

National Parks and Wildlife Service

Conservation Objectives Series

Ardrahan Grassland SAC 002244



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

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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

** indicates a priority habitat under the Habitats Directive*

002244 Ardrahan Grassland SAC

4060 Alpine and Boreal heaths

5130 *R* } *q* ^ { *v* • *A* } { { *~* } *ã* formations on heaths or calcareous grasslands

8240 Limestone pavementsE

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	2009
Title :	Ireland Red List No. 2: Non-marine molluscs
Author :	Byrne, A.; Moorkens, E.A.; Anderson, R.; Killeen, I.J.; Regan, E.C.
Series :	Ireland Red List series, NPWS
Year :	2010
Title :	Ireland Red List No. 4: Butterflies
Author :	Regan, E.C.; Nelson, B.; Aldwell, B.; Bertrand, C.; Bond, K.; Harding, J.; Nash, D.; Nixon, D.; Wilson, C.J.
Series :	Ireland Red List series, NPWS
Year :	2012
Title :	The conservation status of juniper formations in Ireland
Author :	Cooper, F.; Stone, R.E.; McEvoy, P.; Wilkins, T.; Reid, N.
Series :	Irish Wildlife Manuals, No. 63
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 :	Irish semi-natural grasslands survey 2007-2012
Author :	O'Neill, F.H.; Martin, J.R.; Devaney, F.M.; Perrin, P.M.
Series :	Irish Wildlife Manuals, No. 78
Year :	2013
Title :	National survey of limestone pavement and associated habitats in Ireland
Author :	Wilson, S.; Fernandez, F.
Series :	Irish Wildlife Manuals, No. 73
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 List Series, NPWS
Year :	2018
Title :	The Irish Juniper Monitoring Survey 2017
Author :	O'Neill, F.H.; Martin, J.R.
Series :	Irish Wildlife Manuals, No. 101
Year :	2018
Title :	The Irish Juniper Monitoring Survey 2017 - Appendices
Author :	O'Neill, F.H.; Martin, J.R.
Series :	Irish Wildlife Manuals, No. 101
Year :	2018
Title :	The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats
Author :	Martin, J.R.; O'Neill, F.H.; Daly, O.H.
Series :	Irish Wildlife Manuals, No. 102

Other References

Year : 2014
Title : Orchid Ireland Survey 2014
Author : Curtis, T.; Wilson, F.
Series : Report to National Museums Northern Ireland

Spatial data sources

Year :	2018
Title :	Irish Juniper Monitoring Survey 2017. Version 1
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	5130 (map 2)
<hr/>	
Year :	2013
Title :	National Survey of Limestone Pavement and Associated Habitats in Ireland distribution data
GIS Operations :	Dataset clipped to the SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	8240 (map 3)
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Conservation Objectives for : Ardrahan Grassland SAC [002244]

4060 Alpine and Boreal heaths

To maintain the favourable conservation condition of Alpine and Boreal heaths in Ardrahan Grassland 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	Alpine and Boreal heaths occur in intimate association with species-rich dry calcareous grassland, <i>Juniperus communis</i> formations on heaths or calcareous grasslands (habitat code 5130) and Limestone pavements (8240*) in Ardrahan Grasslands SAC. Therefore, these habitats cannot easily be mapped or considered separately. Conservation objectives for the Annex I habitats in this volume should be used in conjunction with each other as appropriate. Although relatively small in area, the SAC contains some of the finest examples of bearberry (<i>Arctostaphylos uva-ursi</i>) heath and mountain avens (<i>Dryas octopetala</i>) heath outside the Burren (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See the notes for Habitat area above
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	The list of positive indicator species for the habitat identified by the National Survey of Limestone Pavement and Associated Habitats is presented in Wilson and Fernandez (2013). This document should be consulted for further details. Positive indicator species recorded in the habitat in the SAC include bearberry (<i>Arctostaphylos uva-ursi</i>), mountain avens (<i>Dryas octopetala</i>), ling heather (<i>Calluna vulgaris</i>), juniper (<i>Juniperus communis</i>), blue moor-grass (<i>Sesleria caerulea</i>) and wild thyme (<i>Thymus polytrichus</i>) (NPWS internal files)
Vegetation composition: negative indicator species	Percentage cover at a representative number of monitoring stops	Negative indicator species collectively not more than 10% cover	Attribute and target based on Wilson and Fernandez (2013), where the list of negative indicator species for the habitat, as identified by Wilson and Fernandez (2013), is presented
Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops	Non-native species not more than 1% cover	Attribute and target based on Wilson and Fernandez (2013)
Vegetation composition: native trees and shrubs	Percentage cover at a representative number of monitoring stops	Cover of native trees and shrubs (except juniper (<i>Juniperus communis</i>)) not more than 25% cover	Attribute and target based on Wilson and Fernandez (2013)
Physical structure: disturbance	Percentage cover at a representative number of monitoring stops	Less than 10% disturbed bare ground (excluding rocks/stones)	Attribute and target based on Wilson and Fernandez (2013)
Indicators of local distinctiveness	Occurrence	Indicators of local distinctiveness are maintained	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.) and other rare or localised species, as well as archaeological and geological features, which often support distinctive species. The Near Threatened species spring gentian (<i>Gentiana verna</i>) and fly orchid (<i>Ophrys insectifera</i>) (Wyse Jackson et al., 2016) have been recorded in the habitat in the SAC (NPWS internal files)

Conservation Objectives for : Ardrahan Grassland SAC [002244]

5130 Juniperus communis formations on heaths or calcareous grasslands

To restore the favourable conservation condition of *Juniperus communis* formations on heaths or calcareous grasslands in Ardrahan Grassland 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; at least 74.4ha for the surveyed sub-site Caherateige (site code GY16)	As part of the Irish Juniper Monitoring Survey (O'Neill and Martin, 2018), <i>Juniperus communis</i> formations on heaths or calcareous grasslands was surveyed and mapped in the sub-site Caherateige (site code GY16) within Ardrahan Grassland SAC to give a total estimated area of 74.4ha. See map 2. This is judged to be a minimum area. Owing to the large extent of this SAC, there may be other areas of the habitat in the SAC that have not been surveyed
Habitat distribution	Occurrence	No decline, subject to natural processes. Surveyed location shown on map 2	Distribution is based on O'Neill and Martin (2018). The habitat occurs as three separate formations of juniper (<i>Juniperus communis</i>) shrubs in the Caherateige sub-site (GY16). It is important to note that further unsurveyed areas of the habitat may be present in the SAC
Juniper formation size	Number and proximity of juniper plants	At least 50 juniper plants present with each plant separated by no more than 20m	Attribute and target based on O'Neill and Martin (2018). A juniper formation is defined by O'Neill and Martin (2018) as any cluster of ≥ 50 juniper plants where no plant is more than 20m from another. In practice, this means that juniper plants should achieve a minimum density of 25 plants per hectare to qualify as a formation. Surveys in 2017 estimated that the population in the Caherateige sub-site (GY16) falls within an interval class of 10,001-50,000 plants (O'Neill and Martin, 2018)
Vegetation structure: female fruiting plants	Percentage in a representative number of 5m x 5m monitoring stops or in an <i>ad hoc</i> count of 50 plants	Fruiting females comprise at least 10% of juniper plants rooted in plot in at least 50% of stops or in an <i>ad hoc</i> count of 50 plants	Attribute and target based on Cooper et al. (2012) and O'Neill and Martin (2018). In the Caherateige sub-site (GY16), it was estimated that 25% of juniper plants were fruiting when surveyed in 2017 (O'Neill and Martin, 2018)
Vegetation structure: seedling recruitment	Presence in a representative number of 5m x 5m monitoring stops	At least one seedling recorded in at least one monitoring stop	Attribute and target based on O'Neill and Martin (2018). Juniper seedlings are defined as plants less than 15cm high that are still flexible and single-stemmed, or with only two branches at most. In the Caherateige sub-site (GY16), no seedlings were recorded in 2017 (O'Neill and Martin, 2018)
Vegetation structure: live juniper	Percentage in a representative number of 5m x 5m monitoring stops or across the site as a whole	At least 90% of juniper plants rooted in plot alive in at least 75% of stops or across the site as a whole	Attribute and target based on Cooper et al. (2012) and O'Neill and Martin (2018). In the Caherateige sub-site (GY16), more than 99% of juniper shrubs were alive when surveyed in 2017 (O'Neill and Martin, 2018)
Vegetation composition: negative indicator species	Percentage in a representative number of 5m x 5m monitoring stops	Total cover of negative indicator species to be less than 10% in at least 50% of stops	Attribute and target based on O'Neill and Martin (2018) where the list of negative indicator species is also presented
Physical structure: germination niches	Percentage in a representative number of 5m x 5m monitoring stops	At least 5% bare soil and/or at least 5% bare rock in at least 50% of stops	Attribute and target based on O'Neill and Martin (2018). Bare soil is important as a germination micro-site and bare rock can also contribute, particularly at the soil-rock interface and in limestone pavement grikes. In the Caherateige sub-site (GY16), a mean of 0.5% bare soil and 18% bare rock was recorded in nine monitoring stops in the habitat in 2017 (O'Neill and Martin, 2018)
Formation structure: browning/die-back of plants	Percentage of juniper cover in a representative number of 5m x 5m monitoring stops	Browning or dead juniper branches (excluding fully dead plants) comprise no more than 20% of total juniper cover in plot in at least 75% of stops	Attribute and target based on O'Neill and Martin (2018). In the Caherateige sub-site (GY16), juniper plants appeared generally healthy overall when surveyed in 2017, with only low levels of browning observed on bushes (O'Neill and Martin, 2018)

Formation structure: evidence of browsing and bark stripping	Occurrence across a representative number of 5m x 5m monitoring stops	Recent browsing of juniper plants and bark stripping and trampling due to browsers evident in no more than 50% of stops	Attribute and target based on O'Neill and Martin (2018). This attribute concerns bark stripping by animals. Bark stripping or damage from abrasion by rock is not included here. It should be noted, however, that distinguishing between the two may be difficult. In the Caherateige sub-site (GY16), juniper browsing was recorded in less than 50% of stops in the habitat in 2017 (O'Neill and Martin, 2018)
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	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.)

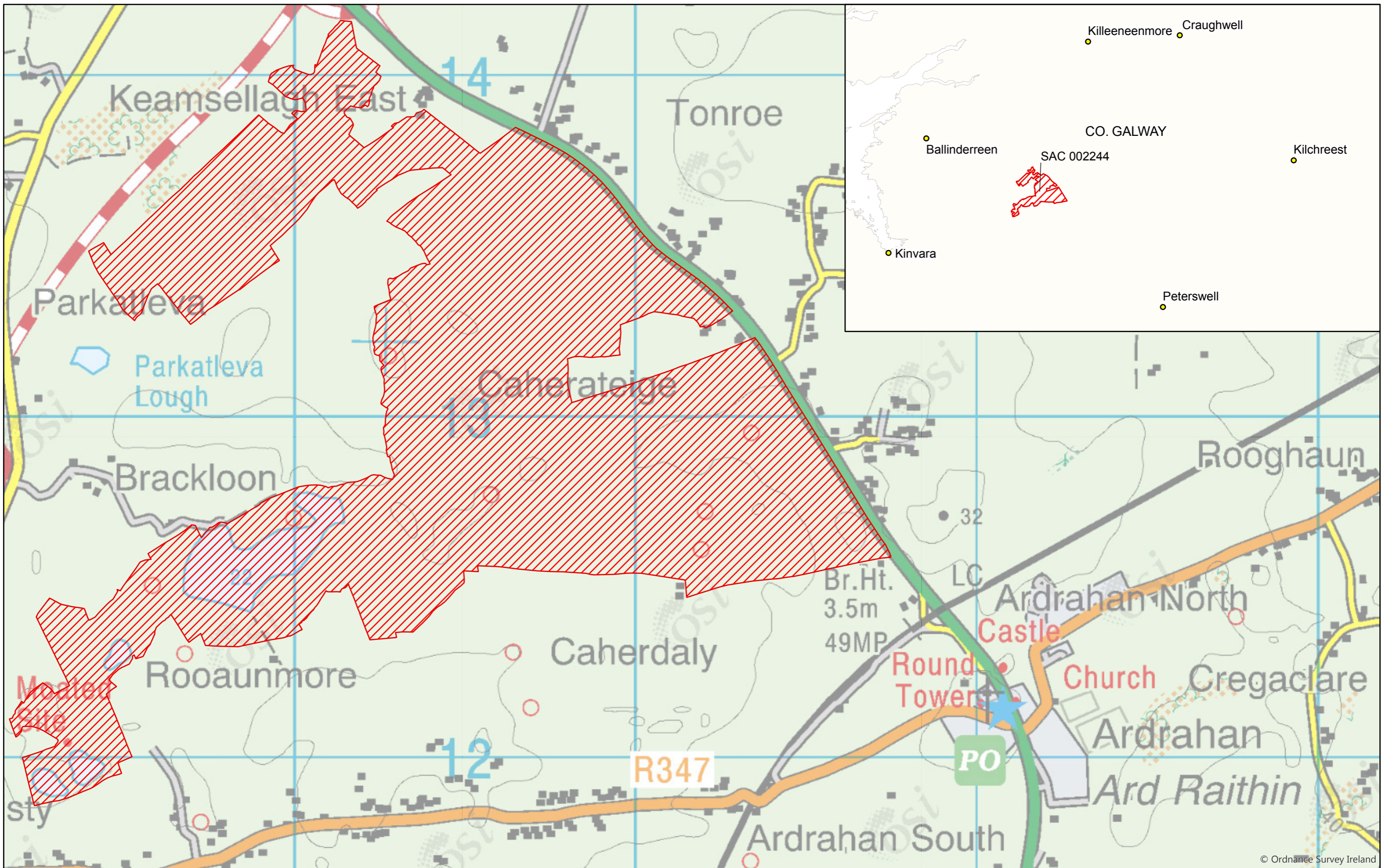
Conservation Objectives for : Ardrahan Grassland SAC [002244]

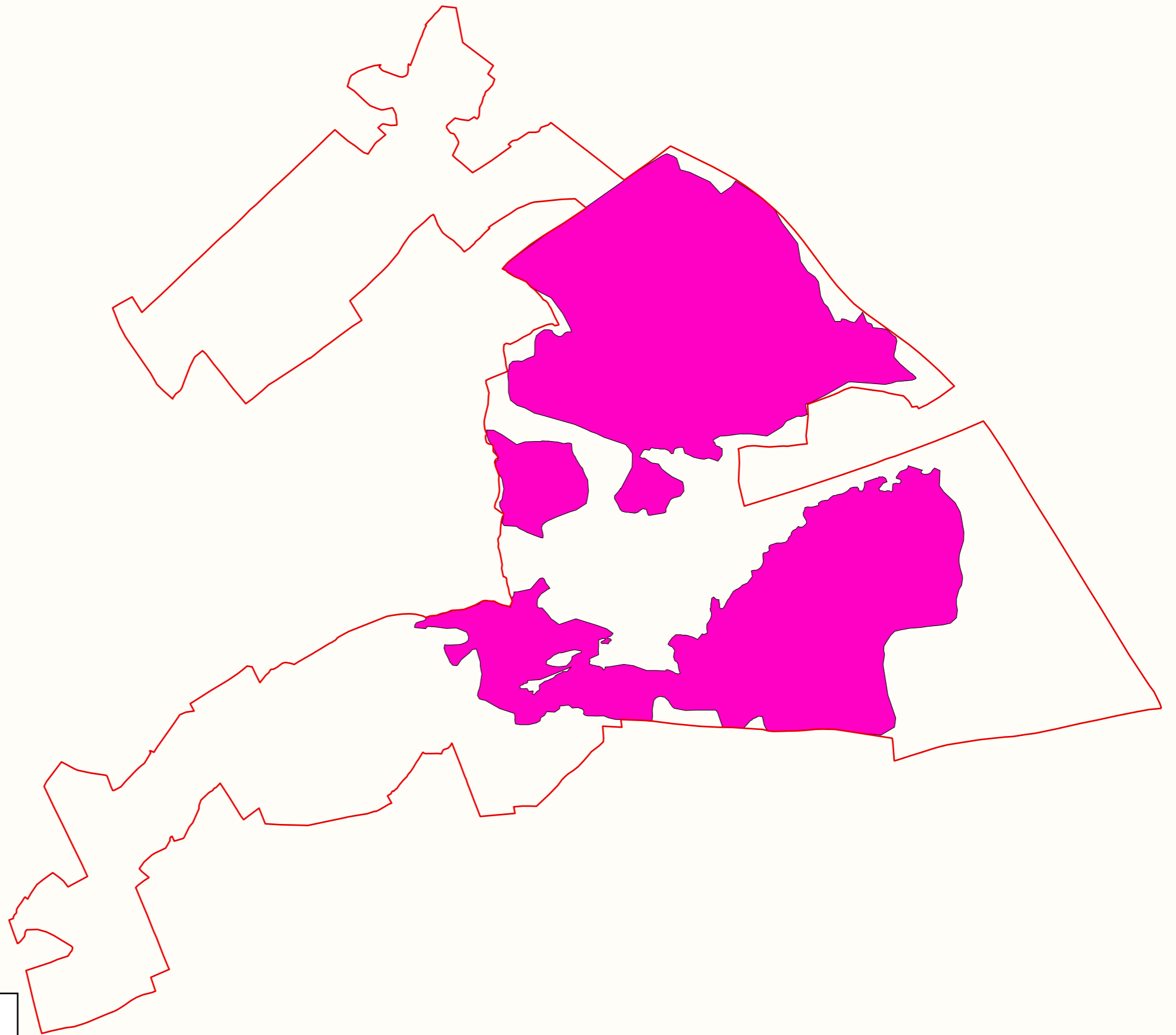
8240 Limestone pavements

To maintain the favourable conservation condition of Limestone pavements* in Ardrahan Grassland 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	Ardrahan Grassland SAC contains a fine example of limestone pavement habitat, which is mostly of the smooth type. Pockets of hazel (<i>Corylus avellana</i>) scrub have developed in places, and there are lesser amounts of blackthorn (<i>Prunus spinosa</i>), bracken (<i>Pteridium aquilinum</i>) and hawthorn (<i>Crataegus monogyna</i>) (NPWS internal files). The habitat occurs in intimate association with the habitats Alpine and Boreal heaths (4060) and <i>Juniperus communis</i> formations on heaths or calcareous grasslands (5130), as well as with wet and dry grasslands (see site 2310 in O'Neill et al., 2013 and Martin et al., 2018). Therefore, these habitats cannot easily be mapped or considered separately. Conservation objectives for the Annex I habitats should be used in conjunction with each other as appropriate. Wilson and Fernandez (2013) mapped the indicative area of limestone pavement, including mosaics with associated habitats, as 129.1ha in the SAC (map 3)
Habitat distribution	Occurrence	No decline. Map 3 shows indicative distribution, including mosaics with other habitats	See the notes for Habitat area above. Distribution based on data from Wilson and Fernandez (2013). This habitat can be split into exposed pavement and wooded pavement
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	Positive indicator species for exposed and wooded pavement are listed in Wilson and Fernandez (2013). Positive indicator species recorded in exposed pavement in the SAC include blue moor-grass (<i>Sesleria caerulea</i>), wild thyme (<i>Thymus polytrichus</i>), bloody crane's-bill (<i>Geranium sanguineum</i>) and burnet rose (<i>Rosa spinosissima</i>) (NPWS internal files)
Vegetation composition: bryophyte layer	Percentage at a representative number of monitoring stops	Bryophyte cover at least 50% on wooded pavement	Attribute and target based on Wilson and Fernandez (2013)
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Collective cover of negative indicator species on exposed pavement not more than 1%	Negative indicator species are listed in Wilson and Fernandez (2013). Negative indicator species for wooded pavement overlap with non-native species (below)
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration	Attribute and target based on Wilson and Fernandez (2013)
Vegetation composition: scrub	Percentage at a representative number of monitoring stops	Scrub cover no more than 25% of exposed pavement	Attribute and target based on Wilson and Fernandez (2013)
Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken (<i>Pteridium aquilinum</i>) cover no more than 10% on exposed pavement	Attribute and target based on Wilson and Fernandez (2013)
Vegetation structure: woodland canopy	Percentage at a representative number of monitoring stops	Canopy cover on wooded pavement at least 30%	Attribute and target based on Wilson and Fernandez (2013)
Vegetation structure: dead wood	Occurrence in a representative number of monitoring stops	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem

Physical structure: disturbance	Occurrence in a representative number of monitoring stops	No evidence of grazing pressure on wooded pavement	Attribute and target based on Wilson and Fernandez (2013)
Indicators of local distinctiveness	Occurrence	Indicators of local distinctiveness are maintained	This includes species 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.) and other rare or localised species, as well as archaeological and geological features, which often support distinctive species. The Near Threatened frog orchid (<i>Coeloglossum viride</i>) has been recorded in calcareous grassland associated with limestone pavement habitat in the SAC (Curtis and Wilson, 2014)





Legend

- Ardrahan Grassland SAC 002244
- 5130 *Juniperus communis* formations on heaths or calcareous grasslands
- OSi Discovery Series County Boundary

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**MAP 2:
ARDRAHAN GRASSLAND SAC
CONSERVATION OBJECTIVES
JUNIPER FORMATIONS**

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

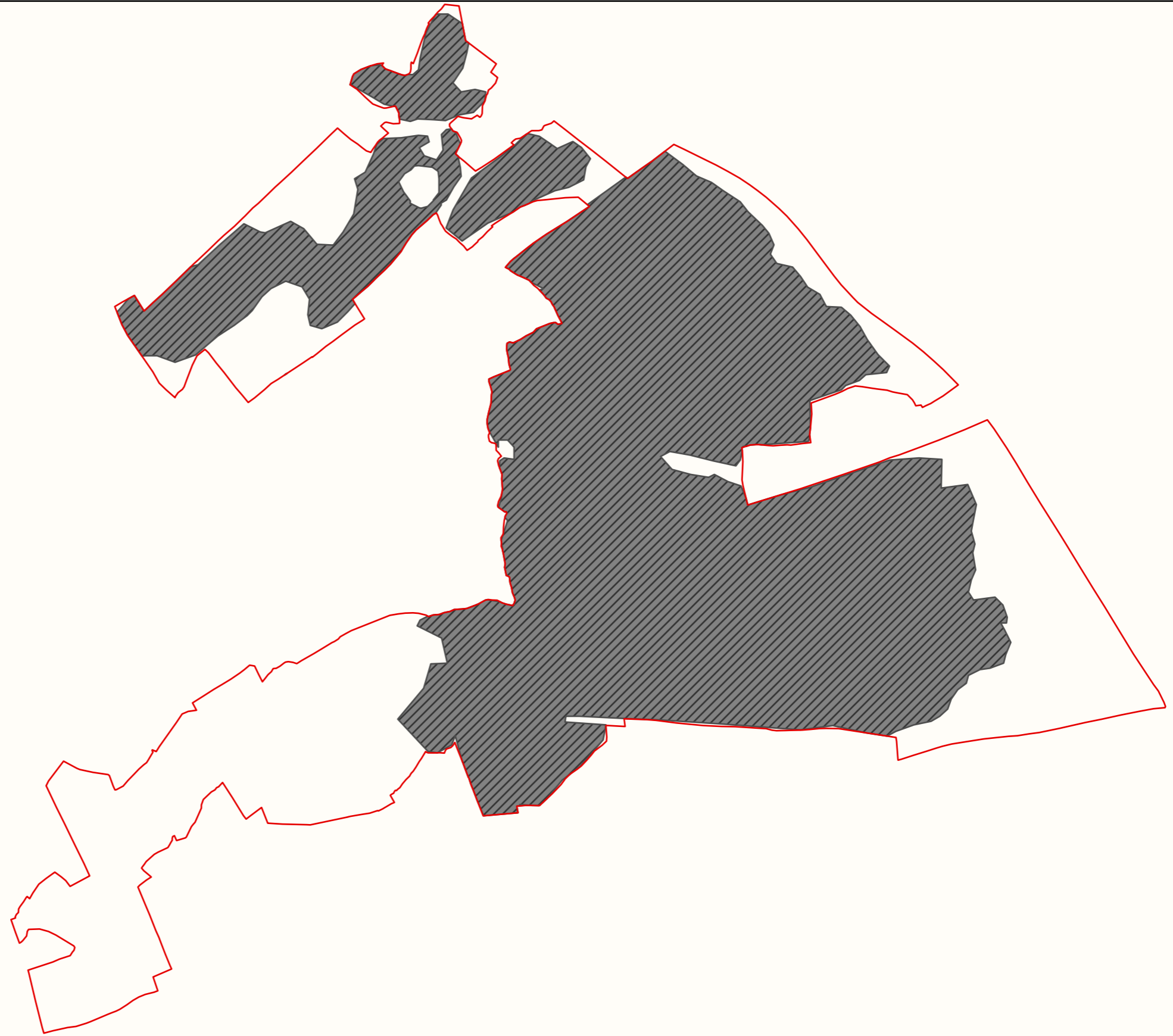
**SITE CODE:
SAC 002244; version 3.0. CO. GALWAY**

0 130 260 390 520 Meters

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh OSI-NMA-014. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

Map Version 1
Date: Feb 2019



Legend

- Ardrahan Grassland SAC 002244
- 8240 Limestone pavements
- OSi Discovery Series County Boundary

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**MAP 3:
ARDRAHAN GRASSLAND SAC
CONSERVATION OBJECTIVES
LIMESTONE PAVEMENT**

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

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0 130 260 390 520 Meters

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbheithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh OSI-NMA-014. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

Map Version 1
Date: Feb 2019