

National Parks and Wildlife Service

Conservation Objectives Series

Iveragh Peninsula SPA 004154



NPWS

An tSeirbhís Páirceanna
Náisiúnta agus Fiadhúlra
National Parks and Wildlife
Service

**National Parks and Wildlife Service,
Department of Housing, Local Government and Heritage,
90 King Street North, Dublin 7, D07 N7CV, Ireland.
Web: www.npws.ie
E-mail: natureconservation@npws.gov.ie**

Citation:

NPWS (2025) Conservation Objectives: Iveragh Peninsula SPA 004154. 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

004154	Iveragh Peninsula SPA
A009	Fulmar <i>Fulmarus glacialis</i>
A103	Peregrine <i>Falco peregrinus</i>
A188	Kittiwake <i>Rissa tridactyla</i>
A199	Guillemot <i>Uria aalge</i>
A346	Chough <i>Pyrrhocorax pyrrhocorax</i>

Please note that this SPA overlaps with Ballinskelligs Bay and Inny Estuary SAC (000335), Killarney National Park, Macgillycuddy's Reek and Caragh River Catchment SAC (000365), Kenmare River SAC (002158) and Valencia Harbour/Portmagee Channel SAC (002262) and is adjacent to Puffin Island SPA (004003) and Castlemaine Harbour SPA (004029). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent and overlapping sites 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 :	2010
Title :	The seasonal distribution and foraging behaviour of Red-billed Choughs <i>Pyrhcorax pyrrhcorax</i> in north Co. Kerry, September 2008 to September 2009
Author :	Trewby, M.; Carroll; D.; Gaj-McKeever, R.; Newton, S.
Series :	Unpublished BirdWatch Ireland Report to National Parks & Wildlife Service, Kilcoole, Wicklow
Year :	2021
Title :	Estimated foraging ranges of the breeding seabirds of Ireland's marine special protected area network
Author :	Power, A.; McDonnell, P.; Tierney, T.D.
Series :	Published NPWS report
Year :	2024
Title :	Status and Distribution of Chough in Ireland: Results of the National Survey 2021
Author :	Colhoun, K.; Rooney, E.; Collins, J.; Keogh, N.P.; Lauder, A.; Heardman, C.; Cummins, S.
Series :	Irish Wildlife Manuals No. 151

Other References

Year :	1900
Title :	The Birds of Ireland: An Account of the Distribution, Migrations and Habits of Birds as Observed in Ireland, with All Additions to the Irish List
Author :	Ussher, R.J.; Warren, R.
Series :	Gurney and Jackson
Year :	1911
Title :	The fulmar petrel breeding in Ireland
Author :	Ussher, R.J.
Series :	The Irish Naturalist, 20(9), pp.149-152
Year :	1914
Title :	Fulmars, Gannets, and Other Sea-Birds on the Skelligs
Author :	Barrington, R. M.
Series :	The Irish Naturalist
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 :	1965
Title :	The status of the Chough in Ireland
Author :	Cabot, D.
Series :	Irish Naturalists' Journal 15: 95-100

Year : 1983
Title : The chough in Britain and Ireland
Author : Bullock, I.; Drewett, D.; Mickleburg, S.
Series : British Birds, 76: 377–401

Year : 1983
Title : Survey of the Peregrine *Falco peregrinus* breeding population in the Republic of Ireland in 1981
Author : Norriss, D.W.; Wilson, H.J.
Series : Bird Study, 30:2, 91-101

Year : 1991
Title : The status of seabirds in Britain and Ireland
Author : Lloyd, C.; Tasker, M.L.; Partridge, K.
Series : Poyser Monographs Volume: 50

Year : 1993
Title : The second international chough survey in Ireland, 1992
Author : Berrow, S.D.; Mackie, K.L.; O'Sullivan, O.; Shepherd, K.B.; Mellon, C.; Coveney, J.A.
Series : Irish Birds, 5: 1-10

Year : 1993
Title : The peregrine falcon. Second edition.
Author : Ratcliffe, D.A.
Series : T. & A.D. Poyser, London

Year : 1993
Title : Seasonal variations in numbers and levels of activity in a communal roost of Choughs *Pyrrhocorax pyrrhocorax* in central Spain
Author : Blanco, G.; Fargallo, J.A.; Cuevas, J.A.
Series : Avocetta, 17: 41-44

Year : 1995
Title : The 1991 survey and weather impacts on the Peregrine *Falco peregrinus* breeding population in the Republic of Ireland
Author : Norriss, D.W.
Series : Bird Study, 42:1, 20-30

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 : 2002
Title : Recovery of the Peregrine Falcon *Falco peregrinus* in Cumbria, UK, 1966–99
Author : Horne, G; Fielding, A.H.
Series : Bird Study, 49:3, 229-236

Year : 2003
Title : The status and distribution of choughs *Pyrrhocorax pyrrhocorax* in the Republic of Ireland 2002/03
Author : Gray, N.; Thomas, G.; Trewby, M.; Newton, S.F.
Series : Irish Birds, 7, 147-156

Year : 2003
Title : Implications for seaward extensions to existing breeding seabird colony Special Protection Areas
Author : McSorley, C.A.; Dean, B.J.; Webb, A.; Reid J.B.
Series : JNCC Report No. 329

Year :	2004
Title :	Seabird populations of Britain and Ireland
Author :	Mitchell, P.I.; Newton, S.F.; Ratcliffe, N.; Dunn, T.E.
Series :	Poyser, London
Year :	2005
Title :	Choughs <i>Pyrrhocorax pyrrhocorax</i> breeding in Wales select foraging habitat at different spatial scales
Author :	Whitehead, S.; Johnstone, I.; Wilson, J.
Series :	Bird Study, 52:2, 193-203
Year :	2006
Title :	The breeding season foraging behaviour of choughs <i>Pyrrhocorax pyrrhocorax</i> in three Irish chough important bird areas
Author :	Trewby, M., Gray, N., Cummins, S., Thomas, G. & Newton, S.
Series :	Unpublished BirdWatch Ireland Report, Kilcoole, Wicklow
Year :	2006
Title :	Linking territory quality and reproductive success in the chough (<i>Pyrrhocorax pyrrhocorax</i>): implications for conservation management of an endangered population
Author :	Kerbiriou, C.; Gourmelon, F.; Jiguet, F.; Le Viol, I.; Frédéric Bioret, F.; Julliard, R.
Series :	Ibis, 148 (2), pp.352-364
Year :	2007
Title :	A review of disturbance distances in selected bird species
Author :	Ruddock, M.; Whitfield, D.P.
Series :	A report from Natural Research (Projects) Ltd to Scottish Natural Heritage
Year :	2009
Title :	Raptors: a field guide to survey and monitoring (2nd Edition)
Author :	Hardey, J.; Crick, H.; Wernham, C.; Riley, H.; Etheridge, B.; Thompson, D.
Series :	The Stationery Office, Edinburgh
Year :	2009
Title :	The 2002 survey of the Peregrine <i>Falco peregrinus</i> breeding population in the Republic of Ireland
Author :	Madden, B.; Hunt, J.; Norriss, D.
Series :	Irish Birds 8: 543-548
Year :	2010
Title :	How Representative is the Current Monitoring of Breeding Seabirds in the UK?
Author :	Cook, A.S.C.P.; Robinson, R.A.
Series :	BTO Research Report No. 573
Year :	2011
Title :	Aspects of the feeding ecology and breeding biology of the red-billed chough (<i>Pyrrhocorax pyrrhocorax</i>) in Ireland
Author :	Boylan, M.
Series :	PhD Thesis, National University of Ireland, Cork.
Year :	2015
Title :	Population status and factors affecting the productivity of Peregrine Falcon <i>Falco peregrinus</i> in Co. Wicklow, Ireland, 2008-2012
Author :	Burke, B.J.; Clarke, D.; Fitzpatrick, A.; Carnus, T.; McMahon, B.J.
Series :	Biology and Environment: Proceedings of the Royal Irish Academy, Vol 115, No. 2, 115-124

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 :	2018
Title :	Breeding status of red-billed choughs <i>Pyrrhocorax pyrrhocorax</i> in the UK and Isle of Man in 2014
Author :	Hayhow, D.B.; Johnstone, I.; Moore, A.S.; Mucklow, C.; Stratford, A.; Šúr, M.; Eaton, M.A.
Series :	Bird Study, 65(4), 458-470
Year :	2019
Title :	Adverse effects of routine bovine health treatments containing triclabendazole and synthetic pyrethroids on the abundance of dipteran larvae in bovine faeces
Author :	Gilbert, G.; MacGillivray, F.S.; Robertson, H.L.; Jonsson, N.N.
Series :	Nature Scientific Reports 9, 4315
Year :	2019
Title :	Desk-based revision of seabird foraging ranges used for HRA screening
Author :	Woodward, I.; Thaxter, C.B.; Owen, E.; Cook, A.S.C.P.
Series :	BTO Research Report No. 724
Year :	2019
Title :	Report under Article 12 of the Birds Directive Period 2013-2018
Author :	EEA
Series :	European Environment Agency. European Topic Centre on Biological Diversity. Pp 1-9. https://cdr.eionet.europa.eu/Converters/run_conversion?file=ie/eu/art12/envxztxxq/IE_birds_reports_20191031-130157.xml&conv=612&source=remote
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

Conservation Objectives for : Iveragh Peninsula SPA [004154]

A009 Fulmar *Fulmarus glacialis*

To maintain the Favourable conservation condition of Fulmar in Iveragh Peninsula SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population size	Apparently Occupied Sites (AOS)	Long term SPA population trend is stable or increasing	Fulmar were first recorded as a breeding bird in Ireland in 1911, and in Co. Kerry it was first recorded breeding in 1913 on the Skelligs (Ussher, 1911; Barrington, 1914). Kennedy et al. (1954) noted that Fulmar were breeding at both Bray Head and Reenadrolaun Point at this time which are within this SPA. In 1988 an estimated 234 pairs were recorded at Doulus Head but the rest of the SPA was not surveyed (Lloyd et al., 1991). A more complete survey in 1999 and 2000 recorded an estimated 803 pairs across the whole SPA (Mitchell et al., 2004). The most recent population estimate for this SPA in 2015 and 2018 recorded 1,030 pairs, an increase of 28% since 1999/2000 (Burnell et al., 2023). The national population of Fulmar has been stable between surveys in 1998 - 2002 and 2015 - 2021 decreasing by 2% (Burnell et al., 2023)
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population	There was no productivity data available for this species in this SPA. Trewby et al. (2007) reported that the average productivity from Lambay Island SPA was 0.32 (\pm 0.05 SE) chicks fledged per Apparently Occupied Sites (AOS) in 2007 (246 pairs across three subplots). Further monitoring and research work is required in order to identify a minimum productivity rate for this species at this site and at the national level. An analysis of the breeding success of Fulmar in the United Kingdom over a 25 year period estimated a mean breeding success of 0.39 and speculated this would result in a population decline (Cook and Robinson, 2010). They estimated that a breeding success of 0.5 would allow populations of Fulmar to stabilise and potentially increase
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	Distribution encapsulates the number of locations and area of potentially suitable nesting habitat for the breeding population and its availability for use. The suitability and availability of habitat across the SPA may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Fulmar. Typically, Fulmar nest near the tops of grassy cliffs on relatively wide ledges (Mitchell et al., 2004)
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The colonisation of Ireland and Britain by Fulmar over the last two centuries has been largely attributed to their close association with fisheries, but contemporary dietary studies indicate that they also feed on a wide variety of prey, including sandeels, crustaceans, and squid (Phillips et al., 1999). Based on several studies, Woodward et al. (2019) provide estimates (i.e. overall mean; mean of maximum distances across all studies; and maximum distance recorded) of Fulmar foraging ranges from the nest site during the breeding season, which are 135km, 542km, and 2,736km respectively (see Power et al., 2021)

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

Conservation Objectives for : Iveragh Peninsula SPA [004154]

A103 Peregrine *Falco peregrinus*

To maintain the Favourable conservation condition of Peregrine in Iveragh Peninsula SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population size	Number of occupied territories	Breeding population is stable/increasing	Peregrine may breed in their first year, but typically wait until two years old or later (Ratcliffe, 1993). Annual occupancy of available territories can vary. The breeding component of the population for the site is defined here as the total number of occupied territories, based on standard definitions (Hardey et al., 2009). The national population is considered stable (EEA, 2019). In this coastal SPA, national surveys recorded 5 territories in 2002 (Madden et al., 2009), and 2 territories in 2017, but with up to 5 sites remaining unsurveyed in 2017 (NPWS internal files), it is not possible to be definitive on the population trend. Historically, 4 breeding territories were known up to 1973 and 3 were recorded in 1981 (Norriss and Wilson, 1983), with just 1 territory in 1991 (Norriss, 1995)
Productivity rate	Number of fledged young per territorial pair	Sufficient to maintain the population size target	National/partial surveys (1981; 1993; 2002; 2017) have given estimates of productivity and breeding success for Peregrine (Norriss and Wilson, 1983; Norriss, 1995; Madden et al., 2009; NPWS internal files). Cold, wet springs can delay/halt breeding (Norriss and Wilson, 1983; Horne and Fielding, 2002) and affect productivity (Burke et al., 2015). In 1981, the 3 recorded pairs in the SPA were unsuccessful and the single pair occupying a territory in 1991, also failed to breed. In 2002, the 5 pairs in the SPA had a 100% breeding success rate (though fledgling numbers were not recorded), but only one confirmed nest was recorded in 2017. A lack of comprehensive published annual data precludes the identification of a minimum productivity rate for this species at this site and at the national level
Distribution: extent of occupied territories within site	Number and distribution of occupied territories across site	Sufficient availability of suitable nesting sites throughout the SPA to maintain the population	Distribution captures the number of occupied territories and areas of suitable nesting habitat available to be used by the population. Peregrine defend nesting territories, with mean nearest-neighbour distances between pairs in districts of Britain ranging from 2.1 - 9km (Ratcliffe, 1993). The mean nearest-neighbour distance between pairs on the Dingle, Iveragh, and Waterford coasts in 1981 was 4.8km (Norriss and Wilson, 1983). Optimal resilience depends on pairs utilising the SPA to the maximum extent possible. Uptake by breeding pairs varies annually, but the spatio-temporal patterns of use of the site by Peregrine should be maintained. Safe, suitable ledges, typically 50cm by 50cm (Ratcliffe, 1993) or crags along coastal cliffs should be available for nesting and levels of disturbance should not limit occupancy of known sites. Peregrine will re-use breeding ledges and in Britain they are also known to nest on the ground on heathery slopes or on steep sand banks (Hardey et al., 2009)

Forage spatial distribution, extent, abundance, and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat, and available prey biomass (i.e. small- to medium-sized birds, mammals) to support the population target	Open landscapes with plentiful supplies of small- to medium-sized birds provide suitable foraging habitat. Peregrine have a generalist diet, feeding largely on birds caught in flight, and require sufficient prey populations of small- to medium-sized birds, though other prey items including small mammals are also taken. Ratcliffe (1993) noted pigeons, grouse, waders (including Snipe, <i>Gallinago gallinago</i>) and passerines occurred in over 80% of diets at 14 study areas across Britain, though the numbers of territories on which these reported figures are based were not provided. At coastal sites in Scotland, auks, petrels, Fulmar (<i>Fulmarus glacialis</i>), Black-headed Gull (<i>Chroicocephalus ridibundus</i>) and Oystercatcher (<i>Haematopus ostralegus</i>) are also taken (Ratcliffe, 1993). Most prey items are caught within 2km of an eyrie, rarely beyond 6km, and hunting areas of neighbouring pairs can overlap (Hardey et al., 2009)
Disturbance to breeding sites	Intensity, timing, frequency, and duration	Disturbance occurs at levels that do not significantly impact upon the breeding population	Factors such as intensity, frequency, timing, location 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, productivity rate and number and distribution of occupied territories. Pairs in remote locations may be more sensitive to disturbance. Activities above a nest are more likely to cause disturbance than those below, and individual pair responses to disturbance may also vary. Safe viewing distances of nest sites are defined by Ruddock and Whitfield (2007). It is unknown whether breeding pairs in this SPA have been subject to unwanted human-related disturbance and/or targeted persecution

Conservation Objectives for : Iveragh Peninsula SPA [004154]

A188 Kittiwake *Rissa tridactyla*

To restore the Favourable conservation condition of Kittiwake in Iveragh Peninsula 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	The Iveragh Peninsula SPA is a large site situated on the west coast of Co. Kerry and is comprised of sea cliff sections over a large area that are difficult to survey for breeding seabirds. The Kittiwake population at this SPA is confined to Doulus Head. In 1988 an estimated 1,325 pairs were recorded at Doulus Head (Lloyd et al., 1991) and the population was somewhat similar in 2000 with an estimated 1,150 pairs recorded (Mitchell et al., 2004). The most recent population estimate for this SPA in 2015 recorded 994 pairs, a decline of 25% since 1988 (Burnell et al., 2023). This is similar to the national trend which has seen a decrease of 14% between 1985 - 1988 and 2015 - 2021 (Burnell et al., 2023). An incomplete survey in 2024 indicates that the population may have declined further (NPWS internal files)
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). The known contemporary Kittiwake nesting sites of this SPA are located at Doulus Head
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 : Iveragh Peninsula SPA [004154]

A199 Guillemot *Uria aalge*

To maintain the Favourable conservation condition of Guillemot in Iveragh Peninsula 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 breeding Guillemot along the coast of Co. Kerry but many accounts are often overshadowed by the large breeding colonies on the offshore islands of the county. The Iveragh Peninsula SPA is a large site situated on the west coast of Co. Kerry and is comprised of sea cliff sections over a large area that are difficult to survey for breeding seabirds. The Guillemot population at this SPA is confined mostly to Doulus Head. In 1988 an estimated 3,497 individuals were recorded at Doulus Head (Lloyd et al., 1991) and the population increased in 2000 with an estimated 4,253 individuals recorded plus another 15 outside of Doulus Head (Mitchell et al., 2004). The most recent population estimate for this SPA in 2015 recorded 6,881 individuals at Doulus Head, an increase of 97% since 1988 (Burnell et al., 2023). This is similar to the national trend which has seen an increase of 80% between 1985 - 1988 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). The nesting Guillemot of this SPA are primarily located at Doulus Head
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)

Conservation Objectives for : Iveragh Peninsula SPA [004154]

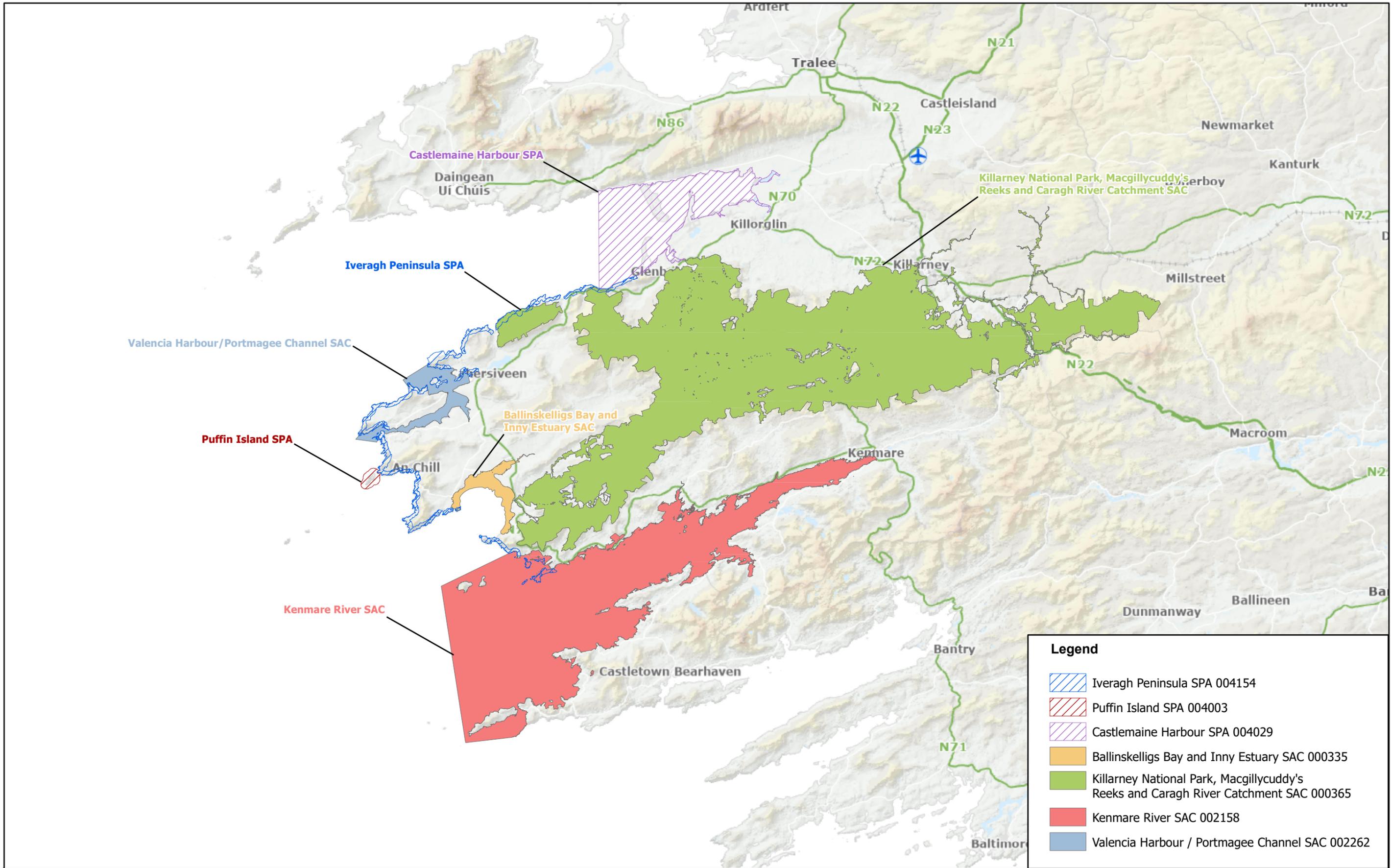
A346 Chough *Pyrhocorax pyrrhocorax*

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

Attribute	Measure	Target	Notes
Population size	Numbers of breeding pairs	Breeding population is increasing	A review of 1992 and 2002/03 national survey data, including count units and survey methods applied, was undertaken (NPWS internal files). The range of population estimates for the SPA are set out using 'confirmed and probable' breeding pairs only and 'all breeding pair' categories for each national survey since 1992, with 44 - 110 in 1992; 56 - 88 in 2002/03 and 25 - 59 in 2021. Applying stricter 2021 survey criteria (Hayhow et al., 2018; Colhoun et al., 2024) retrospectively to 1992 and 2002/03 records, which exclude records with no breeding evidence (NBE) as per Colhoun et al. (2024), updates these original estimates to 17 - 99 (1992), 50 - 74 pairs (2002/03), and 25 - 59 pairs (2021)
Population trend	Percentage change	Population trend stable or increasing	The breeding component of the population, as opposed to non-breeding flock birds, is considered a more reliable metric to reflect population change (Trewby et al., 2006). Using available data from the 1992 (Berrow et al., 1993), 2002/03 (Gray et al., 2003) and 2021 (Colhoun et al., 2024) national surveys, the population trend for the site is considered declining in the short term (i.e. 2002/03 - 2021) and broadly stable in the longer term (1992 - 2021) based on assessments of change in the numbers of known 'confirmed' and 'probable' pair records only; and including all 'possible' breeding pair records for the site, applying 2021 criteria (Colhoun et al., 2024). For the county, the population has also declined, with pair totals of 132 - 171 in 1963 (Cabot, 1965); 205 - 209 in 1983 (Bullock et al., 1983); 112 - 315 in 1992 (Berrow et al., 1993); 141 - 267 in 2002/03 (Gray et al., 2003); and 68 - 134 (excluding NBEs) in 2021 (Colhoun et al., 2024)
Productivity rate	Number of fledged young per confirmed pair	Sufficient to maintain population size target	Most of the population nest along coastal cliffs or in sea caves. In most instances, due to the inaccessible nature of nesting locations, estimates of breeding productivity and success are based on numbers of fledged young seen with adults post-fledging, unless records are for man-made/artificial sites e.g. cattle sheds, old buildings and castles etc. Some studies have provided estimates of productivity and/or success, (e.g. Berrow et al., 1993; Gray et al., 2003; Boylan, 2011; Trewby et al., 2006), and for north County Kerry, a figure of 2.24 fledglings per successful pair was estimated by Trewby et al. (2010). However, this estimate is based on one year's data, and may not be sufficiently representative for this SPA, and wider. Overall, there is a lack of robust representative Irish data to determine a more quantitative target for breeding productivity

Foraging habitat: quality and quantity	Hectares (ha)	Maintain sufficient quality and quantity of coastal grassland and other relevant habitats to support the population targets	Studies in Ireland (e.g. Trewby et al., 2006), Wales (e.g. Whitehead et al., 2005) and elsewhere (e.g. Kerbiriou et al., 2006) have shown that breeding Chough spend most of their time foraging near nest sites (April - June inclusive). Coastal pairs tend to commute along the coast from breeding sites, rather than inland (Trewby et al., 2006). Proximity of suitably-sized feeding areas to nest sites is likely to positively support breeding success (Kerbiriou et al., 2006). Monthly transects for this SPA had 84% of ground observations within 300m of mean high water (Trewby et al., 2010). Grazed habitats with short swards of <5cm are typically preferred and areas of bare ground, where soils are easier to probe e.g. paths, along with earth banks and stone banks. Maritime vegetation on cliffs, especially in spring, is also favoured. Thus, sufficient foraging habitat within 350m of the coastline, where Chough are known to breed, is essential to support breeding pairs
Food availability: prey biomass	Quantity per unit area	Maintain adequate levels of prey biomass (including preferred invertebrate prey items such as leatherjackets, dung beetles, etc.)	Chough feed largely on invertebrates (e.g. ants, spiders, worms, insect larvae such as crane fly larvae, leatherjackets and dung beetles), at or near the soil surface where prey items are more accessible. In warmer weather, Chough can be seen picking off active surface insects, e.g. spiders, including from heather plants (Trewby et al., 2010). The dosing of livestock with veterinary parasiticide treatments (including anthelmintics) has knock-on consequences with respect to invertebrate density in grasslands on which Chough depend (Gilbert et al., 2019)
Distribution of roosting sites	Spatial distribution	The distribution of preferred roosts is maintained	Post-breeding, Chough are highly social, forming mobile flocks that can travel several kilometres to feed (McGrath, 2022). Family groups form 'nursery' flocks in July, returning to nest sites to roost, but by summer's end, these flocks begin to converge pre-dusk, along with non-breeding sub-adults, at communal nocturnal roost sites, leaving post-dawn (Trewby et al., 2010; Blanco et al., 1993). Roosts tend to be close to good foraging habitat (e.g. grazed dune systems); and peak attendance is usually in late summer/early autumn, post-breeding. Lamb's Head is a known communal roost in the SPA (peak of 29 in October 2003), with a smaller roost at Bray Head (Trewby et al., 2006)
Disturbance	Intensity, timing, frequency and duration	Disturbance occurs at levels that do not significantly impact upon Chough in the SPA	Factors such as intensity, frequency, timing, duration of a (direct or indirect) disturbance source and location (e.g. if access to preferred food sources is restricted), must be taken into account to determine the potential impact upon the targets for population size, population trend, productivity rate and distribution of roosting sites. Further, site fidelity (e.g. pairs to nest sites while breeding, or flocks to roost sites at other times), weather (e.g. prolonged cold spells) and predation/competition should also be factored in. Coastal breeding pairs spend up to 80% of their time within 350m of the nest site (Trewby et al., 2006). In North Kerry, 62% of all foraging observations were within 300m of mean high water (Trewby et al., 2010). Impacts are likely to be highest near nest sites (e.g. on coastal cliffs where available foraging habitats are more limited in total area) and at roost sites





Legend

- Iveragh Peninsula SPA 004154
- Puffin Island SPA 004003
- Castlemaine Harbour SPA 004029
- Ballinskelligs Bay and Inny Estuary SAC 000335
- Killarney National Park, Macgillicuddy's Reeks and Caragh River Catchment SAC 000365
- Kenmare River SAC 002158
- Valencia Harbour / Portmagee Channel SAC 002262