

National Parks and Wildlife Service

Conservation Objectives Series

Dingle Peninsula SPA 004153



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*

004153	Dingle Peninsula SPA
A009	Fulmar <i>Fulmarus glacialis</i>
A103	Peregrine <i>Falco peregrinus</i>
A346	Chough <i>Pyrrhocorax pyrrhocorax</i>

Please note that this SPA overlaps with Mount Brandon SAC (000375) and Tralee Bay and Magharees Peninsula, West to Cloghane SAC (002070), and is adjacent to Castlemaine Harbour SAC (000343), Castlemaine Harbour SPA (004029), Blasket Islands SAC (002172) and Tralee Bay Complex SPA (004188). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent and overlapping site(s) as appropriate.

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	2006
Title :	The status and ecology of the chough <i>Pyrhcorax pyrrhcorax</i> in the Republic of Ireland, 2002-2005
Author :	Trewby, M.; Gray, N.; Cummins, S.; Thomas, G.; Newton, S.
Series :	Final report to NPWS
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 Counties Waterford and Cork, February 2008 to January 2009
Author :	Trewby, M.; Carroll; D.; Muga, N.; O'Keeffe, D.; Newton, S.
Series :	Unpublished BirdWatch Ireland Report to National Parks & Wildlife Service, Kilcoole, Wicklow
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 :	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 :	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 : 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 *Pyrhacorax pyrrhacorax* 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 *Pyrhacorax pyrrhacorax* 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 *Pyrrhocorax pyrrhocorax* 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 *Pyrrhocorax pyrrhocorax* 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 (*Pyrrhocorax pyrrhocorax*): 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 *Falco peregrinus* 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 (*Pyrrhocorax pyrrhocorax*) 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 *Falco peregrinus* 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 : 2018

Title : Breeding status of red-billed choughs *Pyrrhocorax pyrrhocorax* 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 : 2022
Title : Chough *Pyrrhocorax pyrrhocorax* counts at a Waterford coastal roost
Author : McGrath, D.
Series : Irish Birds 44: 103-107

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 : Dingle Peninsula SPA [004153]

A009 Fulmar *Fulmarus glacialis*

To restore the Favourable conservation condition of Fulmar in Dingle 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). The Dingle Peninsula SPA is a large site situated on the west coast of Co. Kerry that is difficult to survey entirely in one breeding season due to its size and topography. Therefore, there have been only two complete surveys of this SPA. Between 1999 - 2000 the population of breeding Fulmar was estimated to be 1,016 pairs (Mitchell et al., 2004). The following survey between 2016 - 2018 recorded an estimated 865 pairs, a decline of 14% since 1999 - 2000 (Burnell et al., 2023). Without further data it is difficult to determine a trend but these survey results suggest a small decline or stable population. The national population estimate remained broadly stable (-2%) between 1998 and 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 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). Nesting Fulmar are widely distributed along the cliffs of this SPA with notable numbers at Sybil Head, Dunquin and Reenbeg Point
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 : Dingle Peninsula SPA [004153]

A103 Peregrine *Falco peregrinus*

To maintain the Favourable conservation condition of Peregrine in Dingle 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), and the population within this largely coastal SPA also appears to be stable. A total of 3 occupied territories (2 coastal, 1 inland) were reported in 2002 (Madden et al., 2009), but it was estimated that up to 3 additional territories had gone unrecorded (NPWS internal files). The 2017 national survey also recorded 3 territories (2 coastal, 1 inland), with some areas remaining unsurveyed (NPWS internal files). Historically, numbers along the Dingle Peninsula coast were reported as 3 territories in 1981 (Norriss and Wilson, 1983) and 5 territories 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 the SPA, 0 chicks fledged from 3 territories in 1981 and 1 pair bred successfully out of 5 in 1991. Of the 3 territories recorded in 2002, the breeding outcomes of 2 are unknown, while the third bred successfully. There was one successful breeding attempt (at an inland site) in 2017, with the breeding outcomes of 2 other occupied territories being unknown (NPWS internal files). 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). In 1981, there was a mean nearest-neighbour distance of 4.8km between coastal territories in Co. Waterford and the Dingle and Iveragh Peninsulas (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) 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 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). Surveys in 2017 noted that one historical nest site in the SPA was on a sea stack used extensively by climbers. This nest site had not been occupied by Peregrine in a number of years

Conservation Objectives for : Dingle Peninsula SPA [004153]

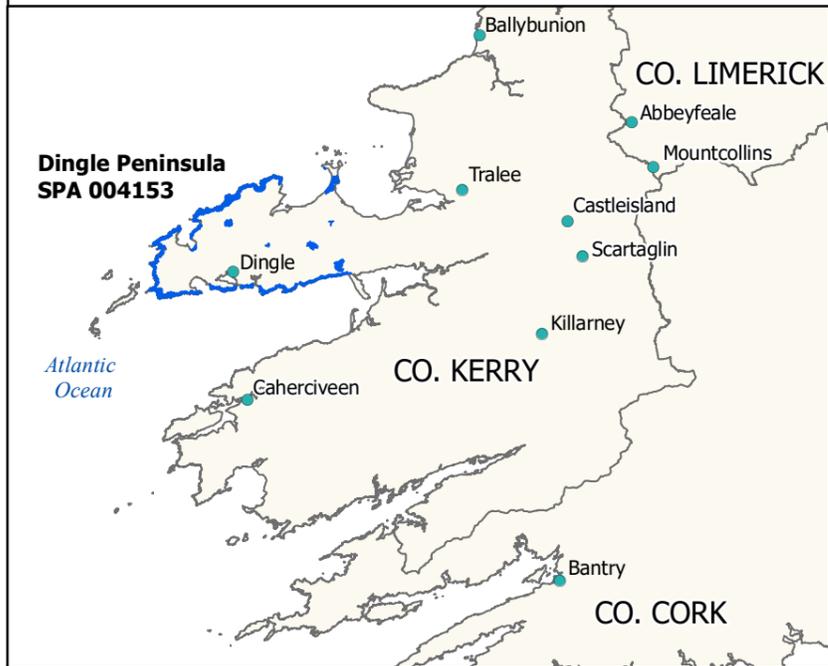
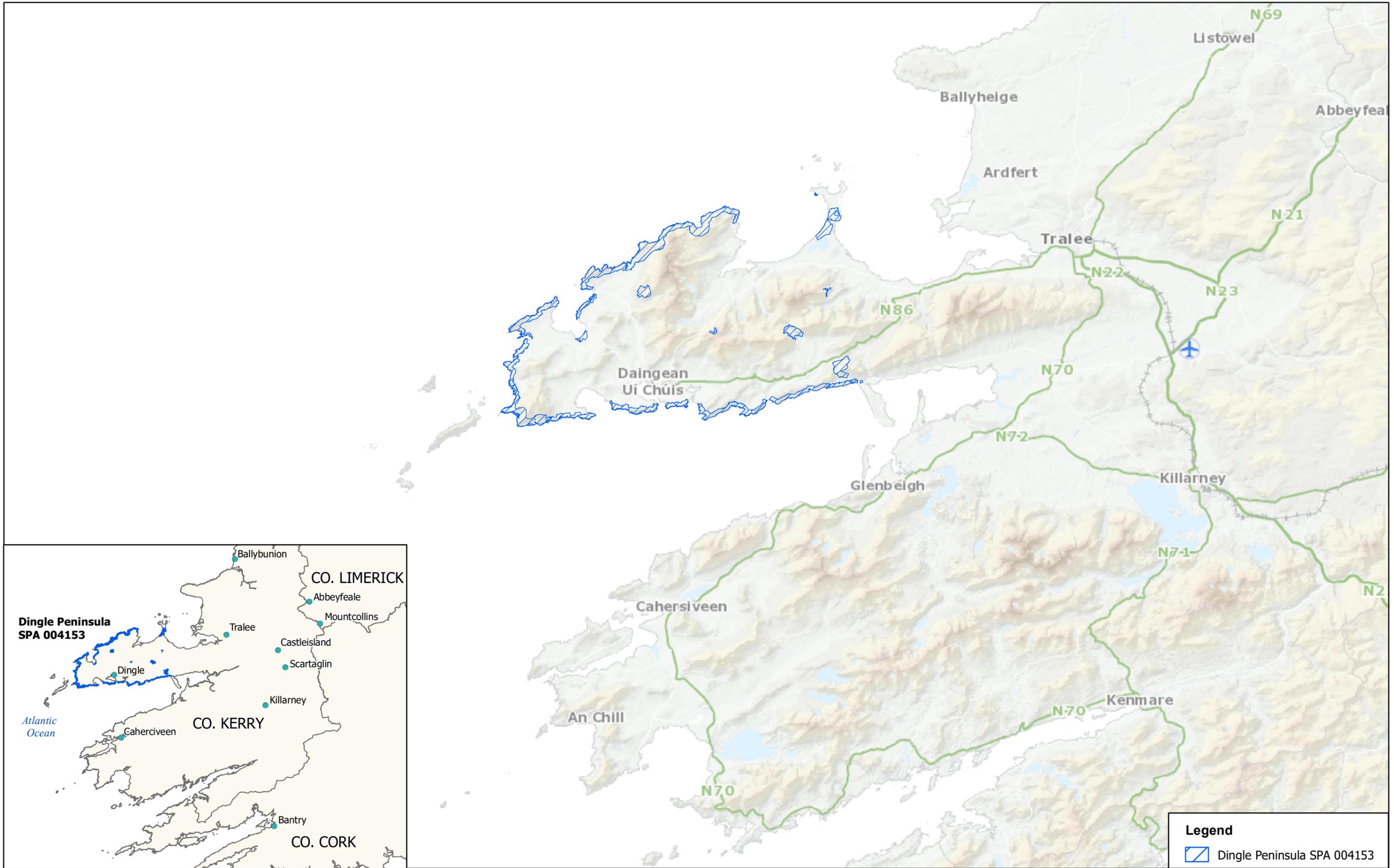
A346 Chough *Pyrrhocorax pyrrhocorax*

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

Attribute	Measure	Target	Notes
Population size	Number of breeding pairs	Population is increasing	This SPA is selected for breeding and non-breeding (wintering) Chough. 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 28 - 119 in 1992; 48 - 103 in 2002/03 and 17 - 36 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 9 - 102 (1992), 48 - 87 pairs (2002/03), and 17 - 36 pairs (2021)
Population trend	Percentage change	Long term 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 declining in the short term (i.e. 2002/03 - 2021) and the longer term (1992 - 2021). This is based on an assessment 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). The county's breeding 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 in 2021, excluding records with no breeding evidence (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 nearby 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 the SPA, and wider county. Overall, there is a lack of robust representative Irish data to determine a more quantitative target for breeding productivity

Foraging habitat: quality and quantity (breeding and wintering)	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) showed that breeding Chough typically forage near nest sites (April - June inclusive). Coastal pairs tend to commute along the coast from breeding sites (Trewby et al., 2006). Proximity of suitably-sized feeding areas to nest sites is likely to positively support breeding success (Kerbiriou et al., 2006). Grazed habitats with short swards of <5cm are usually preferred and areas of bare ground, where soils are easier to probe e.g. paths, earth banks and stone banks. Maritime vegetation on cliffs, notably in spring, is also favoured. Sufficient forage habitat within 350m of the coast, where Chough are known to breed, is vital to support pairs. By autumn, coastal grazed dune habitats are favoured, holding higher Chough densities relative to the general availability of dune habitats, with access to suitable forage habitat in dune systems vital (Trewby et al., 2006)
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 invertebrates, 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. This SPA supports at least four substantial winter roosts: Brandon Creek (peak c.90, August 2005), the Magharees/Castlegregory dunes (peak 108, Dec 2003), Lough Anascaul (peak 75, Aug 2003) and Glanteenassig (peak 80, Nov, 2002) are or have been known to attract large numbers (Trewby et al., 2006). Roost attendance can vary, some are used more reliably than others; with disturbance likely more so in man-made structures (Trewby et al., 2006)
Disturbance at breeding or wintering sites	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 at or near a known nest or roost site), 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, impacts on 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). Impacts are likely to be highest near nest sites and at roost sites but also any sustained displacement of family parties (post-fledging) and/or of flocks from preferred foraging sites such as coastal machair or dunes is a concern

Winter spatial distribution	Extent of range (ha), time and intensity of use	No significant decline in the range size, timing and intensity of use of areas by Chough, other than that occurring from natural patterns of variation	Winter spatial distribution captures the number of locations and area of potentially suitable habitat available to Chough outside the core breeding season. The suitability and availability of habitats is likely to vary throughout the year, for example, due to variation in land management practices (e.g. grazing or mowing) or the abundance of resources available (due to natural variation and other factors). As a result, the spatio-temporal patterns of use of habitats during the year will be affected. By the late summer, post-breeding, large flocks can be observed to range widely on upland slopes, across the mountain flanks of the Dingle Peninsula's interior. Suitable inland foraging habitat on the peninsula (e.g. Connor Pass to Anascaul) acts as possible 'corridors' for Chough to direct or funnel post-fledging flocks towards communal roosts and the coastal dune systems (Trewby et al., 2006)
Supporting winter habitat: area and quality	Area (ha) and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Outside the breeding season, Chough range widely across the entire Dingle Peninsula using suitable habitats for foraging or roosting. The peninsula holds plentiful inland foraging habitat including rough grazing on mountainsides and semi-improved pastures with flocks post-breeding tracked leaving breeding sites to forage in these areas (Trewby et al., 2006). Chough ringed as nestlings have been re-sighted over 20km from their nest sites on the Dingle Peninsula (Trewby et al., 2006). The extent, availability and quality of these ecologically important areas outside the SPA may be of importance for the resilience of the SPA population. It is hypothesised that, post-breeding, dunes can act as 'assembly points' for juveniles and adults and may serve to also support social interactions (Trewby et al., 2006)



**MAP 1:
DINGLE PENINSULA SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION**

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

**SITE CODE:
SPA 004153; version 3
CO. KERRY**

0 2.5 5 10 Kilometres

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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