

Views About Management



A statement of English Nature's views about the management of Bridgwater Bay Site of Special Scientific Interest (SSSI).

Introduction

The Severn Estuary is unique. The huge tidal range gives it a never-ending cycle of exposure and concealment of its great banks of sand, mud, rocks and vegetation. With several of Britain's most attractive rivers draining directly into the estuary, a constant supply of fresh water dilutes the vast influxes of seawater forcing their way into the estuary from the Bristol channel. The Bridgwater Bay SSSI is an important part of this ecosystem at its southern extent.

This statement represents English Nature's views about the management of the SSSI for nature conservation. This statement sets out, in principle, our views on how the site's special conservation interest can be conserved and enhanced. Not all of the management principles will be equally appropriate to all parts of the SSSI and there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest.

Please note that this statement does not constitute a consent under Section 28 of the Wildlife and Countryside Act 1981 for any of the management or operations mentioned. If you wish to undertake any operations given in the list of 'Operations Likely to Damage' included with the site notification package, or if you have concerns, you should contact your local English Nature office.

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Management Principles

Intertidal mud and sand flats

Intertidal mud and sand flats include a range of generally muddy or sandy low-gradient shores that are exposed to air during low tide and submerged during the higher tides. High energy shores, such as those on open coasts, are generally sandy in nature whilst more sheltered, low energy flats are muddier. They support a wide variety of marine invertebrates that represent an important food source for many fish and bird species.

Good water quality and sediment quality should be maintained, and the sediment budget within the estuarine or coastal system should not be restricted by anthropogenic influences.

The birds that use mud and sandflats for feeding and roosting are vulnerable to disturbance from human activities, for example, bait digging, dog walking and wildfowling. These activities can lead to reduced time spent feeding, or individuals being restricted to areas with a poor food supply. Disturbance should therefore be minimised, especially at times when bird populations may be stressed, such as during severe winter weather.

The location and extent of mud or sandflats is dependent on the extent to which the estuary or coast where they occur is constrained from responding to sea level rise and changing sediment regimes. Management needs to create space to enable landward roll-back to take place in response to sea-level rise, and should also allow the system to be dynamic and retain the flexibility to respond to associated changes such as the movement of physical features within the system, e.g. migrating subtidal sandbanks.

Coastal saltmarsh

Saltmarshes form the upper vegetated portions of intertidal mudflats in sheltered coastal locations, such as estuaries, lagoons and beach plains. There is typically a zonation of vegetation, from plants adapted to regular immersion by the tides (halophytes), through to more widespread plant species in the areas less frequently covered by the sea. The halophyte plant species are confined to this type of habitat, and areas of structurally diverse vegetation provide good invertebrate habitat. Saltmarshes are also important nursery sites for several fish species, and important refuge, feeding and breeding grounds for wading birds and wildfowl.

Where the high tide reaches, it is common to find a 'strandline', consisting of pieces of driftwood and any other vegetation dislodged from the sea, although this is often combined with man made debris. The natural component of the strandline is an important one for many species of specialist invertebrates, which in turn provide food for many species of shorebirds.

Where saltmarshes require management this has traditionally been achieved by grazing, and previously used regimes should be continued. Grazing provides a variety of different habitats, particularly for wintering bird species, and if grazing were to cease there may be a loss of botanical diversity. The precise timing and intensity will

vary according to local conditions and requirements, for example the type or availability of stock, or the need to avoid trampling ground nesting birds. However on many sites, the aim will be to create a short turf that can be attractive to over-wintering wildfowl, with a reduction in stock density in the early summer for the benefit of ground-nesting birds. Indeed, careful reduction of grazing can increase the number of breeding birds, without significantly altering the plant species composition. Care should be taken not to overgraze the site, as this may reduce the diversity of animal and plant species that the saltmarsh is able to support, as well as potentially impact the sediments supporting the saltmarsh.

Not all saltmarsh habitats require active management to retain their conservation interest. Where there has not been a history of grazing, the saltmarsh will be able to maintain itself and grazing-sensitive species are likely to be present, therefore grazing should not be introduced.

There are a number of factors that are contributing to saltmarsh change that management may need to take into consideration. These include coastal erosion as a result of coastal flood-defence works, rising sea-levels, variations in sediment deposition, and land claim for development.

Floodplain and coastal grazing marsh

Flat land around sluggish rivers and immediately inland of sea defences has historically been used for grazing and is referred to as grazing marsh. Although very wet in winter, these marshes are generally dry in the summer except for the water that remains in ditches. Traditional methods of management have produced a mixture of flower-rich meadows, rhynes and scrub that support a rich variety of flowering plants, invertebrates, birds and amphibians.

In order to maintain a species-rich sward, each year's growth of vegetation must be removed to prevent the sward from becoming progressively dominated by tussocky and vigorous grasses which, together with an associated build up of dead plant matter, suppress less vigorous species and reduce the botanical diversity of the site. On grazing marshes, the above objective is commonly achieved by closing the fields to stock in the spring and taking the standing crop as hay. This is usually done in early July, but the precise timing of the cut depends on local factors, including past management and current weather conditions. It should be after ground-nesting birds have fledged their young and any short-lived, characteristic plants have set seed.

The aftermath is then grazed in late summer/autumn. Aftermath grazing is important for maintaining a species-rich sward, both through controlling competitive grasses and through hoof-prints providing suitable sites for seedlings to establish. Heavy poaching must be avoided, however. Trees and scrub are of particular importance for invertebrates and birds but should be confined to small, scattered groups.

Periodic dressings of well-rotted farmyard manure may be acceptable if the sward does not receive regular input of nutrients from flooding. Lime should be used with caution. The meadows should not be re-seeded.

Partial winter flooding is important in maintaining suitable habitat conditions for wintering birds. A mosaic of winter flooded grassland and permanently unflooded grassland is desirable with both temporary and permanent pools present. The maintenance of a mosaic of shallow surface pools and un-flooded areas during the winter will provide roosting and feeding habitat for wildfowl and waders. From April onwards, the area of standing surface water should be reduced to increase the area available for nesting waders and also by concentrating aquatic invertebrates in small pools to provide feeding areas for their young.. Some shallow areas of flooding should be maintained until late June to provide patches of bare muddy ground on which the birds can feed as a raised sward height makes feeding on the drier areas more difficult. The birds using these areas are directly vulnerable to disturbance which can cause them to lose time feeding or drive them to areas with a poorer supply of food. Management should seek to minimise any harmful disturbance, especially at times when bird populations are under stress, such as severely cold conditions. Predators, especially crows and related species, should be controlled and this may be best achieved by limiting their nesting sites.

Management should ensure the protection of appropriate water quality, which is usually dependent on land-use in the wider catchment. Where water is excessively rich in fertilisers such as nitrogen and phosphorus, enrichment will alter the plants found in the meadows and ditches, usually for the worse, by encouraging tall rank grasses thistles and nettles.

Swamp

Swamp habitats develop on the fringes of open water, or in shallow depressions with permanent standing water. The plants may be rooted in the submerged soil or form a floating mat of inter-twined roots, rhizomes and stems. Swamps usually consist of a dominant single species of plant (e.g. reeds, tussock sedges, reedmace, reed sweet grass, reed canary grass and bull rushes) with a few other species thinly distributed among them. In common with most other types of wetland, swamps represent a transient stage in the change from open water to dry land.

Management should either seek to retain swamp communities in the same place or should acknowledge the dynamics of succession by ensuring there is always a new niche for the swamp communities to develop in. The succession from swamp into floodplain fen, for example, as the diversity of species present increases, may be slowed by raising the water table and by periodically removing any encroaching scrub. If the vegetation surface of the whole wetland appears to be building up or drying out for some other reason it may be necessary to lower the ground level by creating scrapes or ponds. A programme of rotational cutting to maintain the reedbed may be necessary to encourage the vigorous growth of reed whilst preventing excessive build up of litter. Cutting should take place during the winter (November – March) and all cut material should be removed.

Management should ensure that appropriate water quality is maintained according to the requirements of the wetland communities present. Where swamp is in continuity with a waterbody, the water quality in the waterbody will affect the swamp. While some communities, such as reed swamp are unlikely to be very sensitive to nutritional enrichment, others, such as tussock sedge and narrow leaved reedmace, will be out-

competed by other species (e.g. reed or reed sweet grass) where any increase in the amount of nutrients present occurs.

Swamp habitats have often survived where the vegetation has traditionally been cut for a variety of purposes, including use as building materials or animal bedding. It may be beneficial to consider re-instating these traditional management practices where they are not in conflict with other nature conservation objectives, such as the specific requirements of certain birds or invertebrates.

Ditches

Ditches are artificial habitats created by land drainage, or occasionally by the channelisation of small streams. They may represent the only remaining freshwater habitat within former wetland areas, and often support a wide range of aquatic plant and animal (in particular invertebrate) species that would have previously been more widespread in ponds and wetlands.

If left unmanaged, silt accumulates in the bottom of the ditches, and emergent plants such as reeds are able to colonise across the width of the ditch, leading to a loss of aquatic plant diversity and a gradual drying out of the ditch. To prevent this, periodical removal of sediment and vegetation may be necessary to return the ditch to an early stage of the management cycle. Ideally, ditch management should be undertaken on a rotation, creating a series of different management stages across a site at any one time. All stages of the management cycle have wildlife interest; recently cleared ditches are good for plants and animals which favour newly created habitats and cannot tolerate competition with other species; middle-stage ditches support a rich aquatic plant flora; and late-stage ditches may be important for a variety of invertebrates. The removal of both sediment and vegetation is usually better than simply cutting the vegetation, which does not recreate the earliest stages of the ditch management cycle. Where possible, management should aim to create shallow shelving margins rather than steep ditch sides. Where water voles are known to be present, the relevant good practice guidelines for ditch management and conservation should be followed.

Most ditch systems are subject to water level control, which should be managed to ensure that there is a sufficient depth of water (0.3-0.5m) in ditches throughout the year. Rapid or extreme changes in water level should be avoided unless they are known to be important to plant or animal communities relying on such fluctuations.

Ditches are susceptible to increased levels of nutrients which can cause a loss of aquatic plants and increases in algal growth. Other activities that can lead to this include the control or removal of aquatic plants, or the introduction of species such as bottom feeding coarse fish which uproot plants and disturb ditch sediments. Ditches are also susceptible to invasion by non-native aquatic plants such as floating pennywort and water fern, which are able to grow rapidly taking up available habitat and smothering other plants. Some native plants including a number of duckweed species are also able to take over in this way (although such growths are usually exacerbated by increased nutrients in the water) and management may be necessary to control such invasions where they cause a problem.

An important feature of many coastal ditch systems relating to water quality is the transition between freshwater and brackish water conditions, which often results in interesting changes in plant and animal species along ditch lengths or across the site. Management should aim to maintain such freshwater-brackish transitions where they occur.

All habitats

The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be managed.