# 12. 'Drowned Lands': Changes in the Course of the Rother and its Estuary and Associated Drainage Problems, 1635–1737

Jill Eddison

*All dates given in this paper are Old-Style, i.e. each year begins on 25th March. No attempt has been made to convert historic measurements to modern equivalents: they are given as in the original documents.*

## Introduction

The Rother, with a catchment area of some 47,000 hectares of the eastern High Weald in Kent and Sussex, is the principal river flowing to the sea across the reclaimed marshland between Fairlight and Hythe. The river bed is below High Water Neap Tides (OD Newlyn) as far inland as Bodiam, approximately 17 km from the point where it leaves the upland and 23 km from the present river-mouth. The valley and its tributaries may therefore be considered extensions of the broader marshland area – with which its evolution and history is closely inter-related. The Isle of Oxney, a detached portion of upland, gives the river a choice of two valleys, to the north or south of it. This circumstance provided a most unusual extra dimension to the history of its drainage (Figs. 12.1 and 12.14).

The purpose of this paper is two-fold. First, it outlines the history of the river and its estuary in the hundred years after 1635, the year when the river was diverted from the northern to the southern valley. Second, it assesses the drainage problems involved, the methods employed in tackling them and the resulting features in the marshland landscape. The period was chosen because it was known to be one of fast-moving topographical changes. It is also, because of the complexities of the drainage arrangements and the controversies that ensued, particularly well documented.

The Commissioners of Sewers, the drainage authorities of the time, were confronted by problems due to a combination of the topography, the annual regime of the river and the activities of the sea, as well as more human problems. The evident lack of fall in the course of the river was bound to present problems in getting the water away to the sea. With 75% of the run-off from the catchment area occurring in the six months November–April, the valleys were liable to fresh-water flooding in the winter – the time when there was also the greatest likelihood of storms and sea-floods. In summer the flow of the river was much diminished and not adequate to scour away the vast quantity of silt brought in and deposited by the tides (Appendices 12.1 and 12.2). The net result was that all channels and sluices were likely to become critically swerved (Glossary, Appendix 12.3), a problem which at times proved insuperable.

## Background

The Rother had apparently flowed round the north of Oxney (Fig. 12.1) since the Knelle Dam (also known as Maytham Wall, Bush Wall or Spits Wall) was built in the 1330s, but contemporary maps show that by the end of the sixteenth century a large part of that valley, which became known collectively as the Upper Levels, was 'drowned land' (Eddison 1985, 104). The river channel, known as the Appledore Channel, had become silted beyond redemption and as a result in 1629 some 3,000 acres were 'drowned lands', perennially flooded, and a further 2,000 acres in Shirley Moor and Ebony were 'summer land', good for summer use only. The Great Freshwater Sluice was built in about 1623 across the channel below Appledore, near Thorney Wall (Rendel 1962, 65). (There were two walls with the name of Thorney Wall: the other, in Wittersham Level, is shown on Fig. 12.6). The purposes of this, and all the later tidal sluices, were to limit the extent of the tides, including the silt they deposited, and to regulate the outflow of the river.

South of Oxney lay Wittersham Level, a separate level governed by its own Commission of Sewers. It was in considerably better condition than the Upper Levels, being protected at the west end from the waters of the Rother by the Knelle Dam, and on the east by the Wittersham Sea Wall. The area east of Kent Wall, nearest the sea, was 'high marsh' (also known as 'Wittersham Highlands'), good year-round 'winter land'. To the west of that was the 'low marsh' (also known as 'Wittersham Lowlands'), which was "low and decaying" – presumably useful only in summer (see Symondson's map, 1594). The main Wittersham Sewer

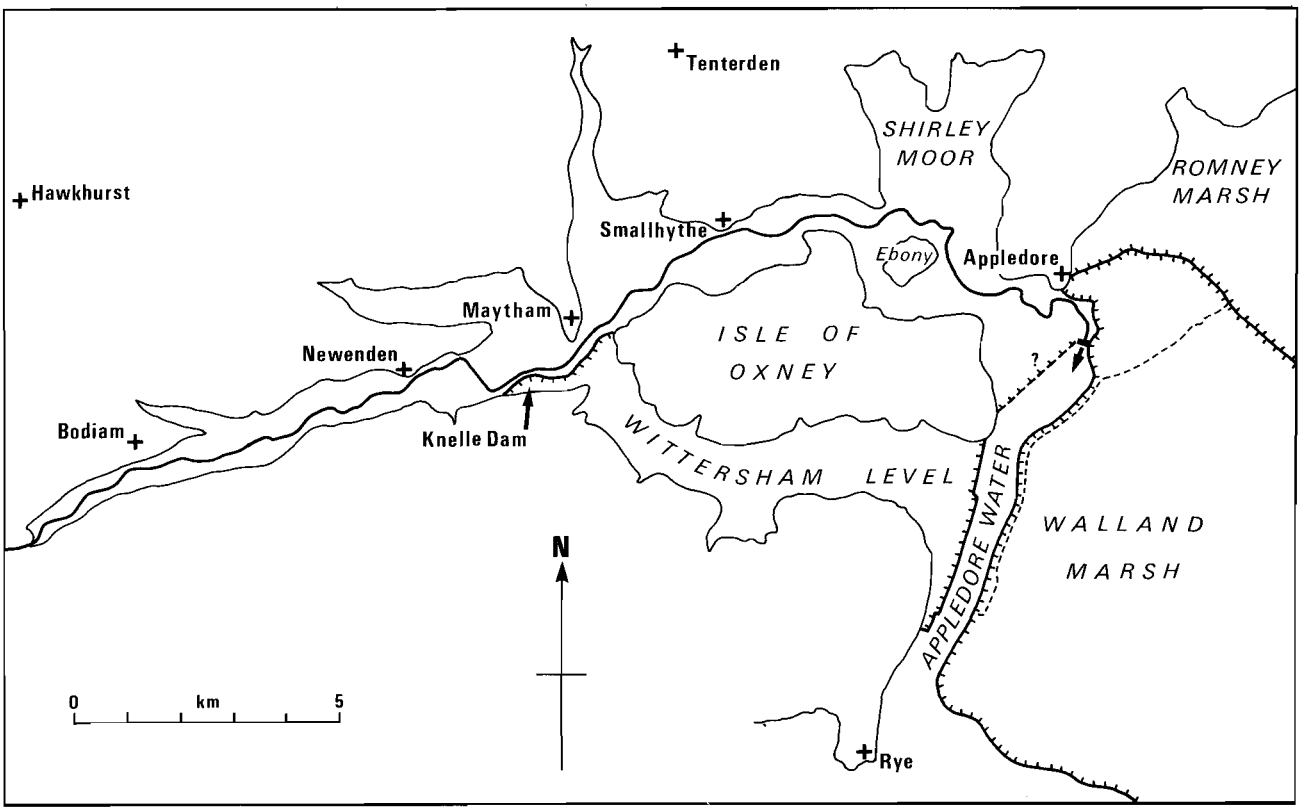


*Fig. 12.1 The passage of the Rother through the Upper Levels prior to 1635. Based on O.S. 1" Seventh Series, with additional information from: Symondson 1594; Stoneham 1599; Cogger 1633; Cogger ?1635; Newman and Hill copy of c. 1635. NOTE: The exact position of the wall from Stone-in-Oxney to Thorney Wall in the whole period 1635–1737 is not known.*

debouched at Scots Float Sluice, and there was also at some time a sluice at or near the site of the later Craven Sluice (Fig. 12.2).[1]

From about 1600 onwards, and possibly earlier, the Upper Levels had undertaken various extensive and very expensive works to try to clear the Appledore Channel and drain their valley, but to no avail. As a result it became clear that the only possible way to restore the flow of the river and to drain the 'drowned lands' was to divert the river from the Appledore Channel to a course through Wittersham Level. The Commissioners of Sewers for Wittersham Level were apparently reluctant to agree, and the agreements for 'turning' the Rother were only eventually signed between the Upper Levels and Wittersham Level on 15th February 1631 and 18th February 1633 (Rendel 1962).

The Upper Levels undertook responsibility for all the new drainage arrangements (Fig. 12.3). The entire 'low marsh' was set out as a vast indraught, and an embanked channel was cut across the 'high marsh' from Kent Wall to a new gutt in Wittersham Sea Wall, through which the water of the Rother entered the tidal estuary. All damage caused to Wittersham 'high marsh', either by the new works or by subsequent flooding, was to be paid for by the Upper Levels.

The indraught was a reservoir which received both surplus river water when it could not be got away to the sea, and also sea water taken in through the new gutt, which could then be used to increase the outflow so as to scour the sluices and the 'New Salt Channel'. The Upper Levels undertook to pay rent for the lands in the indraught, together with all taxes, tithes and water-scotts due thereon. The owners kept the rights of fishing and fowling, of digging and taking sleech, and taking wood and timber for their own use. Reclamation of the indraught was clearly anticipated: the Upper Levels were given powers to enclose it at some future date, subject to certain conditions, and thereby to abate their rents and charges. To facilitate this a very detailed map of land-ownership[2], part of which is shown on Fig. 12.4, was made by William Gire and Ambrose Cogger (the latter at various times clerk and expenditor of the Upper Levels). This map, referred to as 'The Old Map of Wittersham Level', was frequently consulted during reclamation work towards the end of the century.

In this way the Upper Levels became responsible for the passage of the Rother and all the associated drainage works through land which belonged to Wittersham Level. Besides the Commissioners of Sewers for these two Levels, other parties were also interested in the drainage of the river. The Lords (i.e. the drainage authority) of Romney Marsh were concerned because their Five Waterings Sewer emptied into the estuary at Cheriton Barrs (Fig. 12.2). The Commissioners of Walland Marsh sewed the White Kemp Sewer out at the same place. The

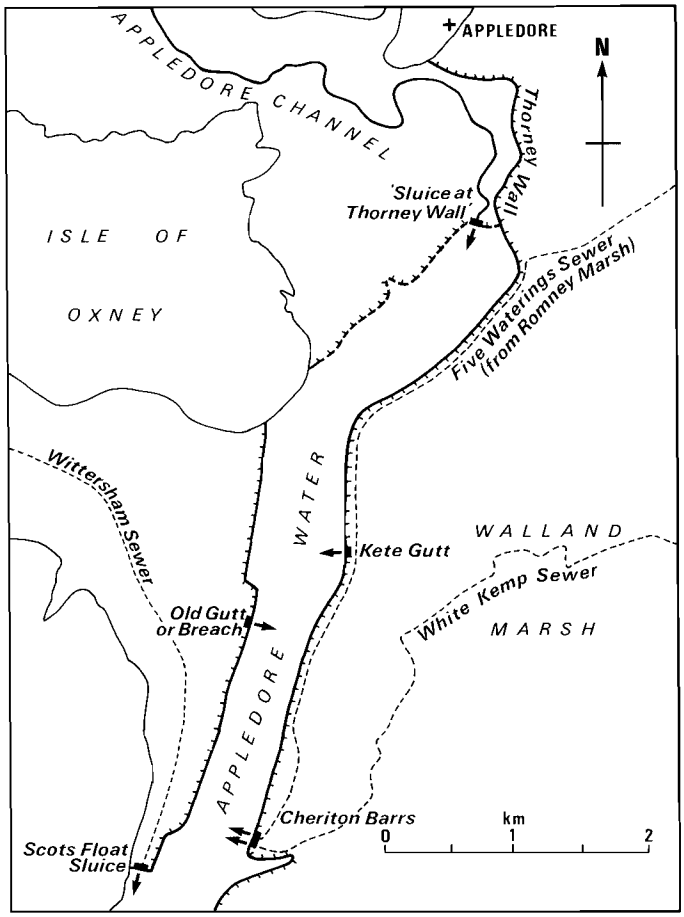


*Fig. 12.2 Outfalls into Appledore Water (the Rother estuary), 1635. Based on OS 1:25000 First Series, with information additional to figure 1 from: ESRO D 496 (1); Hill 1683. NOTE: The courses of the White Kemp, Five Waterings, and Wittersham Sewers have not been established in detail.*

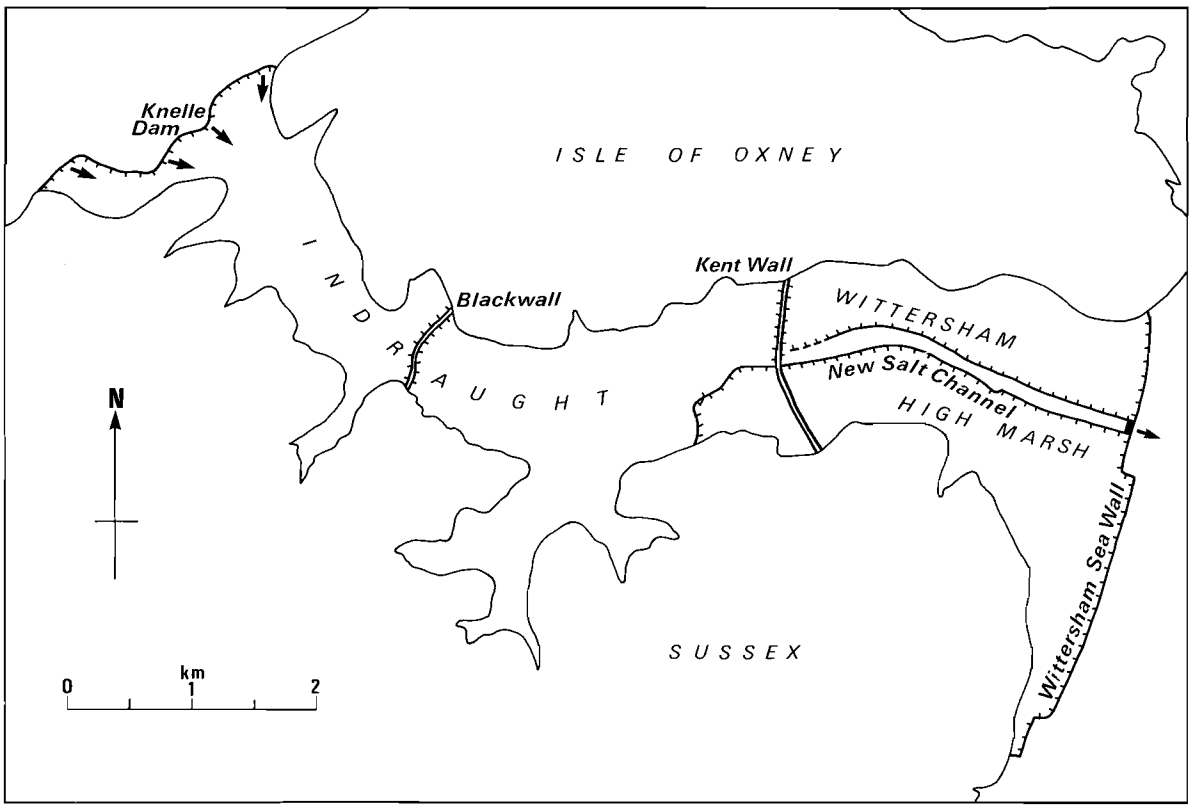


*Fig. 12.3 Wittersham Level 1635–1644. Based on OS 1:25000 First Series, with additional information from: c. 1625 KAO U488 P1; Cogger 1633; Cogger ?1635; Newman and Hill copy of c. 1635; Mark le Pla 1688/9; Newman 1698. NOTE: The course(s) of the river through the indraught are not known, and the position of the three sluices in Knelle Dam is uncertain: the four possibilities are shown here.*

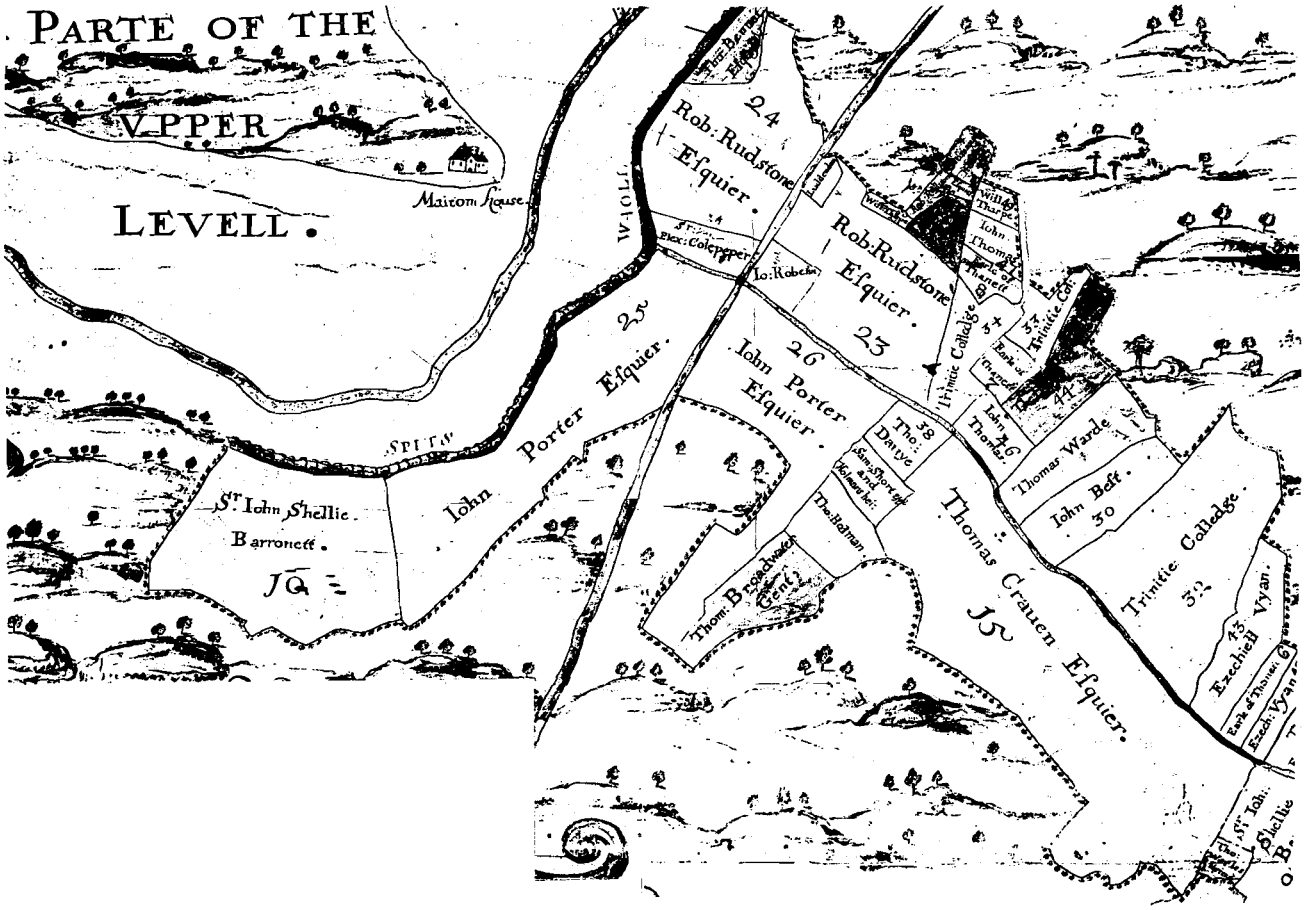


*Fig. 12.4 Wittersham Level ownership map 1633, showing Spits Waoll (Knelle Dam). (Part of) Kent Archives Office S/Ro P1.*

harbour at Rye was already long past its prime and suffered acute silting throughout this period – which could be (and was from time to time) attributed to developments upstream. The mayors, jurats and inhabitants of Rye, Tenterden and other settlements in the valley, including Etchingham, Robertsbridge and Hawkhurst which had iron-working connections, were concerned to keep navigation on the river open in the early part of this period, though that interest apparently waned later on.

## 1635–1646

By 4th May 1635 the Rother was flowing down Wittersham Level. On 19th May certain walls were ordered to be raised and all the other works were to be finished speedily so that the sea could be let into Wittersham Level before Michaelmas. On 4th October 1635 the Rother navigation was transferred to Wittersham Level instead of using the Appledore Channel, "the works in Wittersham being then perfected and a more commodious navigation made on the river".

Not surprisingly, minor adjustments had to be made. In 1639 Sir George Fane and others complained that they had sustained damages on account of drowning and salting of their lands in Wittersham 'high marsh'. In the same year Kent Bridge was threatened by the violence of the tides.

However, on Lady Day 1644 an exceptional tide swept up the valleys into the Upper Levels, and upset the new drainage arrangements permanently. The consequences of this sea-flood were long-lasting. According to a later account, it broke down the walls of the channel, the sea began to overflow the 'high marsh' and in the course of the next few years most of that became drowned with salt water.[3] A jury sworn in January 1644 reported in the following March that a bridge between Maytham and Wittersham, and Kent Bridge, and the walls on the Sussex side were in a state of great decay. They considered that the great quantity of water flowing in and out of the indraught was causing the damage to the walls and would endanger the remaining 'high marsh'. They submitted that to reduce the indraught would be the best way to recover the lost lands and preserve Kent Bridge and the other 'high marsh'. They also recommended making a wall with one large sluice and two small gutts at Kent Bridge which, they said significantly, would be little or no hindrance to draining the lands above Knelle Dam. In other words, they proposed to go from one extreme to the other, and eliminate the indraught altogether. The reason for

putting the sea sluice at Kent Bridge was apparently to keep the sea as far away as possible from the Upper Levels, in the hope of preventing another inundation by any repetition of the 1644 sea-flood.

The sluice was being framed in May 1646 and the works well advanced when, on 3rd September 1646, the commissioners suddenly changed their plan and directed that the stop intended for the sea mouth be waived, and a stop forthwith made at Blackwall Bridge, with such sluices as might be necessary. A strong objection had been lodged on 29th June 1646 by Walland Marsh and the Five Waterings (with whose agreement the Rother had originally been 'turned', subject to certain conditions), predicting that if the indraught was stopped up and the sea shut out of the Wittersham 'low marsh':

"all the slubb which is now carried in there would be lodged in the channel, and there being no water to course it away but the river of Rother, which in summer is so little as will not fill the tenth part of the channel nor carry away the tenth part of the slubb which the sea will bring in. The great depth which the indraught hath wrought in the channel would be lost in a much shorter time than it hath been gained".[4]

It seems probable that these very valid considerations influenced the action of the commissioners at the last minute. The sea sluices – apparently two – were duly completed and thenceforth tidal water was kept to the east of Blackwall, except on certain occasions when it was deliberately admitted to the indraught.

## 1646–1680 Wittersham Level 'Drowned'

From 1646 to 1671 the Commission was principally concerned with maintaining the status quo (Fig. 12.5). The height at which the Knelle Dam was maintained affected every part of the levels, and the commissioners had to aim to achieve a compromise between various different interests. The owners in the Upper Levels wanted the surplus land-water to be drained away from their land but needed to retain enough for their cattle, and to fill the ditches to enclose their fields. Navigation interests required sufficient water in the river upstream. The height of the dam also influenced the amount of water which passed down the Appledore Channel – with implications for the state of that channel and the operation of the sluice at Thorney Wall. All the parties concerned wanted to maintain a sufficient flow through Wittersham Level to prevent swerving of the Wittersham Channel and of the Blackwall sluices. Hence there were repeated adjustments to the sluices or gutts in Knelle Dam, of which there were initially three, two at the sites where the Rother and the Potman's Heath Channel cross the line of the dam today, and one in between. (Mark le Pla's sketch map, Fig. 12.8, shows that by 1688 there were four). To control the water level, pends were inserted or removed at the sluices and gutts, and when repairs were necessary, temporary dams were built across the channels.

Blackwall which, with its sea sluices, had assumed the important role of the westward limit of the usual flow of tides, also needed adjusting from time to time, mainly because the channel downstream depended on scouring by water released periodically through those sluices. In 1665 the expenditor, William Ward, was ordered to take in such tides as should be necessary for keeping open the sluices and also to shut down the land gates to keep up the tide and fresh waters, to be allowed to run upon a dry channel. The following year he was instructed to make two drawing gates at the lower side of the sluices, and flashes on the top for taking in sea water when necessary. In the winter of 1669 the sluices suffered badly from the rage of the sea.

Most of Wittersham 'high marsh' had been lost by then. John Hall succeeded in reclaiming some land on the Kent side of the east end of the Level which belonged to Lady Fane and her son but, paradoxically, this was not altogether an advantage. In 1659 the Fanes asked that the tides should be let in again so that their land might be heightened by "the swerve of the sea equally in proportion with the adjoining marshlands".

Although deserted by the Rother, the Appledore Channel still had an important part to play in the river drainage. It was used to convey the river water eastwards (notably at times when the Wittersham Level sluices were undergoing repairs) and sea water westwards (to augment the flow in Wittersham Level). The sluice below Appledore at Thorney Wall was allowed to deteriorate until in January 1649 Shirley Moor and other levels upstream were warned to repair their own gutts and 'sea walls', so that their lands were secured against sea water in case the sluice should blow up. It proved beyond repair. The new sluice prepared for that site was eventually installed instead in Knelle Dam in 1654, and in 1659 the Commission ordered that the bottom of the sluice, piles and other obstructions which might cause the Channel to swerve should be removed. The equipment employed to remove silt from the Channel included a "boat or engine" made by a ship's carpenter, but this seems to have been a short-lived experiment: after five years it was to be made into a lighter. The Appledore Channel continued to suffer severe silting, as might be expected, and in 1669, for the better sewing of Shirley Moor and in an attempt to keep the gutts of the adjacent small levels in working order, a substantial new sluice with three waterways was built on the site of the former Thorney Wall sluice. The following year penns were put into the Channel above the sluice to try to preserve the flow through it.

It seems that at this stage the practical drainage situation in Wittersham Level was reasonably stable and manageable, but the financial burden, which more than doubled as result of the 1644 sea-flood, was weighing heavy on the Upper Levels. A Decree of 5th June 1655 arranged for an annual payment to Wittersham Level of £2345.16.10 in rents and taxes, compared to £1014.12.0. in the late 1630s.[5] In Hilary Term 1664 a bill in Chancery was brought by Wittersham Level claiming £2879 in arrears.[6] The commissioners showed

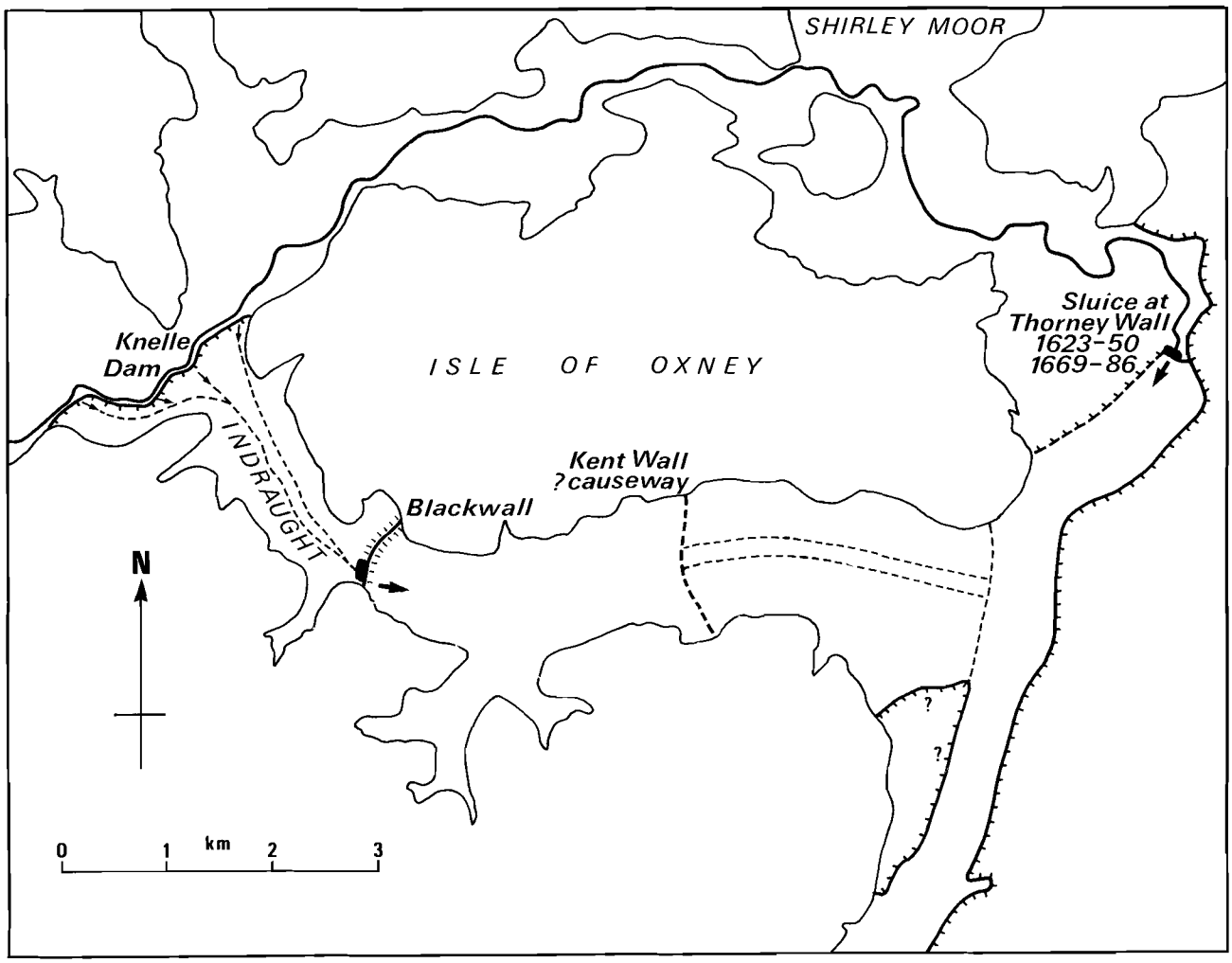


*Fig. 12.5 Rother Levels 1646–1680, showing the principal tidal limits at Blackwall and the sluice at Thorney Wall. Based on OS 1:25000 First Series. NOTE: Not all Wittersham Level was lost immediately after the 1644 sea-flood: some walls were broken down later. On later occasions various parts of the Level, e.g. Fane's Level, were temporarily reclaimed.*

increasing reluctance to fulfil their obligations in the more remote parts of the Levels (coincidentally those nearest the sea), and their minds turned towards inning Wittersham Level in order to reduce their financial commitments. In preliminary moves, foot groynes and stops were made to encourage swerving in the creeks in that Level.

A treaty for shutting the sea out from Wittersham Level was signed between the two levels on 31st August 1671 and confirmed in Chancery on 2nd May 1676. All previous articles were ratified. All rents and charges were to be paid by the Upper Levels as before, until the sea had been shut out for six years, at the end of which the commissioners were to separate and divide each owner's land with sufficient ditches and outfences and return the lands to the respective owners. The Upper Levels were to maintain all the walls, sluices and common sewers constructed in these works, and pay all damages incurred within one month, and the bailiff of Wittersham Level was to have power to distrain for them if necessary.

For the first time, some responsibility was laid on the owners of land in Wittersham Level: all those who sewed their waters through any of the new sewers or sluices were, after the six years were up, to contribute towards the cost of operating them. There was still, however, no clear idea of which parts of the Level were to be inned, nor how the work was to be financed, and there was therefore a delay until the committee to direct and oversee the inning was appointed on 13th April 1680. For the next 22 years executive power was vested in this committee, which took direct decisions and action and reported back to the main Commission later.

## 1680–1688 Inning of Wittersham Level: First Phase

Large blocks of land were rapidly enclosed on both sides of the Level and below Blackwall (Fig. 12.6). In Abdall Level the wall of the old salt channel of the 1630s was used as a foundation for the new innings walls. In other

words, the wall had survived as a significant feature in spite of the Level being open to the tides for the previous 45 years. In September 1684 the expenditor was directed to return to Richard Hudson, the principle operator, his obligations, "the Level now being inned", which indicates that all the reclamation envisaged at this stage had been completed. That such a large acreage could be inned in so short a time and without apparent mishap seems to indicate that the time was indeed ripe, and that the sides and the west end of the tidal area of the Level had already been silted so as to become 'high salts', only occasionally overflowed by the tides.

The Rother was diverted by Hudson's Shutt from its unrestricted tidal channel in the centre of the Level to the new, embanked, Craven Channel which ran through the new inned lands and hugged the south side of the valley, and the New Bridge on the Kent Wall causeway dates from this time. The effect of this was that the river now had no tidal reach in Wittersham Level, but entered the estuary nearly six kilometres further downstream, at Craven Sluice. Surprisingly, the exact date of the construction of the Craven Channel is not known, but it was clearly an integral part of the innings works of the early 1680s, and was certainly in operation by 1684.

The Craven Sluice was apparently an earlier private gutt of Wittersham Level, since there is no mention of it in the decrees and orders of the Upper Levels before 1671. Then, as interest in the possibility of inning increased, attention of the Upper Levels turned towards it and directions to repair and preserve it were given in 1672, 1677 and 1682. In the winter of 1684 the sluice, which by then was essential to the drainage of both the Rother and Wittersham Level, was in great danger of blowing up. The expenditor, taking advice of several of the committee and also from some 'ancient and experienced' local workmen, made a dam at the sluice in order to repair it and made a new cut to turn the water which otherwise would have passed through Craven Sluice, into Scots Float Channel. He was also able successfully to shut the gates at Blackwall to hold the river water back temporarily, in spite of a "great flood". Only later was all this approved by the main Commission, who gave instructions to repair the sluice or to lay a new one nearby.

Accordingly, in April 1685 the expenditor contracted with William Piper and John Dunk to build a new sluice, of three waterways, 107′ long, for £320. Progress was slow and difficult:

"It happened that the ground where the said sluice was to be laid was so bad that the platform for the said sluice could not be made ready so soon as it ought, by the space of three weeks at least. And after your petitioner came to lay the sluice down, there did slide at least 1000 loads of earth in upon your petitioners' work, several times one after another, to their great hindrance, and ... obstruction, ... so that by reason of the premises and of extraordinary rains, tempests and other unavoidable accidents.....they have been at great losses by their undertaking the said work for the sum agreed on".[7]

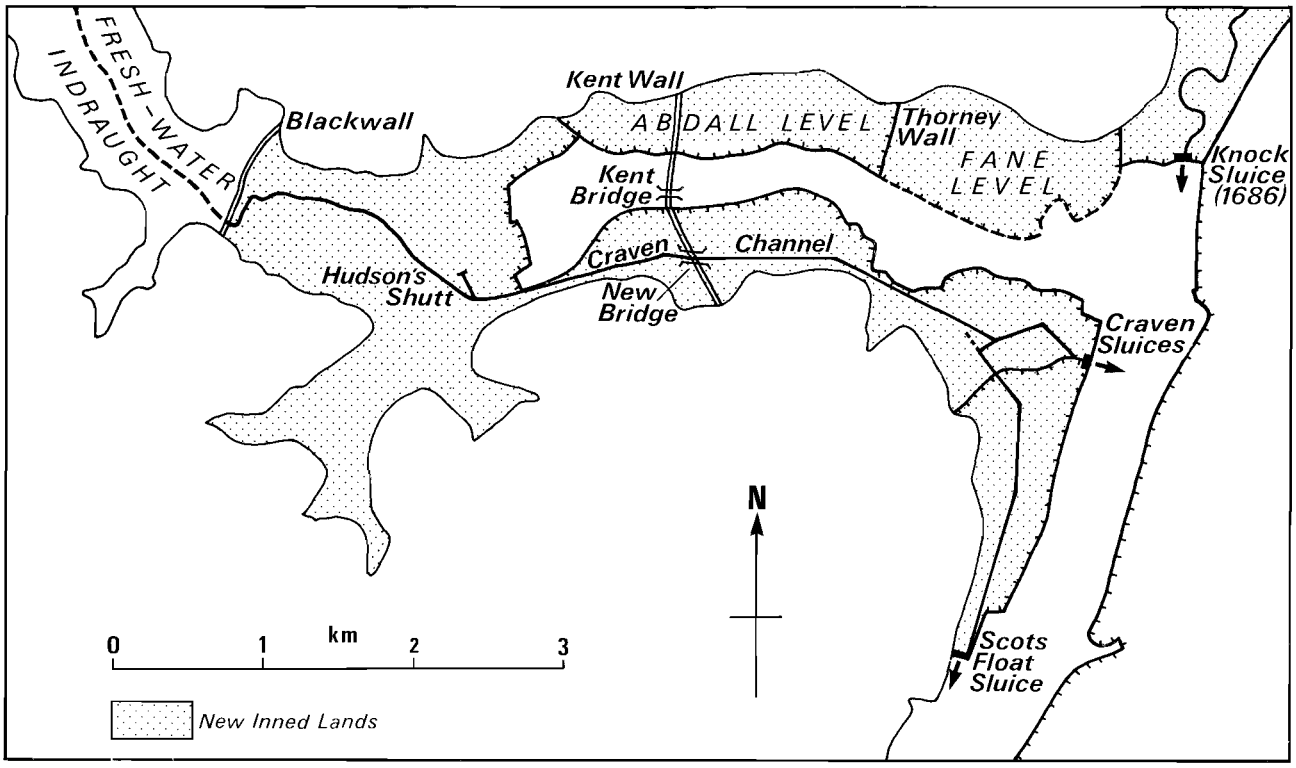


*Fig. 12.6 Wittersham Level 1688, with the Rother flowing in the Craven Channel. Based on OS 1:25000 First Series, with additional information from: Hill 1683; Hill 1688; Hill 1688|9; le Pla 1688|9; Browne 1690; Hill 1717.*


*Fig. 12.7 Craven Level (part of Wittersham Level) 1688. Thomas Hill. (part of) East Sussex Record Office AMS 4865.*

This was apparently the Second Craven Sluice. In September 1686 orders were given to 'new frame' the Old (i.e. first) Craven Sluice and replace it. (This was presumably accomplished before the storm of the following March, because flooding at the sluices was not mentioned on that occasion.) Hill's map of 1688 (Fig. 12.7) shows the two sluices and one dead-end channel through the salts – which may have served the original Craven Sluice, or have been the other site, abandoned because of slumping.

The impromptu diversion of the river to Scots Float set a precedent, and a regulating penn was laid at the upper end of the Scots Float Channel so that the water could be directed to Craven Sluice or to Scots Float.

The problem of Shirley Moor was not solved for long, if at all. (In fact, considering its back-water situation and the lack of fall in the Appledore Channel it was likely to be extremely difficult to drain Shirley Moor well at any time without the use of pumps.) In 1683 Shirley Moor complained again that the Appledore Channel was decaying and that its lands were not sewing well, and suggested that it would be an improvement if the Thorney Wall sluice was moved downstream, nearer the sea, an idea which was first put forward in 1652. The reason behind this seems to have been a fall of 7′ 3″ between the Thorney Wall Sluice and Knock Sluice, while there was practically no fall between the Thorney Wall Sluice and the gutt of the Redhill Sewer (TQ 935301).[8] The Knock Sluice (Fig. 12.6) was accordingly built by Richard Hudson in 1686 – as soon as the Upper Levels had finished with the expense of the innings works in Wittersham Level.

Inevitably, sooner or later, the works of the new innings had to stand the test of abnormal weather conditions. A winter flood of land water lay between Shirley Moor and Bodiam from November till March 1684 – longer than usual.[9] Then a sea-flood on 5th March 1686 caused a major set-back:

"... in the night there happened an extraordinary tide which, being accompanied with a very high wind, broke down above 16 rods of the new inning walls in ...Abdall Level. And very much damaged most of the new inning walls in Wittersham Level. And also broke the shut and walls last made by Richard Hudson near Knock in Wittersham Level. And after that broke down and carried away the penn laid in the channel above the said shutt, by reason of which last mentioned breach the sea flowed up into Shirley Moor and several other Levels near the channel between the said Knock Point and Blackwall".

Immediate action was taken by the expenditor, Elhanan Tucker, sanctioned much later by the commission. To prevent further damage, especially to the main shutt at Knock, which would inevitably have been very great "if the next stream had had its course there", Mr. Tucker gave notice to several of the commissioners and directors of the inning, and consulted several able workmen next day, and immediately set about making a dam in the Appledore Channel above the breach, which he accomplished in five days. He set a gutt beside the dam to release the rising fresh water which resulted from heavy rain. This was completed on 18th March, and he also succeeded in shutting the sea out of Abdall Level on 16th March. He was then ordered to go on repairing the other breaches and defects in the new innings walls and to heighten and strengthen them as occasion required.

## 1688–1702 Inning of Wittersham Level: Second Phase

In the winter of 1688 some miles of the walls of the new innings were still in great danger,[10] while in the autumn of 1687 the commissioners had begun the process of 'delivering up' the lands in Craven Level, then inned the required six years, to the respective owners – albeit with controversial delays.[11]

The commissioners were also intent on further inning, and this second phase was more problematical because it involved the central tract of the level. Opinions were sought of outside consultants. George Townsend, apparently only commenting on proposals already made by the committee, approved a new shutt across the old salt channel between Kent Wall and Thorney Wall (the second Thorney Wall, see p. 142, above), and a wall and other works to enclose Mr. Fane's salts. He warned, however, that a lower shutt could not be made that summer across the Old Salt Channel where the fishing poles were standing, and that if such a shutt was made there would be at least 50 acres of land above that shutt which would lie so low that it would not sew but lie under water.

Mark le Pla, an engineer from the Huguenot settlement at Thorney in the Fens, was commissioned as an advisor by Lord Thanet, one of the principal owners in Wittersham Level. He took an altogether wider and longer-term view of how best to secure the works in Wittersham Level and quicken the sew of the Upper Levels.[12] In order to preserve the sew of Craven Sluice, Knock Sluice and Kete Gutt, he recommended returning to the principle of an indraught. This was to occupy part of the Old Salt Channel between two new shutts, with a cut leading in from the Craven Channel (Fig. 12.8). He also recommended widening the Craven Channel by 20′ – or possibly 40′. And, if it was thought necessary to drain the old indraught above Blackwall, they should do so by installing two engine-mills (wind mills were becoming increasingly common in the Fens at that time), which he said would make the indraught "indifferent summer lands" and – much more important – help to scour the Craven Channel in the summer. His provision of an indraught and for augmented summer flow in the Craven Channel seems to have had the best ingredients for long-term success. The commissioners, however, chose to disregard le Pla's most important recommendations, and four days after the date of Townsend's report they went ahead with their own proposals and gave orders for the construction of the shutt Townsend approved, to be followed by another – the one he warned against. In May 1689 Mr. Tucker, the expenditor, and certain other commissioners were already making a new shutt quite contrary to le Pla's directions.[13] This, the First Shutt (Fig. 12.9) of John Nichols, was completed that year (Richard Hudson had died in the winter of 1688). A second shutt (Nichols' Middle Shutt) was built sometime between 1691 and 1693 (the newly-enclosed land was delivered up to the owners on 27th May 1698).

A third shutt was planned to be built from Craven Sluices to Elderton's Wall and in the spring of 1695 the contract was put out to Thomas Thompson of Spalding, Lincolnshire. However, the shutt broke, a summer's work was lost, Thompson proved unequal to his task and

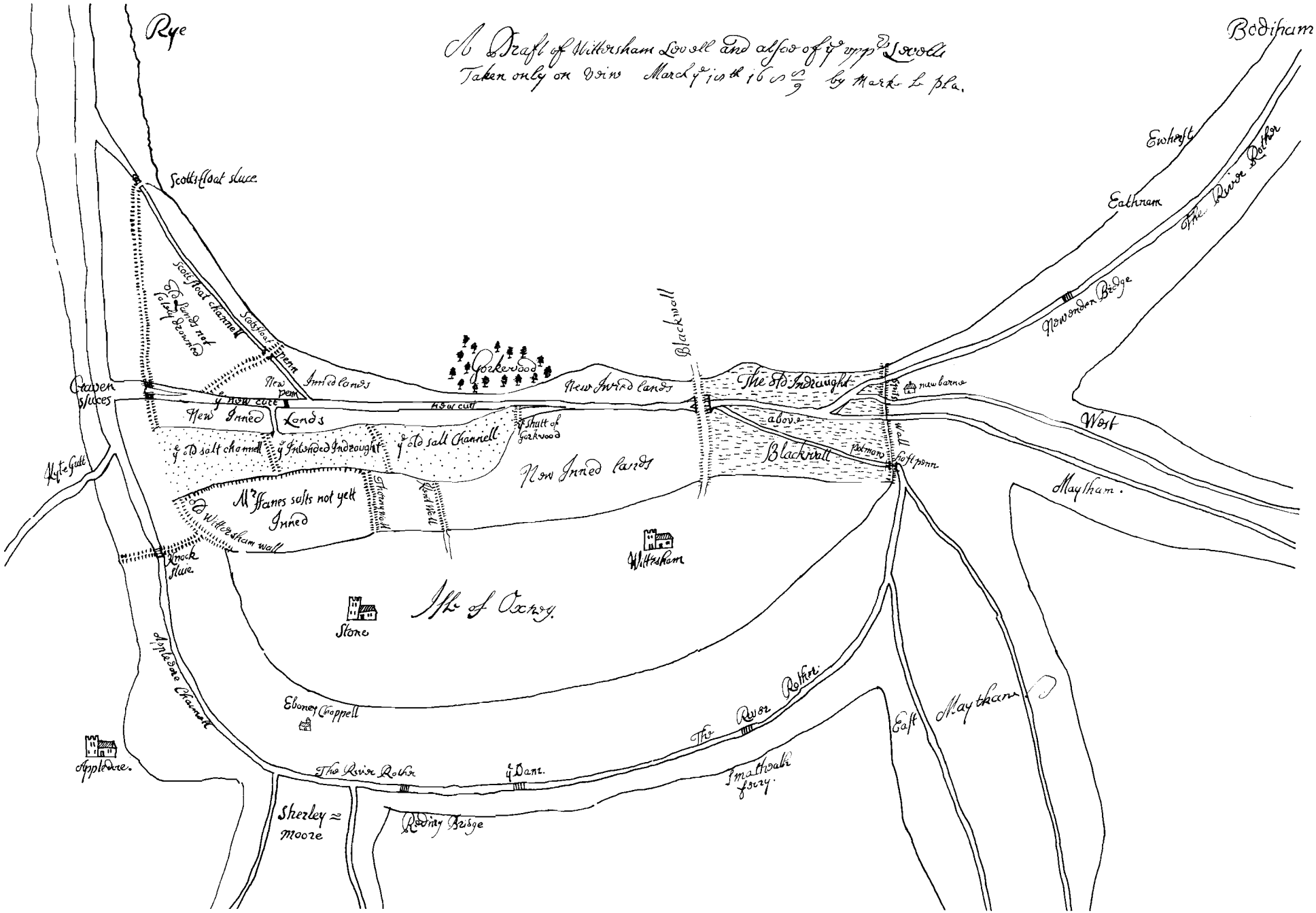


*Fig. 12.8 Sketch map with proposal for a new indraught in Wittersham Level. Mark le Pla. 1688/9. (part of) Kent Archives Office U455 P4, copied by Clifford Bloomfield.*

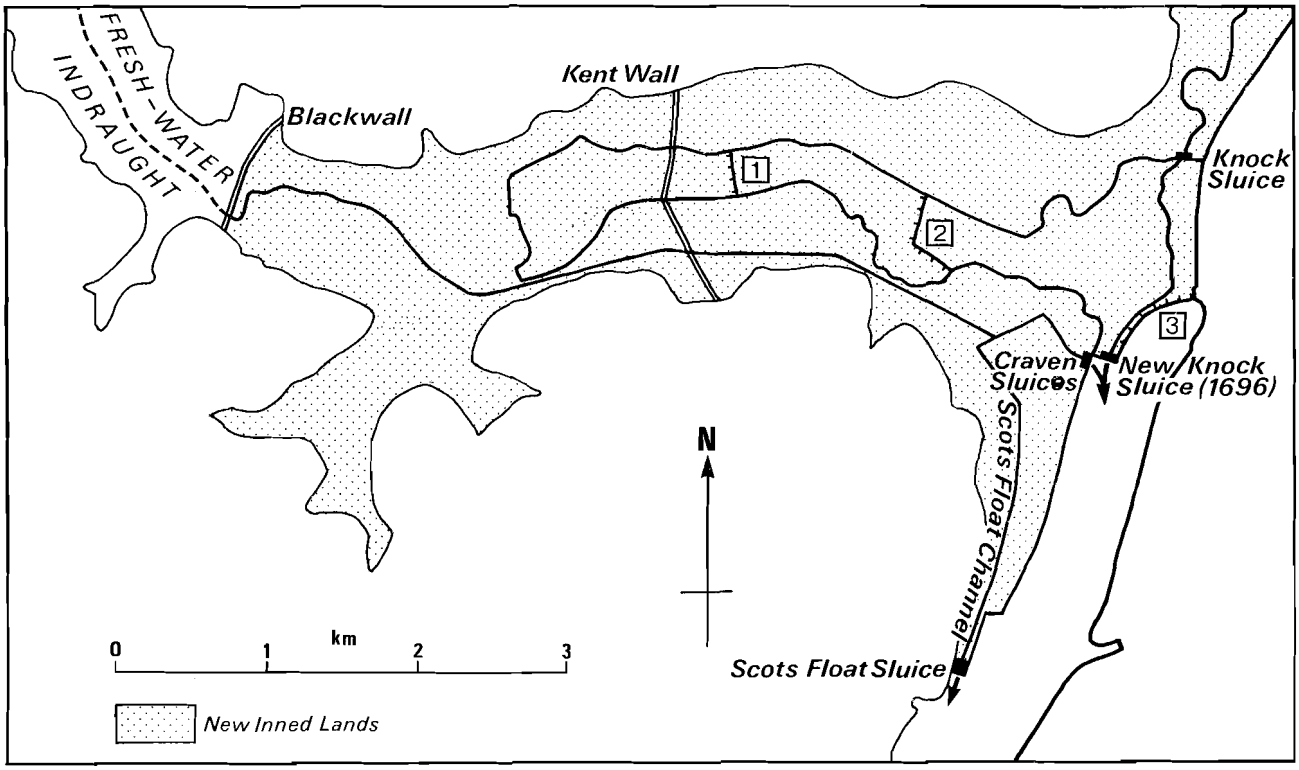


*Fig. 12.9 Wittersham Level 1696. Inning completed. 1, 2, 3 refer to Nichols' First, Second and Last Shutts. Based on OS 1:25000 First Series, with additional information from: Newman 1698; Hill 1717.*

was condemned by the workmen of the levels as very unskilful and inexperienced. His report, dated 12th July 1693, shows considerable lack of understanding of the Levels: "there is enough fall to drain the lowest lands if you will but make drains good to the sluices, viz from Blackwall to the sea". He concluded that if certain works he recommended were completed "you need not question but you will have a dry level, except in some hasty rains the low grounds may some of them be drowned – but it will soon go off again".

It then fell to John Nichols to complete the work the following year. This – Nichols' Last Shutt – enclosed in one sweep both the remainder of Wittersham Level and a large block of the Appledore Channel, and included building the New Knock Sluice at the new outfall of the Appledore Channel (known today as the High Knock Channel). The new sluice was placed very close to the two Craven Sluices, presumably in the hope that it might derive some benefit from the scour of the river (Fig. 12.9).

In a space of 16 years 1,974 acres of Wittersham Level had been inned, and by 1702 the last of the new inned lands were divided and delivered up to the respective owners. On the surface, the situation must have appeared very satisfactory to the Upper Levels. A large part of the rent previously paid to Wittersham Level owners was discontinued (rent remained payable only for the indraught above Blackwall, and for the land used for the Craven Channel), and they had also avoided the need to repair the walls of the earlier shutts, because each successive shutt had become the new seaward line of defence.

However, the alteration of the Rother drainage and the inning itself had created further problems. In addition to inning Wittersham Level, approximately 620 acres of the old Appledore Water between Thorney Wall Sluice and New Knock Sluice had also been enclosed. Craven Sluice, the New Knock Sluice and Kete Gutt now stood at the head of a very much reduced tidal estuary, where there was practically no scour from the ebb tide. Only the flow of the river remained to scour the sluices and the channels outside them.

The problems of getting water away from the Upper Levels had already increased. From 1690 onwards there were repeated instructions to widen and, with worse implications, to deepen the channels. Early – though relatively minor – problems arose with the bridges. In 1691 the foundations of Kent Bridge were not low enough to effect the draining of the indraught; and in 1698, after the Appledore Channel had been 'new cast' and deepened for the better sewing of the Upper Levels, Oxney Ferry Bridge was found to lie about two feet too high and to be an obstruction to the passage of the waters.

In 1691 Robert Culpeper had brought a petition to the King and Queen asking that the Wittersham Level be opened to the tides so that both the Ancient Cinque Port of Rye and the navigation on the Rother should be restored. More time and trouble had to be expended in refuting the petition presented by Rye to the House of

Commons in the spring of 1699 concerning the decay of their harbour, in which they requested the removal of all the new stops and sluices. The Upper Levels and Wittersham Level united to express their opposition.

## 1702–1722

The attention of the commissioners was now focused on getting the land-water away from the Upper Levels to the sea, and their problems increased. The Craven Channel was repeatedly deepened and by 1703 the flow was evidently dependent on a nine-foot ditch in the bottom of the channel, which was so obstructed that if it was not cleared several hundred acres in the Upper Levels would inevitably be drowned. The channels were frequently obstructed by slid-butts – slumped masses of the sides of the channel. The deeper the channels became, and the more steep their sides, the more likely slumping was to occur. Another problem, first mentioned in 1707, was the swelling, rising and breaking up of the peat in the channel, which impeded the flow of the river notably near Corkewood (Fig. 12.8). It appears that deepening the channel had reached the peat bed which lies beneath the surface sediments. In doing so, the commissioners had added very considerably to their problems because, before the use of the well-pointing system of pumping, it was impossible to prevent the peat rising in the channels. (As recently as 1939 an attempt to build a concrete structure in the Rother below Maytham encountered great difficulties because of the force exerted by rising peat.)

In 1702 Craven Sluice was very much swerved by the dryness of the summer, not having a force of fresh water to cleanse it. Conditions were evidently already marginal. A penn to regulate the river flow was laid between Kent Bridge and Craven Sluice in 1703, in an attempt to prevent the swerving.

A violent storm of wind on 19th December 1705, which coincided with a very great spring tide, caused great damage to the Last Shutt, the sea walls and sluices and the new penn above Craven Sluice. The commissioners met, exceptionally, in January to raise money to repair the damages and secure the Upper Levels and Wittersham Level from inundation, and decreed half a quarter scott payable on January 11th. In May 1706 the Old Sluice at Craven was reported under-run and so very much decayed by the recent storms and spring tides that if speedy care was not taken to repair it, both Wittersham Level and the Upper Levels would be in danger of being drowned.

Captain William Markwick advised that Craven Sluice should be replaced by a sluice of brick, well puttied and buttressed. This was certainly done, though the year of the replacement is uncertain, because in 1710 the Craven Sluice was once again to be temporarily repaired. The second Craven Sluice (known as the Lincolnshire Sluice) was also rebuilt in about 1710, by John Clarke, a carpenter, although in 1712 it was found that, contrary to his agreement, he had installed old gates instead of new, and the bottom of the sluice was defective and spewing up water in several places.

Markwick thought, probably rightly, that the cause of the moor swelling and breaking up in the channel was the weight of the banks, and advised that piles 14′ or 15′ long should be driven in by the sides of the channel close to that shore. To be effective, these piles would have needed to pass through the peat into the underlying sediments: whether these would have done so is not clear.

Blackwall needed frequent repairs because of damage caused by the fresh water coming down against it. (When the indraught was full, the wall was exposed to a fetch from the west of some three kilometres.) The Upper Levels were also becoming increasingly insistent that Blackwall impeded their drainage. They had already removed the gates from the two sluices, and now – in order, they said, to preserve Blackwall – they installed an open brick arch, without gates, in the centre of the wall in 1708 or 1709. (An open arch of brick or stone had been ordered as early as June 1704 but, according to one source, was abandoned on that occasion because of a public outcry and a protest by Lord Thanet.) There were definite assertions that this had been organised in their own interest by the owners of land in East Maytham Level, who were disproportionally active among the commissioners of the Upper Levels. The map shown in Fig. 12.10 was evidently drawn to illustrate the interest of East Maytham.

Hardly surprisingly (since the channel was not embanked between Blackwall and Hudson's Shutt), in 1710 this was said to be giving rise to great floods in Wittersham Level – which Markwick then said he had forecast. There is a certain irony that in 1713 the commissioners of the Upper Levels complained that the owners of lands further upstream – in Salehurst, Etchingham and Burwash – had widened and deepened their channels and sewers, which might prejudice the Levels because their waters were coming down too hastily!

The commissioners then became pre-occupied with litigation. They embarked on a protracted case to recover arrears of £160 per annum owed by Romney Marsh and the White Kemp Watering of Walland Marsh, (payment to the Upper Levels had apparently ceased as from July 1644: it is not known whether any later payments were made), as well as several suits against John Fane and other individuals. Between July 1713 and July 1725 a total of £6,227 was borrowed. On the other hand, the decree and order book contains no mention of the state of or repairs to the sea-sluices or sea walls between 1st July 1713 and 26th July 1722. Scots which should have been used for maintenance work were used instead to pay legal fees, and the commissioners got themselves heavily into debt.

## 1722–1737

The commissioners were suddenly alerted. In July 1722 the Scots Float Sluice was in great decay and in danger

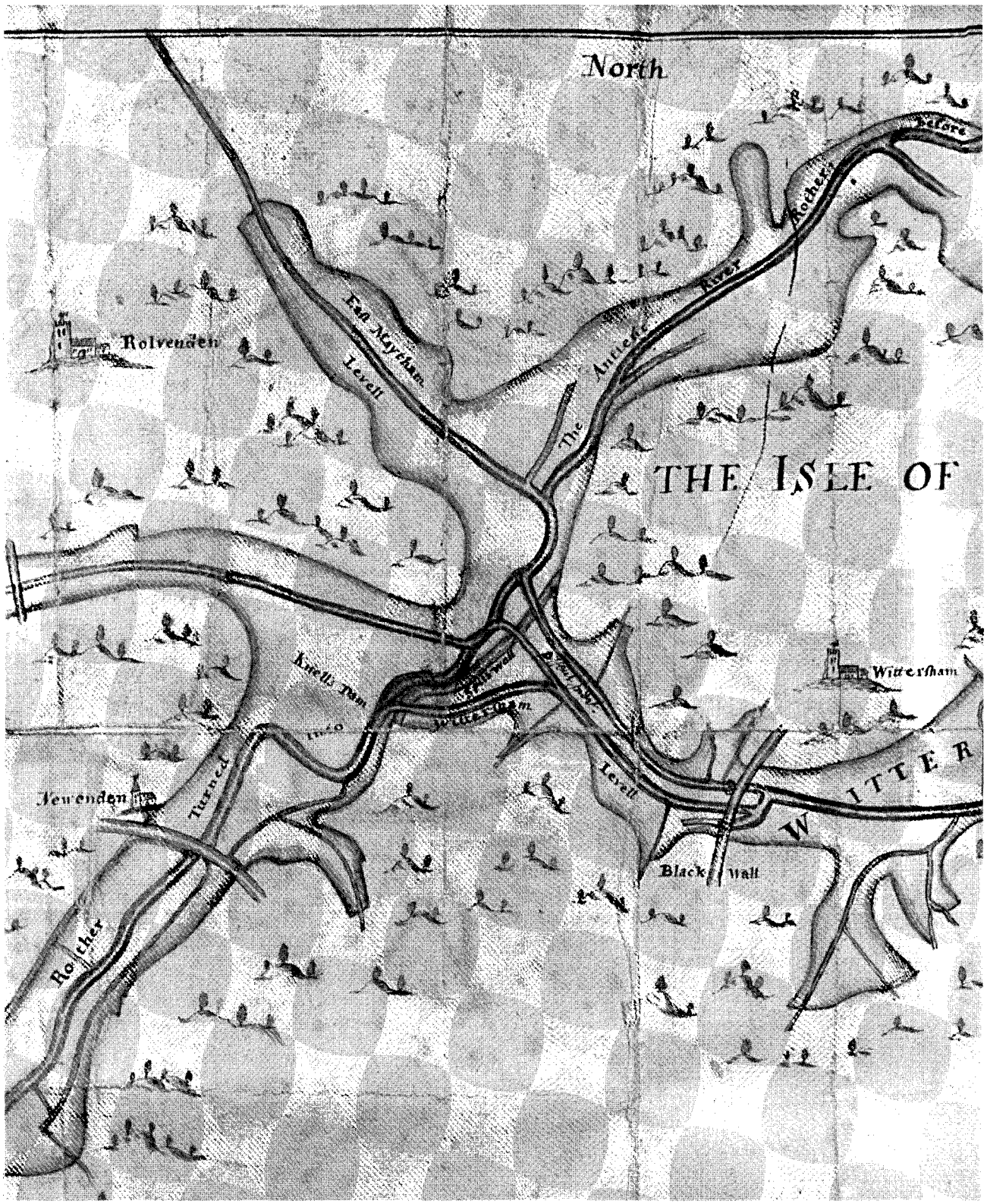


*Fig. 12.10 Blackwall and the sewers at the west end of the Isle of Oxney c.1732, illustrating the interest of East Maytham in the brick arch in Blackwall. (Part of) East Sussex Record Office AMS 4841.*

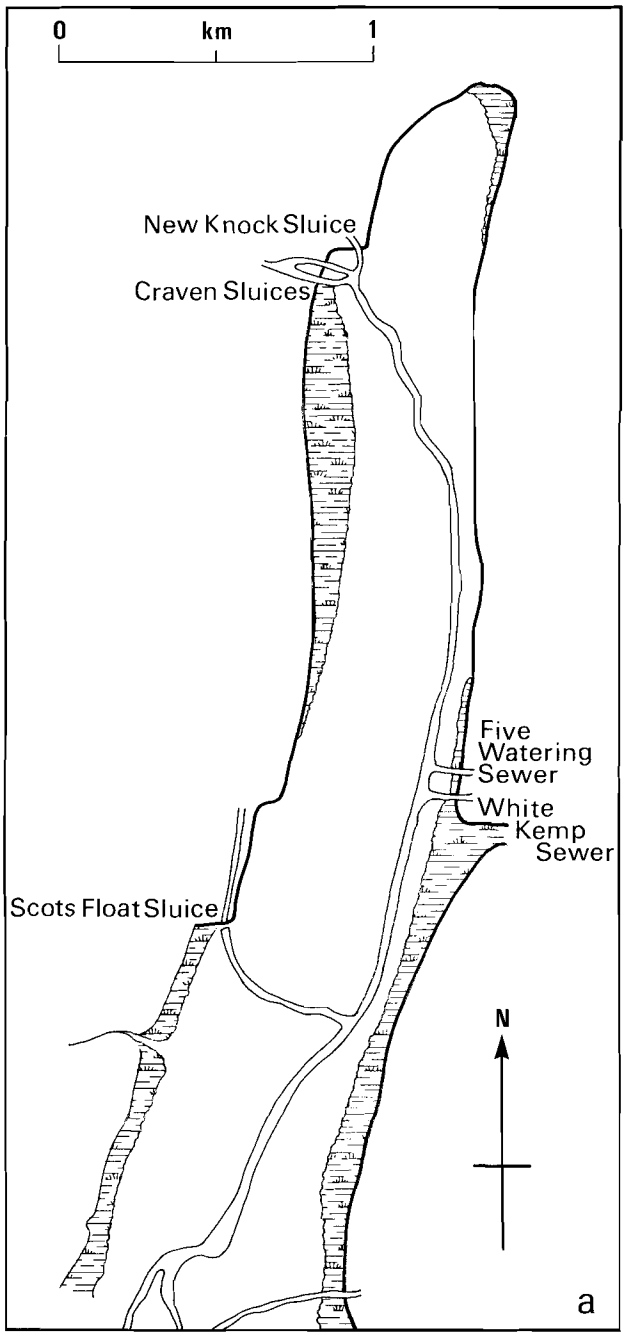


*Fig. 12.11a Silting of the Rother estuary 1702, after Newman and Hill.*

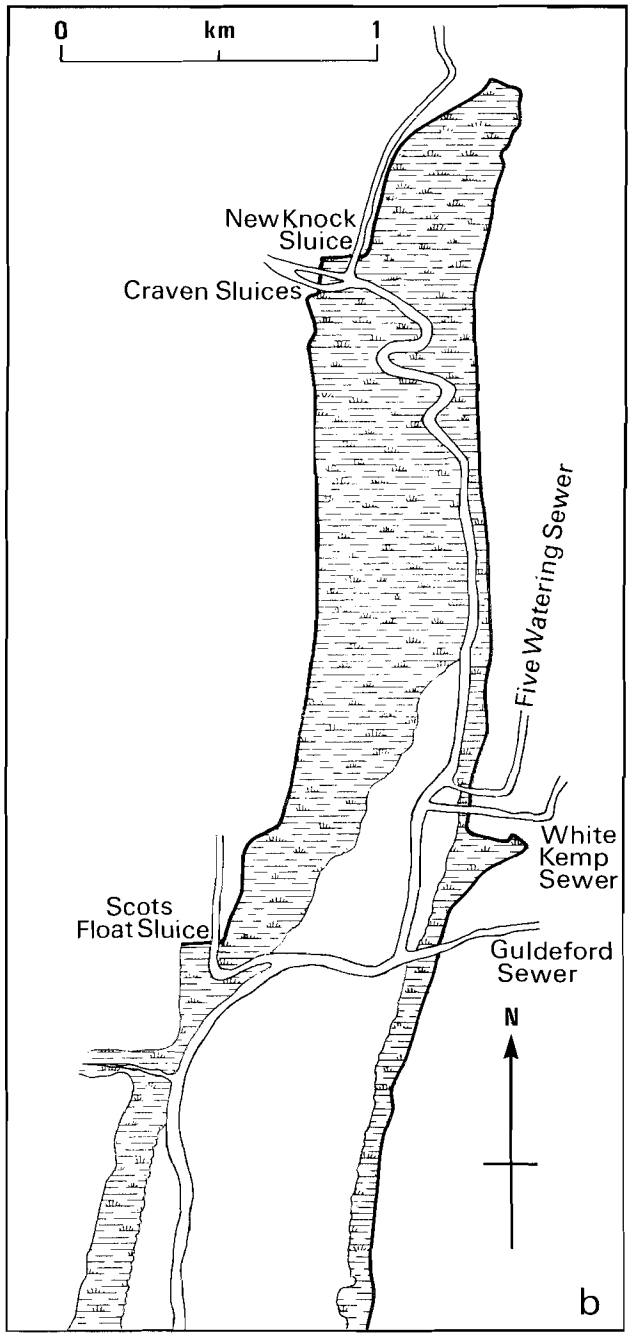


*Fig. 12.11b Silting of the Rother estuary 1717, after Jared Hill.*

of being blown up, "whereby the whole Level of Wittersham might be overflowed unless speedy remedy be taken". Much more serious in the longer term was the silt which was fast accumulating at the head of the estuary. In the face of a very serious situation the commissioners agreed to settle their differences with Romney and Walland Marsh. (They remained in debt until after 1736.)

A sea dam was hastily thrown up outside Scots Float Sluice, to keep the sea out and John Reynolds of Poplar, Middlesex was contracted to lay a new sluice for £750, of which £350 was to be provided by two local sureties and £400 was to come from future scots. The work was completed by 12th October 1732, and £175 was paid – somewhat tardily – to Wittersham Level for damages sustained because Scots Float Sluice had been allowed to decay. Reynolds was provided with a house at Craven Sluice and appointed to look after all the works of the Upper Levels. He was to "watch the channel walls and sluices night and day in spring tides ..... and continually keep open Craven Sluices, or if either of them shall happen to swerve, open the same upon the first (i.e. autumn) flood, or so soon as there shall be sufficient weight of water for that purpose, without any charge to these (Upper) Levels".

But the writing was on the wall for the sluices at the head of the inlet. Figs. 12.11a and 12.11b show how the silt outside the sea walls had advanced in fifteen years.

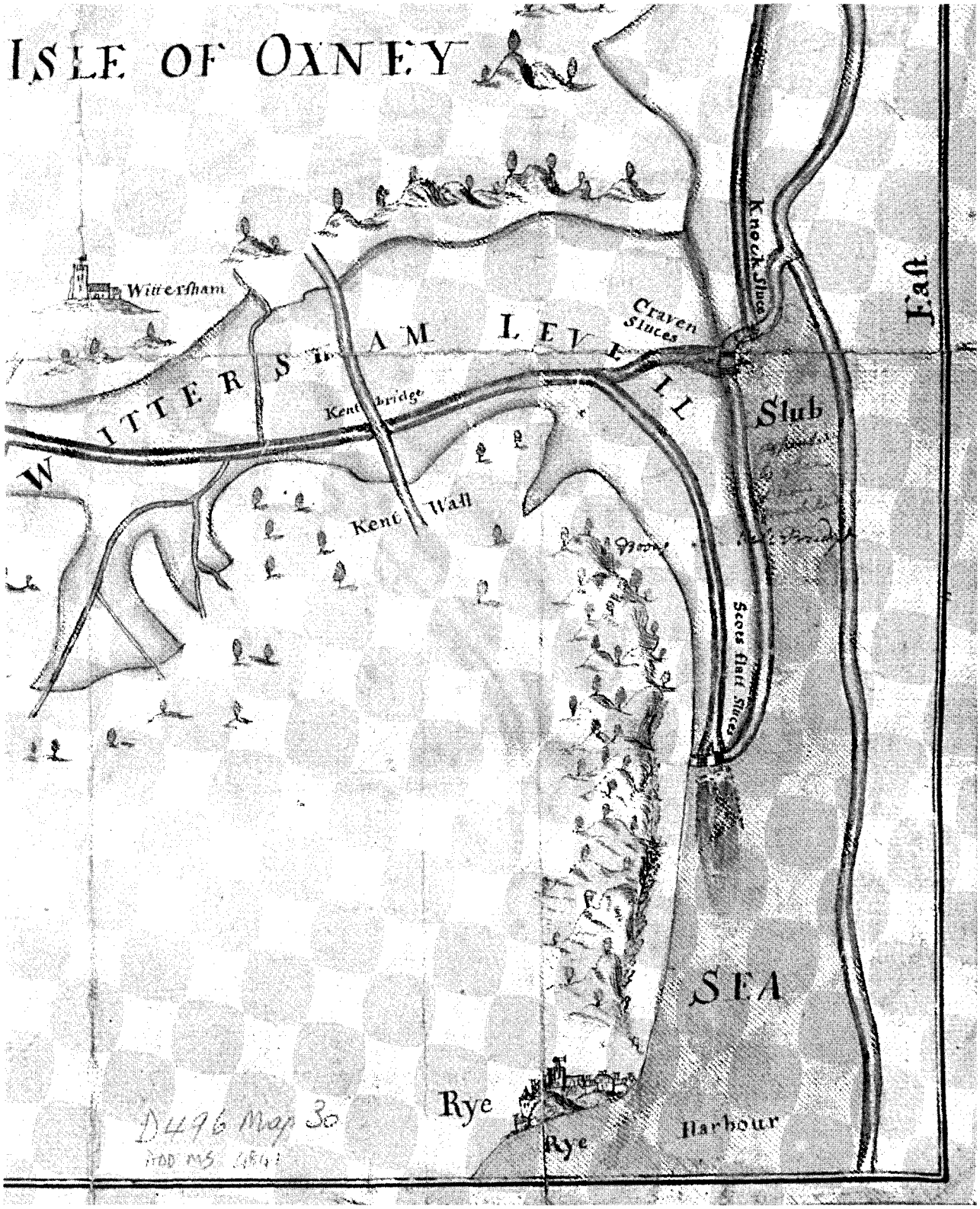


*Fig. 12.12 East end of Wittersham Level c.1732. (Part of) East Sussex Record Office AMS 4841*

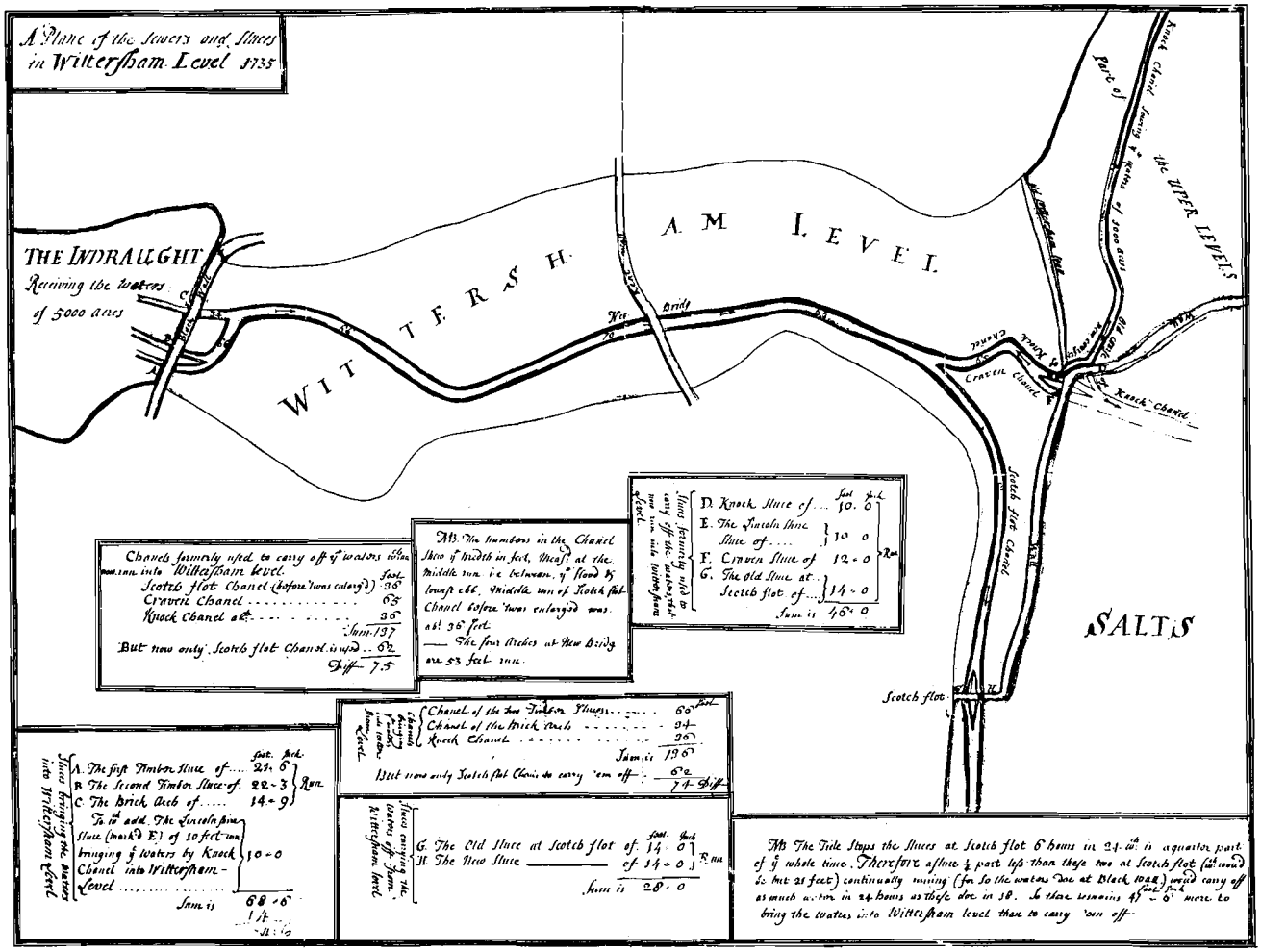


*Fig. 12.13 Plan of the Sewers and Sluices in Wittersham Level 1735. Kent Archives Office U282 P3.*

Two 'basins' (small reservoirs) were built to try to flush out the channels. The great crook in the channel outside Craven Sluice was ordered to be straightened. A straight cut from Craven Sluice to White Kemp Gutt was contemplated, but ruled out after a trial proved that this would be very hazardous, if at all practicable, because of the looseness of the earth which would slump into the channels until the ground had become firmer.

Nothing could be done to keep the channels and sluices open. The Lincolnshire Sluice failed in 1728, and Craven and New Knock about two years later. Sea dams were thrown up outside all three to prevent the salt water and tides from breaking into them and drowning the Level. In June 1732 it was utterly impracticable to open Craven Sluice and, at the insistence of Wittersham Level, a second sluice was built by John Reynolds at Scots Float and was in use by November. Fig. 12.12 gives a somewhat pictorial illustration of the situation at this stage.

With the New Knock Sluice useless, provision had to be made for the waters of the Appledore Channel. In July 1731 the commissioners ordered a new channel to be cut from New Knock Sluice to the Lincolnshire Sluice. The flow of the water was reversed through that sluice and in the sea-ward end of the Craven Channel, so that it flowed west for approximately one kilometre to join the Scots Float Channel (Fig. 12.13). Thus, for the first time, all the waters of the Upper Levels were flowing one way or the other through Wittersham Level and out at Scots Float. In 1734 the Scots Float Channel was widened: in 1735 it was deepened and in 1736 it was widened again.

Unfortunately, optimism about the combined capacity of the Scots Float Sluices was misplaced. The winter of 1734 proved very wet and "a great part of the lands in Wittersham Level were overflowed". The two Juries summoned from Kent and Sussex assessed the damages at £426.2.6d. The Upper Levels procrastinated, eventually meeting Wittersham Level in July 1736, when it was agreed they should pay only £200 in full payment for the damages. In return, Wittersham Level was discharged from all arrears of payments of scots (they had never contributed to the cost of the new sewers and sluices as stipulated in the Agreement of 1676), but

were in future to pay an annual scot of 4d per acre. The Upper Levels were to pay for all damage caused in future by their waters.

As the drainage situation became more difficult, so relations between the two Levels had deteriorated. John Waters, the water baliff of Wittersham Level, refused to accept the £200 as full compensation, and instead broke into the Upper Levels and distrained and sold 135 of their cattle. The accumulated grievances of Wittersham Level were probably compounded by the frustration of knowing that there were no new major options open: the silting had closed in on the Levels.

Lord Westmoreland, John Waters and others then petitioned the Lord Chancellor on behalf of Wittersham Level.[14] That Level was now flooded every winter. Water was admitted to Wittersham Level without restriction through sluices and bridges totalling 68′ 6″ in width: it all had to sew out through Scots Float, where the two sluices combined totalled only 28′ and the outfall was held up by the tides for six hours in every 24. The Upper Levels had first removed the gates in the two wooden sluices in Blackwall. They had then inserted the open brick arch, whose central position meant the flood water was "violently protruded .... with great velocity" into the channel below, which was still not embanked between Blackwall and Hudson's Shutt. Finally, the Craven and Knock Sluices had been "allowed to swerve" and the waters of the Appledore Channel had been introduced into the east end of the Level (Fig. 12.13).

For their part, the Upper Levels had spent since 1732 great sums – over £2,600 – on the new sluice and Scots Float Channel, which Wittersham Level used, but had never contributed towards. They attributed some of the flooding to the failure of the owners and occupiers of Wittersham Level to maintain or shut their minor outfalls into the Scots Float Channel, thus allowing water from the Channel to flow backwards on to the land. And they attributed the main problem to "the natural swerve and decay of the harbour of Rye, which no art, industry or foresight could have prevented".[15]

## Summary

Between 1635 and 1737 the Rother advanced in stages from its medieval to its modern course: only between Knelle Dam and Blackwall did change take place later. In 1635 it was 'turned' south of Oxney, through Wittersham Level; in the early 1680s it was moved to the new Craven Channel; and, having been directed for the first time down Scots Float Channel in 1684, it was finally restricted to that in 1731. Scots Float Sluice is still the limit of the tides on the river (Fig. 12.14). At certain times the tides had access to the whole of Wittersham Level and round the north of Oxney, but by 1696 embankment walls had confined the sea to a much smaller area (Fig. 12.9).

The period was dominated by silting – the deposition of sediment which, the records emphasize, was brought in by the tides. The sea-flood of Lady Day 1644 was the last major advance of the sea. That long-lasting inroad was due to the sea being allowed into a very low area (the Indraught, not recently open to silting) together with political choice which was directed by financial and technological considerations. It was perhaps inevitable that the great storms of 1686 and 1705 should overtop the defences set up to deal with the normal range of conditions, but on those occasions the damage was quickly repaired and the inroads of the sea very brief.

The commissioners had, all the time, to confront the dual problems of flooding (by excess land-water) in the winter, and silting (encouraged by insufficient river flow) particularly in the summer. Silting encouraged reclamation. While the silt was an advantage where it raised the level of the general marshlands, on the other hand it was the cause of immense drainage problems in the channels and sluices. Reclamation in turn encouraged silting. There is little doubt that the piecemeal inning of Wittersham Level between 1680 and 1696 built in and accelerated subsequent problems. After 34 years of relative stability, the major reduction in the size of the estuary and elimination of the salt-water indraught were critical moves. Short-term financial interests prevailed over longer-term interests of good drainage and the recommendations of Mark le Pla, probably the only advisor with no personal interest in the outcome, were disregarded. At that stage the commissioners relinquished control of future events. They might be censored for the neglect of the sluices from 1713 to 1722 but by then little, if anything, could be done to mitigate the inexorable course of silting.

The interdependence between one marsh area and another, not necessarily close to each other, is clearly illustrated. Much of the drainage work was experimental, and some situations were beyond contemporary technology. Set against a background of fast-moving physical change, conflicts of interest between different Commissions of Sewers and different marshland owners were inevitable.

## Conclusions

The present-day drainage (Fig. 12.14) is a product of the progressive work of earlier centuries, and the marsh landscape (much flattened by agricultural practices in recent years, but in evidence on aerial photographs, the earlier OS maps and the Soil Survey map) bears witness to salt marsh creeks, artificial watercourses, historic indraughts and reclamation walls. It has been here shown that certain embankments survived – as well as ditches – forty years of inundation by high tides, well enough to be used as foundations for later walls. It has also been shown that it was an accepted practice to vary the direction of flow in some major channels (e.g. in the Appledore Channel), and to reverse the flow permanently in others (e.g. in part of the Craven Channel in 1731). The implication is that many marsh features have a composite origin.

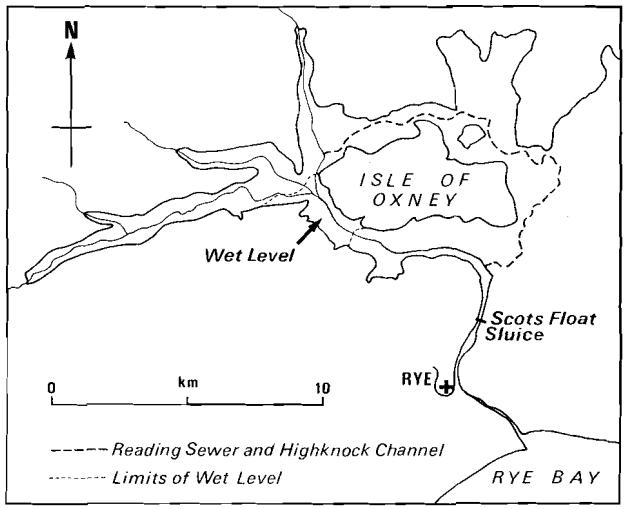


*Fig. 12.14 Rother Levels 1986.*

It has also been demonstrated that without modern dredging and pumping equipment, the use of a salt-water indraught was essential to maintain the flow of the river. It is suggested here that some of the fleets shown on Walland Marsh on the Soil Survey map may also have been used as small-scale indraughts, to retain salt water so as to clear the sluices of the various innings which, having no outflow of fresh water other than the local rainfall, would have otherwise been hopelessly silted by the tides. All these points should be borne in mind when considering the evolution of other parts of the marshland.

It is fitting to end with a quotation from Mark le Pla: "I conceive it extremely difficult if not impossible perfectly to cure the inconveniences of the sew of these Levels ....". Even with the pumping stations of today, it is impossible to get all the fresh water away during times of heavy winter rains. The 600 acres between Knelle Dam and Blackwall are still used as a 'Wet Level', which is purposely flooded on occasions with excess land-water until it can be cleared between high tides at Scots Float.

## Acknowledgements

My thanks are due particularly to Christopher Whittick of East Sussex Record Office for introducing me to the Dawes and Prentice Deposit, and to Kathleen Topping and Patricia Rowsby for their help at the Kent Archives Office. I am also grateful to George Roberts of Southern Water Authority who provided data on the flow of the Rother and the altitude of the river bed, and to Clifford Bloomfield for drawing a facsimile of le Pla's sketch map and for numerous discussions about local drainage. Fair copies of some of the maps were kindly made by Ron Halfhide of the drawing office in the Department of Geography at Royal Holloway and Bedford New College. Figures 12.7, 12.10 and 12.12 are published by kind permission of the East Sussex Record Office. Figures 12.4, 12.8 and 12.13 are published with permission of the Kent Archives Office.

## Appendix 12.1

*River Rother at Udiam (above Bodiam)*
*Monthly flows (cu.m/sec.)*

| *Month* | *1985* | *Long term average* |
|---|---|---|
| January | 4.31 | 3.96 |
| February | 2.62 | 3.50 |
| March | 2.42 | 3.09 |
| April | 3.51 | 2.35 |
| May | 1.44 | 1.47 |
| June | 0.74 | 1.04 |
| July | 0.42 | 0.62 |
| August | 2.69 | 0.64 |
| September | 0.52 | 1.01 |
| October | 0.61 | 1.68 |
| November | 1.48 | 3.06 |
| December | 6.62 | 3.34 |

The area draining to Udiam is approx. 52,000 acres (21,000 ha.). The area draining to Scots Float (which includes the catchment of the Kent Ditch, Hexden and Newmill Channels, together with smaller upland streams) is approx. 117,000 acres (47,000 ha.).

Information supplied by George Roberts, Southern Water.

## Appendix 12.2

*Records of weather and tides, 1631–1737*

1631, 16th-17th October. Storm.
"The sea did much beat down and hurt the wall near White Kemp Gutt, and the indraught thereof is blown up". ESRO D 496 Box 20.

1644, 25th March. Sea-flood.
"Part of Mr. Choute's lands drowned by a breach in the (channel) wall below Kent Wall". ESRO D 496 Decree Book, 30th April 1644. "Highlands in Iden drowned since Lady Day 1644". Decree Book, 8th June 1647.

1684, November. Fresh-water flooding.
"The flood which happened about November 1684 flowed higher and laid longer than usually it has done, from Smallhythe to Bodiam, not going totally off the lower lands until the beginning of March following, therefore doubtless did more damage than common winter floods, which go off earlier in the spring." ESRO D 496 Box 22.

1686, 5th March. A gale, coinciding with a (?)surge tide.
"An extraordinary and violent tide, accompanied by a very high wind." Decree Book, 22nd March 1686. Also Petition of Richard Hudson to the Upper Levels, 25th October 1687, ESRO D 496 Box 22.

1693, 6th October. Wet Season.
"The late great rains". Note attached by G. Bishopp to a letter from Mark le Pla. ESRO D 496 Box 19.

1702. Summer drought.
'The Craven Sluice is very much swerved, occasioned by the dryness of this summer". ESRO D 496 Decree Book, 16th September 1702.

1705, 19th December. "A violent storm of wind with a very great spring tide". ESRO D 496 Decree Book, 2nd January 1705. There is also a reference on 22nd May 1706 to "the late storms and spring tides".

1732. "The great drought for two years past". ESRO D 496 Decree Book, 8th June 1732.

1734. Wet Winter.
"The winter proving very wet, great part of the lands in Wittersham Level as well as most other lowlands in England were overflowed". KAO U455 010.

## Appendix 12.3

### *Glossary of archaic or local terms*

Basin: a small reservoir built on the salt-marsh to take in tidal water which was then released at low tide to scour the channel below, c.f. an indraught, which was larger.

Blow up: see sluice.

Brack: 1) a breach (e.g. in Knelle Dam). 2) a salted, brackish area.

Crook: a bend or curve (in a channel).

Cut, cutt: 1) a new channel, or 2) a short length of an embankment or sluice which has been lowered "to take off the top waters".
Also the verb, to cut.

Dam: a bank built across a channel to keep back the water. Usually a temporary structure, e.g. used when sluices needed repairs. The dams in the channels cut through Knelle Dam were often made and often cut up, as occasion required. Knelle Dam itself was built as a permanent structure (the name originated in 14th century). The Sea Dams outside the Craven and New Knock Sluices were also permanent.

Drowned Lands: marshland which was flooded all year round.

Expenditor: an officer appointed by the commissioners of sewers to expend or disburse the money collected by scots for the repair or construction of sewers and sea walls.

Forelands: 1) the land immediately outside a sea wall, or 2) the platform between an embankment and the channel it enclosed.

Groynes: piers, usually of wood, projecting from a channel wall, used to keep the channel in its intended course. Foot Groynes, presumably low-level structures, were used to encourage silting in the creeks in Wittersham Level.

Gutt: an outfall. Apparently an early name for a sluice. It seems to have been applied originally to outfalls from fresh to salt water, though as the tidal area diminished, this meaning often became obsolete for specific structures and included outfalls into fresh-water channels. e.g. by the end of the 17th century the Gutts of Shirley Moor emptied into a fresh-water channel.

High marsh (also known as Wittersham Highlands): the higher marshland, whose level had been raised by an additional deposit of silt.

High salts: the highest part of a salt-marsh, seldom covered by the tides.

Indraught: a large area of marshland used as a reservoir in which to collect fresh water and, usually, salt water taken in through one or more sluices. The water was then released in a rush to scour the sluice(s) and channel(s) downstream. c.f a basin, which was smaller.

Inning: an area which had been reclaimed from the sea. This involved enclosing it with an embankment wall and organising the internal drainage system and an outfall.
Also the verb, to inn.

Low marsh (also known as Wittersham Lowlands): the lower-lying marshland, generally less silted than the High Marsh and often with peat close below the surface.

Moor: peat, a bed of which lies beneath the Levels.

Moor-logs: tree trunks which occur in the peat. As the peat wastes away and the land-surface is lowered, the logs appear to rise to the surface.

Outfall: a sluice or gutt, the point at which fresh water is released into an estuary or the sea.

Penn, pend: a contrivance built across a channel to control the level and regulate the flow of water; a weir.
Scots: rates payable on marshland to the land-drainage authority.

Sewer: an artificial watercourse for draining marshland and carrying off surface water into a river or the sea.

Shut, shutt: an enclosure; an innings wall which involved shutting off a major channel.

Sleech: mud deposited by the sea or a river; soil composed of the same.

Slubb: thick, unconsolidated mud.
Also the verb, to be slubbed: covered with mud.

Sluice: an outfall; a structure of wood or masonry in a sea-wall or embankment for keeping out salt water and impounding the water of a channel. Provided with adjustable gates by which the flow of water is controlled. When a sluice is blown up, the entire structure of frame and gates is lifted out of the ground, i.e. at an exceptionally high tide. A sluice may be side-run or under-run by water getting in or out round the edge of the frame.

Stop, stopp: a contrivance inserted in a channel to control water movement and hence water level, possibly a stop-board.

Stream (e.g. the next stream, 1686): appears to refer to the next spring tide.

Summer lands: marshland which can only be used in summer, being flooded in winter.

Swarve, swerve: sediment (local Kent and Sussex).
Also the verb, to be swarved or swerved: choked up with sediment.

Wet Level: an area of marshland used to store excess land-water until it can be drained out through the sea-sluices.

Winter lands: marshland which can be used for farming purposes all year round.

## References

*(Superscript numbers in text refer to unpublished sources, listed below.)*

### *Published sources*

Eddison, J 1985: Developments in the lower Rother valleys up to 1600. *Arch. Cant.* 102, 95–110.

Rendel, W. V. 1962: Changes in the course of the Rother. *Arch. Cant.* 77, 63–76.

### *Unpublished sources*

Except where stated otherwise, all the information is taken from the Dawes and Prentice deposit (D 496) in ESRO, either from the Decree and Order Books of the Commission of Sewers for the Upper Levels (9 volumes spanning 1622–1744), or from the comprehensive index to the above, compiled by Thomas Frewen, elected clerk of the Upper Levels in 1734. The deposit also includes a large quantity of unlisted loose papers, in Boxes 19, 20 and 22, which are referred to separately, together with a large map collection which is included in the list of maps, below.

Abbreviations used are as follows:

BL British Library
ESRO East Sussex Record Office
KAO Kent Archives Office
PRO Public Record Office (Chancery Lane)

1. ESRO D 496 (2) and Stoneham 1599, but c.f. ESRO AMS 4846
2. KAO S/Ro P1
3. KAO U455 010
4. ESRO D 496 Box 22
5. KAO U455 010
6. KAO U282 L4/2
7. ESRO D496 Box 22: undated copy of the petition of William Piper and John Dunk to the commissioners of the Upper Levels
8. ESRO AMS 4867
9. ESRO D 496 Box 22
10. KAO U455 06/1 and ESRO D 496 Box 19: report of Mark le Pla
11. KAO U455 07: correspondence from John Gibbon to John Collier, who was apparently Lord Thanet's agent at Hothfield
12. KAO U455 06/1. ESRO D 496 Box 19: report of Mark le Pla
13. KAO U455 07
14. PRO C11 120/2: bill of complaint of Earl of Westmoreland (formerly the Hon. John Fane and Lord Catherlogh) and others to the Lord Chancellor, 10th February 1737, and the answer of eight defendants.
15. PRO C11 125/21: the answers of ten defendants. ESRO D 496 Box 20 (numerous depositions, dated February and March 1737). KAO U455 010

### *Maps*

In order to distinguish between them, four unclassified ms. maps in ESRO D 496 have been numbered 1–4 in this list by the author.

*c.* 1590 An untitled copy of a map of all the marshland between Fairlight and Hythe, including the Rother Levels. BL Cotton Augustus 1. i. 25. Also ESRO Rye 132/9 (reduced negative).

1594 The decayed harborough of Rye. Philip Symondson. ESRO RYE 132/4–6 (the original is in Rye Museum). PRO MPF 224

1599 The plote of Romny Marshe .....shewinge also the drowned lanes from Bodiam to Maytom with Wittersham Level and Sharlis Moor. John Stoneham. Hastings Museum MA.189. ESRO Rye 132/7,8. BL 3065.(37) (a photographic copy)

*c.* 1625 A copy dated *c.* 1700. Drowned Lands in Wittersham Level between Knelle Dam and Kent Wall. (The correct date is clearly after 1635, when the Rother was turned through Wittersham Level and the Level drowned). KAO U488 P1

1633 Wittersham Level: Spits Wall (Knelle Dam) to Kent Wall. The name of the surveyor is not given, but it is evident from ESRO D 496 Decree Book, 7th September 1693, that the map was by William Gire and Ambrose Cogger. KAO S/Ro P1.

n.d., pre 1635, untitled map of land of George Fane, showing Appledore River, Abdall, and Genibelli's Mill. ESRO D 496 (1)

?1635 The Lands of John Hendon Esq., in Iden. 24th July 1635(?). A "Trew Coppy" made in 1698 for the commissioners of the Upper Levels by Newman and Hill of an original by Cogger. ESRO AMS 4826

n.d. probable date *c.* 1635 Land in Iden, similar extent to above map. Unfinished copy by S. Newman and F. Hill made in 1698. ESRO D 496 (2)

1673 Drowned lands in Wittersham Level, showing the Wittersham Channel. A "trew coppy" made by Newman and Hill in 1698. ESRO AMS 4850

1675 Land of Blackbrook, Wittersham, indicating drowned land. George Ridgway. KAO U86 P24

1683 "Shewing how much the ancient Chanell called the Rother (the Appledore Channel) doth ascend and descend". Knock to Reading Street. Hill. ESRO AMS 4867

1688 Wittersham (Craven) Level Innings Map. T.Hill. ESRO AMS 4865

1688/9 Wittersham (Iden) Level Innings Map. T. Hill. KAO S/Ro P2

1688/9 Wittersham Level and the Upper Levels, sketch map. M. le Pla. KAO U455 P4

1689 Beeching Level near Moate House in Wittersham Level (Beckley and Peasmarsh parishes) T. Hill. ESRO AMS 4865

1690 New Inned Lands in Wittersham Level, i.e. Hudson's Inning and Nichols' (first) Inning. Richard Browne. KAO S/Ro P3

1693 Fane Level. New Inned Lands. S. Newman. ESRO D 496 (3)

1698 New Inned Lands in Wittersham Level (enclosed by Nichols' Middle Shutt and Nichols' Last Shutt). S. Newman. ESRO AMS 4824

1702 Rye Harbour with part of its Bay and Branches (up to New Knock Sluice), made for the commissioners of the Upper Levels. Very large map. Newman and Hill. ESRO AMS 4828. PRO MR 348

1717 Rye Harbour .. its Bay and Branches .. between Rye Harbour and Blackwall. Very large map. Jared Hill. ESRO Rye 132/19. BL Tabs 1.d.

1718 Rother Levels, Knelle Dam to Scots Float. ESRO AMS 4846

1724 Wittersham Level between Kent Wall and Blackwall. Jared Hill. ESRO D 496 (4)

1730 The Indraught between Blackwall and Knelle Dam/Spits Wall. John Stonestreet. ESRO AMS 4855

n.d., probable date *c.* 1732, showing the Upper Levels and Wittersham Level, limits Bodiam, Appledore and Rye. ESRO AMS 4841

1735 Sewers and Sluices in Wittersham Level. KAO U282 P3. Also a loose copy in ESRO D 496 Box 19

1736 Rother Levels a) from "about 1631" till "about 1677", and b) from "about 1680" to 1736. KAO U282 P1 and P2

1738 Becket Salts and lands adjoining Becket Wall, with lands outside Wittersham Wall as far south as Craven Sluice. Thomas Hogben. KAO S/Ro P6