

# National Parks and Wildlife Service

## *Conservation Objectives Series*

### Dromore Woods and Loughs SAC 000032



An Roinn Cultúir,  
Oidhreacht agus Gaeltachta  
Department of Culture,  
Heritage and the Gaeltacht

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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*

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000032	Dromore Woods and Loughs SAC
1303	Lesser Horseshoe Bat <i>Rhinolophus hipposideros</i>
1355	Otter <i>Lutra lutra</i>
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
8240	Limestone pavementsE

**Please note that this SAC is adjacent to Ballyogan Lough SAC (000019). 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](http://www.npws.ie/Publications)

### NPWS Documents

<b>Year :</b>	1984
<b>Title :</b>	The vegetation of Irish lakes
<b>Author :</b>	Heuff, H.
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2003
<b>Title :</b>	Survey of eutrophic tall herb communities at Dromore Woods and Loughs SAC (000032)
<b>Author :</b>	Heery, S.
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2006
<b>Title :</b>	Otter survey of Ireland 2004/2005
<b>Author :</b>	Bailey, M.; Rochford, J.
<b>Series :</b>	Irish Wildlife Manual No. 23
<b>Year :</b>	2006
<b>Title :</b>	Bat mitigation guidelines for Ireland
<b>Author :</b>	Kelleher, C.; Marnell, F.
<b>Series :</b>	Irish Wildlife Manual No. 25
<b>Year :</b>	2007
<b>Title :</b>	Supporting documentation for the Habitats Directive Conservation Status Assessment - backing documents. Article 17 forms and supporting maps
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2012
<b>Title :</b>	Ireland Red List No. 8: Bryophytes
<b>Author :</b>	Lockhart, N.; Hodgetts, N.; Holyoak, D.
<b>Series :</b>	Ireland Red List series, NPWS
<b>Year :</b>	2013
<b>Title :</b>	National otter survey of Ireland 2010/12
<b>Author :</b>	Reid, N.; Hayden, B.; Lundy, M.G.; Pietravalle, S.; McDonald, R.A.; Montgomery, W.I.
<b>Series :</b>	Irish Wildlife Manual No. 76
<b>Year :</b>	2013
<b>Title :</b>	Irish semi-natural grasslands survey 2007-2012
<b>Author :</b>	O'Neill, F.H.; Martin, J.R.; Devaney, F.M.; Perrin, P.M.
<b>Series :</b>	Irish Wildlife Manual No. 78
<b>Year :</b>	2013
<b>Title :</b>	National survey of limestone pavement and associated habitats in Ireland
<b>Author :</b>	Wilson, S.; Fernandez, F.
<b>Series :</b>	Irish Wildlife Manual No. 73
<b>Year :</b>	2013
<b>Title :</b>	The status of EU protected habitats and species in Ireland. Volume 2. Habitats assessments
<b>Author :</b>	NPWS
<b>Series :</b>	Conservation assessments

<b>Year :</b>	2015
<b>Title :</b>	Habitats Directive Annex I lake habitats: a working interpretation for the purposes of site-specific conservation objectives and Article 17 reporting
<b>Author :</b>	O Connor, Á.
<b>Series :</b>	Unpublished document by NPWS
<b>Year :</b>	2016
<b>Title :</b>	Ireland Red List No. 10: Vascular Plants
<b>Author :</b>	Wyse Jackson, M.; FitzPatrick, Ú.; Cole, E.; Jebb, M.; McFerran, D.; Sheehy Skeffington, M.; Wright, M.
<b>Series :</b>	Ireland Red Lists series, NPWS
<b>Year :</b>	2018
<b>Title :</b>	Conservation objectives supporting document – lesser horseshoe bat ( <i>Rhinolophus hipposideros</i> )
<b>Author :</b>	NPWS
<b>Series :</b>	Conservation objectives supporting document

## Other References

<b>Year :</b>	1905
<b>Title :</b>	Notes on the botany of central Clare
<b>Author :</b>	Praeger, R.L.
<b>Series :</b>	The Irish Naturalist, 14(9): 188-193
<b>Year :</b>	1982
<b>Title :</b>	Otter survey of Ireland
<b>Author :</b>	Chapman, P.J.; Chapman, L.L.
<b>Series :</b>	Unpublished report to Vincent Wildlife Trust
<b>Year :</b>	1982
<b>Title :</b>	Eutrophication of waters. Monitoring assessment and control
<b>Author :</b>	OECD
<b>Series :</b>	OECD, Paris
<b>Year :</b>	1991
<b>Title :</b>	The spatial organization of otters ( <i>Lutra lutra</i> ) in Shetland
<b>Author :</b>	Kruuk, H.; Moorhouse, A.
<b>Series :</b>	Journal of Zoology, 224: 41-57
<b>Year :</b>	2000
<b>Title :</b>	Colour in Irish lakes
<b>Author :</b>	Free, G.; Allott, N.; Mills, P.; Kennelly, C.; Day, S.
<b>Series :</b>	Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie, 27: 2620-2623
<b>Year :</b>	2006
<b>Title :</b>	Otters - ecology, behaviour and conservation
<b>Author :</b>	Kruuk, H.
<b>Series :</b>	Oxford University Press
<b>Year :</b>	2006
<b>Title :</b>	A reference-based typology and ecological assessment system for Irish lakes. Preliminary investigations. Final report. Project 2000-FS-1-M1 Ecological assessment of lakes pilot study to establish monitoring methodologies EU (WFD)
<b>Author :</b>	Free, G.; Little, R.; Tierney, D.; Donnelly, K.; Coroni, R.
<b>Series :</b>	EPA, Wexford

<b>Year :</b>	2008
<b>Title :</b>	The lesser horseshoe bat conservation handbook
<b>Author :</b>	Schofield, H.W.
<b>Series :</b>	The Vincent Wildlife Trust
<b>Year :</b>	2009
<b>Title :</b>	Importance of night roosts for bat conservation: roosting behaviour of the lesser horseshoe bat <i>Rhinolophus hipposideros</i>
<b>Author :</b>	Knight, T.; Jones, G.
<b>Series :</b>	Endangered Species Research, 8: 79-86
<b>Year :</b>	2010
<b>Title :</b>	Otter tracking study of Roaringwater Bay
<b>Author :</b>	De Jongh, A.; O'Neill, L.
<b>Series :</b>	Unpublished draft report to NPWS
<b>Year :</b>	2010
<b>Title :</b>	Water Quality in Ireland 2007-2009
<b>Author :</b>	McGarrigle, M.; Lucey, J.; Ó Cinnéide, M.
<b>Series :</b>	Environmental Protection Agency, Wexford
<b>Year :</b>	2012
<b>Title :</b>	Rare and threatened bryophytes of Ireland
<b>Author :</b>	Lockhart, N.; Hodgetts, N.; Holyoak, D.
<b>Series :</b>	National Museums Northern Ireland
<b>Year :</b>	2013
<b>Title :</b>	Interpretation manual of European Union habitats- Eur 28
<b>Author :</b>	European Commission- DG Environment
<b>Series :</b>	European Commission
<b>Year :</b>	2015
<b>Title :</b>	Water Quality in Ireland 2010-2012
<b>Author :</b>	Bradley, C.; Byrne, C.; Craig, M.; Free, G.; Gallagher, T.; Kennedy, B.; Little, R.; Lucey, J.; Mannix, A.; McCreesh, P.; McDermott, G.; McGarrigle, M.; Ní Longphuirt, S.; O'Boyle, S.; Plant, C.; Tierney, D.; Trodd, W.; Webster, P.; Wilkes, R.; Wynne, C.
<b>Series :</b>	Environmental Protection Agency, Wexford
<b>Year :</b>	2016
<b>Title :</b>	A narrative for conserving freshwater and wetland habitats in England
<b>Author :</b>	Mainstone, C.; Hall, R.; Diack, I.
<b>Series :</b>	Natural England Research Reports Number 064
<b>Year :</b>	2017
<b>Title :</b>	Water Quality in Ireland 2010-2015
<b>Author :</b>	Fanning, A.; Craig, M.; Webster, P.; Bradley, C.; Tierney, D.; Wilkes, R.; Mannix, A.; Treacy, P.; Kelly, F.; Geoghegan, R.; Kent, T.; Mageean, M.
<b>Series :</b>	Environmental Protection Agency, Wexford

## Spatial data sources

<b>Year :</b>	2008
<b>Title :</b>	OSi 1:5000 IG vector dataset
<b>GIS Operations :</b>	WaterPolygons feature class clipped to the SAC boundary. Expert opinion used to identify Annex I habitat and to resolve any issues arising
<b>Used For :</b>	3150 (map 3)
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<b>Year :</b>	2013
<b>Title :</b>	Irish Semi-Natural Grassland Survey
<b>GIS Operations :</b>	Dataset clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	6430 (map 4)
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<b>Year :</b>	2018
<b>Title :</b>	Heery (2003) Survey of eutrophic tall herb communities at Dromore Woods and Loughs SAC (000032)
<b>GIS Operations :</b>	Map from report georectified. 6430 communities as outlined on map digitised. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	6430 (map 4)
<hr/>	
<b>Year :</b>	2013
<b>Title :</b>	National Survey of Limestone Pavement and Associated Habitats in Ireland distribution data
<b>GIS Operations :</b>	Dataset clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	8240 (map 5)
<hr/>	
<b>Year :</b>	2018
<b>Title :</b>	NPWS lesser horseshoe bat database
<b>GIS Operations :</b>	Roosts identified, clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	1303 (map 6)
<hr/>	
<b>Year :</b>	2007
<b>Title :</b>	Forest Inventory and Planning System (FIPS)
<b>GIS Operations :</b>	Dataset clipped to 2.5km buffer centred on roost location
<b>Used For :</b>	1303 (map 6)
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## Conservation Objectives for : Dromore Woods and Loughs SAC [000032]

### 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation

To maintain the favourable conservation condition of Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation in Dromore Woods and Loughs 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	Little is known about the characteristics or ecology of Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation in Ireland. The habitat is associated with base-rich lakes, with circumneutral or higher pH, in low-lying, large, naturally more productive catchments and is characterised by high abundance and diversity of pondweeds ( <i>Potamogeton</i> spp.) and mesotrophic values for total phosphorus and chlorophyll. It is considered to occur in lakes in Dromore Woods and Loughs SAC, including Dromore and Ballyteige Loughs (see map 3). Two measures of extent should be used: 1. the area of the lake itself and; 2. the extent of the vegetation communities/zones that typify the habitat. Further information relating to all attributes is provided in the lake habitats supporting document for the purposes of site-specific conservation objectives and Article 17 reporting (O Connor, 2015)
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3	As noted above, habitat 3150 is considered to occur in the lakes in Dromore Woods and Loughs SAC (see map 3). Nutrient enrichment from agricultural and other sources is likely to have increased the trophic status of the lakes, and it is possible that the lakes naturally contained a less productive habitat. Environmental Protection Agency (EPA) river quality data demonstrate that the River Fergus has been impacted by nutrients/organic matter since the 1970s
Vegetation composition: typical species	Occurrence	Typical species present, in good condition, and demonstrating typical abundances and distribution	For lists of typical plant species, see the Article 17 habitat assessment for 3150 (NPWS, 2013) and the lake habitats supporting document (O Connor, 2015). Heuff (1984) surveyed Ballyteige Lough and two lakes adjacent to the large Dromore Lough and recorded <i>Schoenoplectus lacustris</i> , <i>Sparganium erectum</i> , <i>Butomus umbellatus</i> , <i>Oenanthe aquatica</i> , <i>Baldellia ranunculoides</i> , <i>Lemna trisulca</i> , <i>Littorella uniflora</i> , <i>Nuphar lutea</i> , <i>Nymphaea alba</i> , <i>Elodea canadensis</i> , <i>Potamogeton friesii</i> , <i>P. lucens</i> , <i>P. perfoliatus</i> , <i>Ceratophyllum demersum</i> and <i>Chara rudis</i> , amongst others. Praeger (1905) recorded <i>Eleocharis acicularis</i> , <i>Ranunculus circinatus</i> , <i>Sium latifolium</i> and others. The Vulnerable <i>Callitriche palustris</i> (Wyse Jackson et al., 2016) was recorded during the 2011 Bioblitz. The River Fergus flows through Dromore Loughs and has historical bryophyte records for <i>Cinclidotus riparius</i> and <i>Fontinalis antipyretica</i> var. <i>cymbifolia</i> (Lockhart et al., 2012)
Vegetation composition: characteristic zonation	Occurrence	All characteristic zones should be present, correctly distributed and in good condition	Further work is necessary to describe the characteristic zonation and other spatial patterns in lake habitat 3150 (see O Connor, 2015). Heuff (1984) gives some information on the zonation at the two lakes adjacent to Dromore Lough and in Ballyteige Lough
Vegetation distribution: maximum depth	Metres	Maintain maximum depth of vegetation, subject to natural processes	The maximum depth of vegetation is likely to be specific to the lake shoreline in question. Further work is necessary to develop indicative targets for lake habitat 3150. The maximum depth of vegetation in Ballyteige Lough was 3m in 1978 (Heuff, 1984)

Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat	Fluctuations in lake water level are typical in Ireland, but can be amplified by activities such as abstraction and drainage. Increased water level fluctuations can increase wave action, up-root vegetation, increase turbidity, alter the substratum and lead to release of nutrients from the sediment. The hydrological regime of the lakes must be maintained so that the area, distribution and depth of the lake habitat and its constituent/characteristic vegetation zones and communities are not reduced. The lakes in Dromore Woods and Loughs SAC demonstrate significant fluctuations in water level
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the vegetation	Research is required to further characterise the substratum types (particle size and origin) and substratum quality (notably pH, calcium, iron and nutrient concentrations) favoured by each of the five Annex I lake habitats in Ireland. It is likely that soft muddy substrata dominate lake habitat 3150. Substratum particle size is likely to vary with depth and along the shoreline within a single lake
Water quality: transparency	Metres	Maintain appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	Transparency relates to light penetration and, hence, to the depth of colonisation of vegetation. It can be affected by phytoplankton blooms, water colour and turbidity. Specific targets have yet to be established for lake habitat 3150 (O Connor, 2015). Habitat 3150 is associated with lower transparency than the other lake habitats. The OECD fixed boundary system set transparency targets for mesotrophic lakes of 6-3m annual mean Secchi disk depth, and 3-1.5m annual minimum Secchi disk depth
Water quality: nutrients	µg/l P; mg/l N	Maintain/restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species	As a relatively productive habitat, mesotrophic and Water Framework Directive (WFD) 'good' status targets apply. Where a lake has nutrient concentrations that are lower than these targets, there should be no decline within class, i.e. no upward trend in nutrient concentrations. For lake habitat 3150, annual average total phosphorus (TP) concentration should be ≤20µg/l TP, average annual total ammonia concentration should be ≤0.065mg/l N and annual 95th percentile for total ammonia should be ≤0.140mg/l N. See also The European Communities Environmental Objectives (Surface Waters) Regulations 2009. Dromore Lough had good nutrient status in 2010-12 (Bradley et al., 2015) and 2013-15 (Fanning et al., 2017), but moderate in 2007-09 (McGarrigle et al., 2010)
Water quality: phytoplankton biomass	µg/l chlorophyll <i>a</i>	Maintain appropriate water quality to support the habitat, including good chlorophyll <i>a</i> status	Mesotrophic and WFD 'good' status targets apply to lake habitat 3150. Where a lake has a chlorophyll <i>a</i> concentration that is lower than this target, there should be no decline within class, i.e. no upward trend in phytoplankton biomass. The average growing season (March-October) chlorophyll <i>a</i> concentration must be <10µg/l. The annual average chlorophyll <i>a</i> concentration should be 2.5-8.0µg/l and the annual peak chlorophyll <i>a</i> concentration should be 8.0-25.0µg/l (OECD, 1982). See also The European Communities Environmental Objectives (Surface Waters) Regulations 2009. Dromore Lough had good chlorophyll <i>a</i> status in 2007-09, 2010-12 and 2013-17 (McGarrigle et al., 2010; Bradley et al., 2015; Fanning et al., 2017)
Water quality: phytoplankton composition	EPA phytoplankton composition metric	Maintain/restore appropriate water quality to support the habitat, including good phytoplankton composition status	The EPA has developed a phytoplankton composition metric for nutrient enrichment of Irish lakes. As for other water quality indicators, lake habitat 3150 requires WFD good status. Dromore Lough had moderate phytoplankton composition status in 2010-12 (Bradley et al., 2015)

Water quality: attached algal biomass	Algal cover	Maintain trace/absent attached algal biomass (<5% cover)	Nutrient enrichment can favour epiphytic and epipelic algae that can out-compete the submerged vegetation. The cover abundance of attached algae in lake habitat 3150 should, ideally therefore, be trace/absent (<5% cover)
Water quality: macrophyte status	EPA macrophyte metric (The Free Index)	Maintain/restore good macrophyte status	Nutrient enrichment can favour more competitive submerged macrophyte species that out-compete the typical and characteristic species for the lake habitat. The EPA monitors macrophyte status for WFD purposes using the 'Free Index'. The target for lake habitat 3150 is good status or an Ecological Quality Ratio (EQR) for lake macrophytes of $\geq 0.68$ , as defined in Schedule Five of the European Communities Environmental Objectives (Surface Waters) Regulations 2009. Dromore Lough had good macrophyte status in 2010-12 (Bradley et al., 2015) and in 2013-15 (Fanning et al., 2017), but moderate in 2007-09 (McGarrigle et al., 2010)
Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes	The specific requirements of lake habitat 3150, in terms of water and sediment pH, alkalinity and cation concentration, have not been fully determined. Acidification is not considered a threat to lake habitat 3150; however, eutrophication can lead to at least temporary increases in pH to toxic levels ( $>9/9.5$ pH units). Maximum pH should be $<9.0$ pH units, in line with the surface water standards. See The European Communities Environmental Objectives (Surface Water Objectives) Regulations 2009
Water colour	mg/l PtCo	Maintain appropriate water colour to support the habitat	Increased water colour and turbidity decrease light penetration and can reduce the area of available habitat for lake macrophytes, particularly at the lower euphotic depths. The primary source of increased water colour in Ireland is disturbance to peatland. No habitat-specific or national standards for water colour currently exist. Studies have shown median colour concentrations in Irish lakes of 38mg/l PtCo (Free et al., 2000) and 33mg/l PtCo (Free et al., 2006). It is likely that the water colour in all Irish lake habitats would naturally be $<50$ mg/l PtCo
Dissolved organic carbon (DOC)	mg/l	Maintain appropriate organic carbon levels to support the habitat	Dissolved (and particulate) organic carbon (OC) in the water column is linked to water colour and acidification (organic acids). Increasing DOC in water has been documented across the Northern Hemisphere, including afforested peatland catchments in Ireland. Damage and degradation of peatland, leading to decomposition of peat is likely to be the predominant source of OC in Ireland. OC in water promotes decomposition by fungi and bacteria that, in turn, releases dissolved nutrients. The increased biomass of decomposers can also impact directly on the characteristic lake communities through shading, competition, etc.
Turbidity	Nephelometric turbidity units/ mg/l SS/ other appropriate units	Maintain appropriate turbidity to support the habitat	Turbidity can significantly affect the quantity and quality of light reaching rooted and attached vegetation and can, therefore, impact on lake habitats. The settlement of higher loads of inorganic or organic material on lake vegetation communities may also have impacts on sensitive, delicate species. Turbidity can increase as a result of re-suspension of material within the lake, higher loads entering the lake, or eutrophication. Turbidity measurement and interpretation is challenging. As a result, it is likely to be difficult to set habitat-specific targets for turbidity in lakes

Fringing habitat: Hectares  
area and condition

Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of the lake habitat

3150 lakes typically have well-developed reedswamp, fen and/or marsh communities around much of their shoreline. Wet woodland would have surrounded much of their shoreline in the past and has survived or re-colonised patches of many 3150 lake shores. These fringing habitats intergrade with and support the structure and functions of the lake habitat. Equally, fringing habitats are dependent on the lake, particularly its water levels, and support wetland communities and species of conservation concern. Many of the fringing wetland habitats support higher invertebrate and plant species richness than the lake habitats themselves. See Mainstone et al. (2016). Lakes in Dromore Woods and Loughs SAC have fringing woodland, marsh, swamp, limestone pavement and fen

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## Conservation Objectives for : Dromore Woods and Loughs SAC [000032]

### 6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

To restore the favourable conservation condition of Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels in Dromore Woods and Loughs 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	Two lowland community types of hydrophilous tall herb fringe communities of plains are considered to occur in Dromore Woods and Loughs SAC: the lowland saum community at woodland edges and the lowland community type adjacent to lakes and rivers. Both community types within the SAC were surveyed by Heery (2003) in two locations each to give an area of 1.95ha of the saum community and 4.98ha of the community type adjacent to rivers and lakes. As part of the Irish Semi-natural Grassland Survey (ISGS) (O'Neill et al., 2013), a further 1.58ha of the lowland community type adjacent to lakes and rivers was surveyed and mapped within the sub-site Dromore Lough (ISGS site code 1627). Map 2 shows the surveyed areas classified as habitat 6430 by Heery (2003) and O'Neill et al. (2013). NB further unsurveyed areas may be present within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes	Distribution is based on Heery (2003) and O'Neill et al. (2013). NB further unsurveyed areas may be present within the SAC
Hydrological regime: flooding depth/height of water table	Metres	Maintain appropriate hydrological regimes	The habitat requires winter inundation, which results in deposition of naturally nutrient-rich sediment
Vegetation composition: positive indicator species	Number of species at a representative number of 2m x 2m monitoring stops	At least three positive indicator species present	Attribute and target based on O'Neill et al. (2013). See O'Neill et al. (2013) and European Commission (2013) for lists of positive indicator species. In this SAC, positive indicator species recorded in the lowland community type adjacent to lake and rivers include meadowsweet ( <i>Filipendula ulmaria</i> ), purple-loosestrife ( <i>Lythrum salicaria</i> ), common valerian ( <i>Valeriana officinalis</i> ), great willowherb ( <i>Epilobium hirsutum</i> ), wild angelica ( <i>Angelica sylvestris</i> ), bittersweet ( <i>Solanum dulcamara</i> ), hemp-agrimony ( <i>Eupatorium cannabinum</i> ), marsh woundwort ( <i>Stachys palustris</i> ), yellow iris ( <i>Iris pseudacorus</i> ) and water forget-me-not ( <i>Myosotis scorpioides</i> ) (Heery, 2003; O'Neill et al., 2013). The first five species listed also occur in the saum community in the SAC, as well as additional species typical of the saum community of the habitat, such as ground-ivy ( <i>Glechoma hederaceae</i> ) (Heery, 2003)
Vegetation composition: positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 40%	Attribute and target based on O'Neill et al. (2013). See O'Neill et al. (2013) and European Commission (2013) for lists of positive indicator species
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	Attribute and target based on O'Neill et al. (2013) and NPWS internal files
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of negative indicator species not more than 33%	Attribute and target based on O'Neill et al. (2013). Negative indicator species for this habitat are reed sweet-grass ( <i>Glyceria maxima</i> ), reed canary-grass ( <i>Phalaris arundinacea</i> ) and common reed ( <i>Phragmites australis</i> )
Vegetation composition: scrub, bracken and heath	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of scrub, bracken ( <i>Pteridium aquilinum</i> ) and heath not more than 5%	Attribute and target based on O'Neill et al. (2013) and NPWS internal files

Vegetation structure: height	Height (centimetres) at a representative number of 2m x 2m monitoring stops	Herb height at least 50cm	Attribute and target based on O'Neill et al. (2013) and NPWS internal files
Physical structure: bare soil	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of bare soil not more than 10%	Attribute and target based on O'Neill et al. (2013) and NPWS internal files
Physical structure: grazing and disturbance	Square metres in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m <sup>2</sup>	Attribute and target based on O'Neill et al. (2013) and NPWS internal files

## Conservation Objectives for : Dromore Woods and Loughs SAC [000032]

### 8240 Limestone pavements†

To maintain the favourable conservation condition of Limestone pavements\* in Dromore Woods and Loughs 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	Limestone pavement* occurs in association with other habitats in Dromore Woods and Loughs SAC, including calcareous grassland, scrub, heath, lake shore and fen (NPWS internal files). Therefore, these habitats cannot easily be mapped separately. Wilson and Fernandez (2013) mapped the indicative area of limestone pavement, including mosaics with grassland, scrub and heath, as 90.3ha (see map 5). Part of the sub-site Moymore (site code NSLP39), surveyed as part of the National Survey of Limestone Pavements and Associated Habitats (Wilson and Fernandez, 2013), lies within the boundary of Dromore Woods and Loughs SAC in the south-west of the SAC
Distribution	Occurrence	No decline. Map 5 shows the indicative distribution, including mosaics with other habitats	Distribution based on Wilson and Fernandez (2013). This habitat can be split into exposed pavement and wooded pavement. In Dromore Woods and Loughs SAC, areas of open pavement and pavement with hazel ( <i>Corylus avellana</i> ) ash ( <i>Fraxinus excelsior</i> ) scrub are found in the north and the habitat also occurs in the south-west of the SAC. All stages of succession are represented in the SAC, from bare limestone pavement to pavement with scrub, to closed woodland (NPWS internal files)
Vegetation composition: typical 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). In this SAC, positive indicator species of wooded pavement recorded in the habitat include ash ( <i>Fraxinus excelsior</i> ), hazel ( <i>Corylus avellana</i> ), spindle ( <i>Euonymus europaeus</i> ), burnet rose ( <i>Rosa spinosissima</i> ), hawthorn ( <i>Crataegus monogyna</i> ), false brome ( <i>Brachypodium sylvaticum</i> ), ivy ( <i>Hedera helix</i> ), honeysuckle ( <i>Lonicera peridymenum</i> ), lords-and-ladies ( <i>Arum maculatum</i> ), enchanter's nightshade ( <i>Circaea lutetiana</i> ), wood avens ( <i>Geum urbanum</i> ), primrose ( <i>Primula vulgaris</i> ), male-fern ( <i>Dryopteris filix-mas</i> ) and the bryophytes <i>Neckera complanata</i> , <i>Plagiomnium undulatum</i> , <i>Rhytidiadelphus triquetrus</i> , <i>Thamnobryum alopecurum</i> , <i>Thuidium tamariscinum</i> and <i>Tortella tortuosa</i> (Wilson and Fernandez, 2013; NPWS internal files)
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). Sycamore ( <i>Acer pseudoplatanus</i> ) and occasional conifers have been recorded in the wooded pavement in the SAC (NPWS internal files). Wilson and Fernandez (2013) recorded beech ( <i>Fagus sylvatica</i> ) in wooded pavement in the sub-site Moymore (site code NSLP39) within the boundary of the SAC
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)

Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken ( <i>Pteridium aquilinum</i> ) cover no more than 10% on exposed pavement	Attribute and target based on Wilson and Fernandez (2013)
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)
Indicators of local distinctiveness	Occurrence	Indicators of local distinctiveness are maintained	This includes species listed in the Flora (Protection) Order, 2015 and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016) and other rare or localised species, as well as archaeological and geological features, which often support distinctive species

## Conservation Objectives for : Dromore Woods and Loughs SAC [000032]

### 1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*

To maintain the favourable conservation condition of Lesser Horseshoe Bat in Dromore Woods and Loughs SAC, which is defined by the following list of attributes and targets:

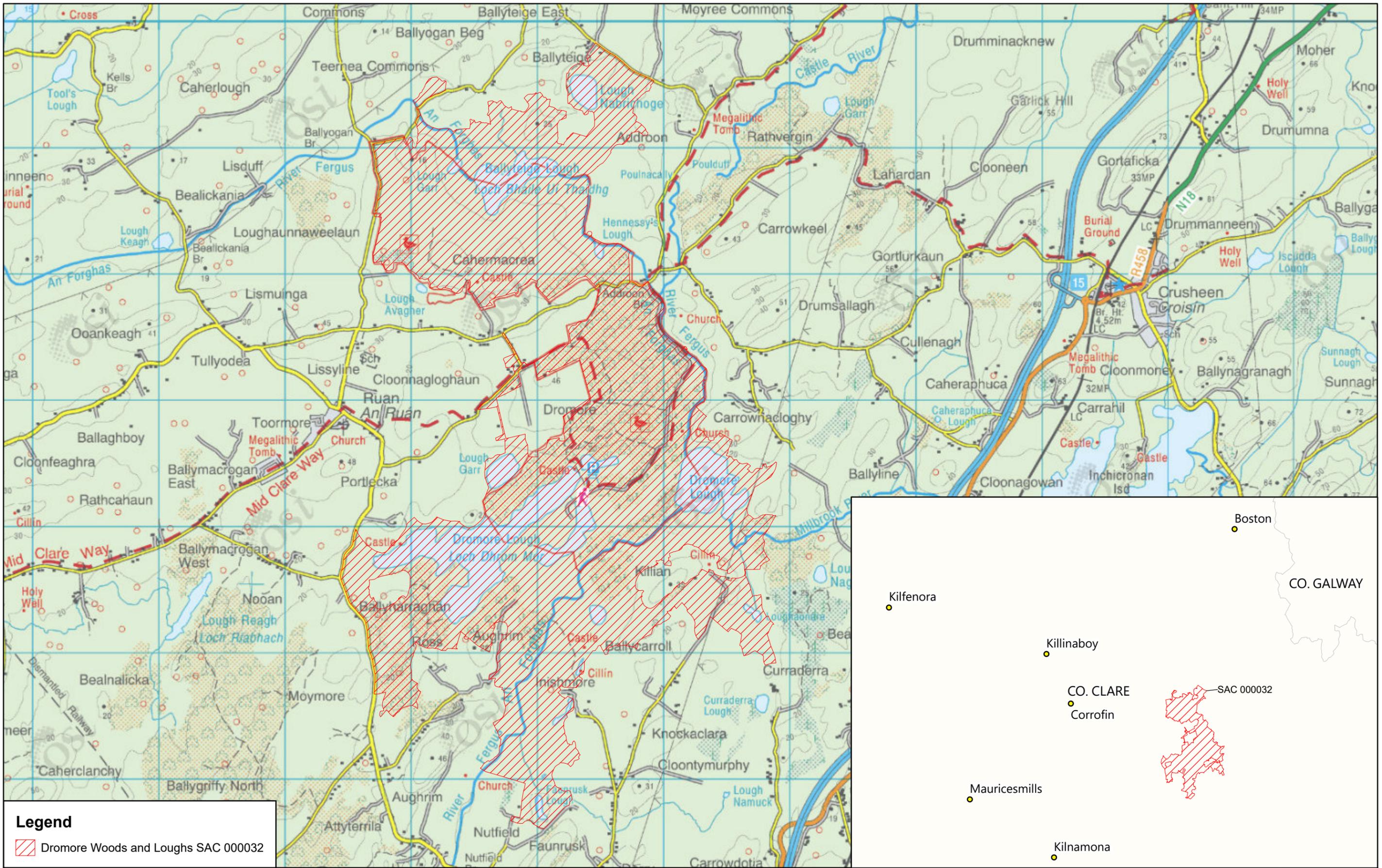
Attribute	Measure	Target	Notes
Population per roost	Number	Minimum number of 261 bats for the summer roost (roost id. 109 in NPWS database). See map 6	A figure of 100 bats for summer roosts and 50 bats for winter roosts was set as a minimum qualifying standard (MQS) when SACs were being selected for lesser horseshoe bats ( <i>Rhinolophus hipposideros</i> ). NPWS conduct annual counts at each qualifying roost. Qualified means from the 2012-2016 data have been calculated whereby the year with the highest maximum count and the year with the lowest maximum count were removed and the mean of the remaining years was calculated. This mean is set as the target figure for the summer roost (roost id. 109 in NPWS database) in Dromore Woods and Loughs SAC. See the conservation objectives supporting document for lesser horseshoe bat (NPWS, 2018) for further information on all attributes and targets
Summer roosts	Condition	No decline	Dromore Woods and Loughs SAC has been selected for lesser horseshoe bat because of the presence of one internationally important summer roost (roost id. 109 in NPWS database). Damage or disturbance to the roost or to the habitat immediately surrounding it will lead to a decline in its condition (Kelleher and Marnell, 2006)
Auxiliary roosts	Number and condition	No decline	Lesser horseshoe bat populations will use a variety of roosts during the year besides the main summer maternity and winter hibernation roosts. Such additional roosts within the SAC may be important as night roosts, satellite roosts, etc. Night roosts are also considered an integral part of core foraging areas and require protection (Knight and Jones, 2009). In addition, in response to weather conditions for example, bats may use different seasonal roosts from year to year; this is particularly noticeable in winter. Several other winter and summer roosts that support lesser horseshoe bats, but at numbers below the MQS figures, are known from Dromore Woods and Loughs SAC. A database of all known lesser horseshoe bat roosts is available on the National Biodiversity Data Centre website. NB further unrecorded roosts may also be present within this SAC
Extent of potential foraging habitat	Hectares	No significant decline within 2.5km of qualifying roost	Lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts (Schofield, 2008). See map 6 which shows a 2.5km zone around the above roost and identifies potential foraging grounds
Linear features	Kilometres	No significant loss within 2.5km of qualifying roost. See map 6	This species follows commuting routes from its roost to its foraging grounds. Lesser horseshoe bats will not cross open ground. Consequently, linear features such as hedgerows, treelines and stone walls provide vital connectivity for this species within 2.5km around each roost (Schofield, 2008)
Light pollution	Lux	No significant increase in artificial light intensity adjacent to named roost or along commuting routes within 2.5km of the roost. See map 6	Lesser horseshoe bats are very sensitive to light pollution and will avoid brightly lit areas. Inappropriate lighting around roosts may cause abandonment; lighting along commuting routes may cause preferred foraging areas to be abandoned, thus increasing energetic costs for bats (Schofield, 2008)

## Conservation Objectives for : Dromore Woods and Loughs SAC [000032]

### 1355 Otter *Lutra lutra*

**To maintain the favourable conservation condition of Otter in Dromore Woods and Loughs SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. Favourable Conservation Status (FCS) target, based on 1980/81 survey findings, is 88% in SACs. Current range is estimated at 93.6% (Reid et al., 2013)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 33.6ha	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above high water mark (HWM) and along river banks) identified as critical for otters (NPWS, 2007)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 8.4km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 96.2ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk and Moorhouse, 1991; Kruuk, 2006)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006; Reid et al., 2013)
Barriers to connectivity	Number	No significant increase	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed



**Legend**  
 Dromore Woods and Loughs SAC 000032

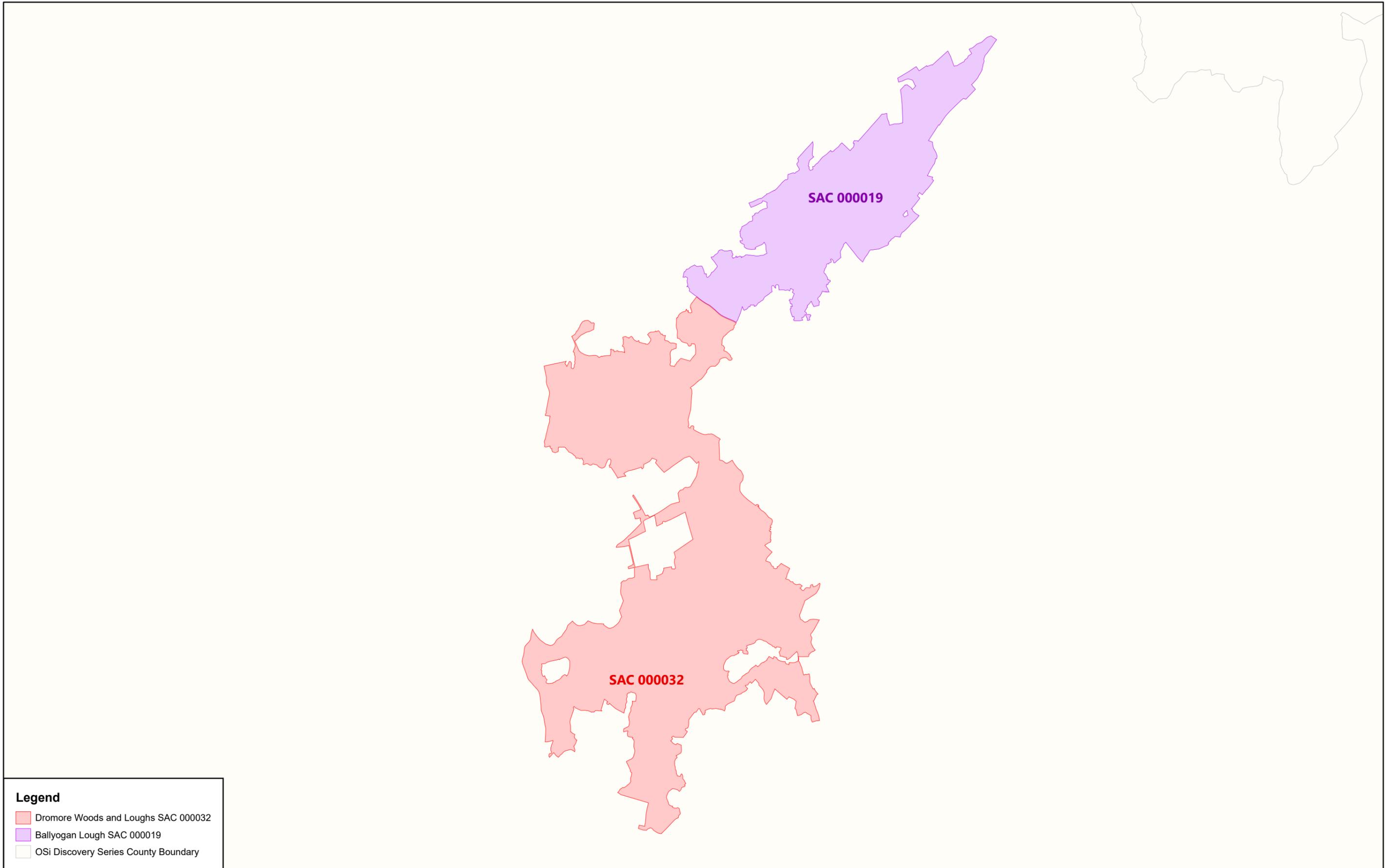
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**MAP 1:  
 DROMORE WOODS AND LOUGHS SAC  
 CONSERVATION OBJECTIVES  
 SAC DESIGNATION**  
 Map to be read in conjunction with the NPWS Conservation Objectives Document.

**SITE CODE:  
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 0 0.5 1 1.5 km

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**Map Version 1  
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**Legend**

- Dromore Woods and Loughs SAC 000032
- Ballyogan Lough SAC 000019
- OSi Discovery Series County Boundary

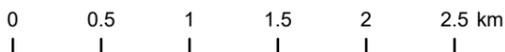


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**MAP 2:  
DROMORE WOODS AND LOUGHS SAC  
CONSERVATION OBJECTIVES  
ADJACENT AND ADJOINING  
DESIGNATIONS**

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

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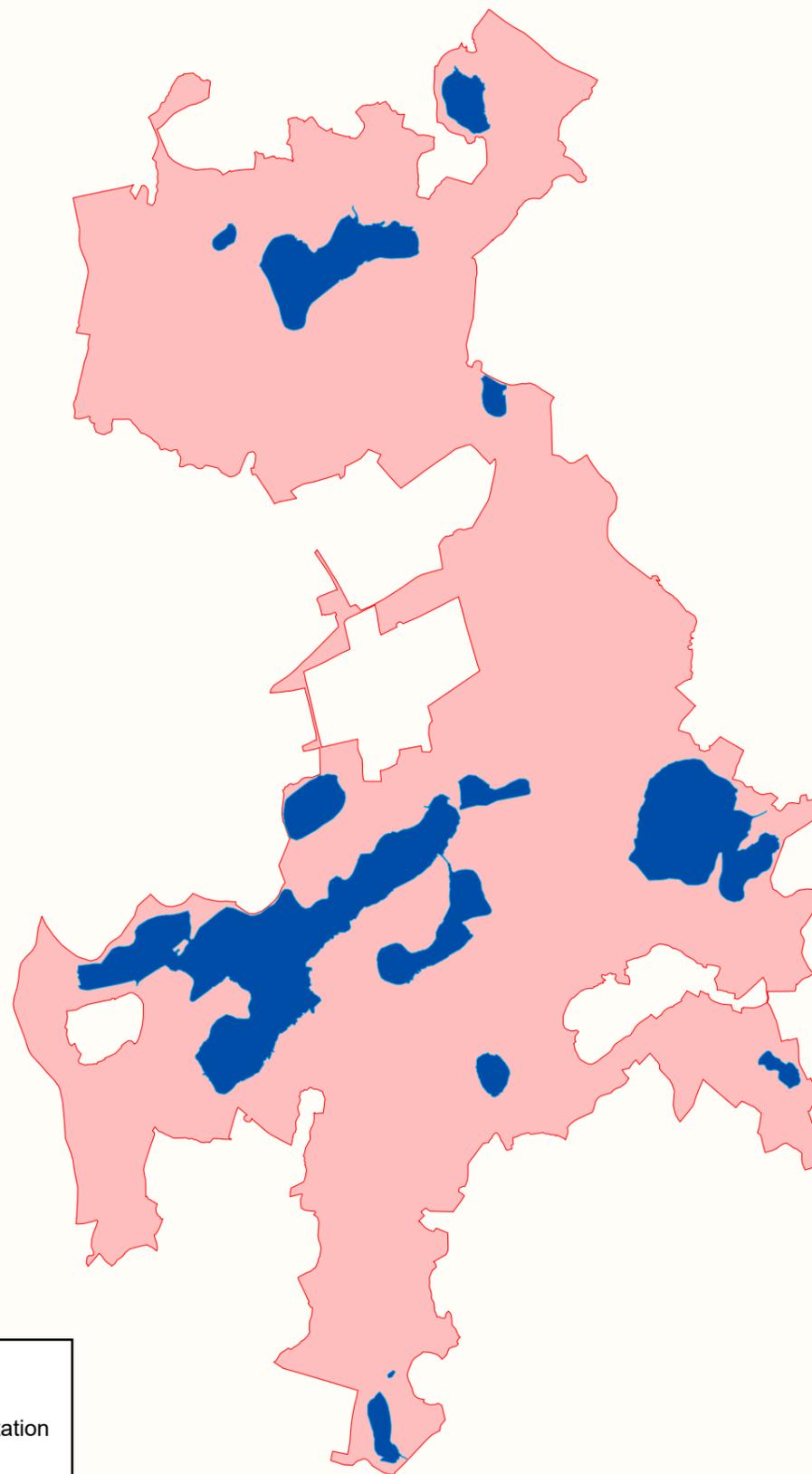


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**Legend**

- 3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation
- Dromore Woods and Loughs SAC 000032
- OSi Discovery Series County Boundary



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**MAP 3:  
DROMORE WOODS AND LOUGHS SAC  
CONSERVATION OBJECTIVES  
INDICATIVE LAKE HABITATS**

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

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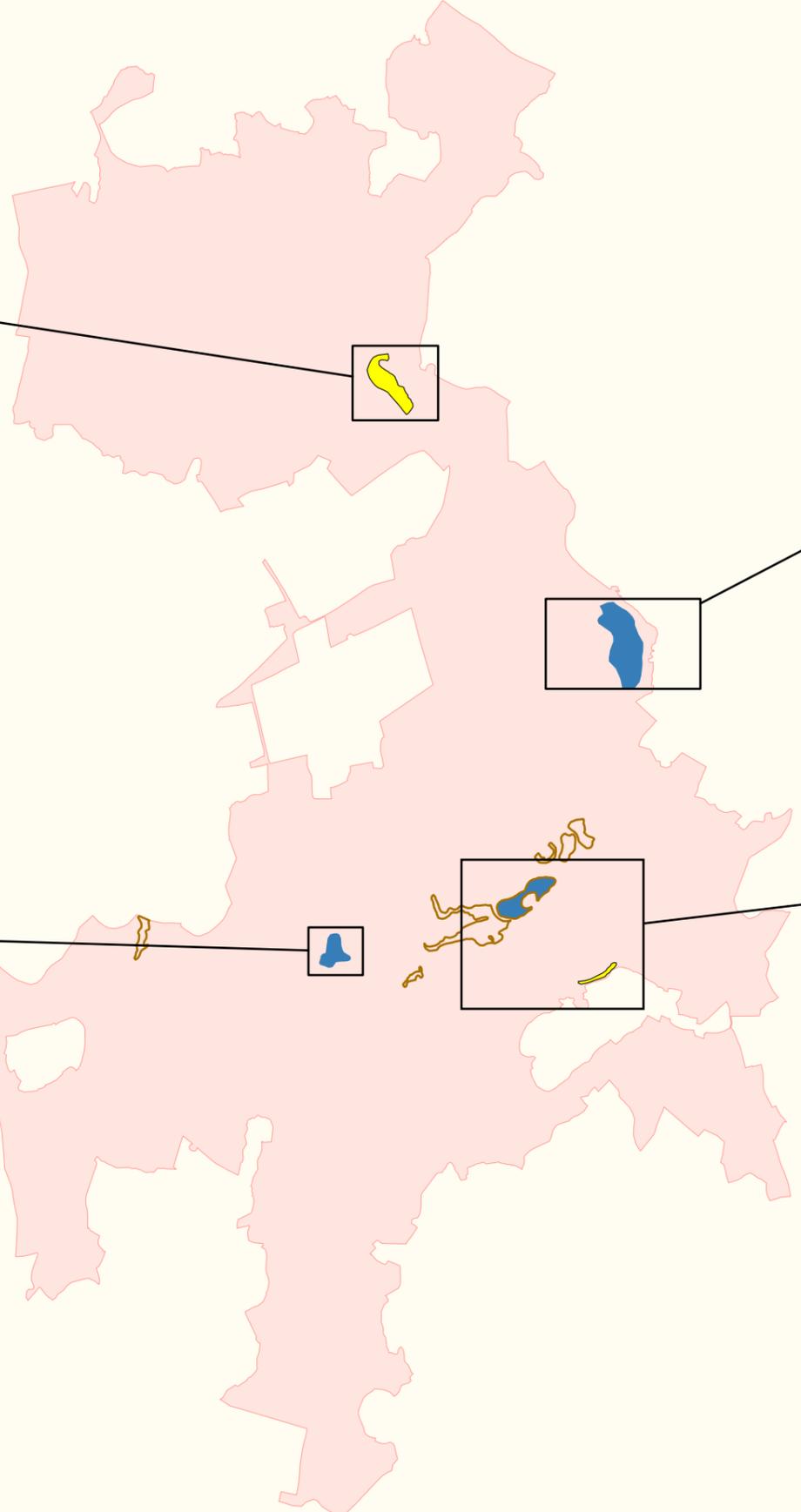
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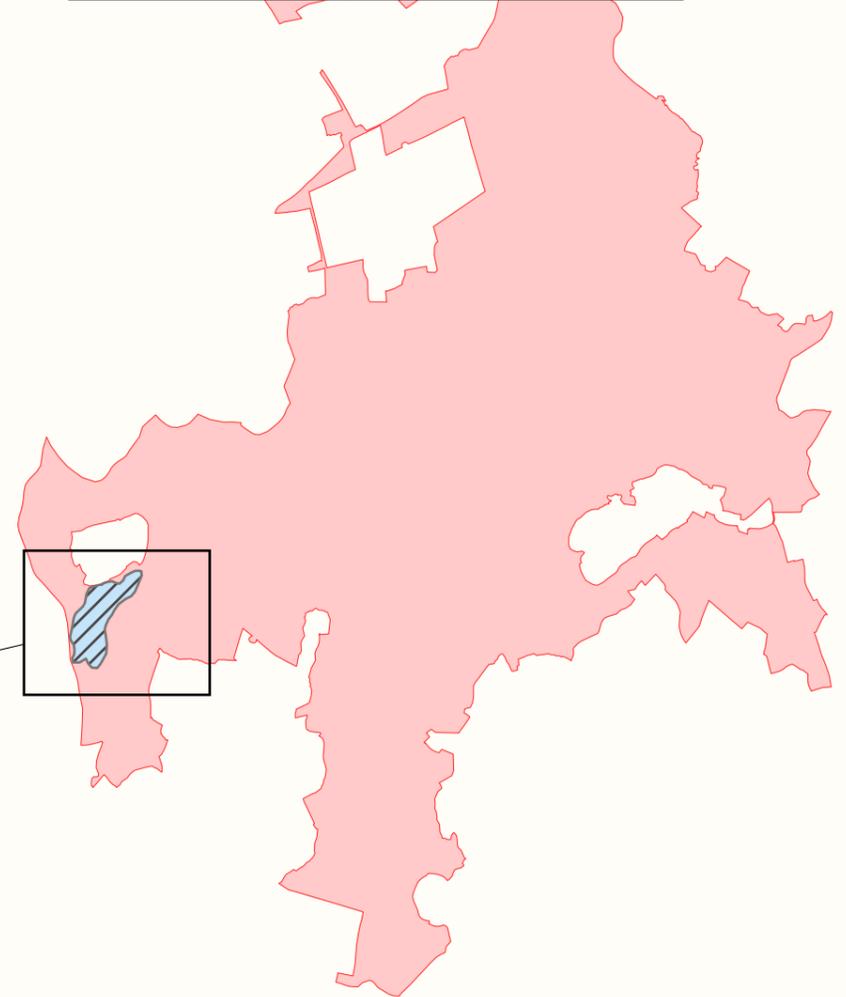
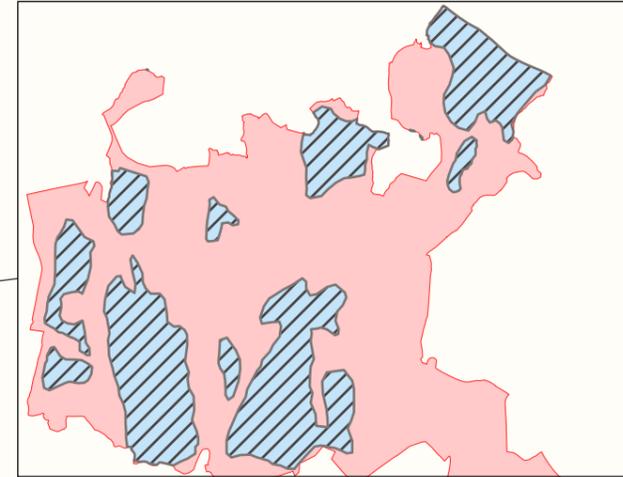
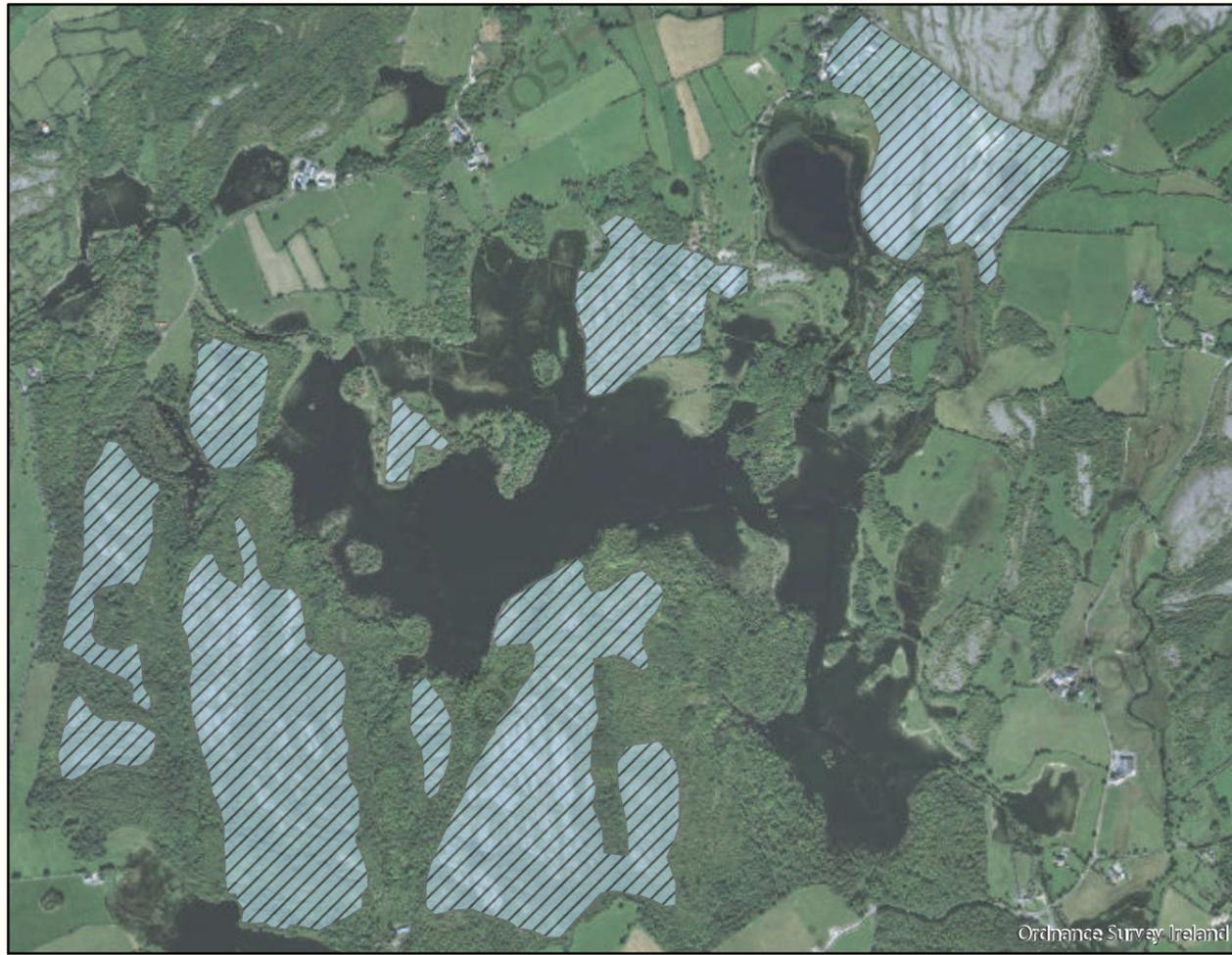
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**Legend**

- ISGS Survey Site: 1627
- Dromore Woods and Loughs SAC 000032
- OSi Discovery Series County Boundaries

**Annex I Grassland Habitats**

- 6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels - lowland community type adjacent to rivers and lakes
- 6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels - lowland saum community at woodland edges



**Legend**

-  8240 Limestone pavements \*
-  Dromore Woods and Loughs SAC 000032
-  OSi Discovery Series County Boundary

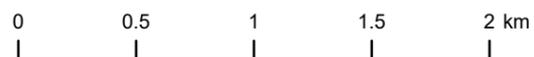


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**MAP 5:  
DROMORE WOODS AND LOUGHS SAC  
CONSERVATION OBJECTIVES  
LIMESTONE PAVEMENT**

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

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**Legend**

- Dromore Woods and Loughs SAC 000032
- OSi Discovery Series County Boundary
- 1303 Lesser Horseshoe Bat *Rhinolophus hipposideros***
- Roost Location
- Roost ID 109 Foraging Range
- Potential Foraging Grounds