The Romney Marsh Research Trust exists to promote, co-ordinate and disseminate research into the historical, social, economic and physical development of Romney and Walland Marshes and their immediate hinterlands. The Trust receives, raises and holds funds to meet grant applications to support and publish research into the Marsh and invites individuals to become Friends of the Romney Marsh Research Trust and to participate in lectures, conferences, field visits and research projects. Details of the Trust and membership are available on the web-site www.rmrt.org.uk.
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Hadrian Cook

This paper links changes in the agricultural sector to land use and the rural landscape on Romney Marsh since the late 18th century. During the 19th and 20th centuries, drainage improvements were first directed to alleviating the hydrological loading on the main drains and then to improving drainage at the field-scale. This widened options for agricultural development and the area became progressively integrated within the national economy. The period between the French Revolutionary Wars and the end of the 20th century shows the Marshland farms becoming progressively more responsive to agricultural markets, to economic intervention and to innovation. Between 1790 and 1990 there occurred increases in demand for agricultural produce during the Napoleonic, First and Second World Wars, with further boom times during ‘Victorian high farming’ and the decades following the Second World War. There were also depressions, between 1870 and 1914, and again during the inter-war period. The period post-1940 saw widespread conversion of permanent pasture and the domination of arable farming. This dramatic landscape change led to the development of the ‘conservation ethic’ on Romney Marsh as with reclaimed wetland landscapes elsewhere.

Introduction

A Working Landscape

This is an account of agrarian development and landscape changes that have shaped the modern Romney, Walland and Denge Marshes (collectively ‘Romney Marsh’). It addresses questions of how government intervention sought to remedy market failure and increase production in the agriculture sector, thereby shaping the rural landscape between 1790 and 1990. Economic specialism in sheep pasturage (a significant source of wealth) declined during these two centuries as the Marshland came to exemplify modern English agriculture. During this period, there is an associated scientific and technical narrative that supports the requirements of national food security. So significant is Romney Marsh in the mindset of professionals that the Association of Drainage Authorities (ADA undated) found it appropriate to declare Romney Marsh ‘the birthplace of land drainage’ on account of its medieval drainage arrangements.

Despite the complexity and rate of change in the landscape, historic enquiry concerning recent centuries remains less popular than for earlier times. Yet today, Romney Marsh remains a discrete cultural area famous for its churches, sheep pasture and lines
of willow pollards along (often sinuous) sewers but the image overlooks the widespread, modern, well-drained arable areas. Early 19th-century writers still detected a lingering ‘otherness’; aside from Barham’s ‘a fifth quarter of the world’ (1840), its geographic integrity (between the sea and degraded cliff line) has marked it out, including the less-attractive historic attributes of disease, crime and flooding. Cobbett’s (1912) simple assertion referring to 1823 ‘in quitting this Appledore, I crossed a canal and entered on Romney Marsh’ portrays a sense of boundary, yet at this time the completed Royal Military Canal (RMC) was less than twenty years old. While the RMC was designed to defend England from invasion by Napoleon (Cobbett himself was sceptical), in reality it served to trigger agrarian change, because it improved arterial drainage. Apart from any romanticised Marsh of ghost, witch and smuggler tales, this is a working landscape that has undergone drastic change; yet ironically the practitioners of ‘free trade’ behind the backs of excise men were once real economic actors. Similar to trade relations, landscape change responds to prosaic considerations of market demand and state intervention. Outcomes have affected the topography, biodiversity and conservation demands within Romney Marsh and mean that certain rural locations now join the villages and churches, as objects of interest and conservation.

Historiography and Scope

Lowland river catchments in England are suitable subjects for writing ‘green history’ (Cook 2008) and by this is inferred a need to embrace the environmental influence in human activities over time. In scope, green history considers political, social and economic activities alongside accounts of environmental change. Romney Marsh is likewise a readily defined area, conditioned by the needs of fresh and sea water management, a ‘hydromorphic’ landscape. Historiography calls on a wide spectrum of sources. Economic historians are concerned with agriculture, history and land use. Soil scientists, agricultural scientists and engineers deal with agronomic-related matters, with respect to which Green’s (1968) soil survey remains a seminal work. There are the four previous multi-authored monographs from the Romney Marsh Research Trust and the publications of the former Institute of Terrestrial Ecology (ITE) a body concerned with the ecology and drainage of the area, and with historical interpretation. Statistical data, from official sources, dates from 1801 and provides a basis for the study of historic land use and its change. ‘Grey literature’ sources include land drainage reports and the Agricultural Land Commission report of 1949. There are also web sources, and the author is party to several articles and unpublished reports. Collating such sources requires that (often normative) social, political and economic considerations are brought to bear on observations from environmental history.

Historical questions addressed for the period 1790 to 1990 are:

- How did the agrarian economy of Romney Marsh integrate with its region and with the national picture?
- How was investment in its fertility, location and drainage realised?
- How did Romney Marsh emerge as an exemplar of modern ‘scientific agriculture’?
- How did the ‘conservation ethic’ develop, and to what effect?

The paper looks first at the economic background to the period, takes a long-view of the national picture (from the 18th century until 1990) including government policy and interventions, presents an analysis of land-use change in the agricultural sector (land-use maps illustrate these changes from 1870), analyses the scientific and technical drivers, the impact on the physical landscape and outlines the rise of conservation measures.

A Dismal Place for Dismal Science

Romney Marsh before 1800

Before the Black Death, Romney Marsh had a mixed agricultural economy (Tatton-Brown 1988), after which there was protracted population decline (Reeves and Eve 1998), a change correlated with widespread conversion to pasture. For the early part of the 18th century, Romney Marsh was generally inhospitable and one of the most un-healthy places to live in Kent (Dobson 1998). There was no RMC and, although there were extensive drainage systems to the sea outfalls, water drained from both the ‘uplands’ to the north and west via the network of sewers across the Marshland to the sea. Dobson identifies flood risk, disease (especially endemic malaria), under-population, a lack of willingness to dwell there by the better-off and criminal activity – all factors that would make it reasonable to describe the area as ‘a dismal place’.
Prior to the 19th century, the overall balance of pasture and arable remains uncertain, as does the distribution of land use over time (Green 1968; Cook and Moorby 1993). However, Garrad (1954, 79) suggests that ‘there has always been a nucleus of arable land in the Marsh which has expanded or contracted according to economic conditions of the time’ a view supported by Thirsk (1967, 60) for the period 1500 to 1640 when a few additional fodder crops were grown, ‘mostly peas, beans, tares and oats with some domestic corn’. Marshland was locally ploughed after the Restoration with corn bounties with some domestic corn. The agricultural focus was provided by animal agriculture, mostly sheep.

Although life was especially difficult for the inhabitants of the Marsh during the 17th and 18th centuries (Dobson 1998; Thirsk 1997, 110), investment continued, evidenced through reclamation and collection of the Scot. Economic incentive was sufficient for the agrarian economy to function, despite elites and clergy being disinclined to live there; landowners preferred the uplands, owning property in both upland and Marshland areas (Reeves and Eve 1998; Hipkin 2003). In fact, the rich grazing provided potential such that a ‘symbiotic relationship’ developed between the agrarian economy of Romney Marsh and the surrounding region that provided an overall mixed farming economy during the 18th century (Davison 2002) with seasonal sheep and cattle movement occurring between the Marshland and adjacent Weald. Economic integration is evident because locally raised beasts were sold at Maidstone while markets in Kent were attended by butchers from Gravesend, Rochester, Chatham, Sheerness, Canterbury and London (Perren 1989, 248). Sheep were also taken to Ashford for sale (Price 1809, 278–9).

Hipkin (2003) reports a survey by Maylam on Lady Day 1768 that was aimed to ensure land occupiers were ‘duly and equitably scotted and charged’ towards the maintenance of sewers and sea-defences, and to provide an authoritative point of reference ‘which may at one view inform the enquirer of the particulars of any parcel of land, and how it stands charged, without the trouble of overlooking or inspecting the maps’. Analysis demonstrated that, on Romney Marsh, a revival of owner occupation meant some larger tenant farmers may have enjoyed a ‘measure of prosperity’ during the later 17th and early 18th centuries. Low grain prices may have benefitted meat and dairy producers at the time, then between 1760 and 1820, there was growing consumer demand, increase in competition for tenancies and a marked revival in owner-occupation. Improved rents also helped smaller proprietors but compromised larger tenant farmers, so that, by 1800, there was a reduction in acreage per occupier.

Other economic activity related to the Marsh’s location between London and the continental mainland. With landowners absent, land and livestock was maintained by ‘lookers’. Consequently, smuggling in the 18th century was rife; imports included tea, gin and brandy, involving large gangs. Wool was exported to France, and this illicit trade was enthusiastically pursued by riding officers (excise men) and dragoons. Miscreants were able to load wool from horseback onto ships bound for France. Intervention tried to prevent this: wool purchase was forbidden within 15 miles of the coast, and farmers within 10 miles of the sea were expected to account for all their fleeces.

Adam Smith, famously a supporter of the free market, was opposed to intervention and despised ‘man-made laws’ evidenced by his famous comment ‘that a smuggler would be an excellent citizen, had not the laws of his country made that a crime which nature never meant to be so’. This justification ignored the terrorising of the countryside by gangs of smugglers (Waugh 1985, 7). Smuggling was destined to diminish after the reduction of Customs duties from 1840. Agricultural prices remained an issue and Romney Marsh was proving an arena for economic policy on several fronts.

The geography around 1800 is recognisable today (Fig. 9.1), though the coastline is more irregular because full reclamation was not achieved until about a century later. Change was occurring, so that by the 1830s the Marsh was one of the healthiest places in Kent (Dobson 1998). One likely reason for a dramatic decline in mortality during the period was improved drainage (especially the imposition of the RMC) and a reduction in pockets of stagnant water. Other factors may have included anti-malarial drugs and a population that developed some immunity. From dismal beginnings, the Marsh was set to become an exemplar of agricultural development achieved in pursuit of food security. In terms of economics (‘the dismal science’), we may contemplate the area outpacing Malthusian predictions over the following two centuries.
Fig. 9.1. Romney Marsh c. 1800 showing the system of drainage and the outfalls immediately prior to the construction of the Royal Military Canal. (Source: Price 1809. Copyright: British Library.)
Interventionism

Interventionism is ‘any form of government interference with market forces to achieve economic ends’. Major instruments include taxation, regulation and subsidy (Baxter and Davis 2003). To these may be added promotion of new technologies, surveys of assets with an instrumental purpose, rewards for good practice and even the acquisition of land by public bodies or others in the national interest. At a time when Parliament was dominated by large landowners, there were two main mechanisms available to the agricultural policy maker: market intervention by law, typified by the Corn Laws (there were also Wool Laws) and action taken through the Board of Agriculture (1793), and its successors. Such interventions were to impact Romney Marsh in the longer-term.

Prior to 1700, most corn had remained within the country and the price remained relatively low, but after 1757 corn imports rose, and in 1773, Adam Smith reports intervention to restrict exports (Kerridge 1967, 335–6). Rather than place bounties (incentive payments) on corn exports to protect the home producers, duties were placed on imports, yet Britain still became a net importer of corn. The price of corn on the London market saw prices rise dramatically between the mid-18th century and 1815–19, after which economic disequilibrium lead to falling prices (Holderness 1989, 104). For the periods 1785–94 and 1800–14 the rise was 94% for wheat alone; in the 1790s fear of hostilities with France linked to domestic food demand caused the Government to intervene.

John Boys, whose opposition to tithes in reducing profitability of Kent farmers will be discussed later, felt there were significant injustices due to price intervention; claiming it impaired agricultural improvement:

The corn and wool-laws were professedly enacted to keep down the price of those articles; if, therefore, they do operate according to their original intention, it needs no argument to prove that they are obstacles to improvement. (Boys 1796, 176).

After deliberation Thomas Malthus was influential in promoting protectionism through Corn Laws, believing in 1815 that restriction of imports would stimulate domestic production (History of Economic Thought undated). It appears market forces could not be relied upon to supply from the home market, neither could external supplies be relied upon because Britain is prone to being cut off from supplies beyond its shores. Unpopular in Britain and Ireland for preventing importation, Corn Laws continued in force due to concern over recession in the home industry. They were repealed in 1846 in the interest of free trade. The Wool Laws, aimed to prevent the export of English wool, had been repealed in 1825.

The Board of Agriculture was formed by Royal Charter in 1793 as a result of lobbying by John Sinclair. Seen as a forerunner to the Department for Food and Rural Affairs, its composition was dominated by landowning interests. Lord Lonsdale, the Duke of Bedford, Coke of Holkham were all members, as well as the great agricultural improver Arthur Young F.R.S. Sinclair ‘believed that a public society would have more weight than a private institution for the promotion of agriculture’, yet the Board was still seen as a government department (Goddard 1989, 379). In its role to give impetus to the New Agriculture, although it had no bureaucratic function, public money was involved as was private subscription (Plumb 1950, 152), it received a grant of £3000 per annum from Parliament (Plumb 1950, 379–83).

The Board commissioned agricultural surveys on a county basis in order to ascertain the full state of agriculture, promote the most advantageous methods of agriculture, act as a general magazine for agricultural knowledge and inspire local societies. Romney Marsh was to undergo scrutiny as a result, and the General Views produced were concerned with the soils, land use, grasses, stock, grains, fallowing, manures, enclosure, wages, labour, drainage processes, roads, leases, societies and improvements in a given county. The outcomes are variable in length, integrity and quality so that re-surveys were commissioned from 1796 (for example Boys (1805) for Kent and Young (1808) for Sussex). Although underfunded in its day, the General Views are of great historical value, despite lacking detail and accurate spatial reference. Other achievements of the Board were the encouragement of agricultural societies and award of prizes for good practice, including irrigation and the sponsorship of lectures on agricultural chemistry by Sir Humphry Davy (Goddard 1989, 379–83). In 1809, Daniel Price published: A System of Sheep-grazing and Management, as Practiced in Romney Marsh and he dedicated it to Sir John Sinclair.

The Board was not, however, regarded as altogether successful due to personality clashes, its aristocratic nature, and to ‘ill-conceived schemes’. The occasion of the dissolution of 1822 was perhaps due to a gradual reduction in activities, and there was withdrawal of government funding. Yet, the old Board was revived in 1838 as the Royal Agricultural Society (Scholarly
Societies Project undated); in 1840 the suffix ‘of England’ was added. Despite earlier problems, it was evidently important once more to create a body to promote the scientific development of Agriculture, and that it should be independent of government (Goddard 1989, 382–3). In 1889, the Board of Agriculture was re-formed, only to become the Ministry of Agriculture in 1920 (Whetham 1978, 122), clearly now a department of state. Notwithstanding the complexity of issues, the rise of quasi-public, and public institutions affirms the rise of a ‘production ethic’ whereby the aim is both to achieve security of food supply and increase the volume output of foodstuffs from the domestic agrarian economy. There is a clear realisation this is a matter of national interest meeting both strategic and economic needs. These developments were to greatly impact upon Romney Marsh.

A Long View of the National Picture

End of an Era

The Napoleonic period provided the demand for farmers to both increase production and convert grass to corn, although prices slumped afterwards. However, the period from approximately 1840 to 1880 has been termed ‘Victorian High Farming’, and whatever this means, the success of domestic agriculture cannot be denied. Even more so, the period 1853 to 1863 was a ‘golden age’ and only after 1879 was the fall in grain prices so steep that minor adjustments could not save many farmers from ruin (Thirsk 1997, 147–9). The period after the repeal of the Corn Laws presented British agriculture with a more uncertain picture, although it was to be some time before serious, protracted recession set in. There had been a short-lived sharp recession immediately after 1846, and subsequent prosperity, accompanied by a long-term structural shift towards pastoral farming as well as investment in the new technology of land drainage. For the first time, this was subsidised by government, although it produced at best a poor return on investment. The impact of another Victorian innovation, steam ploughing may likewise be regarded as over-rated. It was ley farming that produced the single most important change in farming practice (Robinson 1988a, 30; Perry 1975, 153–72). However, for some three decades following the repeal of the Corn Laws, there was insufficient cheap corn from abroad available to undercut domestic corn prices through importation (Robinson 1988a, 24–5). On Romney Marsh there was a small, but steady rise in tillage area although it remained small when compared with the total.

There were two good reasons for the Great Agricultural Depression in British agriculture. The immediate misfortune was wet and cold seasons that ruined several harvests in the 1880s, followed by heat and drought. The second cause was cheap grain imports from North America, with Australian producers available if the former failed. Refrigerated ships were to impact upon home meat production hence the depression persisted well into the first decade of the 1900s. Edwards (1987, 8) observes that, for England and Wales, the area of tillage crops fell from 48% in 1866 to 32% at the end of the century, a sure sign of recession in the domestic industry. The national proportion of tillage remained at least double, sometimes three times that on Romney Marsh, emphasising the continuing importance of grazing land on the latter. The natural response of Romney Marsh farmers was to take refuge in their traditional skills based around sheep farming, with a disinclination to invest in arable, although overall sheep numbers also fell reflecting the deep recession. In reality, the period between the late 1870s and 1939 may be described as one of protracted domestic agricultural depression (Turner 2000, 208). There was, however, a brief recovery during the First World War.

First World War

Government intervention during the First World War was late to arrive. The initial response was to leave agricultural production to the market, although since the later 19th century, the Board of Agriculture had concerned itself with land tenure, plant and animal disease control, dissemination of information and supervision of education and research through grant-aid (Whetham 1978, 64–9). When war broke out on 4th August 1914, Lord Lucas, President of the Board of Agriculture, announced that he saw ‘no occasion whatever for public alarm over food supplies’. It is unfortunate that wartime impacts on labour and the supply of heavy horses, or pressure on imported fertilisers and foodstuffs were not foreseen (Whetham 1978, 70–75). Relatively unfettered market forces resulted in food-price inflation, and by June 1916, retail food prices were about 60% higher than the pre-war level. With a poor harvest in 1916 and submarine warfare disrupting imports, decisive government action was required. Milk prices came under control (Whetham 1978, 111), and a minimum wage was
established for agricultural workers with guaranteed minimum prices set for wheat and oats (Whetham 1978, 91–2). The War Agricultural Executive Committees (WAECs) were district committees, staffed by farmers, professionals, trade unions and landowners who were to visit every farm in their area of responsibility (from spring 1917) in order to ascertain how much extra ploughing could be undertaken (Whetham 1978, 97) as well as to comment upon the efficiency of farming. Persuasion was the main weapon, but the Board reserved the right (for the first time) to dispossess an owner or occupier who did not co-operate. As a consequence, spring sown cereal and potato output was increased by ploughing both temporary and permanent grassland (Garrad 1954, 82). A Food Production Department established by the Board of Agriculture in 1917, organized and distributed agricultural inputs (such as labour, feed, fertiliser and machinery) and acted to increase output of crops. The ploughing of pasture in 1917–18 was judged successful in production of potatoes, fodder crops, wheat and oats. Subsequently, the Corn Production Act of 1917 was to guarantee minimum prices for wheat and oats (barley was omitted out of deference to the temperance movement; Whetham 1978, 95). One challenge was to stabilise prices into the post-war period. This was to prove impossible.

**Inter-war Problems**

Between 1918 and 1920 prices were controlled (Whetham 1978) and an Agriculture Act of 1920 promised price guarantees with four years’ notice of removal (Thirsk 1997, 150). This was followed by a dramatic fall in agricultural prices (Whetham 1978, 140). The government, fearful of the economic consequences of guaranteed minimum prices for wheat and oats, repealed parts of the Act, such that, in practice, it was not honoured and hence seen as a ‘Great Betrayal’ by farmers (Robinson 1988a, 71); although to appease farmers short-term acreage payments for areas planted in cereals were made as a transition, with enforcement of minimum standards of cultivation repealed (Whetham 1978, 141). By 1922 there was effectively no subsidised production in agriculture, only a return to a politically expedient belief in market forces. Agricultural prices fell dramatically between 1921 and 1925 (Whetham 1978, 142); sadly for Romney Marsh farmers the price of wool also fell disastrously between 1920 and 1921. By 1923, the acreage under grass nationally was the same as in 1914 (Thirsk 1997). G.H. Garrard was a sometime agricultural extension worker in Kent who also served on the Kent WAEC during the First World War and became Chief Advisory Officer when the Committee was re-constituted during the Second World War. He reports:

After the First World War and the repeal of the Corn Production Act, large areas of land in Kent, as in other countries were allowed to tumble down to grass ... the process of declining arable acreage, and correspondingly increasing acreage of permanent grass and leys of excessively long duration continued up to 1937 when war clouds loomed heavily on the horizon. (Garrad 1954, 85)

Alongside food security, land drainage was another consideration. Stating the obvious, Ailwyn Fellowes’s preface to Charles Clayton’s book *Land Drainage from Field to Sea* (1919) poses the rhetorical question:

Field drainage is a topic that has often engaged the attention of agriculturists, scientific as well as practical, but how many of them have stopped to consider that land drainage is of little use unless it extends from the field to the sea?

Fields must drain to rivers (or to main sewers); these areas must convey water to the sea. Clayton, who joined the Ministry of Agriculture in 1884, was developing joined-up thinking in land drainage and as Chief Drainage Engineer from 1917 he was responsible for technical advice on water-catchment areas, paving the way for the Land Drainage Act of 1918; without a second thought for habitat destruction. However, he does not specifically mention Romney or Walland Marshes; they were presumably off limits for drainage improvements at this time.

Initially, conditions in the inter-war period made field drainage uneconomic to the farmer, neither was there the social return on investment in arterial drainage needed to facilitate it. The Ministry of Agriculture, however, carried through some arterial drainage. What was needed was reform of the ‘archaic and chaotic system of drainage administration and to overcome opposition from the farming community to paying for its programme’ (Bowers 1998). Administrative reform was consolidated in the Land Drainage Act of 1930 with associated changes in the financial arrangements. With the immediate pre-Second World War changes in agriculture favouring conversion to arable, in tandem with the provision of the 1930 Act, the ingredients for an unprecedented ploughing campaign were now in place. The Wheat Act (1932) heralded changes away from the *laissez-faire* before the Second World War.
Producers of wheat received a subsidy of the difference between average prices for British wheat, and a standard price, termed the ‘deficiency payment’ (Robinson 1988a, 149), such that in the time period 1932 to 1938 the area of wheat in Great Britain rose by 236,000 ha. Government support for agriculture, in one form or another, continued to the end of the period covered by this paper. Sheail (1999) identifies the Land Drainage Act of 1930 as seminal, not only in improving regional drainage (paving the way for an arable expansion), but also in causing what was eventually to become a conflict of goals between drainers and conservationists. Furthermore, un-regulated markets could not be relied upon to meet demand for food in times of absolute national crisis. In 1939, an administration was being formed for a food-production campaign which had been so conspicuously lacking at the outbreak of war in August 1914 (Whetham 1978, 329). It was to the idea of a planned economy that the wartime government now turned. This was to have the single largest impact on the landscape of Romney Marsh since its original reclamation.

Second World War and After
The late intervention in agriculture during the First World War was not going to be repeated. Echoes of the 1793 Board of Agriculture’s General Views emerged as the National Farm Survey (1941–43) and so thorough was this it was dubbed a ‘Second Domesday Book’. In its wake there were powers once more to remove inefficient farmers (Short et al. 2000). In April 1941, the re-constituted County WAECs, once more, received a missive from the Ministry of Agriculture and Fisheries setting out the scope and purpose of the survey:

- A Primary Farm Record for each farm providing information on tenure and occupation and the natural state of the farm, including its fertility, adequacy of its equipment, use of water and electricity, the degree of infestation with weeds or pests and the management condition.
- The complete 1941 June 4th census return for the farm including statistics of crop acreages and livestock numbers and information on rent and length of occupancy.
- A map of the farm showing its boundaries and the fields contained within.

(National Archives 2007).

Every farm and holding of five acres (2 ha) and more was to be surveyed, including those of market gardeners, horticulturists, and poultry-keepers. Holdings of one to five acres, representing less than one per cent of the total area of crops and grass, were subject to a separate survey. There was also information gathered relating to motive power and labour.

Between 1938–39 and 1941–42, gross outputs of agriculture increased by two-thirds while real farm net income increased more than three-fold. Between 1939 and 1942, production of wheat and barley rose by about two-thirds, the tonnage of potatoes almost doubled. Correspondingly cattle numbers remained constant while sheep numbers fell. Typical areas targeted for ploughing included the ‘lower chalk bench’, beneath the escarpment of the downs across southern England, and areas of reclaimed marshland. Bowers (1985) can declare that British farmers had a good war, yet Sheail and Mountford (1984) stress the wartime desire to stabilise the agriculture sector, and a post-war sentiment favouring planned use of land resources.

The policy drivers aimed at securing post-war food security are worthy of scrutiny. The Agricultural Act of 1947 included both supportive measures and a threat of land acquisition in the national interest. It required that policy should promote and maintain a stable and efficient industry in the interests of national food security and provided for the welfare of those working in the industry (Bowers 1985). In supporting production, the Act set the trend for domestic food security as a government priority, a policy which continued until the accession of the UK into the European Economic Community (EEC) in 1973 (Robinson 1988a, 149–50). There was an Annual Review that was set to resolve conflicts between a desire for stability with minimum prices for the consumer and a need to ensure proper remuneration for farmers. There were guaranteed prices that could be manipulated to raise output, or to control excess production.

If price guarantee was a carrot, there was also a stick that had political implications for Romney Marsh. The Act requires, Section 84, 1 (a) (ALC 1949, 5) that:

full and efficient use of the land for agriculture is being prevented by reason of work not being carried out, or fixed equipment not being provided, and that having regard to the nature of the work or equipment required for such use of the land as aforementioned it cannot reasonably be expected to be carried out ... he [the Minister] may acquire the land or any part thereof by compulsory purchase or by hiring.
Here is the potential for a clash between property rights and state intervention. Actions by ‘The Minister’ could be regarded as state dictatorship; especially if he meddled in matters of private land ownership. Areas referred to in Parliament at this time were Borth Bog in Wales, The East Anglian Fens and Romney Marsh (Sheail and Mountford 1984). The newly formed Agricultural Land Commission (ALC) from 1945 was tasked with eliminating negligence and incompetence on farms using compulsory purchase or hiring if necessary. To summarise, its terms of reference (ALC 1949, 6), were to extend arable cultivation in the national interest and to establish the pre-requisite conditions for the maintenance of any arable acreage, including labour, land drainage, road infrastructure and fixed equipment on farms. The case is made that Government acquisition of land might follow a recommendation in an ALC report. An area exceeding 50,000 acres (20,250 ha) on Romney Marsh was ‘one such area requiring consideration’ (ALC 1949, 5).

Murray (1953, 131) reports a tongue-in-cheek opinion that was in circulation within the Romney Marsh community. The ALC was appointed to raise the prestige of the (Attlee) Government, and that Benito Mussolini had ‘done something to the Pontine Marshes’ with the improvement of agriculture in mind. The memory evidently stuck: one Kent landowner commented to the author, some 20 years ago: ‘there was a Labour Government in those days who wanted a large-scale experiment in land nationalisation and Romney Marsh was going to be it’. Nationalisation of land never occurred, although government investment continued apace. Economic assistance with land drainage was available from 1930, and in the post-war era, grant-in-aid reached as much as 50% of capital costs. Between the early 1930s and the mid-1980s, estimated resulting loss of grazing marsh were 64% in the Greater Thames, 37% in Broadland and 48% in Romney Marsh (UK Biodiversity Action Plan 1995). The ALC report is a remarkable, and fair, document. Murray (1953, 133) reports the study was actually prompted by the farmers’ leaders, even though there was equal scepticism in that quarter. The report praises the inhabitants for their fortitude in times of war (ALC 1949, 17), in continuing their agriculture, supported by the Women’s Land Army and by prisoners of war.

Between 1954 and 1980 the drive to increase farm efficiency continued so as to achieve increases in net farm income (Bowers 1985). In real terms, a long-time downward trend in public expenditure on agricultural support is evident, although there was a peak in the late 1950s and early 1960s, and a sudden downward decline is clear in the mid-1970s due to falling grants and subsidies. Until 1964, the objective had been to make British agriculture self-supporting through state investment driving productivity and efficiency. Winter (1996) reports limits on production between the late 1950s and early 1960s that came to affect milk, potatoes, eggs, and cereals. Mechanisms were not only price support and grant-in-aid, but advice through the Agricultural District Advisory Service (ADAS) which represented a logical extension of the ‘good practice’, promoted through the Board of Agriculture from 1793. With echoes of the Corn Laws, there was a period where policy was aimed at the protection of the home market in the face of a growing world food surplus (Winter 1996).

Entry into the EEC in 1972–3 was followed by a period of agricultural domestic policy harmonisation with Europe (Robinson 1988a, 150). In the Common Agricultural Policy, British farmers received high price guarantees favouring the arable sector (including when prices fell below a threshold level) and there were high tariffs placed on importation of food from non-EU states. Increased production was incentivised. The result exaggerated trends already evident in British agriculture, towards arable production, protection of the domestic market and there were to be ecological repercussions for many landscapes, especially on Romney Marsh. Eventually, Britain became subject to quotas to reduce surpluses. Bowers (1985) considers that, while post-war policy had failed to make British farming more competitive, it achieved the political objective of permanent protection, at least within the time-period considered by this paper. Aside from economic costs, landscape features and habitats (he notes grazing marsh especially) were lost through widespread ploughing, changes that were to pave the way for the Wildlife and Countryside Act (1981).

The 1970s and 1980s saw a decisive change in environmental policy. Studies at the University of Reading and at Wye College accurately predicted (all other things being equal) a ‘land surplus’ whereby the production area of the UK under intensive cropping would outstrip demand by 2000 (Potter et al. 1991); an area of perhaps as much as one million ha would have to come out of cereal production. The EU ‘grain mountains’ in the 1980s proved the point. Surplus land might be ‘set-aside’ to achieve conservation benefits. Free-market ideologies under neo-liberal-minded governments from 1979 were to change the nature of support for farms, but in reality this was not to return agriculture to a free market. Governments also had to grapple with the problems of habitat loss, soil degrada-
tion and water pollution under production agriculture and Romney Marsh was to be no exception. It is the growth of the scientific and technical knowledge base that must be considered next.

Production Landscapes and Technical Endeavour

Early Land-use Information

Most significant agricultural writers of the early part of the period in question, and generally at the behest of the Board of Agriculture, had something to say about Romney Marsh. Marshall (1798, 372) exalts the produce of the land and the industry of its occupiers, concentrating on ‘grass or perennial herbage’ noting ‘arable crops engaged little of my attention’. Arable was, however, present in the late 18th century and, although small in acreage, played an important part in the economy, although the perception was largely as fodder. Hall and Russell (1911, 58) ascribe much post-medieval ploughing of the Marsh to demand ‘at the time of the Napoleonic Wars and again about 1850–60 when corn prices were again high, but since then, it has returned to pasture’. However, it should be recalled that Garrad (1954, 79) correctly suggests that a nucleus of arable was present throughout historic time.

However, the real drive for scientific agriculture on Romney Marsh can largely be ascribed to the 20th century. In reality, both the direction of research and the dramatic shift in the mode of production created a situation that could not reconcile research findings centred on the pastoral economy, with policies of food security. Furthermore, in this section, the evidence for a more mixed agrarian economy is examined and the emerging scientific and technical knowledge-base is outlined.

Thirsk (1967, 60) reports a few additional fodder crops (mostly peas, beans, tares and oats with some domestic corn) were grown on Romney Marsh in the post-medieval period. By the second half of the 17th century, ploughing may indeed have increased to supply beyond domestic needs and that required to supplement the hay ration. This situation seems to have persisted into the 18th century when some resident husbandmen (not absentee graziers) cultivated small areas not exceeding 15 acres (6 ha) in severality fields (those held by individual right). At Appledore Court Lodge in 1769 a 32 acre (13 ha) field was ploughed, then laid down again 20 years later, apparently suffering fertility problems as a result, and there was arable on Shirley Moor north of Appledore (Short 1984, 282–3).

John Boys’s *A General View of the Agriculture of the County of Kent* (1796, second edition 1805) actually paints a picture of a dynamic rural economy on Romney Marsh. Although dominated by sheep and cattle, there was a small arable sector. The landscape may already have been experiencing better management due to impending war. Nationally, it is estimated that 80,000 ha or more of hitherto neglected land in England was enclosed and brought into cultivation between 1790 and 1810 (Plumb 1950, 152), largely to feed the armed forces. Such a momentous change is unlikely to have escaped the Marsh, given its proximity to towns, ports and garrisons. Modern writers tend to omit reference to the arable sector, yet Boys (1796, 78–9) states:

> The very small portion of land under the plough is wonderfully productive in wheat, beans, oats and pease. The quantity annually broke up is thought to increase, owing to the moderate composition taken by the clergy in lieu of tithe, and the astonishing produce of the land. The practice of ploughing, however, is not general; and the greatest quantity in any one person’s hands, hardly exceeds eighty acres; very few have half so much, and most of the tenants none. The first crop, when the marsh-land is ploughed is usually pease, the second pease or beans; and then wheat succeeded by beans, and wheat alternately for a few years, with sometimes a variation of a crop of oats or pease.

At the start of the period in question there was both arable rotation and an appreciation of the soil fertility, although no mention is made in the above quotation of potatoes, or of root crops for fodder (Boys 1796, 112). Tenant farmers were disinclined to invest in arable. Boys (1796, 107) notes there is a common covenant in leases in the county not to break up old grasslands, although there may be a trend towards increase of ploughland, consistent with the national picture. The productivity of old meadows in producing ‘great crops of hay’ was used to fatten sheep (oxen were seldom fattened on the Marsh). Sheep were able to graze summer and winter (Boys 1796, 20) and the need for fodder crops was therefore not great.

Boys (1805, 40) notes a likely economic disincentive to plough:

> In Romney Marsh, the grass lands (except in the parish of Lydd) pay a modus in lieu of tithe; some of 4d, some 8d and others 1s. per acre; and corn lands pay
a composition from 4s. to 6s. A fair commutation for tithe, I think would occasion even a great number of improvements in agriculture ...

A ‘modus’ was a cash payment that was agreed between farmers and clergy _in lieu_ of tithe in kind, and it overcame practical problems of paying a tenth part of one’s real produce. It is likely that the considerably greater modus due for corn land, despite the greater returns for the farmer, could act as a disincentive to plough. Full commutation (replacement by cash payment) of tithe occurred in 1836 and as part of the process, maps were subsequently produced that give insights into land use during the period (Betey pers. comm.). Boys (1796, 176) felt there were hindrances to profitability arising from tithes, as he did with the Corn and Wool Laws:

That the payment of tithe in kind does operate against improvements evident, from the immense quantity of poor uncultivated land in most parts of this county (Kent), where the tithe is paid, remaining in its barren state; while some of the same sort of lands, where farmers happen to have the tithe themselves, are improved and cultivated to a high state of perfection and made as productive as some of the best lands.

Price (1809) recognises the value of ‘indigenous’ sheep production, and makes many suggestions for its improvement. He supported appropriate pay for extension workers, experimental farms for grazing and the sponsorship of lectures on the subject through the Board. Price was far-sighted; not only did he remark that ‘the grazing land in Romney Marsh appears, in general, to be rented above its real value, which is owing to the number of competitors’ (Price 1809, 285), but he also promoted the notion of ‘artificial foods’ (for winter fodder) such as cabbage, Swedish turnip, rape, potato, cole, Dutch turnip, and tares. Ploughing was advocated for the ‘breeding land’ (not the best land used for fattening) and also for the planting of corn. He reports that one Richard Coleman esq. of Dymchurch fed his wether tegs on ‘corn, cake and artificial vegetable food, which he finds extremely profitable’; the animals are kept sheltered from the north and east winds suggesting they fatten better when they do not ‘run at large’ (Price 1809, 316). His thesis concerning the growth of fodder is built on the assumption that many livestock die unnecessarily due to the lack of grazing overwinter (Price 1809, 315), yet remarks the graziers are reluctant to plough due to the cost, inconvenience and frequent absenteeism (Price 1809, 312–13).

Information relating to land use before 1860, for each parish, can be calculated from crop returns to government (notably for 1801) and from the later tithe maps and terriers. However, data on land use and livestock numbers at the parish level, as a result of the systematic collection of statistics, is only available after this time. The Crop Returns for 1801 (Turner 1981) were gathered by the Home Office, due to concerns about rising cost of living, particularly corn prices. The acreage of land under crops for each parish was required following the harvest of 1801. By no means all the returns survive in the National Archive, but fortunately there is data for the Kent part of the Marsh (Table 9.1). Scrutiny of the raw data supports the observation of John Boys and Daniel Price; a variety of arable crops were already being grown, although it is likely that much was destined for livestock and for local or domestic consumption. Cereals dominate the arable sector, but potatoes were also being grown. The average of the 12 parishes in Table 9.1 gives an estimated arable area of 5.3%, ranging from approximately 1% (Snargate) to 13%, the highest being Burmarsh, followed by Newchurch and Brenzet; the north part of Romney Marsh proper showing a trend towards a higher arable percentage in 1801.

The impression gained by William Cobbett on his Rural Ride in the area, August/September 1823 (Cobbett 1912), was of a pastoral economy dominated by the hardy Romney Marsh breed of sheep, and Sussex Cattle brought from the Weald to be fattened. Cobbett was unimpressed by the poverty he encountered, yet remarked upon wheat cultivation. Between Brenzet and Old Romney he saw ‘cornfields on one side of me and grass on the other. I asked what the amount of the crop would be. They told me better than five quarters to the acre. I thought so myself.’ Apparently, he had never seen corn like it before and reflected on how the American Prairies compared unfavourably. Between New Romney and Dymchurch he commented ‘sometimes grass land, sometimes corn-land’.

**Land Tax Returns (1798)**

A picture of the distribution of agricultural prosperity at the beginning of the Napoleonic Wars is given by the Land Tax Returns for 1798, which are preserved in the _Parliamentary Papers_ in the National Archives. Those for Kent have been analysed (Grover 1980) and abstracted on a parish basis in map form (Betts 2004). The assessments were intended to reflect rental values, and in Kent were unchanged.
Hadrian Cook

Table 9.1. Acreages of arable from the Crop Return 1801 for certain Kent parishes located wholly in Romney Marsh.

<table>
<thead>
<tr>
<th>Parish</th>
<th>Wheat</th>
<th>Barley</th>
<th>Oats</th>
<th>Potatoes</th>
<th>Peas</th>
<th>Beans</th>
<th>Turnips &amp; rape</th>
<th>Total acreage of record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brenzett</td>
<td>54.5</td>
<td>6.25</td>
<td>11.75</td>
<td>5</td>
<td>14.25</td>
<td>31.75</td>
<td>1.5</td>
<td>125.0</td>
</tr>
<tr>
<td>Brookland with Midley</td>
<td>16</td>
<td>14.25</td>
<td>24.25</td>
<td>10</td>
<td>6.5</td>
<td>10.5</td>
<td></td>
<td>81.5</td>
</tr>
<tr>
<td>Burmarsh</td>
<td>148</td>
<td>3</td>
<td>36</td>
<td></td>
<td>5.5</td>
<td>39</td>
<td></td>
<td>231.5</td>
</tr>
<tr>
<td>Dymchurch</td>
<td>32</td>
<td>9</td>
<td>7</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Fairfield</td>
<td>21</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>15.5</td>
<td></td>
<td>57.5</td>
</tr>
<tr>
<td>Ivychurch</td>
<td>102.5</td>
<td>23.25</td>
<td>11</td>
<td>2.25</td>
<td>1.5</td>
<td>87.5</td>
<td></td>
<td>228.0</td>
</tr>
<tr>
<td>New Romney</td>
<td>16</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8.5</td>
<td>9</td>
<td>2</td>
<td>41.5</td>
</tr>
<tr>
<td>Newchurch</td>
<td>141</td>
<td>21.5</td>
<td>32</td>
<td>6</td>
<td>51</td>
<td>4</td>
<td></td>
<td>255.5</td>
</tr>
<tr>
<td>Old Romney</td>
<td>54</td>
<td>7.25</td>
<td>26.5</td>
<td>8.75</td>
<td>21</td>
<td>48</td>
<td></td>
<td>165.5</td>
</tr>
<tr>
<td>St Mary-in-the-Marsh</td>
<td>30</td>
<td>16</td>
<td>4</td>
<td>10</td>
<td>24</td>
<td>17</td>
<td>18</td>
<td>119.0</td>
</tr>
<tr>
<td>Snargate</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Snave</td>
<td>20.75</td>
<td>9</td>
<td></td>
<td>0.5</td>
<td>1.5</td>
<td>25</td>
<td></td>
<td>56.75</td>
</tr>
</tbody>
</table>

from 1720 to 1798, although they were revised in other counties affected by Parliamentary enclosures. Evidently it was considered that, even if rents were raised, the geographical relativity reflecting underlying variations in land quality was unaffected, and there is no evidence that this assumption was seriously disputed.

Apart from the high values in the vicinity of towns, the average levy on rural land in Kent was about 10d per acre but there were considerable regional variations. High values are found in the parts of north and mid Kent where arable crops, fruit and hops were widely grown. Remarkably, equally high values are to be found on Romney Marsh, where the overall average is about 15d per acre. This average masks considerable differences within the Kentish portion of Romney Marsh (Table 9.2). The northern parishes generally have high values, with Burmarsh and Eastbridge exceptionally high (over 25d per acre), almost the highest rating of any rural area in Kent. High values seem to apply to those parishes with a small but significant area of arable land in the Tithe Commutation Surveys of around 1840, but as most of their agricultural area was pasture, this grassland was presumably more productive and flexible than elsewhere, probably reflecting more efficient drainage. The parishes with low values include Lydd, with a high proportion of shingle, together with Snargate, Fairfield, Midley and Old and New Romney, which around 1840 had very little arable land, and included areas, such as The Dowels, which were difficult to drain effectively.

Tithe Commutation Surveys (1835–44)
The Tithe Commutation surveys recorded the name, area, owner, occupier, land-use category and tithe liability of every titheable parcel of land in England and Wales. In Kent virtually all agricultural land (97.8%) was included (Prince 1959). The surveyors were expected to obtain new information, although they may have made some use of existing records, e.g. for levying parish rates. The survey for each parish consists of a map or maps showing the parcels, and a list giving the information about each (known as the ‘terrier’). The Kent parish maps have been digitised and most of the terriers have been transcribed and posted on the Kent Archaeological Society website, including all the parishes in and around Romney Marsh. Kain (1977) published an introduction to the Kent surveys demonstrating they extended from 1835 to 1844. Most significantly, the surveys apply to the period before the Abolition of the Corn Laws in 1846.

With the exception of buildings and gardens, almost all the land area of the Marsh is recorded as either arable or pasture. Orchards and hop gardens were of negligible extent. In some parishes a few parcels were recorded as ‘meadow’, implying regular cutting for hay, but this is obviously not consistent, and the parcels have been included with pasture in the analysis reported in Table 9.2. The term ‘arable’ is defined as land ploughed in the last three years, and may thus include some recent grass swards, but these are probably not extensive, as ploughing up grassland was not a favoured practice.
The surveys show that, especially in the northern part of Romney Marsh, most farmers had a small area of arable land, amounting on average to about 10% (Table 9.2), and it supports the broad pattern shown in Table 9.1. If wheat growing was profitable but limited in area by shortage of labour, it would imply that parishes, such as Snargate, where there was little arable land, had a watertable that was generally too high for successful wheat growing. Conversely, Newchurch is the parish with by far the highest proportion of arable land: 27.7% (Table 9.2) of the total parish area, 29.9% of the area of crops and grass. The soils around Newchurch are generally of clayey texture, and would only be suitable for wheat growing if there was efficient artificial drainage. The average arable area for the parishes of the Marsh in Kent around 1840 (10.3%) is virtually double the estimated area for 1801 (Table 9.1). However, the accuracy of the 1801 crop returns has long been questioned; it has been suggested they are liable to underestimation (Minchinton 1953).

For Sussex, Stamp (1943, 499), using information from Tithe Commutation documents, was able to map the occurrence of arable land, and by about 1840 there were three areas of arable located within Walland Marsh roughly between East Guldeford and Camber.

William Cobbett’s observations during 1823 suggest the harvest was mainly wheat, of a long-strawed type, growing nearly five feet high, and including both red and white varieties. Recalling he asked the likely yield and was told this would be ‘better than five quarters to the acre’, that is about 2.5 tonnes per ha, a figure that would remain respectable up to the 1940s. Cobbett considered that the crops on Romney Marsh were much better than those he had seen elsewhere, and that the land was evidently ‘most excellent’. One might wonder why, in this case, few farmers had more than 20 acres or so of arable land? The answer emerges from Cobbett’s remarks about the remarkably scanty population of the Marsh, and the difficulty of cutting the long-strawed crop by hand. He notes that the harvesting of wheat was often put out to contract, the common price on the Marsh being fifteen shillings per acre, as compared with twelve shillings on the upland near Appledore. The implication is, perhaps, that contract harvesting was more frequent on Romney Marsh than elsewhere.

### Table 9.2. Land values and land use in the Kent parishes in Romney Marsh 1798–1845. One acre = 0.405 ha.

<table>
<thead>
<tr>
<th>Parish name</th>
<th>Total area 1840 (ac)</th>
<th>1798 land tax (d/ac)</th>
<th>Arable c. 1840 (ac)</th>
<th>Arable c. 1840 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brenzett</td>
<td>1819</td>
<td>21–25</td>
<td>258</td>
<td>14.2</td>
</tr>
<tr>
<td>Brookland</td>
<td>1886</td>
<td>21–25</td>
<td>194</td>
<td>10.3</td>
</tr>
<tr>
<td>Broomhill</td>
<td>1453</td>
<td>21–25</td>
<td>160</td>
<td>11.0</td>
</tr>
<tr>
<td>Burmarsh</td>
<td>1834</td>
<td>26–30</td>
<td>282</td>
<td>15.4</td>
</tr>
<tr>
<td>Dymchurch</td>
<td>1406</td>
<td>21–25</td>
<td>152</td>
<td>10.8</td>
</tr>
<tr>
<td>Eastbridge</td>
<td>1150</td>
<td>26–30</td>
<td>95</td>
<td>8.3</td>
</tr>
<tr>
<td>Fairfield</td>
<td>1206</td>
<td>6–10</td>
<td>111</td>
<td>9.2</td>
</tr>
<tr>
<td>Hope all Saints</td>
<td>1493</td>
<td>16–20</td>
<td>182</td>
<td>12.2</td>
</tr>
<tr>
<td>Ivychurch</td>
<td>4567</td>
<td>21–25</td>
<td>410b</td>
<td>9.0b</td>
</tr>
<tr>
<td>Lydd</td>
<td>12,043</td>
<td>6–10</td>
<td>740e</td>
<td>6.1e</td>
</tr>
<tr>
<td>Midley</td>
<td>2161</td>
<td>6–10</td>
<td>27</td>
<td>1.2</td>
</tr>
<tr>
<td>Newchurch</td>
<td>3139</td>
<td>11–15</td>
<td>869</td>
<td>27.7</td>
</tr>
<tr>
<td>New Romney</td>
<td>2564</td>
<td>6–10</td>
<td>93</td>
<td>3.6</td>
</tr>
<tr>
<td>Old Romney</td>
<td>2546</td>
<td>6–10</td>
<td>152</td>
<td>6.0</td>
</tr>
<tr>
<td>Orgarswick</td>
<td>402</td>
<td>21–25</td>
<td>42</td>
<td>10.4</td>
</tr>
<tr>
<td>St Mary-in-the-Marsh</td>
<td>1916</td>
<td>16–20</td>
<td>283</td>
<td>14.8</td>
</tr>
<tr>
<td>Snargate</td>
<td>1600</td>
<td>6–10</td>
<td>15</td>
<td>0.9</td>
</tr>
<tr>
<td>Snave</td>
<td>1494</td>
<td>16–20</td>
<td>237</td>
<td>15.9</td>
</tr>
<tr>
<td><strong>Total or mean</strong></td>
<td><strong>44,679</strong></td>
<td><strong>15</strong></td>
<td><strong>4302</strong></td>
<td><strong>10.3</strong></td>
</tr>
</tbody>
</table>

Notes: a including Blackmanstone; b a few entries are illegible – might be up to 70 acres more; c includes several parcels of ‘arable and shingle’, so will be slightly less.
On the grassland generally, Cobbett notes that in addition to immense flocks of ‘very pretty and large sheep’, there were large numbers of Sussex red cattle brought in as two-year-old stores from poor pastures in the High Weald. The high overall productivity of land in Romney Marsh made its ownership a good investment, reflected in the high proportion of the owners recorded in the tithe terriers living elsewhere.

**Royal Military Canal (RMC)**

Fig. 9.1 shows the environment across which the RMC was constructed. The RMC was to operate as a ‘catchwater drain’, reducing hydraulic loading from the uplands on the network of sewers to the south and east (Robinson 1988b). An earlier proposal, to flood Romney Marsh as a defence in the event of a French invasion, was abandoned; a defensive stance was preferred (George and George 2004, 33). While this reminds us of the vulnerability of the Marsh to flood, it was never going to be popular with farmers and landowners who would suffer destruction and soil salinisation in the event of sea flooding. Prime Minister William Pitt visited Dymchurch in October 1804 and announced the plan for a defensive canal (George and George 2004, 49) that gained the support of landowners. Work soon started with consulting engineer John Rennie advising on canal lining, dimensions and likely construction problems. Romney Marsh landowners were thus persuaded that, not only would it help defend the country, but that it supported drainage during winter and acted as a reservoir in summer for sub-irrigation and watering livestock. Pitt became so popular that local people referred to ‘Mr Pitt’s Ditch’ (Romney Marsh Countryside Project 2005a). The feature can be seen as isolating in both a hydrological and geographical sense, yet improved drainage would inevitably ease the integration of the Marsh into the national economy, by improving options for production agriculture. Cynics may say the plan to flood the area was actually a ruse to gain agreement for a canal! Interestingly, during the Second World War, Pett Level was flooded as far as the RMC, in case of invasion.

With ground levels within the Romney Marsh sub-catchment generally between 2 and 3 m OD and with levels in the Walland Marsh sub-catchment around 3.8 m OD, gravity drainage is generally found to be appropriate. However, some areas are lower (particularly The Dowels where subsoil peat shrinkage has lead to areas standing close to sea level) and there is a record of a windmill lifting water in the early 19th century (Southern Water Authority 1979). Sadly, despite evidence for windmills on early maps, their purpose is unclear – lifting water or milling (Burnham pers. comm.). Pumping to RMC was by steam from 1852, diesel pumps after 1938 and later electrical pumps were employed (Robinson 1988b). The Union Pumping Station was also constructed to assist arable drainage with additional stations to raise water into the RMC today (Southern Water Authority 1979). In 1876 a new cut linked the RMC southwards to the Dymchurch Wall and the sea near the Great Redoubt, with a dam at West Hythe cutting off the former eastern extension and improving drainage efficiency (Robinson 1988b).

**Farming During the Slumps**

‘Victorian High Farming’ ended around 1880 in the Great Agricultural Depression. Edwards (1987, 8) reports remains of Victorian field drains, reflecting investment associated with former arable on the Marsh. In the last half of the 19th century, permanent pasture occupied over 80% of farmed land and the few tillage crops were largely grown for fodder (rather than cash crops). By 1891, sheep numbers were extraordinary, reaching almost 225,000; outnumbering cattle by about 65 to one. Land-use mapping suggests most of the arable was on Romney Marsh proper and Denge Marsh; in contrast to today, there was very little in the general area of Walland Marsh, although Edwards (1987) suggests the category of ‘rough grazing’ may in reality be former arable. Arable success at that time came from seed crops: turnips and mangolds rather than the cereals and potatoes of later times. Unsurprisingly the first expedient chosen by farmers after the Great Agricultural Depression had been to lay arable land down to grass. On Romney Marsh tillage crops fell compared with England and Wales as a whole (Edwards 1987) and sheep numbers also declined. Fearful of bankruptcy, many farmers opted to remain in pasture in the hope of surviving until better times.

The response on Romney Marsh to the First World War was ‘patchy’ with certain farmers on the east side turning almost completely arable, others only to plough the poorest land first. The overall increase in cereals was not great; although there was a doubling of the potato area, cattle numbers increased and sheep numbers fell. This may be attributed to labour shortages, the lack of infrastructure for arable farming and a strong tendency for large areas to remain as summer grazing for absentee farmers (Edwards 1987, 9). Evidently steam ploughing had been practised and heavy land was thus ploughed directly after harvest.
Garrad (1954, 82) notes the disappearance of steam-ploughing contractors on the Marsh which became a hindrance to arable farming before the advent of the tractor finally displaced horse ploughing. Basden (1998) recalls steam ploughing in the 1920s and that it was regarded as unsuitable due to the headland that was left.

The inter-war depression saw a disproportionate area of permanent grass return, and Stamp (1962, 371) declared the majority of the area to be ‘first quality grassland (suitable for) fattening and pastures and good dairy pastures’. Perversely, this may have perpetuated the notion that Romney Marsh was only really good for animal husbandry, and, in any case the Land Utilisation Survey of Great Britain paints a picture of pasture dominance for the inter-war years (Briault 1942). Marsh farmers were still largely reliant upon market prices of sheep and wool and, until 1931, graziers did quite well because prices remained at a high level. From 1932 rising labour costs collided with falling prices for sheep. Garrad (1954, 79) clearly states that farmers had all their eggs in one basket. There were problems with grassland management, the breeding and management of sheep, with disease control, with wool prices, the demand for smaller joints of meat and there was also a problem with the proportion of grassland to arable. Ploughing would diversify farm income. In reality, the increase in tillage due to the outbreak of the Second World War was stimulated by a process that was already set in motion; a solution to ‘The Romney Marsh Problem’ (Garrad 1936).

Despite the areas of arable recorded on the small-scale maps of the Walland Marsh area in Sussex c. 1840 (Briault 1942, 499) and again for c. 1875 (Briault 1942, 503), only one small area is indicated for the 1930s in the Land Utilisation Survey (Briault 1942, 510). Walland Marsh is portrayed as almost continuous permanent pasture on the alluvial soils. In Kent there are several arable islands on Romney Marsh and Stamp (1943) notes: ‘On Romney Marsh, however, there are scattered arable fields – amounting to about 10% (arable land) of the whole’. He subsequently comments it was ‘at the time of the survey’ and it ‘does not distinguish the very varied quality of the land’. The survey took place before 1938 and it is certain that by 1943 Stamp knew that change was afoot. A governmental ‘ploughing up subsidy’ was actually on offer from 1938 (Garrad 1954, 4) and from 1930, as a result of the Land Drainage Act, the cost of sea defences and main drainage was met by Government grants (Garrad 1954, 73) that replaced the old rating system of ‘scotting’ on the Marsh.

Edwards (1987) notes the tenacity of Romney Marsh farmers and their disinclination to invest. The adage ‘whomever breaks pasture shall himself be broke’ (Edwards 1987, 9) was appropriate during recession when returns on arable investment were unlikely to be realised. For the sheep farmer, some years were better than others; the inter-war period being hard, but not impossible. The arable areas included a modest market gardening sector with seed growing long-established (Garrad 1954, 82). The crops grown included turnips, garden beet, mangolds, spinach, swedes, runner beans, dwarf beans, carrots, wild white clover, perennial ryegrass, and cocksfoot; the relatively dry climate and fertile soil were determining factors. The account given of the 1920s and 1930s by Basden (1998) describes wholly arable operations by Richard Blacklocks, her father, who was demobilised after the First World War. Located between Lydd and New Romney his ex-serviceman’s smallholding owned by Kent County Council was 11 acres (4.5 ha) and entirely arable. Initially the family grew wheat and broad beans under contract to a seed merchant later diversifying into potatoes and other crops. Draught was generally by horse although in the 1940s a labourer was employed and a tractor used.

Second World War and its Aftermath

During the Second World War, there was fall of around 50% in the sheep population, a rise in cattle numbers and a rise in tillage from around 10% to 35% (Edwards 1987). The reduction in sheep numbers was in part due to evacuation from 1940 on ‘sheep-train specials’ (Murray 1953, 130). Around 85,000 sheep were removed, some as far as Yorkshire ‘an immense and urgent task’ that, apparently, had precedence over the evacuation of civilians. Landscape impacts, often driven by the farming community, were achieved through formation of the Kent River Authority (from former amalgamations of catchment boards) that improved regional drainage, while from the late 1940s farmers commenced tile drainage (Edwards 1987, 14). Wartime labour shortages were addressed by employing the Women’s Land Army. Farmers were literally, as well as metaphorically, at the front line. There were clearly difficulties for agricultural operations including the blowing up of bridges across the RMC, military encampments, anti-aircraft installations and bombardment from aeroplanes and doodlebugs. In May 1940, there were once more plans to flood the area with sea water to hamper invasion (Garrad 1954, 79–80).
The conversion to arable during the Second World War again resulted in a variable response from farmers (Edwards 1987, 12). They were required to plough one-third of each farm, despite there being a poor understanding of arable farming and inadequate machinery. Actually, by 1940, the area of tillage crops was only 14% of the farmed area. Apparently, some farmers were pleased to start arable farming, while others were less so, again ploughing only the poorest land first. There is a record of one farmer renting poor land to plough, thereby protecting his own (better) pasture land in the face of wartime powers to grow arable crops. A fall in tillage crop area from 1945 to 1953 across England and Wales is not discernable on the Marsh (Edwards 1987, 13), ley farming increased the area of temporary grass, sheep numbers increased while cattle remained constant. At this time, underdrainage (‘tile drainage’) appears to have become commonplace. These trends continued and Edwards is able to talk of an ‘arable takeover’ between 1955 and 1985. The ley system comprised of four or five years of grass and tillage rotation, when principal cash crops were perennial rye grass and wild white clover seed, wheat and potatoes. This was progressively replaced by more continuous arable with cereals, potatoes and oilseed rape (Edwards 1987, 15). In 1955, cereals occupied around 17% of the farmed area; by 1985 this was almost 40%. The early crop potatoes stabilised around 400 ha after 1960, main crop potatoes peaked in the early 1970s at 850 ha, but fell back to around 650 ha by the end of the period. After the war, Lincolnshire farmers came to Romney Marsh because the soils were free of potato root eel worm, which had all but stopped potato cultivation in Lincolnshire. Backed by experience and able to raise capital for mechanisation and drainage, they sold their farms and were able to select suitable farms on the Marsh. By the mid-1950s the venture was deemed successful, although there remained an ever-present problem of crop disease with inappropriate crop rotations (Garrad 1954, 80). Indeed, the newcomers were starting to invest in sheep to graze their leys within the rotation (Garrad 1954, 81) suggesting that mixed farming might be replaced with a combination of ‘fenland farming’ and sheep farming, the choice dependent on suitability of soils for ploughing.

**Quantification and Mapping**

Land-use statistics have been collected systematically on a civil parish basis since 1866, and hence they provide much needed quantification of land-use areas. In this study, these are collated from a range of sources, but ultimately derived from the annual agricultural returns for 14 (later 13) parishes wholly within Romney Marsh (Green 1968; Pound 1986; Edwards 1987). The Parishes concerned are Burmarsh, Newchurch, Dymchurch, St Mary’s, Brenzett, Snargate, Brookland, Ivychurch, Old Romney, New Romney, Lydd, St Thomas the Apostle later amalgamated in Broomhill, and East Guldeford.

Fig. 9.2 shows the long-term decline of land uses (East Sussex County Council undated). Around 1950, about 84% of the 23,840 ha (in round figures 20,000 ha) of the Marsh was farmland, of the remainder 13% was largely beach and waste (Sheail and Mountford 1984; Edwards 1987, 33).
The most striking trend is the long-time decline in permanent grassland and a corresponding increase in tillage, with a specific plot shown for the temporary grass component that rises gently until the 1970s. Tillage rises to 1881 flattens out, there follows a decline until the early years of the 20th century caused by the importation of food stuffs, it peaks again in 1918, reflecting the ploughing of pasture and creation of new arable during the First World War. There is a dramatic fall into the 1920s, reflecting national policy; however there is an unprecedented rise in the tillage area during the Second World War, then a peak in the late 1960s, a slight fall, then a rising trend again in the late 1970s. The trend for permanent grass throughout the entire period is close to a mirror image, peaking in the 1930s. The decline, however, continues into the 1980s with tillage increasing over permanent grass from the 1960s. The pattern for rough grazing shows long-term decline from 1900; that for temporary grass the opposite, most likely reflecting investment into more complicated farming systems involving leys.

Figs. 9.3a and 9.3b show the % of arable land and permanent grass, for respectively the civil parishes wholly within the Marsh and for all of England and Wales, from 1866 to 1985, as collated by Edwards (1987). Correlations between the local and national are significant, suggesting the local economy responded to changes in the agricultural economy for England and Wales. Both correlations are significant ($p < 0.05$) and positive ($r = 0.70$). The range of changes for Romney Marsh (between 13% and 88% for arable and 32% and 88% for permanent grass) exceeds that for England and Wales as a whole (38% to 60% and 40% to 61% respectively) showing the Marsh responded in an exaggerated fashion to agricultural change at the national level. In Fig. 9.3a, the higher cluster of points represents the period 1945 to 1985, demonstrating the dramatic increase in arable after the Second World War. Changes in permanent pasture (Fig. 9.3b) show the expected inverse pattern.

Land-use information for Romney Marsh has been collated and mapped by ITE from the Land Utilisation Surveys of the 1870s, 1930s and late 1950s and subsequently from field surveys and remote sensing. Figs 9.4, 9.5, 9.6 and 9.7 show the balance of land use for 1870, 1930, 1960 and 1980/1 respectively as reported by Pound (1986). These enable some spatial patterns to be discerned.

Fig. 9.4 shows the balance between arable, rough pasture and general pasture. Around 80% of the farmed area was under permanent pasture (Edwards 1987, 8) including rough grazing. Grazing was largely by the hardy Romney Marsh sheep. Particularly important were fattening pastures containing more than 30% Lolium perenne (Mountford and Sheail 1983; Pound 1986). The remainder of the farmed area was cultivated (tillage 18% and temporary grass 1%) both mostly for fodder (Edwards 1987). This was a time of improvements in field drainage, imports of guano and of steam ploughing. In total, England and Wales had around 57% of its farmed area under tillage and temporary grass, permanent grass was 43%.
remarkable that much of the Walland Marsh remained in pasture, in contrast to Romney Marsh proper where there was appreciable arable. Here parishes such as Brenzett, Burmarsh and Newchurch continued to have a relatively high proportion of arable land, as was the case in 1840 (Table 9.1).

Fig. 9.5 shows land-use changes between 1870 and 1930. Across Romney Marsh proper arable areas have reverted to pasture, while most of Walland Marsh remains under pasture. The basic statistics for the farmed area in 1930 (Edwards 1987) give 10.4% under tillage for Romney Marsh compared with 29% tillage for England and Wales. The figures for permanent pasture are 87.2% and 61.3% respectively. This is the impact of inter-war agricultural recession.

Fig. 9.6 shows the position at the start of the 1960s. Following a substantial period of state support for agriculture, the parish returns for 1965 (Edwards 1987, 28) show 40% of the farmed area in tillage, temporary grass at 13.8% (representing an increase in ley farming) while permanent pasture has fallen dramatically to 46.2%. There are significant arable blocks on Walland Marsh, including the Little Cheyne Court area, giving a more even overall distribution of arable. Arable farming is, once more, commonplace on Romney Marsh proper. The balance of land use between total arable and permanent pasture had switched, such that by 1975, Romney Marsh displayed 58.8% total arable compared with 57.5% for England and Wales as a whole. Permanent pasture was now only 41.2% compared with 42.5% for England and Wales (Edwards 1987, 29).
Fig. 9.7 shows the predominance of arable by the mid-1980s. In 1986 there was 67.7% tillage and temporary grass; permanent pasture had fallen to 32.3% (Edwards 1987, 29). Pound (1986) also notes there was farm amalgamation and abandoned agricultural buildings evident at the time. Walland Marsh is dominated by arable farming by the 1980s and this reflects extensive post-war field drainage. The proportion of arable area on the Marsh now exceeds that for England and Wales by 8.5%; the influence of the EU’s CAP is being felt across the area.

Fig. 9.5. Land use in the early 1930s and land-use change 1870–1930 (re-drawn from ITE and Pound 1986).

Science and Policy, Drivers of Change?
Given its fertility and location in south-east England, it is no surprise that Romney Marsh became a focus for agrarian investigation. After the early 19th century, attention waned, until establishment of the South East of England Agricultural College at Wye in 1894. The College (later re-named Wye College, University of London) became a centre for studies in local soils and agriculture throughout the 20th century.

Marsh graziers recognised three grades of pasture (fattening, breeding, and rough grazing) although opinions varied as to the carrying capacity for sheep. In a systemisation of this ‘indigenous technical knowledge’ first mentioned by Boys (1805); Grade I fattening pasture was able to support six to 10 sheep per acre, Grade II breeding pasture on the heavier soils could support four to six sheep per acre, Grade III breeding pasture on still poorer soils supported two to four sheep per acre and Grade IV rough grazing
Hadrian Cook

was not able to carry more than two sheep per acre in summer (ALC 1949). While it was therefore noted that certain fields had a reputation for fattening livestock, yet others superficially similar in character were not so fertile (Price 1809), the notion that land capability (Burnham and McRae 1981, 3) could stretch to uses other than pasture was not considered until after the Second World War. Before that time, even though the ‘arable nucleus’ had expanded and contracted with market conditions, the perception that sheep ruled the economy did not change. In 1909, one hundred years after Price, Hall and Russell were able ‘with the assistance of a research grant of £150 from the Board of Agriculture’ to investigate the observation that ‘though the grassland of all the marshes is generally rich, it is by no means equally fertile everywhere’. And:

In the course of our work on the soils in the south-east of England samples were obtained from Romney Marsh representing the rich and poor pastures respectively, but the analyses chemical and mechanical fail to reveal any corresponding difference between the soils it was decided to attempt a more thorough investigation of the factors at work’ (Hall and Russell 1912).

The investigation revealed differences in pasture performance could be attributed to botanical composition and ‘habit of growth’ (the fattening pastures were found more ‘leafy’ while ‘stemmy’ swards were more common elsewhere). Later Harrison (1934) reported the best fattening pastures carried uniform herbage dominated by perennial ryegrass with white clover and bent grass. Hall and Russell (1912) noted more clover present in fattening pastures that sustained a green

![Fig. 9.6. Land use around 1960 (re-drawn from ITE and Pound 1986).](image-url)
colour during summer while the non-fattening fields investigated tended to become brown. The fattening fields investigated also displayed a slightly lower watertable. They did, however, discern that fattening fields produced nitrates ‘at a high rate’, ‘contained a relatively large amount of total phosphoric acid’ with textures that would allow excess water to drain away, with better retention of water during dry weather.

The Wye College researchers were pioneers of soil survey, and in a preliminary survey of 1929 (Brade-Birks 1932), named the most productive soil unit, the Finn series, ‘in honour of a Mr Ernest Finn of New Romney’. These comprised well-drained silt loam topsoil around 300 mm in depth. Cole and Dubey (1932), also based at Wye, undertook a more systematic investigation into soil profiles and ascribed the performance of pastures to nine named soil series, along the lines of the traditional capabilities reported by the graziers. So influential was this work that the six most important soil series profiles illustrated by Cole and Dubey (1932) were reproduced by Stamp (1943) and appear in the ALC report (1949). Of the six soils thus identified, only the Newchurch series remains in the modern classification, the others were re-named; for example the loamy and non-calcareous Finn series falls in part within the Tanvats series (Jarvis et al. 1984, 284). However, no soil map was published until that of Green in the 1960s. In the associated memoir (Green 1968, 135) is clear that, while Green supports Cole and Dubey’s assessment that ‘soil profile is directly related to the quality of permanent pastures’, he differs over the poorest quality
pastures. The earlier study found the poorest performing pastures were either well-drained or excessively drained, or alternatively the poorly drained shallow clays over peat (then called the Appledore series). Green ascribed best fattening pastures to moderately well-drained medium-textured soils, while second and third class fattening and breeding pastures to imperfectly-drained soils or moderately well-drained fine-textured soils, stating that that pasture performance relates to management, and pasture grade by soil type. Green’s perception, perhaps, reflects the greater post-war emphasis on drainage management.

The conclusions to the post-war ALC document (1949, 34–5) were far wider than providing agronomic improvement. It also recommended additional (local authority) housing for agricultural workers, drainage works, utilities of water and electricity, even loans and tax concessions to obtain fixed equipment (sheds, stores, and roads); evidently lessons learned here (as elsewhere) from the First World War. The outcome was to be 20,000 acres (8100 ha) of tillage, although this was actually only achieved by the late 1970s. It was concluded the owners, lessees and occupiers could take improvements forward; there would be no need for compulsory purchase or hiring of land. ALC operated in a wholly modern ‘participatory’ fashion and it is remarkable for its list of stakeholders: ‘we ourselves spent 25 days in Romney Marsh, during the course of which we have met a large number of owners and occupiers’. Interviews were also conducted with local authorities, agricultural executive committees, catchment boards and internal drainage boards.

Four possible farming systems were proposed in 1949: (i) sheep farming; (ii) dairy farming; (iii) arable farming, including market gardening; and (iv) ley farming. The latter was evidently preferred for post-war development, on account it ‘ensuring its full and efficient use for agriculture’ (ALC 1949, 19). Ley was acknowledged as a logical development of wartime developments in land use, such that Romney Marsh would ‘make its appropriate contribution to the tillage acreage of the country but will ensure the maintenance of fertility by the periodical resting of the land under grass and also the maintenance of stock-carrying capacity’. Garrad (1954, 81) made a tentative link between land suitability for sheep and that for arable, noting that soils in the Burmarsh district are heavy, but should be suitable for a system of ley farming. Fattening pastures might be retained, but the lower quality breeding pastures could be improved by ploughing with fertiliser applications, especially phosphates, to ‘make good the loss of phosphates incurred by many years grazing …’. The Marsh was heading towards a balanced system of ley farming with crops and stock. The suitability for arable expressed by both ALC (1949) and Green (1968) who are less concerned with soil fertility, cultivation and water retention, than the depth of drainage suited to particular crops. Green comments (p. 138), in effect that subsoils should be sufficiently permeable where arable conversion is to continue:

- with deep and properly maintained sewers many large-scale tile-drainage schemes in old pasture land destined for arable use could properly be less intensive, or would be unnecessary, if drainage water always flowed freely to the River Authority outfalls.

Control of water level using ‘staunchboard’ dams is commonplace on Romney Marsh, while good drainage permits more rapid spring-time soil warming for young arable crops. Drainage under arable land in the 1940s had been supported by the Internal Drainage Board, who expressed concern about the impact of drought when lowering watertables in adjacent (higher) areas, while the Agricultural Executive Committee was advised not to allow land below 5 feet (1.5 m) to be ploughed, due to the risk of flooding. By 1949, farmers were applying for licences to abstract water from watercourses to alleviate drought. Actually, improvements in the inter-war period had set a precedent by making field-scale improvement easier. Subsequently, an application for grant-aid for drainage improvement from the river Rother Drainage Board was rejected by the Ministry in 1951, but improvement was agreed following serious flooding of arable land on Shirley Moor in 1958 (Sheail and Mountford 1984). Progress in land drainage is shown in Fig. 9.8. By 1980, around 63% from an estimated farmed area of 20,375 ha was drained (Sheail and Mountford 1984). Only about 4% of the total farmed area had been drained by the 1940s, a further 12% was drained in the 1950s, 28% in the 1960s and 19% in the 1970s. With the Ministry of Agriculture granting one-half of capital costs, about two-thirds of land to the south and east of the RMC were to be affected by drainage by 1980, reflecting the land-use pattern shown in Fig. 9.7.

For the sub-catchment including Romney Marsh proper, the Agricultural Land Classification (Burnham and McRae 1981) gives 64% as grade 1 or grade 2 agricultural land, 11% are grades 3 and 4, urban areas comprise 6% and other areas 19%. South of the Rhee Wall, including Walland Marsh, comparable figures
are 78%, as grade 1 or grade 2, (other categories are 15% and 2% and 5% respectively), making Walland Marsh an even more attractive prospect for drainage seaward of the RMC (Southern Water Authority 1979). The complexity of soil and topography, as demonstrated by Green’s mapping, would make micro-managed control on watertables appropriate to each part of the Marsh all the more impossible, although the elimination of high watertables would help arable management. He discusses some of the issues for competing land uses, before 1968 (Green 1968, 137–8). As a generality, winter watertables in reclaimed marshland should be between 0.3 and 0.5 m winter freeboard (drainage depth in the ditches) for under-drained pasture (although watertables will break the surface at times) with summer watertables lower, unless maintained high to provide sub-irrigation or produce wet fences to constrain animals. Where under drainage typically provides between 0.8 and 1.0 m of winter freeboard (Cook 1999a), land is suitable for a range of arable crops.

**Landscape Change**

The classic model for landscape change in reclaimed marshlands (Cook 1999a; Cook *et al.* 2009) identifies primary, secondary and tertiary marsh landscapes. Primary marsh comprises salt-marsh and mudflats located seaward, and at the mercy of the tides. Freshwater equivalents, including riverine marsh, are in this category. These areas have historically been areas of high biological productivity and exhibit high
biodiversity, high natural landscape value and once supported diverse human economic activities such as grazing, wildfowling, plant gathering, salt production, fishing, and reed production. For the Romney Marsh area, the salt marsh (and active sinuous creeks) at Rye Harbour outside the sea wall constructed around 1900, is a rare survival. Reclamation against an existing sea wall or natural coastal feature creates, from mudflats or saltmarsh, a polder or ‘inning’ that will become ‘secondary’ marshland that is mostly influenced by the landward hydrological regime and suitable for agriculture, typically grazing. Topographic features commonly survive reclamation wherever ploughing or levelling has not obliterated them. On Romney Marsh post-reclamation topographic interest remains where relict creeks from early reclamation are upstanding due to differential subsidence (Green 1968). The ditches provide for control of the watertable, including sub-irrigation in summer, and on Romney Marsh proper and Walland Marsh, much of the conservation value is concentrated in the watercourses (White et al. 1998). Historically, reedbeds were a part of the reclaimed landscape’s economy valued for thatching and weaving and today for populations of invertebrates and birds. Reedbeds are to be found in the Brookland area, close to the Woolpack Public House, and in several other areas.

Tertiary marshlands are created from reclaimed land by, and for, the needs of modern mechanised agriculture. The agronomic benefits of drainage are well known (Cook 1999b) in increasing options for arable planting, crop yields and improving soil oxygenation, thermal relations and overall ease of soil management under cultivation. Typically, sewers are re-sectioned with steeper profiles and deepened to increase drainage freeboard. Those deemed surplus to requirement are filled in, with under-drainage installed to increase drainage density without providing the inconvenience of too many ‘wet fences’ at the surface, while providing for low watertables. Ancient drainage networks can be rationalised into fewer more ‘arterial’ drainage lines facilitating access for machinery, or where animals remain, these can be watered from mains-fed troughs. Finally, levelling and ploughing removes most topographic features. A tertiary marshland landscape presents as a billiard table landscape criss-crossed by deeply incised ditches. Here hydrological control is optimised for agricultural production, for example growing winter wheat, oilseed rape, potatoes and intensive grass. The serendipitous secondary landscape and the associated botanical and faunal biodiversity has vanished.

Certain of the arable fields on the modern Walland Marsh are vast by local standards, being in the range of 50 to 100 ha in area. This is most notable between the RMC and Brookland, although around Ivychurch (a historically arable area on Romney Marsh proper) certain fields also come within this range. Ordnance Survey mapping from the later 19th century shows that generally these resulted from amalgamation of pre-existing fields. There has also been an increasing trend in the size of grazing fields throughout the 20th century.

A New Dismalness and a New Conservation

Romney Marsh farmers were doing what the ‘production ethic’ demanded of them, the outcome of 200 years of interplay of government intervention and market forces. From an area emerging from problems of low population, drainage, disease and with elements of lawlessness, Napoleonic times saw an impetus towards arable conversion with the evidence suggesting that there was steady conversion from 1800 to 1880. Then, following the Great Agricultural Depression (when the arable sector all but collapsed), the impetus for arable conversion reoccurred once more in the 1930s, only to be realised with a vengeance in the Second World War. From 1940 to 1990 the face of the Marsh was transformed according to the requirements of first national food security, then the EEC produced notorious grain mountain. Policy had driven landscape transformation and, especially strongly from the late 1930s, large areas of Romney Marsh were now tertiary stage reclamations with intensive agriculture. The knowledge-base available from scientific and technical experience, being strongly focussed on livestock farming, lagged well behind the actuality. Come what may, the drive from the outbreak of the Second World War required not so much research into pasture management, or animal nutrition, rather a more aggressive approach to land drainage enabling intensive and widespread arable conversion. Wheat and potatoes replaced sheep as the farming staple. Despite the findings of land-quality assessments for sheep husbandry linked closely to the early development of English soil science, it was land-drainage engineering that would triumph, and most dramatically of all has transformed Walland Marsh over the period covered by this paper.

Considerations of landscape and habitat conservation were late to arrive in this transformed landscape
but the rise of the ‘conservation ethic’ nationally and in particular the threats to the wetland and coastal habitats of the area were to raise concern. Today, this is marked by a plethora of different conservation designations, often patches of secondary marshland so the Romney Marsh Countryside Project can declare:

The Romney Marsh Natural Area is famous for the extent of its wetland habitats ranging from the large shingle expanse of Dungeness to the drainage ditches and small ponds of the surrounding farmland. These in turn boast an impressive diversity of flora and fauna and the area has received both national and international recognition through numerous wildlife designations… (Romney Marsh Countryside Project 2005b).

Inception of a conservation ethic means concern to protect landscapes, habitats and biological diversity. With many grassland areas improved, emphasis has been less on sward conservation (a situation, for example, differing from conservation objectives on the Somerset Levels and Moors) and more on the historic sewer, where much of the ecological interest is centred. Better regional drainage, the infilling, deepening and straightening of ditches, the imposition of under-drainage that removed not only surplus water but caused agro-chemical pollution from nitrates, especially meant a loss of both biodiversity and historic landscape value. Green (1968) is neutral on this subject but writes from the agricultural improvement perspective, reflecting the cusp in a change of emphasis from production to conservation that was about to occur. Biodiverse shallow grazing marsh dykes suitable for watering animals would nonetheless be seen as inefficient in drainage terms (Mountford and Sheail 1983).

The National Parks and Access to the Countryside Act (1949) created National Parks and the Nature Conservancy Council. This organisation had powers to establish National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs). The latter protected areas through the statutory planning process, assuming a significance never intended due to the rapidity of countryside change (Sheail 1999). SSSIs are mostly located on private land, and, despite ruminations of Agricultural Land Commission, most agricultural land on the Marsh remained in private hands. The SSSI became pre-eminent, with the RSPB Reserve at Dungeness (a non-agricultural area) dating from between the wars becoming a National Nature Reserve in 1949 (Romney Marsh Countryside Project 2005b). At the time of the passing of the Wildlife and Countryside Act in 1981, many SSSIs were already in existence under the provisions of the 1949 Act. Each of these was considered, in turn, and either de-notified, or re-notified, that is brought under the provisions of the 1981 Act, often with boundary changes (see Fig. 9.9 for the current extent of SSSIs on the Marsh). This complex process nationally took some ten years to complete. On the Marsh, Mountford and Sheail (1983) systematically scrutinised post-war landscape changes. The proportion of land under cultivation in what was to become the Romney Marsh SSSI (designated in 1977) had fallen from 8% in the 1870s to 2% in the early 1930s, yet close to one-half of the area was under cultivation by 1949. Ecological and landscape degradation included dyke eutrophication (typified by Enteromorpha and other algae) and deep drainage, as around Little Cheyne Court, were reported to be widespread.

SSSIs represented investment by public bodies, not least because farmers were paid compensation for presumed productivity loss through conservation prescriptions. Research was undertaken by statutory organisations and at Wye College that was linked to sewers of conservation value being polluted through agriculture and inappropriately cleared. In one example, in December 1984 staff from the Nature Conservancy Council met with Southern Water to discuss experiments to investigate the impact of land drainage practices on marshland biodiversity (Wade 1989). Subjects for investigation were the effects of herbicide application and weed clearance on channel macrophytes and invertebrate communities with experiments undertaken using a digger fitted with a...
Bradshaw Bucket. In this limited experiment, neither the plant communities nor the invertebrate communities were greatly affected. The outcome of the 1989 report was encouraging, though the author warned against extrapolating the results to widespread and/or long-term land-drainage practices.

Walland Marsh SSSI, designated in 1977, re-notified in 1981 and 2006, had 5 m buffer strips emplaced alongside field drains (Moorby and Cook 1993; White et al. 1998). As a result, in fields where nitrate fertilisers were being actively applied, a dramatic reduction occurred in nitrate leaching. On the alluvial soils (typically with silty clay and silty clay loam topsoil) here, after about four years of reversion to grass and zero fertilisers, nitrate leaching in any case becomes negligible. Where there is arable, the emplacement of buffer strips proved successful in reducing nitrate loading of watercourses in the absence of under-drainage outfalls (White et al. 1998). The practice has now been adopted elsewhere on similar soils in the UK.

The ‘utility’ of alluvial areas in providing ecosystem functions and services is now at the top of the environmental agenda. While there may be benefits in flood retention areas being away from settled areas, contemporary notions take the ideas of the 1980s of wildlife habitat conservation yet further in that the ecosystem and landscape heritage gain is a significant by-product of flood relaxation (Cook 2010). Where once deliberate flooding was to be avoided at all costs (for communication, settlement and agricultural purposes) unless there was a risk of invasion, there remains the possibility of encouraging limited inland flooding for conservation.

Conclusions

This paper, an exercise in ‘green history’, charts 200 years of economic and landscape change across the farmed area of Romney Marsh. Ultimately, the swing between laissez-faire and government intervention, finally favouring the latter, dramatically altered the landscape, becoming a driver for enactment of the ‘conservation ethic’. This culturally isolated area had developed a specialised animal agriculture in the post-medieval period that was nonetheless integrated into the regional economy. This economic mainstay carried the region through several cycles of boom and slump and into the 20th century, achieving full integration in the national agricultural economy while the Marsh became a by-word for agricultural modernisation through land drainage and other inputs. Romney Marsh once comprised a historic landscape based on sheep husbandry, with attendant drainage sewers, sea walls, lines of willow pollards, and medieval churches that remain etched in the national psyche. Yet, by the end of the era under consideration, large areas had developed an appearance redolent of the Lincolnshire Fens. The ‘dismal landscape’ of the 18th century had indeed been made safer for settlement and economic development, largely through improved drainage that followed its long-term reclamation. By turns it was romanticised, vaunted for its animal produce and survived protracted economic downturns; only to be transformed so that secondary marshland landscapes incorporating semi-natural habitats vanished at an alarming rate.

Writing in the early 1800s, Daniel Price comments on inflated rents due to competition for land, perhaps in part due to the period of war as well as the perception that the ground was best suited to sheep husbandry. His was an early recognition for the increase in area under tillage, even if this was only occurring to improve the winter fodder situation for animals. Disincentives to plough at this time of rising corn prices were likely tithes and labour shortages. Evidence points to an increase in arable cropping in many areas in the Kent part of Romney Marsh from around 1800 until the Great Agricultural Depression after 1870. In Sussex (largely Walland Marsh) the picture is less clear, but there was arable land around 1840 to 1870, that appears to have largely vanished by 1930. In reality, although the relative proportions of arable and pasture varied with economic fortunes, pasture dominated throughout the 19th century and well into the 20th century. The great change to arable started in the 1930s, was most dramatic in its impact on the Walland Marsh and can be attributed to the post-Second World War improvements in land drainage.

The inherent fertility of Romney Marsh was recognised early, both through ordinary observation and scientific research. A full realisation of its potential would depend upon both agricultural science and drainage technology. Another key economic factor was location; throughout the 19th century the south-east was convenient place to produce for the national market. However, the widespread conversion arable since the 1930s was driven by the urgency of food security and wartime policy rather than a systematic realisation of technological development. In reality both demand and technological change were driven by state intervention. Continuing concerns over food
security followed Britain into the EEC. By then a largely arable Romney Marsh was poised to make a contribution to the notorious ‘grain mountains’; the realisation in the latter period investigated here of a projected land surplus, in turn shifted government policy towards conservation considerations.

From 1940 a new dismalness set in; this time creating a regimented, well-drained, monoculture-prone tertiary marshland landscape where once sheep had safely grazed. Even Thomas Malthus would have to admit to a spirited attempt to keep up with demand for foodstuffs through the ploughing of pasture, and hence benefitting from generations of fertility realised as arable crops and the application of technology. He could not have seen the emergence of a ‘conservation ethic’ tempering the hitherto inexorable progress of production agriculture. Likewise, we may ask how Adam Smith might have reacted to governmental interventions during times of feared agricultural market failure.

Agricultural science was implemented through advice delivered in extension programmes, with grant-in-aid a driver of agricultural change. While it would not be controversial to view the Marsh as a modernist ‘triumph’ of arable and mixed agriculture, much pre-Second World War effort went into researching land capability associated with pasture productivity and animal agriculture. The economic requirement of land-use change from 1940 drove the implementation of drainage and arable conversion, rather than scientific and technical factors being utilised to advise change in a piecemeal fashion. Subsequently, scholars and conservationists saw the Marsh as a place within which they could chart the (once seemingly unstoppable) march of land drainage, and the regional-scale arrangements ridding the area of water. They also saw conservation in conflict with agricultural and flood defence imperatives and there were several SSSIs underpinning efforts at landscape and habitat conservation. Such environmental management tools are reasonable in limited inland areas. Ideas of ‘managed retreat’ had become real policy options that might return secondary or tertiary landscapes to a primary condition. However, the presence of much coastal settlement makes the Marsh an unlikely candidate for coastal flood defence relaxation.

The future, as ever, remains uncertain. It is likely that conservation will continue to compete with more directly economic demands for food production, even for non-food crops. Agricultural economics also make the future for animal husbandry uncertain, although a mix of traditional skills and fluctuating markets for wool, meat and dairy products could well ensure some kind of future beyond grazing under ‘conservation’ or ‘heritage’ farming. We have both to respect the achievements of agriculture on Romney Marsh, and strive to balance local economic needs and national food security with the very modern paradigms of conservation and respect for historic landscapes.

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References


9. Changing Agricultural Landscapes on Romney Marsh, 1790 to 1990


