



numbers when feeding on the mudflats. These counts also indicate that avocet *Recurvirostra avosetta* and ringed plover *Charadrius hiaticula* regularly exceed nationally important numbers.

During the high tide period, waterfowl disperse to roosts in marshes in north Kent and Essex. Nevertheless, high tide counts for this site clearly reveal species regularly reaching nationally important numbers in winter including European white-fronted goose *Anser albifrons* spp *albifrons*, shelduck *Tadorna tadorna*, gadwall *Anas strepera*, teal *Anas crecca*, pintail *Anas acuta*, shoveler *Anas clypeata*, grey plover *Pluvialis squatarola*, curlew *Numenius arquata* and black-tailed godwit *Limosa limosa*. In addition, nationally important numbers of grey plover, curlew, black-tailed godwit, redshank and greenshank *Tringa nebularia* occur during autumn passage with redshank maintaining their nationally important numbers on spring passage.

During the breeding season the south Thames marshes support an outstanding assemblage of breeding birds including rare<sup>5</sup> species such as garganey *Anas querquedula*, pintail, avocet and bearded tit *Panurus biarmicus*.

Specially protected birds<sup>6</sup> found within the site include hen harrier *Circus cyaneus*, short-eared owl *Asio flammeus*, ruff *Philomachus pugnax*, common tern *Sterna hirundo*, avocet and golden plover *Pluvialis apricaria*.

#### Vegetation

The saltmarshes support characteristic vegetation dominated by the saltmarsh grasses *Puccinellia*, the glassworts *Salicornia*, sea aster *Aster tripolium*, sea lavender *Limonium vulgare* and sea purslane *Halimione portulacoides*, with nationally scarce plants such as golden samphire *Inula crithmoides*<sup>4</sup> and *Puccinellia fasciculata*<sup>4</sup>.

The grazing marsh complexes, including seawalls, counterwalls, fleets, dykes, runnels and seasonally wet depressions provide suitable conditions for a wide range of plants and animals. The grassland habitats range from the damp muddy areas near the dykes, where characteristic plants include divided sedge *Carex divisa*<sup>4</sup>, small goosefoot *Chenopodium botryodes*<sup>4</sup> and golden dock *Rumex maritimus*<sup>4</sup>, to the dry seawalls and counterwalls which support scarce species in addition to many widespread plants. These scarce plants include slender hare's ear *Bupleurum tenuissimum*<sup>4</sup>, sea clover *Trifolium squamosum*<sup>4</sup> and sea barley *Hordeum marinum*<sup>4</sup>, all of which are more abundant in the Thames estuary than elsewhere in Britain. Some seasonally damp depressions in the grassland contain the bulbous foxtail grass *Alopecurus bulbosus*<sup>4</sup> whilst the more level turf is dominated by a variety of grasses including other foxtails *Alopecurus*, bents *Agrostis*, rye-grass *Lolium perenne* and fescues *Festuca*, with various herbs such as clovers *Trifolium* and buttercups *Ranunculus* also present. The rare and specially protected least lettuce *Lactuca saligna*<sup>7</sup> which was previously recorded on seawalls in this site may still survive.

The dykes and fleets which are an integral part of the grazing marsh have a range of salinities and consequently support an interesting range of plants. Those nearest the sea tend to be the most brackish, and generally have sea club-rush *Scirpus maritimus*, common reed *Phragmites australis* and fennel pondweed *Potamogeton pectinatus* as the most abundant species; some also include nationally scarce species such as brackish water-crowfoot *Ranunculus baudotii*<sup>4</sup>. In the freshwater dykes further inland there is a greater variety of species, plants such as branched bur-reed *Sparganium erectum* and reed-maces *Typha* spp. may become dominant. Nationally scarce plants associated with the dykes include soft hornwort *Ceratophyllum submersum*<sup>4</sup> with water soldier *Stratiotes aloides*<sup>4</sup> present in dykes near Higham.

The mudflats have beds of eelgrass including *Zostera angustifolia*<sup>4</sup> and *Z. noltii*<sup>4</sup> and the Allhallows region of the site has areas of vegetated shingle with the nationally scarce sea kale *Crambe maritima*<sup>4</sup> present.

#### Invertebrates

This site supports a diverse invertebrate fauna and includes nationally rare<sup>3</sup> beetles, flies and true bugs. The ‘scarce emerald damselfly’ *Lestes dryas*, listed in the British Red Data Book\*, in the Cliffe area of the site. In addition, 100 nationally scarce species of invertebrate have been recorded including *Lejops vittata* (a hoverfly), *Saldula opacula* (a shorebug) and the dotted fan-foot moth *Macrochilo cribrumalis*, all of which are restricted to wetland, estuarine or grazing marsh habitats. The water beetle fauna is of particular interest and includes four species of *Bagous* (aquatic weevils), three species of *Berosus* and the great silver water beetle *Hydrophilus piceus*.

#### Notes

<sup>1</sup> Nationally important numbers corresponds to more than 1% of the British population.

<sup>2</sup> Internationally important numbers corresponds to more than 1% of the northwest European population.

<sup>3</sup> Species regarded as nationally rare are recorded from 1–15 of the 10 × 10km squares in Britain.

<sup>4</sup> Species regarded as nationally scarce are recorded from 16–100 of the 10 × 10km squares in Britain.

<sup>5</sup> Listed in ‘Red Data Birds in Britain’, NCC/RSPB 1990.

<sup>6</sup> Species listed on Annex 1 of the EEC Birds Directive (79/409/EEC).

<sup>7</sup> Plants listed on Schedule 8 of the Wildlife and Countryside Act 1981.