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National Parks and Wildlife Service

Conservation Objectives Series

Curraghchase Woods SAC 000174

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***

000174	Curraghchase Woods SAC
1016	Desmoulin's Whorl Snail *Vertigo moulinsiana*
1303	Lesser Horseshoe Bat *Rhinolophus hipposideros*
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
91J0	Taxus baccata woods of the British Isles

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	2006
Title :	Bat mitigation guidelines for Ireland
Author :	Kelleher, C.; Marnell, F.
Series :	Irish Wildlife Manuals, No. 25
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 :	2011
Title :	Monitoring and condition assessment of populations of *Vertigo geyeri*, *Vertigo angustior* and *Vertigo moulinsiana* in Ireland
Author :	Moorkens, E.; Killeen, I.
Series :	Irish Wildlife Manuals, No. 55
Year :	2013
Title :	Results of a monitoring survey of yew woodland
Author :	Cross, J.; Lynn, D.
Series :	Irish Wildlife Manuals, No. 72
Year :	2018
Title :	Conservation objectives supporting document – lesser horseshoe bat (*Rhinolophus hipposideros*)
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2019
Title :	Monitoring of sites and habitat for three Annex II species of whorl snail (*Vertigo*)
Author :	Long, M.P.; Brophy, J.T.
Series :	Irish Wildlife Manuals, No. 104
Year :	2019
Title :	Monitoring of sites and habitat for three Annex II species of whorl snail (*Vertigo*). Appendix VI *Vertigo moulinsiana* site reports
Author :	Brophy, J.T.; Long, M.P.
Series :	Irish Wildlife Manuals, No. 104

Other References

Year :	2000
Title :	A guide to habitats in Ireland
Author :	Fossitt, J.A.
Series :	The Heritage Council, Kilkenny

Year :	2002
Title :	Reversing the habitat fragmentation of British woodlands
Author :	Peterken, G.
Series :	WWF-UK, London
Year :	2007
Title :	Protecting and managing underground sites for bats
Author :	Mitchell-Jones, A.J.; Bihari, Z.; Masing, M.; Rodrigues, L.
Series :	EUROBATS Publication Series No. 2
Year :	2008
Title :	The lesser horseshoe bat conservation handbook
Author :	Schofield, H.W.
Series :	The Vincent Wildlife Trust

Spatial data sources

Year :	Revision 2010
Title :	National Survey of Native Woodlands 2003-2008. Version 1
GIS Operations :	QI selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	91E0 (map 2)
Year :	2013
Title :	Internal NPWS data
GIS Operations :	Habitat polygon created from spatial references supplied by NPWS expert. Expert opinion used as necessary to resolve any issues arising
Used For :	91J0 (map 2)
Year :	2023
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1016 (map 3)
Year :	2018
Title :	NPWS lesser horseshoe bat database
GIS Operations :	Roosts identified, clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1303 (map 4)
Year :	2007
Title :	Forest Inventory and Planning System (FIPS)
GIS Operations :	Dataset clipped to 2.5km buffer centred on roost locations
Used For :	1303 (map 4)

91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

To restore the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)* in Curraghchase Woods 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	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)* was surveyed in Curraghchase Woods SAC by Perrin et al. (2008) as part of the National Survey of Native Woodlands (NSNW) within the sub-site Curraghchase Forest Park (NSNW site code 1986), where the wet woodland occurs on peat merging into open alkaline fen near Blue Lough. Map 2 shows the surveyed woodland areas classified as 91E0* (3.46ha) and as Fossitt (2000) woodland types by Perrin et al. (2008). It is important to note that other areas mapped as wet woodland types (WN4 and WN6; Fossitt, 2000) may also correspond with this Annex I woodland habitat. Further unsurveyed areas may also be present within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 2 for surveyed woodland locations	Distribution based on Perrin et al. (2008). See the notes for Habitat area above
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). In some cases, topographical constraints may restrict expansion
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and well-developed herb layer	Described in Perrin et al. (2008) and NPWS internal files
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008) and NPWS internal files
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Alder (*Alnus glutinosa*) and oak (*Quercus* spp.) tend to regenerate poorly. Ash (*Fraxinus excelsior*) often regenerates in large numbers although few seedlings reach pole size
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Periodic flooding is essential to maintain alluvial woodlands along river flood plains, but not for woodland around springs/seepage areas
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder (*Alnus glutinosa*))	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources

Woodland structure: indicators of local disctinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands (see Perrin and Daly, 2010), archaeological and geological features as well as red data and other rare or localised species
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008) and NPWS internal files
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including alder (*Alnus glutinosa*), willows (*Salix* spp.), oak (*Quercus* spp.), ash (*Fraxinus excelsior*) and birch (*Betula pubescens*)	Species reported in Perrin et al. (2008) and NPWS internal files
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The following are the most common invasive species in this woodland type: beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*) and rhododendron (*Rhododendron ponticum*)

91J0 Taxus baccata woods of the British Isles

To restore the favourable conservation condition of *Taxus baccata* woods of the British Isles* in Curraghchase Woods 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 2	*Taxus baccata* woods of the British Isles* within Curraghchase Woods SAC was included in a national monitoring survey of yew (*Taxus baccata*) woodlands by Cross and Lynn (2013) in the sub-site Curraghchase. The minimum area of yew woodland in the SAC estimated by Cross and Lynn (2013) is 3.26ha (see map 2). Yew woodland in the SAC had previously been surveyed by Perrin et al. (2008) as part of the National Survey of Native Woodlands (NSNW) within the sub-site Curraghchase Forest Park (NSNW site code 1986). Map 2 shows the surveyed woodlands in the SAC, including the area classified as 91J0* (3.26ha) by Cross and Lynn (2013). NB further unsurveyed areas may be present within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 2	Distribution based on Cross and Lynn (2013) and NPWS internal files. The area of yew (*Taxus baccata*) woodland in the Curraghchase sub-site occupies the top and sides of a hard limestone ridge/rocky knoll above a stream valley (Cross and Lynn, 2013; NPWS internal files). NB further unsurveyed areas may be present within the SAC
Woodland size	Hectares	Area stable or increasing	See Perrin et al. (2008), Cross and Lynn (2013) and NPWS internal files for further details
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and herb and bryophyte layer	Described in Perrin et al. (2008), Cross and Lynn (2013) and NPWS internal files. In the habitat in the Curraghchase sub-site, the field layer is poorly developed under deep shade and consists largely of ivy (*Hedera helix*) with a scattering of other species (Perrin et al., 2008; Cross and Lynn, 2013)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008), Cross and Lynn (2013) and NPWS internal files
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Yew (*Taxus baccata*) regenerates poorly under its own canopy, but can regenerate under a canopy of other species or in the open if the competition from the field layer is not too strong. In the habitat in this SAC, there is considerable natural regeneration of yew in light gaps (Cross and Lynn, 2013). Planting of yew has also taken place at Curraghchase as part of the EU LIFE project 'Restoring Priority Woodland Habitats in Ireland' managed by Coillte (Cross and Lynn, 2013)
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local disctinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands (see Perrin and Daly, 2010), archaeological and geological features as well as red data and other rare or localised species

Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008), Cross and Lynn (2013) and NPWS internal files
Vegetation composition: typical species	Occurrence	A variety of typical native species present, including yew (*Taxus baccata*) and ash (*Fraxinus excelsior*)	Species reported in Perrin et al. (2008), Cross and Lynn (2013) and NPWS internal files
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The most common invasive species in this woodland type is beech (*Fagus sylvatica*), although there is evidence to suggest that it actually facilitates regeneration of yew (*Taxus baccata*). In the yew woodland in this SAC, beech trees have been thinned and cherry laurel (*Prunus laurocerasus*) largely removed as part of the EU LIFE project managed by Coillte (Cross and Lynn, 2013)

1016 Desmoulin's Whorl Snail *Vertigo moulinsiana*

To maintain the favourable conservation condition of Desmoulin's Whorl Snail (*Vertigo moulinsiana*) in Curraghchase Woods SAC, which is defined by the following list of attributes and targets:

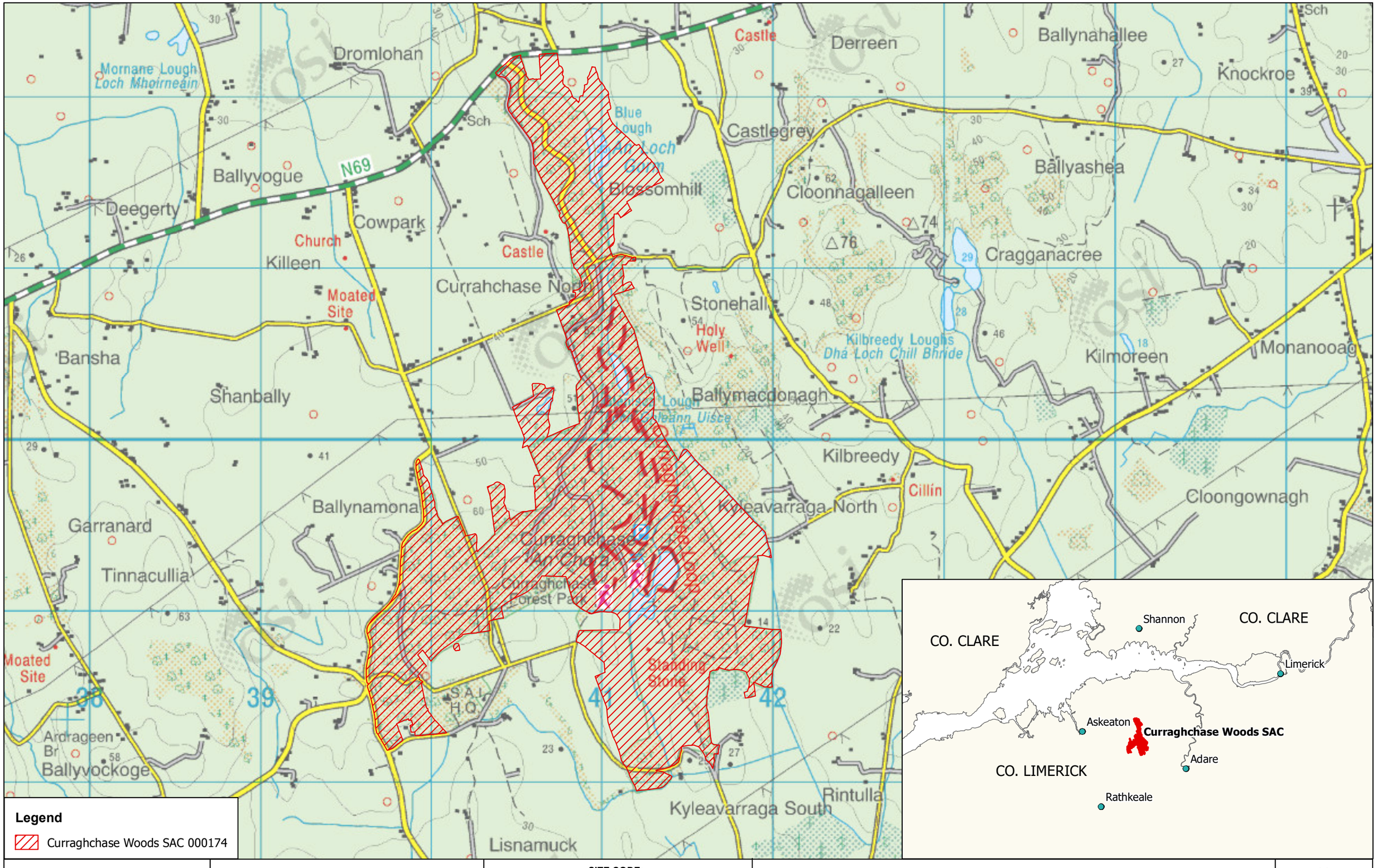
Attribute	Measure	Target	Notes
Distribution	Number of occupied 1km squares	No decline, subject to natural processes. There is one known site for this species in the SAC within the 1km grid squares R4148 and R4149. See map 3	There are records of Desmoulin's whorl snail (*Vertigo moulinsiana*) from two 1km squares that overlap the SAC: R4148 and R4149. See map 3. See details for the site (site code VmCAM12) in Moorkens and Killeen (2011), Long and Brophy (2019) and Brophy and Long (2019)
Occurrence in suitable habitat	Percentage positive records in a representative number of samples	No decline, subject to natural processes. A baseline figure of 50% positive samples is set	Desmoulin's whorl snail should be present in at least 50% of samples taken across the site in suitable habitat. Sampling should be done at an appropriate scale within patches and across the site according to the definitions and methodology in Moorkens and Killeen (2011), Long and Brophy (2019) and Brophy and Long (2019)
Habitat area	Hectares	Area of suitable habitat stable or increasing, subject to natural processes; no less than 1.8ha of at least sub-optimal habitat	The baseline figure for the amount of habitat in at least sub-optimal condition for this site is 1.8ha. Optimal and sub-optimal habitat is defined in Moorkens and Killeen (2011), Brophy and Long (2019) and Long and Brophy (2019)
Habitat quality	Percentage of samples classified as suitable habitat	No decline, subject to natural processes	Over 80% of sample locations should be assessed as either habitat class I or II. Sampling should be done at an appropriate scale within patches and across the site according to the definitions and methodology in Moorkens and Killeen (2011), Long and Brophy (2019) and Brophy and Long (2019). See Brophy and Long (2019) for definition of habitat classes for *Vertigo moulinsiana* specific to this site
Habitat quality: soil wetness	Soil wetness criteria	No decline, subject to natural processes	80% of sample points should be classified as in soil moisture Class 3-5 with appropriate scale of sampling across the site and within habitat patches. This attribute should be assessed according to the definitions and methodology in Moorkens and Killeen (2011), Brophy and Long (2019) and Long and Brophy (2019). See Brophy and Long (2019) for definition of soil moisture classes for *Vertigo moulinsiana* specific to this site
Habitat quality: water levels	Hydrological regime	Maintain at current levels, subject to natural processes	The lake levels should be maintained at current levels with typical natural hydrological cycles
Habitat quality: vegetation structure	Grazing levels	No increase in grazing levels	*Vertigo moulinsiana* habitat generally consists of tall-growing vegetation, in habitats with low-intensity or no grazing or mowing. Habitat degradation can be caused by grazing or mowing, and this has occurred in some of the habitat patches. There should be no increase in grazing levels and mowing frequency in all habitat patches and, in some, the levels and frequency should be reduced in order to restore habitat quality
Tree canopy extent	Percentage cover	Tree canopy cover around lake stable at current levels, subject to natural processes	Desmoulin's whorl snail (*Vertigo moulinsiana*) occurs at the terrestrial/open water transition in this SAC. This habitat could become unsuitable should tree cover increase causing critical areas to dry out. Tree cover should not be allowed to increase into the lake margins (this attribute should be considered in conjunction with those listed in the conservation objective for 91E0* in this volume)

1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*

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

Attribute	Measure	Target	Notes
Population per roost	Number	Minimum number of 100 bats for the summer roost (linked roost ids 659 and 852 in NPWS database); minimum number of 81 bats for the winter roost (roost id. 659). See map 4	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 bat (*Rhinolophus hipposideros*). 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 usually set as the target figure for each roost and this is the case for the winter roost (roost id. 659 in NPWS database) in Curraghchase Woods SAC. However, in the case of the summer roost (linked roost ids. 659 and 852 in NPWS database) where a mean of 89 bats was recorded (2012-2016), the target is instead set at the MQS of 100 bats. See the conservation objectives supporting document for lesser horseshoe bat (NPWS, 2018) for further information on all attributes and targets
Winter roosts	Condition	No decline	Curraghchase Woods SAC has been selected for lesser horseshoe bat because of the presence of one internationally important winter roost (roost id. 659 in NPWS database). Damage or disturbance to this roost or to the habitat immediately surrounding it will lead to a decline in its condition (Mitchell-Jones et al., 2007)
Summer roosts	Condition	No decline	Curraghchase Woods SAC has been selected for lesser horseshoe bat because of the presence of two linked roosts (linked roost ids 659 and 852 in NPWS database) that together form one internationally important summer roost. Damage or disturbance to the linked roosts or to the habitat immediately surrounding the roosts will lead to a decline in their 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. One other summer roost that supports lesser horseshoe bats, but at numbers below the MQS figure, is known from Curraghchase Woods 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 roosts	Lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts (Schofield, 2008). See map 4 which shows a 2.5km zone around the above roosts and identifies potential foraging grounds

Linear features	Kilometres	No significant loss within 2.5km of qualifying roosts. See map 4	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 roosts or along commuting routes within 2.5km of those roosts. See map 4	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)



Legend

Curraghchase Woods SAC 000174

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MAP 1:
CURRAGHCHASE WOODS SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

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

SITE CODE:
SAC 000174; version 3.02
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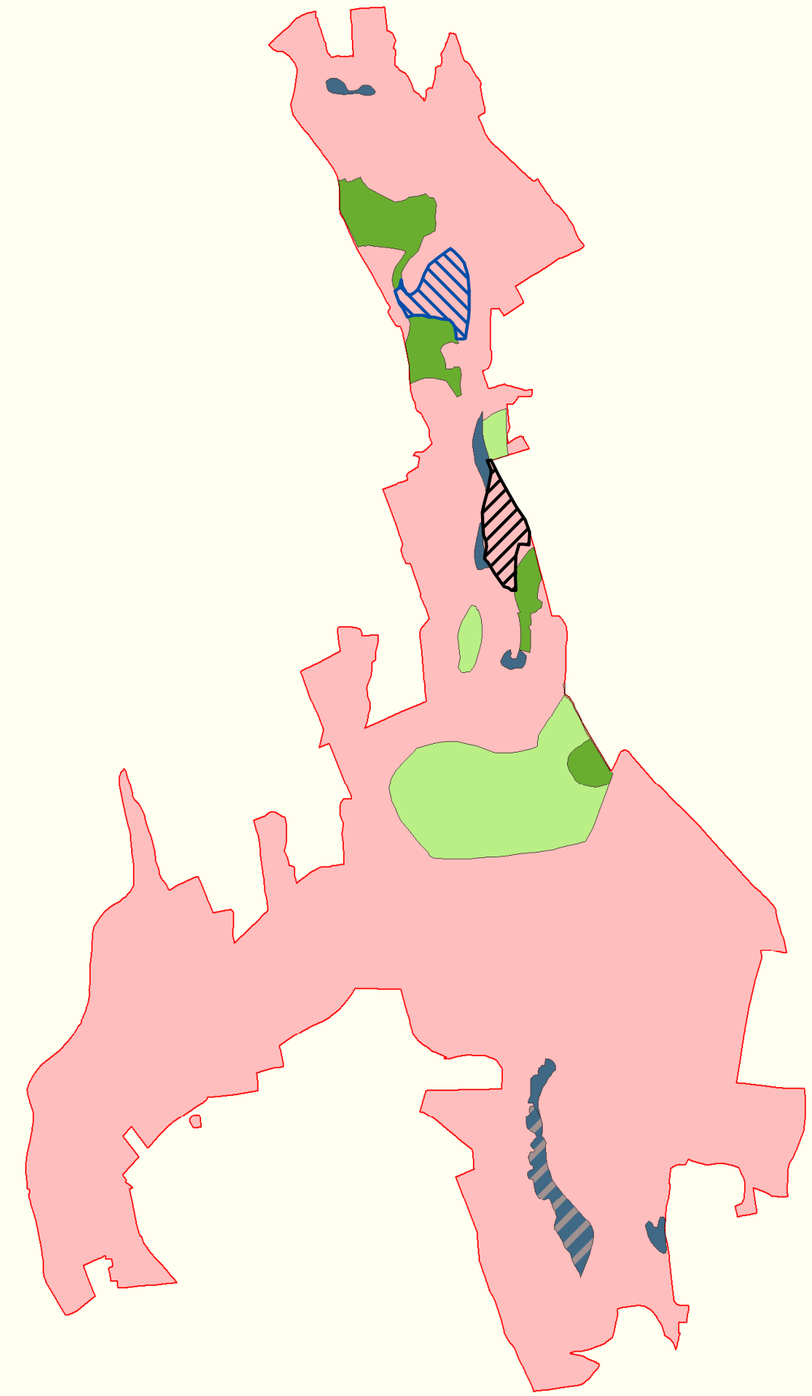
0 0.25 0.5 1 Kilometre

N

Map version 2
Date: January 2023



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Curraghchase Woods SAC 000174

Annex I Woodland Habitats

91E0 *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion, Alnion incanae, Salicion albae*)

91J0 **Taxus baccata* woods of the British Isles

Non Qualifying Interests

WD1 (Mixed) broadleaved woodland

WN2 Oak-ash-hazel woodland

WN4/WN6 Wet pedunculate oak-ash woodland/ Wet willow-alder-ash woodland

WN6 Wet willow-alder-ash woodland

WN7 Bog woodland

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MAP 2:
CURRAGHCHASE WOODS SAC
CONSERVATION OBJECTIVES
WOODLAND HABITATS

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

SITE CODE:
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0 0.25 0.5 1 Kilometre

N

Map version 2
Date: January 2023

R4149

R4148

Legend

1016 Desmoulin's whorl snail *Vertigo moulinsiana* 1km Grid Squares

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MAP 3:
CURRAGHCHASE WOODS SAC
CONSERVATION OBJECTIVES
DESMOULIN'S WHORL SNAIL

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

SITE CODE:
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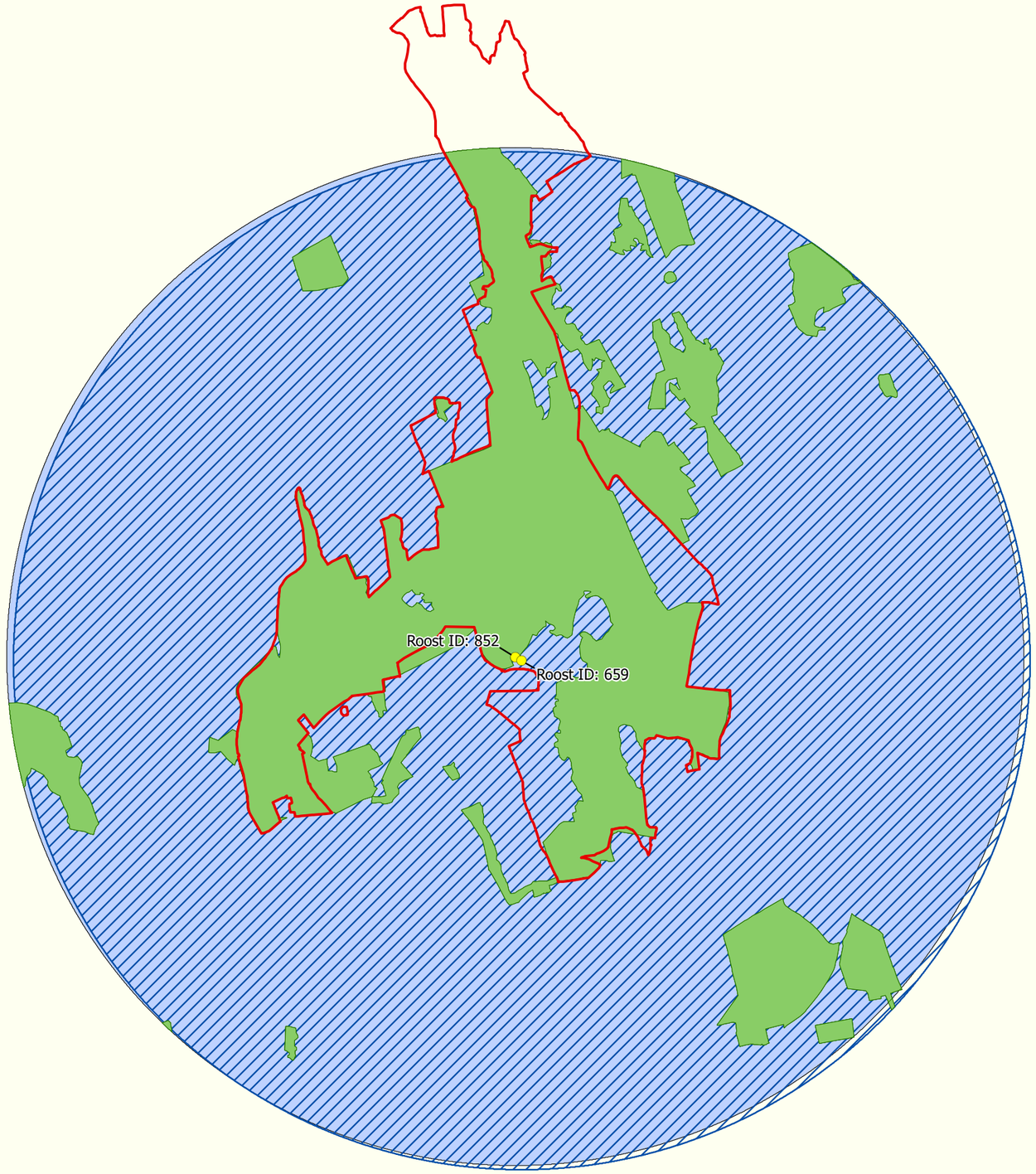
0 0.25 0.5 1 Kilometre

N

Map version 2
Date: January 2023



Legend

- Curraghchase Woods SAC 000174

1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*

- Roost Location
- Roost ID 659 Foraging Range
- Roost ID 852 Foraging Range
- Potential Foraging Grounds

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MAP 4:
CURRAGHCHASE WOODS SAC
CONSERVATION OBJECTIVES
LESSER HORSESHOE BAT

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

SITE CODE:
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0 0.25 0.5 1 Kilometre

N

Map version 2
Date: January 2023