

Saltmarsh in the heart of the Colne Estuary. Chris Gibson



The Essex coast

A more desolate region can scarce be conceived, and yet it is not without beauty.' It is perhaps surprising that Reverend Baring-Gould's description of the Essex coast, from his 1880 novel *Mehalah*, is as appropriate today as when it was first written. Despite the immense changes wrought by the 20th century – intensive agriculture, urban expansion and industrial development – which have eroded the essential wildness of our coastline, it is still of national and international significance for wildlife. And it is here for all to enjoy: some 15 million people live within an hour's drive of the Essex coast.

Essex has one of the longest coastlines of any English county. As the brent goose flies, Manningtree to Purfleet, on the borders of Suffolk and Greater London respectively, are only 80km apart, but following the twists and turns around estuaries and islands, the coast is more than 500km long. The coastline is a mosaic of habitats, from open sea, through mudflats and saltmarshes to the seawalls and grazing marshes. Each is home to outstanding wildlife, forming one of the most important areas of relatively undeveloped coastline in the southern North Sea, although each is subject to human and other pressures which require management.

Overview

Summarised and updated from Gibson 2003.

Habitats

As evidenced by the near-continuous suite of sites of national and international importance (SSSI, SPA, SAC and Ramsar sites), extending even over some of the most heavily developed frontages, the Essex coast is of exceptional wildlife value.

The major habitat groups can conveniently be divided by the seawall, itself a linear grassland of considerable value. Outside the seawall, in the active coastal process zone, management is largely left to the sea, as it reforms and reshapes habitats, while inside, more traditional human interventions are required.

The most extensive intertidal habitats are found in the sheltered estuaries, where the finest particles of suspended material (silt) are deposited. Mudflats are formed at lower tidal levels, and contain a rich invertebrate fauna, thriving on twice-daily inundation by detritus-rich waters; in turn, this productivity supports internationally significant populations of wetland birds. Continued deposition raises the surface higher in the tidal range, until the point where more terrestrial, albeit salt-tolerant, vegetation can survive, forming saltmarshes. The

The coastline of Essex is long, intricate and starkly beautiful. As well as being the winter home for huge aggregations of waterbirds, it provides important habitat for many rare plants and specialised invertebrates. There are also serious management challenges as balance is sought between the pressures of climate change and human intrusion, and the need to safeguard this important landscape, as **Chris Gibson** describes.



Top Extensive Thames-side mudflats, of great wildlife value despite the largely developed frontage. *Chris Gibson*

Bottom The Naze cliffs, largely still allowed to erode as a necessary source of sediment for the rest of the Essex coast. *Chris Gibson*

Essex coast is especially important for saltmarshes, supporting around one tenth of the total UK resource. These range from low marsh dominated by annuals such as glasswort, through middle marsh, characterised by saltmarsh-grasses and sea-lavenders, to upper, shrubby marsh at the highest tidal levels.

More localised deposits of coarser sand, shingle and shell provide additional, supratidal habitats. Necessarily tolerant of salt spray, drought and mechanical disturbance from wave action, typical plants include sea-holly and marram grass on sand, and yellow horned-poppy and sea kale on shell and shingle.

Beyond the mudflats, the shallow sea is highly turbid but supports shellfish, including native oysters, now largely outcompeted by non-native escapes from mariculture. Fish populations (particularly sprats) in the outer Thames support the largest winter aggregation of red-throated divers in the country, together with seals and harbour porpoises.

Seawalls have been built around the Essex coast since the Middle Ages to facilitate agricultural management. Out of the tidal regime, the enwalled

saltmarshes became brackish grazing marsh. Where these have survived later drainage and conversion to arable, they provide a valuable adjunct habitat for wintering waterbirds, breeding habitat for some wildfowl and waders, and feeding areas for raptors. Grazing marsh vegetation reflects its brackish nature, often with extensive stands of strawberry clover, hairy buttercup and spiny restharrow. Ditches ramifying through the grazing marshes are especially brackish, supporting distinct communities of specialised plants and invertebrates which thrive in those conditions.

While much of the coastal hinterland is now intensive agriculture or urban, in a few places semi-natural habitats complete the coastal suite, including woodland and coastal grassland. The large reservoir at Abberton is only 2km from the Blackwater Estuary, their birds showing regular interchange. Especially by the Thames, large tracts of formerly industrial brownfield land have developed considerable wildlife value, especially for invertebrates, reflecting the warm microclimate of the Thames Estuary and proximity to sources of colonisation from the Continent. Pride of place among these is Canvey Wick SSSI, designated specifically for its brownfield invertebrates, the highest concentration of rare species at any site in the country.

Underlying many of these habitats, there are several SSSIs notified for their geological interest. Most dramatically, the cliffs at Walton-on-the-Naze give a window into two key geological periods: when London Clay was laid down some 50 million years ago, and Red Crag, a three-million-year-old beach deposit, the stratigraphic variation of fossils therein providing the earliest accessible evidence of the onset of the last ice age.

Species

Each of the constituent estuaries is of international significance for one or more species of wintering waterbird. Typical figures, summarised from the Wetland Bird Survey programme and rounded to the nearest thousand, are shown in the table below.

National rank	Site	Average total waterbirds (winter 2010–11 to 2014–15)*
4	Thames**	170,000
16	Blackwater	75,000
19	Hamford Water	52,000
20	Dengie	52,000
22	Stour***	50,000
31	Abberton Reservoir	34,000
39	Colne	29,000
42	Crouch/Roach	28,000

* Excludes gulls and terns, which are not counted at every site.

** Includes Maplin Sands and part of the Kent shore.

*** Includes the Suffolk shore.

By adding gulls, offshore seabirds and other uncounted birds and stretches of coast, the Essex coast is home to more than half-a-million waterbirds each winter. The Siberian-breeding dark-bellied brent goose epitomises the international importance of the Essex coast: almost a half of the world population winters on English coastlines, and half of those do so in Essex.

Of course, wintering waterbirds are not the only birds of interest. Several species (e.g. redshank, lapwing and shelduck) also breed, primarily on land managed specifically for them; raptors and owls hunt over the marshes, particularly in winter; and saltmarshes are an essential winter food source for seed-eating birds, including twite and corn bunting.

Each Essex coastal habitat is characterised by plants that have adaptations to cope with the various environmental stresses. The table below includes those with a conservation status of near threatened or greater, based on IUCN (International Union for Conservation of Nature) criteria, plus a selection now evaluated as least concern but which previously were considered nationally scarce or rare, simply on the basis of the number of 10km squares occupied (see box below).

As might be expected, given the range of specialised habitats and plants, the Essex coast is also home to many rare and localised invertebrates. Of the two eponymous county insects, the Essex skipper is widespread and often abundant, especially on seawalls, as over much of south-eastern England; sadly, however, for reasons not entirely clear the Essex emerald moth became extinct nationally in the 1990s. Two extant macromoths of importance are the ground lackey, whose larvae live in conspicuous communal 'nests' on saltmarshes, and Fisher's estuarine moth, feeding on hog's-fennel and consequently restricted to the north Essex and north Kent coasts.

The seawalls support strong populations of Roesel's bush-cricket, the heartland from which it has colonised most of southern England over the past 20 years. Similarly, the grazing marsh ditches have served as a springboard for establishment of rare Odonata: scarce emerald and willow emerald damselflies are now well-established, and the southern migrant hawkler seems to be following suit.

Conservation management

'Traditional' conservation land management is largely restricted to the habitats inside the seawall, where grazing, mowing and rotational ditch clearance are the essential activities needed to maintain them. Given the 80% loss of grazing marshes over the 20th century, there is also an imperative to restore at least some of the functionality of the former marshes. Drained marsh has been sown back to permanent grassland to provide alternative feeding for brent geese, scared



Dark-bellied brent goose, icon of the Essex coast. *Chris Gibson*



Fisher's estuarine moth, restricted to north Essex and north Kent. *Chris Gibson*



Annual sea-purslane – rarest plant of the Essex coast – at its only British site. *Chris Gibson*

Mudflats	Dwarf eel-grass VU ; Common eel-grass NT
Saltmarsh	Annual sea-purslane CR ; Small cord-grass EN ; Borrer's saltmarsh-grass VU ; Golden-samphire LC ; Shrubby sea-blite LC ; Perennial glasswort LC ; One-flowered glasswort LC ; Marsh-mallow LC ; Annual beard-grass LC ; Lax-flowered sea-lavender LC ; Curved hard-grass LC
Shell, shingle and sand	Prickly saltwort VU ; Bur medick VU ; Sea-heath NT ; Sea pea LC ; Dune fescue LC ; Bulbous meadow-grass LC ; Suffocated clover LC ; Ray's knotgrass LC ; Tendring rock sea-lavender W ; Rush-leaved fescue W ; Bermuda grass W
Seawalls	Least lettuce EN ; Slender tare VU ; Sea barley VU ; Slender hare's-ear VU ; Hog's-fennel LC ; Sea clover LC ; Stiff saltmarsh-grass LC
Grazing marsh	Stinking goosefoot EN ; Divided sedge VU ; Mousetail VU ; Spiral tasselweed NT ; Saltmarsh goosefoot LC ; Dittander LC ; Brackish water-crowfoot LC
Coastal grassland	Deptford pink EN ; Hartwort EN ; Bithynian vetch VU ; Clustered clover LC ; Early meadow-grass LC ; Bird's-foot fenugreek LC ; Hairy vetchling W

IUCN categories: **CR** critically endangered; **EN** endangered; **VU** vulnerable; **NT** near-threatened; **LC** least concern; **W** waiting list, for further investigation.

Managed realignment at Abbotts Hall, Blackwater Estuary. The breach is visible top right. Chris Gibson



Top Mudflats, saltmarsh and a rare woodland transition zone, Stour Estuary. Chris Gibson

Bottom Saltmarsh developing in the Tollesbury managed realignment. The seawall breach is just visible, top right. Chris Gibson



from winter crops. Recently, on the Thames especially, landscape-scale land-use changes, driven by the need to offset harm from sea-defence schemes and industrial developments, have incorporated such habitat restorations.

Outside the seawall, the conservation challenges are more diverse. Some have been well-addressed, particularly through the requirements of European

legislation, such as water pollution, from all sources except agricultural run-off. Likewise, land-claim, the seaward extension of dry land onto important intertidal habitats, is now the exception rather than the norm.

Perhaps more of a problem, given its huge and increasing scale, is that of too many people wanting to live near and visit the Essex coast. Every new household adds to the ecological footprint; every visitor creates the potential for harm, in particular through disturbance. Tackling such large-scale human proximity issues is by necessity complex and resource-consuming, and sadly the application of the precautionary principle to address piecemeal attrition seems to have fallen out of political favour. Natural England's coast path, is a plan on one hand welcome, enabling fuller appreciation of the sometimes-hidden wildlife riches, but on the other a risk. The route must avoid sensitive features, and there must be appropriate presence and enforcement available to control those who would abuse the new opportunities, otherwise the initiative will destroy the very thing it set out to celebrate.

The seawall itself also needs managing, not least because colonisation by scrub (and then rabbits and badgers) can compromise its defensive role against surge tides. The standard method, mowing the entire seawall of Essex over a two-month period in late summer, is simple and effective in flood management terms, but produces a rank, near-monoculture of sea couch. Bespoke mowing regimes are in place in a few areas, especially to promote hog's-fennel and Fisher's estuarine moth around Hamford Water, and elsewhere grazing has been used to try and encourage diversity. However, this is problematic, given the need to fence stock out of the saltmarshes due to their inherent instability in the face of sea level rise. Put simply, the saltmarshes are at risk from two interacting phenomena: a natural rise in sea level due to the ongoing isostatic settlement

of the south-east following the retreat of the last glaciation, and a not-so-natural rise in sea level (and enhanced storminess) through climate change and thermal expansion of the seas. Saltmarsh instability means that the extensive grazing of sheep, as used effectively further north and west, on the other side of the isostatic seesaw, cannot be safely used in Essex: lose the saltmarshes to erosion by sea or stock, and you lose both a wildlife habitat and a vital first line of sea-defence. Fortunately, the biodiversity value of seawalls has now been recognised, and the Environment Agency (EA), manager of most of this resource, is seeking to adopt more ecologically sensitive management wherever possible (Gardiner et al. 2015).

It is tempting to devolve all habitat management in the active coastal process zone to the dynamism of the sea. However, direct intervention by humans is necessary when those processes run up against hard barriers we have created: rising sea levels erode the saltmarshes, squeezing them between an advancing tide-line and fixed sea-defences. In Essex, coastal squeeze solutions have been identified, trialled and implemented – notably, managed realignment, where land is returned to the active process zone through deliberately breaching the sea-defences. From the germ of an idea in the 1980s, to now an accepted solution for many coastal management issues, in Britain and elsewhere in the world, this is the real legacy of recent conservation management on the Essex coast.

Coordination and cooperation

The Essex coast was not really on the conservation radar until around 1970, when the government approved plans to build a new London Airport on Maplin Sands. Fledgling environmental impact assessment recognised the harm this would cause, and the government therefore set about enhancing the protection of much of the rest of the coast by creating a series of National Nature Reserves. From the outset, the statutory sector (Nature Conservancy, and successor bodies; together with Essex County Council and some District Councils) worked collectively and collaboratively with the voluntary sector (Essex Naturalists' [now Wildlife] Trust, RSPB and National Trust) to tackle this huge job of conserving the Essex coast. In the event, the airport was not built but the collective responsibility remained intact: in essence, different bodies agreed (informally) to lead on different estuaries, but with a statutory overview by way of coordination.

Moving towards the end of the last century, and recognition of the need to address coastal squeeze strategically, the cooperative approach continued, and indeed was enhanced by the engagement of the flood risk management agency (National Rivers Authority, now EA). Such collaborative

relationships between statutory and voluntary bodies in delivering very significant managed realignments continue to this day, with reservations that some of the identified requirement to offset the negative impacts of longer-term flood-risk management strategies (designed to cover 100-year periods) may never be delivered. Especially when legal drivers arise out of EU legislative requirements, the future must be treated as highly uncertain.

Since 2000, again exemplifying the cooperative approach, steps have been taken to try and address the severe but diffuse issues of too many people wanting to do too many things (particularly noisy ones, such as jet-skiing) in too small an area. Stakeholder meetings and agreements, well-coordinated by Essex, Colchester and Maldon Councils made substantial progress. However, pressures have continued to grow, with increasing leisure demands and house-building targets. With worsening financial constraints in the public sector (and, it would seem, growing risk-aversity), the leadership coming from the councils, Natural England and EA has been substantially curtailed. The priority for the future has to be to restore this leadership, rebalance the cooperative approach, retain the precautionary principle in seeking to manage activities, and always remember the importance of respecting natural change and dynamism – working with nature rather than against it.

Integrating the needs of wildlife and the wishes of recreational and other users remains a key challenge. Chris Gibson



Dr Chris Gibson has recently taken early retirement after 31 years with Nature Conservancy Council, English Nature and Natural England, for much of that time helping to put the Essex coast on the map. Email: chrismothman@btinternet.com; website: www.chrisgibsonwildlife.co.uk

References

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