

5 Habitats and Species

The environmental value of the Braunton Marsh and surrounding area has long been recognised. The undulating pastures, the hedgerows, and the drainage ditches of varying depths and widths, provide several different types of habitat, and support a wide variety of species. The conditions provided by the relict tidal guts are particularly important, as they provide damper conditions for wetland plant communities, which are increasingly threatened across the UK. The channels provide cover for many resident birds, and the area is also an important feeding and breeding ground for many species. The Marshes also comprise an important wildlife corridor, maintaining a connection between the various designated areas and other adjacent habitats.



Picture by courtesy of Miranda Coleman-Cooke



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5.1 Habitats

Historically, the value of the area as a feeding ground for birds, and the ecology of the freshwater channels, were acknowledged under a wide-scale Torridge Estuary SSSI designation until the late 1980s. Despite this designation, however, it is understood that few studies have ever been undertaken to quantify the ecological significance of the Marsh. As such, it is almost impossible to determine how much the Marsh has changed over time. However, a limited number of fragmented species lists and survey records of a small range of taxons, do exist within the archives of Natural England, largely associated with the ecology of the drainage ditches^{1,2,3,4,5}. In spite of this limited ability to quantify ecological change, much of the Marsh was de-notified in 1988, on the grounds that parts of the pasture had suffered a reduction in biological diversity following agricultural improvement. Detailed records of this process are unavailable; however, many Marsh pastures have since been identified as potential Devon County Wildlife Sites, but their fulfilment of the habitat criteria remains unconfirmed. Habitat on the neighbouring Horsey Island was confirmed as a County Wildlife Site in the mid 1990s¹⁶. The records of this assessment may help to suggest the potential biodiversity that might be found across the Braunton Marsh area as a whole. However, since this time, the habitat on Horsey Island has been subject to changing agricultural practices and increasing salt inundation over the past few years due to a faulty sluice, providing a more transitional saltmarsh environment. Anecdotal reports suggest that many freshwater species are now in decline across many parts of Horsey Island⁹.

Remaining areas of unimproved pasture, containing the highest concentration of ecological interest and botanical diversity, were designated and purchased as individual SSSIs at the time of de-notification. These are situated at Swanpool, and Greenaway and Freshmarsh. Details are available through Natural England. Swanpool is situated to the north of the Marsh, and despite sharing certain similarities, remains a habitat distinct from that of the former saltmarsh. However, parts of Greenaway and Freshmarsh SSSI fall within the area of Braunton Marsh itself. Unfortunately, extrapolation of the types of species found within



Picture by courtesy of Miranda Coleman-Cooke

the Greenaway and Freshmarsh SSSI remains one of the few ways to evaluate which species may still be found within the rest of the Marsh pastures today. It is anticipated however, that notable Devon species such as the Parsley Water Dropwort (*Oenanthe lachenalii*) and the Marsh Arrow Grass (*Triglochin palustris*), found in few other parts of the county, are likely to be found amongst the herbs of some Marsh pastures, much as they are in the SSSIs nearby⁸.

The citation sheet of Greenaway and Freshmarsh SSSI states that the areas represent some of the last remaining fragments of herb-rich grazing marsh in the county. The rest of the Marshes, however, also represent the same type of coastal and lowland grazing marsh, which is identified as a priority habitat under a UK Biodiversity Action Plan (UKBAP). Details of coastal and floodplain grazing marsh can be found on the UKBAP website⁶, and it is a habitat that has become increasingly rare following habitat loss since WWII. Grazing Marsh is also identified as a priority habitat within the Devon BAP⁷, owing to its scarcity within the county. Indeed, only in 1997, some 40 acres of highly biodiverse grazing marsh were ploughed up on Horsey Island⁷. The marsh waterways also contains UKBAP stream and river habitats, and UKBAP reedbed habitats⁶, such as those found at the former major tidal guts of St Arthur's and the Inner Marsh Pill. The hedgerows which divide the Marsh also constitute an important habitat identified by the North Devon BAP.

The Braunton Marshes also provide an important habitat in terms of bird life, including many species of conservation concern (Appendix 11). The area is very popular with birdwatchers, and is included under the RSPB Important Bird Area designation. Anecdotal evidence from local birdwatchers and landowners suggests that birdlife on the Marsh has varied significantly over the years. Species such as Golden Plovers and Lapwings, were once far more abundant than can be observed today^{11,12}. There is much speculation about what may cause these reductions in population size, ranging from disturbance by visitors, dog walkers, shooting, overstocking, climatic variation and increased predation from species such as mink, foxes, and magpies. It is also suggested that a marked change in the rate of declining bird numbers over the estuary as a whole coincided with the decommissioning of the power station at Yelland¹⁵. The power station is thought to have previously provided a particularly favourable, warmer estuarine environment, which helped to attract birds into the area. Simultaneously, however, other species such as Canada Geese and Egrets are reported have become more prevalent in recent decades^{9,13}.

Records from local ornithologists and local groups such as the Devon Birdwatching and Preservation Society, and national organisations such as the Wetland Bird Survey, provide a useful source of information covering the last decade or so. The Braunton Marsh Shooting Syndicate, which is permitted to feed and shoot any species of bird within the area of the former Williams' Estate shooting grounds, is also a potentially useful source of information. The self-policed syndicates, which have experienced a surge in popularity in recent years, provide accurate records of the number of wildfowl taken during each season for the last few decades. However, although one unconfirmed report suggests a Williams' Estate game-book containing information about bird numbers dating back to the turn of the century may still exist, most of the available data is recent in nature. Combined with natural fluctuations in bird populations according to climatic patterns, the relatively short-term nature of available data means that verification of any long-term trends or their causes is likely to be very difficult. However, such an attempt is undoubtedly warranted on the ground that, if fruitful, it would provide valuable guidance and justification for future initiatives for bird conservation across the Marsh.

5.2 Species

Within the priority habitats contained in the Braunton Marsh, several locally, nationally, and even internationally important species have been identified. Species listed in Devon Biodiversity Action Plans (BAP) include Curlews (*Numenius arquata*), the Great Green Bush Crickets (*Tettigonia viridissima*)⁸ and Barn Owls (*Tyto alba*). In the past, owls were reported to have once been numerous inhabitants of the Marsh lincays, and several species of owl have been observed in recent years⁹. However, it is believed that the overall decline in owl numbers coincided not only with the decline of the lincays, but also with the decline of water voles (also a UKBAP species), possibly as a result of an increase in predation by mink. In recent years, there are only unconfirmed reports of water voles (*Arvicola terrestris*) remaining in the area. Greater Horseshoe Bats (*Rhinolophus ferrumequinum*), known to forage and roost on the Braunton Marshes¹⁰, represent another Devon BAP species, and are also covered by UKBAP status. Records of the Devon Wildlife Trust suggest that Otters may also frequent the Braunton Marsh from time to time. Otters are the highest-profile species to be found on the Marshes; they are subject to a UKBAP and are protected under the Wildlife and Countryside Act 1981 and the European Habitats and Species Directive, and are also listed as vulnerable under the IUCN Redlist, 2000.



Today, in addition to the fragmented records and survey work already mentioned,^{1,2,3,4,5} many species recorded within the habitats across the Braunton Marsh have been collated within National Biodiversity Network (NBN) 10km² datasets for various taxons. In some cases, the datasets can then be broken down into more specific locations. Unfortunately, however, such locations are often protected, unspecified, or vague, making it difficult to produce a comprehensive list. This is compounded by varying interpretations as to the boundary of the 'Braunton Marsh', which sometimes refers to areas beyond the original extent of the saltwater marsh. Nonetheless, an attempt has been made to collate non-exhaustive species lists for the birds, mammals and plants likely to be observed on the marshes, using the NBN records, existing survey work, and with the help of local experts. (Appendix 11, 12, 13).

It appears that the most detailed survey yet undertaken of the Braunton Marshes was conducted by the Environment Agency in 1996⁴. The limited study sampled plant and invertebrate species at eight sites across the Braunton Marsh and surrounding area as far as Swanpool. Exceptional floral diversity, and several unusual dragonflies, molluscs and beetles with regional or national conservation designations, were identified at a site along the Inner Marsh Pill, and on sites along the boundary drain close to the Great Sluice and Pedricks' Lane^{4,5}. In 2005, the invertebrate survey component of the study was replicated on a smaller scale, and it was found that the levels of macro-invertebrate diversity varied widely from that observed in 1996. The influence of drain clearance, which operates on an approximately three-year cycle, is likely to be a significant contributor to this variation in observed biodiversity. Similarly, farming practices, such as the presence or absence of fences adjacent to the ditches, is also likely to influence the form and level of biodiversity in the area. Across the marshes, farmers manage their land in different ways, providing variety in the form and condition of the drain edges. The implication for biodiversity of soil poaching along the drain edges is not well understood. The current variation in fencing practices across the Marshes is likely to provide a wide range of ecological conditions, providing habitats for a greater number of species. Confirmation of the optimal management of the drain edges may provide scope for further investigation in the future.

5.3 Management

Several organisations currently play a part in the environmental management of the Marshes. The Environment Agency has a statutory responsibility to ensure the water quality of the main rivers, thus influencing the biodiversity of the drains. In accordance with their 2002 policy statement, the Braunton Internal Drainage Board aims to 'ensure no net loss of habitats covered by Biodiversity Action Plans, monitoring any gains and losses, and reporting annually to the Environment Agency' and to 'take appropriate opportunities to enhance habitats'. The Braunton and District Drainage Board is one of the central tools for direct local management of wildlife in the area. In recent years the Board has encountered significant threats to the wildlife of the Marsh drainage channels, owing to the occurrence of an invasive species of water fern (*Azolla filiculoides*). Fortunately, this invasive weed now appears to be under control, but, it has been replaced by a new threat from the species *Myriophyllum aquaticum*, commonly known as Parrot'sfeather. This invasive pond weed is currently being managed through a system of herbicides and mechanical removal.

Under the national, regional and local BAPs, partnerships between various agencies also aim to encourage management through schemes to promote the conservation interest of priority habitats. In the case of the Braunton Marshes, uptake of Environmental Stewardship Schemes by landowners is one of the main routes for the implementation of BAPs, providing a contractual agreement for farm management with the aim of promoting wildlife specific to the area. A recent surge of entry into such agreements will therefore help ensure the economic viability that is an essential precursor for the promotion of environmentally-sensitive farming practices. However, it is unclear what economic incentives will remain once these agreements expire after 10 years. Other voluntary initiatives have also been undertaken to conserve species such as Barn Owls in the area. This year, the Braunton Marsh Shooting Syndicate also reintroduced a number of Grey Partridges (*Perdix perdix*), a native species which had not been seen on the Marsh for over a decade¹³.

Preservation of wildlife interests, wherever possible, is certainly an aim shared by the landowners and the Braunton and District Drainage Board alike. Yet it is important to realise the practical and economic implications of pursuing such goals proactively, and the need for expertise and funding to achieve them. As can be concluded from the above paragraphs, there continues to be a requirement for a more systematic and comprehensive evaluation of the environmental resources found on the Braunton Marshes. This would undoubtedly prove beneficial for targeting future environmental management in the area.

1 - Coleopterist Newsletter, 1987; Records of Natural England, Exeter Offices

2 - Wolsery, F. A., 1988; Assessment of botanical contents and value of waterways of Braunton Marshes (2 day survey). Records of Natural England, Exeter Offices

3 - Gough, H. K., 1987; An interim report of a macro-invertebrate survey of the Braunton Marsh Area. Records of Natural England, Exeter Offices

4 - Knight, L., 1997; Braunton Marshes Conservation Survey 1996. Environment Agency. Devon Area Internal Report.

5 - Devon Area Ecological Appraisal Team, 2005; Braunton Marshes Biological Survey. Environment Agency. Devon Area Internal Report.

6 - www.ukbap.org.uk

7 - Devon Biodiversity Action Plan – Grazing Marsh

8 - Mary Breeds, personal communication, 2006

9 - Maranda Coleman-Cooke, personal communication, 2006

10 - Billington, G., 2002; Radio tracking study of greater horseshoe bats at Caen Valley Bats Site of Special Scientific Interest. English Nature Research Report number 495

11 - John Hartnoll, personal communication, 2006

12 - Rowland Dibble, personal communication, 2006

13 - Lesley Oldham, personal communication, 2006

14 - Braunton Marsh IDB policy statement on flood protection and water level management, 2002

15 - Northern Devon Coast and Countryside Service, 1998; Taw Torridge Estuary Combine Issues Report

16 - Devon Biodiversity Records Centre – Devon Wildlife Trust Site Survey Cards for Horsey Island

