

National Parks and Wildlife Service

Conservation Objectives Series

Arragh More (Derrybreen) Bog SAC 002207



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*

002207	Arragh More (Derrybreen) Bog SAC
7120	Degraded raised bogs still capable of natural regeneration

Please note that this SAC is adjacent to Kilcarren-Firville Bog SAC (000647). 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 :	2017
Title :	National Raised Bog Special Areas of Conservation Management Plan 2017-2022
Author :	NPWS
Series :	Conservation Management Plan
<hr/>	
Year :	2019
Title :	NHA Raised Bog Monitoring Project 2018 - Arragh More Bog (NHA 000640), County Tipperary - Site Report
Author :	Crushell, P.; Crowley, W.; Denyer, J.; Foss, P.; Gallagher, M.C.; MacGowan, F.; Smith, G.
Series :	Conservation Management Plan
<hr/>	
Year :	2023
Title :	Arragh More (Derrybreen) Bog SAC (Site Code: 002207) Conservation objectives supporting document- raised bog habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

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)
<hr/>	
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

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 (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 (Map 4)

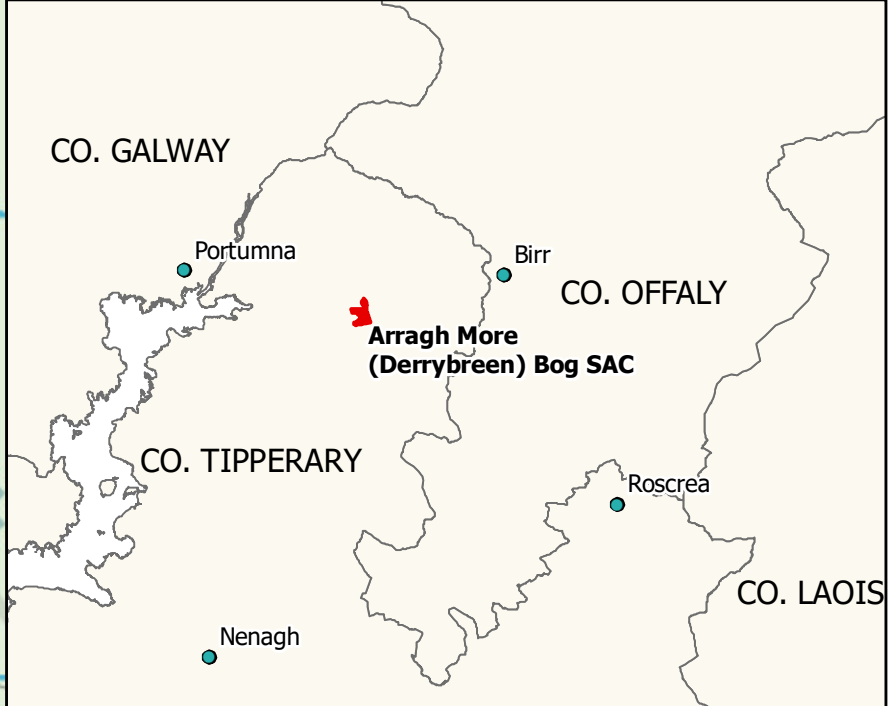
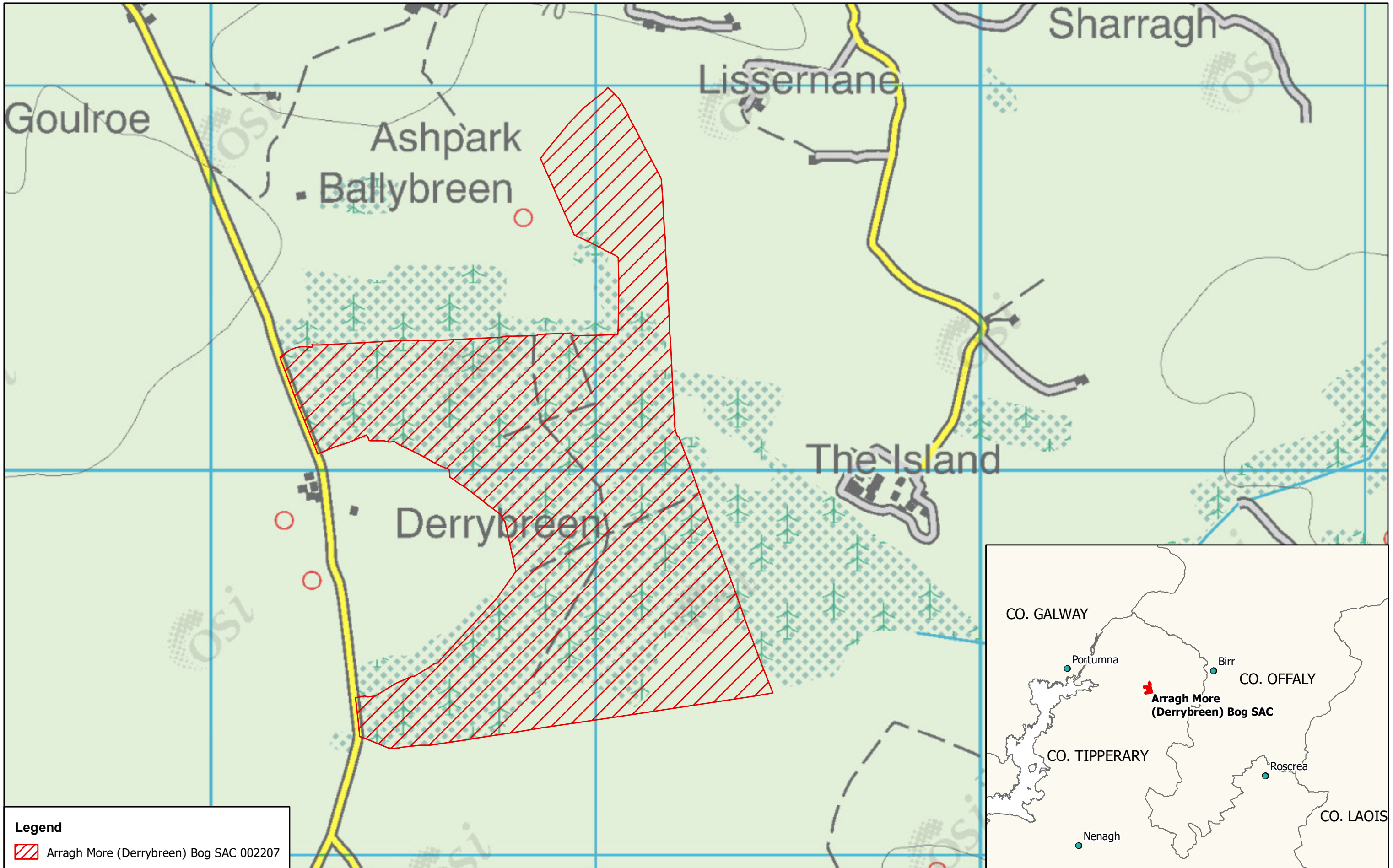
Conservation Objectives for : Arragh More (Derrybreen) Bog SAC [002207]


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 Arragh More (Derrybreen) 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 11.8ha, subject to natural processes	The most recent estimates for the area indicate that Active Raised Bog (ARB) habitat is not present within the SAC (Crushell et al., 2019). The area of Degraded Raised Bog (DRB) on the high bog potentially restorable to ARB by drain blocking has been estimated as 11.4ha. This is based on field surveys, combined with estimates from an eco-hydrological model and NPWS expert knowledge. Eco-hydrological assessments of the cutover estimates that an additional 0.4ha of bog-forming habitats could be restored. The long term target for ARB for the SAC is therefore 11.8ha. See the supporting document for further details on this and the following attributes
Habitat distribution	Occurrence	Restore the distribution and variability of active raised bog across the SAC. See map 3 for distribution of potential ARB	Two main areas of high bog covering 11.4ha have been identified as DRB and thus with potential to develop peat forming habitats (i.e. active raised bog or bog woodland). These consist of a large area (9.9ha) to the east and a much smaller one (1.5ha) to the south of the SAC
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 Arragh More (Derrybreen) Bog SAC in 2014 (latest figure available) was 61.3ha (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, except for very short periods of time
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 active raised bog and the services it provides	The SAC is bordered by forest plantations on cutover to the north, raised bog and cutover to the east and south, and agricultural grassland to the west
Vegetation quality: central ecotope, active flush, soak, bog woodland	Hectares	Restore 5.9ha of central ecotope central ecotope/active flush/soaks/bog woodland as appropriate	At least 50% of ARB habitat should comprise high quality ARB habitat such as central ecotope, active flush, and bog woodland. Target area of active raised bog for the site has been set at 11.8ha (see area target above)
Vegetation quality: microtopographical features	Hectares	Restore adequate cover of high quality microtopographical features	As a result of restoration efforts on Arragh More (Derrybreen) Bog SAC, the high bog appears to be re-wetting and there are two areas in the eastern section of the SAC that are showing significant indications of recovery and represent DRB habitat. These areas are on two major water flow paths across the bog and now have standing surface water in the hollows and pools for most of the year and considerable areas of regenerating <i>Sphagnum</i> species

Vegetation quality: bog moss (<i>Sphagnum</i>) species	Percentage cover	Restore adequate cover of bog moss (<i>Sphagnum</i>) species to ensure peat-forming capacity	(<i>Sphagnum</i>) 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 <i>Sphagnum austinii</i> are particularly good peat formers. (<i>Sphagnum</i>) cover and distribution also varies naturally across a site
Typical 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 subtypes or geographical range
Typical 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 subtypes or geographical range
Elements of local distinctiveness	Occurrence	Maintain features of local distinctiveness, subject to natural processes	The SAC was mostly afforested in the 1970s, with just over 12ha of high bog in the north-east and south of the site being left unplanted. These plantations were mostly felled by 2013. All the intensive drainage systems associated with the plantation were blocked by 2014 as part of an EU-funded Coillte LIFE Project. Some of the DRB in the more flushed parts of the bog may eventually develop into the very rare priority EU-Annexed habitat Bog Woodland (91D0), which would add further to the scientific interest of the site
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	Disturbance indicators include species indicative of conditions drying out such as abundant bog asphodel (<i>Narthecium ossifragum</i>), deergrass (<i>Trichophorum germanicum</i>) and harestail cotton-grass (<i>Eriophorum vaginatum</i>) forming tussocks; abundant magellanic bog-moss (<i>Sphagnum magellanicum</i>) in pools previously dominated by <i>Sphagnum</i> species typical of very wet conditions (e.g. feathery bog-moss (<i>S. denticulatum</i>)); and indicators of frequent burning events such as abundant <i>Cladonia floerkeana</i> and high cover of carnation sedge (<i>Carex panicea</i>) (particularly in true midlands raised bogs)
Vegetation composition: non-native invasive species	Percentage cover	Non-native invasive species at insignificant levels and not more than 1% cover	The most common non-native invasive species of raised bogs include lodgepole pine (<i>Pinus contorta</i>), rhododendron (<i>Rhododendron ponticum</i>), and pitcherplant (<i>Sarracenia purpurea</i>)
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 Arragh More (Derrybreen) Bog SAC suggests that the current level is approximately 12.7kg 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 runoff from surrounding mineral lands)



Legend
 Arragh More (Derrybreen) Bog SAC 002207

 An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra
 National Parks and Wildlife Service


MAP 1:
ARRAGH MORE (DERRYBREEN) BOG SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION
 Map to be read in conjunction with the NPWS Conservation Objectives Document

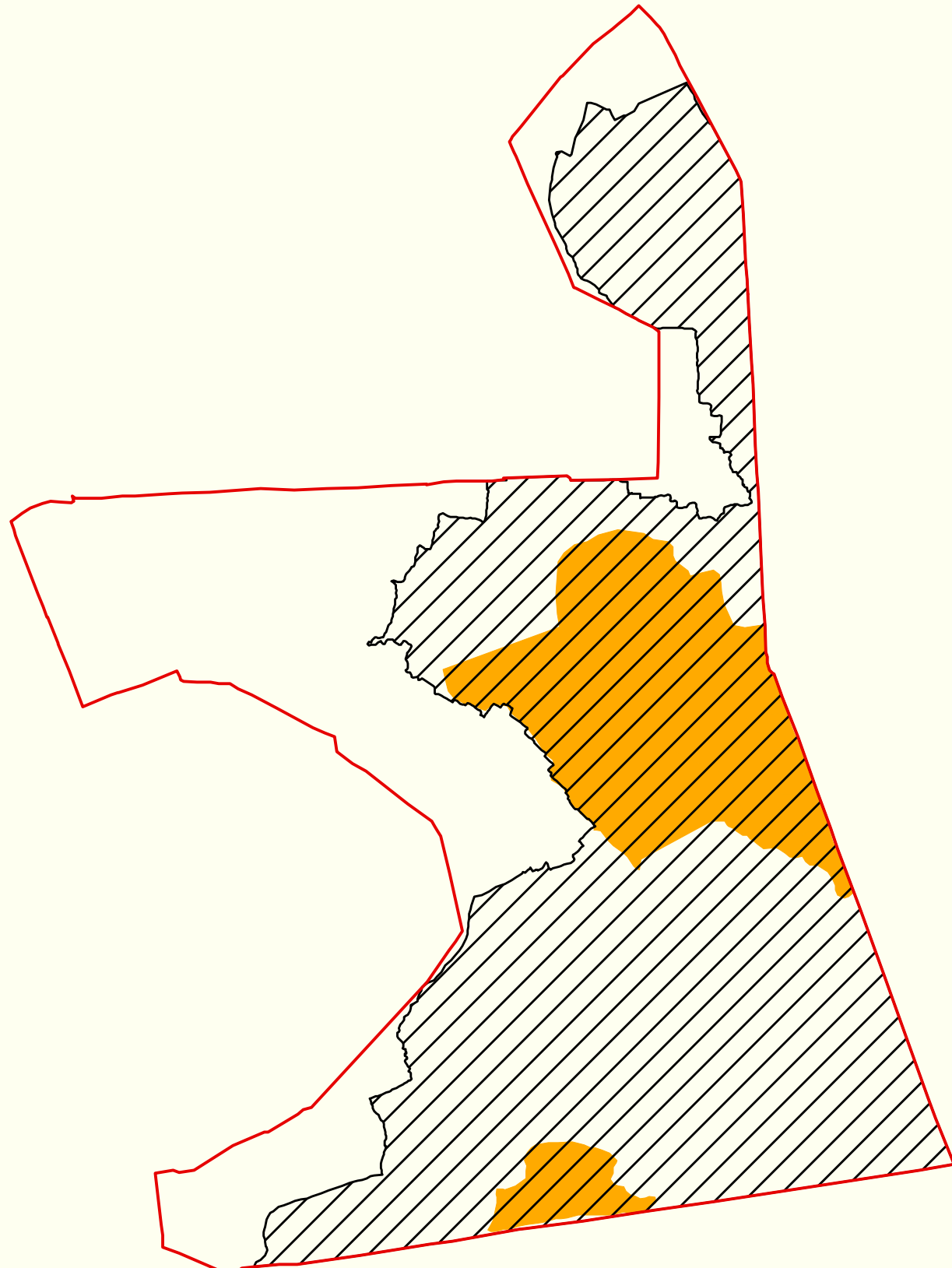
SITE CODE:
SAC 002207; version 3
CO. TIPPERARY

0 125 250 500 Metres




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 athbheithníthe a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh OSI-NMA-014. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann


Date: March 2023



Legend

-  High Bog Boundary
-  Potential 7110 Active Raised Bog
-  Arragh More (Derrybreen) Bog SAC 002207




An tSeirbhís Páirceanna Náisiúnta
agus Fiadhúlra
National Parks and Wildlife Service

MAP 3:
ARRAGH MORE (DERRYBREEN 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 002207; version 3
CO. TIPPERARY

0 100 200 400 Metres

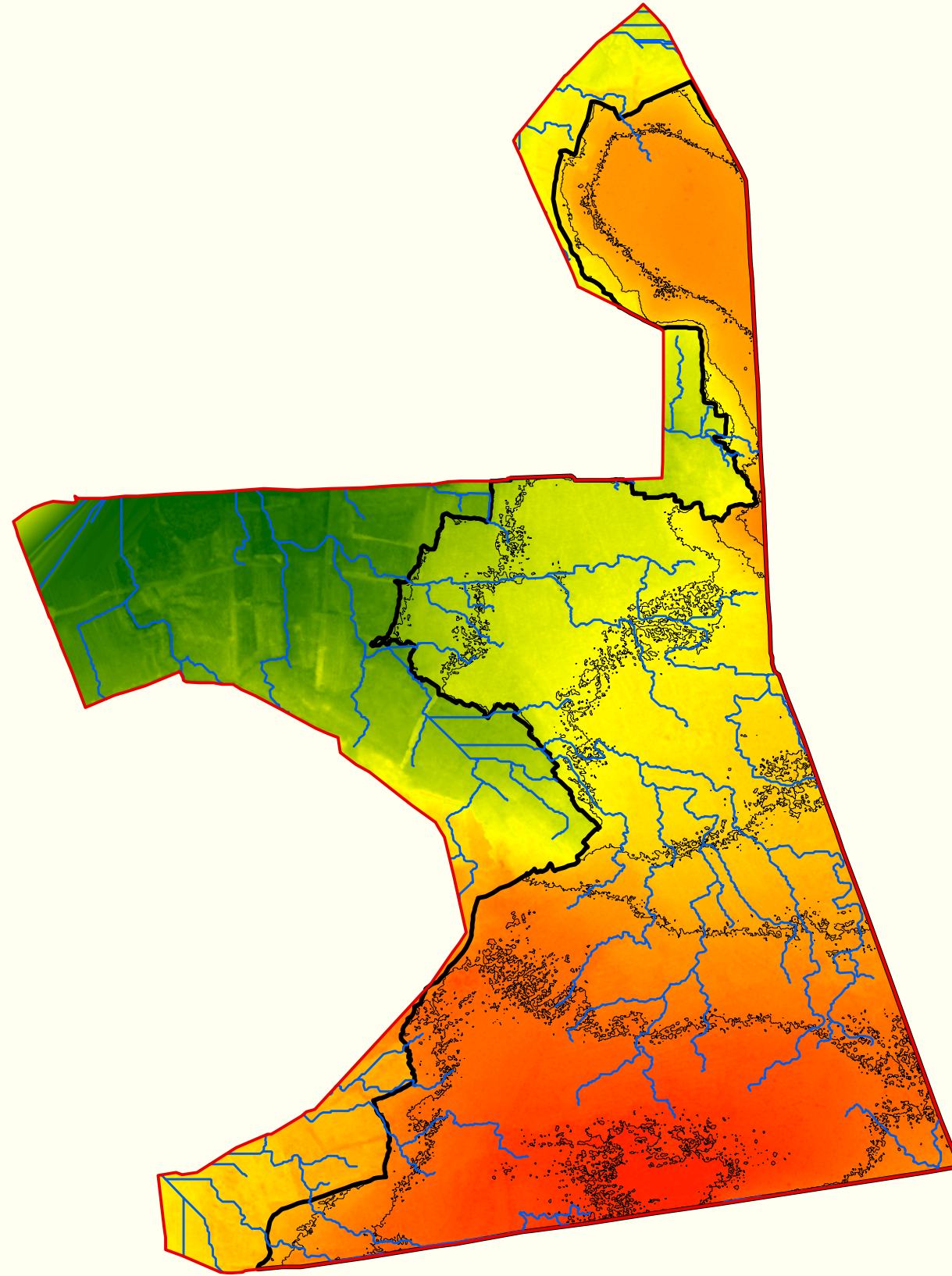


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Date: March 2023



Legend

-  High Bog Boundary
 -  Drainage Patterns
 -  Contours
 -  Arragh More (Derrybreen) Bog SAC 002207
- Elevation
-  67.46 m
 -  58.49 m