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Conservation Objectives Series

Ballyogan Lough SAC 000019

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***

000019	Ballyogan Lough SAC
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae*
8240	Limestone pavements*

Please note that this SAC is adjacent to Dromore Woods and Loughs SAC (000032). See map 2. The conservation objectives for this site should be used in conjunction with those for the adjacent site as appropriate. IMPORTANT: This 'Version 2' document includes 1 additional QI (8240). The conservation objectives for pre-existing QIs have not been updated.

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

NPWS Documents

Year :	1972
Title :	A preliminary report on Areas of Scientific Interest in County Clare
Author :	Goodwillie, R.N.
Series :	Unpublished report
Year :	2009
Title :	Ireland Red List No. 2: Non-marine molluscs
Author :	Byrne, A.; Moorkens, E.A.; Anderson, R.; Killeen, I.J.; Regan, E.C.
Series :	Ireland Red List series, NPWS
Year :	2010
Title :	Ireland Red List No. 4: Butterflies
Author :	Regan, E.C.; Nelson, B.; Aldwell, B.; Bertrand, C.; Bond, K.; Harding, J.; Nash, D.; Nixon, D.; Wilson, C.J.
Series :	Ireland Red List series, NPWS
Year :	2012
Title :	Ireland Red List No. 8: Bryophytes
Author :	Lockhart, N.; Hodgetts, N.; Holyoak, D.
Series :	Ireland Red List series, NPWS
Year :	2013
Title :	National survey of limestone pavement and associated habitats in Ireland
Author :	Wilson, S.; Fernandez, F.
Series :	Irish Wildlife Manuals, No. 73
Year :	2013
Title :	The status of EU protected habitats and species in Ireland. Volume 2. Habitats assessments
Author :	NPWS
Series :	Conservation assessments
Year :	2013
Title :	Conservation status assessments for three fen habitat types - 7230 – Alkaline fens, 7210 – Calcareous fens with *Cladium mariscus* and species of Caricion davallianae and 7140 – Transition mires and quaking bogs
Author :	Kimberley, S.
Series :	Unpublished report to NPWS
Year :	2014
Title :	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
Author :	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
Series :	Irish Wildlife Manuals, No. 79
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 Lists series, NPWS
Year :	2019
Title :	Checklists Protected and Threatened Species in Ireland 2019
Author :	Nelson, B.; Cummins, S.; Fay, L.; Jeffrey, R.; Kelly, S.; Kingston, N.; Lockhart, N.; Marnell, F.; Tierney, D.; Wyse Jackson, M.
Series :	Irish Wildlife Manuals, No. 116

Year :	2020
Title :	Important Invertebrate Area Surveys: Ballyogan and Slieve Carran, Co. Clare
Author :	Mantell, A.; Anderson, R.
Series :	Irish Wildlife Manuals, No. 127
Year :	2021
Title :	Checklists Protected and Threatened Species in Ireland. Version 2.1. 3 December 2021
Author :	Nelson, B.; Cummins, S.; Fay, L.; Jeffrey, R.; Kelly, S.; Kingston, N.; Lockhart, N.; Marnell, F.; Tierney, D.; Wyse Jackson, M.
Series :	Irish Wildlife Manuals, No. 116

Other References

Year :	2004
Title :	Common Standards Monitoring guidance for lowland wetland habitats
Author :	JNCC
Series :	Joint Nature Conservation Committee, Peterborough

7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae*

To maintain the favourable conservation condition of Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae* in Ballyogan Lough 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	Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae* has not been mapped in detail for Ballyogan Lough SAC and thus the total area of the qualifying priority habitat in the SAC is unknown. The SAC supports typical examples of the habitat in a calcareous lake system, which includes Ballyogan Lough, Moyree Lough and other small lakes. The habitat occurs in a mosaic with other swamp and fen/marsh wetland habitats and cutover bog vegetation predominantly in the north-east of the SAC. Greater fen-sedge (*Cladium mariscus*) dominated areas mostly occur in the wetter areas close to the lakes (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes for Habitat area above
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients	Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Fen habitats require high groundwater levels (i.e. water levels at or above the ground surface) for a large proportion of the calendar year (i.e. duration of mean groundwater level). Fen groundwater levels are controlled by regional groundwater levels in the contributing catchment area (which sustain the hydraulic gradients of the fen groundwater table). Regional abstraction of groundwater may affect fen groundwater levels
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or where necessary restore, as close as possible to natural or semi-natural drainage conditions	Drainage, either within or surrounding the fen habitat, can result in the drawdown of the fen groundwater table. The depth, geometry and density of drainage (hydromorphology) will indicate the scale and impact on fen hydrology. Drainage can result in loss of characteristic species and transition to drier habitats
Ecosystem function: water quality	Water chemistry measures	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus, with the latter tending to be the limiting nutrient under natural conditions. Water supply should also be relatively calcium-rich
Vegetation composition: typical species	Percentage cover at a representative number of 2m x 2m monitoring stops	Maintain adequate cover of typical species, including brown mosses and vascular plants	For lists of typical plant species, see the Article 17 conservation status assessment for *Cladium* fens (NPWS, 2013) and the Article 17 fen habitats supporting document (Kimberley, 2013). In this SAC, stands of greater fen-sedge (*Cladium mariscus*) occur in association with common reed (*Phragmites australis*), and species including black bog-rush (*Schoenus nigricans*), blunt-flowered rush (*Juncus subnodulosus*) and small sedges such as dioecious sedge (*Carex dioica*) and lesser tussock-sedge (*C. diandra*) (Goodwillie, 1972; NPWS internal files)
Vegetation composition: native negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of native negative indicator species at insignificant levels	Negative indicators include species not characteristic of the habitat and species indicative of undesirable impacts such as overgrazing, undergrazing, nutrient enrichment, agricultural improvement or impacts on hydrology. See JNCC (2004) and Kimberley (2013)

Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014). Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances
Vegetation composition: trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	Attribute and target based on Perrin et al. (2014). Scrub and trees will tend to invade if fen conditions become drier
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground not more than 10%. Where tufa is present, disturbed bare ground not more than 1%	Attribute and target based on Perrin et al. (2014). While grazing may be appropriate in this habitat, excessive areas of disturbed bare ground may develop due to unsuitable grazing regimes. Disturbance can include hoof marks, wallows, human footprints, vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion for peatlands
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	This includes species on the Flora (Protection) Order, 2015 and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016)

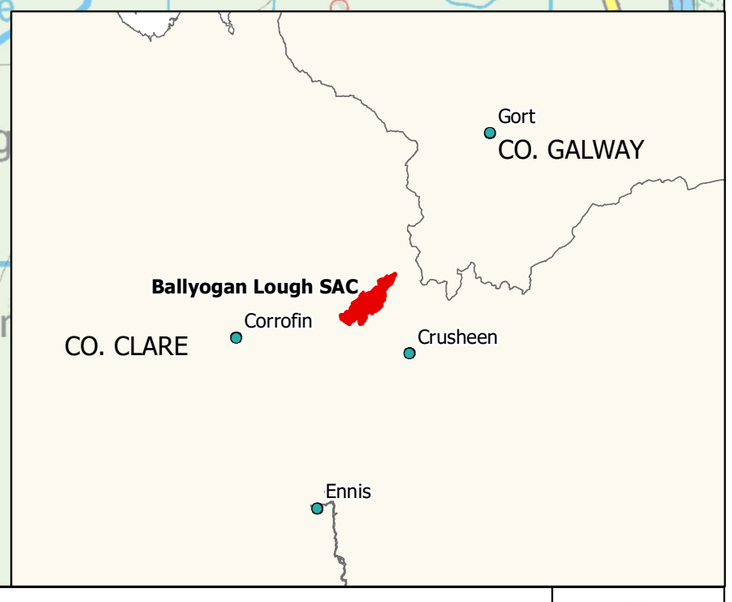
8240 Limestone pavements*

To maintain the favourable conservation condition of Limestone pavements* in Ballyogan Lough SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to natural processes	Limestone pavements occur in intimate association with other habitats in Ballyogan Lough SAC, for example scrub and calcareous grassland, and the Annex I habitat Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae [7210]. Due to their intricate association and overlapping nature, these habitats cannot easily be mapped or considered separately. The total area of Limestone pavement at Ballyogan Lough SAC has not been surveyed in detail, but based on Wilson and Fernandez (2013) is estimated to be approximately 149ha (see map 3). A host of distinctive Burren habitat features, including Limestone pavement and associated scrub, have been recorded by Mantell and Anderson (2020), who surveyed approximately 10-15% of the SAC. Due to the complex nature of Limestone pavement creation, over vast periods of time, it is considered non-restorable if lost
Distribution	Occurrence	No decline. Map 3 shows the indicative distribution, including mosaics with other habitats	Limestone pavement is estimated to make up between 30-40% of the area of this SAC, and is most abundant at the south-west of the site. See also the notes for Habitat area above. Ballyogan Lough SAC is adjacent to Dromore Woods and Lough SAC (000032) to the south, in which Limestone pavements is listed as a Qualifying Interest (QI) (see map 2)
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	Positive indicator species for exposed and wooded pavement are listed in Wilson and Fernandez (2013)
Vegetation composition: bryophyte layer	Percentage at a representative number of monitoring stops	Bryophyte cover at least 50% on wooded pavement	Attribute and target based on Wilson and Fernandez (2013)
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Collective cover of negative indicator species on exposed pavement not more than 1%	Negative indicator species are listed in Wilson and Fernandez (2013). Negative indicator species for wooded pavement overlap with non-native species (below)
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration	Attribute and target based on Wilson and Fernandez (2013). Typical non-native species on exposed pavement can include *Cotoneaster* spp., Old Man's Beard (*Clematis vitalba*) and Red Valerian (*Centranthus ruber*); non-native species on wooded pavement include the species listed for exposed pavement, as well as, Beech (*Fagus sylvatica*) and conifer species (excluding *Pinus sylvestris*). *Cotoneaster* spp. was recorded as present in the Limestone pavement habitat areas surveyed by Mantell and Anderson, (2020). Small-leaved Cotoneaster (*Cotoneaster microphyllus*) is frequent on the pavement where it has become fully naturalised (NPWS internal files)
Vegetation composition: scrub	Percentage at a representative number of monitoring stops	Scrub cover no more than 25% of exposed pavement	Attribute and target based on Wilson and Fernandez (2013). The scrub and Limestone pavement, which is situated in the southern part of the site, is dominated by Hazel (*Corylus avellana*) and Ash (*Fraxinus excelsior*)
Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken (*Pteridium aquilinum*) cover no more than 10% on exposed pavement	Attribute and target based on Wilson and Fernandez (2013). Dense Bracken (*Pteridium aquilinum*) has been recorded in the north of the site as part of the areas surveyed by Mantell and Anderson (2020)

Vegetation structure: woodland canopy	Percentage at a representative number of monitoring stops	Canopy cover on wooded pavement at least 30%	Attribute and target based on Wilson and Fernandez (2013)
Vegetation structure: dead wood	Occurrence in a representative number of monitoring stops	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Physical structure: disturbance	Occurrence in a representative number of monitoring stops	No evidence of grazing pressure on wooded pavement	Attribute and target based on Wilson and Fernandez (2013), and relates to excessive or unsuitable grazing pressure. According to Mantell and Anderson (2020) the current management arrangement consists of grazing by cattle across the site. There were no signs of other active management evident on site, such as scrub control. The Mantell and Anderson survey (2020) covered 10-15% of the SAC
Indicators of local distinctiveness	Occurrence	Indicators of local distinctiveness are maintained	This includes species listed in the Flora (Protection) Order, 2022 and species of flora and fauna on red data lists (Byrne et al., 2009; Regan et al., 2010; Lockhart et al., 2012; Wyse Jackson et al., 2016, etc.; see Nelson et al., 2019, 2021) and other rare or localised species, as well as archaeological and geological features, which often support distinctive species. Typical notable species listed in Wilson and Fernandez (2013) for Limestone pavement include Shrubby Cinquefoil (*Potentilla fruticosa*) on exposed pavement habitat. Red data species for exposed pavement include Wood Small-reed (*Calamagrostis epigejos*), Alder Buckthorn (*Frangula alnus*), Limestone Fern (*Gymnocarpium robertianum*) and Hairy Violet (*Viola hirta*). Other plants of note include Yew (*Taxus baccata*) and Spindle (*Euonymus europaeus*), both of which are relatively rare on site

Muckanagh Lough
Loch Mhuiceanach
Tullymackan
Knockatermon
Shanballysallagh
Monrea
Ballyeighter Lough
Loch Bhéal Íochtair
Rinelea
Garvillaun
Lough Gour
Church
Holy Well
Burren Way
△66
Ballyogan More
Ballyogan Lough
Castlequarter
Inghid Br
Lough George
Loch Sheoirse
Ranaghan
Addergoole
Bushy Isd
Graveyard
Salamacutteen Lough
Moyree Lough
Moyree River
Holy Well
Foilrim
Teermulmoney
Ballyteige East
Dromeen
Castle
Moyree Commons
Derrynag
Ballyteige
Castle River
Lough Nabrichoge
Lough Garr
Megalithic



Legend

Ballyogan Lough SAC 000019

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MAP 1:
BALLYOGAN LOUGH SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

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

SITE CODE:
SAC 000019; version 3.02
CO. CLARE

0 125 250 500 Metres

N

Map Version 2
Date: February 2024

Ballyogan Lough SAC 000019

Dromore Woods and Loughs SAC 000032

Legend

- Ballyogan Lough SAC 000019
- Dromore Woods and Loughs SAC 00032

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MAP 2:
BALLYOGAN LOUGH SAC
CONSERVATION OBJECTIVES
ADJACENT SITE

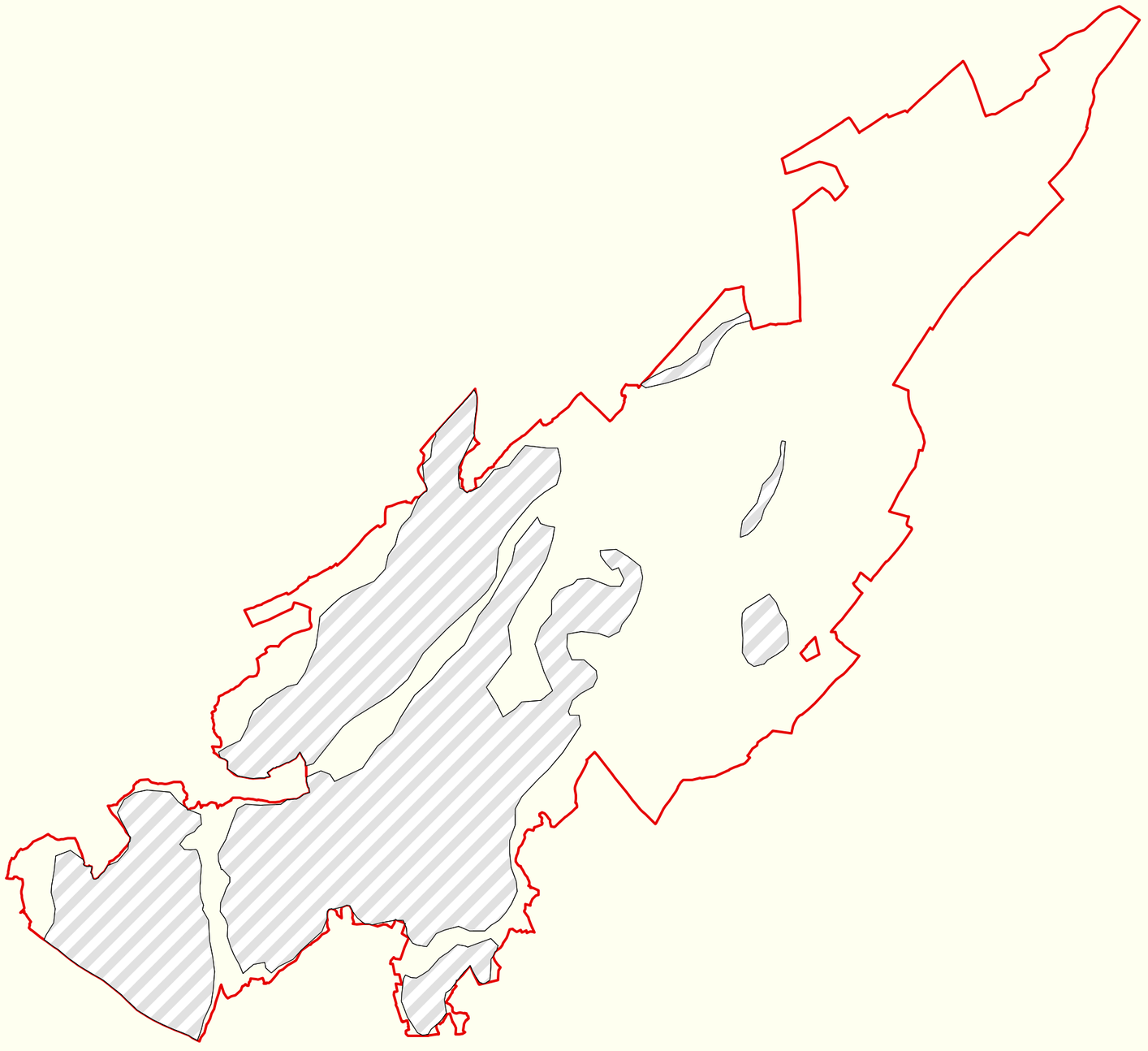
Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
SAC 000019; version 3.02
CO. CLARE

0 250 500 1,000 Metres

N

Map Version 2
Date: February 2024



Legend

- Ballyogan Lough SAC 000019
- 8240 Limestone Pavement*

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MAP 3:
BALLYOGAN LOUGH SAC
CONSERVATION OBJECTIVES
LIMESTONE PAVEMENT

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

SITE CODE:
SAC 000019; version 3.02
CO. CLARE

0 125 250 500 Metres

N

Map Version 1
Date: February 2024