

4 Water Level Management

Essentially, the drainage system of Braunton Marsh operates by means of gravity, with the subtle gradients of the clay-lined water channels directing water around the marshes. Water exits the Marshes via the Great Sluice at Horsey Island. During the summer, some water enters the system at Velator, via the River Caen¹, however the primary source of water entering the system comes from a spring situated in an area known as the 'Meres' or 'Mares' to the north. During the summer of 2006, dry conditions meant that this spring was barely flowing, yet the drains were relatively full, suggesting that the system is also fed by other springs, and from water draining from the Braunton Burrows dune system to the west². Following the re-profiling of the boundary drain by the IDB in the late 1980s, there were concerns that this act may have contributed to a reduction in the water table of Braunton Burrows. This hypothesis was investigated through the preparation of a draft Environment Agency Water Level Management Plan¹, however results as to the cause of this reduction were inconclusive. Elsewhere, across the estuary, Northam Burrows has also suffered a reduction in its water table in recent years.

The numerous drainage controls of the original system remain scattered across the Marshes, typically in the form of simple weirs adjusted using wooden boards, which are either inserted or removed to raise or lower the water levels in the drain. Elm is the wood traditionally used, owing to greater resistance to rotting when continually exposed to water. Historically, some controls were used to shut off and empty sections of the drains during manual clearance of drains, but only a small number of controls are still used today. Four major controls are currently used to adjust the water levels between higher summer levels and a reduced winter regime. Lower winter levels can help clear excess weed from the drains during times of hard frost, however, a faster flow rate and a comparatively high winter level, which is more favourable for wildlife, are currently being practised. Minor adjustments in water level are made at three other small controls.

Although a visitor might instinctively think that the main purpose of the Drainage Board was concerned with land drainage and flood prevention, the area within the control of the IDB floods extremely rarely. Instead, the control of water levels is primarily for the purpose of livestock farming, both with regard to ease of drinking, and in order to keep the animals on different pastures apart. Essentially, this purpose is very different from the flood and coastal defence objectives of the Environment Agency, which retains discretionary powers over the 'main river' of St. Arthur's Pill and the sea defences including the Great Sluice³. Over the years, the central drainage authority (now the Environment Agency) has been subject to reorganisation and new legislation, which has sometimes led to a discontinuity of effective communication and cooperation with local landowners and the IDB. Braunton IDB decisions regarding the adjustment of the water levels, or conducting maintenance work, are made after the expert consideration (and expertise) of the Board, whose Members have been consistently and closely involved with the day-to-day and long-term observation and management of the Braunton Marsh environment. Many Board Members have in the past, and continue to be, made up from individuals who have farmed, or have been associated with, the Marshes for much of their adult lives, or even since childhood.

Drainage and water level issues within the Marshes are either considered at quarterly meetings, or raised at the Annual General Meeting which is open to all marsh owners. Traditionally, the management and control of water levels on Braunton Marsh were the responsibility of the Inspectors, and generally fell to the employee living in the Inspectors' House. With the advent of the Braunton & District Drainage Board, and the role of the Inspectors' House resident changing from herdsman to toll keeper, water-level management now relies upon the good will of individuals within the Drainage Board. Today, it falls to Board members to volunteer their time and expertise to monitor and adjust the controls as necessary, performing tasks such as the closing of the penstock at Velator on high spring tides, which ensures that the drains are not contaminated with salt water.

1 - Environment Agency, 1998; Water Level Management Plan, Braunton Marsh

2 - John Avery, personal communication, 2006

3 - Ministry of Fisheries and Food, 1999; High level targets for flood defence and elaboration of the Environment Agency's flood defence supervisory duty. Flood and coastal defence with emergencies division. (From the records of the IDB)



THE GREAT SLUICE

