

National Parks and Wildlife Service

Conservation Objectives Series

Turloughmore (Sligo) SAC 000637



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
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*

000637 Turloughmore (Sligo) 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 :	Owenmore River Catchment. Proposed Arterial Drainage Environmental Impact Assessment - Botanical and Ornithological Surveys.
Author :	Goodwillie, R.N.; Buckley, P.; Douglas, C.
Series :	Unpublished report
Year :	1992
Title :	Turloughs over 10ha - Vegetation survey and evaluation
Author :	Goodwillie, R.N.
Series :	Unpublished report to NPWS
Year :	2017
Title :	Conservation objectives supporting document: Turloughs* and Rivers with muddy banks with Chenopodium rubri p.p. and Bidention p.p. vegetation
Author :	O Connor, Á.
Series :	Conservation objectives supporting document
Year :	2019
Title :	The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments
Author :	NPWS
Series :	Conservation assessments

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
Year :	2009
Title :	Teagasc EPA soil and subsoils mapping project-final report. Volume II
Author :	Fealy, R. M.; Green, S.; Loftus, M.; Meehan, R.; Radford, T.; Cronin, C.; Bulfin, M.
Series :	Teagasc, Dublin
Year :	2014
Title :	Interim classification, harmonisation and generalisation of county soil maps of Ireland. Irish soil information system final technical report 1
Author :	Jones, R.J.A.; Hannam, J.A.; Palmer, R.C.; Truckell, I.G.; Creamer, R.E.; McDonald, E.
Series :	Report for the EPA prepared by Teagasc and Cranfield University

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)

Year : 2020
Title : OSi 1:5000 mapping
GIS Operations : Turlough boundary digitised and clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For : 3180 (map 2)

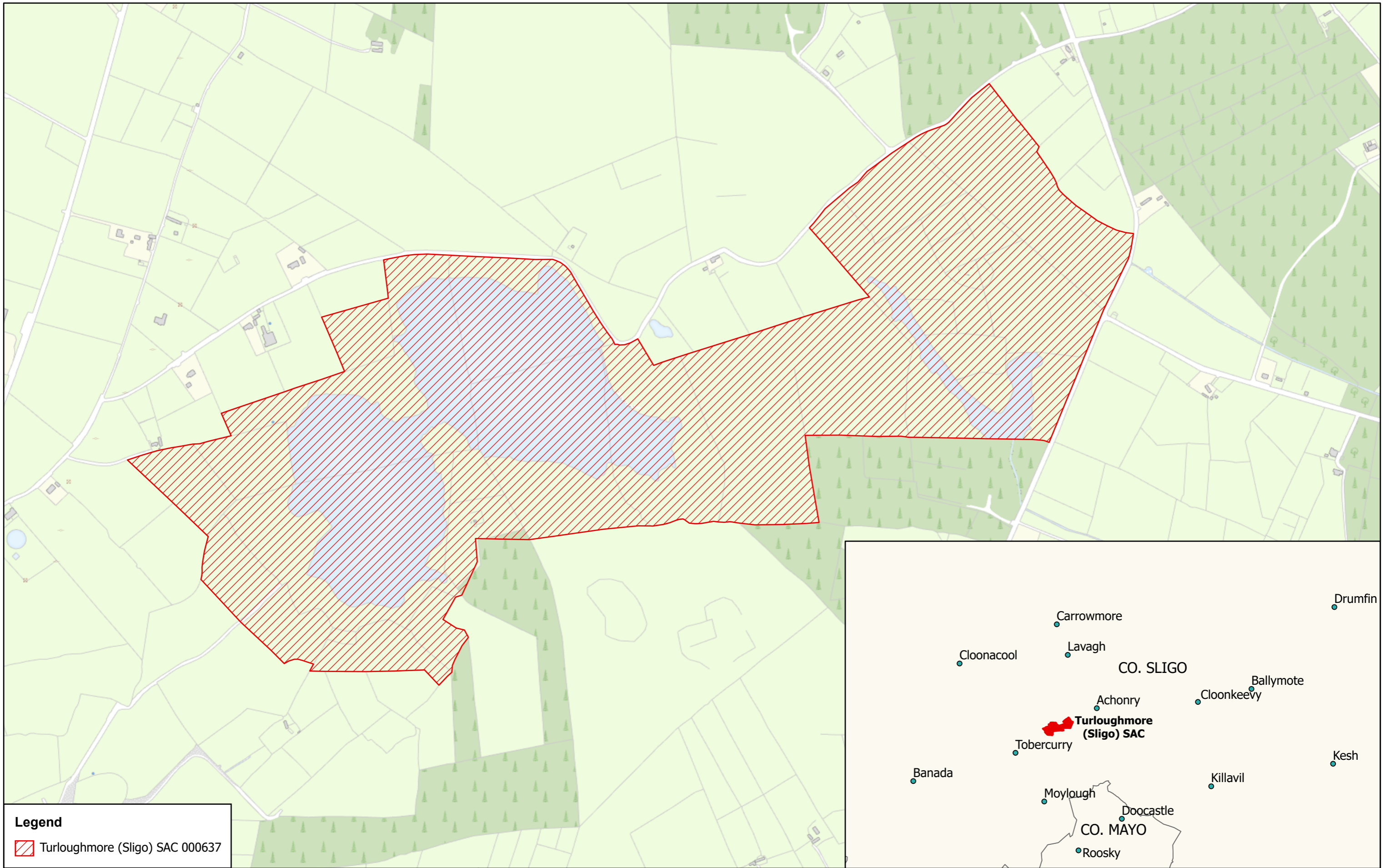
Conservation Objectives for : Turloughmore (Sligo) SAC [000637]


3180 Turloughs*

To maintain the favourable conservation condition of Turloughs in Turloughmore (Sligo) 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	Turloughmore (Sligo) SAC was studied by Coxon (1986), Goodwillie (1992) and Goodwillie et al. (1992). The turlough area in the SAC has been calculated as 27.2ha based on Goodwillie (1992) for the main turlough basins, and 1:5000 OSi mapping for the eastern element. See map 2 for known extent. Goodwillie et al. (1992) described the turlough as two basins separated by a slight ridge, each basin having several hollows and sinkholes. 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). Goodwillie (1992) described the hydrology of Turloughmore (Sligo). There is no overground flow into the basin apart from a minor amount of seepage from a bog area to the east during high rainfall. Swallow holes are situated around the edges of the eastern basin with a few on more central raised areas. In the western basin about four narrow holes occur in the floor. The turlough drains quite quickly; it is thought this is because of the sand content in the substrate. There are no long-lasting pool areas and the vegetation is dry in the summer. At the time of Goodwillie's survey, there was no evidence of drainage either within or at the edge of the basin
Soil type	Hectares	Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota	Coxon (1986) described sandy topsoil over sandy silt as characteristic for this turlough. Goodwillie (1992) noted some peat encroachment on the western and eastern margins and a little peat enrichment of the soil profile in lower areas. The soil mapping of Fealy et al. (2009) characterised the soil in the east as cutover peat and that in the west as lacustrine, with a ridge of well-drained, basic mineral soil over limestone tills in between. In a later soil mapping study, Jones et al. (2014) characterised the soil in the east as blanket peat and that in the west as moderately to poorly drained fine loamy drift with limestones
Soil nutrient status: nitrogen and phosphorus	N and P concentration in soil	Maintain nutrient status appropriate to soil types and vegetation communities	Goodwillie (1992) noted that this turlough type was rare due to its naturally oligotrophic status with relatively low alkalinity
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	Goodwillie (1992) noted that the floodwater appeared to be only moderately calcareous
Active peat formation	Flood duration	Maintain active peat formation	Goodwillie (1992) noted some peat encroachment on the western and eastern margins and a little peat enrichment of the soil profile in lower areas. Peat is particularly prevalent in the soil maps of Fealy et al. (2009) and Jones et al. (2014)

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. According to Working Group on Groundwater (Turlough sub-committee) (2005), Turloughmore (Sligo) is currently classed as having a high trophic sensitivity (i.e. oligotrophic), but the natural sensitivity is unknown. At a minimum, however, in order to achieve favourable conservation condition it should reach targets of $\leq 20\mu\text{g/l}$ for total phosphorus and trace/absent epiphyton as algal mats (<2% cover)
Vegetation composition: area of vegetation communities	Hectares	Maintain area of sensitive and high conservation value vegetation communities/units	Goodwillie (1992) and Goodwillie et al. (1992) described the vegetation communities in detail. The most notable feature of the vegetation was the heathy vegetation at the middle levels of the turlough, mainly of <i>Nardus stricta</i> , <i>Deschampsia cespitosa</i> and <i>Potentilla erecta</i> , along with <i>Carex</i> spp. Above this, on the ridge between the basins and at the edge of the turlough, there was often a band of <i>Molinia caerulea</i> , <i>Juncus effusus</i> , <i>J. conglomeratus</i> , <i>Succisa pratensis</i> and <i>Anthoxanthum odoratum</i> . The turlough floor was mainly a drier type of Goodwillie's (1992) Wet <i>Carex nigra</i> community, with <i>C. nigra</i> , <i>C. hirta</i> , <i>Schedonorus arundinaceus</i> , <i>Phalaris arundinacea</i> and <i>Senecio aquaticus</i> . An area of tall herb swamp with <i>P. arundinacea</i> , <i>Filipendula ulmaria</i> , <i>Mentha arvensis</i> and <i>Rumex acetosa</i> also occurred as a belt in the eastern half. A <i>Polygonum amphibium</i> community occurred around the swallow holes
Vegetation composition: vegetation zonation	Distribution	Maintain vegetation zonation/mosaic characteristic of the turlough	The habitat map of Goodwillie et al. (1992) showed zonation from the basin floor, with the wet <i>Carex nigra</i> community giving way to a short, heathy grassland of <i>Nardus stricta-Deschampsia cespitosa-Potentilla erecta</i> , which graded at higher levels into a rough <i>Molinia caerulea</i> grassland community. A wetter <i>Polygonum amphibium</i> community occurred around the swallowholes
Vegetation structure: sward height	Centimetres	Maintain sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough	Goodwillie (1992) and Goodwillie et al. (1992) described the vegetation as lightly grazed by cattle and horses, with the sward up to 25cm high or more in places. However, NPWS internal files describe grazing pressure around the turlough as mostly fairly high
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). No plant or invertebrate species of note have been reported from the Turloughmore (Sligo) site. NPWS internal files note that the site is visited occasionally by small numbers of whooper swans in winter, a species listed on Annex I of the Birds Directive
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	A small amount of scrub exists at the north edge of the eastern basin



Legend
 Turloughmore (Sligo) SAC 000637

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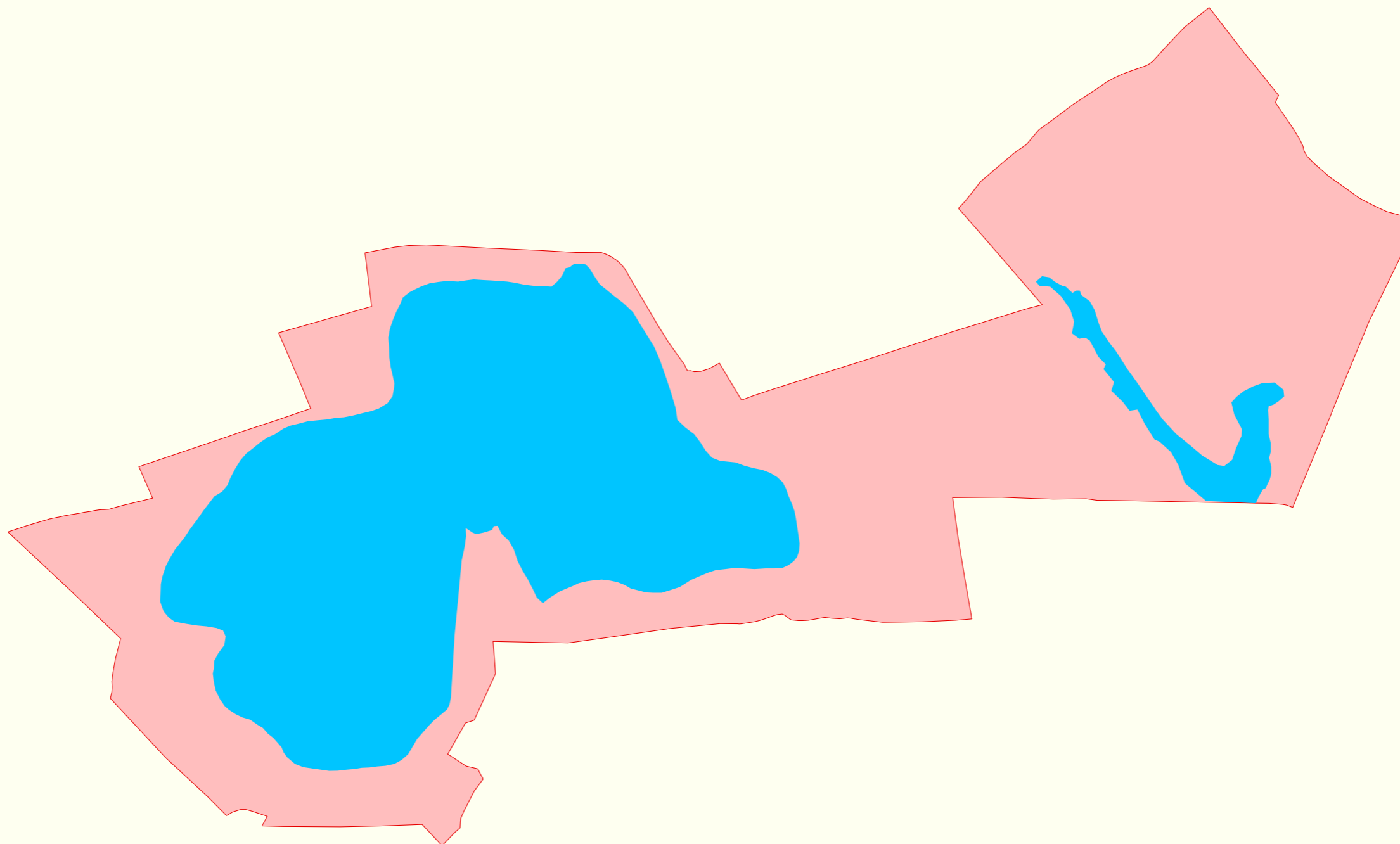
**MAP 1:
 TURLOUGHMORE (SLIGO) SAC
 CONSERVATION OBJECTIVES
 SAC DESIGNATION**
 Map to be read in conjunction with the NPWS Conservation Objectives Document.

**SITE CODE:
 SAC 000637; version 3. CO. SLIGO**
 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





Legend

- 3180 Turloughs*
- Turloughmore (Sligo) SAC 000637

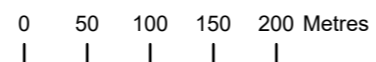


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**MAP 2:
TURLOUGHMORE (SLIGO) SAC
CONSERVATION OBJECTIVES
TURLOUGHS**

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

**SITE CODE:
SAC 000637; version 3. CO. SLIGO**



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**Map Version 1
Date: November 2020**