

National Parks and Wildlife Service

Conservation Objectives Series

Tacumshin Lake SPA 004092



NPWS

An tSeirbhís Páirceanna
Náisiúnta agus Fiadhúlra
National Parks and Wildlife
Service

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Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

* indicates a priority habitat under the Habitats Directive

004092	Tacumshin Lake SPA
A004	Little Grebe <i>Tachybaptus ruficollis</i>
A037	Bewick's Swan <i>Cygnus columbianus bewickii</i>
A038	Whooper Swan <i>Cygnus cygnus</i>
A050	Wigeon <i>Anas penelope</i>
A051	Gadwall <i>Anas strepera</i>
A052	Teal <i>Anas crecca</i>
A054	Pintail <i>Anas acuta</i>
A056	Shoveler <i>Anas clypeata</i>
A061	Tufted Duck <i>Aythya fuligula</i>
A125	Coot <i>Fulica atra</i>
A140	Golden Plover <i>Pluvialis apricaria</i>
A141	Grey Plover <i>Pluvialis squatarola</i>
A142	Lapwing <i>Vanellus vanellus</i>
A156	Black-tailed Godwit <i>Limosa limosa</i>
A999	Wetlands

Please note that this SPA overlaps with Tacumshin Lake SAC (000709) and is adjacent to Lady's Island Lake SAC (000704), Carnsore Point SAC (002269) and Seas off Wexford SPA (004237). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent and overlapping sites as appropriate.

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	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
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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
<hr/>	
Year :	2018
Title :	Habitat-and species mediated short-and long-term distributional changes in waterbird abundance linked to variation in European winter weather
Author :	Pavón-Jordán, D.; Clausen, P.; Dagys, M.; Devos, K.; Encarnação, V.; Fox, A.D.; Frost, T.; et al.
Series :	Diversity and Distributions, 1-15
<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
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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
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Year :	2020
Title :	Little Grebe (<i>Tachybaptus ruficollis</i>), version 1.0. In Birds of the World (del Hoyo J., Elliott A., Sargatal J., Christie D.A., de Juana E., Editors)
Author :	Llimona, F.; del Hoyo, J.; Christie, D.A.; Jutglar, F.; Garcia, E.F.J.; 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 :	2020
Title :	Black-bellied Plover (<i>Pluvialis squatarola</i>), version 1.0. In Birds of the World (S.M. Billerman, Editor)
Author :	Poole, A.F.; Pyle, P.; Patten, M.A.; Paulson, D.R.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2020
Title :	Gadwall (<i>Mareca strepera</i>), version 1.0. In Birds of the World (S.M. Billerman, Editor)
Author :	Leschack, C.R.; McKnight, S.K.; Hepp, G.R.
Series :	Cornell Lab of Ornithology, Ithaca, NY, USA
Year :	2021
Title :	Population size, breeding success and habitat use of Whooper Swan <i>Cygnus cygnus</i> and Bewick's Swan <i>Cygnus columbianus bewickii</i> in Ireland: results of the 2020 International Swan Census
Author :	Burke, B.; McElwaine, J.G.; Fitzgerald, N.; Kelly, S.B.A.; McCulloch, N.; Walsh, A.J.; Lewis, L.J.
Series :	Irish Birds 43: 57-70
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

Conservation Objectives for : Tacumshin Lake SPA [004092]

A004 Little Grebe *Tachybaptus ruficollis*

To maintain the Favourable conservation condition of Little Grebe at Tacumshin Lake 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 Little Grebe in Ireland has increased by 38% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Little Grebe that used Tacumshin SPA increased by 11% between winters 1995/96 and 2019/20. This result is similar to the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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	Little Grebe are a diving waterbird, diving to depths of approximately 1m, occasionally 2m (Llimona et al., 2020), and feed predominantly on animal material, including a range of invertebrates (particularly insect larvae), small fish and molluscs (Crowe et al., 2009). Key foraging habitat reflects that of prey species and includes sheltered waters such as ponds, edges of lakes and slow flowing rivers and canals, particularly where the water is richly vegetated with dense plant material, as well as estuaries, lagoons and sheltered coasts

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	When roosting overnight, the species uses a range of waterbodies, as noted for foraging habitat. Roosting is a critical ecological requirement for the wintering population. 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 : Tacumshin Lake SPA [004092]

A037

Bewick's Swan *Cygnus columbianus bewickii*

To restore the Favourable conservation condition of Bewick's Swan at Tacumshin Lake 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 Bewick's Swan wintering in Ireland decreased by 99% from 1991 to 2015 (Lewis et al., 2019). During the baseline assessments to inform SPA designation, 235 Bewick's Swan were estimated to be using this SPA (5 year mean of peak counts for period 1995/96 - 1999/2000; see NPWS, 2013). A single Bewick's Swan was estimated to be using Tacumshin Lake SPA in recent years (5 year mean of peak counts from I-WeBS monitoring for the period 2016/17 - 2020/21). This represents an estimated population decrease of 99% since the baseline period, in line with 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. 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, shallow tidal areas, marshes, and other wetland habitats

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 consists primarily of permanent waterbodies, such as rivers, lakes, 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

A038 Whooper Swan *Cygnus cygnus*

To maintain the Favourable conservation condition of Whooper Swan at Tacumshin Lake 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 in the long term, with a 40% population increase from 1991 to 2015 (Lewis et al., 2019). During the baseline assessments to inform SPA designation, 213 Whooper Swan were estimated to be using this SPA (5 year mean of peak counts for baseline period (1995/96 - 1999/2000); see NPWS, 2013). A population of 260 Whooper Swan was estimated to be using the Tacumshin Lake SPA in recent years (5 year mean peak of counts from I-WeBS monitoring for the period 2016/17-2020/21; note the 2019/20 count was derived from the International Swan Census (Burke et al., 2021)). This represents an estimated population increase of 22%, 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) 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 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 consists primarily 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

A050 Wigeon *Anas penelope*

To restore the Favourable conservation condition of Wigeon at Tacumshin Lake 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 19% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Wigeon that used Tacumshin Lake SPA decreased by 46% between winters 1995/96 and 2019/20. This decline is significantly greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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 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	Wigeon rely primarily on wetlands or waterbodies for roosting. 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 : Tacumshin Lake SPA [004092]

A051 Gadwall *Anas strepera*

To restore the Favourable conservation condition of Gadwall at Tacumshin Lake 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 Gadwall in Ireland has increased by 25% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Gadwall that used Tacumshin Lake SPA decreased by 35% between winters 1995/96 and 2019/20. This result is in contrast to the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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, flooded areas, lakes, estuaries and lagoons, as well as grasslands. In winter, Gadwall are primarily herbivorous, dabbling for leaves, stems, seeds and roots of plants in surface waters. Gadwall will also consume algae, aquatic insects, crustaceans, and molluscs, and they occasionally graze on grasslands or consume cereal grain where adjacent to wetlands. The species feeds from the water surface to 30cm below the surface, over beds of submerged aquatic vegetation, by dabbling, submerging the head or by upending. Kleptoparasitism from other waterbirds is also noted. The species may feed both diurnally and nocturnally (Leschack 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. When roosting overnight, Gadwall 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 : Tacumshin Lake SPA [004092]

A052

Teal *Anas crecca*

To maintain the Favourable conservation condition of Teal at Tacumshin Lake 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 20% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Teal that used Tacumshin Lake SPA increased by 31% between winters 1995/96 and 2019/20. This result is similar to the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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	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 spp.</i>) (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. They feed by day where they are safe from disturbance
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 : Tacumshin Lake SPA [004092]

A054 Pintail *Anas acuta*

To restore the Favourable conservation condition of Pintail at Tacumshin Lake 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 14% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Pintail that used Tacumshin Lake SPA declined by 30% between winters 1995/96 and 2019/20. This result is greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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	Pintail are a dabbling duck that feed primarily by dabbling and upending, and less often diving, in shallow water, usually up to 30cm depth. Foraging habitats include freshwater, brackish, intertidal and marine wetlands, including lagoons and marshes, as well as estuaries and bays on sheltered coasts, and less often on agricultural habitats such as stubble fields. This species feeds predominantly on aquatic plants and their seeds, with aquatic insects, crustaceans, earthworms, molluscs and (spilled) grain supplementing the diet (Crowe et al., 2009; 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. When roosting overnight, Pintail can form large roosting flocks using habitats such as estuaries, brackish coastal lagoons, or large inland lakes or permanent waterbodies (see foraging habitats). 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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A056 Shoveler *Anas clypeata*

To restore the Favourable conservation condition of Shoveler at Tacumshin Lake 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 11% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Shoveler that used Tacumshin Lake SPA decreased by 24% between winters 1995/96 and 2019/20. This result is greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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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A061 Tufted Duck *Aythya fuligula*

To restore the Favourable conservation condition of Tufted Duck at Tacumshin Lake 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 Tufted Duck 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). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Tufted Duck that used Tacumshin Lake SPA decreased by 81% between winters 1995/96 and 2019/20. This result is significantly greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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	This species is omnivorous and forages primarily in open freshwater or brackish waterbodies. Molluscs are the main food source, and hence the species prefers shallow areas (to c.15m depth). The species also consumes fish, insects, amphibians and various plant materials (leaves, shoots, tubers, seeds). Tufted Duck feed primarily by diving, but to a lesser extent will also feed at the surface of waterbodies, wade in shallows, and forage onshore (e.g. for cereal grain). Utilised habitats include lakes, rivers, ponds, reservoirs, marshes, estuaries, lagoons, and (less so) coastal areas. In winter, individual Tufted Duck can forage alone or as part of large aggregations

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	When roosting overnight, the species uses a range of waterbodies, as noted for foraging habitat. Roosting is a critical ecological requirement for the wintering population. 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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A125 Coot *Fulica atra*

To restore the Favourable conservation condition of Coot at Tacumshin Lake 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 Coot in Ireland has declined by 24% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Coot that used Tacumshin Lake SPA declined by 89% between winters 1995/96 and 2019/20. This result is significantly greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values. Population declines are likely linked, at least in part, to distribution shifts driven by climate change (see Pavón-Jordan et al., 2018)
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	This species is omnivorous; plants dominate the diet but it will also take invertebrate and vertebrate prey. It forages primarily in waterbodies, rarely foraging far from them. The species feeds at the surface and sub-surface of waterbodies by upending and diving. It prefers shallow, open, slow moving waterbodies with marginal, floating, emergent or bottom vegetation. Foraging habitats utilised by the Coot include rivers, canals, lakes, reservoirs, ponds, lagoons, estuaries, drainage channels and flooded lands. In winter, individual Coot can forage alone or as part of large aggregations

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	When roosting overnight, Coot use a range of waterbodies, as noted for foraging habitat. Roosting is a critical ecological requirement for the wintering population. 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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A140 Golden Plover *Pluvialis apricaria*

To restore the Favourable conservation condition of Golden Plover at Tacumshin Lake 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 55% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Golden Plover that used Tacumshin Lake SPA declined by 26% between winters 1995/96 and 2019/20. This result is similar to the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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 forages exclusively at ground level and relies primarily on surface and sub-surface dwelling invertebrate prey, consuming a wide variety of prey items, including pupae and larvae. 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 in 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

Conservation Objectives for : Tacumshin Lake SPA [004092]

A141 Grey Plover *Pluvialis squatarola*

To restore the Favourable conservation condition of Grey Plover at Tacumshin Lake 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 Grey Plover in Ireland has declined by 58% 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, 85 Grey Plover were estimated to be using this SPA (5 year mean of peak counts for baseline period 1995/96 - 1999/2000; see NPWS, 2013). A population of 5 Grey Plover was estimated to be using the Tacumshin Lake SPA in recent years (5 year mean peak of counts from I-WeBS monitoring for the period 2016/17 - 2020/21). This represents an estimated population decline of 94% 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
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	Grey Plover feed on a wide variety of intertidal invertebrates, particularly polychaete worms, molluscs, amphipods and crustaceans. The distribution of this species is primarily coastal in Ireland and foraging habitat often consists of estuaries, beaches and sandy or muddy tidal flats, most commonly along eastern and southern coasts. This species typically does not form feeding flocks, with birds rarely observed with congeners (Poole 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. When roosting overnight, this species typically utilises a similar range of habitats as noted for foraging, particularly sheltered environments. They regularly roost among dense flocks during high tide. 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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A142 Lapwing *Vanellus vanellus*

To restore the Favourable conservation condition of Lapwing at Tacumshin Lake 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 64% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Lapwing that used Tacumshin Lake SPA declined by 59% between winters 1995/96 and 2019/20. This result is similar to the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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 forages exclusively at ground level and relies primarily on surface and sub-surface dwelling invertebrate prey, consuming a wide variety of prey items, including pupae and larva. The species locates prey both visually and aurally. 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 : Tacumshin Lake SPA [004092]

A156 Black-tailed Godwit *Limosa limosa*

To maintain the Favourable conservation condition of Black-tailed Godwit at Tacumshin Lake 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 93% from 1994/95 to 2019/20, as monitored via the Irish Wetland Bird Survey (I-WeBS; Kennedy et al., 2022). In a robust statistical analysis of I-WeBS data, Kennedy et al. (2022) determined that the population of Black-tailed Godwit that used Tacumshin Lake SPA increased by 193% between winters 1995/96 and 2019/20, significantly greater than the reported national population trend. In their analyses, Kennedy et al. (2022) used indices of the total count of a given species across the entire winter period, providing a more comprehensive assessment of change in the population that used the site, compared to approaches such as a comparison of 5 year mean peak values
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 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 insect 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

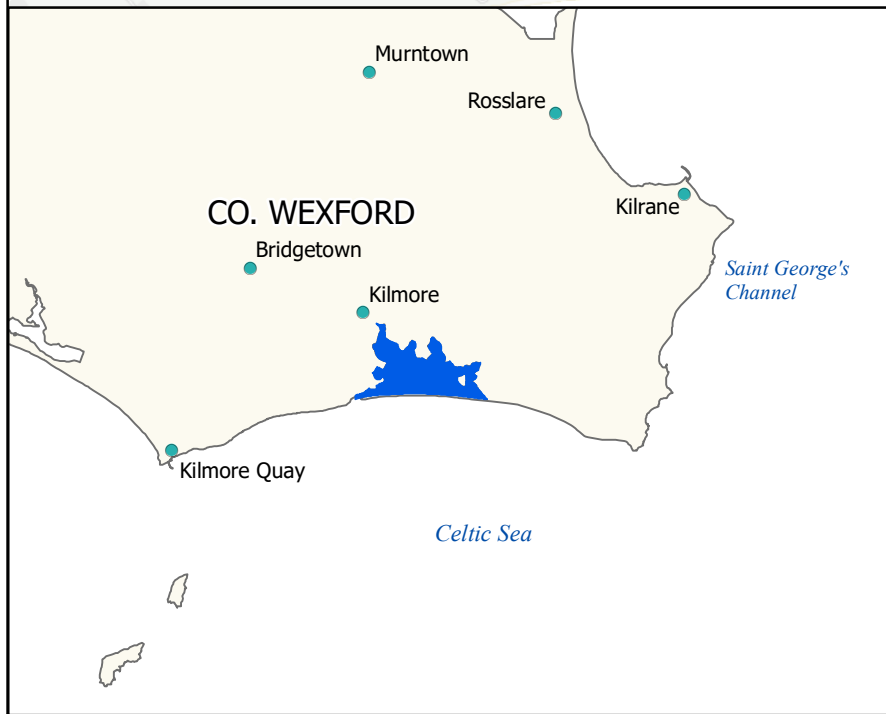
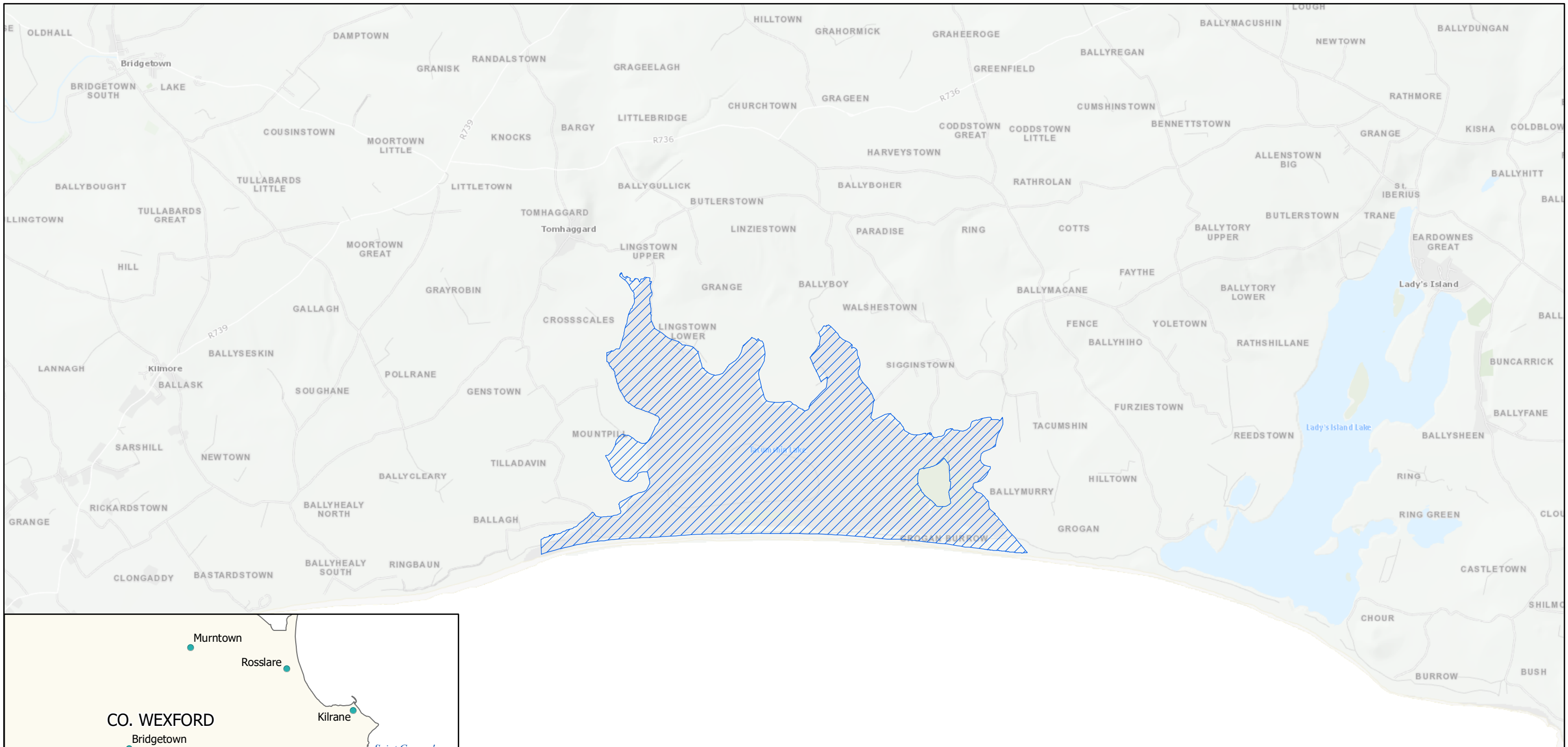
Conservation Objectives for : Tacumshin Lake SPA [004092]

A999


Wetlands

To maintain the Favourable conservation condition of Wetland habitats in Tacumshin Lake 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

 Tacumshin Lake SPA 004092




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

**MAP 1:
 TACUMSHIN LAKE SPA
 CONSERVATION OBJECTIVES
 SPA DESIGNATION**

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

**SITE CODE:
 SPA 004092; version 3
 CO. WEXFORD**

0 0.25 0.5 1 Kilometres



The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuimhach ginearálta. Féadfar athbheithníthe a déanamh ar theorainneacha na gceantar comharthaithe. © Folaíonn sé rannán Náisiúnta Mapála de shonraí Tailte Éireann arna atáirgeadh faoin rannán mapála Náisiúnta d'uimhir cheadúnais Tailte Éireann CYAL50351092



**Map version 1
 Date: March 2024**



Legend

-  Tacumshin Lake SPA 004092
-  Seas off Wexford SPA 004237
-  Tacumshin Lake SAC 000709
-  Lady's Island Lake SAC 000704
-  Carnsore Point SAC 002269