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Conservation Objectives Series

Carrowkeel Turlough SAC 000475

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
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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***

000475	Carrowkeel Turlough SAC

3180	Turloughs*

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	1992
Title :	Turloughs over 10ha - Vegetation survey and evaluation
Author :	Goodwillie, R.N.
Series :	Unpublished report to NPWS
Year :	2016
Title :	Ireland Red List No. 10: Vascular Plants
Author :	Wyse Jackson, M.; FitzPatrick, Ú.; Cole, E.; Jebb, M.; McFerran, D.; Sheehy Skeffington, M.; Wright, M.
Series :	Ireland Red List Series, NPWS
Year :	2017
Title :	Conservation objectives supporting document: Turloughs* and Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation
Author :	O Connor, Á.
Series :	Conservation objectives supporting document

Other References

Year :	1986
Title :	A study of the geology, hydrology and geomorphology of turloughs
Author :	Coxon, C.
Series :	Unpublished Ph.D. Thesis, Trinity College Dublin
Year :	2005
Title :	Guidance on the Pressures and Impacts on Groundwater Dependent Terrestrial Ecosystems. Risk Assessment Sheet GWDTERA2a - Turloughs
Author :	Working Group on Groundwater (Turlough sub-committee)
Series :	Water Framework Directive Pressures and Impact Assessment Methodology - Guidance Document No. GW9

Spatial data sources

Year :	2020
Title :	Goodwillie (1992) Turloughs over 10 hectares: Vegetation survey and evaluation
GIS Operations :	Goodwillie map scanned and georectified. Turlough as outlined on map digitised. New turlough dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	3180 (map 2)

Conservation Objectives for : Carrowkeel Turlough SAC [000475]

3180 Turloughs*

To maintain the favourable conservation condition of Turloughs in Carrowkeel Turlough SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Carrowkeel Turlough was studied by Coxon (1986) and Goodwillie (1992). The turlough area in the SAC has been calculated as 29.3ha based on Goodwillie (1992). See map 2 for known extent. Goodwillie (1992) categorised Carrowkeel turlough as being of national ecological importance. See O Connor (2017) for information on all attributes and targets
Habitat distribution	Occurrence	No decline, subject to natural processes	See map 2
Hydrological regime	Various	Maintain appropriate natural hydrological regime necessary to support the natural structure and functioning of the habitat	Hydrological regime is sub-divided into more detailed attributes (groundwater contribution, flood duration, frequency, area and depth, and permanently flooded/wet areas) and targets in O Connor (2017). The hydrology of Carrowkeel Turlough was studied by Coxon (1986) and Goodwillie (1992). Goodwillie (1992) reported a long-lasting, but not permanent, lake in the southern half of the basin, c.0.5m deeper than the rest of the turlough. A drainage ditch that extended throughout the length of the basin, linked a pond under a farm yard in the north of the site to the lake and then ran under a bridge to the south-west. Goodwillie (1992) also recorded that there was no sign of significant external drainage, although there was some evidence that surplus water may be taken away at the south-west end of the site at certain times of the year
Soil type	Hectares	Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota	The turlough habitat in the SAC has a range of soils. The lower land is covered by silty peat, especially at the north-eastern end of the site, and some superficial marl was recorded in the lake by Goodwillie (1992). In the remainder of the site there is usually more than 60cm of sandy drift on top of clay (Coxon, 1986). For further information on the soil type in Carrowkeel Turlough see Coxon (1986) and Goodwillie (1992)
Soil nutrient status: nitrogen and phosphorus	N and P concentration in soil	Maintain nutrient status appropriate to soil types and vegetation communities	
Physical structure: bare ground	Presence	Maintain sufficient wet bare ground, as appropriate	
Chemical processes: calcium carbonate deposition and concentration	Calcium carbonate deposition rate/soil concentration	Maintain appropriate calcium carbonate deposition rate and concentration in soil	The areas of marl reported for Carrowkeel Turlough by Goodwillie (1992) will have a high calcium carbonate content
Active peat formation	Flood duration	Maintain active peat formation	Silty peat in lower areas of the turlough is a feature of the habitat in this SAC (Goodwillie, 1992)

Water quality	Various	Maintain appropriate water quality to support the natural structure and functioning of the habitat	Water quality is sub-divided into more detailed attributes (nutrients, colour, phytoplankton and epiphyton biomass) and targets in O Connor (2017). See also The European Communities Environmental Objectives (Surface Waters) (Amendment) Regulations 2019. Goodwillie (1992) recorded that there was likely to be some nutrient input from agricultural sources at the north-eastern end of the site, and possibly also from Carrowkeel village. Carrowkeel Turlough should, typically, be naturally oligotrophic (Working Group on Groundwater (Turlough sub-committee), 2005). The targets for oligotrophic turloughs are ≤20µg/l total phosphorus and trace/absent epiphyton as algal mats (<2% cover), to reach favourable condition
Vegetation composition: area of vegetation communities	Hectares	Maintain area of sensitive and high conservation value vegetation communities/units	The vegetation of Carrowkeel Turlough is diverse and of the vegetation communities mapped by Goodwillie (1992), a sedge fen community (5D), *Polygonum amphibium* community (8A), wet *Carex nigra* community (6B), and reedbeds (11a community) were the most common types recorded. Goodwillie (1992) also recorded *Ranunculus trichophyllus, Apium inundatum* and *Potamogeton natans* in areas of open water
Vegetation composition: vegetation zonation	Distribution	Maintain vegetation zonation/mosaic characteristic of the turlough	There is a mosaic of vegetation communities within the upper vegetation zone at Carrowkeel Turlough, including the common sedge fen community (5D) and less common sedge grassland (3B community) that were both recorded by Goodwillie (1992). At the lower levels of the turlough the wet *Carex nigra* community (6B) recorded by Goodwillie (1992) was found on slightly drier ground than the *Polygonum amphibium* community (8A) that covered much of the lower ground, and this gave way to a reedbed community (11a) with *Scirpus lacustris* and open water
Vegetation structure: sward height	Centimetres	Maintain sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough	Generally non-intensive grazing was recorded within the Carrowkeel Turlough by Goodwillie (1992), although it was noted that some of the fields in the north-east of the site were more closely grazed by sheep
Typical species	Presence	Maintain typical species within the turlough	Typical species is sub-divided into more detailed attributes (terrestrial, wetland and aquatic plants, invertebrates and birds) and targets in O Connor (2017). One rare and notable plant species has been recorded within Carrowkeel Turlough. Goodwillie (1992) recorded *Stellaria palustris* within the turlough, listed as Least Concern in Wyse Jackson et al. (2016)
Fringing habitats: area	Hectares	Maintain marginal fringing habitats that support turlough vegetation, invertebrate, mammal and/or bird populations	
Vegetation structure: turlough woodland	Species diversity and woodland structure	Maintain appropriate turlough woodland diversity and structure	No turlough scrub or woodland was recorded for Carrowkeel Turlough by Goodwillie (1992). However, there are some areas of scrub or young woodland on the edges of the turlough that are visible on aerial photographs of the site

Pollelamagur Lake

CARROWKEEL NORTH

Claremorris

Crossboyne

CO. MAYO

Carrowkeel Turlough SAC

Hollymount

Irishtown

Ballinrobe

CO. GALWAY

Legend

Carrowkeel Turlough SAC 000475

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Department of Housing, Local Government and Heritage

MAP 1:
CARROWKEEL TURLOUGHSAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

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

SITE CODE:
SAC 000475; version 3.02. CO. MAYO

0 50 100 150 200 Metres

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 garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh OSI-NMA-014. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

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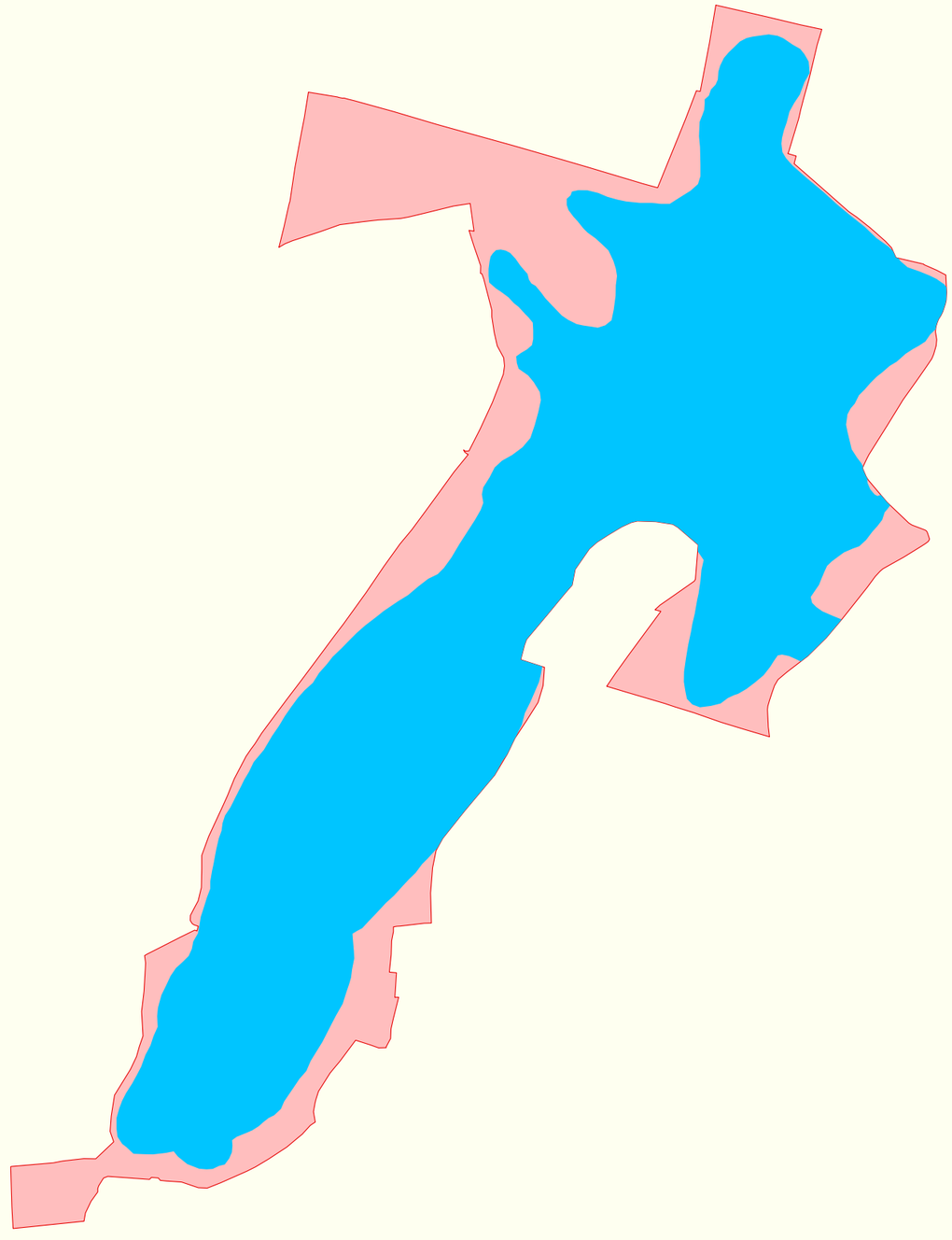
Map Version 1
Date: November 2020



Legend

- 3180 Turloughs*
- Carrowkeel Turlough SAC 000475

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Department of Housing, Local Government and Heritage

MAP 2:
CARROWKEEL TURLOUGH SAC
CONSERVATION OBJECTIVES
TURLOUGHS

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

SITE CODE:
SAC 000475; version 3.02. CO. MAYO

0 50 100 150 200 Metres

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: November 2020