NPWS

Cross Lough (Killadoon) SAC
(site code: 000484)

Conservation objectives supporting document- Coastal habitats

Version 1

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Contents

Please note that this document should be read in conjunction with the following report: NPWS (2021) Conservation Objectives: Cross Lough (Killadoon) SAC 000484. Version 1.0. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

1 Introduction

Achieving Favourable Conservation Status (FCS) is the overall objective to be reached for all Annex I habitat types and Annex II species of European Community interest listed in the Habitats Directive 92/43/EEC (European Commission, 2013). It is defined in positive terms such that a habitat type or species must be prospering and have good prospects of continuing to do so.

Cross Lough (Killadoon) SAC (000484) is a small Special Area of Conservation (SAC) located approximately 9km southwest of Louisburgh, Co. Mayo. The SAC is selected for the coastal habitat Perennial vegetation of stony banks (EU habitat code 1220), which is the sole Qualifying Interest for this SAC.

2 Conservation Objectives

A conservation objective aims to define the favourable conservation condition of a habitat or species at a particular site. Implementation of the objective will help to ensure that the habitat or species achieves favourable conservation status at a national level.

This supporting document sets out the conservation objective for Perennial vegetation of stony banks in Cross Lough (Killadoon) SAC, which is defined by a list of parameters, attributes and targets. The main parameters are (a) Range (b) Area and (c) Structure and Functions, the last of which is broken down into a number of attributes, including physical structure, vegetation structure and vegetation composition.

The attributes and targets set for the Perennial vegetation of stony banks (vegetated shingle) habitat are based in part on the findings of the Vegetated Shingle Monitoring Project (VSM) (Martin *et al*., 2017), which was carried out in 2016 on behalf of the National Parks and Wildlife Service (NPWS). This document should be read in conjunction with that report.

3 Perennial vegetation of stony banks

The following definition of perennial vegetation of stony banks habitat in Ireland is based on the data collected during the VSM (Martin *et al*., 2017) and is an adaptation of the definitions used in European Commission (2013) and NPWS (2013).

Perennial vegetation of stony banks occurs along the coast where shingle (cobbles, pebbles, and gravel ≥2mm) has accumulated to form elevated ridges or banks above the high tide mark. The majority of the rocky material should be between 2mm and 256mm in diameter to be considered in this habitat category. On the upper beach, the pioneer community can be characterised by perennial species such as sea beet (*Beta vulgaris* subsp. *maritima*), sea-kale (*Crambe maritima*), rock samphire (*Crithmum maritimum*), cleavers (*Galium aparine*), yellow-horned poppy (*Glaucium flavum*), sea pea (*Lathyrus japonicus*), wild radish (*Raphanus raphanistrum* subsp. *maritimus*), curled dock (*Rumex crispus*), sea campion (*Silene uniflora*), perennial sow-thistle (*Sonchus arvensis*) and sea mayweed (*Tripleurospermum maritimum*). The majority of the area within this pioneer community is usually bare shingle. At the top of the beach, and moving inland, a wider range of vegetation types can be found at larger shingle sites including a lichen-rich community and coastal forms of grassland, heath and scrub. The grassland community can be characterised by grass species such as common bent-grass (*Agrostis capillaris*), creeping bent-grass (*A*. *stolonifera*), false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*), spreading meadow-grass (*Poa humilis*), sand couch

(*Elytrigia repens*), red fescue (*Festuca rubra*), Yorkshire fog (*Holcus lanatus*) and crested hair-grass (*Koeleria macrantha*), field wood-rush (*Luzula campestris*), and broadleaf herbs such as yarrow (*Achillea millefolium*), thrift (*Armeria maritima*), common mouse-ear (*Cerastium fontanum*), wild carrot (*Daucus carota*), autumn hawkbit (*Leontodon autumnalis*), common bird's-foot trefoil (*Lotus corniculatus*), buck's-horn plantain (*Plantago coronopus*), ribwort plantain (*P. lanceolata*), silverweed (*Potentilla anserina*), common sorrel (*Rumex acetosa*), dandelion (*Taraxacum officinale* agg.), lady's bedstraw (*Galium verum*), red clover (*Trifolium pratense*) and white clover (*T. repens*). The scrub community can be characterised by the woody species honeysuckle (*Lonicera periclymenum*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus* agg.), gorse (*Ulex europaeus*) and the climber hedge bindweed (*Calystegia sepium*). These more inland communities have less bare shingle and vegetative cover usually dominates. The majority of the grassland and scrub communities are rooted within soil, whereas the pioneer community is usually rooted in gravel, sand or organic matter (e.g. decomposing seaweed and other plant material). Once the soil layer on top of the shingle is more than 30cm deep, the community is no longer defined as perennial vegetation of stony banks.

3.1 Overall Objective

The overall objective for 'Perennial vegetation of stony banks' in Cross Lough (Killadoon) SAC is to '*restore the favourable conservation condition*'.

This objective is based on an assessment of the recorded condition of the habitat under a range of attributes and targets. The assessment is divided into three main headings: (a) Range, (b) Area and (c) Structure and Functions.

3.2 Area

3.2.1 Habitat area

Habitat extent is a basic attribute to be assessed when determining the condition of a particular habitat. The target for favourable condition is that there is no decrease from the established baseline. Bearing in mind that coastal systems are naturally dynamic and subject to change, even within a season, this target is assessed subject to natural processes, including erosion and succession.

Perennial vegetation of stony banks has not been mapped in detail for Cross Lough (Killadoon) SAC and thus the exact total area of the qualifying habitat in the SAC is unknown. This is a high energy coast and analysis of aerial photographs indicates that the habitat is dynamic, and the habitat area in any one year depends on the weather conditions. There is no clear evidence that the area of perennial vegetation of stony banks in this SAC has deteriorated due to human interventions (NPWS internal files).

The target is that the habitat area should be stable or increasing, subject to natural processes, including erosion and succession.

3.3 Range

3.3.1 Habitat distribution

Perennial vegetation of stony banks in Cross Lough (Killadoon) SAC occurs as a ridge separating Cross Lough to the east from the shingle beach to the west, running approximately north to south (NPWS internal files).

The target is that there should be no decline or change in the distribution of the habitat, unless it is the result of natural processes, including erosion and succession.

3.4 Structure and Functions

A fundamental aim of shingle conservation is to facilitate natural mobility. Shingle beaches are naturally dynamic systems, making them of geomorphological interest, as well as ecological interest. They are constantly changing and shingle features are rarely stable in the long-term.

3.4.1 Physical structure: functionality and sediment supply

The health and on-going development of the habitat relies on a continuing supply of shingle sediment. This may occur sporadically as a response to storm events rather than continuously. Interference with the natural coastal processes, through offshore (or onshore) extraction or coastal defence structures in particular, can interrupt the supply of sediment and lead to beach starvation.

In Cross Lough (Killadoon) SAC, the shingle barrier is characterised by cobbles overlain, in much of the site, by gravel and sand. Much of the vegetation is rooted in the gravel and sand, although cobbles are frequently close to the surface. During a site visit in 2020, cobbles deposited on the vegetated ridge provided evidence of ongoing natural sediment mobility. Some anthropogenic movement of shingle, an alteration to the natural physical processes affecting the sediment, was noted in the habitat, as was evidence of vehicle usage at the interface between the ridge and the beach, as well as on the ridge itself (NPWS internal files).

The target is to maintain, or where necessary restore, the natural circulation of sediment and organic matter, without any physical obstructions.

3.4.2 Physical structure: disturbance

Damage to the habitat due to disturbance was assessed as a negative indicator by Martin *et al*. (2017). Disturbance can include damage from heavy trampling, vehicle damage and removal of substrate.

In the habitat in this SAC, most of the disturbance recorded during a site visit in 2020 was linked to natural processes. Although vehicle use and anthropogenic movement of substrate recorded would constitute disturbances, they occupied less than 20% of the habitat (NPWS internal files).

The target is that no more than 20% of the habitat is affected by disturbance.

3.4.3 Vegetation structure: zonation

Ecological variation within this habitat type depends on stability, the amount of fine material accumulating between the pebbles, climatic conditions, width of the foreshore and past management of the site. The ridges and lows also influence the vegetation patterns, resulting in characteristic communities and zonations of bare and vegetated shingle. In the frontal, less stable areas of shingle, the vegetation tends to be dominated by short-lived salt-tolerant perennials (pioneer community). Where the shingle is more stable, it becomes more vegetated and may include grassland, heathland and scrub communities, depending on the exact nature of the site. The presence of lichens indicates long-term stability of the shingle structure. Further information on the communities of perennial vegetation of stony banks is found in Martin *et al*. (2017).

In Cross Lough (Killadoon) SAC, elements of a pioneer community have been recorded along the exposed western edge of the habitat, transitioning to a grassland community in more stable areas (NPWS internal files).

Vegetated shingle is part of a naturally dynamic coastal system. In order to ensure the ecological functioning of all of the vegetated shingle communities present, it is vital to maintain the zonations and transitions to other habitats, including lagoon, saltmarsh and sand dune habitats.

The target is to maintain the range of coastal habitats, including transitional zones, subject to natural processes, including erosion and succession.

3.4.4 Vegetation composition: communities and typical species

The degree of exposure, as well as the coarseness and stability of the substrate, determines species diversity. Typical species lists for the three main vegetated shingle communities (pioneer, grassland and scrub) are presented in Martin *et al*. (2017).

In the habitat in Cross Lough (Killadoon) SAC, several typical species have been recorded, including sea mayweed (*Tripleurospermum maritimum*), sea sandwort (*Honckenya peploides*), silverweed (*Potentilla anserina*), red fescue (*Festuca rubra*) and sea beet (*Beta vulgaris* subsp. *maritima*) (NPWS internal files).

The target for this attribute is to ensure that the occurrence of typical species within the range of vegetated shingle communities is maintained.

3.4.5 Vegetation composition: native negative indicator species

Native negative indicator species can include species indicative of changes in nutrient status e.g. nettle (*Urtica dioica*), and species not considered to be typical of the habitat, e.g. bracken (*Pteridium aquilinum*). The list of native negative indicator species commonly found in the habitat is presented in Appendix I of Martin *et al*. (2017).

In Cross Lough (Killadoon) SAC, ring feeders, dung, shortly grazed vegetation and some negative indicator species associated with agriculture (e.g. thistles), indicating overly intensive grazing, were recorded during a site visit in 2020, and the lake showed signs of nutrient enrichment (NPWS internal files).

The target for native negative indicator species is that no species is present in more than 60% of stops and the combined cover in any individual stop is 25% or less.

3.4.6 Vegetation composition: non-native species

Non-native species can be invasive and have deleterious effects on native vegetation. Low targets are set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances.

Non-native species have not been reported in the Perennial vegetation of stony banks habitat in this SAC.

The target for non-native species is that no species is present in more than 20% of stops, the combined cover in any individual stop is 1% or less, and the cover across the whole site 1% or less. At a site level, if a non-native species has been under-recorded, or not recorded, via the stops the percentage cover for the species across the site should be recorded and assessed.

4 References

European Commission (2013) Interpretation Manual of European Union Habitats – EUR 28. DG Environment-Nature and Biodiversity, Brussels.

Martin, J.R., Daly, O.H. and Devaney, F.M. (2017) Survey and assessment of vegetated shingle and associated habitats at 30 coastal sites in Ireland. Irish Wildlife Manuals, No. 98. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin.

NPWS (2013) The status of EU protected habitats and species in Ireland. Volume 2. Habitat Assessments. Version 1.1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.