

National Parks and Wildlife Service

Conservation Objectives Series

Bills Rocks SPA 004177



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*

004177 Bills Rocks SPA

A014 Storm Petrel *Hydrobates pelagicus*

A204 Puffin *Fratercula arctica*

Supporting documents, relevant reports & publications

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

NPWS Documents

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 :	A survey of Manx Shearwater, European Storm and Leach's Petrels in NW Ireland: status and distribution on selected islands in 2021
Author :	Colhoun, K. Collins, J.; Phelan, E.; Meneely, J.; O'Neill, J.; McClure, A.; O'Brien, I.; Carden, A.
Series :	Unpublished report to NPWS

Other References

Year :	1851
Title :	The Natural History of Ireland. Vol III. Birds
Author :	Thompson, W.
Series :	Reeve and Denham, London
Year :	1940
Title :	Notes on the birds of Achill Island and the Bills Rocks, Co. Mayo
Author :	Fitter, R.S.R.
Series :	British Birds 34: 133-134
Year :	1967
Title :	The Birds of Bills Rocks, Co. Mayo
Author :	Cabot, D.
Series :	Irish Naturalists' Journal 13: 359-361
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 :	1991
Title :	The status of seabirds in Britain and Ireland
Author :	Lloyd, C.; Tasker, M.L.; Partridge, K.
Series :	Poyser Monographs Volume: 50
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 :	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 :	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 :	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 :	Atlantic Puffin (<i>Fratercula arctica</i>), 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 :	The breeding seabirds and other birds on the Bills Rocks, County Mayo
Author :	Cabot, D.; Cabot, R.; Viney, M.
Series :	Irish Birds, 42, pp.55-62
Year :	2021
Title :	European Storm-Petrel (<i>Hydrobates pelagicus</i>), 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 :	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 :	2024
Title :	Atlantic Puffin (<i>Fratercula arctica</i>)
Author :	JNCC
Series :	https://jncc.gov.uk/our-work/atlantic-puffin-fratercula-arctica/
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

Conservation Objectives for : Bills Rocks SPA [004177]

A014 Storm Petrel *Hydrobates pelagicus*

To restore the Favourable conservation condition of Storm Petrel in Bills Rocks 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 methods and analytical methods for this species have changed between surveys and are likely to change in the future, requiring the use of new technology and innovative approaches (Burnell et al., 2023). Therefore, caution is required when comparing population estimates. Lloyd et al. (1991) reported 1,000 or more pairs in 1983 and an estimated 500 pairs were recorded in 2000 (Mitchell et al., 2004). The most recent population estimate of 36 pairs in 2021 (Colhoun et al., 2022; Burnell et al., 2023) indicates that the current population is significantly smaller. The reported population of Storm Petrel in Ireland has increased by 10% between 1998 - 2002 and 2015 - 2021, indicating a stable 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 2021 both islands were surveyed but breeding was only recorded on the East Bills (Colhoun et al., 2022)
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 (<i>Sprattus sprattus</i> , <i>Ammodytes marinus</i>), 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)

Conservation Objectives for : Bills Rocks SPA [004177]

A204

Puffin *Fratercula arctica*

To restore the Favourable conservation condition of Puffin in Bills Rocks 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 sited on steeply sloping ground largely inaccessible to surveyors, counts of the number of individual birds associated with the area is a survey method often used, though it is less accurate than counting the number of occupied burrows during the breeding season (see Arneill, 2018; Walsh et al., 1995). Puffin have been breeding in this SPA since at least the 19th century (Thompson, 1851). Initial estimates were high, Fitter (1940) reported a count of over 5,000 pairs in 1939 and Cabot (1967) reported 1,000 pairs in 1967. Lloyd et al. (1991) reported 102 pairs, a significant decline. However, 1,500 individuals were estimated at this site in 2001 (Mitchell et al., 2004). The most recent estimate of 300 individuals (Cabot et al., 2020) indicates a significant decline for this species at this site. The estimated national population of Puffin has declined by 26% between 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. 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)
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 scree, or at low densities in cracks in sheer cliffs (Mitchell et al., 2004). Historically, nesting Puffin have been recorded on both the East and West Bills. In 2018 the breeding birds concentrated in the area south-east of East Bill (Cabot et al., 2020)
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 (5 - 15cm) schooling midwater fish including Sprat (<i>Sprattus sprattus</i>), sandeel (<i>Ammodytes</i> spp.), and Herring (<i>Clupea harengus</i>) (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)

