Northern Ireland Priority Guide: Reedbeds

What are Reedbeds?

In the context of this document the term Reedbeds is used to encompass Reedbed and swamp communities. The term is used to describe a range of tall, wetland vegetation communities where the water table is at or above ground level for most of the year. Reedbeds are therefore swamp communities which are generally species-poor vegetation types, often dominated by bulky monocotyledons and tall emergent herbs. Many Reedbed communities provide a habitat for a range of specialist species most notably breeding birds.

Reedbeds are widely distributed on the margins of water bodies, along lowland and upland streams, estuaries, reservoirs, clay pits, sewage treatment works, industrial lagoons and as successional habitat on fens and bogs. Reedbeds originate naturally as part of a serial succession of open water or as an indirect consequence of human activity. In some instances they have appeared when agricultural practices (or peat cutting) have ceased, usually where grazing and water control have been abandoned on low-lying land. Some have been created for specific purposes e.g. water treatment, while numerous ponds, gravel pits and ditches also contain Reedbeds that colonised naturally.

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

Northern Ireland Priority Habitat type: Reedbeds		
Habitat Directive Annex 1 habitats (SAC feature)	**ASSI features**	**NI priority species**
None	Reedbeds	Reed Bunting, Otter, Reed-beetle, Cowbane, Greater Water-parsnip, Tubular Water-dropwort and Marsh Stitchwort

Definition

For the purposes of this document, Reedbeds are defined as:

- Tall herbaceous wetland vegetation where the water table is at or above ground level for most of the year.
- Reedbed area >0.5 ha and Reedbed width over the whole area of at least 5m.

Where are they found?

Reedbeds often occur as discrete stands but can also occur in a complex mosaic with other habitat types such as lakes, Fen, Wet woodland, Coastal and floodplain grazing marsh and in modified examples of Lowland raised bog. In these cases it may be difficult to distinguish Reedbeds from other wetland vegetation. Reedbeds in Northern Ireland are especially associated with lowland wetlands around the large lakes and inter-drumlin wetlands. Several large stands (>10 ha) occur around Lough Neagh e.g. at Portmore Lough, Blackers Rock and in the Lough Erne catchments. There are also a significant number of stands greater than 2 ha including an estimated 40 sites in Down and Armagh.

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. NIEA will update datasets periodically.

Why are they important to wildlife?

Reedbeds dominated by Common Reed *Phragmites australis* have the unique structure to support a number of specialised bird and invertebrate species. Characteristic breeding birds of Common Reed *Phragmites australis* dominated Reedbeds in Northern Ireland include Reed Bunting, Water Rail, Sedge Warbler and locally, Reed Warbler. They also provide nesting cover for a number of species of waterfowl such as Great-crested Grebe. In addition, they provide roosting and feeding sites for several birds including Hen Harrier, Starling, Swallow and Sand Martin. In the UK, at least 700 species of invertebrates have been found to be associated with Reedbeds. Some 64 insect species are known to be dependent on Common Reed *Phragmites australis* to some extent and some 40 species of insect feed solely on it.

However, more diverse Reedbed communities are often desirable to maintain other key species and diverse species assemblages. For instance the Reed Warbler prefers tall Common Reed *Phragmites australis* at the waters edge whereas the Sedge Warbler can use drier diverse Reedbed and Fen. The Bittern and Marsh Harrier, which are extinct as breeding birds in Ireland, but still occur occasionally and have the potential to re-colonise, need very large mono-dominant Common Reed *Phragmites australis* reed beds with the former also requiring abundant open shallow water to catch fish and amphibians. A wide range of other wetland animals use Reedbeds especially where it is close to Fen or open water including the priority species Otter, and Reed-beetle. Many of Northern Ireland's larger Reedbeds are largely unmanaged and their biodiversity could be significantly enhanced with suitable conservation management.

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

- Drainage – past arterial drainage schemes have reduced the extent of Reedbeds throughout Northern Ireland. Lowered water levels results in Reedbeds drying out with consequent invasion of scrub and change to drier vegetation types.
- Harvesting – traditional harvesting of the Common Reed *Phragmites australis* for thatching has largely ceased, this has led to a reduction in structural diversity and species diversity within some Reedbeds.
- Eutrophication – from spray drift or runoff from adjacent agricultural land can lead to changes in herbaceous flora. In addition, pesticide drift may cause localised damage to some flora and/or fauna.
- Industrial and urban development – can lead to fragmentation, greater ecological isolation and reduction in area of existing Reedbeds. This loss of habitat is locally significant, particularly due to residential development within the Lough Neagh basin. Constraints from industrial or residential development on the spread of Reedbed from conservation sites onto adjacent ground may lead to greater uniformity of structure within each individual Reedbed site.
- Fly tipping – of building rubble as well as agricultural and domestic waste into Reedbeds in Northern Ireland is a frequent occurrence. This can lead to changes in the composition of the herbaceous flora and invertebrate communities.
- Acidification and nitrogen enrichment – from atmospheric deposition could potentially lead to vegetation change. In Northern Ireland, atmospheric nitrogen deposition increases from west to east and higher levels therefore coincide with the areas of greatest concentration of Reedbed.
- Climate Change –Climate change could potentially result in changes in the species composition and diversity of Reedbed and associated invertebrate populations.

Favourable Management of Reedbeds

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 Reedbeds are protected through National and International legislation. In the wider countryside, Reedbeds are protected from development and increased agricultural productivity through planning policies and legislation such as the Environmental Impact Assessment Regulations.

Many Reedbeds are too wet to be grazed. The drier margins of Reedbeds are best managed by extensive grazing at a low stocking rate, and including a 'no grazing' period. Undergrazing and/or overgrazing should be avoided.

Encroaching scrub and tussock forming rushes should be controlled by cutting as these can spread at the expense of the priority habitat. Machinery should only be used where ground conditions permit.

Application of lime or organic and inorganic fertilisers is damaging as is reduces species-richness and diversity with a loss of nature conservation value.

How do we determine the "health" or condition of Reedbeds?

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: Reedbeds Indicator species

Positive Indicators:

Carex acutiformis	Lesser Pond-sedge
Carex elata	Tufted Sedge
Carex vesicaria	Bladder-sedge
Carex rostrata	Bottle Sedge
Carex riparia	Greater Pond-sedge
Equisetum fluviatile	Water Horsetail
Carex paniciulata	Greater Tussock-sedge
Cladium mariscus	Great Fen-sedge
Eleocharis palustris	Common Spike-rush
Phalaris arundinacea	Reed Canary-grass
Phragmites australis	Common Reed
Schoenoplectus spp.	Common Club-rush
Typha angustifolia	Lesser Bulrush
Typha latifolia	Bulrush

Negative Indicators:

Epilobium hirsutum	Great Willowherb
Glyceria maxima	Reed Sweet-grass
Phalaris arundinacea	Reed Canary-grass
Sparganium erectum	Branched Burr
Typha latifolia	Bulrush
Urtica dioica	Stinging Nettle

Appendix 2: National Vegetation Classification codes

Reedbeds 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 Reedbeds are:

S1 - *Carex elata* swamp

S2 - *Cladium mariscus* swamp

S3 - *Carex paniculata* swamp

S4 - *Phragmites australlis* swamp

S5 - *Glyceria maxima* swamp

S6 - *Carex riparia* swamp

S7 - *Carex acutiformis* swamp

S8 - *Scirpus lacustris* ssp. *lacustris* (*Schoenoplectus lacustris*) swamp

S9 - *Carex rostrata* swamp (dominated by *C. rostrata*, which characteristically forms a rather open cover of shoots usually 50-60cm tall)

S10 - *Equisetum fluviatile* swamp (mixtures of *Carex rostrata* and *Equesitum fluviatile* are common around lake margins and can be separated only on the criterion of local dominance of one or the other species)

S11 - *Carex vesicaria* swamp

S12 - *Typha latifolia* swamp

S13 - *Typha angustifolia* swamp

S14 - *Sparganium erectum* swamp

S19 - *Eleocharis palustris* swamp

S20 - *Scirpus lacustris* ssp *tabernaemontani* (*Schoenoplectus tabernaemontani*)

S21 - *Scirpus maritimus* swamp

S23 - Other water-margin vegetation (the vegetation included here is characteristically heterogenous but the most frequent species are *Apium nodiflorum*, *Rorippa nasturtium-aquaticum* and *Veronica beccabunga*)

S25 - *Phragmites australis-Eupatorium cannabinum* tall-herb fen

S28 - *Phalaridetum arundinaceae*

S27 - *Carex rostrata-Potentilla palustris* fen (transition mire)

A wide range of other NVC types associated with other lowland priority habitats e.g. Fen, Swamp, Coastal and flood plain grazing marsh and more species -poor communities often form transitions with Reedbed.