

HA7: Grazing Marsh and Floodplain Grassland

Definition

Grazing marsh and floodplain grassland are concentrated in coastal levels and the floodplains of major rivers and are typified by gentle topography with impeded drainage. The habitat depends upon periodic inundation and grazing (or cutting). These assemblages are usually found on surface water gley, ground water gley and peat soils with a low to moderate fertility, usually underlain by clays and loams of mildly acidic to neutral reaction (Firbank et al 1993).

The principle factors that determine the species composition of wet neutral grassland are soil type, moisture and management (past and present). Floodplain grassland in London covers a wide range of communities; from the Yorkshire fog *Holcus lanatus* - tufted hair-grass *Deschampsia cespitosa* community, which can be floristically very poor, to the crested dog's tail *Cynosorus cristatus* – marsh marigold *Caltha palustris* community. The latter is a rare, species-rich type, particularly associated with old flood meadows.

London's grazing marsh and floodplain grassland resource

There are approximately 416 ha of estuarine grazing marsh and 432 ha of floodplain grassland in Greater London. Grazing marsh and floodplain grassland habitat in Greater London is limited in distribution, extent and quality, reflecting the national declines of these habitats. Estuarine grazing marsh has been recorded from three London boroughs: Barking & Dagenham; Bexley and Havering, which has the highest total area of estuarine grazing marsh (231 ha, or 56% of the total London resource). See column 'a' in Table 1 and Map a, which shows the extent of this habitat in the capital.

Havering also has the highest total recorded floodplain grassland (135 ha or 31% of the London total); followed by Hillingdon and Richmond upon Thames. These three boroughs contain 70% of London's floodplain grassland resource. Floodplain grassland has been recorded from 14 out of 33 London boroughs. See Table 1 column 'b' and Map b.

The exact extent of grazing marsh in the United Kingdom is unknown but estimates have suggested there may be a total of 300,000 hectares of grazing marsh, mainly coastal (HMSO 1995). At the current time the best estimate for the South East region is approximately 27,500 hectares of seasonally inundated grassland, most of which occurs as coastal grazing marsh (Wicks & Cloughley 1998). The combined floodplain grassland and grazing marsh resource in London is estimated at 848 hectares, which represents 0.3% of the estimated national resource and approximately 3% of the South East regional resource.

Nature Conservation Importance

It has been suggested that the national area of wet grassland declined by more than 40% between the 1930s and the 1980s (RSPB, EN, ITE, 1997). Indeed, Greater London lost 85% of grazing marsh on the Thames estuary between 1935 and 1989 (Thornton & Kite 1990). Although there are no figures available for the decline of floodplain grassland within Greater London it is thought to follow similar trends.

Floodplain grasslands support a wide range of plant, bird and invertebrate species, many of which are rare and declining. However, many floodplain grasslands in London are floristically poor and predominantly composed of Yorkshire fog and tufted oat grass. Other examples of floodplain grassland can be species-rich with damp loving plants such as sneezewort *Achillea ptarmica* and ragged robin *Lychnis flos-cuculi*. Typical bird species of this habitat type are yellow wagtail, sedge warbler and snipe, although the former is now a scarce breeder in Greater London and the latter occurs primarily as a winter visitor. Where there are ponds and ditches within the floodplain, great crested newts and grass snakes may be present. The majority of the dragonfly species recorded in London, including the emerald damselfly and the ruddy darter, also favour this habitat. Well-vegetated ditches can also support colonies of water vole. The rather scarce Daubenton's bat has a preference for feeding over rivers and associated bankside habitat.

Table 1: Grazing Marsh and Floodplain Grassland Resource within Greater London

| Borough | a) Total Estuarine Grazing Marsh (ha) | % of London's Resource | b) Total Floodplain Grassland (ha) | % of London's Resource | c) Total Alluvium (ha) | % of London's resource |
|----------------------|---------------------------------------|------------------------|------------------------------------|------------------------|------------------------|------------------------|
| City of London | - | - | - | - | - | - |
| City of Westminster | - | - | - | - | - | - |
| Barking & Dagenham | 3.9 | 0.9 | 14 | 3.2 | 56 | 1.9 |
| Barnet | - | - | - | - | 63 | 2.1 |
| Bexley | 181 | 44 | 24 | 5.6 | 370 | 13 |
| Brent | - | - | - | - | 17 | 0.6 |
| Bromley | - | - | 1.4 | 0.3 | 36 | 1.2 |
| Camden | - | - | - | - | - | - |
| Croydon | - | - | - | - | - | - |
| Ealing | - | - | - | - | 78 | 2.7 |
| Enfield | - | - | 30 | 6.9 | - | - |
| Greenwich | - | - | - | - | 107 | 3.6 |
| Hackney | - | - | - | - | - | - |
| Hammersmith & Fulham | - | - | - | - | 6 | 0.3 |
| Haringey | - | - | 9.4 | 2.2 | 140 | 4.8 |
| Harrow | - | - | 0.4 | 0.1 | 14 | 0.5 |
| Havering | 231 | 56 | 135 | 31 | 881 | 30 |
| Hillingdon | - | - | 107 | 25 | 226 | 7.7 |
| Hounslow | - | - | 20 | 4.6 | 73 | 2.5 |
| Islington | - | - | - | - | 52 | 1.8 |
| Kensington & Chelsea | - | - | - | - | 11 | 0.4 |
| Kingston upon Thames | - | - | 13 | 3 | 107 | 3.6 |
| Lambeth | - | - | - | - | 8 | 0.3 |
| Lewisham | - | - | 2 | 0.5 | 72 | 2.4 |
| Merton | - | - | 7.6 | 1.8 | 35 | 1.2 |

| Borough | a) Total Estuarine Grazing Marsh (ha) | % of London's Resource | b) Total Floodplain Grassland (ha) | % of London's Resource | c) Total Alluvium (ha) | % of London's resource |
|----------------------|---------------------------------------|------------------------|------------------------------------|------------------------|------------------------|------------------------|
| Newham | - | - | - | - | 125 | 4.2 |
| Redbridge | - | - | - | - | 131 | 4.5 |
| Richmond upon Thames | - | - | 59 | 14 | 221 | 7.5 |
| Southwark | - | - | - | - | 3 | 0.1 |
| Sutton | - | - | - | - | 14 | 0.5 |
| Tower Hamlets | - | - | - | - | 47 | 1.6 |
| Waltham Forest | - | - | 8.9 | 2.1 | - | - |
| Wandsworth | - | - | - | - | 53 | 1.8 |
| London Total | 416 ha | | 432 ha | | 2946 ha | |

NB: Numbers have been rounded to two significant figures. Data from London Wildlife Habitat Survey, 1984/5; re-survey data 1990, 1991, 1992, 1994, 1995, 1997 & 1998.

London's remaining Thames-side grazing marsh supports nationally scarce plants such as divided sedge *Carex divisa* and marsh dock *Rumex palustris* but is mainly characterised by large expanses of grassland interspersed with ditches supporting common reed *Phragmites australis* and sea club-rush *Scirpus maritimus*. On the north bank of the Thames these ditches provide habitat for the nationally scarce emerald damselfly. Grazing marsh is particularly important for birds such as waders and wildfowl. It provides breeding habitat for a number of species such as lapwing, redshank and skylark; in winter, grazing marsh is the favoured hunting territory for short-eared owl. The remaining grazing marsh on both sides of the Thames supports large populations of water vole.

Some floodplain grassland sites of nature conservation value in Greater London

Frays Farm Meadows, L.B. Hillingdon

Ingrebourne Marshes, L.B. Havering

Petersham Meadows, L.B. Richmond.

Two grazing marsh sites of nature conservation value in Greater London

Crayford Marshes, L.B. Bexley

Rainham Marshes, L.B. Havering.

Threats and Opportunities

Threats

Estuarine grazing marsh. Urbanisation has accounted for the greatest loss in grazing marsh, with residential, industrial development and land-filling accounting for 68% of loss (Thornton & Kite 1990). Creation of amenity open space and conversion to arable has also resulted in loss of grazing marsh. Current threats include:

- Development – some significant areas of the remaining Thames-side grazing marshes are allocated for commercial or industrial development in UDPs.
- Lack of management, particularly grazing.
- Inadequate water supplies to maintain optimal hydrological regime.
- Disturbance – particularly unauthorised motorcycle scrambling, shooting and falconry.

Floodplain grassland. Industrialisation and urbanisation has also led to large historical losses of flood plain grassland in Greater London. Many rivers and streams have been culverted or canalised as flood defence measures, thus eliminating seasonal inundation of the floodplain. As a consequence, much of the former floodplain associated with London's rivers and streams has been built upon. Current threats include:

- Continued development alongside rivers thus reducing the potential for floodplain restoration.
- Abstraction from rivers and ground water leading to low flows and reduced water levels.
- Eutrophication leading to changes in plant communities.
- Lack of traditional management, such as grazing.

Opportunities

Grazing marsh. The remaining areas of Thames-side grazing marsh require protection and management. There are few, if any, opportunities to restore or enhance Thames-side grazing marsh in London outside of existing sites. In addition to securing long-term protection, the re-instatement of appropriate grazing and hydrological regimes would greatly enhance the existing value of this habitat. Initial management on Wennington and Aveley Marshes (that part of the Inner Thames Marshes Site of Special Scientific Interest outside the Greater London boundary) has shown that appropriate grazing and flooding can significantly enhance the habitat for breeding waders and wildfowl. Partnerships between key players could also provide new opportunities for public access and appreciation of the Thames-side grazing marshes.

Floodplain grassland. There is significant potential for enhancement and restoration of floodplain grassland habitats in Greater London by modification and alteration of existing flood defences. Many flood defences alongside rivers in London were installed without consideration of the impact on biodiversity or the impact on the natural dynamics of the river. As flood defences are refurbished or replaced there are opportunities to restore the natural dynamics of the river system where this would not increase the flood-risk to private property. Indeed restoration of floodplain grassland and other riverside habitats can reduce the flood risk by slowing and reducing the level of water in the main channel. Potential sites should and are being highlighted within catchment LEAPS (Local Environment Agency Plans).

Where sites can be restored or enhanced, provision should be made for long-term management. Like many aquatic or grassland habitats, floodplain grassland can succeed to willow scrub quite quickly without a constraining factor such as grazing or mowing. In some cases, allowing some existing areas of floodplain grassland with limited nature conservation value to succeed to willow scrub may be beneficial as wet woodland is also a scarce habitat type in Greater London.

Data Sources

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Rationale and limitations of approach

Data for the Thames Estuary grazing marsh audit was taken from the Nature Conservancy Council report ‘Changes in the extent of the Thames Estuary Grazing Marsh’ (Thornton & Kite, 1990). The study encompassed an area stretching from the Tower of London to the Greater London boundary, and included all the land between the River Thames and the 25 feet contour line. The report provided the extent of grazing marsh in 1989 and therefore represents a dated account of the resource. It is however the most recent, comprehensive account available.

The Floodplain Grassland Audit was based upon data taken from the London Wildlife Habitat Survey (1984/5). Wet grassland sites already highlighted from the ‘wet overlay’ (see Rationale and Limitations section of the Grasslands, Meadows and Pasture Audit, HA5) were included within this audit if adjacent to a river.

As many wet grasslands were not identified on the ‘wet overlay’, additional riverine grassland parcel data was obtained from London Ecology Unit Handbooks, Schedules and Habitat Survey maps. Habitat parcel descriptions were used to decide if the area was indeed floodplain grassland.

Habitat parcel descriptions also provided area of parcel and percentage of neutral grassland within each parcel. The percentage area was taken as an estimate of the floodplain grassland resource within each site. For limitations of this approach refer to Rationale and Limitations of the Grasslands, Meadows and Pasture Audit (HA5).

Staff at the London Ecology Unit assisted with clarifying floodplain grassland areas for a handful of difficult sites; those that had changed markedly since the last survey or had no indication of areas in survey data. These sites fell in the following boroughs: Hillingdon, Enfield and Barking and Dagenham.

Further to the assessment of the current resource, geological maps of London (British Geological Survey 1:50,000 Series Solid and Drift Geology, sheets: 255,256,257,271, 287,286,269, 270) were used to measure alluvium deposits with a dot matrix to assess potential area of floodplain grassland. Each borough was counted independently and a total for London taken. Areas shown as built upon were excluded. However, this still led to an artificially enhanced figure, as some areas displayed as alluvium are now urbanised.