

# National Parks and Wildlife Service

## *Conservation Objectives Series*

### Lough Coy SAC 002117



An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreacht  
Department of Housing,  
Local Government and Heritage

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## Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

### Notes/Guidelines:

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

## Qualifying Interests

*\* indicates a priority habitat under the Habitats Directive*

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002117      Lough Coy SAC

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3180      Turloughs\*

## Supporting documents, relevant reports & publications

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

### NPWS Documents

<b>Year :</b>	2012
<b>Title :</b>	Ireland Red List No. 8: Bryophytes
<b>Author :</b>	Lockhart, N.; Hodgetts, N.; Holyoak, D.
<b>Series :</b>	Ireland Red List series, NPWS
<b>Year :</b>	2015
<b>Title :</b>	Turlough hydrology, ecology and conservation (Part 1)
<b>Author :</b>	Waldren, S. (ed.)
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2016
<b>Title :</b>	Ireland Red List No. 10: Vascular Plants
<b>Author :</b>	Wyse Jackson, M.; FitzPatrick, Ú.; Cole, E.; Jebb, M.; McFerran, D.; Sheehy Skeffington, M.; Wright, M.
<b>Series :</b>	Ireland Red List Series, NPWS
<b>Year :</b>	2017
<b>Title :</b>	Conservation objectives supporting document: Turloughs* and Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidenton</i> p.p. vegetation
<b>Author :</b>	O Connor, Á.
<b>Series :</b>	Conservation objectives supporting document

### Other References

<b>Year :</b>	1985
<b>Title :</b>	Phytosociological and ecological studies on turloughs in the west of Ireland
<b>Author :</b>	MacGowran, B.
<b>Series :</b>	Unpublished Ph.D. Thesis, National University of Ireland, Galway
<b>Year :</b>	1992
<b>Title :</b>	A review of the scarce and threatened Coleoptera of Great Britain. Part 1. UK. Nature Conservation: 3
<b>Author :</b>	Hyman, P. S.; Parsons, M. S.
<b>Series :</b>	Joint Nature Conservation Committee, Peterborough, UK
<b>Year :</b>	1997
<b>Title :</b>	An Investigation of the Flooding Problems in the Gort–Ardrahan Area of South Galway. Ecology Baseline Study. Vols I and II.
<b>Author :</b>	Southern Water Global and Jennings O'Donovan and Partners (eds)
<b>Series :</b>	The Office of Public Works, Dublin
<b>Year :</b>	2005
<b>Title :</b>	Guidance on the Pressures and Impacts on Groundwater Dependent Terrestrial Ecosystems. Risk Assessment Sheet GWDTERA2a - Turloughs
<b>Author :</b>	Working Group on Groundwater (Turlough sub-committee)
<b>Series :</b>	Water Framework Directive Pressures and Impact Assessment Methodology - Guidance Document No. GW9
<b>Year :</b>	2005
<b>Title :</b>	An investigation of the plant, carabid, and staphylinid communities of turloughs in southeast Galway/north Clare, Ireland
<b>Author :</b>	Regan, E.C.
<b>Series :</b>	Unpublished Ph.D. Thesis, National University of Ireland, Galway

**Year :** 2005  
**Title :** Further records of carabid beetles from turloughs  
**Author :** Regan, E.C.  
**Series :** Irish Naturalists' Journal, 28(2): 59–61

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**Year :** 2011  
**Title :** The hydrology and hydroecology of turloughs  
**Author :** Naughton, O.  
**Series :** Unpublished Ph.D. Thesis, Trinity College Dublin

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**Year :** 2012  
**Title :** Groundwater flooding in Irish karst: The hydrological characterisation of ephemeral lakes (turloughs)  
**Author :** Naughton, O.; Johnston, P.M.; Gill, L.W.  
**Series :** Journal of Hydrology, 470-471: 82-97

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## Spatial data sources

<b>Year :</b>	2015
<b>Title :</b>	Turlough hydrology, ecology and conservation
<b>GIS Operations :</b>	Dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	3180 (map 2)
<hr/>	
<b>Year :</b>	2020
<b>Title :</b>	Goodwillie et al. (1997) Land vegetation in the Gort lowlands
<b>GIS Operations :</b>	Goodwillie et al. 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
<b>Used For :</b>	3180 (map 2)
<hr/>	

## Conservation Objectives for : Lough Coy SAC [002117]

### 3180 Turloughs\*

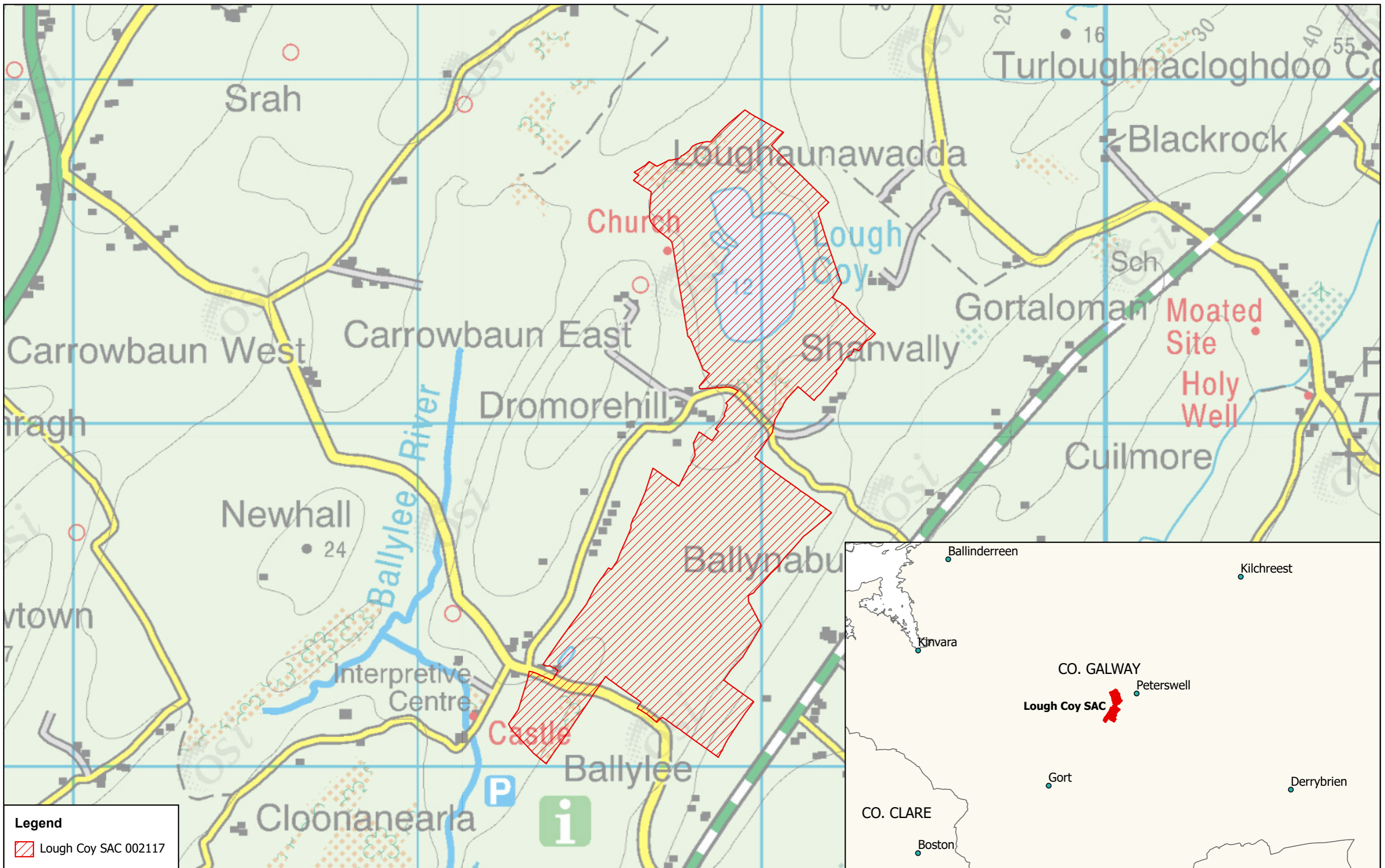
**To restore the favourable conservation condition of Turloughs in Lough Coy SAC, which is defined by the following list of attributes and targets:**

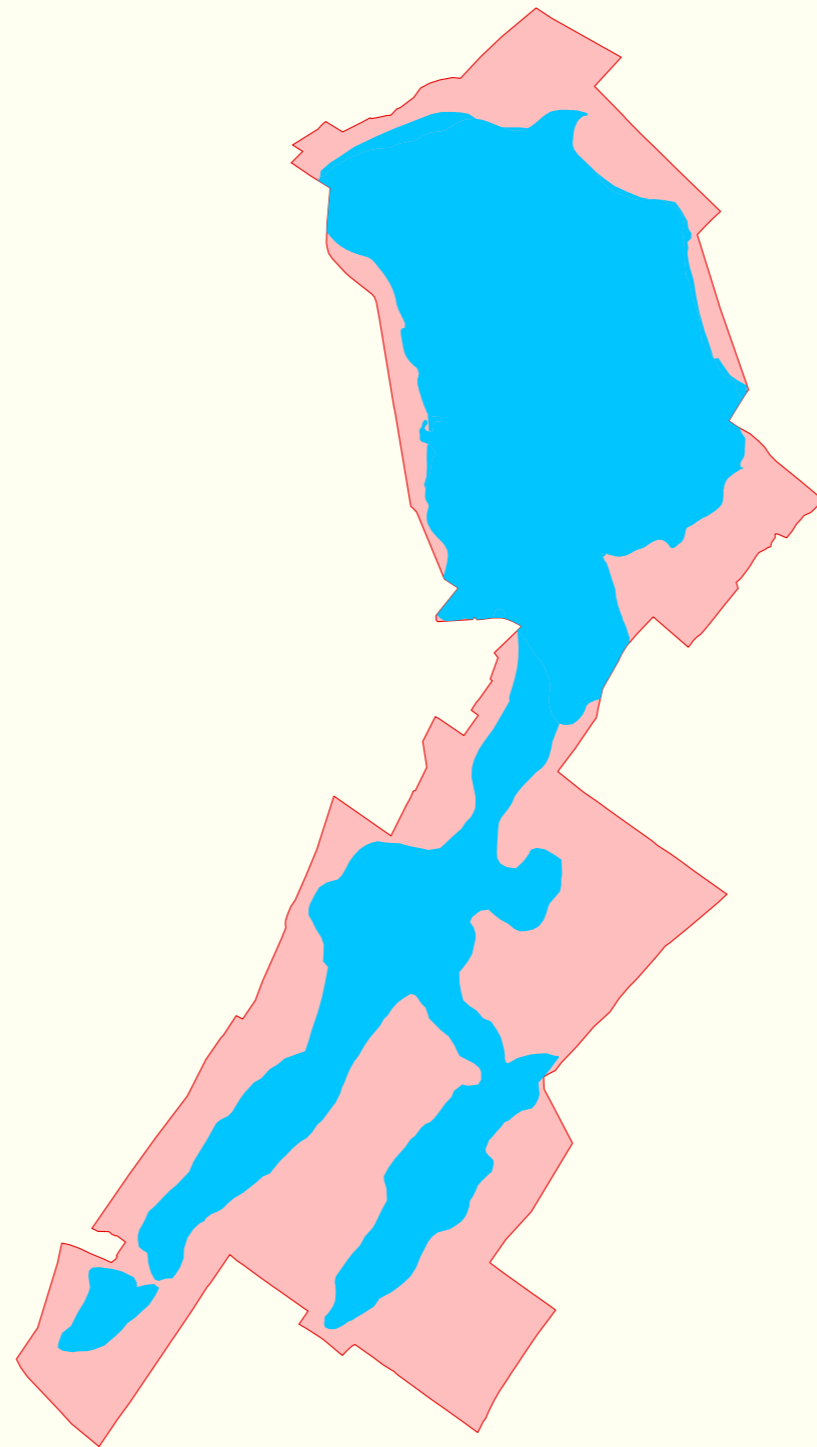
Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes.	Lough Coy turlough is a well-studied Irish turlough (MacGowran, 1985; Goodwillie et al., 1997; Regan 2005a, 2005b; Naughton, 2011; Waldren, 2015). The turlough area in the SAC has been calculated as 40.6ha based on Goodwillie et al. (1997) and Waldren (2015). See map 2 for known extent. Lough Coy turlough was assessed as being in unfavourable-inadequate (poor) conservation condition by Waldren (2015). 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 Lough Coy turlough is well studied (Naughton, 2011; Naughton et al., 2012; Waldren, 2015). The turlough was characterised by Waldren (2015) as a relatively deep, compact, bowl-shaped turlough where steep, grassy slopes surround a semi-permanent lake. The hydrological regime is flashy, with more than one significant flood event occurring on an annual basis. The hydroperiod is 187 days. Waldren (2015) assessed the hydrological function at Lough Coy turlough as Good; while some drainage work is known in the zone of groundwater contribution, it is not considered to significantly impact on the functioning of the turlough
Soil type	Hectares	Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota	The main soil types at Lough Coy turlough are very shallow, poorly drained mineral soil, surrounding alluvial mineral soil in the lower turlough basin. Small areas of very shallow, well-drained mineral soil are present at the upper edges of the turlough (Waldren, 2015). For further information on soil type in the Lough Coy turlough, see Waldren (2015)
Soil nutrient status: nitrogen and phosphorus	N and P concentration in soil	Maintain nutrient status appropriate to soil types and vegetation communities	Waldren (2015) recorded a relatively low mean total nitrogen (TN) within the soils at Lough Coy turlough of 7,069mg/kg TN and a relatively high mean total phosphorus (TP) of 1,163mg/kg TP
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	According to Waldren (2015), soils had a low calcium carbonate content of 4.0% at Lough Coy turlough. Goodwillie et al. (1997) recorded peat over marl in the southern limb of the SAC
Active peat formation	Flood duration	Maintain active peat formation	No peat soils were recorded at this turlough by Waldren (2015). All soils were described as mineral, and the mean organic matter content was low, at 14.5% (Waldren, 2015); however, Goodwillie et al. (1997) recorded peat over marl in the southern limb of the SAC



Water quality	Various	Restore 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. Lough Coy turlough had low alkalinity, high colour, mean total phosphorus of 43.3µg/l, and mean total nitrogen of 1.4mg/l (Waldren, 2015). Mean chlorophyll <i>a</i> was 5.2µg/l and the maximum was 13.5µg/l. Lough Coy turlough should, typically, be naturally oligotrophic or mesotrophic (Working Group on Groundwater (Turlough sub-committee), 2005) and requires targets of ≤20µg/l TP, <8µg/l annual mean chlorophyll <i>a</i> , <25µg/l annual maximum chlorophyll <i>a</i> , and should maintain trace/absent epiphyton as algal mats (<2% cover) to reach favourable condition
Vegetation composition: area of vegetation communities	Hectares	Maintain/restore area of sensitive and high conservation value vegetation communities/units	A diverse range of vegetation types were mapped in Lough Coy turlough by Waldren (2015), the dominant being a <i>Filipendula ulmaria-Potentilla erecta-Viola</i> sp. community in the upper slopes of the turlough, and an <i>Agrostis stolonifera-Ranunculus repens</i> community in the middle zone. An <i>Eleocharis acicularis</i> community occupied the lowest zone, just above the open water (Waldren, 2015). The <i>Filipendula ulmaria-Potentilla erecta-Viola</i> sp. and <i>Eleocharis acicularis</i> communities are of high conservation value. Goodwillie et al. (1997) recorded fen and wet grassland communities in the southern limb. See Goodwillie et al. (1997) and Waldren (2015) for further information on vegetation communities
Vegetation composition: vegetation zonation	Distribution	Maintain/restore vegetation zonation/mosaic characteristic of the turlough	Goodwillie et al. (1997) described a clear, simple zonation in the turlough basin resulting from the topography. The upper vegetation zone at Lough Coy turlough includes areas of scrub, woodland and <i>Lolium</i> grassland. Just below this, the <i>Filipendula ulmaria-Potentilla erecta-Viola</i> sp. community dominates. Moving down into the turlough the <i>Agrostis stolonifera-Ranunculus repens</i> community is common and at the lowest level of the turlough, just above the open water, the <i>Eleocharis acicularis</i> community is the dominant vegetation type. See Goodwillie et al. (1997) and Waldren (2015) for further information on vegetation communities in Lough Coy turlough
Vegetation structure: sward height	Centimetres	Maintain/restore sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough	Goodwillie et al. (1997) noted poaching by cattle on the exposed summer mud and vegetated shoreline. The grazing regime at Lough Coy turlough was reported by Waldren (2015) as intensive cattle grazing
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). Waldren (2015) recorded <i>Viola persicifolia</i> , which is listed as Near Threatened in Wyse Jackson et al. (2016). Goodwillie et al. (1997) noted <i>Limosella aquatica</i> , an FPO species, <i>Rorippa islandica</i> and the liverwort <i>Riccia cavernosa</i> . <i>Eleocharis acicularis</i> was recorded by MacGowran (1985). All are listed in red data lists as Least Concern (Wyse Jackson et al., 2016; Lockhart et al., 2012). Waldren (2015) noted <i>Alonella excisa</i> as an important aquatic invertebrate. Regan (2005) recorded four notable carabids: <i>Blethisia multipunctata</i> , <i>Chlaenius nigricomis</i> , <i>Pelophila borealis</i> and <i>Pterostichus gracilis</i> ; the first three are listed in the British Red Data Book (Hyman and Parsons, 1992). NPWS internal files note that Lough Coy is an important site for wintering waterbirds

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	There are areas of scrub and woodland noted on the edge of Lough Coy turlough (Waldren, 2015). NPWS internal files note <i>Rhamnus cathartica</i> as one of the component species of this scrub





**Legend**

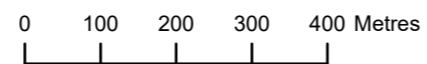
- 3180 Turloughs\*
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**An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreacht**  
Department of Housing,  
Local Government and Heritage

**MAP 2:  
LOUGH COY SAC  
CONSERVATION OBJECTIVES  
TURLOUGHS**

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

**SITE CODE:  
SAC 002117; version 3. CO. GALWAY**



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



**Map Version 1**  
Date: November 2020