

# National Parks and Wildlife Service

## *Conservation Objectives Series*

Lisbigney Bog SAC 000869



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*

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000869 Lisbigney Bog SAC

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1016 Desmoulin's Whorl Snail *Vertigo moulinsiana*

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

## 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>	1972
<b>Title :</b>	A Preliminary Report on Areas of Scientific Interest in County Laois
<b>Author :</b>	Farrell, L.
<b>Series :</b>	Unpublished Report
<b>Year :</b>	2005
<b>Title :</b>	Conservation Plan for 2005-2010. Lisbigney Bog cSAC Site Code 000869 Co. Laois
<b>Author :</b>	NPWS
<b>Series :</b>	Conservation Plan
<b>Year :</b>	2009
<b>Title :</b>	Ireland Red List No. 2: Non-marine molluscs
<b>Author :</b>	Byrne, A.; Moorkens, E.A.; Anderson, R.; Killeen, I.J.; Regan, E.C.
<b>Series :</b>	Ireland Red List series, NPWS
<b>Year :</b>	2010
<b>Title :</b>	Ireland Red List No. 4: Butterflies
<b>Author :</b>	Regan, E.C.; Nelson, B.; Aldwell, B.; Bertrand, C.; Bond, K.; Harding, J.; Nash, D.; Nixon, D.; Wilson, C.J.
<b>Series :</b>	Ireland Red List series, NPWS
<b>Year :</b>	2011
<b>Title :</b>	Monitoring and condition assessment of populations of <i>Vertigo geyeri</i> , <i>Vertigo angustior</i> and <i>Vertigo moulinsiana</i> in Ireland
<b>Author :</b>	Moorkens, E.; Killeen, I.
<b>Series :</b>	Irish Wildlife Manuals, No. 55
<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>	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>	2019
<b>Title :</b>	Monitoring of sites and habitat for three Annex II species of whorl snail ( <i>Vertigo</i> )
<b>Author :</b>	Long, M.P.; Brophy, J.T.
<b>Series :</b>	Irish Wildlife Manuals, No. 104
<b>Year :</b>	2019
<b>Title :</b>	Monitoring of sites and habitat for three Annex II species of whorl snail ( <i>Vertigo</i> ). Appendix VI <i>Vertigo moulinsiana</i> site reports
<b>Author :</b>	Brophy, J.T.; Long, M.P.
<b>Series :</b>	Irish Wildlife Manuals, No. 104
<b>Year :</b>	2019
<b>Title :</b>	Checklists Protected and Threatened Species in Ireland 2019
<b>Author :</b>	Nelson, B.; Cummins, S.; Fay, L.; Jeffrey, R.; Kelly, S.; Kingston, N.; Lockhart, N.; Marnell, F.; Tierney, D.; Wyse Jackson, M.
<b>Series :</b>	Irish Wildlife Manuals, No. 116

**Year :** 2021  
**Title :** Checklists Protected and Threatened Species in Ireland. Version 2.1. 3 December 2021  
**Author :** Nelson, B.; Cummins, S.; Fay, L.; Jeffrey, R.; Kelly, S.; Kingston, N.; Lockhart, N.; Marnell, F.; Tierney, D.; Wyse Jackson, M.  
**Series :** Irish Wildlife Manuals, No. 116

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**Year :** in prep.  
**Title :** Scoping study and pilot survey of fens  
**Author :** O'Neill, F.H.; Perrin, P.M.; Denyer, J.; Martin, J.R.; Daly, O.H.; Brophy, J.T.  
**Series :** Irish Wildlife Manuals

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## **Other References**

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

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## Spatial data sources

**Year :** digitised 2005  
**Title :** Internal NPWS dataset  
**GIS Operations :** QI selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising  
**Used For :** 7210 (map 2)

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**Year :** 2021  
**Title :** NPWS rare and threatened species database  
**GIS Operations :** Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising  
**Used For :** 1016 (map 3)

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## Conservation Objectives for : Lisbigney Bog SAC [000869]

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

To restore the favourable conservation condition of Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae\* in Lisbigney 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	The indicative area of the priority Annex I habitat Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae* in Lisbigney Bog SAC has been mapped as 9.91ha (NPWS internal files). See map 2. The habitat occurs in association with other fen, marsh and common reed ( <i>Phragmites australis</i> ) swamp vegetation in the SAC (NPWS, 2005; Farrell, 1972; NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See map 2 for the indicative distribution of the habitat in the SAC (NPWS internal files)
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain/restore soil pH and nutrient status within natural ranges	Relevant nutrients and their natural ranges are yet to be defined. Increased nutrients can lead to changes in plant and invertebrate species through competition and subsequent structural changes to micro-habitat. These nutrients favour growth of grasses rather than forbs and mosses and leads to a higher and denser sward
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply levels	Restore appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Fen habitats require high groundwater levels (i.e. water levels at or above the ground surface) for a large proportion of the calendar year (i.e. duration of mean groundwater level). Fen groundwater levels are controlled by regional groundwater levels in the contributing catchment area (which sustain the hydraulic gradients of the fen groundwater table). Regional abstraction of groundwater may affect fen groundwater levels. In this SAC, the water table level has been noted as significantly below the requirements for <i>Cladium</i> fen (NPWS, 2005)
Ecosystem function: hydrology - surface water flow	Drain density and form	Restore as close as possible to natural or semi-natural, drainage conditions	Drainage, either within or surrounding the fen habitat, can result in the drawdown of the groundwater table. The depth, geometry and density of drainage (hydromorphology) will indicate the scale and impact on fen hydrology. Drainage can result in loss of characteristic species and transition to drier habitats. A network of drainage ditches cross the SAC and drainage is a significant issue for the habitat (NPWS, 2005; NPWS internal files)
Ecosystem function: water quality	Various	Maintain/restore appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus, with the latter tending to be the limiting nutrient under natural conditions. Water supply should be also relatively calcium-rich. Water drains into the habitat in the SAC from the surrounding intensively managed farmland; hence any fertilisers, herbicides or pesticides used on the farms may be washed into the SAC (NPWS, 2005)
Vegetation composition: cover of <i>Cladium mariscus</i>	Percentage cover at a representative number of monitoring stops	Cover of <i>Cladium mariscus</i> at least 25%	Attribute and target based on O'Neill et al. (in prep.)



Vegetation composition: typical vascular plants	Percentage cover at a representative number of monitoring stops	Maintain/restore adequate cover of typical vascular plant species	For lists of typical vascular plant species, including high quality indicators, see O'Neill et al. (in prep.). Typical vascular plant species that have been recorded in the habitat in the SAC include great fen-sedge ( <i>Cladium mariscus</i> ), black bog-rush ( <i>Schoenus nigricans</i> ), purple moor-grass ( <i>Molinia caerulea</i> ), purple loosestrife ( <i>Lythrum salicaria</i> ), common valerian ( <i>Valeriana officinalis</i> ), marsh cinquefoil ( <i>Comarum palustre</i> ), marsh marigold ( <i>Caltha palustris</i> ), wild angelica ( <i>Angelica sylvestris</i> ), meadow thistle ( <i>Cirsium dissectum</i> ), meadowsweet ( <i>Filipendula ulmaria</i> ) and water horsetail ( <i>Equisetum fluviatile</i> ) (NPWS, 2005)
Vegetation composition: native negative indicator species	Percentage cover at a representative number of monitoring stops	Cover of native negative indicator species at insignificant levels	Negative indicators include species not characteristic of the habitat and species indicative of undesirable activities such as overgrazing, undergrazing, nutrient enrichment, agricultural improvement or impacts on hydrology. Native negative indicators may include <i>Anthoxanthum odoratum</i> , <i>Epilobium hirsutum</i> , <i>Holcus lanatus</i> , <i>Juncus effusus</i> , <i>Phragmites australis</i> , <i>Ranunculus repens</i> and <i>Typha latifolia</i> . See O'Neill et al. (in prep.)
Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops	Cover of non-native species less than 1%	Attribute and target based on O'Neill et al. (in prep.). Non-native species can be invasive and have deleterious effects on native vegetation. A low target is set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	Attribute and target based on O'Neill et al. (in prep.). Scrub and trees will tend to invade if fen conditions become drier. In the fen habitat in this SAC, scrub encroachment by birch ( <i>Betula</i> sp.), gorse ( <i>Ulex europaeus</i> ) and willow ( <i>Salix</i> sp.) scrub has been reported, as well as the occurrence of several mature Scots pine trees ( <i>Pinus sylvestris</i> ) (NPWS, 2005)
Vegetation composition: algal cover	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of algae less than 2%	Attribute and target based on O'Neill et al. (in prep.). Algal cover is indicative of nutrient enrichment from multiple sources (McBride et al., 2011)
Vegetation structure: vegetation height	Percentage cover at a representative number of monitoring stops	At least 10% of live shoots more than 1m high	Attribute and target based on O'Neill et al. (in prep.)
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of disturbed bare ground not more than 10%	Attribute and target based on O'Neill et al. (in prep.). While grazing may be appropriate in this habitat, excessive areas of disturbed bare ground may develop due to unsuitable grazing regimes. Disturbance can include hoof marks, wallows, human footprints, vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion for peatlands. Burning has been noted as a threat to the fen vegetation in this SAC (NPWS, 2005)
Physical structure: tufa formations	Percentage cover in local vicinity of a representative number of monitoring stops	Disturbed proportion of vegetation cover where tufa is present is less than 1%	Attribute and target based on O'Neill et al. (in prep.)
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	This includes species on the Flora (Protection) Order, 2015 and/or Red Lists (Byrne et al., 2009; Regan et al., 2010; Lockhart et al., 2012; Wyse Jackson et al., 2016, etc.; see Nelson et al., 2019, 2021). See the conservation objective for the Annex II listed and Endangered (Byrne et al., 2009) Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) in this volume

Transitional areas between fen and adjacent habitats	Hectares; distribution	Maintain/restore adequate transitional areas to support/protect the <i>Cladium</i> fen habitat and the services it provides	In many cases, fens transition to other wetland habitats. It is important that the transitional areas between <i>Cladium</i> fen and other habitats are maintained in as natural condition as possible in order to protect the functioning of the fen. Habitat that is structurally suitable for Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) should be maintained/restored (see the conservation objective for Desmoulin's whorl snail in this volume)
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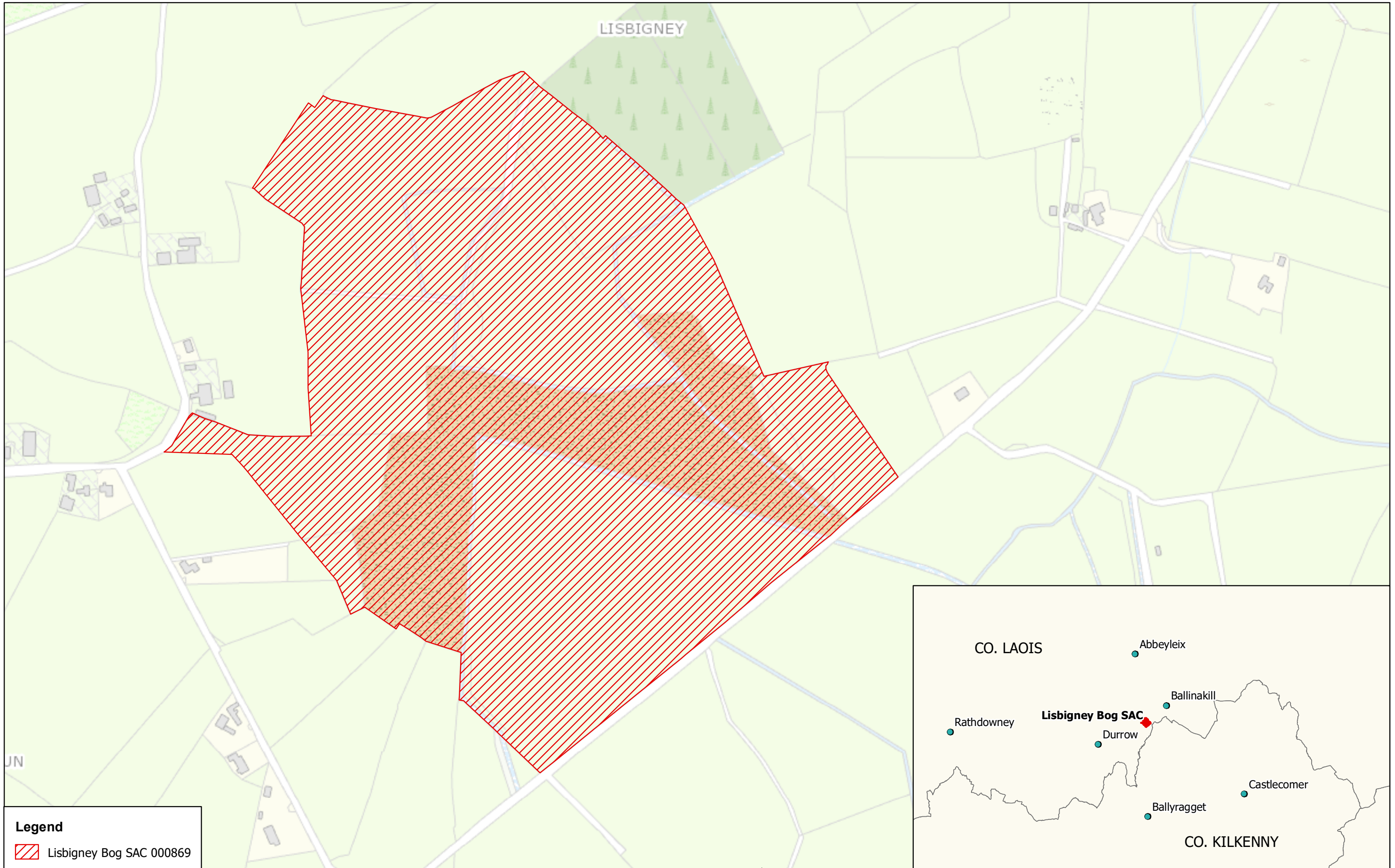
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## Conservation Objectives for : Lisbigney Bog SAC [000869]


### 1016 Desmoulin's Whorl Snail *Vertigo moulinsiana*

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

Attribute	Measure	Target	Notes
Distribution	Number of occupied 1km squares	Population restored to baseline. There is one recorded site for the species in the SAC within the 1km grid square S4479. See map 3	Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) was last recorded in Lisbigney Bog SAC in 1998 at one site within the 1km grid square S4479; it was not found in 2006, 2010 or 2016. See details for the site Lisbigney Bog (site code VmCAM15) in Moorkens and Killeen (2011), Long and Brophy (2019) and Brophy and Long (2019). Further work is required to definitively establish the status of the species in this SAC
Occurrence in suitable habitat	Percentage positive records in a representative number of samples	Restore to self-sustaining population	This attribute should be assessed following the methodology in Long and Brophy (2019), taking a representative number of samples in suitable habitat across the site in an appropriate timeframe to detect successful reproduction. A self-sustaining population will be indicated by detection of both adults and juveniles
Habitat area	Hectares	Restore area of suitable habitat, subject to natural processes	In 1998, Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) was recorded at Lisbigney Bog SAC in swamp and fen vegetation with greater tussock-sedge ( <i>Carex paniculata</i> ), lesser pond-sedge ( <i>C. acutiformis</i> ) and meadowsweet ( <i>Filipendula ulmaria</i> ). It was classified as a mixture of tall herb swamps (FS2) and wet grassland (GS4) of Fossitt (2000). Since then, the habitat has become unsuitable for the species and restoration is required. Optimal and sub-optimal habitat is defined in Moorkens and Killeen (2011) and given in Long and Brophy (2019) and Brophy and Long (2019)
Habitat quality: water levels	Hydrological regime	Restore suitable hydrological regime, subject to natural processes	Water levels appear to have dropped at this SAC, making conditions unsuitable for Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> )



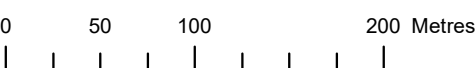
**Legend**  
 Lisbigney Bog SAC 000869

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**MAP 1:  
 LISBIGNEY BOG SAC  
 CONSERVATION OBJECTIVES  
 SAC DESIGNATION**  
 Map to be read in conjunction with the NPWS Conservation Objectives Document


**SITE CODE:  
 SAC 000869; version 3  
 CO. LAOIS**

0 50 100 200 Metres

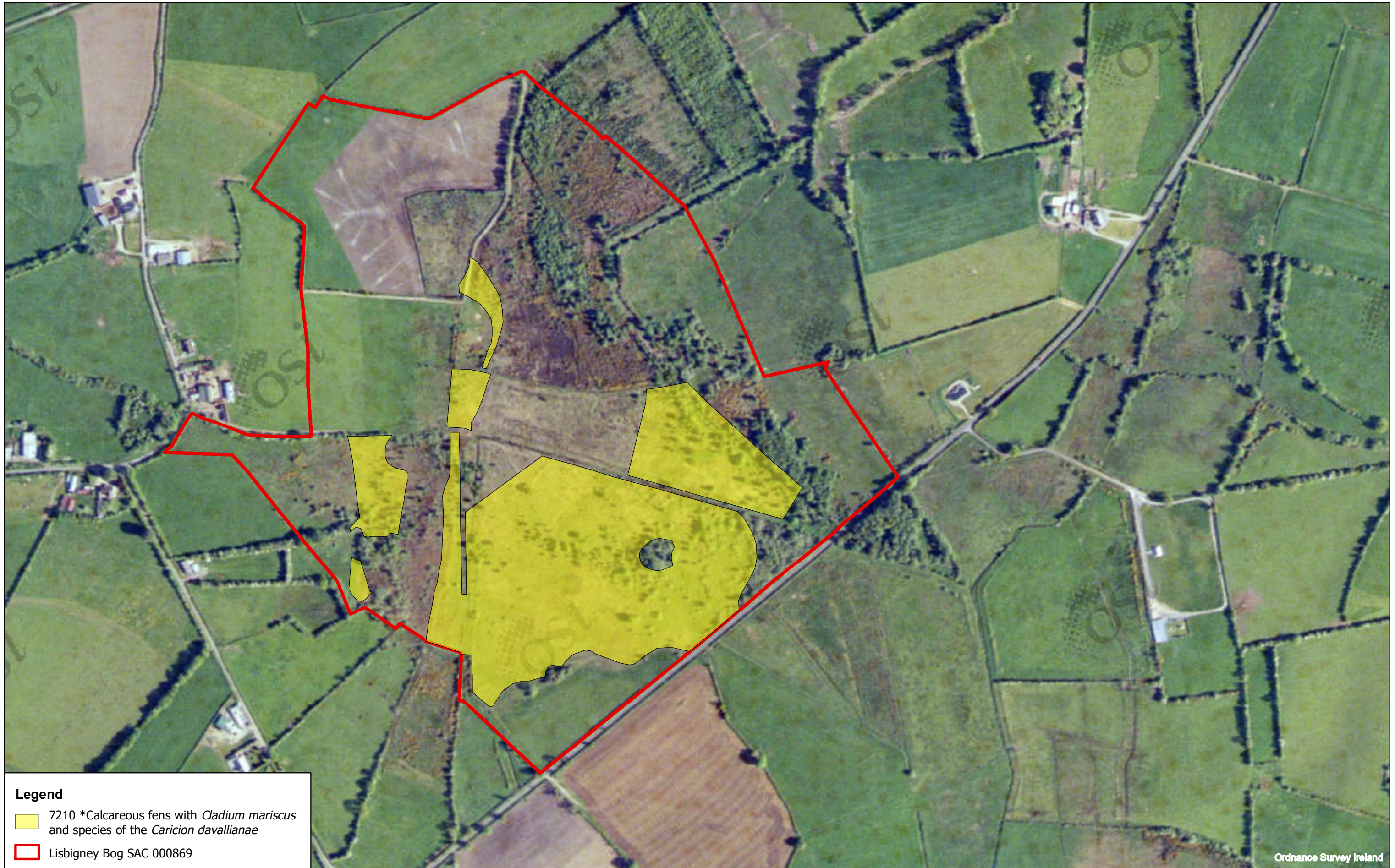


The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
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**Date: November 2021**





**Legend**

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

 Lisbigney Bog SAC 000869

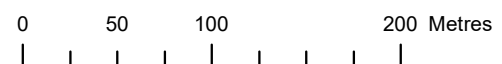
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Department of Housing,  
Local Government and Heritage

**MAP 2:  
LISBIGNEY BOG SAC  
CONSERVATION OBJECTIVES  
CLADIUM FENS**

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

**SITE CODE:  
SAC 000869; version 3  
CO. LAOIS**



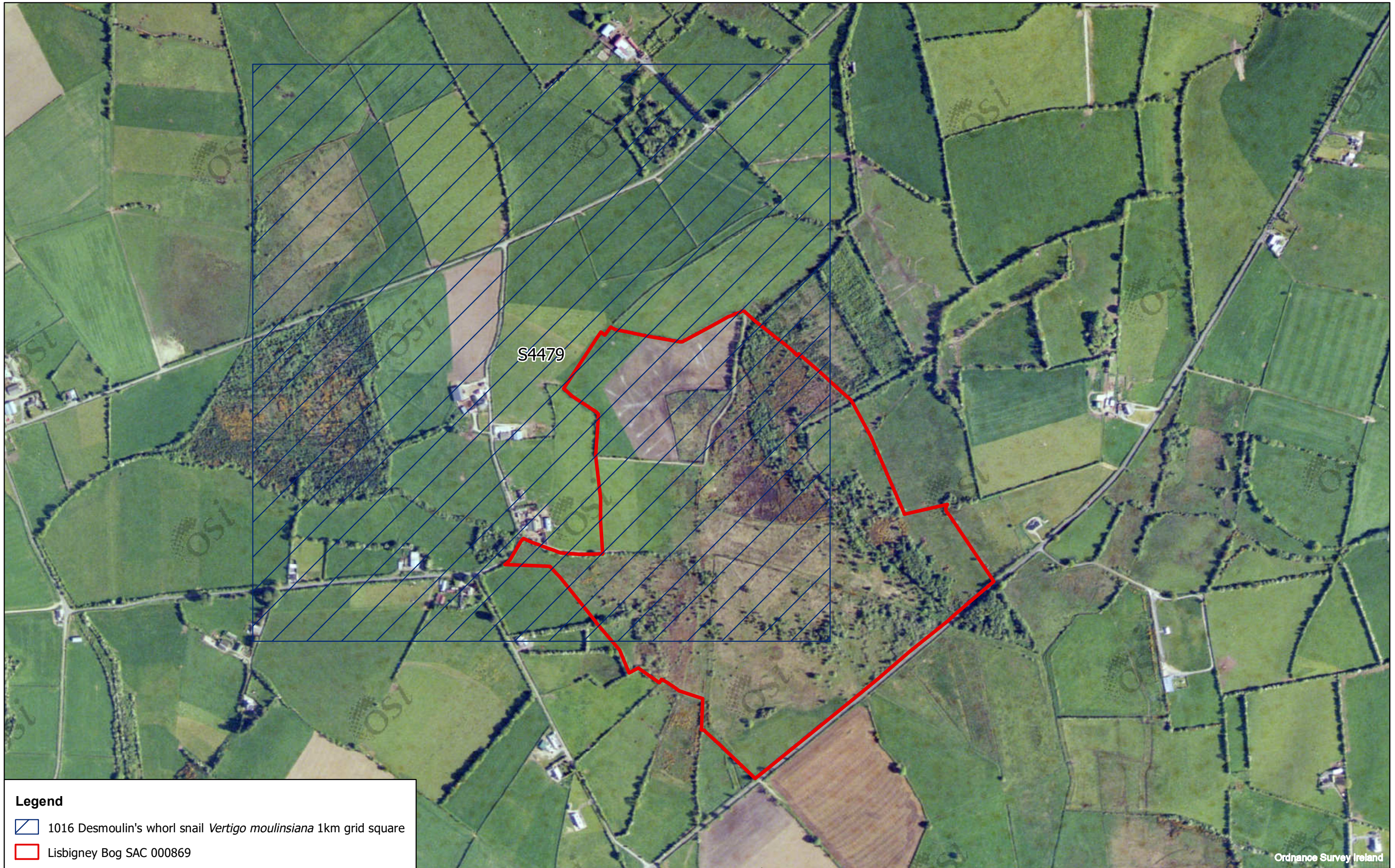
The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.  
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Date: December 2021





**Legend**

-  1016 Desmoulin's whorl snail *Vertigo moulinsiana* 1km grid square
-  Lisbigney Bog SAC 000869

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