

National Parks and Wildlife Service

Conservation Objectives Series

Inishmore SPA 004152



NPWS

An tSeirbhís Páirceanna
Náisiúnta agus Fiadhúlra
National Parks and Wildlife
Service

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Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

** indicates a priority habitat under the Habitats Directive*

004152	Inishmore SPA
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A188	Kittiwake <i>Rissa tridactyla</i>
A194	Arctic Tern <i>Sterna paradisaea</i>
A195	Little Tern <i>Sterna albifrons</i>
A199	Guillemot <i>Uria aalge</i>

Please note that this SPA overlaps with Inishmore Island SAC (000213). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	2007
Title :	Seabird Productivity at East and South coast colonies in Ireland in 2007: Site accounts
Author :	Trewby, M.; Burt E.; Newton, S.
Series :	Unpublished report to NPWS
Year :	2021
Title :	Estimated foraging ranges of the breeding seabirds of Ireland's marine special protected area network
Author :	Power, A.; McDonnell, P.; Tierney, T.D.
Series :	Published NPWS report
Year :	2022
Title :	Rockabill Tern Report, 2022
Author :	Allbrook, D.; Dunne, S.; Fink, A.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2022
Title :	Lady's Island Lake Tern Report 2022
Author :	Stubbings, E.; Büche, B.; Murray, T.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2023
Title :	Lady's Island Lake Tern Report 2023
Author :	Stubbings, E.; Büche, B.; Murray, T.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2023
Title :	Kilcoole Little Tern Conservation Project Report 2023
Author :	Johnson, G.C.; Stanley, J.; Doyle M.; Burke, B.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2023
Title :	Rockabill Tern Report 2023
Author :	Fihey, A.; Crowley, C.; Fitzgerald, M.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2024
Title :	Lady's Island Lake Tern Report 2024
Author :	Stubbings, E.; Büche, B.; Doyle, H.; Burke, B.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS
Year :	2024
Title :	Rockabill Tern Report 2024
Author :	Coughlan, K.; Roberts, E.; Streker, R.; Newton, S.
Series :	BirdWatch Ireland Seabird Conservation Report to NPWS

Other References

Year :	1900
Title :	The Birds of Ireland: An Account of the Distribution, Migrations and Habits of Birds as Observed in Ireland, with All Additions to the Irish List
Author :	Ussher, R.J.; Warren, R.
Series :	Gurney and Jackson
Year :	1954
Title :	The Birds of Ireland. Their Migrations and Habits. Assessed by G.R. Humphreys
Author :	Kennedy, P.G.; Ruttledge R.F.; Scroope, C.F.
Series :	London: Oliver and Boyd
Year :	1966
Title :	Ireland's Birds: their distribution and migrations
Author :	Ruttledge, R.F.
Series :	Published by HF & G Witherby, London
Year :	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 :	2003
Title :	Implications for seaward extensions to existing breeding seabird colony Special Protection Areas
Author :	McSorley, C.A.; Dean, B.J.; Webb, A.; Reid J.B.
Series :	JNCC Report No. 329
Year :	2004
Title :	Seabird populations of Britain and Ireland
Author :	Mitchell, P.I.; Newton, S.F.; Ratcliffe, N.; Dunn, T.E.
Series :	Poyser, London
Year :	2008
Title :	Colony habitat selection by Little Terns <i>Sternula albifrons</i> in East Anglia: implications for coastal management
Author :	Ratcliffe, N.; Schmitt, S.; Mayo, A.; Tratalos, J.; Drewitt, A.
Series :	Seabird, 21: 55-63
Year :	2010
Title :	How Representative is the Current Monitoring of Breeding Seabirds in the UK?
Author :	Cook, A.S.C.P.; Robinson, R.A.
Series :	BTO Research Report No. 573
Year :	2017
Title :	Productivity of the Black-legged Kittiwake <i>Rissa tridactyla</i> required to maintain numbers
Author :	Coulson, J.C.
Series :	Bird Study 64: 84-89
Year :	2019
Title :	Desk-based revision of seabird foraging ranges used for HRA screening
Author :	Woodward, I.; Thaxter, C.B.; Owen, E.; Cook, A.S.C.P.
Series :	BTO Research Report No. 724
Year :	2020
Title :	Arctic tern (<i>Sterna paradisaea</i>), 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 :	Black-legged Kittiwake (<i>Rissa tridactyla</i>), 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 :	2021
Title :	Common Murre (<i>Uria aalge</i>), 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
Year :	2023
Title :	Seabirds Count: a census of breeding seabirds in Britain and Ireland (2015-2021)
Author :	Burnell, D.; Perkins, A.J.; Newton, S.F.; Bolton, M.; Tierney, T.D.; Dunn, T.E.
Series :	Lynx Nature Books, Barcelona

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

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	Ussher and Warren (1900) and Kennedy et al. (1954) noted the presence of a Kittiwake colony on the cliffs of Inishmore. An estimated 587 pairs of Kittiwake bred at this site in 1999 (Mitchell et al., 2004). The population declined significantly to 106 pairs in 2015 (Burnell et al., 2023). However, the population recovered somewhat in 2024 with 326 pairs recorded (NPWS internal files) which represents an overall decline of 45% since 1999. This is similar to the national population trend which has declined by 36% between 1998 - 2002 and 2015 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity rate from Lambay Island SPA was 0.65 ($\pm$ 0.07 SE) chicks fledged per AON in 2007 (316 pairs across three subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. Coulson (2017) established, based on data from UK Kittiwake colonies during the period 1985 - 2015, that 0.8 fledglings per pair were needed to maintain the size of these colonies. Coulson (2017) also noted that this level of productivity is not a fixed value and changes if the adult mortality rate changes
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Kittiwake. Typically, this species is a cliff-nester on ledges of offshore islands, sea stacks, or inaccessible areas of coastal mainland (Hatch et al., 2020). Nesting Kittiwake are found on the cliffs on the south coast of this SPA
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Kittiwake is a surface feeding seabird and primarily piscivorous (e.g. sandeels, herring, gadoids), with some invertebrates (e.g. euphausiids, amphipods) in the diet also recorded (Hatch et al., 2020). Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Kittiwake foraging ranges from the nest site during the breeding season, which are 55km, 156km, and 770km respectively (see Power et al., 2021)
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution

Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Kittiwake foraging ranges from the nest site during the breeding season, which are 55km, 156km, and 770km respectively (see Power et al., 2021)

Conservation Objectives for : Inishmore SPA [004152]

A194

Arctic Tern *Sterna paradisaea*

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

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	This SPA was surveyed as part of the all-Ireland tern survey in 1995 and an estimated 338 breeding pairs of Arctic Tern were recorded on Rock Island (Hannon et al., 1997). However, Arctic Tern have not been recorded breeding in recent years, indicating that this SPA no longer holds a breeding population
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Annual productivity estimates are available from the wardened tern colonies of Rockabill and Lady's Island Lake. Over a three-year period (2022 - 2024) the average productivity estimates were 0.24 and 0.93 chicks per nest respectively (Stubbings et al., 2022, 2023 and 2024; Coughlan et al., 2024, Fihey et al., 2023; and Allbrook et al., 2022). As this species is long-lived there is a possibility that a population could be returning to a nest site annually but not fledging any chicks. Caution should be taken when interpreting the results of tern breeding numbers, especially on offshore islands, without having productivity data
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Arctic Tern. Terns are ground nesting birds. Typically colonies are found in open areas close to the shore, frequently in areas with loose substrate or low vegetation (Hatch et al., 2020). In Ireland all known large colonies are situated on marine or inland islands of varying distances from the mainland/shore. In 1995, the breeding population was recorded on Rock Island on the western-tip of this SPA
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Arctic Tern are largely piscivorous. The most frequent fish prey are small, schooling species commonly caught in open water, at tide rips, and over predators (e.g. jellyfish and marine mammals). These are usually 1- or 2-year-old fish from the Clupeidae (herring), Gadidae (cod, pollock) and Ammodytidae (sandeel) families (Hatch et al., 2020). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) of Arctic Tern foraging ranges from the nest site during the breeding season, which are 6km, 26km, and 46km respectively (see Power et al., 2021)

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

Conservation Objectives for : Inishmore SPA [004152]

A195

Little Tern *Sterna albifrons*

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

Attribute	Measure	Target	Notes
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	Kennedy et al. (1954) noted that the largest Little Tern colony in Co. Galway was on the Aran Islands with approximately 20 pairs, although it is described as absent from Inishmore. This SPA was surveyed as part of the all-Ireland tern survey in 1995 and an estimated 1 - 6 pairs were recorded (Hannon et al., 1997). In 1999, the population was 13 pairs (Mitchell et al., 2004). In 2015, 9 pairs of Little Tern were recorded in this SPA (Burnell et al., 2023). An estimated 20 pairs were recorded breeding in this SPA in 2023 (NPWS internal files) but no breeding Little Tern were recorded in 2024. However, it is possible that there is interchange of breeding birds between this SPA and the adjacent Inishmaan. The national population trend has seen a significant increase for this species but this can be attributed to the colony at The Murrough SPA where the population has increased rapidly since a wardening project began there in the 1980s (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. A productivity rate of 0.7 chicks per pair is required for population stability for Little Tern, according to an analysis of seabird population by Cook and Robinson (2010). In 2023, the productivity rate at the wardened colony in The Murrough SPA was 1.5 and since 2010 the productivity has been above 1.0 for most years, which is well above the output needed to maintain the population (Johnson et al., 2023). As this species is long-lived there is a possibility that a population could be returning to a nest site annually but not fledging any chicks. Caution should be taken when interpreting the results of tern breeding numbers, especially on offshore islands, without having productivity data. Great Black-backed Gull is a likely predator of Little Tern within this SPA
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Little Tern. Within this SPA Little Tern have been recorded most often on Dog's Head with breeding recorded there in 1999, 2015 and 2023
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Based on two studies on a single colony, Woodward et al. (2019) summarises the mean foraging range and the mean-maximum foraging range as 3.5km and 5km, respectively

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the breeding colony can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance 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. Human disturbance can impact on breeding success, as colonies are often sited on beaches used by the public (Ratcliffe et al., 2008)
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	The Little Tern has the smallest foraging range of seabirds breeding in Ireland (Woodward et al., 2019). Seabird species can make extensive use of the waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening) as defined in McSorley et al. (2003). Additionally, some species may engage in maintenance behaviours outside of the breeding colony but not in the water. For example, terns may roost on rocky islets or beaches away from the breeding colony
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Based on two studies on a single colony, Woodward et al. (2019) summarises the mean foraging range and the mean-maximum foraging range as 3.5km and 5km respectively

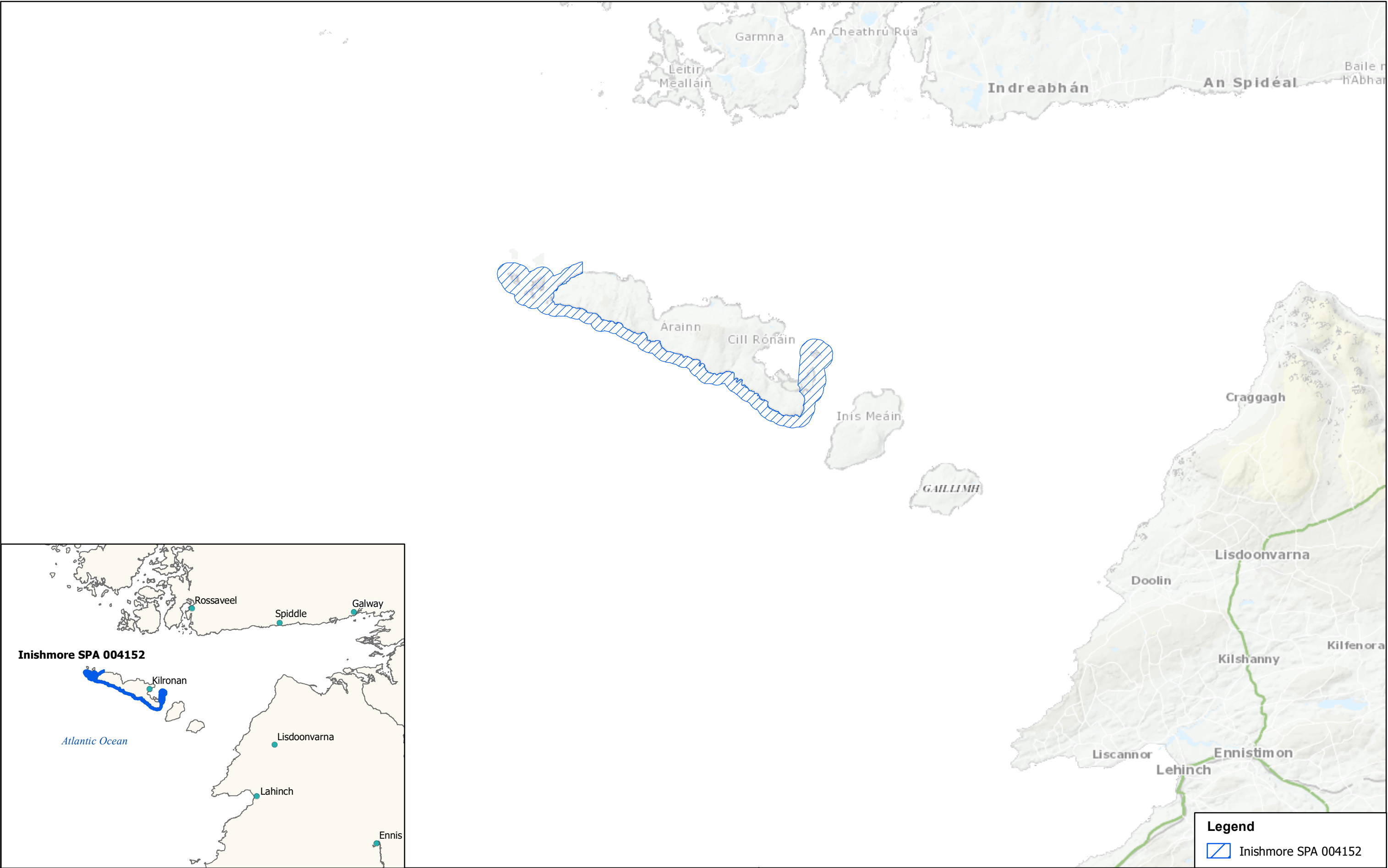
Conservation Objectives for : Inishmore SPA [004152]

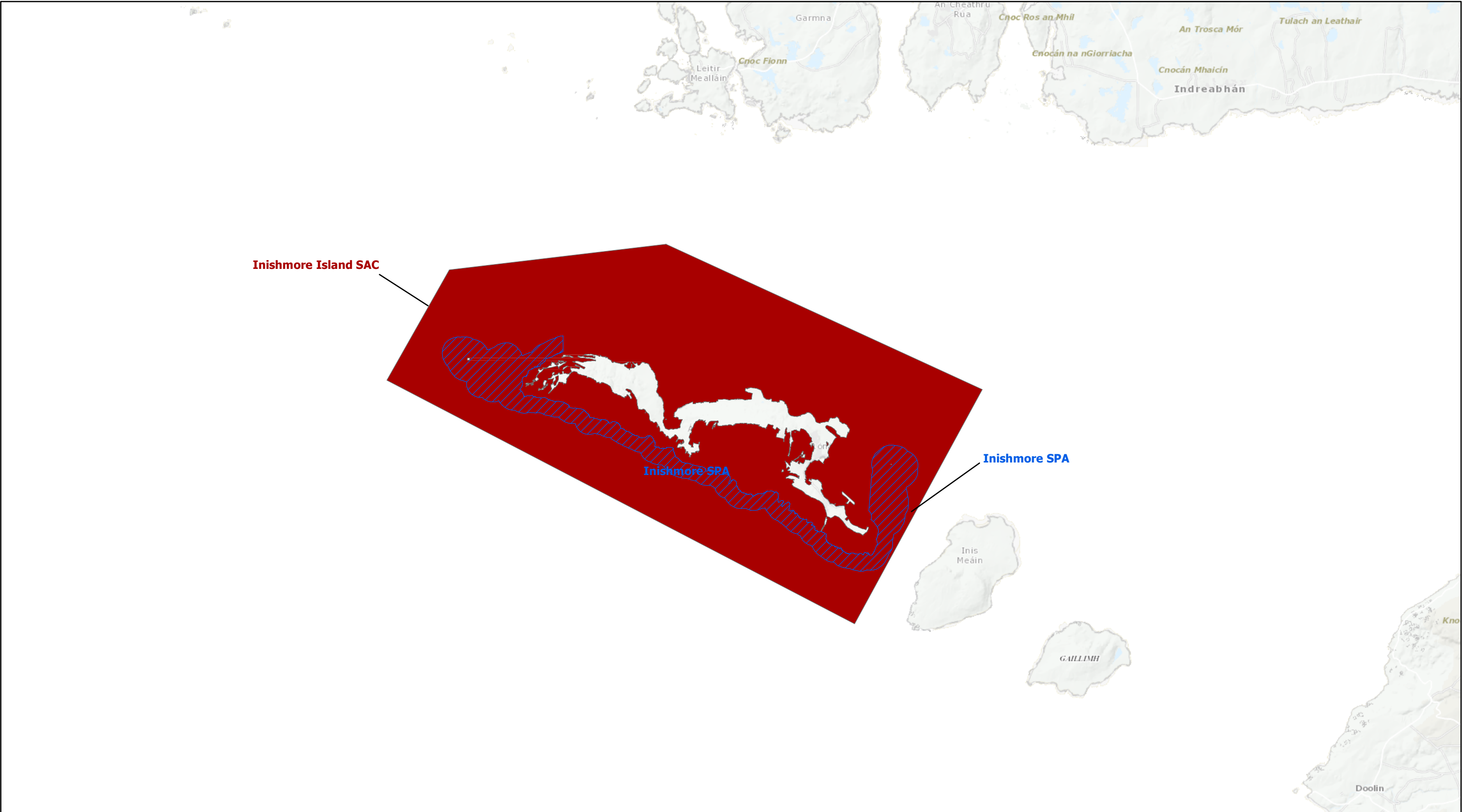
A199 Guillemot *Uria aalge*

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

Attribute	Measure	Target	Notes
Breeding population size	Individuals (IND)	Long term SPA population trend is stable or increasing	Ussher and Warren (1900) noted the presence of a Guillemot colony on the cliffs on Inishmore and Rutledge (1966) highlighted Inishmore as a significant colony in Ireland. An estimated 3,443 individuals were recorded at this site in 1999 (Mitchell et al., 2004). The population increased to 5,197 individuals in 2015 (Burnell et al., 2023). The most recent population estimate in 2024 recorded 3,127 individuals (NPWS internal files) which represents an overall decline of 9% since 1999. The national population of Guillemot has increased by 28% between surveys in 1998 - 2002 and 2015 - 2021 (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported the mean Guillemot productivity from Lambay Island SPA was 0.74 ($\pm$ 0.06 SE) chicks fledged per Apparently Occupied Sites (AOS) in 2007 (355 pairs across five subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. An analysis of the breeding success of Guillemot in the United Kingdom over a 25 year period determined that a breeding success of 0.66 would result in an increasing population (Cook and Robinson, 2010)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Guillemot. Ledges on sea cliffs and sloping island surfaces are the preferred habitat for this species (Ainley et al., 2021). Nesting Guillemot are found on the cliffs on the south coast of this SPA
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The diet of Guillemot consists of micronektonic prey, 2 - 25cm in length (mainly 6 - 10cm), 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 the 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 33km, 73km, and 338km respectively (see Power et al., 2021)

Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	Disturbance events at the nest site/breeding colony level can result in a reduction of overall productivity and even lead to the abandonment of the breeding colony. The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure, which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing, and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours (e.g. courtship, bathing, preening), as defined in McSorley et al. (2003). Studies in the UK found the highest densities of Guillemot performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003)
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA	Seabirds, particularly during the breeding season, require regular and efficient access to marine waters ecologically connected to the colony in order to forage as well as to engage in other maintenance behaviours. Studies in the UK found the highest densities of Guillemot performing these behaviours occurred within 1km of the breeding colony (McSorley et al., 2003). 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 33km, 73km, and 338km respectively (see Power et al., 2021)





Legend

Inishmore SPA 004152

Inishmore Island SAC 000213