Archaeological Evidence for the Exploitation, Reclamation and Flooding of Salt Marshes

Archäologische Befunde für die Nutzung, Trockenlegung und Überflutung von Salzwassermarschen

Données archéologiques sur l'exploitation, la récupération et l'inondation des marais salants

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In the last ten years freshwater and salt marshes have been a major area of research in English archaeology. Surveys have been undertaken on many of the major English wetlands to identify the character of the archaeology and determine the methods necessary to conserve them. These studies had been prompted by a realization that marshlands contain abundant organic materials, such as wood and leather which survived in the waterlogged conditions. The emphasis in most of these surveys has been the prehistoric remains; the evidence from the medieval and later periods has been studied in less detail. However, there have been exceptions. Work by *Rippon* (*1996*; *1997*) on the Welsh and English sides of the Severn estuary has allowed a study of the complex landscapes of the medieval period to be unravelled. In the Fens, the *Hall* (*1996*) and *Silvester* (*1988*; *1993*) have uncovered medieval landscapes and outlined their development. These studies of have shown how during the Middle Ages, and particularly in the twelfth and thirteenth centuries, the growing population of England occupied new marshlands, first exploiting areas and later draining them.

Much of the work on the medieval expansion into the wetlands has used morphological approaches to identify the stages of reclamation. The basic techniques of landscape analysis – identifying earlier and subsequent phases of fields – have proved a powerful tool in analysing the advance of settlement. However, it is possible to complement morphological analysis with an understanding derived from the study of physical processes operating on salt marshes. We may interpret the environment which medieval people encountered by considering the natural processes of salt marsh development, and this enables us to understand the way the marshlands were utilized and subsequently reclaimed. The present paper outlines this alternative approach. It contrasts evidence from an area of active salt marsh in the north of Norfolk with reclaimed salt marsh in Walland Marsh near the boundary of Kent and Sussex. Three particular issues are considered – the exploitation of marshlands without reclamation, the reclamation process and its remains, and the flooding of marshland and its impact.

The character of salt marsh

Salt marshes are bands of land parallel to the coast or within the lower part of estuaries flooded twice daily by tides. They must be protected from high-energy wave action to allow the deposition of sediment. Coastal salt marshes are sheltered from the sea by a barrier, typically a band of sand or shingle. Those within estuaries are protected by their location from wave action. It is not only the presence of salt water which distinguishes salt marshes from those flooded by fresh water, but also the regular ebb and flow of tidal water which cuts creeks into the marsh deposits and introduces new sediment into the system. It is important to distinguish two different zones within the salt marsh. Unvegetated mud flats develop on the coastal edge of the marsh. The movement of sea water there is too strong and the mud too unstable to allow the growth of plants. Behind the mud flats is the vegetated salt marsh. covered with halophytic (salt-loving) plants. A typical sequence in northern Europe is *Spartina spp.* as a colonizing species on the lowest marsh, followed by *Salicornia spp.* and *Puccinellia maritima* on the low salt marsh. Away from the coast, the marsh will have less salinity and other less-salt tolerant species will be found.

Marshes are dissected by a system of creeks which channel water into the marsh at high tide and allow it to drain during the ebb tide. There are a number of creek patterns. Some have a parallel form; others a dendritic form. Each form seems to have developed to absorb the energy of the tidal waters and that of the waves which can force sea water up the creeks. Where the dominant influence is tidal, the creek forms tend to be dendritic as the force of the incoming water is dissipated in a network of branching channels. Where marshes are exposed to the force of waves, the pattern tends to have a linear form (*Pethick 1992*, 53–60).

The pattern of creeks on almost every marshland in England has been altered to a greater or lesser extent by human exploitation. Creeks have often been canalized to make larger channels to drain the marsh more effectively, or to act as boundaries. This aspect of