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Conservation Objectives Series

The Bull and The Cow Rocks SPA 004066

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***

004066	The Bull and The Cow Rocks SPA
A014	Storm Petrel *Hydrobates pelagicus*
A016	Gannet *Morus bassanus*
A204	Puffin *Fratercula arctica*

Please note that this SPA overlaps with Beara Peninsula SPA (004155) and Kenmare River SAC (002158). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping or adjacent 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 :	2019
Title :	The status of Ireland's breeding seabirds: Birds Directive article 12 reporting 2013 – 2018
Author :	Cummins, S.; Lauder, C.; Lauder, A.; Tierney, T. D.
Series :	Irish Wildlife Manual No. 114
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 :	2023
Title :	2023 National Census of Northern Gannet (*Morus bassanus*) colonies in the Republic of Ireland
Author :	Murphy, E.; Tierney, T.D.; Walsh, A.; Power, A.; Jessopp, M.
Series :	Unpublished NPWS report

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 :	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 :	1966
Title :	Ireland's Birds: their distribution and migrations
Author :	Ruttledge, R.F.
Series :	Published by HF & G Witherby, London
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 :	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 :	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 :	2015
Title :	Census of Gannet *Morus bassanus* colonies in Ireland in 2013 - 2014
Author :	Newton, S.F.; Harris, M.P.; Murray, S.
Series :	Irish Birds, 10 (2)
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 (*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 :	Northern Gannet (*Morus bassanus*), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Mowbray, T. B.
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 :	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 (*Fratercula arctica*)
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

A014 Storm Petrel *Hydrobates pelagicus*

To maintain the Favourable conservation condition of Storm Petrel in The Bull and The Cow 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 islands which leads to difficulties in surveying 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). Both islands of this SPA are very difficult to land on and hence are seldom visited or surveyed. Ussher and Warren (1900) noted that a Storm Petrel egg was discovered on an island off the coast of Co. Cork while Kennedy et al. (1954) state that there was no known colony in that county at that time. In 1955 an estimated 150 pairs bred on Bull Rock (Ruttledge, 1966). This SPA was estimated to have held 3,500 breeding pairs of Storm Petrel in 1998 - 2002 but this should be considered a "best guess" (Burnell et al., 2023). The site has not been surveyed in recent years
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)
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)

A016 Gannet *Morus bassanus*

To maintain the Favourable conservation condition of Gannet in The Bull and The Cow 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	Breeding was first recorded on Bull Rock in the mid-19th century (Kennedy et al., 1954; Ussher and Warren,1900). Kennedy et al. (1954) noted that the typical population then was 500 pairs. The population has steadily increased with each survey: in the mid-1980s, 1,511 pairs; 1,815 pairs in 1995; 3,694 pairs in 2004; and 6,388 by 2014 (Newton et al., 2015). The most recent survey, conducted in 2023, estimated that the Bull Rock population to be 7,048 pairs (Murphy 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. A productivity of 0.65 young fledged per pairs has been suggested as a threshold level necessary to sustain a population (Mowbray, 2020). Cook and Robinson (2010) undertook Population Viability Analyses (PVA) of a selection of breeding populations in the UK. Over their study period Gannet productivity at monitored nests was 0.69 chicks per pair. In the same time period the population of Gannet increased suggesting the productivity was suitable to at least maintain the population. Similarly a productivity of 0.69 (n=191) was recorded on Ireland's Eye in 2007. At this time the population of Gannet was increasing on Ireland's Eye
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	Gannet breed on offshore islands and occasionally on mainland coastal cliffs (Mowbray, 2020). Colonies are typically located on cliff ledges or steep slopes (Mowbray, 2020). All of Ireland's six colonies are located on marine islands (Cummins et al., 2019)
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 Gannet is mainly comprised of surface schooling fish, 2.5 - 30.5cm in length; main fish species taken include mackerel and herring (Mowbray, 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 Gannet foraging ranges from the nest site during the breeding season, which are 120km, 315km, and 709km 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)

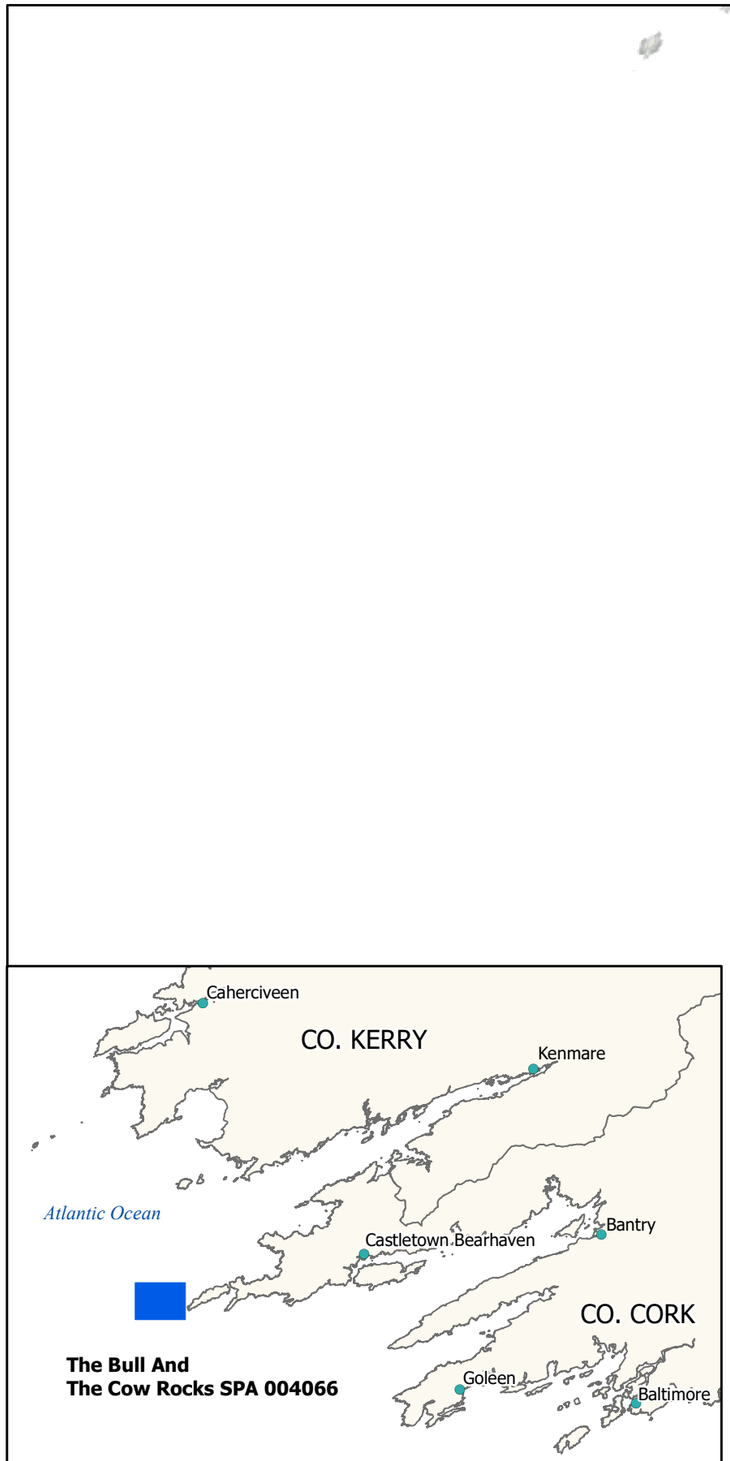
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically 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 Gannet foraging ranges from the nest site during the breeding season, which are 120km, 315km, and 709km respectively (see Power et al., 2021)

A204 Puffin *Fratercula arctica*

To maintain the Favourable conservation condition of Puffin in The Bull and The Cow 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 (see Arneill, 2018; Walsh et al., 1995). Both islands of this SPA are very difficult to land on and hence are seldom visited or surveyed. As a result there are few records of Puffin at this site both historically and in recent years. Puffin have been breeding at this site since at least the 19th century (Ussher and Warren, 1900) and both Kennedy et al. (1954) and Ruttledge (1966) noted the colony as one of the most densely populated in Ireland. A population of approximately 200 pairs was present at the site in the early 1990s but the islands have not been surveyed since (NPWS internal files). However, Puffin have been observed around the islands and flying to suitable breeding habitat at the site indicating that a breeding population is still present
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 screes, or at low densities in cracks in sheer cliffs (Mitchell et al., 2004)
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)



Legend

The Bull and The Cow Rocks SPA 004066

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MAP 1:
THE BULL AND THE COW ROCKS SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION

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

SITE CODE:
SPA 004066; version 3.01
CO. CORK

0 1.25 2.5 5 Kilometres

N

Map version 1
Date: July 2024

Kenmare River SAC

The Bull And The Cow Rocks SPA

Beara Peninsula SPA

Cahersiveen
N70
Knight's Town
Chapeltown
Aghatubrid
CIARRAÍ
Máistir Gaoithe
Portmagee
Emlaghmore
An Chill
Baile an Sceilg
Waterville
N70
Castle Cove
Caherdaniel
Ardgroom
Eyeries
Urhin
Castletown Bearhaven
Ilihies
Rossmackowen
Rerrin
Sneem
Blackwater Bridge
Kenmare
Kilgarvan
Bunane
Tuosist
N71
Glengarriff
Ballylicky
Adrigole
Trafrask
Whiddy Island
Bantry
Dromore
Glanlough
Durrus
Caheragh
Ahakista
Kilcrohane
N71
Ballydehob
Church Cross
N71
Skull
Toormore
Goleen
Crookhaven

Legend

- The Bull And The Cow Rocks SPA 004066
- Beara Peninsula SPA 004155
- Kenmare River SAC 002158

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MAP 2:
THE BULL AND THE COW ROCKS SPA
CONSERVATION OBJECTIVES
OVERLAPPING AND ADJACENT SITES

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

SITE CODE:
SPA 004066; version 3.01
CO. CORK

0 2.5 5 10 Kilometres

N

Map version 1
Date: July 2024