

Reedbeds

Introduction

Reedbeds are wetlands dominated by stands of one plant, the Common reed (*Phragmites australis*). The majority are freshwater, but reedbeds are also found in brackish and tidal waters. Common reed is an active coloniser of wet ground or open water and reedbeds form a transition stage in the eventual succession to woodland. In tidal areas or sites which are subject to regular freshwater flooding, a reedbed may persist in a relatively stable state unless there is heavy siltation. Elsewhere, the accumulation of dead vegetation and litter will result in the gradual drying of the bed, allowing invasion of carr, scrub or woodland species. All stages in this development provide important habitats for invertebrates; the areas of lowest invertebrate interest being those of open water.

Five British Red Data Book invertebrates are closely associated with reedbeds including Reed leopard moth (*Phragmataecia castanaea*) and a rove beetle *Lathrobium rufipenne*. In East Anglia, more than 700 species of invertebrate have been recorded from reedbeds, 23 of them Red Data Book.

40 species in four Orders - Hemiptera, Lepidoptera (moths only), Coleoptera & Diptera - are known to feed only on reed, with a further 24 insects feeding partly on reed during their life cycle. A wide range of invertebrates are also associated with reed even if they do not feed directly on it. These include predators (mainly beetles and spiders) and parasites of the reed-feeding invertebrates which live in the stems, including gall-forming flies and solitary wasps. The solitary bee *Hylaeus pectoralis* nests in vacated cigar galls on reed.

Threats

- **Loss of area**

Large areas of reedbed can be lost by water abstraction, land drainage and conversion to intensive agriculture

- **Lack of appropriate management**

This can include too frequent harvesting/cutting cycle, of existing reedbeds leading to drying, scrub encroachment and succession to woodland

- **Sea-level rise**

Rising sea levels on the East coast of England are expected to lead to the loss of significant areas of habitat

- **Pollution**

Pollution of freshwater supplies to the reedbed

Habitat Management

Maintain all stages of succession from young reed in shallow water to old reed with scrub invasion on almost dry ground over dense litter. If reed is actively invading a large water-body, this can be achieved for some time by simply letting invasion continue. Cutting back or killing the outermost fringe of an invading reedbed and holding back the later stages of succession at the landward margin may be sufficient to maintain all successional stages in a reedbed.

Water levels

Water levels should be maintained at a high and stable level thus ensuring continuity of this habitat. It is important to have some areas of litter that will be kept moist and not dry out completely. Raising water levels may be as

damaging as drought for many invertebrates such as Desmoulin's whorl snail.

Ensure habitat diversity

Structural heterogeneity is important in providing a range of sub-habitats for invertebrates. Besides pure stands of common reed (*Phragmites australis*), it is most important to retain areas where *Phragmites* is mixed with other vegetation elements, such as tussocky grasses, sallow carr and sedges (*Carex sp.*). Good stands of greater tussock sedge (*Carex paniculata*) will benefit the Nationally scarce fly *Anagnota bicolor*. The gall fly *Lipara similis* causes galls on common reed, but requires the plant to be under some stress from partial shade or drier conditions; the fly *Cryptonevra consimilis* lives within the galls of *L. similis*, so is also dependent on reed in this condition.

Flower-rich areas at the margin of the reedbeds should be encouraged to provide pollen and nectar sources for adult insects. Stands of yellow loosestrife (*Lysimachia vulgaris*) are particularly important for the rare solitary bee *Macropis europaea*, which uses oil from the plant to line the cells of its subterranean nest.

As well as vegetational structure, the physical context of the reedbed is important for invertebrates. A gently sloping profile or berm at the margin of the waterbody is more beneficial than the sharp edges. Sloping edges offer a gradient for ecological adjustment by invertebrates during fluctuations in water level, during both summer draw-down and in times of unusually high water levels.

Consider grazing

Reed is capable of invading and smothering mixed fen, marsh or wet grassland and dense reed beds should not necessarily be the sole objective of a reedbed BAP, as these may not have the greatest floral and invertebrate biodiversity. One means of control is to deploy cattle grazing to ensure that the reed does not become too dominant. Indeed some reed invertebrates prefer open representation of reed rather than dense stands. Cattle may also help to maintain beds of *Glyceria maxima*, required by the Swollen spire snail (*Mercuria confusa*), by reducing competition from *Phragmites*.

Mild cattle trampling and poaching can create patches of bare substrate for some rare craneflies and other insects, including those that are found in brackish reedbeds. Such mild trampling can be a major agent in creating and maintaining a high quality berm at ditch margins.



Lipara lucens cigar gall on reed © Roger Key

Non-commercial cutting

If reeds are managed by cutting, this should be on as long a rotation as possible. The caterpillars of the RDB Reed leopard moth (*Phragmataecia castaeae*) live in reed stems and have a 3-4 year life cycle. Any rotation cycle of less than 4 years would seriously damage the moths' chances of survival.

Reed litter should form part of the ecological mosaic, though not a dominant part. Removal of litter prevents or slows the drying out of the reed bed, but some cuttings of Common reed and associated vegetation should be left in piles at the edge of the reed bed or elsewhere on site to provide hibernation refugia. Some areas where *Phragmites* is not cut regularly should be also be left and allowed to form a deep litter layer or tussocks to benefit species such as the fly *Parochthiphila spectabilis*, which are sensitive to extensive cutting, or ground and rove beetles requiring a wet ground layer that is not completely inundated. Stands of uncut reeds also provide valuable hibernation sites for spiders. However, dense, unmanaged reed is likely to be detrimental to species such as



craneflies as it will restrict access to water and peat.

Commercial cutting

If commercial cutting of reeds is carried out or proposed, it is best to manage only part of a site intensively, leaving other areas unmanaged or managed on a long rotation. These less heavily managed areas provide habitat for the more slowly-developing invertebrates and a source of colonists for the heavily managed areas. Under commercial management reeds are cut down after 1, 2 or 3 years. Beds may be burned in the spring if they are uncut or have much litter, with the aim of restoring reed growth. Burning destroys many invertebrate populations and managed beds are relatively uniform in structure, lacking the earlier & later successional stages. If burning is to be used as a management tool to rehabilitate a neglected reed bed which might otherwise be lost, it should be a one-off operation and not a regular management tool. Only a fraction of the reedbed should be burned in any one year.

Scrub removal

Scrub encroachment should be discouraged over most of the area, but in some small areas scrub should be retained. The best method of removal is to pull out bushes, leaving small pools within the reed bed, which can support interesting invertebrates. Simply cutting scrub will have the effect of promoting thicker re-growth from stumps and may lead to an ever-increasing need for cutting.

However, if a reedbed is very neglected and heavily scrubbed over, it may be best to allow the progression to scrub to continue. The invertebrate fauna of heavily-scrubbed over reed and of wetland scrub is itself considerable. Rehabilitation of such areas is likely to be a major task, requiring the destruction of a considerable amount of the interest already present.

Minimise disturbance by pleasure boats

Considerable damage can be caused by wash from motorised boat traffic scouring banks, removing sediment and dislodging beds of reeds and *Glyceria*.

BAP species associated with reedbeds:

Desmoulin's whorl snail (*Vertigo moulinsiana*)

For a more comprehensive list of species associated with this habitat, please see the download list.

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