

National Parks and Wildlife Service

Conservation Objectives Series

Greaghans Turlough SAC 000503



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*

000503 Greaghans Turlough SAC

3180 Turloughs*

Please note that this SAC is adjacent to Kilglassan/Caheravoostia Turlough Complex SAC (000504). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent site 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 :	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 <i>Chenopodium rubri</i> p.p. and <i>Bidens</i> 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 :	2014
Title :	Establishment of groundwater source protection zones, Kilmaine public water supply scheme
Author :	Kelly, C.; Moe, H.; Smietanka, M.; Drew, D.; Hickey, C.
Series :	Report to the EPA

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 3)

Conservation Objectives for : Greaghans Turlough SAC [000503]

3180 Turloughs*

To restore the favourable conservation condition of Turloughs in Greaghans 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	Greaghans Turlough was studied by Coxon (1986) and Goodwillie (1992). The turlough area in the SAC has been calculated as 35.1ha based on Goodwillie (1992). See map 3 for known extent. Goodwillie (1992) assessed Greaghans Turlough as being of regional ecological importance. Kelly et al. (2014), citing Coxon (1986), noted the importance of Greaghans and nearby Cahevavostia, Ardkill and Skealaghan turloughs due to the fact that they are considered to be naturally functioning turloughs rather than extensively modified. See O Connor (2017) for information on all attributes and targets
Habitat distribution	Occurrence	No decline, subject to natural processes	See map 3
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 this turlough was studied by Coxon (1986) and Goodwillie (1992). According to Goodwillie (1992), the main swallow hole occurs by a wall, to the north-east, and there are also some depressions on the south-west side. Two streams enter the turlough, one from the north-east that appears to be permanent, and one from the south that is ephemeral; a channel in the north-western corner may be a sign of attempted drainage but seems to have had little overall effect on the hydrology of the site (NPWS internal files)
Soil type	Hectares	Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota	According to Goodwillie (1992), the edges of the basin are till over bedrock but the flat centre is a sheet of marl representing a long-standing ancient lake, with Coxon (1986) describing a layer of marl occurring above a thicker layer of grey clay. This is in general agreement with the mapping of Fealy et al. (2009), who mapped the turlough basin as alluvial/marl, and the outer edges as deep, well-drained basic mineral soil over limestone till
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 in the centre of the turlough reported by Goodwillie (1992) and Coxon (1986) would be expected to have a high calcium carbonate content
Active peat formation	Flood duration	Maintain active peat formation	According to Goodwillie (1992), the surface soil is slightly peaty but no significant active peat formation was described

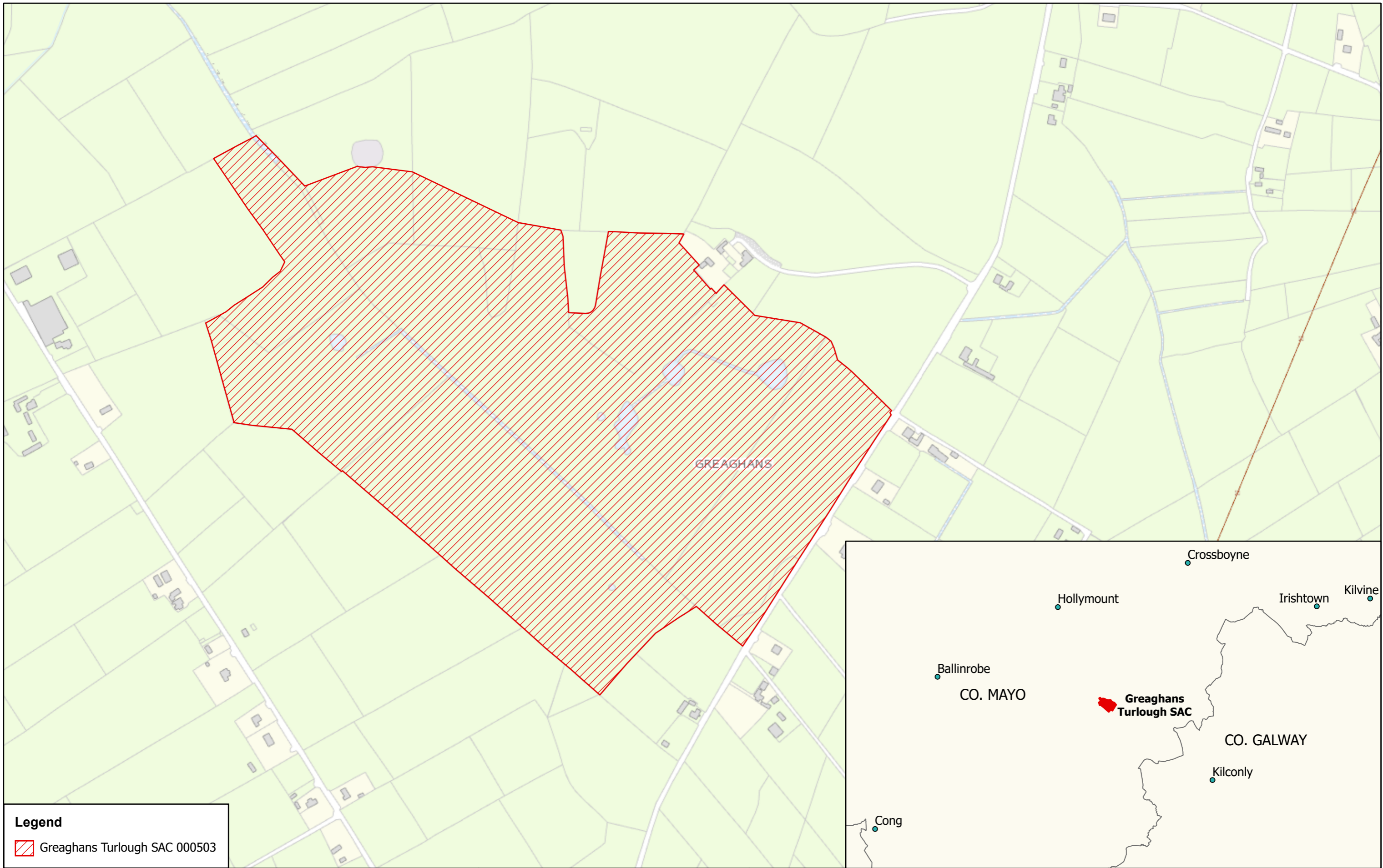
Water quality	Various	Restore appropriate water quality to support the natural structure and functioning of the habitat	Water quality is sub-divided into more detailed attributes (nutrients, colour, phytoplankton and epiphyton biomass) and targets in O Connor (2017). See also The European Communities Environmental Objectives (Surface Waters) (Amendment) Regulations 2019. When Goodwillie (1992) surveyed the site, there was significant nutrient input from the inflowing stream (which at that time had sewage fungus) and from the two adjacent farms, one to the north-east and the other at the west end of the basin. According to the Working Group on Groundwater (Turlough sub-committee) (2005), Greaghans Turlough currently has a medium trophic sensitivity and this is also judged to be its natural trophic sensitivity. Therefore targets of $\leq 20\mu\text{g/l}$ TP and trace/absent epiphyton as algal mats (<2% cover) are required to reach favourable condition
Vegetation composition: area of vegetation communities	Hectares	Maintain area of sensitive and high conservation value vegetation communities/units	Goodwillie (1992) described two main communities on the turlough floor: a wet <i>Carex nigra</i> community in flatter regions, and a <i>Persicaria amphibia</i> community in lower areas. He described two ponds present in summer with <i>Potamogeton</i> spp., <i>Rorippa amphibia</i> and other aquatic macrophytes. Different grassland communities occurred at the margins of the basin. Species-rich limestone grassland was at the eastern end, leading down to a slightly leached poor grassland with <i>Potentilla erecta</i> , <i>Molinia caerulea</i> and <i>Ranunculus acris</i> . Fields at the south-western edge were more eutrophic, with <i>Poa pratensis</i> and <i>Lolium perenne</i> ; fields in the far north-west corner had been reseeded. Ash scrub woodland occurred above a narrow fringe of <i>Phalaris arundinacea</i> and <i>Filipendula ulmaria</i> with either <i>Potentilla reptans</i> or <i>Lysimachia nummularia</i> growing through it. See Goodwillie (1992) for further information
Vegetation composition: vegetation zonation	Distribution	Maintain vegetation zonation/mosaic characteristic of the turlough	Internal NPWS files note that the vegetation in the turlough basin is clearly related to the contours, with <i>Persicaria amphibia</i> occurring in most of the deepest parts, and <i>Carex nigra</i> , <i>Juncus articulatus</i> and <i>Ranunculus flammula</i> above this. At the edges, this grades into grassland, which is nutrient-enriched and species-poor at the western end but more species-rich to the east. See Goodwillie (1992) for further information on vegetation communities in Greaghans Turlough
Vegetation structure: sward height	Centimetres	Maintain/restore sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough	When Goodwillie (1992) surveyed the site, cattle and a few sheep from the two adjacent farms had free access to the turlough. Grazing pressure was most severe at the western end, reducing eastwards to almost no 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). Goodwillie (1992) recorded <i>Rorippa islandica</i> from here, a former red-listed species which is now classed as "Least Concern" by Wyse Jackson et al. (2016). Greaghans Turlough has been noted for its use in winter by swans, including whooper swan, a species listed on Annex I of the Birds Directive (NPWS internal files)
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

Goodwillie (1992) noted the presence on the north shore of low, tree-covered spurs of *Fraxinus excelsior*, *Crataegus monogyna* and *Euonymus europaeus*, corresponding to community 3W *Rhamnus* wood and covering approximately 0.1 ha in area. Despite the name of the community, Goodwillie (1992) did not list *Rhamnus cathartica* as a species for this turlough



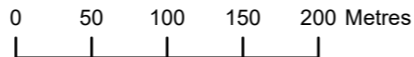
Legend
 Greaghans Turlough SAC 000503

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**MAP 1:
 GREAGHANS TURLOUGH SAC
 CONSERVATION OBJECTIVES
 SAC DESIGNATION**
 Map to be read in conjunction with the NPWS Conservation Objectives Document.

**SITE CODE:
 SAC 000503; version 3.01. CO. MAYO**

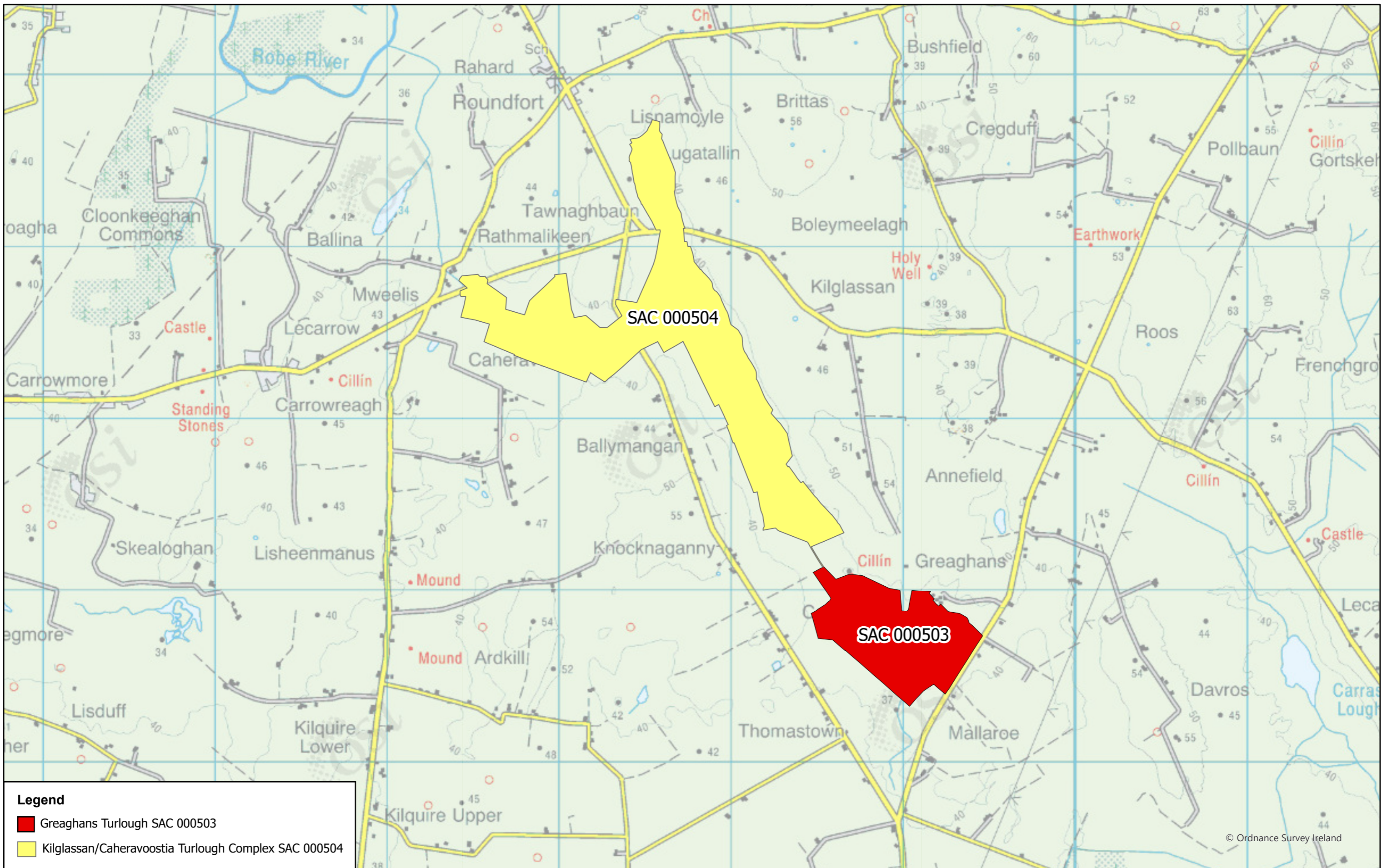
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The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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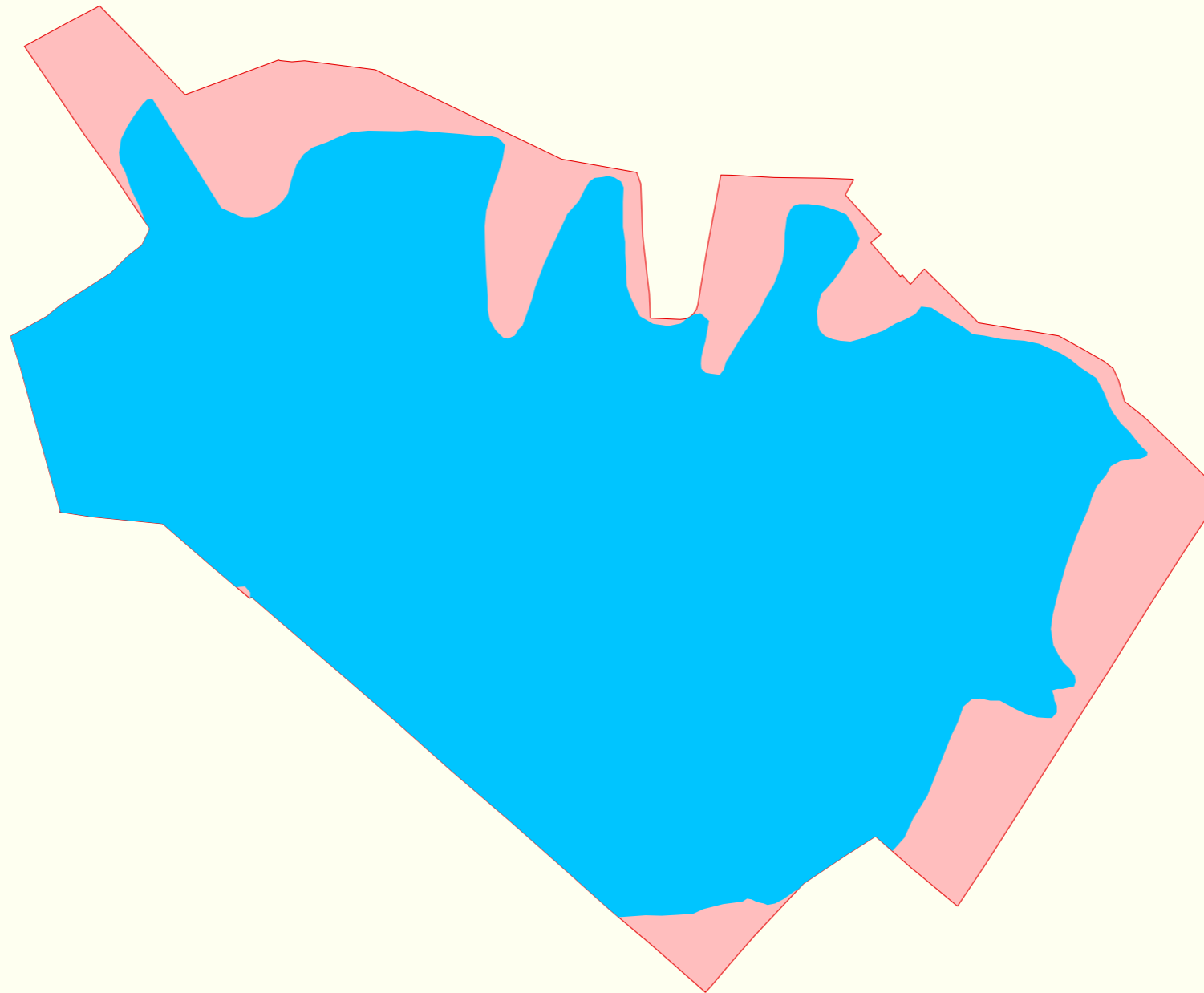
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 Map Version 1
 Date: November 2020



Legend

- Greaghans Turlough SAC 000503
- Kilglassan/Caheravoostia Turlough Complex SAC 000504



Legend

- 3180 Turloughs*
- Greaghans Turlough SAC 000503



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**MAP 3:
GREAGHANS TURLOUGH SAC
CONSERVATION OBJECTIVES
TURLOUGHs**

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

**SITE CODE:
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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**