ISSN 2009-4086

# National Parks and Wildlife Service

## *Conservation Objectives Series*

## Seas off Wexford SPA 004237

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**Citation:**

**NPWS (2024) Conservation Objectives: Seas off Wexford SPA 004237. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.**

**Series Editors: Maria Long and Colin Heaslip**
**ISSN 2009-4086**

# 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***

004237 Seas off Wexford SPA

| | |
|---|---|
| A001 | Red-throated Diver *Gavia stellata* |
| A009 | Fulmar *Fulmarus glacialis* |
| A013 | Manx Shearwater *Puffinus puffinus* |
| A016 | Gannet *Morus bassanus* |
| A017 | Cormorant *Phalacrocorax carbo* |
| A018 | Shag *Phalacrocorax aristotelis* |
| A065 | Common Scoter *Melanitta nigra* |
| A176 | Mediterranean Gull *Larus melanocephalus* |
| A179 | Black-headed Gull *Chroicocephalus ridibundus* |
| A183 | Lesser Black-backed Gull *Larus fuscus* |
| A184 | Herring Gull *Larus argentatus* |
| A188 | Kittiwake *Rissa tridactyla* |
| A191 | Sandwich Tern *Sterna sandvicensis* |
| A192 | Roseate Tern *Sterna dougallii* |
| A193 | Common Tern *Sterna hirundo* |
| A194 | Arctic Tern *Sterna paradisaea* |
| A195 | Little Tern *Sterna albifrons* |
| A199 | Guillemot *Uria aalge* |
| A200 | Razorbill *Alca torda* |
| A204 | Puffin *Fratercula arctica* |

**For all overlapping or adjoining SPA and SACs, see map 2**

# Supporting documents, relevant reports & publications

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

## NPWS Documents

| | |
|---|---|
| **Year :** | 2018 |
| **Title :** | The seasonal distribution and abundance of seabirds in the western Irish Sea 2016 |
| **Author :** | Jessopp, M.; Mackey, M.; Luck, C.; Critchley, E.; Bennison, A.; Rogan, E. |
| **Series :** | Report to Department of Communications, Climate Action and Environment, and National Parks & Wildlife Service, Department of Culture, Heritage & the Gaeltacht, Ireland |
| **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 :** | 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 :** | Kilcoole Little Tern Conservation Project Report, 2022 |
| **Author :** | Johnson, G.C.; Kavanagh, P.; Burke, B. |
| **Series :** | BirdWatch Ireland Seabird Conservation Report to NPWS |
| **Year :** | 2022 |
| **Title :** | Spatial utilisation of marine areas as foraging resources for Roseate and Common Terns at Rockabill SPA |
| **Author :** | Power, A.; O'Connor, I.; Tierney, T.D. |
| **Series :** | Unpublished report by NPWS and ATU |
| **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 :** | The seasonal distribution and abundance of seabirds, cetaceans and other megafauna in the south and southwest Irish coast |
| **Author :** | Giralt Paradell, O.; Jessopp, M.; Rogan, E. |
| **Series :** | Report to Department of Communications, Climate Action and Environment, and National Parks and Wildlife Service |
| **Year :** | 2023 |
| **Title :** | Monitoring of breeding seabird populations on Great Saltee 2023 |
| **Author :** | Tierney T.D.; Murray, T.; Cummins, S.; Doyle, H.; Walsh, A. |
| **Series :** | Unpublished NPWS report |

## Other References

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| **Year :** | 1990 |
| **Title :** | The Manx Shearwater |
| **Author :** | Brooke, M. |
| **Series :** | Poyser, London |
| **Year :** | 1997 |
| **Title :** | The status and distribution of breeding sandwich, roseate, common, arctic and little terns in Ireland in 1995 |
| **Author :** | Hannon, C.; Berrow, S.D.; Newton, S.F. |
| **Series :** | Irish Birds, 6: 1-22 |
| **Year :** | 1998 |
| **Title :** | Flexible foraging techniques in breeding cormorants *Phalacrocorax carbo* and shags *Phalacrocorax aristotelis*: benthic or pelagic feeding? |
| **Author :** | Grémillet, D.; Argentin, G.; Schulte, B.; Culik, B.M. |
| **Series :** | Ibis, 140(1), pp.113-119 |
| **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 :** | 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 :** | 2005 |
| **Title :** | Generic guidelines for seaward extensions to existing breeding northern fulmar *Fulmarus glacialis* colony Special Protection Areas |
| **Author :** | McSorley, C.A.; Webb, A.; Dean, B.J.; Reid J.B. |
| **Series :** | JNCC Report No. 358 |
| **Year :** | 2006 |
| **Title :** | Distribution and behaviour of Common Scoter *Melanitta nigra* relative to prey resources and environmental parameters |
| **Author :** | Kaiser, M.J.; Galanidi, M.; Showler, D.A.; Elliott, A.J.; Caldow, R.W.; Rees, E.I.S.; Stillman, R.A.; Sutherland, W.J. |
| **Series :** | Ibis, 148, pp.110-128 |
| **Year :** | 2012 |
| **Title :** | Integrating Irish Marine Protected Areas: the FAME Seabird Tracking Project |
| **Author :** | Baer, J.; Newton, S. |
| **Series :** | Unpublished BirdWatch Ireland report |
| **Year :** | 2013 |
| **Title :** | Space Partitioning Without Territoriality in Gannets |
| **Author :** | Wakefield, E. D.; et al. |
| **Series :** | Science, 341 (6141). 68 - 70 |
| **Year :** | 2015 |
| **Title :** | The breeding status of Great Cormorant (*Phalacrocorax carbo carbo*) in Co. Wexford |
| **Author :** | Murray, T.; Cabot, D. |
| **Series :** | Irish Naturalists' Journal 34(2): 89-94 |

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| **Year :** | 2015 |
| **Title :** | Simultaneous multi-colony tracking of a pelagic seabird reveals cross-colony utilization of a shared foraging area |
| **Author :** | Dean, B.; Kirk, H.; Fayet, A.; Shoji, A.; Freeman, R.; Leonard, K.; Perrins, C.M.; Guilford, T. |
| **Series :** | Marine Ecology Progress Series, 538, pp.239-248 |
| **Year :** | 2016 |
| **Title :** | Assessing the Movements and Usage of Irish Sea Birds using Innovative Technology: A report on phase 1, Seabirds |
| **Author :** | Moss, E.; Tierney, N.; Crowe, O. |
| **Series :** | Unpublished report by BirdWatch Ireland to the Sustainable Energy Authority of Ireland |
| **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 :** | 2019 |
| **Title :** | The diet of red-throated divers (*Gavia stellata*) overwintering in the German Bight (North Sea) analysed using molecular diagnostics |
| **Author :** | Kleinschmidt, B.; Burger, C.; Dorsch, M.; Nehls, G.; Heinänen, S.; Morkūnas, J.; Žydelis, R.; Moorhouse-Gann, R.J.; Hipperson, H.; Symondson, W.O.; Quillfeldt, P. |
| **Series :** | Marine Biology, 166, pp.1-18 |
| **Year :** | 2019 |
| **Title :** | Digital video aerial surveys of Common Scoter at Rosslare Bay: Final report December 2018 to March 2019 |
| **Author :** | Hi-Def |
| **Series :** | Produced for Marine Institute |
| **Year :** | 2019 |
| **Title :** | Tidal drift removes the need for area-restricted search in foraging Atlantic puffins |
| **Author :** | Bennison, A.; Quinn, J.L.; Debney, A.; Jessopp, M. |
| **Series :** | Biology Letters, 15(7), p.20190208 |
| **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 :** | Great Cormorant (*Phalacrocorax carbo*), version 1.0. In Birds of the World (S. M. Billerman, Editor) |
| **Author :** | Hatch, J.J.; Brown, K.M.; Hogan, G.G.; Morris, R.D.; Orta, J.; Garcia, E.F.J.; Jutglar, F.; Kirwan, G.M.; Boesman, P.F.D. |
| **Series :** | Cornell Lab of Ornithology, Ithaca, NY, USA |
| **Year :** | 2020 |
| **Title :** | Black-headed Gull (*Chroicocephalus ridibundus*), 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; 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 |
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| **Year :** | 2020 |
| **Title :** | Results from the first three years of monitoring post-breeding tern aggregations in Ireland |
| **Author :** | Burke, B.; Fitzgerald, N.; Boland, H.; Murray, T.; Gittings, T.; Tierney, T.D |
| **Series :** | Irish Birds 42: 35-44 |
| **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 :** | 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 :** | 2020 |
| **Title :** | Mediterranean Gull (*Ichthyaetus melanocephalus*), 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.; Garcia, E. F. J. |
| **Series :** | Cornell Lab of Ornithology, Ithaca, NY, USA |
| **Year :** | 2020 |
| **Title :** | Assessing the effectiveness of foraging radius models for seabird distributions using biotelemetry and survey data |
| **Author :** | Critchley, E.J.; Grecian, W.J.; Bennison, A.; Kane, A.; Wischnewski, S.; Cañadas, A.; Tierney, D.; Quinn, J.L.; Jessopp, M.J. |
| **Series :** | Ecography, 43(2), pp.184-196 |
| **Year :** | 2020 |
| **Title :** | Sandwich Tern (*Thalasseus sandvicensis*), version 1.0. In Birds of the World (S. M. Billerman, Editor) |
| **Author :** | Shealer, D.; Liechty, J. S.; Pierce, A. R.; Pyle, P.; Patten., M. A. |
| **Series :** | Cornell Lab of Ornithology, Ithaca, NY, USA |
| **Year :** | 2021 |
| **Title :** | Common Murre (*Uria aalge*), version 2.0. In Birds of the World (S. M. Billerman, P. G. Rodewald, and B. K. Keeney, Editors) |
| **Author :** | Ainley, D. G.; Nettleship, D. N.; Storey, A. E. |
| **Series :** | Cornell Lab of Ornithology, Ithaca, NY, USA |

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| **Year :** | 2021 |
| **Title :** | Common Gull (*Larus canus*), version 1.1. In Birds of the World (S. M. Billerman, Editor) |
| **Author :** | Moskoff, W., Bevier, L. R.; Rasmussen, P. C. |
| **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 :** | 2023 |
| **Title :** | Lady's Island Lake Tern Report 2023 |
| **Author :** | Stubbings, E.; Büche, B.; Murray, T.; Newton, S. |
| **Series :** | BirdWatch Ireland Seabird Conservation Report |
| **Year :** | 2023 |
| **Title :** | Seabirds Count: a census of breeding seabird 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 |

## A001 Red-throated Diver *Gavia stellata*

**To maintain the favourable conservation condition of Red-throated Diver at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Non-breeding population size | Number | Long term SPA population trend is stable or increasing | Red-throated Diver is a Special Conservation Interest (SCI) for this site. During the non-breeding period divers (primarily Great Northern and Red-throated Diver) in the western Irish Sea are known to concentrate in the shallower coastal areas, with a clear preference for waters of 5-20m (Jessopp et al., 2018). One series of surveys focused on waters off Rosslare, which overlaps with Seas off Wexford SPA, found that the numbers of Red-throated Diver peaked in the early January survey and estimated the population to be 607 (±95% confidence interval of 404 – 835) individuals (Hi-Def, 2019). A population of 499 individuals was estimated based on Hi-Def data (NPWS unpublished data analysis). Red-throated Diver can be quite mobile and it is likely that there is interchange between this SPA and adjacent areas (e.g the Raven SPA) |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio-temporal patterns of use of the habitats by the non-breeding population |
| Forage spatial distribution, extent and abundance | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | The diet of this piscivorous diver is poorly known outside of the breeding season but one study from the German Bight indicates that Red-throated Diver is a generalist opportunistic feeder but pelagic schooling fish that have a high energetic value might be favoured (Kleinschmidt et al., 2019) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the non-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 over-winter 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 |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as additional foraging when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A009 Fulmar *Fulmarus glacialis*

**To restore the favourable conservation condition of Fulmar at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Fulmar is also a Special Conservation Interest of Saltee Islands SPA (004002). Breeding Fulmar have declined by 31% between 1998-2002 and 2015 to 357 pairs (Burnell et al., 2023). These birds exploit the marine waters of the Seas off Wexford SPA during the breeding season. As Fulmar can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Islands SPA breeding population (Power et al., 2021). Fulmar breeding at other colonies and non-breeding individuals may also use Seas off Wexford SPA during the breeding period. Giralt Paradell et al. (2023) undertook a single summer survey of the south coast. Based on this 95 individuals are estimated to have occurred in the SPA during the breeding season. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Fulmar. Jessopp et al. (2018) recorded Fulmar throughout the western Irish Sea survey area showing a clear preference for deeper waters. Based on several studies, Woodward et al. (2019) provides 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 135; 542; and 2,736 km respectively (see Power et al., 2021) |
| Forage spatial distribution, extent, abundance and availability | Location and 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 more recent dietary studies indicate they also feed on a wide variety of prey including sandeels, crustaceans and squid (Philips et al., 1999) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the 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 over-winter 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). Studies in the UK found the highest densities of Fulmar performing these behaviours occurred within 2 km of the breeding colony (McSorley et al., 2005) |

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|---|---|---|---|
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Fulmar require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A013 Manx Shearwater *Puffinus puffinus*

**To maintain the favourable conservation condition of Manx Shearwater at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Dean et al. (2015) identifies an area of marine waters on the south-east as being an important foraging resource for Manx Shearwater breeding in colonies located around the periphery of the Irish Sea; the Seas off Wexford SPA overlaps with this area. One summer aerial survey, conducted in 2021, estimated 8,268 individual Manx Shearwater within the SPA (Giralt Paradell et al,. 2023; NPWS unpublished data analysis). It should be noted however that the south coast of Ireland also appears to be a transit area for breeding Manx Shearwater from Wales accessing Atlantic waters on long foraging trips (Giralt Paradell et al., 2023) |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Manx Shearwater. Jessopp et al. (2018) noted that particularly during the summer survey Manx Shearwater were sighted throughout their survey area, but were not observed in the nearshore waters, instead generally being recorded at least 4 km from the shore. Manx Shearwater had a clear preference for deeper waters in the survey area, with a marked absence of this species over shallow areas and sandbars with less than 20 m water depth. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) observed Manx Shearwater throughout the survey area (Giralt Paradell et al., 2023) with larger aggregations recorded around Dungarvan Bay, and off the south-west coast |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Primarily clupeiform fish, during the chick rearing period; outside of this period squid and other marine invertebrates may form a larger part of the Manx Shearwater's diet (Brooke, 1990) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the non-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 over-winter 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Manx Shearwater require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A016 Gannet *Morus bassanus*

**To maintain the favourable conservation condition of Gannet at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Gannet is also a Special Conservation Interest of Saltee Islands SPA (004002). This breeding population exploits the surrounding marine waters of Seas off Wexford SPA during the breeding season. The breeding Gannet population is estimated to have increased by 93% over the period 2003-2005 to 2014 from 2,466 to 4,722 Apparently Occupied Nests (AON) (Burnell et al., 2023). As Gannet can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Island SPA breeding population (Power et al., 2021). Giralt Paradell et al. (2023) undertook a single summer survey of the south coast. Based on this 778 individuals are estimated to have occurred in the SPA during the breeding season. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Gannet. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) noted that Gannet sightings were concentrated in the western transects and, to a lesser extent in the eastern transects close to the Saltee Islands (Giralt Paradell et al., 2023). Jessopp et al. (2018) showed that there was no apparent depth preference for Gannet in aerial surveys conducted in 2016 in the Irish Sea. A tracking study of Gannet breeding on Great Saltee Island showed Gannet foraging to the south and south-west of the islands (Wakefield, 2013), some of which overlaps with the Seas off Wexford SPA. However, Gannet also spent a significant amount of foraging time away from this SPA |
| Forage spatial distribution, extent, abundance and availability | Location and 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 - 30.5 cm in length; main fish species taken include mackerel and herring (Mowbray, 2020). Based on several studies, Woodward et al. (2019) provides 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 Gannet, which are 120, 315, and 709 km respectively (see Power et al., 2021) |

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| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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 over-winter 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA | Gannet require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A017 Cormorant *Phalacrocorax carbo*

**To restore the favourable conservation condition of Cormorant at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Population size | Number | Long term SPA population trend is stable or increasing | The breeding Cormorant of Saltee Islands SPA (004002) and Keeragh Islands SPA (004118) use Seas off Wexford SPA as a foraging resource. There may be interchange between these colonies (Murray and Cabot, 2015). The estimated population of both SPAs combined has decreased by 10% between 1999 and 2015 (Burnell et al., 2023). The population in 2023 has declined a further 29% since 2015 (Tierney et al., 2023). Based on a single summer aerial survey by Giralt Paradell et al. (2023) it was estimated that 152 individual Cormorant/Shags were within the SPA (NPWS unpublished data analysis). Cormorant is a SCI (non-breeding) for the adjoining Raven SPA (004019). Aerial surveys focused on waters off Rosslare, found that the numbers of Cormorant peaked in January and estimated a population of 3,960 (±95% confidence interval of 38 -10,972) individuals (Hi-Def, 2019); this overlaps with this SPA. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Cormorant. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate Shag (*Phalacrocorax aristotelis*) and Cormorant by eye and they were grouped together. There was a peak in the distribution of sightings over water depths around 10 m indicating a preference for shallow waters, with few observations occurring over water depths in excess of 20 m. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) also did not differentiate between Cormorant and Shag (Giralt Paradell et al., 2023). During the summer the species were mainly distributed in two areas, close to the Saltee Islands (Co. Wexford) and Dingle Bay (Co. Kerry) |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | The Cormorant's diet consists predominantly of small benthic and pelagic fish which are captured by pursuit diving, typically over shallow (<10m) freshwater, estuarine and marine environments (Gremillet et al., 1998; Hatch et al., 2020). Based on several studies, Woodward et al. (2019) provides estimates (i.e. overall mean; mean of maximum distances across all studies; and maximum distance recorded) of Cormorant foraging ranges from the nest site during the breeding season, which are 7, 26, and 35 km respectively (see Power et al., 2021) |

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| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. display, bathing, preening) as defined in McSorley et al. (2003) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Cormorant require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A018 Shag *Phalacrocorax aristotelis*

**To restore the favourable conservation condition of Shag at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Shag is also a Special Conservation Interest of Saltee Islands SPA (004002). 2015 survey results show that the estimated population of the Saltee Islands decreased by 57% to 114 pairs since 1998-2002 (Burnell et al., 2023). Based on a single summer aerial survey undertaken by Giralt Paradell et al. (2023) it was estimated that 152 individual Cormorants/Shags occured within the SPA (NPWS unpublished data analysis). Note that this survey did not differentiate Shag and Cormorant by eye and they were grouped together. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Shag. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate Shag and Cormorant by eye and they were grouped together. There was a clear peak in the distribution of sightings over water depths around 10 m indicating a preference for shallow waters. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between Shag and Cormorant (Giralt Paradell et al., 2023). During the summer, the highest densities were recorded in coastal areas off the south-east and south-west coast. Highest densities were recorded in Dingle Bay. However, in the eastern area, higher densities were found to the east of the Saltees Islands |
| Forage spatial distribution, extent, abundance and availability | Location and 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 sea bed or at intermediate depths, and principally of the families Ammodytidae (sandeels), Gadidae, Clupeidae, Cottidae and Labridae, but a wide range of species taken, perhaps opportunistically (Orta et al., 2021). Based on several studies, Woodward et al. (2019) provides provides 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 9, 13, and 46 km respectively (see Power et al., 2021). Baer and Newton (2012) and Moss et al. (2016) provide telemetry based foraging information of this species relevant to this particular area |

| | | | |
|---|---|---|---|
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA | Shag require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A065 Common Scoter *Melanitta nigra*

**To maintain the favourable conservation condition of Common Scoter at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Non-breeding population size | Number | Long term SPA population trend is stable or increasing | Common Scoter utilise the shallow nearshore coastal waters off County Wexford across the non-breeding period (Jessopp et al., 2018). One series of surveys focused on waters off Rosslare found that the numbers of Common Scoter peaked in the second part of January and estimated the population to be 3,670 (±95% confidence interval of 515 – 8,197) individuals (Hi-Def, 2019); the Seas off Wexford SPA overlaps with this area. A population of 1,078 individuals was estimated based on Hi-Def data (NPWS unpublished data analysis). Common Scoter flocks can be quite mobile and it is likely that there is interchange between this SPA and adjacent areas (e.g the Raven SPA) |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio-temporal patterns of use of the habitats by the non-breeding population |
| Forage spatial distribution, extent and abundance | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Common Scoter is a diving duck that feed on prey species that live upon or within the upper few centimetres of the substratum. Common Scoter diet primarily comprises of bivalve molluscs with other species (e.g. crabs, small fishes and gastropods) incorporated less frequently (Kaiser et al., 2006) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the non-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 over-winter 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 |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as additional foraging when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A176 Mediterranean Gull *Larus melanocephalus*

**To maintain the favourable conservation condition of Mediterranean Gull at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Mediterranean Gull has been proposed to be listed as a Special Conservation Interest for Lady's Island Lake SPA (004009), which abuts Seas off Wexford SPA. The Lady's Island Lake SPA population is the largest colony in the country with a total of 59 pairs estimated in 2023, which represents an increase of 157% from the 2014 populaiton estimate (Stubbings et al., 2023). The Lady's Island Lake SPA colony may use Seas off Wexford SPA as a foraging resource. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Mediterranean Gull. Based on a single study, Woodward et al. (2019) provides estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean and maximum distance recorded) for Mediterranean Gull, which are 11.5 km and 20 km respectively |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Mediterranean Gull in the breeding season feed mainly on terrestrial and aquatic insects and small numbers of fish, rodents and worms (Burger at al., 2020) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Mediterranean Gulls require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A179 Black-headed Gull *Chroicocephalus ridibundus*

**To maintain the favourable conservation condition of Black-headed Gull at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Seas off Wexford SPA provides essential resources for adjacent breeding seabird colonies. Breeding Black-headed Gull is a Special Conservation Interest for Lady's Island Lake SPA (004009). Since 1995 the Lady's Island population has increased by 190% to 2,754 pairs (Cummins et al., 2019; Stubbings et al., 2023). Black-headed Gull can range up to 18.5 km from their nest sites during the breeding season, so it is likely that Lady's Island Lake SPA and the Seas off Wexford SPA contain the majority of the foraging habitat for this population (Woodward et al. 2019). No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Black-headed Gull |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Diet varies by location and season. Birds foraging in marine environments feed on fish and marine invertebrates (Moskoff et al., 2021).The diet of Black-headed Gull is extremely broad and opportunistic. Coastal birds may feed on marine invertebrates and to lesser extent on fish, sometimes following fishing vessels (Burger et al., 2020) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the non-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 over-winter 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 |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as additional foraging when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A183 Lesser Black-backed Gull *Larus fuscus*

**To maintain the favourable conservation condition of Lesser Black-backed Gull at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Lesser Black-backed Gull is also a Special Conservation Interest of Saltee Islands SPA (004002). This population exploits the surrounding marine waters of Seas off Wexford SPA during the breeding season. The breeding Lesser Black-backed Gull population is estimated to have increased by 53% over the period 1999-2015 from 164 to 251 pairs (Burnell et al., 2023). As Lesser Black-backed Gull can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Islands SPA breeding population (Power et al., 2021; Woodward et al., 2019). No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Lesser Black-backed Gull. Sightings of black-backed gulls (e.g. Lesser Black-backed Gull, Great Black-backed Gull) by Jessopp et al. (2018) were normally of single individuals with some larger groups observed. Black-backed gulls showed no clear water depth preference although relatively more observations of Lesser Black-backed Gulls occurred over shallower depths |
| Forage spatial distribution, extent, abundance and availability | Location and 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, birds' eggs and chicks, trawler discards, rodents and berries (Burger et al., 2020). Based on several studies, Woodward et al. (2019) provides 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 43, 127, and 533 km respectively (see Power et al., 2021) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Lesser Black-backed Gull require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A184 Herring Gull *Larus argentatus*

**To maintain the favourable conservation condition of Herring Gull at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Herring Gull is also a Special Conservation Interest of Saltee Islands SPA (004002). Over the period 1999-2015, the Herring Gull breeding population was estimated to have increased by 58% to 115 pairs (Burnell et al., 2023). As Herring Gull can range large distances from their nest sites during the breeding season it is likely that this SPA does not contain all relevant foraging resources for this breeding population for the Saltee Islands SPA (Power et al., 2021). A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between Herring and Common Gull (Giralt Paradell et al., 2023). Based on this, 399 individuals are estimated to have occurred in the SPA during the breeding season. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio-temporal patterns of use of the habitats by Herring Gull. Jessopp et al. (2018) survey of the western Irish Sea did not distinguish between Common Gull and Herring Gull – these gulls occurred across the range of available water depths in the survey area but more observations were noted in depths less than 50 m |
| Forage spatial distribution, extent, abundance and availability | Location and 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 landbirds, small mammals, terrestrial insects, earthworms, berries, carrion, and a wide variety of human refuse (Weseloh et al., 2020). Based on several studies, Woodward et al. (2019) provides 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 15, 59, and 92 km respectively (see Power et al., 2021) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Herring Gull require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A188 Kittiwake *Rissa tridactyla*

**To restore the favourable conservation condition of Kittiwake at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Kittiwake is also a Special Conservation Interest of Saltee Islands SPA (004002). Since 1998-2002 the population has decreased by 46% to 1,144 Apparently Occupied Nests (AON) in 2023 (Burnell et al., 2023; unpublished NPWS data). Giralt Paradell et al. (2023) undertook a single summer survey of the south coast. Based on this 161 individuals are estimated to have occurred in the SPA during the breeding season. No survey data is currently available for the entire SPA area outside of the breeding season. As Kittiwake can range large distances from their nest sites during the breeding season it is likely that this SPA does not contain all relevant foraging resources for the aforementioned SPA (Power et al., 2021) |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Kittiwake. Highest densities occurred some distance from the coast according to aerial surveys of the western Irish Sea (Jessopp et al., 2018). Based on several studies, Woodward et al. (2019) provides 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 Kittiwake, which are 55, 156, and 770 km respectively (see Power et al., 2021). A single aerial survey off Ireland's southern coast (from Wexford to Kerry) showed that Kittiwake were widely distributed throughout the survey area (Giralt Paradell et al., 2023) |
| Forage spatial distribution, extent, abundance and availability | Location and 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, herrings, gadoids) with some invertebrates (e.g. euphausids, amphipods) in the diet also recorded (Hatch et al., 2020). Based on several studies, Woodward et al. (2019) provides 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 55, 156, and 770 km respectively (see Power et al., 2021) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the 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. 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; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Kittiwake require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A191 Sandwich Tern *Sterna sandvicensis*

**To maintain the favourable conservation condition of Sandwich Tern at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Sandwich Tern is also a Special Conservation Interest for Lady's Island Lake SPA (004009). Since 1995 the Lady's Island population has increased by 14% to 1,288 pairs (Hannon et al., 1997; Stubbings et al., 2023). However, the population in previous years has been higher with 1,629 and 1,736 pairs in 2021 and 2022 respectively. Sandwich Tern can range up to 80 km from their nest sites during the breeding season (Woodward et al. 2019). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al 2020). Notable concentrations have been recorded close to Carne beach, part of Lady's Island Lake SPA. Based on aerial surveys by Giralt Paradell et al. (2023) it was estimated that 1,946 individual terns were within the SPA (NPWS unpublished data analysis). This study did not differentiate between tern species |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Sandwich Tern. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) showed tern sightings occurred across a large range of sea depths, occuring more frequently over shallow areas of sea in the central transects of the survey area during the summer breeding season, with some sightings also concentrated further south. A single aerial survey off Ireland’s southern coast (from Wexford to Kerry) did not differentiate between the five resident tern species (Giralt Paradell et al., 2023). Highest densities were recorded in the south-east coast of Ireland, close to Lady's Island Lake |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Sandwich Tern feed primarily along coastal marine areas. They are largely piscivorous. In north-temperate regions of Europe they primarily eat Clupeidae (herring) and Ammodytidae (sandeels) families (Shealer et al., 2020) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). At latter stages of the breeding season tern species form large aggregations at terrestrial and intertidal roost sites along the coast (Burke et al., 2020) |

| | | | |
|---|---|---|---|
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Sandwich Tern require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A192 Roseate Tern *Sterna dougallii*

**To maintain the favourable conservation condition of Roseate Tern at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Roseate Tern is also a Special Conservation Interest for Lady's Island Lake SPA (004009). Since 1995 the Lady's Island population has increased by 369% to 291 pairs (Hannon et al., 1997; Stubbings et al., 2023). Roseate Tern can range up to 24 km from their nest sites during the breeding season, so it is likely that the Seas off Wexford SPA and adjacent SPAs contain the majority of the foraging habitat for this population (Woodward et al. 2019). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al 2020). Notable concentrations have been recorded close to Carne beach (part of Lady's Island Lake SPA) and in Wexford Harbour and Slobs SPA. Based on aerial surveys by Giralt Paradell et al. (2023) it was estimated that 1,946 individual terns were within the SPA (NPWS unpublished data analysis). This study did not differentiate between tern species |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Roseate Tern. Aerial surveys of the marine waters to the south and south-west (between Wexford and Kerry) did not differentiate between the five resident tern species (Giralt Paradell et al., 2023). Highest densities were recorded in the south-east coast of Ireland, close to Lady's Island |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Roseate Tern is largely piscivorous; studies from Rockabill SPA further north in the Irish Sea show that sandeels (*Ammodytes* spp.) along with clupeids and, to a lesser extent, gadoids can form important prey bases (e.g. Stubbings et al., 2023). Breeding birds forage over marine waters often some distance from the colony (see Power et al., 2021) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). At latter stages of the breeding season tern species form large aggregations at terrestrial and intertidal roost sites along the coast (Burke et al., 2020) |

| | | | |
|---|---|---|---|
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Roseate Tern require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A193 Common Tern *Sterna hirundo*

**To maintain the favourable conservation condition of Common Tern at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Common Tern is also a Special Conservation Interest for Lady's Island Lake SPA (004009). Since 1995 the Lady's Island population has increased by 268% to 919 pairs (Hannon et al., 1997; Stubbings et al., 2023). Common Tern can range up to 30 km from their nest sites during the breeding season, so it is likely that Lady's Island Lake SPA, the Raven SPA (004019) and the Seas off Wexford SPA contain the majority of the foraging habitat for this population (Woodward et al. 2019). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al., 2020). Notable concentrations have been recorded close to Carne beach (part of Lady's Island Lake SPA) and in Wexford Harbour and Slobs. Based on a single summer aerial survey by Giralt Paradell et al. (2023) it was estimated that 1,946 individual terns were within the SPA (NPWS unpublished data analysis). This study did not differentiate between tern species |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Common Tern. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate Common and Arctic Tern by eye and they were grouped together. While sightings occurred across a large range of sea depths, they occurred more frequently over shallow areas of sea in the central transects of the survey area during the summer breeding season, with some sightings also concentrated further south. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between the five resident tern species (Giralt Paradell et al., 2023). Highest densities were recorded in the south-east coast of Ireland, close to Lady's Island |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Common Tern are largely piscivorous. Studies from Rockabill SPA further north in the Irish Sea show that sandeels (*Ammodytes* spp) along with Clupeidae (herring) and, to a lesser extent, Gadidae (cod, pollock) can form important prey bases (e.g. Allbrook et al., 2022). Breeding birds forage over marine waters often some distance from the colony (see Power et al., 2021, Power et al., 2022) |

| | | | |
|---|---|---|---|
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). At latter stages of the breeding season tern species form large aggregations at terrestrial and intertidal roost sites along the coast (Burke et al., 2020) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Common Tern require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A194 Arctic Tern *Sterna paradisaea*

**To maintain the favourable conservation condition of Arctic Tern at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Arctic Tern is also a Special Conservation Interest for Lady's Island Lake SPA (004009). Since 1995, the Lady's Island population has increased by 368% to 706 pairs (Hannon et al., 1997; Stubbings et al., 2023). Arctic Tern can range up to 46 km from their nest sites during the breeding season, so it is likely that Lady's Island Lake SPA and the Seas off Wexford SPA contain the majority of the foraging habitat for this population (Woodward et al., 2019). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al., 2020). Notable concentrations have been recorded close to Carne beach (part of Lady's Island Lake SPA) and in Wexford Harbour and Slobs. Based on a single summer aerial survey by Giralt Paradell et al. (2023) it was estimated that 1,946 individual terns were within the SPA (NPWS unpublished data analysis). This study did not differentiate between tern species |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Arctic Tern. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate Common and Arctic Tern by eye and so they were grouped together. While sightings occurred across a large range of sea depths, they occurred more frequently over shallow areas of sea in the central transects of the survey area during the summer breeding season, with some sightings also concentrated further south. A single aerial survey off Ireland's southern coast (between Wexford and Kerry) did not differentiate between the five resident tern species (Giralt Paradell et al., 2023). Highest densities were recorded in the south-east coast of Ireland, close to Lady's Island |
| Forage spatial distribution, extent, abundance and availability | Location and 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. 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, including from the Clupeidae (herring), Gadidae (cod, pollock) and Ammodytidae (sandeels) families (Hatch et al., 2020). Based on several studies, Woodward et al. (2019) provides 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 Arctic Tern, which are 6, 26, and 46 km respectively (see Power et al., 2021) |

| | | | |
|---|---|---|---|
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). At latter stages of the breeding season tern species form large aggregations at terrestrial and intertidal roost sites along the coast (Burke et al., 2020) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Arctic Tern require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A195 Little Tern *Sterna albifrons*

**To restore the favourable conservation condition of Little Tern at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Little Tern is also a Special Conservation Interest of Wexford Harbour and Slobs SPA (004076). Population size at Wexford Harbour has fluctuated over the years. The population estimate for 1995 was 12 pairs (Hannnon et al., 1997). It has reached a high of 315 pairs in 2014, an increase of 2,525%. However, no sustained succesful breeding has been recorded since 2018. The foraging range of breeding Little Tern from the colony is relatively small and therefore it is likely that all feeding resources for this colony during the breeding season are included within the Seas off Wexford SPA, The Raven SPA and Wexford Harbour and Slobs SPA (Woodward et al., 2019; Power et al., 2022). Based on aerial surveys by Giralt Paradell et al. (2023) it was estimated that 1,946 individual terns were within the SPA (NPWS unpublished data analysis). This study did not differentiate between tern species |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Little Tern. Breeding birds forage over marine and brackish waters quite close (<5 km) to the colony (Power et al., 2022). A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between the five resident tern species (Giralt Paradell et al., 2023). Highest densities were recorded in the south-east coast of Ireland, close to Lady's Island, within this SPA |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | Little Tern are largely piscivorous; studies from a more northerly Irish colony show that sandeels (*Ammodytes* spp.) along with clupeids and, to a lesser extent, gadoids can form important prey bases (Johnson et al., 2022). Breeding birds forage over marine and brackish waters quite close (< 5km) to the colony (Power et al., 2022) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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 over-winter 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003) |

| | | | |
|---|---|---|---|
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Little Tern require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A199 Guillemot *Uria aalge*

**To maintain the favourable conservation condition of Gulliemot at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Guillemot is also a Special Conservation Interest of Saltee Islands SPA (004002). From 1999, individual population estimates at Saltee of 21,436 increased by 65% to 35,420 in 2023 (Cummins et al., 2019; Tierney et al., 2023). These birds exploit this SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for the Saltee Island SPA breeding populations (Power et al., 2021). Giralt Paradell et al. (2023) undertook summer surveys of the south coast; Razorbill and Guillemot were categorised together. Based on this 16,251 individuals are estimated to have occurred in the SPA during the breeding season; it is likely that Guillemot formed the majority of these. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat may vary through time. This will affect the spatio-temporal patterns of use of the habitats by the Guillemot. Woodward et al. (2019) provides estimates (i.e. mean, mean of max distances across all studies, and max distance) of Guillemot movements from the colony, which are 33, 73, and 338 km respectively. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between auk species (Giralt Paradell et al., 2023). During the summer, the highest densities were recorded in coastal areas off the south-east and south-west coast of Ireland |
| Forage spatial distribution, extent, abundance and availability | Location and hectares, and forage biomass | Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target | The diet of Guillemot consists of micronektonic prey, 2 - 25 cm in length (mainly 6 - 10 cm), including fish, euphausiids, large copepods, and squid. In summer when adults are provisioning chicks prey is predominantly fish. This contrasts with a more diverse diet during non-breeding period, with euphausiids in particular being more important (Ainley et al., 2021). Based on several studies, Woodward et al. (2019) provides 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 Guillemot, which are 33, 72, and 338 km respectively (see Power et al., 2021) |

| | | | |
|---|---|---|---|
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). Studies in the UK found the highest densities of Guillemot performing these behaviours occurred within 1 km of the breeding colony (McSorley et al., 2003) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA | Guillemot require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A200 Razorbill *Alca torda*

**To maintain the favourable conservation condition of Razorbill at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Razorbill is also a SCI of Saltee Islands SPA (004002). Individual population estimates at Saltee of 3,739 in 1999 have increased by 160% to 6,519 in 2015 (Burnell et al., 2023). These birds exploit Seas off Wexford SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for the Saltee Islands SPA breeding population (Power et al., 2021). Razorbill from other colonies and non-breeding individuals may use this SPA during the breeding period. Giralt Paradell et al. (2023) undertook a single summer survey of the south coast; Razorbill and Guillemot were categorised together. Based on this 16,251 individuals are estimated to have occurred in the SPA during the breeding season; it is likely that Razorbill formed a significant minority of these. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Razorbill. Woodward et al. (2019) provides estimates (i.e. mean, mean of max distances across all studies, and max distance) of Razorbill movements from the colony, which are 61, 89, and 313 km respectively. A single aerial survey off Ireland's southern coast (from Wexford to Kerry) did not differentiate between auk species (Giralt Paradell et al., 2023). During the summer, the highest densities were recorded in coastal areas off the south-east and south-west coast of Ireland. Razorbill tracking data collected during the 2017 breeding season from the Saltee Islands SPA showed birds foraging south of the islands, overlapping significantly with the Seas off Wexford SPA (Critchley et al., 2020) |
| Forage spatial distribution, extent, abundance and availability | Location and 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 herrings and sandeels. Crustaceans and polychaetes may also be important in adult diets (Lavers et al., 2020) |

| | | | |
|---|---|---|---|
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | The impact of any significant disturbance (direct or indirect) to the non-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 over-winter 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). Studies in the UK found the highest densities of Razorbill performing these behaviours occurred within 1 km of the breeding colony (McSorley et al., 2003) |
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA | Razorbill require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

## A204 Puffin *Fratercula arctica*

**To restore the favourable conservation condition of Puffin at Seas off Wexford SPA, which is defined by the following list of attributes and targets:**

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Breeding population size | Number | Long term SPA population trend is stable or increasing | Breeding Puffin is also a Special Conservation Interest of Saltee Islands SPA (004002). This breeding population exploits the surrounding marine waters of Seas off Wexford SPA during the breeding season. The breeding Puffin population is estimated to have declined by 82% over the period 1999-2015 from 1,822 to 277 individuals (Burnell et al., 2023). As Puffin can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Island SPA breeding population (Power et al., 2021). Giralt Paradell et al. (2023) undertook a single summer survey of the south coast. Based on this 114 individuals are estimated to have occurred in the Seas off Wexford SPA during the breeding season. No survey data is currently available for the entire SPA area outside of the breeding season |
| Spatial distribution | Hectares, time and intensity of use | Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population | Distribution encapsulates the number of locations and area of potentially suitable habitat for the 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 Puffin. Puffin tracking data was collected from Saltee Islands SPA in 2017 and 2018 during the chick-provisioning period (Bennison et al., 2019). This study describes how Puffins foraged using tides to transport them through their feeding grounds primarily foraging south of the islands, overlapping significantly with the Seas off Wexford SPA |
| Forage spatial distribution, extent, abundance and availability | Location and 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 predominately consists of small to mid-sized (5 - 15 cm) schooling midwater fish including Sprat (*Sprattus sprattus*), sandeels (*Ammodytes* spp.) and Atlantic Herring (*Clupea harengus*) (Lowther et al., 2020). Based on several studies, Woodward et al. (2019) provides 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 62, 137, and 383 km respectively (see Power et al., 2021) |
| Disturbance across the site | Intensity, frequency, timing and duration | The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution | 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 over-winter 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. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). Studies in the UK found that the highest densities of Puffin performing these behaviours occurred within 1 km of the breeding colony (McSorley et al., 2003) |

| | | | |
|---|---|---|---|
| Barriers to connectivity | Number; location; shape; area (hectares) | The number, location, shape and area of barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA | Puffin require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors |

Killenaule
Callan
Fethard
Clonmel
N76
N24
M9
Dungarvan
Borris
Thomastown
Graiguenamanagh
N29
Waterford
N25
Tramore
New Ross
Clonroche
Newbawn
Wellingtonbridge
Carrick
N80
Ferns
Camolin
N11
M11
N30
Enniscorthy
Blackwater
Castlebridge
Wexford
N25
Rosslare
Rosslare Harbour
Kilmore Quay

CO. WEXFORD
CO. WATERFORD

**Legend**

Seas off Wexford SPA 004237

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

**MAP 1:**
**SEAS OFF WEXFORD SPA**
**CONSERVATION OBJECTIVES**
**SPA DESIGNATION**

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

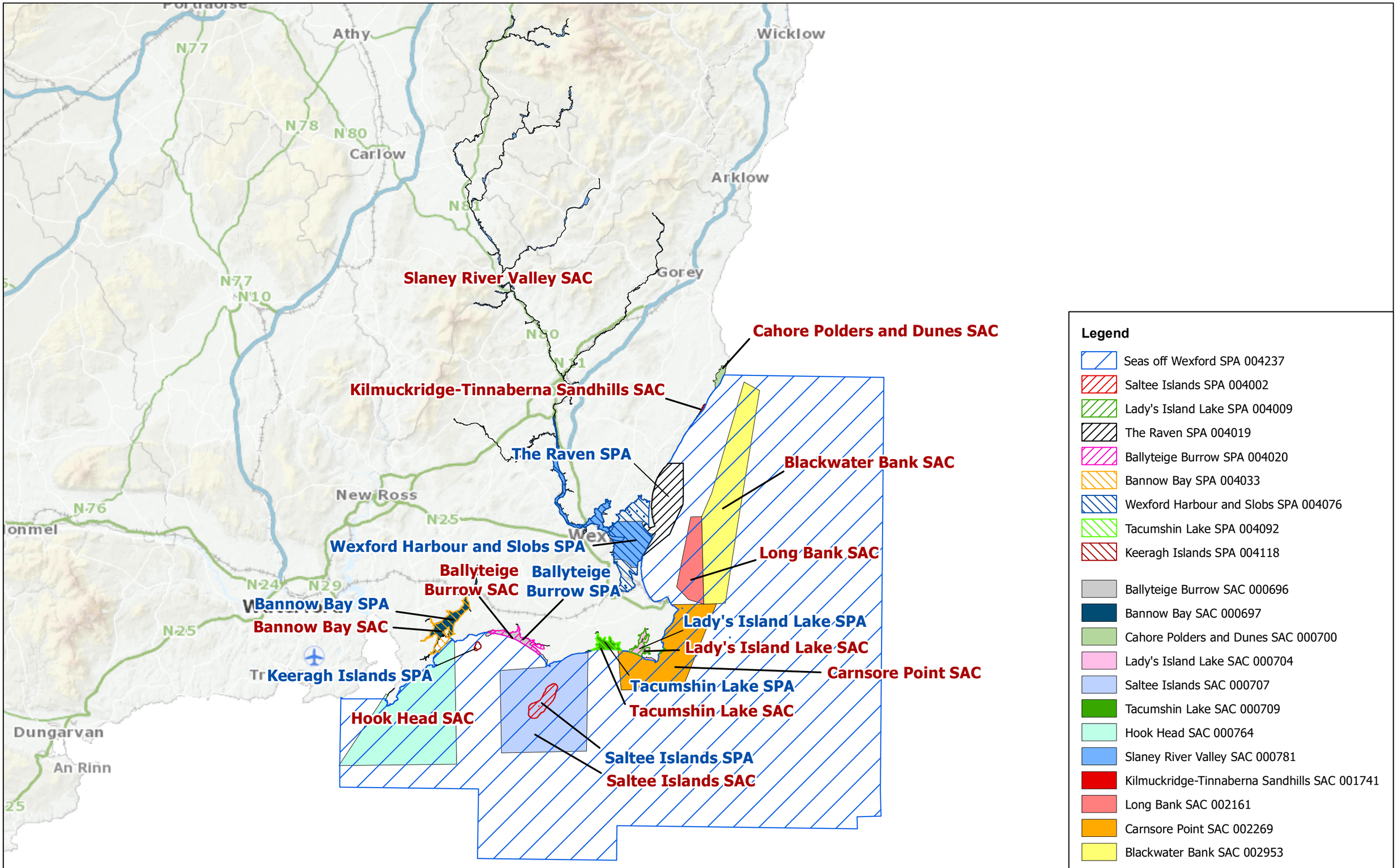
**SITE CODE:**
**SPA 004237; version 3**

0 2.5 5 10 Kilometres



N

**Map version 1**
**Date: January 2024**




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

**MAP 2:**
**SEAS OFF WEXFORD SPA**
**CONSERVATION OBJECTIVES**
**OVERLAPPING AND ADJACENT SITES**

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

**SITE CODE:**
**SPA 004237; version 3**

0 5 10 20 Kilometres



N

**Map version 1**
**Date: January 2024**