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Conservation Objectives Series

Mount Jessop Bog SAC 002202

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
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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***

002202	Mount Jessop Bog SAC
7120	Degraded raised bogs still capable of natural regeneration
91D0	Bog woodland*

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	1990
Title :	The Raised Bogs of Ireland, their Ecology, Status and Conservation.
Author :	Cross, J.
Series :	Report to the Minister of State at the Department of Finance. The Stationery Office, Dublin
Year :	2008
Title :	National survey of native woodlands 2003-2008
Author :	Perrin, P.M.; Martin, J.; Barron, S.; O'Neill, F.H.; McNutt, K.E.; Delaney, A.
Series :	Unpublished report to NPWS
Year :	2010
Title :	A provisional inventory of ancient and long-established woodland in Ireland
Author :	Perrin, P.M.; Daly, O.H.
Series :	Irish Wildlife Manuals, No. 46
Year :	2013
Title :	Results of a monitoring survey of bog woodland
Author :	Cross, J.; Lynn, D.
Series :	Irish Wildlife Manuals, No. 69
Year :	2017
Title :	National Raised Bog Special Areas of Conservation Management Plan 2017-2022
Author :	NPWS
Series :	Conservation Management Plan
Year :	2019
Title :	NHA Raised Bog Monitoring Project 2018 - Mount Jessop Bog (NHA 001450), County Tipperary - Site Report
Author :	Crushell, P.H.; Crowley, W.; Denyer, J.; Foss, P.; Gallagher, M.C.; MacGowan, F.; Smith, G.
Series :	NHA Raised Bog Monitoring Project
Year :	2023
Title :	Mount Jessop Bog SAC (Site Code: 002202) Conservation objectives supporting document-raised bog habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	in prep.
Title :	The monitoring and assessment of four EU Habitats Directive Annex I woodland habitats
Author :	Daly, O.H.; O'Neill, F.H.; Barron, S.J.
Series :	Irish Wildlife Manuals

Other References

Year :	2002
Title :	Reversing the habitat fragmentation of British woodlands
Author :	Peterken, G.
Series :	WWF-UK, London

Year :	2011
Title :	Review and revision of empirical critical loads and dose-response relationships. Proceedings of an expert workshop, Noordwijkerhout, 23-25 June 2010
Author :	Bobbink, R.; Hettelingh, J.P.
Series :	RIVM report 680359002, Coordination Centre for Effects, National Institute for Public Health and the Environment (RIVM)
Year :	2014
Title :	Nitrogen deposition and exceedance of critical loads for nutrient nitrogen in Irish grasslands
Author :	Henry, J.; Aherne, J.
Series :	Science of the Total Environment, 470–471: 216–223
Year :	2016
Title :	Irish Vegetation Classification: Technical Progress Report No. 2
Author :	Perrin, P.
Series :	Report submitted to National Biodiversity Data Centre

Spatial data sources

Year :	2023
Title :	Internal NPWS dataset
GIS Operations :	Modelled potential habitat and ecotope polygon clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	7110, 7120, 91D0 (Map 2, Map 3)
Year :	2023
Title :	Digital elevation model and drainage patterns dataset
GIS Operations :	Dataset clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	7110, 7120, 91D0 (Map 4)

7120 Degraded raised bogs still capable of natural regeneration

To restore the favourable conservation condition of Degraded raised bogs still capable of natural regeneration in Mount Jessop Bog SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Restore area of active raised bog to 2.6ha, subject to natural processes	Bog Woodland (91D0) (0.2ha) has developed on the south-eastern cutover of Mount Jessop Bog SAC. 91D0 habitat is deemed to correspond with Active Raised Bog (7110). The area of Degraded Raised Bog (DRB) on the high bog has been estimated as 1.1ha. This is based on field surveys, combined with estimates from an eco-hydrological model and NPWS expert knowledge. There is no recorded Active Raised Bog (ARB) on the high bog within the SAC. Eco-hydrological assessments of the cutover estimate that an additional 1.3ha of bog-forming habitats could be restored. The long term target for ARB for the SAC is therefore 2.6ha. See the supporting document for further details on this and the following the attributes
Habitat distribution	Occurrence	Restore the distribution and variability of active raised bog across the SAC. See map 2 for distribution of potential ARB	DRB corresponds to those areas of high bog where the hydrology has been adversely affected by peat cutting, drainage, afforestation and other land use activities, but which are capable of regeneration to ARB within 30 years (see area target above)
High bog area	Hectares	No decline in extent of high bog necessary to support the development and maintenance of active raised bog. See map 3	The area of high bog within Mount Jessop Bog SAC in 2014 (latest figure available) was 25.2ha (NPWS, 2017)
Hydrological regime: water levels	Centimetres	Restore appropriate water levels throughout the site	For DRB to be restored to ARB, mean water level needs to be near or above the surface of the bog lawns for most of the year. Seasonal fluctuations should not exceed 20cm, and the mean water level should only be 10cm below the surface, for very short periods of time. Open water is often characteristic of soak systems
Hydrological regime: flow patterns	Flow direction; slope	Restore, where possible, appropriate high bog topography, flow directions and slopes. See map 4 for current situation	The restoration of DRB to ARB depends on mean water levels being near or above the surface of bog lawns for most of the year. Long and gentle slopes are the most favourable to achieve these conditions. Changes to flow directions due to subsidence of bogs can radically change water regimes and cause drying out of higher quality DRB areas and soak systems
Transitional areas between high bog and adjacent mineral soils (including cutover areas)	Hectares; distribution	Restore adequate transitional areas to support / protect the active raised bog ecosystem and the services it provides	The transitional areas at Mount Jessop Bog include a range of different habitat types: old abandoned peat-cutting, scrub and birch (*Betula pubescens*). In the south-east, the former conifer forestry has been clear felled as part of site restoration works. The development of transitional habitats depends on a number of factors including prevailing land-use, topography, up-welling regional groundwater, and drainage. Large areas (c. 9ha) of wet birch woodland are expected to develop along the east of the site within cutover land
Vegetation quality: central ecotope, active flush, soaks, bog woodland	Hectares	Restore 1.3ha of central ecotope/active flush/soaks/bog woodland as appropriate as appropriate	At least 50% of ARB habitat should comprise high quality ARB habitat such as central ecotope, active flush, soaks and bog woodland. Target area of active raised bog for the site has been set at 2.6ha (see area target above)
Vegetation quality: microtopographical features	Hectares	Restore adequate cover of high quality microtopographical features	Low hummock and hollow microtopography is moderately developed on Mount Jessop Bog (Crushell et al., 2019), though pools are absent

Vegetation quality: bog moss (*Sphagnum*) species	Percentage cover	Restore adequate cover of bog moss (*Sphagnum*) species to ensure peat-forming capacity	*Sphagnum* cover varies naturally across raised bogs in Ireland with relatively high cover in the east to lower cover in the west. Hummock forming species such as *Sphagnum austinii* are particularly good peat formers. *Sphagnum* cover and distribution also varies naturally across a site
Typical ARB species: flora	Occurrence	Restore, where appropriate, typical active raised bog flora	Typical flora species include widespread species, as well as those with more restricted distributions but typical of the habitat's sub-types or geographical range
Typical ARB species: fauna	Occurrence	Restore, where appropriate, typical active raised bog fauna	Typical fauna species include widespread species, as well as those with more restricted distributions but typical of the habitat's sub-types or geographical range
Elements of local distinctiveness	Occurrence	Maintain features of local distinctiveness, subject to natural processes	Bog Woodland (91D0) has developed on the south-east corner of the SAC. A range of features may be associated with raised bogs which add to the scientific, historical, or conservation value of a bog. These can include geological, topographical, archaeological and hydrological features (e.g. soaks, lakes, flushes) and noteworthy species of flora and fauna (Cross, 1990). Notable species of flora and fauna include those listed in the Habitats and Birds Directives, Red-listed species and other rare or localised species. For this attribute, features that are particularly associated with ARB are relevant
Negative physical indicators	Percentage cover	Negative physical features absent or insignificant	Negative physical indicators include: bare peat, algae dominated pools and hollows, marginal cracks, tear patterns, subsidence features such as dry mineral mounds/ridges emerging or expanding, and burning evidence
Vegetation composition: native negative indicator species	Percentage cover	Native negative indicator species at insignificant levels	Indicators of disturbance on a raised bog include species indicative of drying out conditions such as abundant *Narthecium ossifragum* and *Trichophorum germanicum*; *Eriophorum vaginatum* forming tussocks; abundant *Sphagnum magellanicum* in pools previously dominated by species typical of very wet conditions (e.g. *Sphagnum cuspidatum*). Indicators of frequent burning events include abundant *Cladonia floerkeana* and high cover of *Carex panicea* (particularly in the true midlands raised bog type)
Vegetation composition: non-native invasive species	Percentage cover	Non-native invasive species at insignificant levels and not more than 1% cover	Non-native invasive species that can commonly occur on raised bog habitats include: *Pinus contorta*, *Rhododendron ponticum*, and *Sarracenia purpurea* (Cross, 1990). *Rhododendron ponticum* and *Pinus contorta* have been reported on the bog
Air quality: nitrogen deposition	kg N/ha/year	Air quality surrounding bog close to natural reference conditions. The total N deposition should not exceed 5kg N/ha/yr	Change in air quality can result from fertiliser drift; adjacent quarry activities; or other atmospheric inputs. The critical load range for ombrotrophic bogs has been set as between 5 and 10kg N/ha/yr (Bobbink and Hettelingh, 2011). The latest N deposition figures for the area around Mount Jessop Bog suggests that the current level is approximately 16.6kg N/ha/yr (Henry and Aherne, 2014)
Water quality	Hydrochemical measures	Water quality on the high bog and in transitional areas close to natural reference conditions	Water chemistry within raised bogs is influenced by atmospheric inputs (rainwater). However, within soak systems, water chemistry is influenced by other inputs such as focused flow or interaction with underlying substrates. Water chemistry in areas surrounding the high bog varies due to influences of different water types (bog water, regional groundwater, and run-off from surrounding mineral lands)

91D0 Bog woodland*

To maintain the favourable conservation condition of Bog woodland* in Mount Jessop Bog 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. See map 3	91D0 Bog woodland is present within Mount Jessop Bog SAC in the form of wet birch woodland on cutover bog. It occurs in association with non-Annex bog woodland. As part of the National Survey of Native Woodlands (NSNW), Mount Jessop (NSNW site code 835) was partially surveyed by Perrin et al. (2008). As part of a LIFE Project (LIFE09 NAT/IE/000222), this SAC was surveyed in 2015. Map 3 shows the minimum area of 91D0 within the SAC, which is estimated to be 0.23ha (NPWS internal files). It is important to note that further areas of 91D0 may develop within the SAC (NPWS internal files) subject to appropriate management
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3	Distribution based on NPWS internal files. It is important to note that further areas of 91D0 may develop within the SAC
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	The target areas for individual woodlands aim to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions (Peterken, 2002). The artificial expansion of new bog woodland is likely to be difficult, although creation of the right hydrological conditions may shift vegetation in the direction of bog woodland (Cross and Lynn, 2013). There is potential within Mount Jessop Bog SAC for additional areas of wet birch woodland to develop, some of which may form additional 91D0 habitat (NPWS internal files)
Woodland structure: canopy cover and height	Percentage cover; metres	Total canopy cover at least 30%; downy birch (*Betula pubescens*) comprises at least 50% of canopy cover; median canopy height at least 4m	Attribute and target based on Daly et al. (in prep) and Cross and Lynn (2013). The 91D0 habitat at Mount Jessop is dominated by downy birch (*Betula pubescens*) (NPWS internal files)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008). See also the Irish Vegetation Classification (Perrin, 2016; www.biodiversityireland.ie/projects/national-vegetation-database/irish-vegetation-classification)
Woodland structure: tree size classes	Occurrence	Downy birch present in each tree size class	Attribute and target based on Daly et al. (in prep) and Cross and Lynn (2013). The presence of all size classes indicates that a woodland has good structural diversity with trees of varying ages
Woodland structure: regeneration	Occurrence	At least one downy birch sapling of at least 1m tall present within each monitoring stop	Attribute and target based on Daly et al. (in prep) and Cross and Lynn (2013). The woodland at Mount Jessop (NSNW site code 835) developed by natural regeneration of downy birch (*Betula pubescens*) on cutover bog (Perrin et al., 2008)
Woodland structure: senescent and dead wood	Occurrence	Senescent or dead wood present	Mature and veteran trees and dead wood are important for bryophytes, lichens, saproxylic organisms and some bird species. Their retention within a woodland is important to ensure continuity of habitats/niches and propagule sources. However, as downy birch trees seldom exceed 30cm in diameter in this habitat and fallen dead wood rots quickly and is engulfed by bog mosses, dead wood may be less frequent in bog woodland than in other woodland types (Cross and Lynn, 2013)
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands (see Perrin and Daly, 2010), archaeological and geological features as well as red listed and other rare or localised species

Woodland structure: indicators of overgrazing	Occurrence	All four indicators of overgrazing absent	There are four indicators of overgrazing within 91D0*: topiary effect on shrubs and young trees, browse line on mature trees, abundant dung, and severe recent bark stripping (Daly et al., in prep)
Woodland structure: dwarf shrub cover	Percentage cover at a representative number of monitoring stops	Native dwarf shrub layer cover less than 50%; ling (*Calluna vulgaris*) cover less than 40%	Attribute and target based on Daly et al. (in prep) and Cross and Lynn (2013)
Woodland structure: bryophyte cover	Percentage cover at a representative number of monitoring stops	Bryophyte cover at least 50%; bog moss (*Sphagnum* spp.) cover at least 25%	Attribute and target based on Daly et al. (in prep) and Cross and Lynn (2013)
Vegetation composition: positive indicator species	Occurrence within monitoring stops	Downy birch (*Betula pubescens*), bog moss (*Sphagnum* spp.) and at least five other positive indicator species present	Bog woodland is typically species-poor but with a characteristic and distinctive flora. Positive indicator species for 91D0 are listed in Daly et al. (in prep) and Cross and Lynn (2013). The 91D0 habitat at Mount Jessop was dominated by downy birch, with willow (*Salix* spp.) also present. The bog moss *Sphagnum cuspidatum* dominates in wet hollows (NPWS internal files)
Vegetation composition: negative indicator species	Percentage cover within monitoring stops	Both native and non-native invasive species absent or under control. Total cover should be less than 10%	Negative indicator species include bracken (*Pteridium aquilinum*), bramble (*Rubus fruticosus* agg.) and any non-native species, including herbaceous species. All conifer plantations within the SAC were clear felled and drainblocked by 2013 as part of the Coillte EU Life Project Demonstrating Best Practice in Raised Bog Restoration in Ireland (LIFE09 NAT/IE/000222). Control of regeneration of non-native species such as lodgepole pine (*Pinus contorta*) is ongoing (NPWS internal files)

CLOONKEEN

CURRY

MOUNTJESSOP

MOUNTJESSOP

CORDIVIN

CLOONEVIT

LISGURRY

CLOONEVIT

CO. ROSCOMMON

Longford

Danesfort

Mount Jessop Bog SAC

Lanesborough

Moydown

CO. LONGFORD

Ballymahon

CO. WESTMEATH

Legend

Mount Jessop Bog SAC 002202

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National Parks and Wildlife Service

MAP 1:
MOUNT JESSOP BOG SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

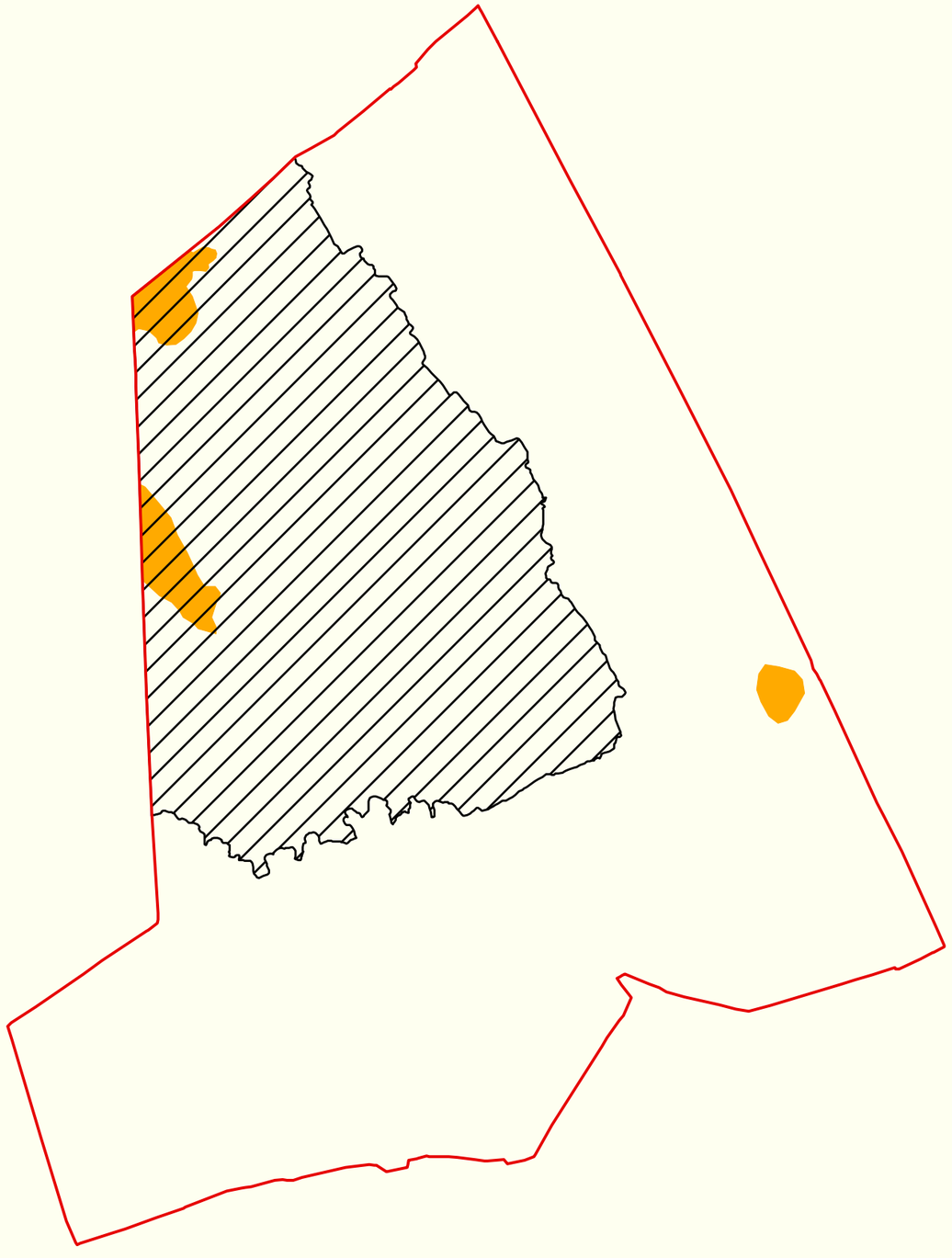
Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
SAC 002202; version 3
CO. LONGFORD

0 100 200 400 Metres

N

Date: March 2023



Legend

- High Bog Boundary
- Potential 7110 Active Raised Bog
- Mount Jessop Bog SAC 002202

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MAP 2:
MOUNT JESSOP BOG SAC
CONSERVATION OBJECTIVES
EXTENT OF POTENTIAL ACTIVE RAISED BOG

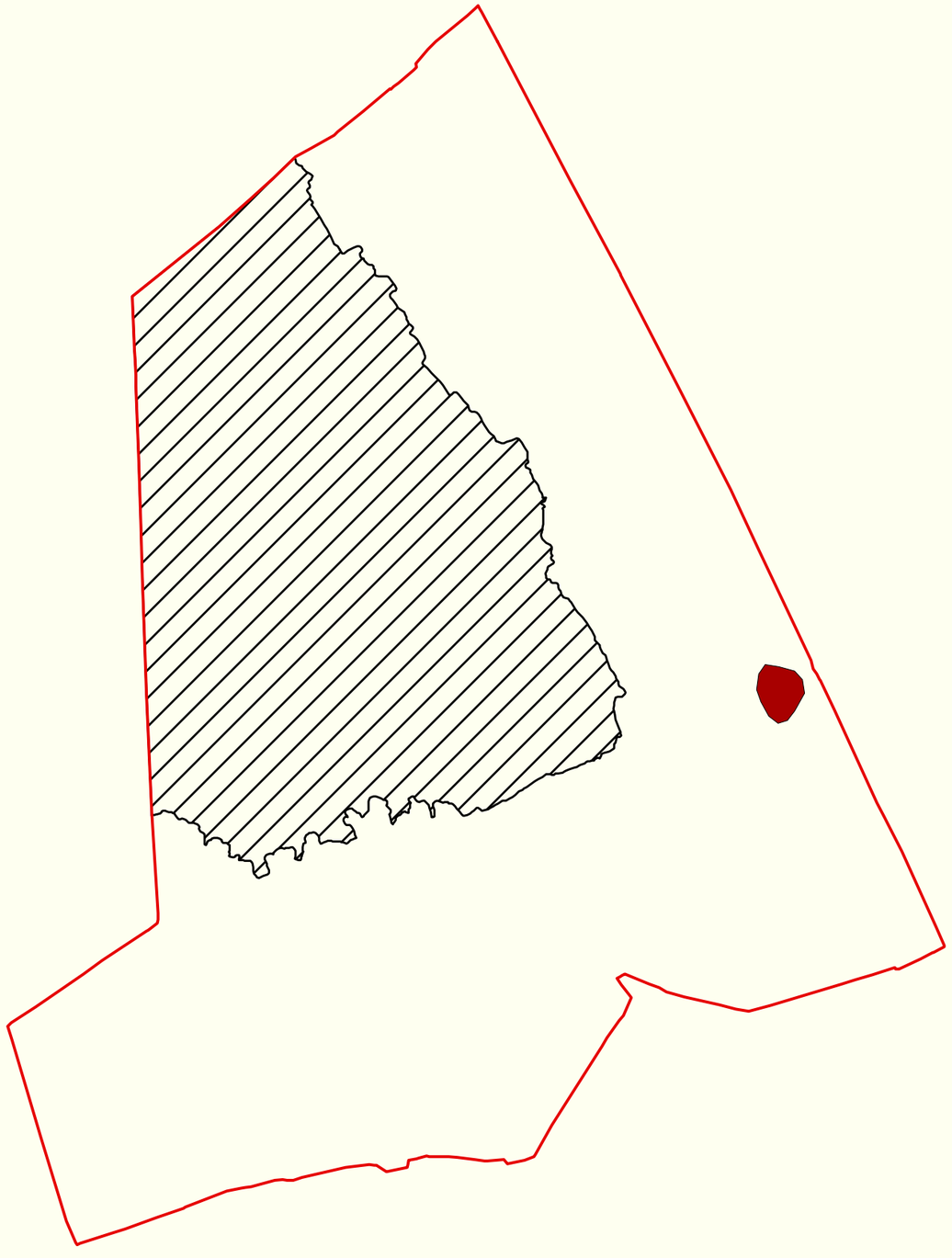
Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
SAC 002202; version 3
CO. LONGFORD

0 50 100 200 Metres

N

Date: March 2023



Legend

- High Bog Boundary
- Mount Jessop Bog SAC 002202

Active Raised Bog Vegetation

- Bog Woodland

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MAP 3:
MOUNT JESSOP BOG SAC
CONSERVATION OBJECTIVES
ACTIVE RAISED BOG VEGETATION

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

SITE CODE:
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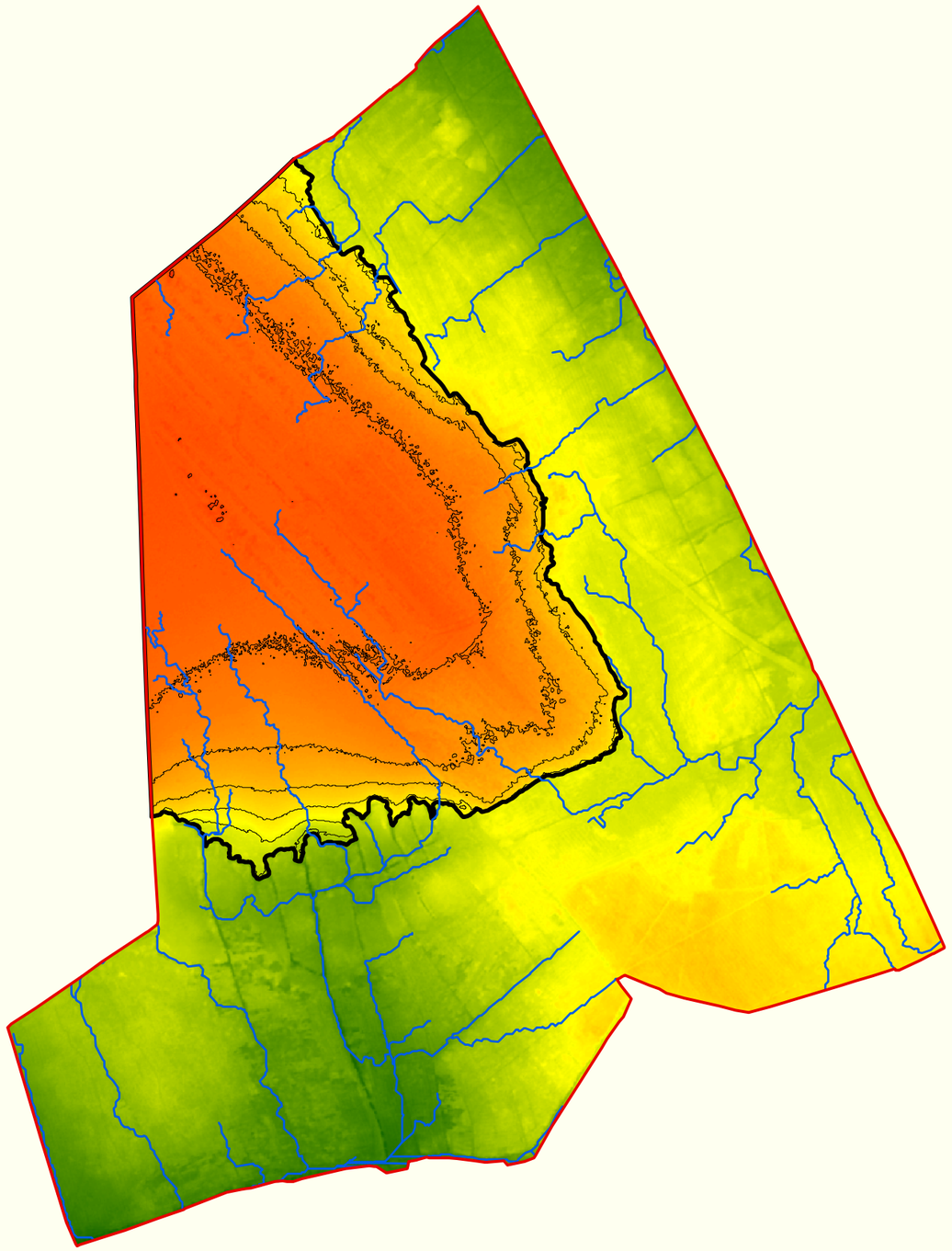
0 50 100 200 Metres

N

Date: March 2023



Legend

- High Bog Boundary
- Drainage Patterns
- Contours
- Mount Jessop Bog SAC 002202

Elevation

65.52 m

55.20 m

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MAP 4:
MOUNT JESSOP BOG SAC
CONSERVATION OBJECTIVES
DIGITAL ELEVATION MODEL& DRAINAGE PATTERNS

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

SITE CODE:
SAC 002202; version 3
CO. LONGFORD

0 50 100 200 Metres

N

Date: March 2023