194	Arctic Tern *Sterna paradisaea*
A200	Razorbill *Alca torda*
A204	Puffin *Fratercula arctica*
A346	Chough *Pyrrhocorax pyrrhocorax*

Please note that this SPA overlaps with Blasket Islands SAC (002172). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site(s) as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	1988
Title :	The 1988 Blasket Islands expedition
Author :	Brazier, H.; Merne, O.
Series :	Unpublished report by Irish Wildbird Conservancy/Wildlife Service
Year :	2006
Title :	The status and ecology of the chough *Pyrrhocorax pyrrhocorax* in the Republic of Ireland, 2002 -2005
Author :	Trewby, M.; Gray, N.; Cummins, S.; Thomas, G.; Newton, S.
Series :	Final report to NPWS
Year :	2007
Title :	Seabird Productivity at East and South coast colonies in Ireland in 2007: Site accounts
Author :	Trewby, M.; Burt E.; Newton, S.
Series :	Unpublished report to NPWS
Year :	2010
Title :	The seasonal distribution and foraging behaviour of Red-billed Choughs *Pyrrhocorax pyrrhocorax* in Counties Waterford and Cork, February 2008 to January 2009
Author :	Trewby, M.; Carroll; D.; Mugan, N.; O'Keeffe, D.; Newton, S.
Series :	Unpublished BirdWatch Ireland Report to National Parks & Wildlife Service, Kilcoole, Wicklow
Year :	2010
Title :	The seasonal distribution and foraging behaviour of Red-billed Choughs *Pyrrhocorax pyrrhocorax* in north Co. Kerry, September 2008 to September 2009
Author :	Trewby, M.; Carroll; D.; Gaj-McKeever, R.; Newton, S.
Series :	Unpublished BirdWatch Ireland Report to National Parks & Wildlife Service, Kilcoole, Wicklow
Year :	2021
Title :	Estimated foraging ranges of the breeding seabirds of Ireland's marine special protected area network
Author :	Power, A.; McDonnell, P.; Tierney, T.D.
Series :	Published NPWS report
Year :	2022
Title :	Rockabill Tern Report, 2022
Author :	Allbrook, D.; Dunne, S.; Fink, A.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2022
Title :	Lady's Island Lake Tern Report 2022
Author :	Stubbings, E.; Büche, B.; Murray, T.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2023
Title :	Lady's Island Lake Tern Report 2023
Author :	Stubbings, E.; Büche, B.; Murray, T.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2023
Title :	Rockabill Tern Report 2023
Author :	Fihey, A.; Crowley, C.; Fitzgerald, M.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS

Year :	2024
Title :	Status and Distribution of Chough in Ireland: Results of the National Survey 2021
Author :	Colhoun, K.; Rooney, E.; Collins, J.; Keogh, N.P.; Lauder, A.; Heardman, C.; Cummins, S.
Series :	Irish Wildlife Manuals No. 151
Year :	2024
Title :	Lady's Island Lake Tern Report 2024
Author :	Stubbings, E.; Büche, B.; Doyle, H.; Burke, B.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2024
Title :	Rockabill Tern Report 2024
Author :	Coughlan, K.; Roberts, E.; Streker, R.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS

Other References

Year :	1900
Title :	The Birds of Ireland: An Account of the Distribution, Migrations and Habits of Birds as Observed in Ireland, with All Additions to the Irish List
Author :	Ussher, R.J.; Warren, R.
Series :	Gurney and Jackson
Year :	1911
Title :	The fulmar petrel breeding in Ireland
Author :	Ussher, R.J.
Series :	The Irish Naturalist, 20(9), pp.149-152
Year :	1954
Title :	The Birds of Ireland. Their Migrations and Habits. Assessed by G.R. Humphreys
Author :	Kennedy, P.G.; Ruttledge R.F.; Scroope, C.F.
Series :	London: Oliver and Boyd
Year :	1954
Title :	The Birds of the Blasket Islands with Special Reference to Great Blasket Island, Inishvickillaun and Illaunboy and some Notes on the Adjacent Mainland
Author :	Alexander, S.M.D.
Series :	Bird Study, 1(4), 148–168.
Year :	1965
Title :	The status of the Chough in Ireland
Author :	Cabot, D.
Series :	Irish Naturalists' Journal 15: 95-100
Year :	1966
Title :	Ireland's Birds: their distribution and migrations
Author :	Ruttledge, R.F.
Series :	Published by HF & G Witherby, London
Year :	1966
Title :	The Bird Population of the Great Blasket Island, Illaunboy and Beginish, Co. Kerry.
Author :	Hounsome, M.V.; Rear, D.
Series :	The Irish Naturalists' Journal, pp.169-175

Year :	1976
Title :	The seabirds of Britain and Ireland.
Author :	Cramp, S.; Bourne, W.R.P.; Saunders, D.
Series :	HarperCollins
Year :	1977
Title :	Handbook of the Birds of Europe, the Middle East and North Africa. The birds of the Western Palearctic, Vol. 1
Author :	Cramp, S.; Simmons, K.E.L.
Series :	Oxford University Press, Oxford
Year :	1983
Title :	The chough in Britain and Ireland
Author :	Bullock, I.; Drewett, D.; Mickleburg, S.
Series :	British Birds, 76: 377–401
Year :	1985
Title :	The 1984 all Ireland tern survey
Author :	Whilde, A.
Series :	Irish Birds 3: 1-32
Year :	1990
Title :	The Manx Shearwater
Author :	Brooke, M.
Series :	Poyser, London
Year :	1991
Title :	The status of seabirds in Britain and Ireland
Author :	Lloyd, C.; Tasker, M.L.; Partridge, K.
Series :	Poyser Monographs Volume: 50
Year :	1993
Title :	The second international chough survey in Ireland, 1992
Author :	Berrow, S.D.; Mackie, K.L.; O'Sullivan, O.; Shepherd, K.B.; Mellon, C.; Coveney, J.A.
Series :	Irish Birds, 5: 1-10
Year :	1993
Title :	Seasonal variations in numbers and levels of activity in a communal roost of Choughs *Pyrrhocorax pyrrhocorax* in central Spain
Author :	Blanco, G.; Fargallo, J.A.; Cuevas, J.A.
Series :	Avocetta, 17: 41-44
Year :	1995
Title :	Seabird monitoring handbook for Britain and Ireland: a compilation of methods for survey and monitoring of breeding seabirds
Author :	Walsh, P.; Halley, D.J.; Harris, M.P.; del Nevo, A.; Sim, I.M.W.; Tasker, M.L.
Series :	JNCC, Peterborough
Year :	1999
Title :	Diet of the northern fulmar *Fulmarus glacialis*: reliance on commercial fisheries?
Author :	Phillips, R.A.; Petersen, M.K.; Lilliendahl, K.; Solmundsson, J.; Hamer, K.C.; Camphuysen, C.J.; Zonfrillo, B.
Series :	Marine Biology, 135 (1), pp.159-170
Year :	2003
Title :	The status and distribution of choughs *Pyrrhocorax pyrrhocorax* in the Republic of Ireland 2002/03
Author :	Gray, N.; Thomas, G.; Trewby, M.; Newton, S.F.
Series :	Irish Birds, 7, 147-156

Year :	2003
Title :	Implications for seaward extensions to existing breeding seabird colony Special Protection Areas
Author :	McSorley, C.A.; Dean, B.J.; Webb, A.; Reid J.B.
Series :	JNCC Report No. 329
Year :	2004
Title :	Seabird populations of Britain and Ireland
Author :	Mitchell, P.I.; Newton, S.F.; Ratcliffe, N.; Dunn, T.E.
Series :	Poyser, London
Year :	2005
Title :	Choughs *Pyrrhocorax pyrrhocorax* breeding in Wales select foraging habitat at different spatial scales
Author :	Whitehead, S.; Johnstone, I.; Wilson, J.
Series :	Bird Study, 52:2, 193-203
Year :	2006
Title :	The breeding season foraging behaviour of choughs *Pyrrhocorax pyrrhocorax* in three Irish chough important bird areas
Author :	Trewby, M., Gray, N., Cummins, S., Thomas, G. & Newton, S.
Series :	Unpublished BirdWatch Ireland Report, Kilcoole, Wicklow
Year :	2006
Title :	Linking territory quality and reproductive success in the chough (*Pyrrhocorax pyrrhocorax*): implications for conservation management of an endangered population
Author :	Kerbiriou, C.; Gourmelon, F.; Jiguet, F.; Le Viol, I.; Frédéric Bioret, F.; Julliard, R.
Series :	Ibis, 148 (2), pp.352-364
Year :	2010
Title :	How Representative is the Current Monitoring of Breeding Seabirds in the UK?
Author :	Cook, A.S.C.P.; Robinson, R.A.
Series :	BTO Research Report No. 573
Year :	2011
Title :	Aspects of the feeding ecology and breeding biology of the red-billed chough (*Pyrrhocorax pyrrhocorax*) in Ireland
Author :	Boylan, M.
Series :	PhD Thesis, National University of Ireland, Cork.
Year :	2014
Title :	The Lesser Black-backed Gull *Larus fuscus* in England: how to resolve a conservation conundrum
Author :	Ross-Smith, V.H.; Robinson, R.A.; Banks, A.N.; Frayling, T.D.; Gibson, C.C.; Clark, J.A.
Series :	Seabird, 27 (October), pp.41-61
Year :	2017
Title :	Productivity of the Black-legged Kittiwake *Rissa tridactyla* required to maintain numbers
Author :	Coulson, J.C.
Series :	Bird Study 64: 84-89
Year :	2018
Title :	Breeding status of red-billed choughs *Pyrrhocorax pyrrhocorax* in the UK and Isle of Man in 2014
Author :	Hayhow, D.B.; Johnstone, I.; Moore, A.S.; Mucklow, C.; Stratford, A.; Šúr, M.; Eaton, M.A.
Series :	Bird Study, 65(4), 458-470

Year :	2018
Title :	Developing and assessing methods to census and monitor burrow-nesting seabirds in Ireland
Author :	Arneill, G.E.
Series :	PhD thesis, University College Cork
Year :	2019
Title :	Adverse effects of routine bovine health treatments containing triclabendazole and synthetic pyrethroids on the abundance of dipteran larvae in bovine faeces
Author :	Gilbert, G.; MacGillivray, F.S.; Robertson, H.L.; Jonsson, N.N.
Series :	Nature Scientific Reports 9, 4315
Year :	2019
Title :	Desk-based revision of seabird foraging ranges used for HRA screening
Author :	Woodward, I.; Thaxter, C.B.; Owen, E.; Cook, A.S.C.P.
Series :	BTO Research Report No. 724
Year :	2020
Title :	Arctic tern (*Sterna paradisaea*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Hatch, J. J.; Gochfeld, M.; Burger, J.; Garcia, E. F. J.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Lesser Black-backed Gull (*Larus fuscus*), version 1.0. In Birds of the World (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors)
Author :	Burger, J.; Gochfeld, M.; Kirwan, G. M.; Christie,D. A.; de Juana, E
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Black-legged Kittiwake (*Rissa tridactyla*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Hatch, S. A.; Robertson, G. J.; Baird, P. H.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Razorbill (*Alca torda*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Lavers, J.; Hipfner, J. M.; G. Chapdelaine, G.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Atlantic Puffin (*Fratercula arctica*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Lowther, P. E.; Diamond, A. W.; Kress, S. W.; Robertson, G. J.; Russell, K.; Nettleship, D. N.; Kirwan, G. M.; Christie, D. A.; Sharpe, C. J.; Garcia, E. F. J.; Boesman, P. F. D.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Herring Gull (*Larus argentatus*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Weseloh, D. V.; Hebert, C. E.; Mallory, M. L.; Poole, A. F.; Ellis, J. C.; Pyle, P.; Patten, M. A.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2021
Title :	European Shag (*Gulosus aristotelis*), version 1.2. In Birds of the World (B. K. Keeney, Editor)
Author :	Orta, J., Garcia, E. F. J.; Jutglar, F.; Kirwan, G. M.; Boesman, P. F. D.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2021
Title :	European Storm-Petrel (*Hydrobates pelagicus*), version 1.1. In Birds of the World (Editor not available)
Author :	Carboneras, C.; Jutglar, F.; Kirwan, G.M.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA

Year :	2022
Title :	Chough *Pyrrhocorax pyrrhocorax* counts at a Waterford coastal roost
Author :	McGrath, D.
Series :	Irish Birds 44: 103-107
Year :	2023
Title :	Seabirds Count: a census of breeding seabirds in Britain and Ireland (2015-2021)
Author :	Burnell, D.; Perkins, A.J.; Newton, S.F.; Bolton, M.; Tierney, T.D.; Dunn, T.E.
Series :	Lynx Nature Books, Barcelona
Year :	2023
Title :	Manx Shearwater *Puffinus puffinus*
Author :	Lee, D.S.; Haney, J.C.; Carboneras, C.; Jutglar, F.; Kirwan, G.M.
Series :	Birds of the World (N. D. Sly, Editor) Version: 1.1
Year :	2024
Title :	Atlantic Puffin (*Fratercula arctica*)
Author :	JNCC
Series :	https://jncc.gov.uk/our-work/atlantic-puffin-fratercula-arctica/
Year :	2024
Title :	European Shag (*Phalacrocorax aristotelis*)
Author :	JNCC
Series :	https://jncc.gov.uk/our-work/european-shag-phalacrocorax-aristotelis/
Year :	2024
Title :	Seabird Population Trends and Causes of Change: 1986–2023, the annual report of the Seabird Monitoring Programme
Author :	Harris, S.J.; Baker, H.; Balmer, D.E.; Bolton, M.; Burton, N.H.K.; Caulfield, E.; Clarke, J.A.E.; Dunn, T.E.; Evans, T.J.; Hereward, H.R.F.; Humphreys, E.M.; Money, S.; O'Hanlon, N.J.
Series :	BTO Research Report 771

A009 Fulmar *Fulmarus glacialis*

To restore the Favourable conservation condition of Fulmar in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Apparently Occupied Sites (AOS)	Long term SPA population trend is stable or increasing	Fulmar were first recorded as a breeding bird in Ireland in 1911 in Co. Mayo (Ussher, 1911) and had colonised Inishnabro in the Blasket Islands by 1918 (Alexander, 1954). This SPA is comprised of six main islands, plus some smaller islands, islets and sea stacks. As a result this SPA has been difficult to survey completely for breeding seabirds. Complete surveys of this SPA in 1969 and 1988 estimated 1,026 and 2,179 pairs of breeding Fulmar respectively (Lloyd et al., 1991; Cramp et al., 1976). A survey of Inishvickillane conducted in 2000 yielded 672 pairs which was an increase from 367 pairs on that island in 1988 (Mitchell et al., 2004). The most recent survey of this SPA was in 2015/2016 and recorded 1,884 pairs across five islands, a decrease of 14% since 1988 (Burnell et al., 2023). This declining trend contrasts with the national population estimate which has increased by 89% over the period 1985 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity from Lambay Island SPA was 0.32 (± 0.05 SE) chicks fledged per Apparently Occupied Sites (AOS) in 2007 (246 pairs across three subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. An analysis of the breeding success of Fulmar in the United Kingdom over a 25 year period estimated a mean breeding success of 0.39 and speculated this would result in a population decline (Cook and Robinson, 2010). They estimated that a breeding success of 0.5 would allow populations of Fulmar to stabilise and potentially increase
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Fulmar. Typically, Fulmar nest near the tops of grassy cliffs on relatively wide ledges (Mitchell et al., 2004). In this SPA nesting Fulmar have been recorded on Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island, Tearaght Rocks, Oileán Buí and Great Blasket. Inishnabro held the highest numbers in 1988 and 2015/2016
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The colonisation of Ireland and Britain by Fulmar over the last two centuries has been largely attributed to their close association with fisheries, but contemporary dietary studies indicate that they also feed on a wide variety of prey, including sandeels, crustaceans, and squid (Phillips et al., 1999). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean; mean of maximum distances across all studies; and maximum distance recorded) of Fulmar foraging ranges from the nest site during the breeding season, which are 135km, 542km, and 2,736km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening). Work carried out in the UK found that the highest densities of Fulmar performing these behaviours occurred within 2km of the breeding colony (McSorley et al., 2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Work carried out in the UK found that the highest densities of Fulmar performing these behaviours occurred within 2km of the breeding colony (McSorley et al., 2003). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean; mean of maximum distances across all studies; and maximum distance recorded) of Fulmar foraging ranges from the nest site during the breeding season, which are 135km, 542km, and 2,736km respectively (see Power et al., 2021)

A013 Manx Shearwater *Puffinus puffinus*

To maintain the Favourable conservation condition of Manx Shearwater in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Apparently Occupied Sites (AOS)	Long term SPA population trend is stable or increasing	Manx Shearwater are nocturnal and nest underground on islands which leads to difficulties in surveying this species and generating accurate population estimates. Survey methods and analytical methods have changed between surveys and are likely to change in the future (Burnell et al., 2023). Therefore, caution is required when comparing population estimates. Manx Shearwater were reported in abundance on Inishnabro in the 19th century (Alexander, 1954) but the full extent of the population on the islands was unknown (Ussher and Warren, 1900). Alexander (1954) noted breeding birds on Inishvickillane and Great Blasket in 1953 and Ruttledge (1966) noted large colonies on Tearaght and Inishtooskert. An estimated 7,600 pairs were recorded in 1988 on Inishnabro, Inishtooskert, Inishvickillane and Tearaght (Lloyd et al., 1991). A survey between 2019 - 2021 estimated 109,390 pairs across the same islands, plus Great Blasket, representing 82% of the national population (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. An analysis of monitoring data from 2021, 2023, and 2024 from Skellig Michael, Co. Kerry produced an estimate of 0.54 presumed fledged chick per active nest (NPWS internal files). In 2023, a productivity rate of 0.60 across three UK colonies was reported (Harris et al., 2024)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Manx Shearwater nest in burrows and under boulders. Colonies are typically found on steep grassy slopes on offshore islands where there is reduced predation risk (Lee et al., 2023). In this SPA nesting Manx Shearwater have been recorded on Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island and Great Blasket. Between 2019 and 2021 the largest populations were recorded on Inishnabro followed by Tearaght Island and Great Blasket
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Manx Shearwater feed primarily on clupeiform fish such as Sprat (*Sprattus sprattus*) and Herring (*Clupea harengus*); squid and other marine invertebrates may also form part of their diet (Lee et al., 2023). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of foraging ranges from the nest site during the breeding season, which are 136km, 1,347km, and 2,890km respectively (see Power et al., 2021)
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution

Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of foraging ranges from the nest site during the breeding season, which are 136km, 1,347km, and 2,890km respectively (see Power et al., 2021)

A014 Storm Petrel *Hydrobates pelagicus*

To maintain the Favourable conservation condition of Storm Petrel in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Apparently Occupied Sites (AOS)	Long term SPA population trend is stable or increasing	Storm Petrel are small, nocturnal and nest underground on offshore islands which leads to difficulties in surveying this species and generating accurate population estimates. Survey and analytical methods for this species have changed between surveys and are likely to change in the future (Burnell et al., 2023). Therefore, caution is required when comparing population estimates. A significant population has been present here since at least the 19th century (Ussher and Warren, 1900). Tearaght Island has been described as having vast numbers of Storm Petrel (Kennedy et al., 1954; Ruttledge, 1966) and Inishvickillane was estimated to hold 7,600 pairs in 1953 (Alexander, 1954). An estimated 85,500 pairs nested across Inishnabro, Inishtooskert, Inishvickillane and Tearaght Island in 1988 (Lloyd et al., 1991). Between 2018 - 2021 the same islands were surveyed, plus Beginish, and 56,417 pairs were recorded. This estimate accounts for 52% of the national population (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. There is a lack of published productivity estimates for this species. On Skellig Michael there is an ongoing programme of work to develop a method to produce robust productivity estimates for Storm Petrel at that site. In the UK there is insufficient data to produce productivity trends due to the difficulties involved in monitoring breeding success for this burrow and crevice nesting species (Harris et al., 2024)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Storm Petrel. Storm Petrel breed on rocky ground on offshore islands and stacks, and occasionally on headlands (Carboneras et al., 2021). Storm Petrel use a range of nesting habitats, including natural crevices, under rocks and boulders, in stone walls, in self-excavated burrows, and in burrows originally excavated by other species (Cramp and Simmons, 1977). In this SPA nesting Storm Petrel have been recorded on Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island and Beginish. Inishvickillane followed by Tearaght Island held the highest numbers in 1988 and between 2018 and 2021
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The primary diet of the Storm Petrel is small fish (*Sprattus sprattus*, *Ammodytes marinus*), squid, and crustaceans (Carboneras et al., 2021). Based on several studies, Woodward et al. (2019) estimate a mean-max foraging range of 336km for Storm Petrel from the nest site during the breeding season (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Based on several studies, Woodward et al. (2019) estimate a mean-max foraging range of 336km for Storm Petrel from the nest site during the breeding season (see Power et al., 2021)

A018 Shag *Phalacrocorax aristotelis*

To maintain the Favourable conservation condition of Shag in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	This SPA is comprised of six main islands, plus some smaller islands, islets and sea stacks. As a result this SPA has been difficult to survey completely for breeding seabirds. There are no conclusive breeding records of Shag in this SPA before 1966 (Brazier and Merne, 1988). The first complete survey of Shag on the Blasket Islands was conducted in 1969 and yielded 50 - 52 pairs across five islands (Cramp et al., 1976). An estimated 333 pairs were recorded across six islands in this SPA in 1988, a significant increase (Lloyd et al., 1991). The most recent complete survey of this SPA was in 2015/2016 and recorded 543 pairs across four islands, an increase of 63% since 1988 (Burnell et al., 2023). Within the same time period the national population of Shag has increased by 2% (Burnell et al., 2023). The population in 2015/2016 was the largest for any SPA in Ireland at that time (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity from Lambay Island SPA was 1.69 (± 0.08 SE) chicks fledged per AON in 2007 (135 pairs across five subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. Shag productivity in Scotland has averaged 1.28 chicks fledged per pair between 1986 and 2019 (JNCC, 2024). In this time period the Scottish population of Shag has decreased 47% (Burnell et al., 2023). However, the cause of decline may not be related to productivity rate but rather due to significant losses of that adult population during "wrecks" in some winters during this time period (JNCC, 2024)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Shag. Typically this species breeds on sea cliffs, rocks and stacks (Orta et al., 2021). In this SPA nesting Shag have been recorded on Great Blasket, Inishnabro, Inishtooskert, Inishvickillane, Beginish, Young's Island and Oileán Buí. Inishtooskert held the highest numbers in 1988 and 2015/2016
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The diet of Shag is almost exclusively fish, taken chiefly near the sea bed or at intermediate depths, and principally of the families Ammodytidae (sandeels), Gadidae, Clupeidae, Cottidae, and Labridae, but a wide range of other species can be taken, perhaps opportunistically (Orta et al., 2021). Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Shag, which are 9km, 13km, and 46km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003). Additionally, some species may engage in maintenance behaviours outside of the breeding colony but not in the water
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Shag, which are 9km, 13km, and 46km respectively (see Power et al., 2021)

A183 Lesser Black-backed Gull *Larus fuscus*

To maintain the Favourable conservation condition of Lesser Black-backed Gull in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	This SPA is comprised of six main islands, plus some smaller islands, islets and sea stacks. As a result this SPA has been difficult to survey completely for breeding seabirds. Lesser Black-backed Gull have been breeding on the Blasket Islands since at least the 19th century (Ussher and Warren, 1900). Hounsome and Rear (1966) noted 150 pairs nesting on Oileán Buí in 1965. In 1969 an estimated 338 pairs were recorded breeding across eight islands (Cramp et al., 1976). An estimated 424 pairs of Lesser Black-backed Gull nested in this SPA in 1988 across seven islands (Brazier and Merne, 1988). Between 1999 and 2001 an estimated 501 pairs nested on seven islands in this SPA (NPWS internal files), an increase of 18%. The population on Great Blasket in 2015 was 83 pairs but a complete survey was not undertaken of the SPA (Burnell et al., 2023). The natural-nesting population in Ireland has increased by 163% between surveys in 1998 - 2002 and 2015 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the mean productivity of Lesser Black-backed Gull from Lambay Island SPA was 1.66 (± 0.14 SE) chicks fledged per pair in 2007 (18 pairs across three subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. Ross-Smith et al. (2014) summarise Lesser Black-backed Gull productivity in some UK colonies, and colonies with productivity rates above 1.0 had increasing population trends
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. Lesser Black-backed Gull nests colonially, often with other gull species on offshore islands and coastal cliffs (Mitchell et al., 2004). In this SPA nesting Lesser Black-backed Gull have been recorded on Great Blasket, Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island, Young's Island, Oileán Buí and Beginish
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The diet of Lesser Black-backed Gull is diverse and opportunistic. This species can forage over both terrestrial and aquatic habitats. Frequent prey items include small fish, aquatic invertebrates, bird's eggs and chicks, trawler discards, rodents, and berries (Burger et al., 2020). Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Lesser Black-backed Gull, which are 43km, 127km, and 533km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003). Additionally, some species may engage in maintenance behaviours outside of the breeding colony but not in the water
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Lesser Black-backed Gull, which are 43km, 127km, and 533km respectively (see Power et al., 2021)

A184 Herring Gull *Larus argentatus*

To restore the Favourable conservation condition of Herring Gull in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	This SPA is comprised of six main islands, plus some smaller islands, islets and sea stacks. As a result this SPA has been difficult to survey completely for breeding seabirds. Herring Gull have been breeding on the Blasket Islands since at least the 19th century (Brazier and Merne, 1988). A population of 443 pairs were recorded on these islands in 1969 (Cramp et al., 1976). An estimated 131 pairs of Herring Gull nested in this SPA in 1988 (Lloyd et al., 1991). Between 1999 and 2001 an estimated 99 pairs nested in this SPA (Mitchell et al., 2004), a decrease of 24%. The Herring Gull population has not been fully surveyed in the SPA since 2001. The natural-nesting (i.e. non-urban) Herring Gull population in Ireland has increased by 94% between national surveys in 1998 - 2002 and 2015 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Cook and Robinson (2010) undertook Population Viability Analyses (PVA) of a selection of breeding populations in the UK. Over their study period, Herring Gull productivity at monitored nests was 0.75. Were this level to be maintained, Herring Gull populations would decline by 60% over 25 years. For the population to stabilise, breeding success would have to increase to 1.3 - 1.5 chicks per nest per year. A lack of comprehensive Irish data precludes the identification of a minimum productivity rate for this species at the site and at the national level
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Herring Gull. Typically, coastal Herring Gull colonies are located along rocky coastlines with cliffs, islets and offshore islands (Mitchell et al., 2004). In this SPA nesting Herring Gull have been recorded on Great Blasket, Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island, Young's Island, Oileán Buí and Beginish
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Herring Gull is a generalist and opportunistic feeder and can forage over both terrestrial and aquatic habitats. Its diet includes fish, fish offal, bivalves, gastropods, crustaceans, squid, insects, other seabirds, small land birds, small mammals, terrestrial insects, earthworms, berries, carrion, and a wide variety of human refuse (Weseloh et al., 2020). Woodward et al. (2019) reviewed the foraging ranges of seabird species from over 300 studies including: direct tracking of birds; estimates based on flight speeds and time activity; survey observations; and speculative estimates. Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Herring Gull foraging ranges from the nest site during the breeding season, which are 15km, 59km, and 92km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Herring Gull foraging ranges from the nest site during the breeding season, which are 15km, 59km, and 92km respectively (see Power et al., 2021)

A188 Kittiwake *Rissa tridactyla*

To restore the Favourable conservation condition of Kittiwake in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	This SPA is comprised of six main islands, plus some smaller islands, islets and sea stacks. As a result this SPA has been difficult to survey completely for breeding seabirds. A significant population of Kittiwake has been present on the Blasket Islands since at least the 19th century (Ussher and Warren, 1900) with reference to thousands of pairs. A breeding population of 773 pairs of Kittiwake were recorded in 1988 on Inishnabro, Oileán Buí, Inishvickillane and Tearaght (Lloyd et al., 1991). An incomplete survey in 2000 (Inishnabro and Inishvickillane) yielded 336 pairs (Mitchell et al., 2004). The most recent survey of this SPA was in 2015/2016 and recorded 287 pairs across three islands (Inishnabro, Oileán Buí and Tearaght) a decrease of 63% since 1988 (Burnell et al., 2023). This is somewhat similar to the national trend which has seen a decrease of 36% between 1999 - 2002 and 2015 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity rate from Lambay Island SPA was 0.65 (± 0.07 SE) chicks fledged per AON in 2007 (316 pairs across three subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. Coulson (2017) established, based on data from UK Kittiwake colonies during the period 1985 - 2015, that 0.8 fledglings per pair were needed to maintain the size of these colonies. Coulson (2017) also noted that this level of productivity is not a fixed value and changes if the adult mortality rate changes
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Kittiwake. Typically, this species is a cliff-nester on ledges of offshore islands, sea stacks, or inaccessible areas of coastal mainland (Hatch et al., 2020). In this SPA nesting Kittiwake have been recorded on Inishnabro, Inishvickillane, Tearaght Island and Oileán Buí
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Kittiwake is a surface feeding seabird and primarily piscivorous (e.g. sandeels, herring, gadoids), with some invertebrates (e.g. euphausids, amphipods) in the diet also recorded (Hatch et al., 2020). Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Kittiwake foraging ranges from the nest site during the breeding season, which are 55km, 156km, and 770km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Kittiwake foraging ranges from the nest site during the breeding season, which are 55km, 156km, and 770km respectively (see Power et al., 2021)

A194 Arctic Tern *Sterna paradisaea*

To restore the Favourable conservation condition of Arctic Tern in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	Arctic Tern are known to have bred on the Blasket Islands since at least the 19th century (Ussher and Warren, 1900). Hounsome and Rear (1966) noted 1,000 Arctic/Common Tern individuals on Beginish and Young's Island in 1965 at the start of the breeding season. No breeding terns were recorded in this SPA during the 1984 all-Ireland tern survey (Whilde et al., 1985). In 1988 an estimated 212 pairs were recorded on Beginish and Young's Island (Brazier and Merne, 1988). A population of 103 pairs were recorded in the SPA in 2001, a decrease of 51% (NPWS internal files). Sightings of circa 150 individual Arctic Tern were recorded annually at these islands until 2010 when no nesting was recorded (NPWS internal files). Breeding Arctic Tern have not been recorded in the SPA since, which indicates a complete population collapse. Overgrazing of the nesting islands may have been a contributory factor in this regard
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Annual productivity estimates are available from the wardened tern colonies of Rockabill and Lady's Island Lake. Over a three-year period (2022 - 2024) the average productivity estimates were 0.24 and 0.93 chicks per nest respectively (Stubbings et al., 2022, 2023 and 2024; Coughlan et al., 2024, Fihey et al., 2023; and Allbrook et al., 2022)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Arctic Tern. Terns are ground nesting birds. Typically colonies are found in open areas close to the shore, frequently in areas with loose substrate or low vegetation (Hatch et al., 2020). In Ireland all known large colonies are situated on marine or inland islands of varying distances from the mainland/shore. In this SPA nesting Arctic Tern have been recorded on Young's Island, Oileán Buí and Beginish
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Arctic Tern are largely piscivorous. The most frequent fish prey are small, schooling species commonly caught in open water, at tide rips, and over predators (e.g. jellyfish and marine mammals). These are usually 1- or 2-year-old fish from the Clupeidae (herring), Gadidae (cod, pollock) and Ammodytidae (sandeel) families (Hatch et al., 2020). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Arctic Tern foraging ranges from the nest site during the breeding season, which are 6km, 26km, and 46km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening) as defined in McSorley et al. (2003). Additionally, some species may engage in maintenance behaviours outside of the breeding colony but not in the water. For example, terns may roost on rocky islets or beaches away from the breeding colony
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular access to waters ecologically connected to the colony in order to forage, as well as to engage in other maintenance behaviours. Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Arctic Tern foraging ranges from the nest site during the breeding season, which are 6km, 26km, and 46km respectively (see Power et al., 2021)

A200 Razorbill *Alca torda*

To maintain the Favourable conservation condition of Razorbill in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Individuals (IND)	Long term SPA population trend is stable or increasing	A significant population of Razorbill has been present on the Blasket Islands since at least the 19th century (Ussher and Warren, 1900). Alexander (1954) estimated approximately 300 individuals on Inishvickillane in 1953 and noted breeding birds on Great Blasket. Ruttledge (1966) noted Tearaght as one of the most significant Razorbill colonies in the country. A population of 422 individual Razorbill were recorded in 1988 breeding on Inishnabro, Inishtooskert, Inishvickillane and Tearaght (Brazier and Merne, 1988). This increased to 512 individuals in 2000 on the same islands with the exception of Tearaght (Mitchell et al., 2004). The most recent population estimate from 2016 (Inishnabro, Inishtooskert, Tearaght) saw the population increase to 752 individuals, the peak count for this SPA. This represents an overall population increase of 78% since 1988 (Burnell et al., 2023). Similarly, within the same time period the national population increased by 57% (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity from Lambay Island SPA was 0.65 (± 0.03 SE) chicks fledged per Apparently Occupied Sites (AOS) in 2007 (270 pairs across six subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. An analysis of the breeding success of Razorbill in the United Kingdom over a 25 year period determined that a breeding success of 0.55 would result in a slowly decreasing population (Cook and Robinson, 2010)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by the species. Razorbill breed in rocky coastal regions on steep mainland cliffs and rocky offshore islands (Lavers et al., 2020). In this SPA nesting Razorbill have been recorded on Inishnabro, Inishvickillane, Tearaght Island and Inishtooskert
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The diet of Razorbill comprises of schooling fish including herring and sandeels. Crustaceans and polychaetes may also be important in adult diets (Lavers et al., 2020). Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Razorbill which are 61km, 89km, and 313km respectively

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening) as defined in McSorley et al. (2003). Studies in the UK found the highest densities of Razorbill performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Studies in the UK found the highest densities of Razorbill performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003). Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Razorbill which are 61km, 89km, and 313km respectively

A204 Puffin *Fratercula arctica*

To restore the Favourable conservation condition of Puffin in Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Individuals (IND)	Long term SPA population trend is stable or increasing	As Puffin burrows are often on steeply sloping ground that are largely inaccessible, counts of the number of individual birds associated with the area is a survey method often used (see Arneill, 2018; Walsh et al., 1995). A significant population has been present at this SPA since at least the 19th century (Ussher and Warren, 1900). In 1955 over 20,000 pairs were estimated on Tearaght alone (Ruttledge, 1966) but the population of the islands reportedly collapsed between 1968 and 1969 (Brazier and Merne, 1988). A complete survey in 1988 estimated a population of 4,924 pairs (Lloyd et al., 1991). A survey of Inishvickillane in 2000 estimated 389 pairs, a decrease from 655 pairs in 1988 (Mitchell et al., 2004). A survey of Inishnabro and Tearaght Island in 2021 estimated 2,424 pairs, a decrease from 4,149 pairs in 1988 (Burnell et al., 2023). These incomplete surveys indicate a decreasing population. The national population has decreased by 26% between 1999 and 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. In Wales, an average of 0.71 chicks were fledged per apparently occupied burrow between 1986 and 2019 (JNCC, 2024). In this time period the Welsh population of Puffin increased (Burnell et al., 2023). Recreational disturbance from boats may disrupt rafting Puffin within this SPA
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by the species. Puffin are a highly colonial species with pairs typically nesting underground in burrows dug in the soil of offshore islands. If such habitat is in short supply, Puffin can nest among boulder screes, or at low densities in cracks in sheer cliffs (Mitchell et al., 2004). In this SPA nesting Puffin have been recorded on Inishnabro, Inishtooskert, Inishvickillane, Tearaght Island and Great Blasket Island. Tearaght Island held the highest numbers in 1988 and has been reported historically as a significant colony (Kennedy et al., 1954; Ruttledge, 1966)
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The diet of Puffin predominantly consists of small to mid-sized (5cm - 15cm) schooling midwater fish including Sprat (*Sprattus sprattus*), sandeel (*Ammodytes* spp.), and Herring (*Clupea harengus*) (Lowther et al., 2020). Based on several studies, Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Puffin, which are 62km, 137km, and 383km respectively (see Power et al., 2021)

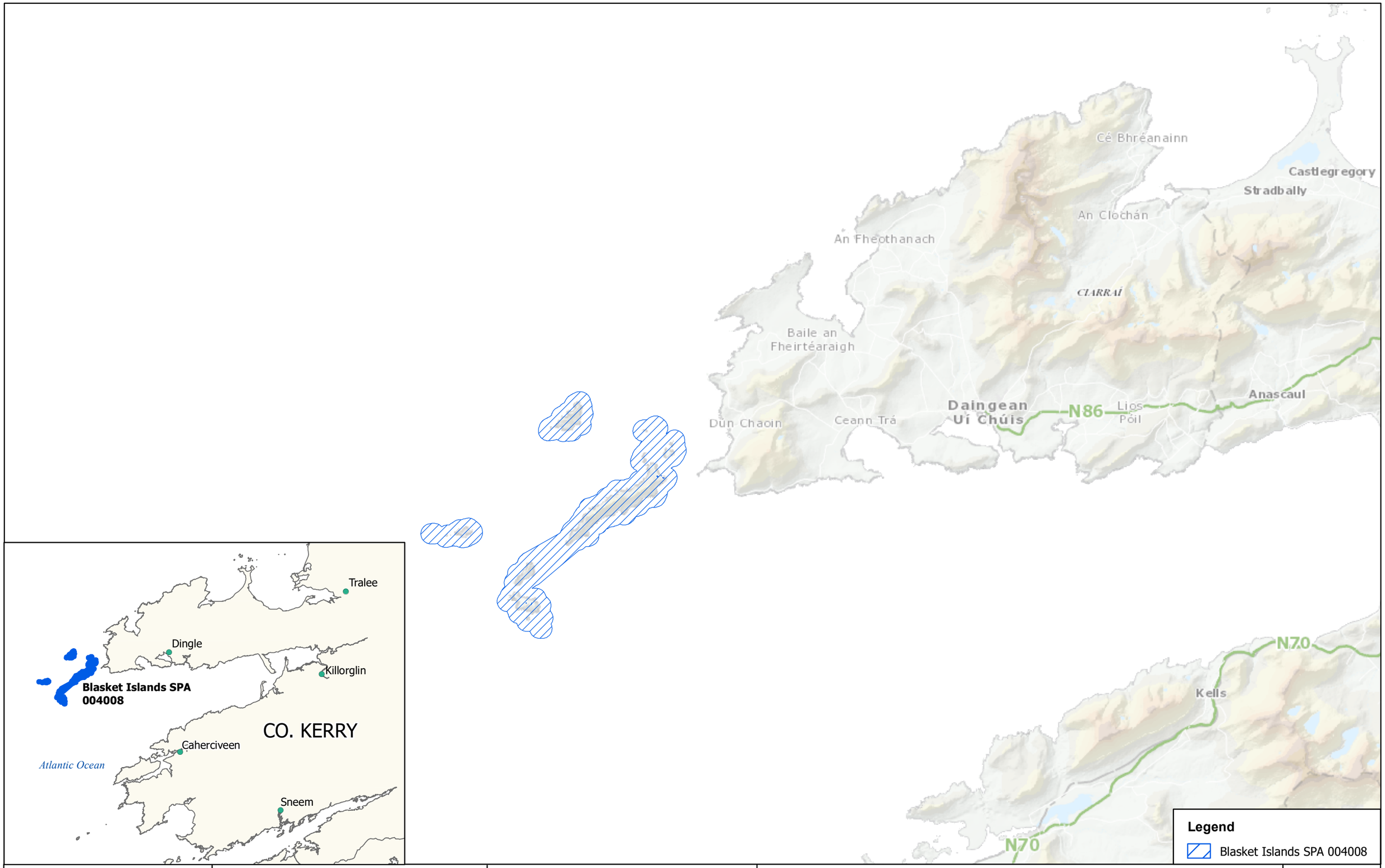
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003). Studies in the UK found that the highest densities of Puffin performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony, in order to forage as well as to engage in other maintenance behaviours. Studies in the UK found that the highest densities of Puffin performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003). Woodward et al. (2019) provide estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for Puffin, which are 62km, 137km, and 383km respectively (see Power et al., 2021)

A346 Chough *Pyrrhocorax pyrrhocorax*

To restore the Favourable conservation condition of Chough in the Blasket Islands SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population size	Number of breeding pairs	Breeding population is increasing	A review of 1992 and 2002/03 national survey data, including count units and survey methods applied, was undertaken (NPWS internal files). The range of population estimates for the SPA are set out using 'confirmed and probable' breeding pairs only and 'all breeding pair' categories for each national survey since 1992, with 7 - 11 in 1992; 5 - 9 in 2002/03 and 1 - 3 in 2021. Applying stricter 2021 survey criteria (Hayhow et al., 2018; Colhoun et al., 2024) retrospectively to 1992 and 2002/03 records, which exclude records with no breeding evidence (NBE) as per Colhoun et al. (2024), updates these original estimates to 7 - 11 (1992), 5 - 6 pairs (2002/03), and 1 - 3 pairs (2021). Note, the 2021 national survey had reduced coverage of offshore islands, including Blasket Islands SPA, relative to previous surveys (Colhoun et al., 2024)
Population trend	Percentage change	Population trend stable or increasing	The breeding component of the population, as opposed to non-breeding flock birds, is considered a more reliable metric to reflect population change (Trewby et al., 2006). Using available data from the 1992 (Berrow et al., 1993), 2002/03 (Gray et al., 2003) and 2021 (Colhoun et al., 2024) national surveys, the population trend for the site is declining in the short term (i.e. 2002/03 - 2021) and declining in the longer term (1992 - 2021) based on assessments of change in the numbers of known 'confirmed' and 'probable' pair records only; and including all 'possible' breeding pair records for the site, applying 2021 criteria (Colhoun et al., 2024). For the county, the population has also declined, with pair totals of 132 - 171 in 1963 (Cabot, 1965); 205 - 209 in 1983 (Bullock et al., 1983); 112 - 315 in 1992 (Berrow et al., 1993); 141 - 267 in 2002/03 (Gray et al., 2003); and 68 - 134 (excluding records with no breeding evidence) in 2021 (Colhoun et al., 2024)
Productivity rate	Number of fledged young per confirmed pair	Sufficient to maintain population size target	Most of the population nest along coastal cliffs or in sea caves. In most instances, due to the inaccessible nature of nesting locations, estimates of breeding productivity and success are based on numbers of fledged young seen with adults post-fledging, unless records are for man-made/artificial sites e.g. cattle sheds, old buildings and castles etc. Some studies have provided estimates of productivity and/or success, (e.g. Berrow et al., 1993; Gray et al., 2003; Boylan, 2011; Trewby et al., 2006), and for nearby north County Kerry, a figure of 2.24 fledglings per successful pair was estimated by Trewby et al. (2010). However, this estimate is based on one year's data, and may not be sufficiently representative for the SPA, and wider. Overall, there is a lack of robust representative Irish data to determine a more quantitative target for breeding productivity

Foraging habitat: quality and quantity	Hectares (ha)	Maintain sufficient quality and quantity of coastal grassland and other relevant habitats to support the population of Chough at the level of breeding pairs referred to in the attribute above	Studies in Ireland (e.g. Trewby et al., 2006), Wales (e.g. Whitehead et al., 2005) and elsewhere (e.g. Kerbiriou et al., 2006) have shown that breeding Chough spend most of their time foraging near nest sites (April - June inclusive). Coastal pairs tend to commute along the coast from breeding sites, rather than inland (Trewby et al., 2006). Proximity of suitably-sized feeding areas to nest sites is likely to positively support breeding success (Kerbiriou et al., 2006). Monthly transects in nearby North Kerry had 62% of ground observations within 300m of mean high water (Trewby et al., 2010). Grazed habitats with short swards of <5cm are typically preferred and areas of bare ground, where soils are easier to probe e.g. paths, along with earth banks and stone banks. Maritime vegetation on cliffs, especially in spring, is also favoured. Thus, sufficient foraging habitat within 350m of the coastline, where Chough are known to breed, is essential to support breeding pairs
Food availability: prey biomass	Quantity per unit area	Maintain adequate levels of prey biomass (including preferred invertebrate prey items such as leatherjackets, dung beetles, etc.)	Chough feed largely on invertebrates (e.g. ants, spiders, worms, insect larvae such as crane fly larvae, leatherjackets and dung beetles), at or near the soil surface where prey items are more accessible. In warmer weather, Chough can be seen picking off surface active insects, e.g. spiders, including from heather plants (Trewby et al., 2010). The dosing of livestock with veterinary parasiticide treatments (including anthelmintics) has knock-on consequences with respect to invertebrate density in grasslands on which Chough depend (Gilbert et al., 2019)
Distribution of roosting sites	Spatial distribution	The distribution of preferred roosts is maintained	Post-breeding, Chough are highly social, forming mobile flocks that can travel several kilometres to feed (McGrath, 2022). Family groups form 'nursery' flocks in July, returning to nest sites to roost, but by summer's end, these flocks begin to converge pre-dusk, along with non-breeding sub-adults, at communal nocturnal roost sites, leaving post-dawn (Trewby et al., 2010; Blanco et al., 1993). Roosts tend to be close to good foraging habitat (e.g. grazed dune systems), and peak attendance is usually in late summer/early autumn, post-breeding. Brandon Creek (peak c.90, August 2005) located nearby on the Dingle Peninsula, Co. Kerry, is one of the largest known roost sites on the peninsula for Chough (Trewby et al., 2006)
Disturbance	Intensity, timing, frequency and duration	Disturbance occurs at levels that do not significantly impact upon Chough in the SPA	Factors such as intensity, frequency, timing, duration of a (direct or indirect) disturbance source and location (e.g. if access to preferred food sources is restricted), must be taken into account to determine the potential impact upon the targets for population size, population trend, productivity rate and distribution of roosting sites. Further, site fidelity (e.g. pairs to nest sites while breeding, or flocks to roost sites at other times), weather (e.g. prolonged cold spells) and predation/competition should also be factored in. Coastal breeding pairs spend up to 80% of their time within 350m of the nest site (Trewby et al., 2006). Impacts are likely to be highest near nest sites (e.g. on coastal cliffs where available foraging habitats are more limited in total area) and at roost sites



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MAP 1:
BLASKET ISLANDS SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION

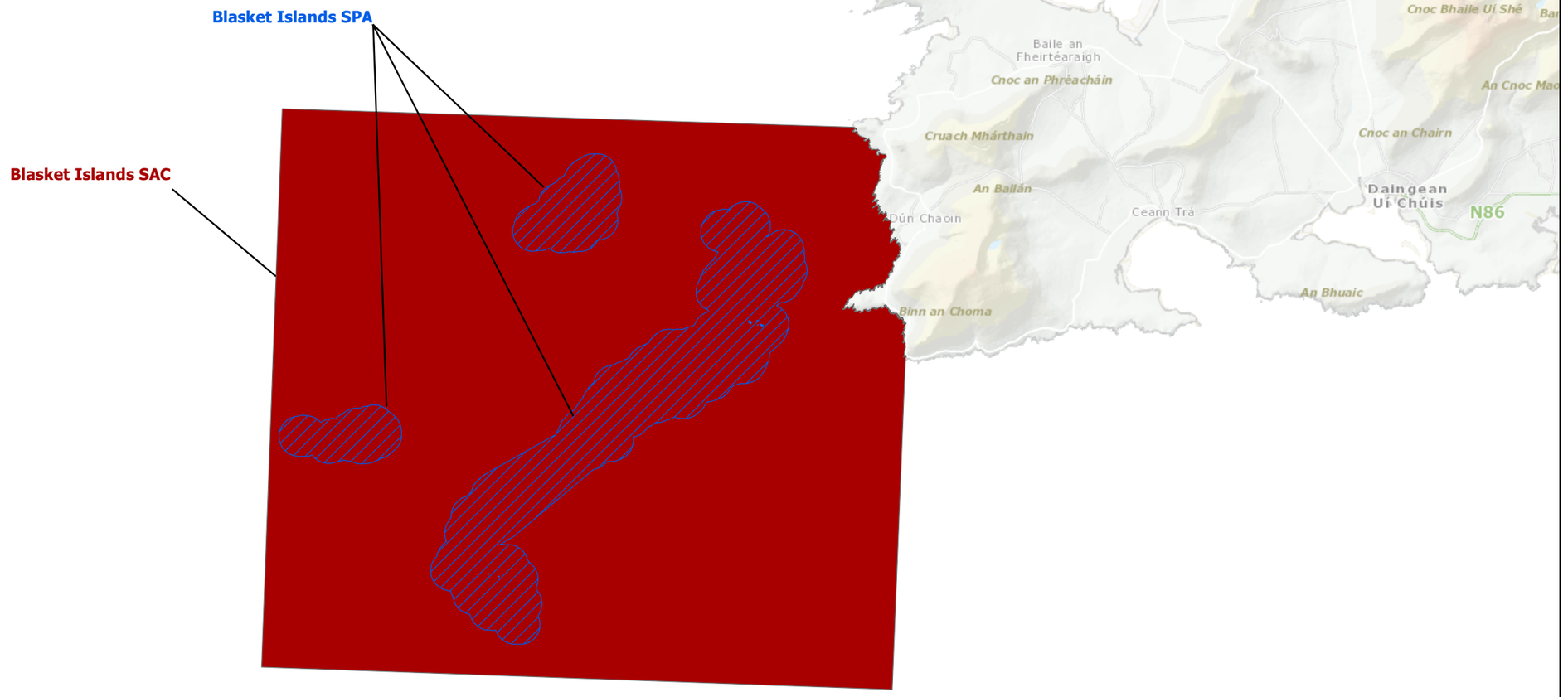
Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
SPA 004008; version 3
CO. KERRY

0 1.25 2.5 5 Kilometres

N

Map version 1
Date: July 2024



Legend

- Blasket Islands SPA 004008
- Blasket Islands SAC 002172

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MAP 2:
BLASKET ISLANDS SPA
CONSERVATION OBJECTIVES
OVERLAPPING AND ADJACENT SITES

Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
SPA 004008; version 3
CO. KERRY

0 1.25 2.5 5 Kilometres

N

Map version 1
Date: July 2024