Northern Ireland Priority Habitat Guide: Coastal and floodplain grazing marsh

What is Coastal and floodplain grazing marsh?

Coastal and floodplain grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The habitat can comprise of a wide range of vegetation communities determined by a range of local factors including water regime, soil condition and past and current management practices which have modified more natural wetland vegetation. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of fen and swamp communities which are the subject of separate Habitat Descriptors.

Grazing marsh can be divided into two main types. Coastal grazing marshes occur in flat coastal areas usually behind coastal defences or natural barriers like sand dunes and are characteristically drained by a network of ditches containing standing water throughout the year. They have often have been derived from reclaimed saltmarsh or mudflats. Floodplain grazing marsh is associated with large lowland rivers and lakes. Much of this habitat was formerly regularly flooded swampy woodland, fen or reedbed.

Table 1: Linking Habitat types with Annex 1 features, ASSI features and NI Priority Species

Northern Ireland Priority Habitat type: Coastal and floodplain grazing marsh		
Habitat Directive Annex 1 habitats (SAC feature)	**ASSI features**	**NI priority species**
None	None	Lapwing, Redshank, Curlew, Whooper Swan

Definition

Coastal and floodplain grazing marsh is defined in the UK Habitat Action Plan as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water.

- Located on coastal lowlands or floodplains.
- Site may contain seasonal water filled hollows and permanent ponds.
- Most areas are grazed, some are cut for hay or silage.
- Habitat is characterised by the control of water levels through the use of pumps or sluices.

Where are they found?

Coastal grazing marsh is of limited extent in Northern Ireland. The 3 main sites are Strand Lough, Quoile Pondage on County Down and the shores of Lough Foyle. The Lough Foyle Alluvial Plain stretches along the shore of Lough Foyle to the mouth of the River Roe.

Inland floodplain grazing marshes are more widespread in Northern Ireland. The habitat occurs on flat low-lying areas where it frequently occurs as a mosaic with other wetland habitats such as lakes and fens.

Areas of species-rich grassland on alluvial soils are limited, important examples are associated with large lakes such as Lough Neagh, Lough Beg and Upper Lough Erne.

DAERA hold priority habitat and species data on the NIEA Natural Environment Map Viewer. See https://appsd.daera-ni.gov.uk/nedmapviewer/ (and link to video tutorial). Note that the Map Viewer indicates areas which hold NIEA records of habitat / species data, but does not infer the complete coverage of these environmental assets in Northern Ireland.

Why are they important to wildlife?

This habitat has been the subject of surveys over the past few decades because of the number of Breeding waders such as Snipe, Lapwing, Redshank and Curlew that they support. Wintering geese and swans e.g. the Whooper Swan have benefited from the improvements of pastures in areas such as Lough Neagh, Lough Beg and Upper Lough Erne.

The variety and abundance of flowering plants within semi-natural habitats provide good sources of pollen and nectar for many of our pollinating insects such as bumblebees, hoverflies, butterflies and moths. For further information on habitat management for pollinators, refer to the All-Ireland Pollinator Plan resources: www.pollinators.ie.

Pressures & Threats

Floodplain and coastal grazing marshes are residual habitats of agricultural practices that were more widespread in the past. The retention of characteristic features of the habitat depends largely on the maintenance of the principal elements of those practices. Factors which may threaten the habitat are:

- Drainage – has reduced the area of floodplain wetlands, including grazing marsh, throughout Northern Ireland. Drainage schemes have confined rivers and lakes within fixed channels and controlled water levels, and restricted rivers lakes from migrating naturally across their floodplain and depositing silt and nutrients in times of flood. This has adversely affected the extent and quality of wetlands, including floodplain grazing marsh, due to changes in vegetation composition, decline in scarce species and associated breeding wader populations.
- Sea defence works – such as the construction of coastal flood control embankments, channel dredging or deepening can also affect floodplain grassland by lowering water tables.
- Agricultural improvement – such as drainage, cultivation, fertiliser and pesticide application, ploughing and re-seeding have all been major causes of habitat loss and may be the most significant threat to Coastal and floodplain grazing marsh. Intensive management of grassland often follows drainage as a drier surface facilitating access of machinery for ploughing and reseeding. Other agricultural operations such as harrowing, rolling and grazing in the early part of the breeding season i.e. before mid June can greatly reduce wader productivity. Grazing – at an appropriately low level is necessary to maintain habitat by preserving a relatively low nutrient status and by keeping competitive species in check. Overgrazing results in a reduction in species diversity as stress-tolerant species dominate. Furthermore, heavy trampling associated with high stocking levels may have detrimental effects on soil structure and weedy species colonising the sward. The high soil moisture levels results in the soil profile being particularly sensitive to hoof damage by poaching caused by overstocking at the wrong time of year. Overstocking during the breeding season can also result in increased nest trampling.
- Lack of management – such as no cutting, grazing or burning, causes Coastal and floodplain grazing marsh to undergo vegetation change leading to rankness and the development of scrub and eventually woodland.
- Fragmentation – resulting in a reduction of stand size and separation of unimproved grassland parcels results in reduced opportunities for desirable species to colonise relatively impoverished meadows or areas where changes in management such as reduction in fertiliser application, would otherwise permit re-establishment of desirable grassland communities.
- Residential development – on unimproved grassland which is perceived as being of little value because of its low agricultural productivity may result in its preferential development for lone houses in the wider countryside or for housing developments on the periphery of existing settlements.
- Airborne pollution – such as acidification and nitrogen enrichment from atmospheric deposition could potentially lead to vegetation change. With drier summers resulting from climate change it is possible that nutrient input from airborne dust will also increase.
- Climate change –The water regime and vegetation communities coastal and floodplain grassland are likely to be impacted by climate change particularly through though rising sea-levels and changed weather patterns.
- Groundwater abstraction – can potentially have an effect on river flows with possible knock-on effects on the frequency of inundation of the grazing marsh communities. This may in turn affect the species and community composition of the habitat.

Favourable Management of Coastal and floodplain grazing marsh

These important sites should be protected and maintained where they occur, and should be restored where their condition has declined. Some of our most important grassland sites are protected through National and International legislation. In the wider countryside, grasslands are protected from development and increased agricultural productivity through planning policies and legislation such as the Environmental Impact Assessment Regulations.

Optimal management for this habitat requires a low level of grazing, with a period of 'no grazing'. Minimise over and under-grazing through flexible management. Trees should not be planted, nor should these grasslands be used for supplementary feeding or storage areas.

Application of organic and inorganic fertilisers would be damaging as it reduces species-richness and diversity with a loss of nature conservation value.

Other measures are possible to enhance the wetland features associated with this habitat. Diversity can be increased on larger sites by varying the type and timing of management interventions, including allowing areas of bare ground and isolated scrub. Expand the area of grazing marsh by re-introducing appropriate water level management and wetland features on improved grassland and arable land.

How do we determine the "health" or condition of Coastal and floodplain grazing marsh?

The conservation status can be determined by the condition of the habitat. Favourable condition is defined by setting targets or target ranges for a series of different attributes. These are components or characteristics of the vegetation that are relatively easy to measure, but which are reliable indicators of the "health" of the habitat.

NIEA has developed Rapid Condition Assessments for several broad habitat types (grassland, moorland, woodland, coastal and wetlands). These will be made available online in the future. In the interim copies can be requested by contacting NIEA by E-mail: NIEA.EFSHigher@daera-ni.gov.uk.

Appendix 1: Lowland Coastal Floodplain and Grazing Marsh Indicator species

Positive Indicators:

Wetland plants can be associated with the habitat and its associated wetland features e.g.

Water edge/swamp

Bolboschoenus maritimus	Sea Club-rush
Carex riparia	Greater Pond-sedge
Elecocharis palustris	Common Spike-rush
Lemna minor	Common Duckweed
Phalaris arundinacea	Reed Canary-grass
Phragmites australis	Common Reed

Wet hollows and inundated grassland

Alopecurus geniculatus	Marsh Foxtail
Glyceria fluitans	Flote-grass
Potentilla anserina	Silverweed

Appendix 2: National Vegetation Classification codes

Coastal floodplain and grazing marsh in Northern Ireland encompass a range of plant communities that broadly reflect a number of those communities described in the National Vegetation Classification (NVC) of Great Britain (Rodwell, 1991a) where descriptions and codes are given to associations of plants that are characteristic of particular environmental and management conditions.

In Northern Ireland, the main NVC communities which make Coastal and floodplain grazing marsh are:

M25 - *Molinia caerulea – Potentilla erecta* mire rush dominated pasture

M27- *Filipendula ulmaria – Angelica sylvestris* mire rush dominated pasture

MG10 - *Holcus lanatus - Juncetum effusus* rush pasture

MG9 - *Holcus lanatus - Deschampsia caespitosa* grassland

MG11 - *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland

MG13 - *Agrostis stolonifera - Alopecurus geniculatus* grassland

This excludes a wide range of Open water, Swamp, Fen and Saltmarsh communities which can be associated with the habitat.