

# National Parks and Wildlife Service

## *Conservation Objectives Series*

Derryveagh and Glendowan Mountains SPA  
004039



**NPWS**

An tSeirbhís Páircenna  
Náisiúnta agus Fiadhúilra  
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

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004039      Derryveagh and Glendowan Mountains SPA

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A001      Red-throated Diver *Gavia stellata*

A098      Merlin *Falco columbarius*

A103      Peregrine *Falco peregrinus*

A140      Golden Plover *Pluvialis apricaria*

A466      Dunlin *Calidris alpina schinzii*

**Please note that this SPA overlaps with Cloghernagore Bog and Glenveagh National Park SAC (002047), Fawnboy Bog/Lough Nacung SAC (000140), Leannan River SAC (002176), Muckish Mountain SAC (001179), River Finn SAC (002301) and is adjacent to Gannivegil Bog SAC (000142). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.**

## Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: [www.npws.ie/Publications](http://www.npws.ie/Publications)

### NPWS Documents

<b>Year :</b>	2013
<b>Title :</b>	A review of the SPA network of sites in the Republic of Ireland
<b>Author :</b>	NPWS
<b>Series :</b>	Published Report
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<b>Year :</b>	2022
<b>Title :</b>	Survey of breeding merlin in the special protection area network 2018
<b>Author :</b>	Lusby, J.; O'Brien, I.; Lauder, A.; Wilson-Parr, R.; Breen, D.; Cummins, S.; Tierney, D.
<b>Series :</b>	Irish Wildlife Manual No. 139

### Other References

<b>Year :</b>	1983
<b>Title :</b>	Survey of the Peregrine <i>Falco peregrinus</i> breeding population in the Republic of Ireland in 1981
<b>Author :</b>	Norriss, D.W.; Wilson, H.J.
<b>Series :</b>	Bird Study, 30:2, 91-101
<hr/>	
<b>Year :</b>	1993
<b>Title :</b>	The peregrine falcon. Second edition.
<b>Author :</b>	Ratcliffe, D.A.
<b>Series :</b>	T. & A.D. Poyser, London
<hr/>	
<b>Year :</b>	1997
<b>Title :</b>	The Birds of the Western Palearctic Concise Edition. Vol. 1 Non-Passerines
<b>Author :</b>	Snow, D.W.; Perrins, C.M.
<b>Series :</b>	Oxford University Press
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<b>Year :</b>	2000
<b>Title :</b>	Time budgets and foraging of breeding golden plover <i>Pluvialis apricaria</i>
<b>Author :</b>	Whittingham M.J.; Percival S.M.; Brown A.F.
<b>Series :</b>	Journal of Applied Ecology 37, 632-646
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<b>Year :</b>	2002
<b>Title :</b>	Recovery of the Peregrine Falcon <i>Falco peregrinus</i> in Cumbria, UK, 1966–99
<b>Author :</b>	Horne, G; Fielding, A.H.
<b>Series :</b>	Bird Study, 49:3, 229-236
<hr/>	
<b>Year :</b>	2002
<b>Title :</b>	Upland Bird Survey Report 2002: Donegal
<b>Author :</b>	Cox, R.B.; Eddleston, C.R.; Newton, S.F.
<b>Series :</b>	BirdWatch Ireland Conservation Report No. 02/04
<hr/>	
<b>Year :</b>	2005
<b>Title :</b>	Merlins of the Wicklow mountains
<b>Author :</b>	McElheron, A.
<b>Series :</b>	Currach Press, Dublin
<hr/>	
<b>Year :</b>	2007
<b>Title :</b>	A review of disturbance distances in selected bird species
<b>Author :</b>	Ruddock, M.; Whitfield, D.P.
<b>Series :</b>	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

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**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

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**Year :** 2010  
**Title :** Breeding biology of merlins *Falco columbarius* in Ireland, 1986-1992  
**Author :** Norriss, D.W.; Hara, B.; Hennigan, J.; McElheron, A.; McLaughlin, D.J.; Swan, V; Walsh, A.  
**Series :** Irish Birds, 9:23-30

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**Year :** 2011  
**Title :** Assessing the effectiveness of monitoring methods for merlin *Falco columbarius* in Ireland: the pilot merlin survey 2010  
**Author :** Lusby, J.; Fernández-Bellon, D.; Norriss, D.; Lauder, A.  
**Series :** Irish Birds 9, 143 – 154

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**Year :** 2011  
**Title :** The feeding ecology of merlin *Falco columbarius* during the breeding season in Ireland, and an assessment of current diet analysis methods  
**Author :** Fernández-Bellon, D.; Lusby, J.  
**Series :** Irish Birds 9, 159-164

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**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

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**Year :** 2017  
**Title :** Breeding ecology and habitat selection of merlin *Falco columbarius* in forested landscapes  
**Author :** Lusby, J.; Corkery, I.; McGuinness, S.; Fernández-Bellon, D.; Toal, L.; Norriss, D.; Breen, D.; O'Donail, A.; Clarke, D.; Irwin, S.; Quinn, J.L.; O'Halloran, J.  
**Series :** Bird Study 64, 445-454

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**Year :** 2019  
**Title :** Report under the Article 12 of the Birds Directive Period 2008-2012  
**Author :** European Environment Agency  
**Series :** European Topic Centre on Biological Diversity. Pp 1-9.  
[https://cdr.eionet.europa.eu/Converters/run\\_conversion?file=ie/eu/art12/envxtxxq/IE\\_birds\\_reports\\_20191031-130157.xml&conv=612&source=remote#A096\\_B](https://cdr.eionet.europa.eu/Converters/run_conversion?file=ie/eu/art12/envxtxxq/IE_birds_reports_20191031-130157.xml&conv=612&source=remote#A096_B)

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**A001 Red-throated Diver *Gavia stellata***

**To maintain the Favourable conservation condition of Red-throated Diver at Derryveagh and Glendowan Mountains SPA, which is defined by the following list of attributes and targets:**

<b>Attribute</b>	<b>Measure</b>	<b>Target</b>	<b>Notes</b>
Breeding population trend	Percentage change in number of breeding pairs	Long term trend is stable or increasing	The national breeding population of Red-throated Diver (which is estimated to occur only in Co. Donegal) is considered to have been broadly stable between 1980 and 2018 (see EEA, 2019). A 2010 survey of Red-throated Diver within the SPA recorded 6 pairs. Provisional results from a survey of the SPA in 2024 suggest a minimum of 4 breeding pairs were present within the SPA, with a number of individual birds recorded at other sites within the SPA (NPWS internal data), however, not all areas of suitable breeding habitat within the SPA were surveyed and additional pairs may be present
Productivity rate	Number of young fledged per breeding pair	Sufficient productivity to maintain the population trend as stable or increasing	Productivity is a measure of breeding output and a key demographic parameter. It is defined here as the total number of chicks that are successfully reared to fledge (i.e. become independent of their parents) divided by the total number of breeding pairs (or AOTs), including failed pairs, in a given breeding season. Breeding productivity is a key determinant, amongst other demographic parameters, in whether a population can maintain itself
Distribution of breeding habitat	Spatial distribution	No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation	Red-throated Diver breed on small freshwater pools (typically less than 5ha, but as small as 10-20m long), with a preference for shallow pools with well-vegetated banks, headlands and islets for nesting. The species shows a preference for breeding sites of low disturbance and open (treeless) terrain, and avoids areas of dense floating or emergent vegetation. An insufficiency of food in small nesting pools requires birds to fly to larger lakes and/or coastal waters for foraging (Snow and Perrins, 1998)
Extent and condition of breeding habitat	Hectares of high quality breeding habitat	Sufficient area of high quality habitat to support the population target	Red-throated Diver breed on small freshwater pools (typically less than 5ha, but as small as 10-20m long), with a preference for shallow pools with well-vegetated banks, headlands and islets for nesting. Nests are typically located amid shoreline vegetation or built-up with plant material in shallow water. The species shows a preference for breeding sites of low disturbance and open (treeless) terrain, and avoids areas of dense floating or emergent vegetation. An insufficiency of food in small nesting pools requires birds to fly to larger lakes and/or coastal waters for foraging (Snow and Perrins, 1998). High quality breeding habitat is considered as habitat in which Red-throated Diver can successfully nest and rear young, which will depend on food from areas outside of the nesting pool

Disturbance at breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact upon population target	The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population trend and/or spatial distribution. 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 trend and spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of mortality (in adults and chicks) or reduced breeding fitness of adults (if energy expenditure is greater than energy intake), and can thus negatively impact population trends. Disturbance is likely to have greatest impact at nesting sites, for example, increasing the mortality risk to eggs and chicks from predation, inclement weather and starvation, as well as the risk of abandonment by adults
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the breeding population's access to this SPA or movement within the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. This is of particular relevance to the likely movements of adults between nesting sites (small pools) and the larger lakes and coastal waters in which they need to forage
Forage spatial distribution, extent and abundance	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target	During the breeding season, Red-throated Diver typically forage away from the small pools in which they nest, primarily foraging in larger lakes and coastal waters, including estuaries. The species' primary prey is live fish, caught by diving, and less frequently it preys upon frogs and invertebrates including crustaceans, molluscs, insects, and annelids (Snow and Perrins, 1998)



## Conservation Objectives for : Derryveagh and Glendowan Mountains SPA [004039]

### A098 Merlin *Falco columbarius*

**To maintain the Favourable conservation condition of Merlin in Derryveagh and Glendowan Mountains 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 increasing/stable	Early season visits improve detectability of Merlin, a challenging species to survey (Norriss et al., 2010; Lusby et al., 2011, 2017). Lusby et al. (2017) defined occupied territories according to highest levels of breeding evidence i.e. all confirmed breeding pairs and any occupied territories during the survey breeding season (1 Apr - 15 Jul) and sites with recent signs of occupation e.g. plucking posts with fresh kills on repeat visits. For this SPA, a baseline estimate of at least 6 and up to 11 territories (NPWS, 2013) was derived using available data from various surveys conducted over a 30 year period and estimates informed by the availability of suitable breeding habitat for sites with known breeding Merlin populations. The 2018 targeted survey of the SPA network, which covered c.17% in total extent of this SPA, located a single pair (Lusby et al., 2022), but with additional survey effort in recent years confirming a minimum of 3 territories for this SPA (NPWS internal files)
Productivity rate	Number of fledged young per breeding attempt with known outcome	Sufficient to meet the population size target	Various Irish studies have provided estimates of productivity and/or breeding success for Merlin (e.g. Norriss et al., 2010; Lusby et al., 2017; Lusby et al., 2022) but general information on life history such as natal dispersal, first year and adult survival are lacking in the Irish context. Further, reproductive performance of pairs at this SPA is not known. In the absence of such data, it is not possible to identify a minimum breeding productivity rate for this SPA. For study areas in Ireland where productivity has been measured, estimates vary. Lusby et al. (2022) reported 3.5 fledged young per successful pair (based on 8 pairs across 6 Merlin SPA's in 2018). Monitoring of five breeding localities from 1986-1992 by Norriss et al. (2010) estimated 2.15 young per territorial pair. An overview of all surveyed nest records (1982-2014), including data from Norriss et al. (2010), calculated an average productivity rate of 3 young fledged per successful pair (Lusby et al., 2017)
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain the population	Formerly ground-nesting in heather, Merlin are now largely tree-nesting in Ireland, often utilising old crows' nests (McElheron, 2005; Norriss et al., 2010; Lusby et al., 2017), albeit some ground-nesting pairs may remain. Other nesting options include copses and shelter belts, isolated trees in open upland areas and dense heather. With recent records of ground-nesting pairs in this SPA, potentially suitable habitat includes heath and bog. Thus, a sufficiency of available nest sites (e.g. mature trees holding suitable stick nests, including those on vegetated lake islands, that are proximate to open foraging habitats and dense heather stands on sloping ground), distributed across the SPA, is needed to support the breeding population. For those forested areas used by breeding Merlin, Norriss et al. (2010) found 72% of nests (n=61) within 60m of forest plantation edge. Pairs nesting outside the SPA may still forage within the SPA (Lusby et al., 2022)

Extent and condition of suitable open habitats for foraging	Hectares; condition assessment; prey biomass	Sufficient availability of suitable foraging habitat across the SPA to support targets relating to population size, productivity rate and distribution	The sporadic occupancy of territories by Merlin, and failures of some pairs to lay clutches, is noted for other raptor species where females in poorer territories have difficulty attaining condition to breed (Norriss et al., 2010). Lusby et al. (2017) showed that the proportion of 'open suitable habitat' i.e. moors and heathland, peat bogs and semi-natural grasslands (using CORINE Land Cover) within 5km of nest sites was positively related to breeding success. Up to now, limited nest records for this SPA preclude such analyses. Open foraging habitats include wet and dry heaths; <i>Molinia</i> -dominated meadows; blanket bog; semi-open habitats i.e. woodland copses. Preferred prey include open country small passerines and moths; woodland birds feature in April (Fernández-Bellon and Lusby, 2011). Key aspects to consider regarding any assessment of the condition of open habitats for Merlin are structure, soil integrity, overall connectivity and coherence
Disturbance at breeding sites	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact upon the breeding population	The impact of any significant disturbance on the SPA's breeding population will ultimately be manifested in the targets that relate to population demographics (i.e. population, productivity rate) and the extent of suitable habitat occupied by breeding pairs. Factors such as location (e.g. proximity to nest site), intensity, frequency, timing and duration of a potentially disturbing activity (direct/indirect) need to be taken into account to determine its significance on breeding Merlin. Merlin frequently select the tallest trees in which to nest, thereby potentially increasing nest vulnerability to felling operations for any pairs nesting in commercial forests (Norriss et al., 2010), adjacent to the SPA. Lusby et al. (2022) described the pressures within the SPA network which include turf-cutting, burning, agricultural intensification and afforestation. As this SPA encompasses part of a National Park, recreational disturbance is also a consideration

## Conservation Objectives for : Derryveagh and Glendowan Mountains SPA [004039]

### A103 Peregrine *Falco peregrinus*

To restore the Favourable conservation condition of Peregrine in Derryveagh and Glendowan 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 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' and based on standard definitions (Hardey et al., 2009). The national population is considered stable (EEA, 2019), and in the core areas surveyed in Co. Donegal (i.e. Inishowen, Derryveagh Mts and Bluestack Mountains), numbers are broadly stable at a minimum of 23 occupied territories in 1981 (Norriss and Wilson, 1983; Madden et al., 2009); 25 in 1991 (Madden et al. 2009); 22 in 2002 (Madden et al., 2009) and 21 in 2017, with 30 breeding attempts across 45 occupied territories in the county in 2017 (NPWS internal files). By contrast, the SPA population has declined from 5-6 occupied territories in 2002 to just 3 in 2017, albeit at least one known territory in the SPA was not checked for occupancy in 2017
Productivity rate	Number of fledged young per territorial pair	Sufficient to maintain the population size target	Cold wet springs can delay/halt breeding in Peregrine (e.g. Norriss and Wilson, 1983; Horne and Fielding, 2002) and affect productivity (Burke et al., 2015). National/partial surveys (1981; 1993; 2002; 2017) have estimated breeding success and productivity (i.e. no. fledged young/territorial pair). In 2002, c.63% of pairs bred successfully in Co. Donegal (Madden et al., 2009) and c.62% in 2017 (NPWS internal files). The known productivity rates ranged from 0.68 (n=25) in 1991; 0.81 (n=22) in 2002; to 1.04 (n=45) in 2017. National estimates ranged from 0.80-0.82 in 1981 (Norriss and Wilson, 1983); 1.18 in 1991 (n=123) (Norriss, 1995) to 1.23 in 2002 (n=390) (Madden et al., 2009). Productivity estimates for the SPA are based on small samples (i.e. 1.0 (n=6) in 1991; unknown in 2002; and 0.33 (n=3) in 2017 (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	Numbers and distribution of occupied territories across site	Sufficient availability of suitable nesting sites throughout the SPA to maintain/restore the population	Distribution captures the number of occupied territories and areas of suitable nesting habitat for the population and its availability for use. Peregrine defend nesting territories, with average nearest neighbour distance between pairs in Britain ranging from of 2.1-9.0km (Ratcliffe, 1993). The equivalent range in Co. Wicklow (2008-2012) was 0.7-16.6km (Burke et al., 2015). 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 inland cliffs are available for nesting and levels of disturbance are not limiting occupancy of known sites. Peregrine will re-use breeding ledges and in Britain can nest on the ground in heathery slopes or on steep sand banks (Hardey et al., 2009)

Forage spatial distribution, extent, abundance and availability	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat, and available prey biomass (i.e. small-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. Most prey 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 on birds at the breeding site	The impact of any significant disturbance on the SPA's breeding population will ultimately be manifested in the targets that relate to population demographics (i.e. population trend, productivity rate) and the distribution of occupied territories across the SPA. Factors such as intensity, frequency, timing and duration of a potentially disturbing activity need to be taken into account to determine its significance on breeding Peregrine in the SPA. Pairs in remote locations may be more sensitive to disturbance. Activities above a nest are more likely to cause disturbance than 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 : Derryveagh and Glendowan Mountains SPA [004039]

### A140 Golden Plover *Pluvialis apricaria*

**To maintain the Favourable conservation condition of Golden Plover at Derryveagh and Glendowan Mountains SPA, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Breeding population trend	Percentage change in number of breeding pairs	Long term trend is stable or increasing	The national breeding population of Golden Plover in Ireland is estimated to have declined by 82-84% between 1972 and 2019 (see EEA, 2019). Apparently Occupied Territory (AOT) is a standard metric used to represent breeding pairs. In 2002, baseline surveys to inform SPA designation recorded a minimum of 18 Golden Plover AOTs in this SPA (Cox et al., 2002; NPWS, 2013). There are insufficient data available to provide an updated population estimate for this species within the SPA and thus a population trend cannot be estimated
Productivity rate	Number of young fledged per breeding pair	Sufficient productivity to maintain the population trend as stable or increasing	Productivity is a measure of breeding output and a key demographic parameter. It is defined here as the total number of chicks that are successfully reared to fledge (i.e. become independent of their parents) divided by the total number of breeding pairs (or AOTs), including failed pairs, in a given breeding season. Breeding productivity is a key determinant, amongst other demographic parameters, in whether a population can maintain itself. There is currently no information on the productivity rate of Golden Plover within this SPA. A lack of comprehensive data precludes the identification of a minimum productivity rate for the Golden Plover population of this SPA or indeed for the national breeding population
Distribution of breeding habitat	Spatial distribution	No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation	Golden Plover breed in open habitats, primarily blanket bog and other peatland habitats in Ireland, where they nest on the ground, in short or tussocky vegetation
Extent and condition of breeding habitat	Hectares of high quality breeding habitat	Sufficient area of high quality habitat to support the population target	Golden Plover breed in open habitats, primarily blanket bog and other peatland habitats in Ireland, where they nest on the ground, in short or tussocky vegetation. High quality breeding habitat is considered as habitat in which Golden Plover can successfully nest and rear young
Disturbance at breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact upon population target	The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population trend and/or spatial distribution. 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 trend and spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of mortality (in adults and chicks) or reduced breeding fitness of adults (if energy expenditure is greater than energy intake), and can thus negatively impact population trends. Disturbance is likely to have greatest impact at nesting sites, for example, increasing the mortality risk to eggs and chicks from predation, inclement weather and starvation, as well as the risk of abandonment by adults
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the breeding population's access to this SPA or movement within the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact

Forage spatial distribution, extent and abundance	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target	Golden Plover forage exclusively at ground level and rely primarily on a wide variety of surface and sub-surface dwelling invertebrate prey. Coleoptera, Oligochaeta, and Diptera (Bibionidae and Tipulidae) are known important prey for the species. The species is reliant on open habitats, primarily breeding in blanket bogs and other peatland habitats in Ireland. During the breeding season, Golden Plover also utilize a range of surrounding habitats for foraging, including grasslands, lake shores and other wetlands. While Golden Plover primarily forage diurnally, the species is also known to feed nocturnally on clear and moonlit nights. Quantitative information on foraging ranges of breeding Golden Plover in Ireland is unavailable but studies elsewhere have shown breeding adults to forage up to 4km from the nest (Whittingham et al., 2000). Whittingham et al. (2000) reported moorland breeding Golden Plover foraged 1.1-3.7km from their nests during the incubation period
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## Conservation Objectives for : Derryveagh and Glendowan Mountains SPA [004039]

A466

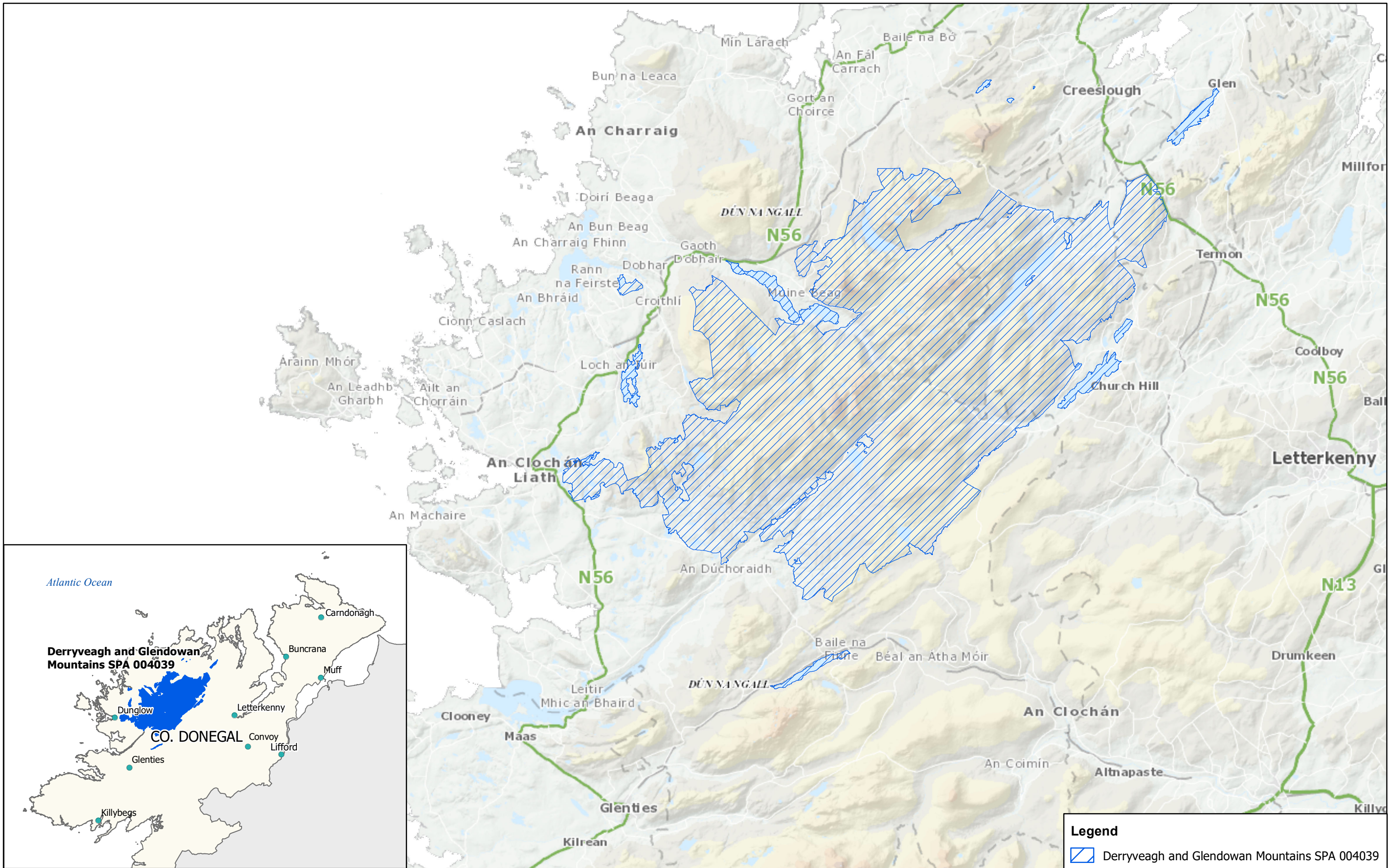
Dunlin *Calidris alpina schinzii*

**To maintain the Favourable conservation condition of Dunlin at Derryveagh and Glendowan Mountains SPA, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Breeding population trend	Percentage change in number of breeding pairs	Long term trend is stable or increasing	The national breeding population of Dunlin in Ireland is estimated to have declined by 93-94% between 1972 and 2019 (see EEA, 2019). Apparently Occupied Territory (AOT) is a standard metric used to represent breeding pairs. In 2002, baseline surveys to inform SPA designation recorded a minimum of 5 Dunlin AOTs in this SPA (Cox et al., 2002; NPWS, 2013). There are insufficient data available to provide an updated population estimate for this species within the SPA and thus a population trend cannot be estimated
Productivity rate	Number of young fledged per breeding pair	Sufficient productivity to maintain the population trend as stable or increasing	Productivity is a measure of breeding output and a key demographic parameter. It is defined here as the total number of chicks that are successfully reared to fledge (i.e. become independent of their parents) divided by the total number of breeding pairs (or AOTs), including failed pairs, in a given breeding season. Breeding productivity is a key determinant, amongst other demographic parameters, in whether a population can maintain itself. There is currently no information on the productivity rate of Dunlin within this SPA. A lack of comprehensive data precludes the identification of a minimum productivity rate for the Dunlin population of this SPA or indeed for the national breeding population
Distribution of breeding habitat	Spatial distribution	No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation	Dunlin breed in open, moist habitats, showing a preference for areas of vegetation interspersed with shallow pools or other standing or flowing water. They breed in upland and lowland blanket bog, other peatland habitats, coastal grasslands (such as machair), edges of lagoons, and other suitably open wetlands
Extent and condition of breeding habitat	Hectares of high quality breeding habitat	Sufficient area of high quality habitat to support the population target	Dunlin breed in open, moist habitats, showing a preference for areas of vegetation interspersed with shallow pools or other standing or flowing water. They breed in upland and lowland blanket bog, other peatland habitats, coastal grasslands (such as machair), edges of lagoons, and other suitably open wetlands. Dunlin nest on the ground in long or tussocky vegetation in which the nest is concealed. High quality breeding habitat is considered as habitat in which Dunlin can successfully nest and rear young
Disturbance at breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact upon population target	The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population trend and/or spatial distribution. 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 trend and spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of mortality (in adults and chicks) or reduced breeding fitness of adults (if energy expenditure is greater than energy intake), and can thus negatively impact population trends. Disturbance is likely to have greatest impact at nesting sites, for example, increasing the mortality risk to eggs and chicks from predation, inclement weather and starvation, as well as the risk of abandonment by adults

Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the breeding population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the breeding population's access to this SPA or movement within the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact
Forage spatial distribution, extent and abundance	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target	Dunlin forage exclusively at ground level and rely primarily on a wide variety of surface and sub-surface dwelling invertebrate prey. When breeding, diet is primarily adults and larvae of insects, including Diptera, crane flies, beetles, caddisflies, wasps, sawflies and mayflies. Dunlin will also feed upon spiders, mites, and earthworms. Foraging habitats include those habitats in which they breed (see Distribution of breeding habitat attribute above)





**Legend**

 Derryveagh and Glendowan Mountains SPA 004039




**MAP 1:  
DERRYVEAGH AND GLENDOWAN MOUNTAINS SPA  
CONSERVATION OBJECTIVES  
SPA DESIGNATION**

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

**SITE CODE:  
SPA 004039; version 3  
CO. DONEGAL**

0 1.25 2.5 5 Kilometres



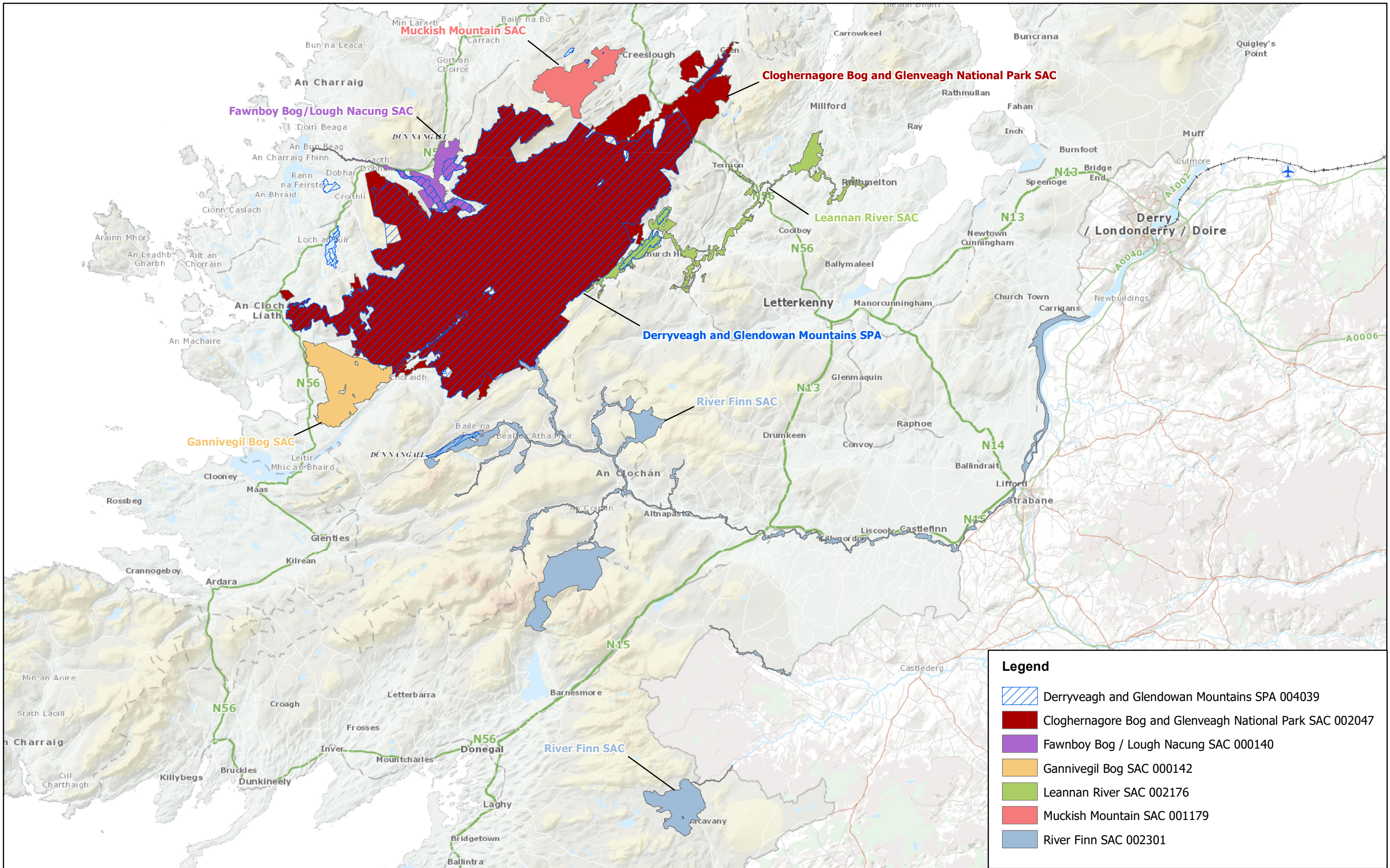
The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
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


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**Map version 1  
Date: May 2024**



**Legend**

-  Derryveagh and Glendowan Mountains SPA 004039
-  Cloghernagore Bog and Glenveagh National Park SAC 002047
-  Fawnboy Bog / Lough Nacung SAC 000140
-  Gannivegil Bog SAC 000142
-  Leannan River SAC 002176
-  Muckish Mountain SAC 001179
-  River Finn SAC 002301