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## Clonaslee Eskers and Derry Bog SAC 000859

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Authors	Jeffrey, Rebecca
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# National Parks and Wildlife Service

## *Conservation Objectives Series*

### Clonaslee Eskers and Derry Bog SAC 000859



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

**National Parks and Wildlife Service,  
Department of Culture, Heritage and the Gaeltacht,  
90 King Street North, Dublin 7, D07 N7CV, Ireland.**

**Web: [www.npws.ie](http://www.npws.ie)  
E-mail: [nature.conservation@chg.gov.ie](mailto:nature.conservation@chg.gov.ie)**

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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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000859      Clonaslee Eskers and Derry Bog SAC

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1013      Geyer's Whorl Snail *Vertigo geyeri*

7230      Alkaline fens

## 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>	1998
<b>Title :</b>	An inventory of Mollusca in potential SAC sites with special reference to <i>Vertigo angustior</i> , <i>V. moulinsiana</i> and <i>V. geyeri</i> : 1998 survey
<b>Author :</b>	Moorkens, E.
<b>Series :</b>	Unpublished report to NPWS
<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>	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>	2013
<b>Title :</b>	Conservation status assessments for three fen habitat types - 7230, 7210 and 7140
<b>Author :</b>	Kimberley, S.
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2014
<b>Title :</b>	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
<b>Author :</b>	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
<b>Series :</b>	Irish Wildlife Manuals, No. 79
<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 List Series, NPWS
<b>Year :</b>	in prep.
<b>Title :</b>	Monitoring of sites and habitat for three Annex II species of whorl snail ( <i>Vertigo</i> ). Volume 1: Final report
<b>Author :</b>	Long, M.P.; Brophy, J.T.
<b>Series :</b>	Irish Wildlife Manuals, No. 104

## Other References

- Year :** 2004  
**Title :** Common Standards Monitoring guidance for lowland wetland habitats  
**Author :** JNCC  
**Series :** Joint Nature Conservation Committee, Peterborough
- 
- Year :** 2009  
**Title :** *Pupilla pratensis* (Clessin, 1871) (Gastropoda: Pupillidae) recognized in Ireland  
**Author :** Moorkens, E.A.; Killeen, I.J.  
**Series :** Irish Naturalists' Journal, 30: 148
- 
- Year :** 2011  
**Title :** Review and revision of empirical critical loads and dose-response relationships. Proceedings of an expert workshop, Noordwijkerhout, 23-25 June 2010  
**Author :** Bobbink, R.; Hettelingh, J.P.  
**Series :** RIVM report 680359002, Coordination Centre for Effects, National Institute for Public Health and the Environment (RIVM)
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## Spatial data sources

**Year :** 2018  
**Title :** Internal NPWS data  
**GIS Operations :** Habitat polygon created from spatial references supplied by NPWS experts. Expert opinion used as necessary to resolve any issues arising  
**Used For :** 7230 (map 2)

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**Year :** 2018  
**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 :** 1013 (map 3)

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## Conservation Objectives for : Clonaslee Eskers and Derry Bog SAC [000859]

### 7230 Alkaline fens

**To restore the favourable conservation condition of Alkaline fens in Clonaslee Eskers and Derry 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 alkaline fen in Clonaslee Eskers and Derry Bog SAC is c.5.7ha (NPWS internal files). The habitat is found to the east of the R421. The best example of the habitat occurs where calcareous springs occur in the alkaline fen at the base of the esker ridges. The habitat also occurs in mosaic with other wetland vegetation and raised bog vegetation in some areas (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
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013). See also Bobbink and Hettelingh (2011)
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain, and where necessary restore, active peat formation	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	Maintain, and where necessary 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
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, and where necessary 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 alkaline fen 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. It is likely that the OPW arterial drains C3(13C) at the north and C3(13F) in the west of the habitat in the SAC are locally drawing down the groundwater table (although some restoration work has been carried out on C3(13F)). Internal field drains may also be having an impact (NPWS internal files)
Ecosystem function: water quality	Water chemistry measures	Maintain 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 also be relatively calcium-rich. In this SAC, the alkaline fen habitat at the base of the esker ridge is fed by calcium-rich springs which occur where water emerges after percolating down through the glacial material of the esker ridge (NPWS internal files)
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	The entire diversity of alkaline fen vegetation communities present in the SAC is currently unknown. Information on the vegetation communities associated with alkaline fens in the uplands is presented in Perrin et al. (2014)

Vegetation composition: brown mosses	Percentage cover at a representative number of 2m x 2m monitoring stops	Maintain adequate cover of typical brown moss species	Typical brown moss species include <i>Bryum pseudotriquetrum</i> , <i>Calliergonella cuspidata</i> , <i>Calliergon giganteum</i> , <i>Campylium stellatum</i> , <i>Cratoneuron filicinum</i> , <i>Ctenidium molluscum</i> , <i>Fissidens adianthoides</i> , <i>Palustriella commutata</i> , <i>Scorpidium cossonii</i> , <i>S. revolvens</i> and <i>S. scorpioides</i> . In the habitat in this SAC, mosses recorded include <i>Calliergonella cuspidata</i> , <i>Campylium stellatum</i> , <i>Ctenidium molluscum</i> and <i>Palustriella commutata</i> (NPWS internal files)
Vegetation composition: typical vascular plants	Percentage cover at a representative number of 2m x 2m monitoring stops	Maintain adequate cover of typical vascular plant species	For lists of typical plant species see the Article 17 conservation status assessment for alkaline fens (NPWS, 2013) and the fen habitats supporting document (Kimberley, 2013). See also Perrin et al. (2014) and JNCC (2004). The habitat in the SAC is dominated by black bog-rush ( <i>Schoenus nigricans</i> ), with other typical species occurring including long-stalked yellow-sedge ( <i>Carex lepidocarpa</i> ), carnation sedge ( <i>C. panicea</i> ), common sedge ( <i>C. nigra</i> ), few-flowered spike-rush ( <i>Eleocharis quinqueflora</i> ), blunt-flowered rush ( <i>Juncus subnodulosus</i> ), purple moor-grass ( <i>Molinia caerulea</i> ), meadow thistle ( <i>Cirsium dissectum</i> ), common butterwort ( <i>Pinguicula vulgaris</i> ), devil's-bit scabious ( <i>Succisa pratensis</i> ), grass-of-parnassus ( <i>Parnassia palustris</i> ) and lesser clubmoss ( <i>Selaginella selaginoides</i> ) (NPWS internal files)
Vegetation composition: native negative indicator species	Percentage cover at a representative number of 2m x 2m 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 graminoids such as reed canary-grass ( <i>Phalaris arundinacea</i> ) and reed sweet-grass ( <i>Glyceria maxima</i> ), tall herbs such as great willowherb ( <i>Epilobium hirsutum</i> ), bracken ( <i>Pteridium aquilinum</i> ), bramble ( <i>Rubus fruticosus</i> ) and common nettle ( <i>Urtica dioica</i> ), and bryophytes such as <i>Brachythecium rutabulum</i> and <i>Kindbergia praelonga</i> . In this SAC, bramble is encroaching onto the habitat (NPWS internal files)
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014). 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 Perrin et al. (2014). Scrub and trees will tend to invade if fen conditions become drier. Gorse ( <i>Ulex europaeus</i> ) scrub is encroaching onto the alkaline fen in the SAC (NPWS internal files)
Vegetation composition: soft rush and common reed cover	Percentage cover in local vicinity of a representative number of monitoring stops	Total cover of soft rush ( <i>Juncus effusus</i> ) and common reed ( <i>Phragmites australis</i> ) less than 10%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: litter	Percentage cover in local vicinity of a representative number of monitoring stops	Total cover of litter not more than 25%	Attribute and target based on JNCC (2004). More than 25% litter cover may indicate insufficient removal of biomass by grazing and/or undesirable water table levels
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground not more than 10%	Attribute and target based on Perrin et al. (2014). 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

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 Perrin et al. (2014)
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.). Calcareous springs, some tufa-forming, are associated with the habitat in the SAC (NPWS internal files). The Near Threatened fly orchid ( <i>Ophrys insectifera</i> ) (Wyse Jackson et al., 2016) has been recorded in the habitat in the SAC (NPWS internal files). The rare hydrophilic land snail of calcareous fens <i>Pupilla pratensis</i> has been recorded (Moorkens and Killeen, 2009), as have the Vulnerable molluscs <i>Aplexa hypnorum</i> , <i>Leiostyla anglica</i> , <i>Vallonia pulchella</i> , <i>Vertigo antivertigo</i> and <i>Vertigo geyeri</i> (listed on Annex II), as well as the Near Threatened species <i>Vertigo pygmaea</i> and <i>V. substrata</i> (Byrne et al., 2009; Moorkens and Killeen, 2011). See the conservation objective for Geyer's whorl snail ( <i>Vertigo geyeri</i> ; species code 1013) in this volume

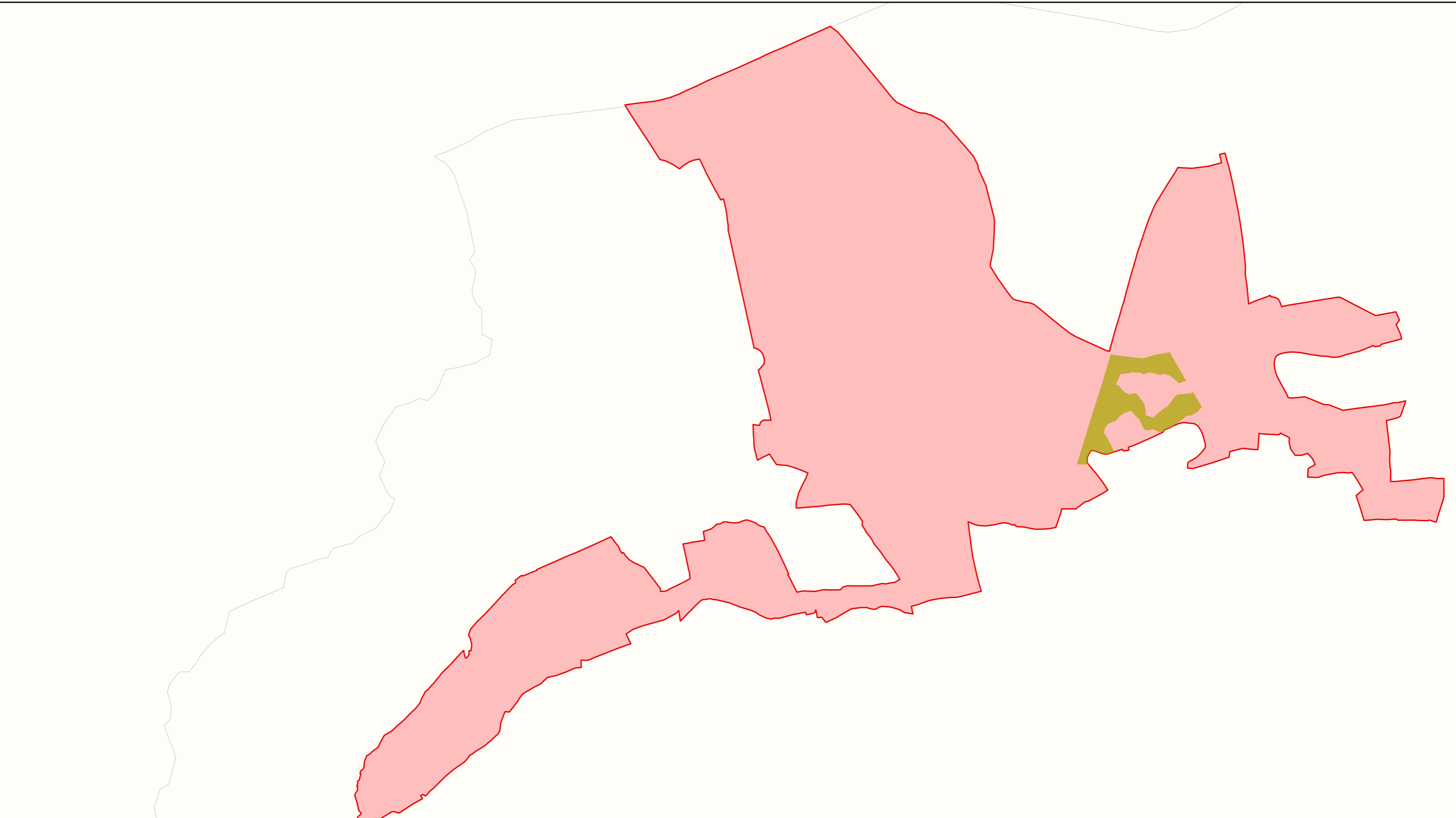
## Conservation Objectives for : Clonaslee Eskers and Derry Bog SAC [000859]

### 1013 Geyer's Whorl Snail *Vertigo geyeri*

To restore the favourable conservation condition of Geyer's Whorl Snail in Clonaslee Eskers and Derry Bog SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Number of occupied 1km grid squares	No decline, subject to natural processes. There is one known site for this species in the SAC within N2712. See map 3	There is a single site for Geyer's whorl snail ( <i>Vertigo geyeri</i> ) in Clonaslee Eskers and Derry Bog SAC which occurs in the 1km grid square N2712. See Moorkens (1998) and details of surveyed site VgCAM04 in Moorkens and Killeen (2011) and in Long and Brophy (in prep.). The species has not been found in the SAC since before 2005
Habitat area	Hectares	Area of suitable habitat stable or increasing, subject to natural processes; no less than 0.7ha of at least suboptimal habitat	Geyer's whorl snail ( <i>Vertigo geyeri</i> ) was recorded in areas of fen on seepages and spring lines along the base of an esker in the SAC. Optimal and suboptimal habitat is defined by Moorkens and Killeen (2011) and given in Long and Brophy (in prep.). The area of habitat classified as optimal or suboptimal should be at least 0.7ha (Moorkens and Killeen, 2011). When surveyed in 2014, the area of suitable habitat was just over 0.1ha (Long and Brophy, in prep.). The decline in habitat area is considered to be due to a combination of lack of grazing and drying out. See the conservation objective for Alkaline fens (7230) in this volume
Habitat quality: flushes and spring lines	Number of flushes	No decline, subject to natural processes	The habitat along the flushes and spring lines is the critical area of habitat for the species. Nine flushes were mentioned as present in 2005 by E. Moorkens, and a target of six of these being suitable for the species was set. In 2008, seven flushes were suitable (Moorkens and Killeen, 2011), but this had dropped to four in 2014 (Long and Brophy, in prep.)
Habitat quality: soil wetness	Percentage of a representative number of sample points	No decline, subject to natural processes; at least 50% of a representative number of sample points in areas of optimal habitat should be classified as optimal wetness	This attribute should be assessed following the methodology and definitions in Moorkens and Killeen (2011) and Long and Brophy (in prep.). Soil wetness should be suitable for the species in 50% of a representative number of sample points in areas of optimal habitat





**Legend**

- 7230 Alkaline fens
- Clonaslee Eskers and Derry Bog SAC 000859
- OSi Discovery Series County Boundary

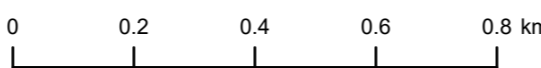


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**MAP 2:  
CLONASLEE ESKERS AND DERRY BOG  
CONSERVATION OBJECTIVES  
INDICATIVE ALKALINE FEN HABITAT**

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

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SAC 000859; version 3. CO. LAOIS**

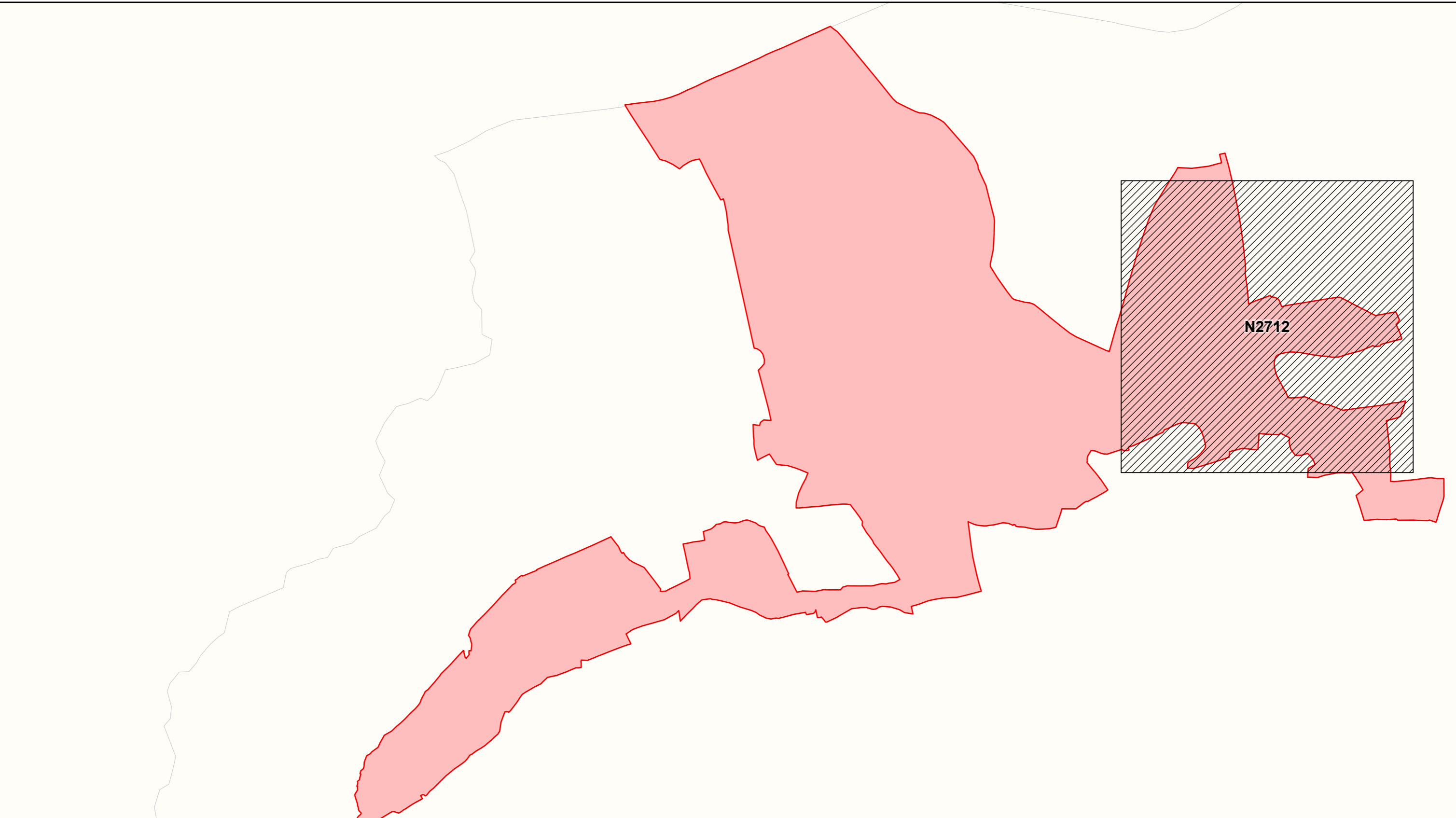


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**Map Version 1  
Date: Dec 2018**



**Legend**

-  1013 Geyer's Whorl Snail *Vertigo geyeri*
-  Clonaslee Eskers and Derry Bog SAC 000859
-  OSi Discovery Series County Boundary

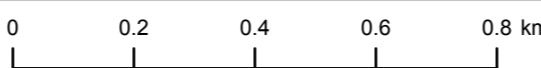


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**MAP 3:  
CLONASLEE ESKERS AND DERRY BOG  
CONSERVATION OBJECTIVES  
GEYER'S WHORL SNAIL**

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

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**Map Version 1  
Date: Dec 2018**