

National Parks and Wildlife Service

Conservation Objectives Series

Scragh Bog SAC 000692



An Roinn
Cultúir, Oidhreachta 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*

000692 Scragh Bog SAC

1393 Slender Green Feather-moss *Drepanocladus vernicosus*

7140 Transition mires and quaking bogs

7230 Alkaline fens

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	1972
Title :	A Preliminary Report on Areas of Scientific Interest in County Westmeath
Author :	Goodwillie, R.N.
Series :	Unpublished Report
Year :	2012
Title :	Ireland Red List No. 8: Bryophytes
Author :	Lockhart, N.; Hodgetts, N.; Holyoak, D.
Series :	Ireland Red List series, NPWS
Year :	2013
Title :	The status of EU protected habitats and species in Ireland. Volume 2. Habitats assessments
Author :	NPWS
Series :	Conservation assessments
Year :	2013
Title :	Conservation status assessments for three fen habitat types - 7230, 7210 and 7140
Author :	Kimberley, S.
Series :	Unpublished report to NPWS
Year :	2014
Title :	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
Author :	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
Series :	Irish Wildlife Manual No. 79
Year :	2015
Title :	Monitoring methods for <i>Hamatocaulis vernicosus</i> (Mitt.) Hedenäs (Slender green feather-moss) in the Republic of Ireland
Author :	Campbell, C.; Hodgetts, N.; Lockhart, N.
Series :	Irish Wildlife Manual No. 91
Year :	2016
Title :	Ireland Red List No. 10: Vascular Plants
Author :	Wyse Jackson, M.; FitzPatrick, Ú.; Cole, E.; Jebb, M.; McFerran, D.; Sheehy Skeffington, M.; Wright, M.
Series :	Ireland Red Lists series, NPWS
Year :	2017
Title :	An invertebrate survey of Scragh Bog, Co. Westmeath
Author :	Anderson, R.; Mantell, A.; Nelson, B.
Series :	Irish Wildlife Manual No. 96

Other References

Year :	1979
Title :	<i>Arcometopia wahlbergi</i> , <i>Clusoides caledonica</i> and <i>Stigmella catharticella</i> : insects new to Ireland
Author :	Speight, M.C.D.; Cogan, B.
Series :	Irish Naturalists' Journal, 19(11): 401-403

Year :	1981
Title :	The phytosociology and ecology of Scragh Bog, Co. Westmeath
Author :	O'Connell, M.
Series :	New Phytologist, 87(1): 139-187
Year :	1984
Title :	<i>Coenagrion lunulatum</i> (Odonata): morphology of the female and notes on a second Irish colony
Author :	Speight, M.C.D.; Legrand, J.
Series :	Irish Naturalists' Journal, 21(6): 237-242
Year :	1988
Title :	A survey of aquatic coleoptera in central Ireland and the Burren
Author :	Bilton, D.T.
Series :	Bulletin of the Irish Biogeographical Society, 11: 77-94
Year :	1989
Title :	The genera <i>Scorpidium</i> and <i>Hamatocaulis</i> , gen. nov., in northern Europe
Author :	Hedenäs, L.
Series :	Lindbergia, 15: 8-36
Year :	2002
Title :	The role of a buffer zone on species composition and nutrient status of fens in Ireland: A case study in Scragh Bog, Co Westmeath
Author :	Beltman, B.; Dorland, E.; van Vliet, B.
Series :	Irish Naturalists' Journal, 27(1): 19-32
Year :	2004
Title :	Common Standards Monitoring guidance for lowland wetland habitats
Author :	JNCC
Series :	Joint Nature Conservation Committee, Peterborough
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)
Year :	2012
Title :	Rare and threatened bryophytes of Ireland
Author :	Lockhart, N.; Hodgetts, N.; Holyoak, D.
Series :	National Museums Northern Ireland
Year :	2013
Title :	Conservation of selected legally protected and Red Listed bryophytes in Ireland
Author :	Campbell, C.
Series :	Unpublished Ph.D. Thesis, Trinity College Dublin

Spatial data sources

Year : digitised 2004
Title : Internal NPWS dataset
GIS Operations : QIs selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For : 7140, 7230 (maps 2 and 3)

Year : 2017
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 : 1393 (map 4)

7140 Transition mires and quaking bogs

To maintain the favourable conservation condition of Transition mires and quaking bogs in Scragh 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	Scragh Bog SAC contains one of the best examples of transition mire and quaking bog habitat in Ireland, with natural gradations from open water and transitions to alkaline fen, fen carr and embryonic development of ombrotrophic bog especially well-demonstrated. The estimated area of transition mires and quaking bogs in Scragh Bog SAC is c.8ha. The majority of Scragh Bog SAC is managed as a Nature Reserve (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See map 2 for indicative distribution of the habitat in Scragh Bog 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 Bobbink and Hettelingh (2011)
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 - water levels	Centimetres; duration of water levels	Maintain appropriate water levels necessary to support the natural structure and functioning of the habitat	Maintenance of a permanently high water level, remaining close to the peat surface all year, with water level fluctuations within natural ranges, is required for this wetland habitat. See Kimberley (2013). In this SAC, the fen is fed by weak surface springs near the south-eastern end and drains by an artificially defined outlet in the north-west (NPWS internal files). See also O'Connell (1981) for information on the hydrology of Scragh Bog SAC
Ecosystem function: hydrology - flow patterns	Flow direction	Maintain appropriate topography and water movement regime necessary to support the natural structure and functioning of the habitat	Maintenance, both within and surrounding the habitat, of topography and flow patterns within natural ranges is essential in order to ensure the hydrological integrity of this wetland habitat
Ecosystem function: water quality	Water chemistry measures	Maintain appropriate water quality to support the natural structure and functioning of the habitat	The surface water conditions necessary to maintain transition mires range from acidic to slightly base-rich. The vegetation typically has intimate mixtures of species considered to be acidophile and others considered calciphile. In other cases, these intermediate properties may reflect the actual process of succession, as peat accumulates in groundwater-fed fen or open water to produce rainwater-fed bog isolated from groundwater influence. See O'Connell (1981) and Beltman et al. (2002) for further details on the hydrochemistry of Scragh Bog SAC
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	See O'Connell (1981) for information on the vegetation communities in Scragh Bog. Information on vegetation communities associated with this habitat in the uplands is presented in Perrin et al. (2014)

Vegetation composition: typical vascular plants and bryophytes	Percentage cover at a representative number of 2m x 2m monitoring stops	Maintain adequate cover of typical vascular plant and bryophyte species	For lists of typical plant species, see the Article 17 conservation status assessment for transition mires and quaking bogs (NPWS, 2013) and the fen habitats supporting document (Kimberley, 2013). See also Perrin et al. (2014) and JNCC (2004). In this SAC, typical species recorded in the habitat include slender sedge (<i>Carex lasiocarpa</i>), bogbean (<i>Menyanthes trifoliata</i>), the Near Threatened (NT) slender cottongrass (<i>Eriophorum gracile</i>) (Wyse Jackson et al., 2016), and the mosses <i>Bryum pseudotriquetrum</i> and <i>Scorpidium revolvens</i> . In parts, fibrous tussock-sedge (<i>Carex appropinquata</i>) (NT) dominates, with typical species also recorded including bottle sedge (<i>C. rostrata</i>), marsh pennywort (<i>Hydrocotyle vulgaris</i>), marsh cinquefoil (<i>Comarum palustre</i>) and marsh bedstraw (<i>Galium palustre</i>) (NPWS internal files). See also Goodwillie (1972) and O'Connell (1981)
Vegetation composition: native negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Native negative indicator species at insignificant levels	Negative indicators include species not characteristic of the habitat and species indicative of undesirable impacts such as overgrazing, undergrazing, nutrient enrichment, agricultural improvement or impacts on hydrology. Native negative indicator species that could suggest drying out include ling (<i>Calluna vulgaris</i>) and birch (<i>Betula pubescens</i>)
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
Physical structure: drainage	Percentage area in local vicinity of a representative number of monitoring stops	Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%	Attribute and target based on Perrin et al. (2014). Drainage can result in loss of characteristic species and transition to drier habitats
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). 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
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 listed in the Flora (Protection) Order, 2015 (FPO) and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016). The Near Threatened sedge species fibrous tussock-sedge (<i>Carex appropinquata</i>) and slender cottongrass (<i>Eriophorum gracile</i>) (Wyse Jackson et al., 2016) have been recorded from the habitat in the SAC, the latter is listed on the FPO. The Vulnerable mosses <i>Cinclidium stygium</i> and <i>Tomentypnum nitens</i> and the Near Threatened liverwort <i>Ricciocarpos natans</i> (Lockhart et al., 2012) are also associated with the habitat. The Near Threatened and Annex II and FPO listed slender green feather-moss (<i>Hamatocaulis (Drepanocladus) vernicosus</i>) is also found (Lockhart et al., 2012; Campbell et al., 2015; NPWS internal files). See also the conservation objective for slender green feather-moss in this volume. The habitat in the SAC is also important for invertebrates (see Anderson et al., 2017)

7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in Scragh 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	Scragh Bog SAC contains an excellent example of alkaline fen in near-natural condition with a species-rich plant assemblage. The habitat occurs predominantly in the centre of the SAC with some smaller adjacent patches, with an estimated area of c.1.5ha. Gradations from alkaline fen to transition mire and quaking bogs (7140), to fen carr and embryonic development of ombrotrophic bog are especially well-demonstrated in the SAC. The majority of Scragh Bog SAC is managed as a Nature Reserve (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See map 3 for indicative distribution of the habitat in Scragh Bog 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 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	Maintain, or 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. In this SAC, the fen is fed by weak surface springs near the south-eastern end and drains by an artificially defined outlet in the north-west (NPWS internal files). See O'Connell (1981) and Beltman et al. (2002) for information on the hydrology of Scragh Bog SAC
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or 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
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, calcium-rich water, with an average pH of 6-7, originates from the springs and diffuse groundwater inflow (Beltman et al., 2002). See O'Connell (1981) and Beltman et al. (2002) for further details on the hydrochemistry of Scragh Bog SAC
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	See O'Connell (1981) for information on the vegetation communities in Scragh Bog. Information on vegetation communities associated with this habitat 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>Campyllum 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 this SAC, bryophytes recorded in the habitat include <i>Campyllum stellatum</i> , <i>Scorpidium revolvens</i> , <i>S. scorpioides</i> , and the Vulnerable mosses <i>Tomentypnum nitens</i> and <i>Cinclidium stygium</i> (Lockhart et al., 2012; NPWS internal files). See also O'Connell (1981)
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). In this SAC, the alkaline fen is dominated by black bog-rush (<i>Schoenus nigricans</i>) with typical species recorded including long-stalked yellow sedge (<i>Carex lepidocarpa</i>), narrow-leaved marsh orchid (<i>Dactylorhiza traunsteinerioides</i>) and grass-of-parnassus (<i>Parnassia palustris</i>) (NPWS internal files). See also Goodwillie (1972) and O'Connell (1981)
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 impacts 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>
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
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)

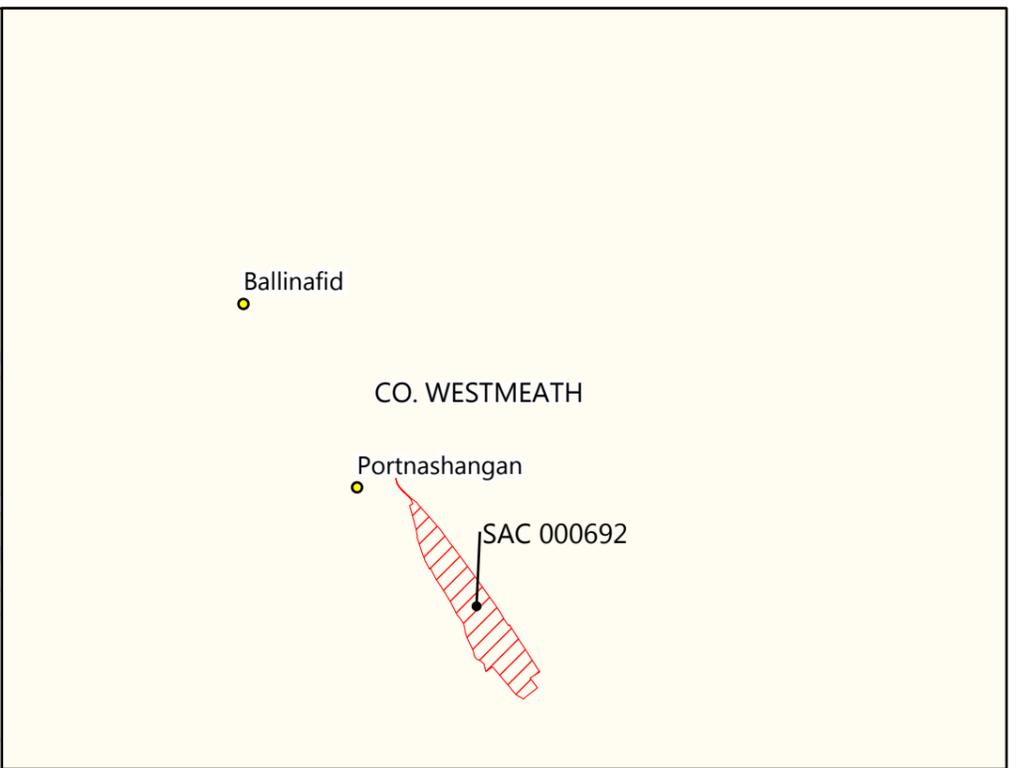
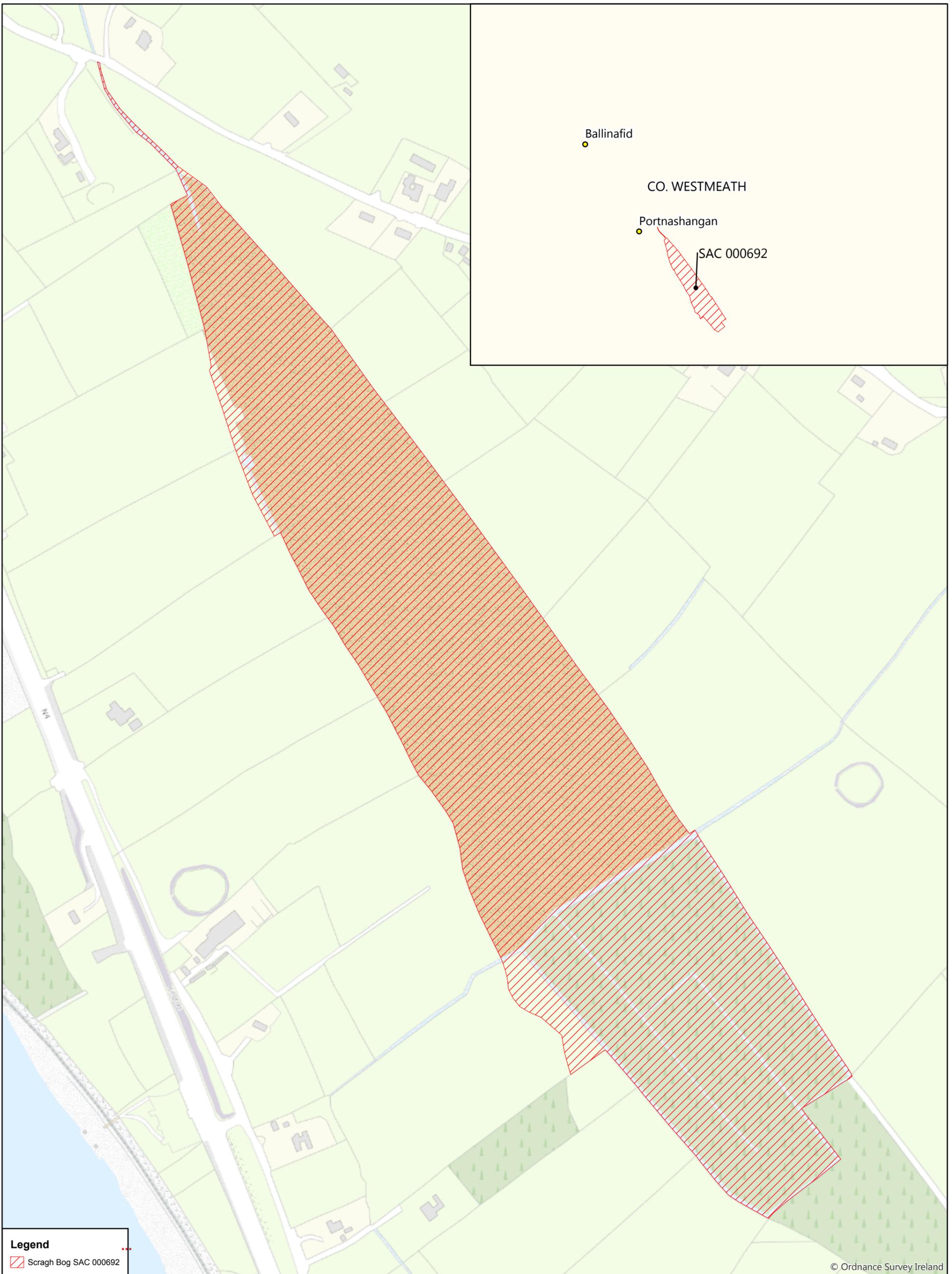
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	This includes species on the Flora (Protection) Order, 2015 (FPO) and/or the red data lists (Lockhart et al., 2012; Wyse Jackson et al., 2016). The Vulnerable mosses <i>Cinclidium stygium</i> and <i>Tomentypnum nitens</i> (Lockhart et al., 2012) are found in the habitat in the SAC. The Near Threatened Annex II and FPO listed slender green feather-moss (<i>Drepanocladus (Hamatocaulis) vernicosus</i>) and the Near Threatened liverwort <i>Ricciocarpos natans</i> (Lockhart et al., 2012) are associated with the habitat in the SAC (Campbell et al., 2015; NPWS internal files). The habitat in the SAC is also important for invertebrates (Speight and Cogan, 1979; Speight and Legrand, 1984; Bilton, 1988; Anderson et al., 2017)
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1393 Slender Green Feather-moss *Drepanocladus vernicosus*

To maintain the favourable conservation condition of Slender Green Feather-moss (Shining sickle-moss) in Scragh Bog SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Number and geographical spread of populations	No decline, subject to natural processes. See map 4 for recorded locations at Scragh Bog	(Please note that <i>Drepanocladus vernicosus</i> was reclassified as <i>Hamatocaulis vernicosus</i> by Hedenäs (1989)). The largest known population of slender green feather-moss (<i>Hamatocaulis vernicosus</i>) in Ireland occurs in Scragh Bog SAC predominantly in transition mire and quaking bog habitat (7140) and the species is also associated with alkaline fen habitat (7230) in the SAC (Campbell, 2013; Campbell et al., 2015; NPWS internal files)
Population size	Number of individuals	No decline, subject to natural processes	The population at Scragh Bog was estimated by Campbell (2013) to be 323,294,457 shoots (c.323,294,000 shoots). Counts of shoots were based on the mean of number of shoots in seven 10cm x 10cm areas, extrapolated to 18,129 per m ² in 17,833m ² (Campbell, 2013). See Campbell et al. (2015) for further details
Population cover	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage cover of slender green feather-moss (<i>Hamatocaulis vernicosus</i>) should be at least 23%	The mean percentage cover of slender green feather-moss (<i>Hamatocaulis vernicosus</i>) recorded in seven 2m x 2m plots at Scragh Bog was 28.7% (Campbell, 2013). The target cover figure is a c.20% reduction of the recorded cover to allow for a margin of error and variability over monitoring seasons. See Campbell et al. (2015) for further details
Area of suitable habitat	Hectares	No decline, subject to natural processes	The area of occupancy at Scragh Bog was estimated from mapping of GPS co-ordinates to be 59,442m ² . However, only c.30% of this is suitable habitat i.e. c.17,833m ² (1.783ha) (Campbell, 2013). See Campbell et al. (2015) for further details
Hydrological conditions: water table level	Metres	Maintain suitable hydrological conditions	Slender green feather-moss (<i>Hamatocaulis vernicosus</i>) is mostly confined to mesotrophic fens, a transitional habitat between acid bog and base-rich fen. This appears to occur in at least two forms in Ireland: upland transitional flushes, where the plants can occur in lawns that rise and fall with fluctuating water table levels; and wet lowland sedge meadows, where plants can be inundated in winter, but may be subject to some desiccation in the summer, such as at Scragh Bog. Based on Campbell (2013) and Campbell et al. (2015)
Vegetation composition: tree cover	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage tree cover should be less than 15%	Slender green feather-moss (<i>Hamatocaulis vernicosus</i>) grows in moss-dominated, open communities, generally with a low cover of trees and shrubs. Campbell (2013) recorded tree cover of 0-33% in seven 2m x 2m plots at Scragh Bog. See Campbell et al. (2015) for further details
Vegetation composition: shrub cover	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage shrub cover should be less than 20%	Slender green feather-moss (<i>Hamatocaulis vernicosus</i>) grows in moss-dominated, open communities, generally with a low cover of trees and shrubs. Campbell (2013) recorded shrub cover of 0-50% in seven 2m x 2m plots at Scragh Bog. See Campbell et al. (2015) for further details
Vegetation composition: grass cover	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage grass cover should be less than 25%	Slender green feather-moss (<i>Hamatocaulis vernicosus</i>) grows in moss-dominated, open communities, generally with a low cover of grasses. Campbell (2013) recorded grass cover of 0-25% in seven 2m x 2m plots at Scragh Bog. See Campbell et al. (2015) for further details

Vegetation composition: bryophyte cover	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage bryophyte cover should be more than 50%	Campbell (2013) recorded bryophyte cover of 51-95% in seven 2m x 2m plots at Scragh Bog. See also Campbell et al. (2015)
Vegetation composition: cover of <i>Calliergonella cuspidata</i>	Percentage cover in a representative number of 2m x 2m monitoring plots	Mean percentage cover of <i>Calliergonella cuspidata</i> should be less than 60%	<i>Calliergonella cuspidata</i> , a moss species often associated with high nutrient conditions, is usually present, but with low cover and rarely dominant. Cover of <i>Calliergonella cuspidata</i> was c.2-90% in seven 2m x 2m plots recorded by Campbell (2013) at Scragh Bog. See also Campbell et al. (2015)
Vegetation structure: vegetation height	Centimetres in a representative number 2m x 2m monitoring plots	Mean vegetation height should not exceed 80cm	Campbell (2013) recorded a mean vegetation height of 69.6cm in seven 2m x 2m plots at Scragh Bog. See also Campbell et al. (2015)



Legend

 Scragh Bog SAC 000692

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

**MAP 1:
SCRAGH BOG SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION**

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

**SITE CODE:
SAC 000692; version 3. CO. WESTMEATH**

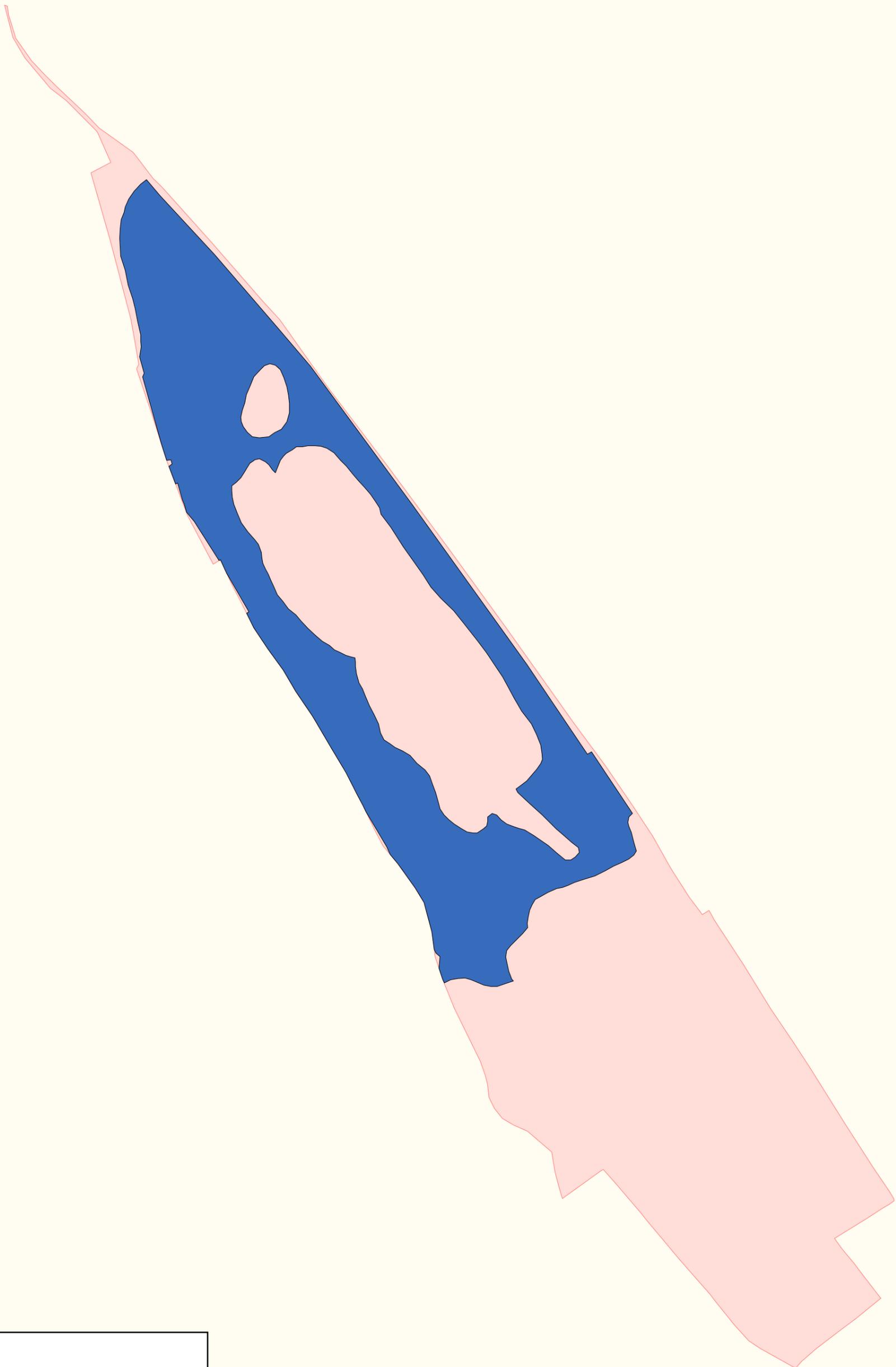
0 30 60 90 120 150 Meters

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Nil sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithne a déanamh ar theorainneacha na gceantar comharthaíthe. Suirbhéaracha Ordonáis na hÉireann Ceadúnas Uimh EN 0059216. © Suirbhéaracha Ordonáis na hÉireann Rialtas na hÉireann

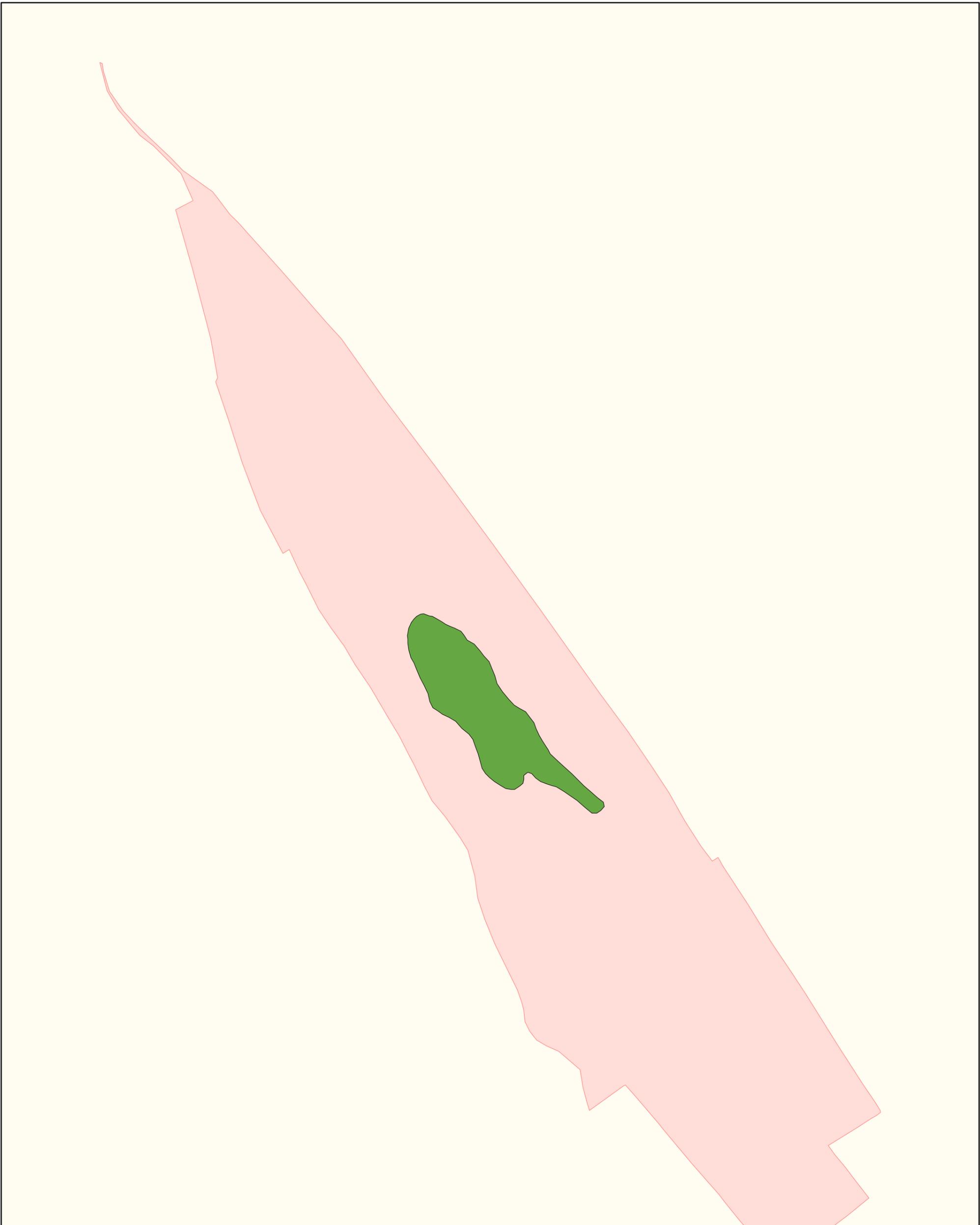
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**Map Version 1
Date: Dec 2017**



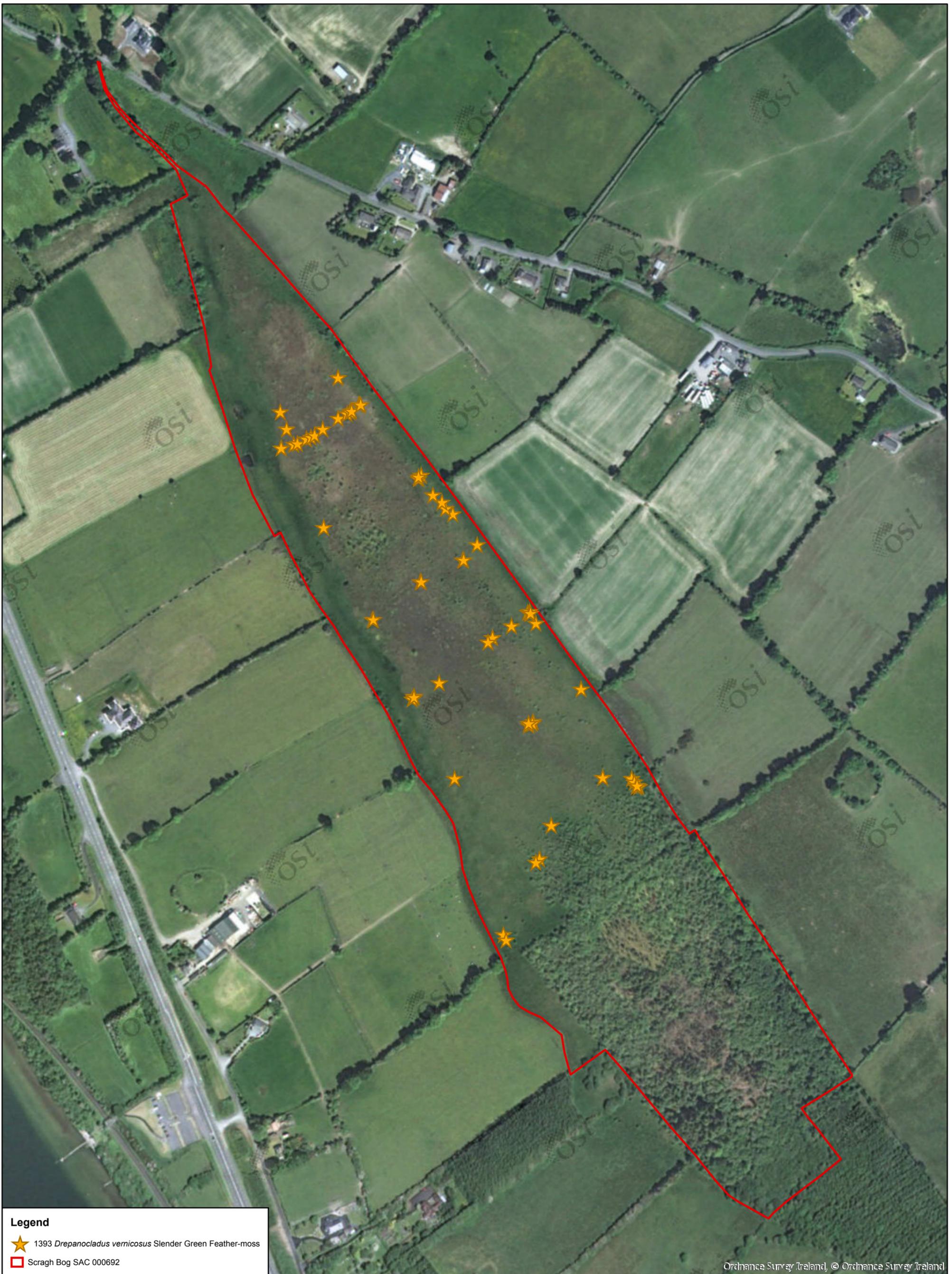
Legend

- 7140 Transition mires and quaking bogs
- Scragh Bog SAC 000692
- OSi Discovery Series County Boundary



Legend

- 7230 Alkaline Fens
- Scragh Bog SAC 000692
- OSi Discovery Series County Boundary



Legend

- ★ 1393 *Drepanocladus vernicosus* Slender Green Feather-moss
- Scragh Bog SAC 000692

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