

National Parks and Wildlife Service

Conservation Objectives Series

River Little Brosna Callows SPA 004086



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**

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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

004086	River Little Brosna Callows SPA
A038	Whooper Swan <i>Cygnus cygnus</i>
A050	Wigeon <i>Anas penelope</i>
A052	Teal <i>Anas crecca</i>
A054	Pintail <i>Anas acuta</i>
A056	Shoveler <i>Anas clypeata</i>
A140	Golden Plover <i>Pluvialis apricaria</i>
A142	Lapwing <i>Vanellus vanellus</i>
A156	Black-tailed Godwit <i>Limosa limosa</i>
A179	Black-headed Gull <i>Chroicocephalus ridibundus</i>
A395	Greenland White-fronted Goose <i>Anser albifrons flavirostris</i>
A999	Wetlands

Please note that this SPA is adjacent to All Saints Bog SPA (004103), All Saints Bog and Esker SAC (000566), Redwood Bog SAC (002353), River Shannon Callows SAC (000216) and Middle Shannon Callows SPA (004096). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent 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 :	2013
Title :	A review of the SPA network of sites in the Republic of Ireland
Author :	NPWS
Series :	Published Report
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Year :	2019
Title :	Irish wetland bird survey: waterbird status and distribution 2009/10-2015/16
Author :	Lewis, L.J.; Burke, B.; Fitzgerald, N.; Tierney, T.D.; Kelly, S.
Series :	Irish Wildlife Manuals No. 106

Other References

Year :	1995
Title :	Impacts of hunting disturbance on waterbirds - a review
Author :	Madsen, J.; Fox, A.D.
Series :	Wildlife Biology 1(4):193-207
<hr/>	
Year :	1998
Title :	The Birds of the Western Palearctic Concise Edition. Vol. 1 Non-Passerines
Author :	Snow, D.W.; Perrins, C.M. (eds.)
Series :	Oxford University Press, New York
<hr/>	
Year :	2009
Title :	A review of Ireland's waterbirds, with emphasis on wintering migrants and reference to H5N1 avian influenza
Author :	Crowe, O.; Wilson, J.; Aznar, I.; More, S.J.
Series :	Irish Veterinary Journal, 62, 1-12
<hr/>	
Year :	2016
Title :	Assessing connectivity with Special Protection Areas (SPAs)
Author :	Scottish Natural Heritage
Series :	Guidance Series Version 3 - June 2016
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Year :	2019
Title :	Report of the 2018/19 international census of Greenland white-fronted geese
Author :	Fox, T.; Francis, I.; Walsh, A; Norriss, D.
Series :	Unpublished report
<hr/>	
Year :	2019
Title :	Report under the Article 12 of the Birds Directive Period 2008-2012
Author :	EEA
Series :	European Environment Agency. European Topic Centre on Biological Diversity. Pp 1-9
<hr/>	
Year :	2020
Title :	Report of the 2019/20 international census of Greenland white-fronted geese
Author :	Fox, T.; Francis, I.; Walsh, A.; Norriss, D.
Series :	Unpublished report

Year :	2020
Title :	Black-headed Gull (<i>Chroicocephalus ridibundus</i>), version 1.0. In Birds of the World (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors)
Author :	Burger, J.; Gochfeld, M.; Kirwan, G. M.; Christie, D. A; Garcia, E. F. J.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Green-winged Teal (<i>Anas crecca</i>), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Johnson, K.; Carboneras, C.; Christie, D. A.; Kirwan, G. M.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Northern Pintail (<i>Anas acuta</i>), version 1.0. In Birds of the World (S. M. Billerman, Editor)
Author :	Clark, R.G.; Fleskes, J.P.; Guyn, K.L.; Haukos, D.A.; Austin, J.E.; Miller, M.R.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2021
Title :	Report of the 2020/21 international census of Greenland white-fronted geese
Author :	Fox, T.; Francis, I.; Walsh, A.; Norriss, D.; Kelly, S.
Series :	Unpublished report
Year :	2022
Title :	Irish wetland bird survey: I-WeBS national and site trends report 1994/95 – 2019/20
Author :	Kennedy, J.; Burke, B.; Fitzgerald, N.; Kelly, S.B.A.; Walsh, A.J.; Lewis, L.J.
Series :	https://birdwatchireland.ie/app/uploads/2022/04/iwebs_trends_report.html
Year :	2022
Title :	Report of the 2021/22 international census of Greenland white-fronted geese
Author :	Fox, T.; Francis, I.; Walsh, A; Norriss, D.; Kelly, S.
Series :	Unpublished report
Year :	2023
Title :	Report of the 2022/23 international census of Greenland white-fronted geese
Author :	Fox, T.; Francis, I.; Walsh, A; Norriss, D.; Kelly, S.
Series :	Unpublished report

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A038 Whooper Swan *Cygnus cygnus*

To maintain the Favourable conservation condition of Whooper Swan in the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of Whooper Swan wintering in Ireland has increased by 40% from 1991 to 2015 (Lewis et al., 2019). During the baseline assessments to inform SPA designation, 122 Whooper Swan were estimated to be using this SPA (5 year mean peak for period 1995/96 - 1999/2000); see NPWS, 2013). More recent data showed a population of 411 Whooper Swan used the SPA during the period (4 year mean of peak counts from ground-based I-WeBS surveys, 2017/18 to 2021/22, excluding 2020/21). This represents an estimated population increase of 237% since the baseline period, which is significantly greater than the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors

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	This species feeds on a wide range of aquatic and terrestrial vegetation. Key forage materials include: leaves, with significant consumption of grasses; seeds, including spilled grain; roots; tubers, including potatoes; shoots, including those from winter wheat and other cereals. Key foraging habitats are grasslands (including wet grassland, semi-improved grassland, and intensive grassland), arable stubble, winter cereals, rivers, lakes, turloughs and other wetland habitats. In general, the foraging distance of wintering Whooper Swan from night roosts is estimated to be less than 5km (Scottish Natural Heritage, 2016), although this will vary depending on site and landscape
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. Overnight roosting habitat mainly consists of permanent waterbodies, such as rivers, lakes, turloughs, lagoons and other open waterbodies. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A050 *Wigeon Anas penelope*

To restore the Favourable conservation condition of Wigeon at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Wigeon in Ireland has declined by 18% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 8,116 Wigeon were estimated to be using this SPA (4 year mean of peak counts for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 7,743 Wigeon used the SPA during the period 2017/18 - 2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population decline of 5% since the baseline period, which is less than the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors
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	This dabbling duck feeds primarily on aquatic vegetation, at surface level in waterbodies or at ground level in wetland habitats. Key forage materials include leaves, stems, stolons, roots, rhizomes, and seeds (including cereals). Key wintering habitats are marshes, lagoons, estuaries, coastal bays, lakes, rivers and river floodplains, turloughs and other wetland habitats, as well as pastures

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. Wigeon rely primarily on wetlands or waterbodies for roosting. When roosting overnight, this species typically utilises a similar range of habitats as noted for foraging. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A052

Teal *Anas crecca*

To maintain the Favourable conservation condition of Teal at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Teal in Ireland has increased by 19% from 1994/95 to 2019/20, as monitored via I-WeBS (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 2,683 Teal were estimated to be using this SPA (4 year mean of peak counts for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 3,277 Teal used the SPA during the period 2017/18 -2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population increase of 22% since the baseline period, which is greater than the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors

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	Teal utilise a wide range of foraging habitats and have a broad diet. Key food sources are: small seeds of sedges, grasses and aquatic vegetation; aquatic invertebrates, including larvae, such as molluscs and crustaceans; as well as algae (particularly <i>Enteromorpha</i> spp.) (Johnson et al., 2020). Key habitats include shallow water, between depths of 4cm (dabbling) - 24cm (upending), and can be widespread on wetlands with good cover, such as reedbeds. The species uses a wide variety of shallow areas within wetland habitats, both coastal and inland, including estuaries, lagoons, mudflats, marshes, floodplains, lakes, ponds, turloughs and agricultural areas
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. When roosting overnight, Teal primarily utilise permanent waterbodies, marshes, wide ditches, wet grassland and wetlands (see foraging habitats). Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A054

Pintail *Anas acuta*

To maintain the Favourable conservation condition of Pintail at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Pintail in Ireland has declined by 13% from 1994/95 to 2019/20, as monitored via I-WeBS (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 130 Pintail were estimated to be using this SPA (4 year mean of peak counts for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 438 Pintail used the SPA during the period 2017/18 - 2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents a population increase of 237% since the baseline period, which is in contrast to the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact.
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	Pintail are a dabbling duck, mainly feeding at the surface of shallow waters, often upending or diving in waters of 10-30cm depth, or foraging in terrestrial habitats (Crowe et al., 2009; Clark et al., 2020). This species is omnivorous. Key foraging material is predominantly plant seeds (including grain) and aquatic plants, while insects and crustaceans are also eaten (Snow and Perrins, 1998). Pintail show a preference for feeding in sheltered coastal habitats, estuaries, marshes, floodplains, and agricultural areas (including stubble fields). Unlike most ducks, Pintail have more nocturnal feeding habits, often feeding on wetlands during the night and agricultural/crop areas in the morning and evening (Clark et al., 2020)

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. In winter, Pintail typically roost in undisturbed wetlands, making obvious daily movements between daytime foraging areas and roost sites. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
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Conservation Objectives for : River Little Brosna Callows SPA [004086]

A056 Shoveler *Anas clypeata*

To maintain the Favourable conservation condition of Shoveler at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Shoveler in Ireland has declined by 10% from 1994/95 to 2019/20, as monitored via the I-WeBs (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 164 Shoveler were estimated to be using this SPA (4 year mean of peak counts for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 345 Shoveler used the SPA during the period 2017/18 - 2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population increase of 110% since the baseline period, which is in contrast to the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact
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	Foraging habitats include a range of wetlands, such as marshes, rivers, flood-waters, lakes, reservoirs, lagoons and estuaries, as well as grasslands. Shoveler are omnivorous and primarily forage at the surface (dabbling or upending) but also dive. The species demonstrates a highly specialised filter-feeding behaviour which allows it to consume a wide variety of planktonic prey items, including crustaceans, molluscs, insects, larvae and various plant materials

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. When roosting overnight, Shoveler primarily utilise wetlands (see foraging habitats). Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
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Conservation Objectives for : River Little Brosna Callows SPA [004086]

A140 Golden Plover *Pluvialis apricaria*

To maintain the Favourable conservation condition of Golden Plover at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Golden Plover in Ireland has declined by 54% from 1994/95 to 2019/20, as monitored via I-WeBS (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 10,577 Golden Plover were estimated to be using this SPA (4 year mean of peak counts from aerial data for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 12,818 Golden Plover used the SPA during the period 2017/18 - 2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population increase of 21% since the baseline period, which is in contrast to the national trend
Winter spatial distribution	Winter spatial distribution	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors
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	This species forages exclusively at ground level and relies primarily on surface and sub-surface dwelling invertebrate prey, consuming a wide variety of prey items. The species is reliant on open habitats, including a wide range of wetland habitats such as the edges of lakes, turloughs, river floodplains, lagoons, estuaries, intertidal flats and other coastal wetlands, as well as grasslands (wet grassland, semi-improved and improved grasslands), stubble fields and ploughed farmlands. While Golden Plover primarily forage diurnally, the species is also known to feed nocturnally on clear and moonlit nights

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Golden Plover roost exclusively at ground level. Roosting is a critical ecological requirement for the wintering population. When roosting overnight, this species typically utilises a similar range of habitats as noted for foraging. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

A142 Lapwing *Vanellus vanellus*

To maintain the Favourable conservation condition of Lapwing at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Lapwing in Ireland has declined by 63% from 1994/95 to 2019/20, as monitored via I-WeBS (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 6,552 Lapwing were estimated to be using this SPA (3 year mean of peak counts from aerial surveys during the period 1995/96 - 1999/2000; see NPWS, 2013). More recent data showed a population of 7,841 Lapwing used the SPA during the period 2017/18 - 2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population increase of 20% since the baseline period, which is in contrast to the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors
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	This species forages exclusively at ground level and relies primarily on surface and sub-surface dwelling invertebrate prey, consuming a wide variety of prey items. The species is reliant on open habitats, including a wide range of wetland habitats such as the edges of lakes, turloughs, river floodplains, lagoons, estuaries, intertidal flats and other coastal wetlands, as well as grasslands (wet grassland, semi-improved and improved grasslands) and ploughed farmlands. While Lapwing feed primarily diurnally, the species is also known to feed nocturnally on clear and moonlit nights

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Lapwing roost exclusively at ground level. Roosting is a critical ecological requirement for the wintering population. When roosting overnight, this species typically utilises a similar range of habitats as noted for foraging. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A156 Black-tailed Godwit *Limosa limosa*

To maintain the Favourable conservation condition of Black-tailed Godwit at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of wintering Black-tailed Godwit in Ireland has increased by 92% from 1994/95 to 2019/20, as monitored via I-WeBS (Kennedy et al., 2022). During the baseline assessments to inform SPA designation, 2,900 Black-tailed Godwit were estimated to be using this SPA (4 year mean of peak counts for baseline period 1995/96 to 1999/2000; see NPWS, 2013). More recent data showed a population of 5,691 Black-tailed Godwit used the SPA during the period 2017/18 -2021/22 (4 year mean of peak counts from I-WeBS monitoring, excluding 2020/21). This represents an estimated population increase of 96% since the baseline period, which is similar to the national trend
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors

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	This species forages exclusively at ground level and avoids tall, dense vegetation and water deeper than it can stand in. The species relies primarily on surface and sub-surface dwelling invertebrate prey, but also consumes plant materials (e.g. cereal grain). This species consumes a wide variety of invertebrate prey, including polychaete worms, molluscs, crabs, amphipods and larvae (e.g. of Tipulidae). The species is reliant on open habitats, including a wide range of wetland habitats, such as marshes, the shores of lakes and turloughs, river floodplains, lagoons, intertidal estuarine flats (preferring mudflats) and other coastal wetlands, as well as grasslands (wet grassland, semi-improved and improved grasslands)
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	This species roosts exclusively at ground level. Roosting is a critical ecological requirement for the wintering population. When roosting overnight, this species typically utilises a similar range of habitats as noted for foraging. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the Favourable conservation condition of Black-headed Gull at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national waterbird monitoring scheme (Irish Wetland Bird Survey, I-WeBS) does not comprehensively monitor this population and therefore robust national population estimates and trends cannot be generated (Lewis et al., 2019). During the baseline assessments to inform SPA designation, 1,939 Black-headed Gull were estimated to be using this SPA (2 year mean of peak counts from aerial surveys for the baseline period 1999/2000 to 2000/2001; see NPWS, 2013). As I-WeBS does not typically cover wintering gull species, there are insufficient data available to generate a more recent population estimate nor to estimate population trends for this site
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain), which can negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors
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	Black-headed Gull diet can be both broad and opportunistic, with a general tendency towards natural food sources as opposed to anthropogenic food sources. Food items include both aquatic and terrestrial insects, earthworms and plant material (e.g. seeds) (Burger et al., 2020). Key wintering habitats include both wetlands and surrounding agricultural areas, and the species may also utilise grasslands/green areas in urban areas. This species tends to occur more frequently in coastal habitats but is also common inland

Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. Black-headed Gull rely primarily on wetlands or waterbodies for roosting. Open areas adjacent to such areas may also be important. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat

Conservation Objectives for : River Little Brosna Callows SPA [004086]

A395 Greenland White-fronted Goose *Anser albifrons flavirostris*

To restore the Favourable conservation condition of Greenland White-fronted Goose at the River Little Brosna Callows SPA which is defined by the following list of attributes and targets:

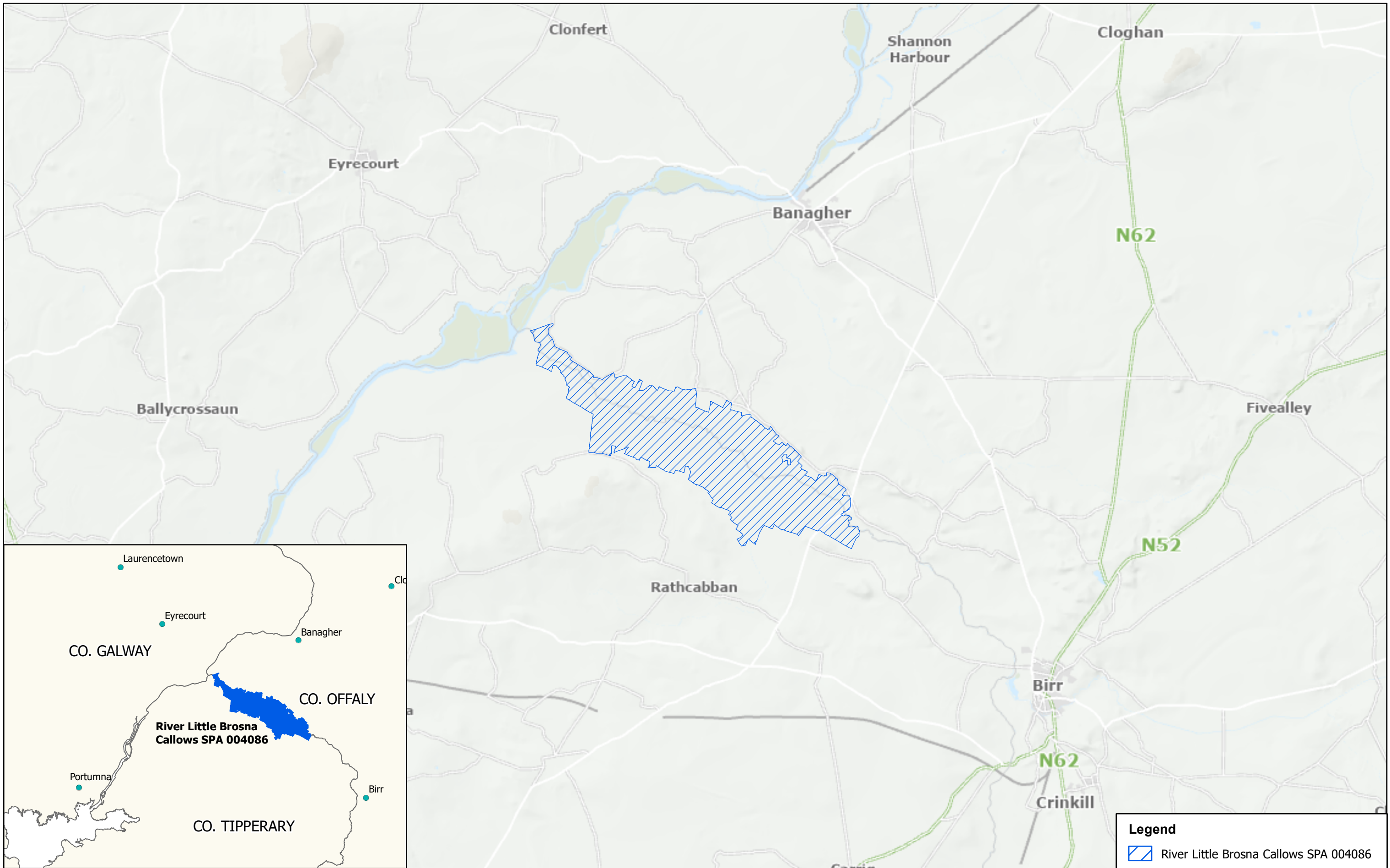
Attribute	Measure	Target	Notes
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	The national population of Greenland White-fronted Goose has declined by 13% between 1985 and 2018 (EEA, 2019). It is understood that a single flock of Greenland White-fronted Goose uses the River Little Brosna Callows SPA and the Dovegrove Callows SPA (see NPWS, 2013). During the baseline assessment to inform SPA designation, 527 geese were estimated to be using the River Little Brosna Callows SPA and the Dovegrove Callows SPA (5 year mean of peak counts for baseline period 1994/95 to 1998/99). More recent data showed a population of 180 Greenland White-fronted Goose used the River Little Brosna Callows SPA and Dovegrove Callows SPA (5 year mean of peak counts 2018/19 to 2022/23; see Fox et al., 2019, 2020, 2021, 2022 and 2023). This represents a population decline of 66% since the baseline period
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas are likely to vary throughout the season, for example, due to variation in land management practices or the abundance of resources available (due to natural variation and other factors). This will affect the spatio-temporal patterns of use of the habitats by the wintering population
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of winter mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends (see, for example, Madsen and Fox, 1995). 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
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the wintering population, and it may require access to other SPAs or sites for certain activities, such as foraging when preferred foraging areas are unavailable due to disturbance, extensive flooding, or other factors

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	This species is a grazer, feeding on a wide range of vegetation. Key forage materials include roots, tubers (such as potatoes), shoots (such as winter wheat), stolons, rhizomes, leaves (such as grasses), and seed such as (spilled) grain. Key habitats include peat bogs (including raised bogs and blanket bogs), grasslands (such as wet grassland, callows, semi-improved grassland, and intensive grassland), arable stubble, winter cereal fields, coastal grasslands, and occasionally salt marsh. In general, the foraging distance of wintering Greenland White-fronted Goose from night roosts is estimated at 5km to 8km (Scottish Natural Heritage, 2016), although this will vary depending on site and landscape
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	Roosting is a critical ecological requirement for the wintering population. Overnight roosting habitat mainly consists of permanent waterbodies, such as lakes, estuaries, bays, and other open waterbodies. When roosting in waterbodies, this species can roost on above-water features such as sandbanks. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members. A lack of sufficient and suitable roosting habitats can result in increased mortality risk, whether indirectly (e.g. via increased energy expenditure travelling to/from roost sites) or directly (e.g. via increased predation risk), or reduction in site use; this would ultimately affect the achievement of targets for population trend and/or spatial distribution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	The wintering population can make extensive use of suitable habitats in important areas outside the SPA, for foraging and roosting. The extent, availability and quality of these supporting habitats may be of importance for the resilience of the SPA population. Suitable supporting habitats include those highlighted in the attributes for foraging and roosting habitat


A999 Wetlands

To maintain the wetland habitats at the River Little Brosna Callows SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas. This is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Wetland habitat area	Hectares	No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation	Any significant loss to the wetland habitat within the SPA would likely negatively impact the regularly-occurring migratory waterbirds that utilise this wetland habitat. Such loss of wetland habitat would likely reduce the diversity and abundance of waterbird species that the wetland can support. This, in turn, could negatively impact the Conservation Objectives for waterbird species listed as Special Conservation Interests in the SPA or other regularly-occurring migratory waterbird species
Wetland habitat quality and functioning	Quality and function of the wetland habitat	No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation	Any significant impact on the quality, functioning and accessibility of the wetland habitat within the SPA would likely negatively impact the regularly-occurring migratory waterbirds that utilise this wetland habitat. Impacts on wetland quality, functioning and accessibility would likely reduce the diversity and abundance of waterbird species that the wetland can support. This, in turn, could negatively impact the Conservation Objectives for waterbird species listed as Special Conservation Interests in the SPA or other regularly-occurring migratory waterbird species



Legend

 River Little Brosna Callows SPA 004086




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

**MAP 1:
RIVER LITTLE BROSNA CALLOWS SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION**

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

**SITE CODE:
SPA 004086; version 3
CO. OFFALY, TIPPERARY**

0 0.5 1 2 Kilometres

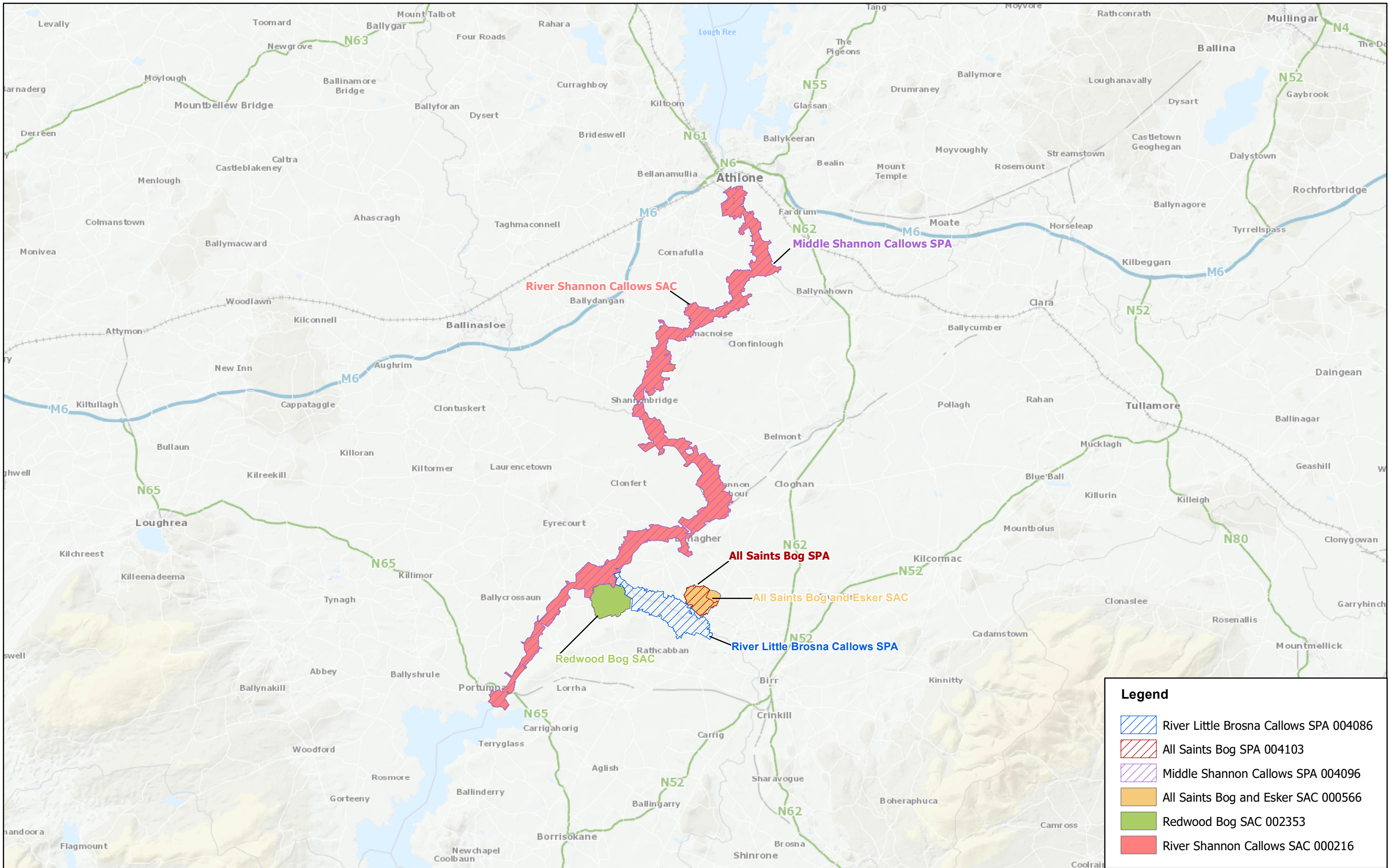


The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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**Map version 1
Date: March 2024**



Legend

-  River Little Brosna Callows SPA 004086
-  All Saints Bog SPA 004103
-  Middle Shannon Callows SPA 004096
-  All Saints Bog and Esker SAC 000566
-  Redwood Bog SAC 002353
-  River Shannon Callows SAC 000216