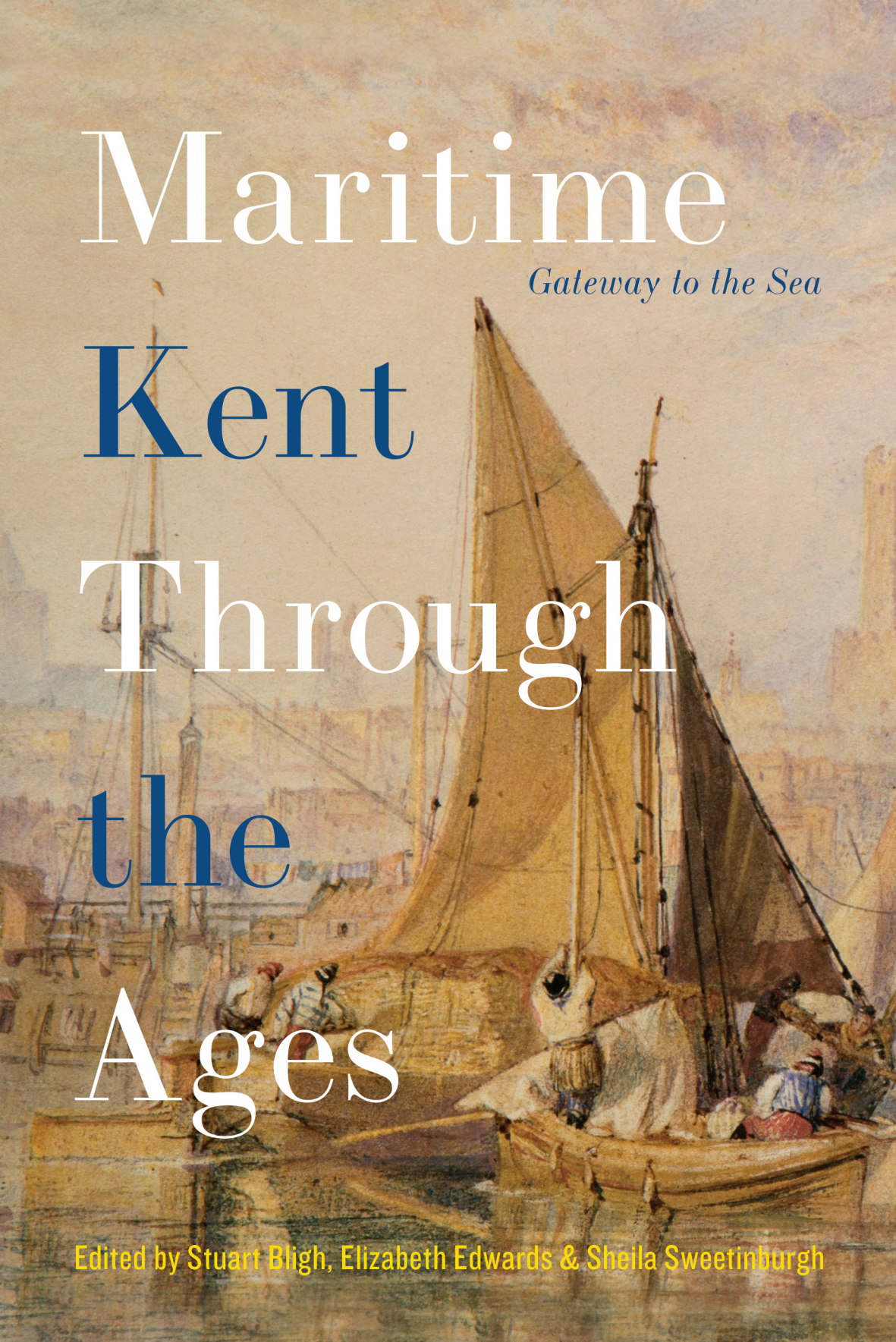
Maritime Kent Through the Ages

Gateway to the Sea



Edited by Stuart Bligh, Elizabeth Edwards & Sheila Sweetinburgh

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Frontispiece: Map of Kent showing coastal and important inland places; adapted from *An Historical Atlas of Kent* (courtesy of Kent Archaeological Society)

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KAS KENT ARCHAEOLOGICAL SOCIETY

Canterbury Christ Church University | CKHH CENTRE FOR KENT HISTORY & HERITAGE

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Susan Rose retired from both Roehampton University and the Open University in 2008 and is now researching and writing at home as an independent scholar. She has written extensively on medieval maritime history covering both mercantile and military aspects of the relationship between people, states, ships and the sea. Her latest book is *The Wealth of England: The Medieval Wool Trade and Its Political Importance 1100–1600* (Oxford, 2018). A recent article looks at the connection of Richard I and John with the operation and ownership of ships by the English Crown (*Mariner's Mirror 106.1, 2020).* Her opening chapter in *The Routledge Companion to Marine and Maritime Worlds 1400–1800* (London, 2020), 'Why the Medieval Sea Mattered', attempts to put the topic in a wide context. She is currently engaged on a project examining the links between Henry VIII and the money market in Antwerp in the 1520s–40s.

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Chris Young was a Senior Lecturer at Canterbury Christ Church University until his retirement in 2019. While a specialist across physical geography, his main interests are in environmental change, coastal processes and the application of physical geography to assist in the sustainable management of environmental impacts caused by modern climatic change. Having spent most of his working life in Kent, he knows the environment well and has published on 'The Geology and Landscape of the Isle of Sheppey' and contributed to *An Historical Atlas of Kent.*

Acknowledgements

In 2017 Stuart Bligh highlighted the relatively low profile of Kent's rich maritime heritage and suggested that the time was ripe for a wide-ranging history of maritime Kent. His initiative led to a preliminary meeting of the three editors with Professor Sarah Palmer, for whose support and encouragement we are very grateful. With the eventual aim of this volume in mind, a conference, 'Maritime Kent through the Ages', was held in June 2018 generously hosted by Canterbury Christ Church University's Centre for Kent History and Heritage (CCCU, CKHH). The importance of the contributions of the speakers to the completion of the project cannot be overestimated as they drew enthusiastic audience response and questions demonstrating the considerable interest in maritime Kent. Our thanks to CCCU CKHH and to all those involved in the conference. Planning is now underway between CKHH and Kent Archaeological Society (KAS) for a follow-up conference in late 2021.

With initial support from KAS's New Research and Publications Fund, the project was taken forward and the wide range of contributors, including a geographer, archaeologists, literary scholars and historians from the Roman to the modern period, were willingly recruited, and we are grateful to them for their enthusiasm and contributions to the final volume. We are also very grateful to our other sponsors, the William and Edith Oldham Charitable Trust and Peter Hobbs, together with all those who have supported and encouraged us in this enterprise behind the scenes, including Mark Bateson of Kent History and Library Centre. Our final thanks go to the publishers, The Boydell Press, most especially to Peter Sowden and his editorial team for their patience and unfailing support throughout the project.

Stuart Bligh, Elizabeth Edwards and Sheila Sweetinburgh

Abbreviations

AM	*Annales Monastici*, ed. H. R. Luard, 5 vols (1864–69)
Arch. Cant.	*Archaeologia Cantiana*
BL	British Library, London
CCAL	Canterbury Cathedral Archives and Library
CCR	*Calendar of Close Rolls* [1272–1509], 47 vols (London, 1892–1963)
CLR	*Calendar of Liberate Rolls Preserved in the Public Record Office, 1226–1272*, 6 vols (London, 1916–64)
CPR	*Calendar of Patent Rolls* [1232–1509], 52 vols (London, 1891–1916)
HAK	*An Historical Atlas of Kent*, ed. T. Lawson and D. Killingray (Chichester, 2004)
Hasted, *History*	E. Hasted, *History and Topographical Survey of the County of Kent*, 12 vols (1797–1801; reprinted 1972)
KHLC	Kent History and Library Centre, Maidstone
MALSC	Medway Archives and Local Studies Centre
ODNB	*Oxford Dictionary of National Biography*
PR	*Pipe Rolls*
S	P. H. Sawyer, *Anglo-Saxon Charters: An Annotated List and Bibliography* (London, 1968)
TNA	The National Archives, London
VCH Kent	*Victoria County History: Kent*, 3 vols (London, 1908–32)

1
Introduction

Stuart Bligh, Elizabeth Edwards and Sheila Sweetinburgh

There has been no published maritime history of Kent, which is surprising considering the importance and variety of the county's maritime heritage. The focus for Kent's history is more often on the county's wider role as the thoroughfare between London and the Continent, as the 'Garden of England' supplying fruit and vegetables to London and other large cities, as one of the major early industrial counties with its Wealden iron and the cloth industry, or as the home of the Anglican Church at Canterbury.

This book seeks to redress that balance. It is not meant to be a comprehensive maritime history of Kent but does cover a wide variety of subject areas from prehistory to the contemporary. These include the influence of topography, Kent's unique and important role in the development of the Royal Navy, the evolution of maritime communities, the impact of different races and cultures, and the role of women. There are both local and national perspectives to illustrate how Kent, as a maritime and coastal county, has had a unique and significant impact on the history of this country, Europe and the world.

As Chapter 2 explains, Kent's topography has been a key factor in the county's development and maritime importance. It juts out into the sea at the point where the North Sea meets the English Channel and so is surrounded by perhaps the most important stretch of water in the United Kingdom. Its southern coast faces the Channel, which has been a major route for seaborne traffic over hundreds of years, and to the north the Kent coast forms the southern boundary of the Thames Estuary, the gateway to London. In total the coastline is 202 miles long, one of the longest in England, with eight of the thirteen historic boroughs in the county bordering the sea. The narrow strait between Dover and Calais is the shortest sea crossing from the UK to continental Europe at just twenty-one miles.

This unique position, particularly the close proximity to both London and continental Europe, has meant that the county has been of strategic maritime importance since the Romans landed in 55 BC. The narrow channel between Dover and Calais offers an opportunity to monitor and control both trade and military activity and so control of this short stretch of water could provide significant strategic power. One of the strongest influences on the development of Kent's maritime importance has been England's ever-changing relationship with France, as our nearest neighbour, and with Europe more generally.

Kent has hosted four of the original six naval dockyards in the country and has a claim to be the 'cradle of the Royal Navy' through the founding and operation of the Cinque Ports, with four of the five original ports in the county. The Cinque Ports' status contributed to the quasi-independent political role of the county, as well as giving Kent a unique and early opportunity to develop seaborne business, industry and trade both locally through its many ports and also through close links with London.

More broadly, people in Kent have had a close relationship with the sea since the time of the land bridge connecting the region to the rest of Europe, and the county claims the earliest surviving sea-going boat – the 'Bronze Age Boat' at Dover Museum. This long relationship with the sea manifested itself in many ways including boat and shipbuilding, seaborne trade, smuggling, fishing and tourism. In addition, some of England's most notable mariners, such as Sir Francis Drake, George Rooke, William Bligh, Richard Haddock and Edward Pellew, were born or lived in the county. Additionally, Nelson started his naval career aged twelve at Chatham where his great flagship *Victory* was also built.

Kent and Defence

Kent has played a major role in the defence of Britain for hundreds of years, on land, at sea and more recently in the air. The county's close proximity to continental Europe and its position on a direct route to London give it strategic importance and mean that Kent has stood in the path of invading enemy forces since Roman times. The threat of invasion has, until the twentieth century, been from the sea. Consequently, the response has been necessarily maritime and has included coastal defensive installations, naval facilities and the deployment of warships. This need to defend has not only shaped Kent's economic and social development but has also had a profound effect on the county's identity. Kent's motto 'invicta' means unconquered and is an indication of just how ingrained defence is in the county's psyche.

The requirement to defend increases as a nation develops and expands. As Britain grew in wealth and influence, its naval prowess grew too, with the focus changing, particularly from the sixteenth century onwards, to supporting wider colonial and imperial ambitions. Ports in Kent supplied men and ships to transport troops heading to military campaigns in continental Europe, and later some became permanent bases and dockyards for the Royal Navy. Four naval dockyards have been located in the county, at Woolwich, Deptford, Sheerness and Chatham. These were critical for the supply of ships and naval power to support the operations of an ambitious and expanding nation. Deptford and Woolwich were established in the early years of the sixteenth century and Chatham did not close until 1984, meaning there was a naval presence in Kent for well over 450 years.

The earliest significant example of defensive action against a seaborne force intent on invading the county is probably the efforts of the local population to repel the Roman invasions in 55 and 54 BC. The Romans were responsible for the first naval and defence facilities in Kent, with Richborough and Dover the best examples (see Parfitt, this volume). The imperial fleet, the *Classis Britannica*, operated around the Kent coast over a significant period.

During the Anglo-Saxon period, a significant increase in maritime trade helped build wealth and prosperity, and the need to protect and defend grew. When Offa imposed new obligations on Kent as a sub-kingdom in 792, one of these was specifically to resist attacks from the sea, mainly by the Vikings.[1] Much of this resistance was shore-based, but there were also seaborne actions, for example in 850 when a Viking fleet and army was defeated by forces led by Ealdorman Ealhhere at Sandwich.[2] As larger forces of Vikings arrived in Britain from 865 onwards, intent on invasion rather than raiding, a more concerted and systematic response was required (see Parfitt, this volume). When Alfred became king of Wessex in 871, he began planning and building a system of forts to deal with the increasing threat. Towards the end of his reign, he also put in place a shipbuilding programme to create a naval force to counter the invaders at sea.

By the time of the Norman invasion there were well-established ports in the county that proved important for the new administration. Entries for these ports in the Domesday Book show the service they provided to the king in the form of men and ships for military service. Dover, for example,

1 N. A. M. Rodger, *Safeguard of the Sea: A Naval History of Britain 660–1649* (London and New York, 1997), p. 7.

2 Ibid., p. 9; S. Brookes, 'Viking Age Kent, c.800–1042', in *Early Medieval Kent, 800–1220*, ed. S. Sweetinburgh (Woodbridge, 2016), p. 106.

provided twenty ships, each with twenty-one men, for fifteen days every year.[3] This service was developed and formalised by the establishment of the confederation of Cinque Ports in 1155 and its emerging network of towns and limbs (see Draper, this volume). While the Ports were predominantly a trade confederation, the need to protect seaborne trade and the Ports from which their ships operated became an important part of the role of the confederation. However, the ambitions of monarchs such as Henry II, during whose reign Ireland, Wales and Scotland were brought under varying degrees of English control, meant that the ships and men provided by the Ports in Kent would do more than just protect.

The loss of England's territory in Normandy in 1204 was a defining moment for the Cinque Ports and also perhaps for the naval history of England (see Jobson, this volume). Prior to this date the Channel had been a relatively benign conduit for trade and travel between two parts of the kingdom but afterwards it was a border separating England and Kent from a hostile enemy. The requirement for sea service needed to be developed and organised centrally with the state taking more responsibility for the administration and coordination of maritime defence and naval forces.

William of Wrotham, who was appointed *custos portuum maris* in 1207, has been described as 'the first true wielder of the British Trident'.[4] His remit was to organise and formalise the country's maritime defence and naval forces in a role that is broadly equivalent to the Secretary of State for Defence and the First Lord of the Admiralty today. William's suitability for the role came from his experience in previous roles, including constable of Dover Castle, Lord Warden of the Cinque Ports and Keeper of the King's Tin Mines, organising the shipping of tin to the Continent.[5]

The importance of the Cinque Ports and the influence of Kent-based men such as William of Wrotham in national governance brought the county to further prominence by the Tudor period. Henry VIII was born at Greenwich and was made lord warden of the Cinque Ports in 1493 at the age of two, so had early links with both the sea and Kent. Henry's interest in ordnance, ships and, of course, power, together with his disputes with Rome and the Catholic continental powers, was to have significant implications for both the country and Kent. He is credited with establishing the first royal dockyard at Woolwich in 1512 and during his reign there were significant developments in the design of fighting ships. The most spectacular

[3] *Domesday Book: Kent*, ed. P. Morgan (Chichester, 1983), D:2.

[4] F. W. Brooks, *The English Naval Forces 1199–1272* (London, 1932, repr. 1962), p. viii.

[5] Canon Scott Roberts, 'William of Wrotham, Lord Warden of the Cinque Ports', *Arch. Cant.* 12 (1878), 310.

example was his flagship, the *Henri Grâce à Dieu*, which was built at Woolwich and was the largest warship in the world at the time it was launched in 1514, weighing over 1,000 tonnes and with a complement of 700 men. The focus was on size, firepower and a fighting force that could compete with and intimidate France in particular. This approach and ambition had direct consequences for Kent in the need to increase shipbuilding capacity through new dockyards and facilities in the county. As Christopher Ware explains, coastal defence was expanded and modernised and in Kent this also saw the establishment of series of 'device forts' and other works in places that were susceptible to invasion, with the castles at Walmer and Deal being perhaps the best known examples.

Elizabeth I continued her father's efforts to improve the navy and in Kent the most important of these was the establishment of the dockyard at Chatham in about 1570. The threat from France and Spain remained, and the force to repel the Spanish Armada gathered first at Chatham in 1588. Francis Drake, a vice-admiral at the time of the Armada, spent his early years living near Upnor Castle just upstream of the dockyard.

By the mid-seventeenth century the Royal Navy was well established, and Chatham was the main dockyard and key base for naval operations in the North Sea and the Channel. Its importance was shown at the outbreak of civil war in 1642 when the commissioner, Phineas Pett, placed the dockyard in parliamentary hands and ships lying in the anchorage at the Downs were seized. However, significant support for Charles I in Kent meant continuing unrest and opposition in the county. At sea the most significant act of rebellion was the mutiny of the fleet anchored at the Downs in spring 1648, which threatened parliamentary control of the county, particularly the dockyard at Chatham and the fortifications at Rochester and Dover.

In the second half of the century the outbreak of the Anglo-Dutch Wars, which were partly about the control of the sea and maritime trade, had a significant impact in Kent. The first war began in 1652 with the battle of Goodwin Sands off the Kent coast. They have been described as the earliest wars Britain fought at sea with a standing navy. Indeed, in terms of the sheer number of ships deployed, the naval battles of the Anglo-Dutch Wars are the largest that Britain has been involved in. Ships and men from Kent played a major role. The Four Days Battle in June 1666, during the second Anglo-Dutch War, is probably the most striking sea action in terms of size with more than 200 ships fighting on each side. But the most significant Kent-based action was the Medway Raid in 1667 when Dutch ships attacked the English fleet in the Medway and towed away the flagship, the *Royal Charles*. The fact that the Dutch had been able to operate with impunity so close to London and the naval dockyard at Chatham was deeply

embarrassing for the whole country (see Ware, this volume). It has been suggested that the subsequent response in terms of the changes made to the administration and operation of the navy laid the foundations for Britain's rise to naval dominance by the beginning of the nineteenth century.

Throughout the eighteenth century the navy grew in size and influence, with numerous campaigns and actions across the world. As Andrew Lambert explains, the wars with Revolutionary and Napoleonic France between 1793 and 1815 saw Napoleon assemble an invasion force of 100,000 men near Boulogne, and Kent again found itself the front line of defence. Fleets based at the Nore, Deal and Dover blockaded French ports, while on land defence facilities and communication systems were built and improved. Following the victory at Trafalgar in 1805, British maritime power was largely dominant, with ships stationed at bases in every quarter of the globe. (It is worth noting that fifteen of the twenty-seven ships at Trafalgar were built in Kent, including Nelson's flagship, the *Victory*, and that Nelson himself began his naval career at Chatham in 1771.) This was a period of optimal operation for the dockyard at Chatham, which at its height covered an area of around 400 acres and had a workforce of 1,800. Extensive and well-equipped facilities such as the longest rope house in Europe at 1,140ft and new innovations such as the steam-powered sawmills, designed by Marc Brunel, enabled the yard to launch an impressive thirty-eight warships between 1792 and 1815.[6]

However, by the end of the nineteenth century this naval dominance was being challenged, by Germany in particular. Consequently, the First World War saw a significant threat from the German High Seas Fleet based at Wilhelmshaven. Operations in the North Sea and the bombardment of ports, including Yarmouth, Lowestoft and Hartlepool among others, proved the reality of this threat. The Battle of Jutland in 1916 was communicated as a British victory but in fact it was inconclusive and heightened fears that further attacks were probable. In Kent, the possibility of attack and an amphibious assault was taken seriously, with new coastal defence measures put in place and existing works and fortifications improved.

At sea, the Dover Patrol naval command was formed in 1914 with bases in Dover and Dunkirk. The Patrol, which included a variety of ships including cruisers, coastal motor boats and submarines, played a key role preventing German ships and U-boats using the Channel as a route to the Atlantic. The Zebrugge Raid in 1918 was the Patrol's most notable action, with eight Victoria Crosses awarded for an operation to blockade German ships in Bruges-Zebrugge harbour. Chatham played an active part in the war as one of the Royal Navy's three manning ports and as the home of the

[6] P. MacDougall, *The Chatham Dockyard Story* (Rainham, 1981), pp. 97, 172–3.

Chatham Division. The new threat from submarines was brought sharply into focus when three of the division's older cruisers, HMS *Hogue*, *Aboukir* and *Cressy*, were sunk by a single U-boat while on patrol in the North Sea in September 1914.

Kent also had a role in the establishment of new services within the Royal Navy during the war. The first flight across the Channel took place in 1909 and the emergence of air power led to the forming of the Royal Naval Air Service in 1914 with early trials of aircraft and pilots taking place at Eastchurch on the Isle of Sheppey. The Women's Royal Naval Service was formed in 1917 and, as Jo Stanley's chapter illustrates, it played an important role in wartime operations in Dover. Folkestone was also the main transit point for troops heading to France, with an estimated ten million soldiers and other personnel passing through the port during the war.

By the Second World War, Kent's role focused less on defence against seaborne attack and more on the threat from the air. The county was home to several Royal Air Force bases and a network of gun emplacements to protect London, in particular, from enemy aircraft and V1 rockets. The Channel remained a key route for supplies and troop movements; warships operated by the Royal Navy's Nore and Dover commands provided protection for shipping in both the Channel and the North Sea. The dockyards at Chatham and Sheerness were affected by the economic decline of the 1920s and 1930s but both resumed a vital role during the Second World War, building, repairing and refitting ships, including submarines. The Dover Command played a key role in the Dunkirk evacuations, with the headquarters for Operation Dynamo located in the tunnels under Dover Castle and many of the ships disembarking troops at the port. The town and port of Dover were also a target for sustained bombing and shelling by enemy aircraft, with over 3,000 air raid alerts, and powerful cross-channel guns, resulting in widespread damage and loss of life. The county earned its nickname of Hellfire Corner.

During the latter half of the twentieth century, the dockyards at Chatham and Sheerness finally closed, bringing to an end the county's close and long association with the Royal Navy. The opening of the Channel tunnel and the terminus at Folkestone in 1994 brought the county to national attention once again as either the last line of defence or the first point of contact, depending on your perspective. However, defence today is more focused on less tangible and visible threats, such as cyber and viral attacks. The days when Kent was a key part of the front-line defence of Britain are now long gone.

Trade and Industry

For more than two thousand years, individuals, their families and communities have used Kent's rich and diverse coastal environment of sea, land and tidal foreshore to provide commodities such as foodstuffs; materials for use in manufacturing, building and storage; goods for overseas or coastal trading, and resources that facilitated such trade. Furthermore, as the chronologically organised chapters in this section underline, all four of these categories of the county's maritime trade and industry have taken place over time. Yet ideas concerning continuity only provide part of the story, and it is equally evident that the rise and fall of specific industries or changes regarding trading, whether the commodities involved or how the trade was conducted, are similarly significant respecting different periods in Kent's history. For the need to respond to political, social and economic circumstances, whether at personal or corporate, including state, levels, has at times brought substantial opportunities to initiate or expand sectors of the coastal economy, but equally has brought the decline or even complete cessation of others. Consequently, the purpose here is to focus briefly on matters concerning continuity and change over time by examining one commodity from each of the four sections within Kent's maritime trade and industry identified above, which are to a degree linked to one another, to highlight issues such as longevity, flexibility and specialisation.

Throughout the centuries, agriculture, especially livestock, has been an important aspect of Kent's maritime economy, farmers using the mix of low-lying salt and fresh marsh, with some chalk uplands.[7] Even though much of the marshland was subject to more organised drainage only from the twelfth and thirteenth centuries, these and other developments produced a landscape dominated by scattered farmsteads rather than large nucleated villages.[8] It is feasible at least some peasants may have adopted the innovative, agrarian practices of the great landlords, which Bruce Campbell has characterised as mixed farming with cattle, and, in some areas such as the north Kent marshes, sheep.[9] As he has noted, the vital role

[7] G. Draper, '"Land and Marsh": Settlement, Colonisation and Consolidation, c.800–1220', in *Early Medieval Kent*, ed. Sweetinburgh, pp. 44–6; A. Everitt, *Continuity and Colonization: The Evolution of Kentish Settlement* (Leicester, 1986), pp. 57–65.

[8] Draper, 'Land and Marsh', pp. 58–65.

[9] B. Campbell, 'Agriculture in Kent in the High Middle Ages', in *Later Medieval Kent, 1220–1540*, ed. S. Sweetinburgh (Woodbridge, 2010), pp. 26–7. For early fourteenth-century peasant farming, see A. F. Butcher and A. Gross, 'The History of Romney Marsh c.1150–1350' (unpublished report, Romney Marsh Research Trust, 1991), cited in L. Barber and G. Priestley-Bell, *Medieval Adaptation, Settlement and*

of livestock in the centuries before the Black Death led to more intensive farming practices, as well as providing foodstuffs including meat and dairy produce, especially cheese, for in-house consumption or sale in the marketplace.[10] Additionally, wool was a prized commodity and the proximity of London was especially important for those in north Kent.

The changing demographic, social and economic conditions of the later Middle Ages led to a reduction in the density of farmsteads, as the surviving successful peasant farmers engaged in the land market and were able to acquire vacant holdings or parcels of land from their neighbours.[11] For the majority, livestock remained an integral aspect of their strategy, and some were able to add to their holdings by leasing demesne lands in the fifteenth century to expand their livestock enterprises.[12] Others who capitalised on the growing demand for meat, including local consumption in the coastal, and to a lesser extent inland, settlements, were butcher-graziers from the Cinque Ports.[13] Furthermore, Kent's northern coastal farmers continued to benefit from their proximity to London (see Caiazza, this volume), while their southern counterparts were well placed to gain from the trade with English Calais, which was totally dependent on supplies from England.[14] Wool, too, remained a valuable product, the Wealden cloth industry offering another market for Kentish wool.[15]

The shift towards larger holdings by yeomen farmers in the southern marshes became more marked over the early modern period, including the influence of gentry farmers from inland Kent who sought to use the

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Economy of a Coastal Wetland. The Evidence from around Lydd, Romney Marsh, Kent (Oxford, 2008), p. 20.

10 Campbell, 'Agriculture', pp. 30, 32–5. S. Sweetinburgh, 'Overcoming Disaster? Farming Practices on Christ Church Priory's Marshland Manors in the Early 14th Century', in *Romney Marsh: Persistence and Change in a Coastal Lowland*, ed. M. Waller, E. Edwards and L. Barber (Sevenoaks, 2010), pp. 101–11.

11 S. Sweetinburgh, 'Farming the Kentish Marshlands: Continuity and Change in the Late Middle Ages', in *Custom and Commercialisation in English Rural Society: Revisiting Tawney and Postan*, ed. J. P. Bowen and A. T. Brown (Hatfield, 2016), pp. 86–92.

12 S. Dimmock, *The Origin of Capitalism in England, 1400–1600* (Leiden, 2014), pp. 272–300.

13 S. Sweetinburgh, 'Hythe's Butcher-Graziers: Their Role in Town and Country in Late Medieval Kent', in *New Directions in Local History since Hoskins*, ed. C. Dyer, A. Hopper, E. Lord and N. Tringham (Hatfield, 2011), pp. 103–13.

14 M. Mate, *Trade and Economic Developments, 1450–1550: The Experience of Kent, Surrey and Sussex* (Woodbridge, 2006), pp. 40–1, 43–4, 87–9, 98–9.

15 Ibid., 16, 176, 191; M. Gardiner, 'Settlement Change on Denge and Walland Marshes, 1400–1550', in *Romney Marsh: Environmental Change and Human Occupation in a Coastal Lowland*, ed. J. Eddison, M. Gardiner and A. Long (Oxford, 1998), p. 141.

county's coastal marshlands for grazing.[16] Initially such purchased lands were grazed by sheep and cattle, but by the seventeenth century, sheep had largely displaced cattle, thereby reducing still further labour requirements for these absentee landholders and leading to considerable hardship for some marshland families.[17] Yet, some families could point to their longevity on the marshlands as resident farmers, and like their absentee neighbours were committed to livestock production for the meat market, apparently growing little in terms of grain, unlike those farming further inland, albeit certain individuals were prepared to try more exotic crops, including rapeseed and madder.[18]

Livestock rearing and fattening was also a major aspect of the farming regime on the northern marshes, and again sheep remained a key component. Yet, several coastal areas close to the Thames Estuary were used for the growing of fruit, vegetables and hops, as at Teynham, and market gardening was similarly a feature in the Sandwich area.[19] Such localised specialism in response to the demands of the London market, and the ability of individual farmers to take advantage of consumer demand, is further evidence of the flexibility and diversity among the coastal farmers (see Andrewes and Dunster, this volume), while continuing to stress the role of mixed farming and the value placed on livestock production.[20]

Farming in modern times up to the Second World War on the Kent marshlands witnessed the continuing domination of sheep production on extensive farms comprising large fields.[21] Coupled with this, most farmers lived on their much healthier inland farms, and as absentee landlords the care of their sheep was in the hands of marshland men called 'lookers', who

[16] Gardiner, 'Settlement Change', pp. 136–40.

[17] S. Hipkin, 'The Structure of Land Occupation in the Level of Romney Marsh during the Late 16th and Early 17th Centuries', in *Romney Marsh: Environmental Change*, ed. Eddison et al., pp. 156–61.

[18] J. Thirsk, 'Agriculture in Kent, 1540–1640', in *Early Modern Kent, 1540–1640*, ed. M. Zell (Woodbridge, 2000), pp. 100–1, 103.

[19] Ibid., pp. 101–2.

[20] A. Davidson, 'A "Particularly Convenient and Useful" Arrangement: The Symbiotic Relationship between the Agrarian Economy of Romney Marsh and the Surrounding Region in the 18th Century', in *Romney Marsh: Coastal and Landscape Change through the Ages*, ed. A. Long, S. Hipkin and H. Clarke (Oxford, 2002), pp. 190–4, 196–200.

[21] A. Davidson, 'Aspects of Corporate Landownership and the Fortunes of Livestock Farmers on Walland Marsh and Denge Marsh, c. 1730–1790', in *Romney Marsh: Persistence*, ed. Waller et al., pp. 142, 145–52.

unlike shepherds were hired to look after the sheep of several owners.[22] This scenario was especially marked in the southern marshes, but similar practices were in place elsewhere (see Edwards, this volume).

However, change came following government wartime directives that gradually saw the ploughing up of permanent pasture and the return to arable farming. This shift away from livestock has accelerated in more recent decades, and even though sheep and cattle have not completely disappeared from Kent's coastal farms, crops, from potatoes to linseed, as well as turf production, are altering the appearance of these areas.[23] Furthermore, pressures regarding housing and renewable energy (see Killingray, this volume) have transformed and continue to transform the coastal agrarian landscape.

Turning secondly to manufacturing, salt production, important for example in the making of cheese and food preservation, including meat and fish, illustrates an industry that even within the broad narrative of initially flourishing before disappearing by the later Middle Ages, witnessed periodic fluctuations regarding the scale and distribution of salt-working sites. As Elizabeth Blanning discusses in this volume, evidence for salt production in the Roman period has been found along the creeks of the north Kent marshes, as well as at similar places on Romney Marsh, in part a consequence of lower sea levels at the time. However, from the late Iron Age to the end of Roman Britain, shifts in production levels on Romney Marsh, the lands close to the Medway Estuary and on the Hoo Peninsula differed among these areas and over time, although by the fourth century salt manufacturing had apparently completely disappeared from Kent, instead taking place on the Somerset Levels.

As K. P. Witney found, there is limited documentary evidence for salt production in late Anglo-Saxon Kent, but Domesday offers a valuable county-wide survey for the eleventh century.[24] Salt was being manufactured on the Romney Marshes, although levels were seemingly much higher over the county boundary near Rye, perhaps in part due to the area's proximity to the Wealden swine pastures; and in the coastal creeks of the north Kent marshes.[25] Yet little seemingly occurred west of Milton Hundred, with fur-

[22] A. Reeves and D. Eve, 'Sheep-Keeping and Lookers' Huts on Romney Marsh', in *Romney Marsh: Environmental Change*, ed. Eddison et al., pp. 191–6, 198.

[23] A. Armstrong, 'Agriculture and Rural Society', in *Kent in the 20th Century*, ed. N. Yates (Woodbridge, 2001), pp. 102–3.

[24] K. P. Witney, 'The Woodland Economy of Kent 1066–1348', *Agricultural History Review* 38 (1990), 31–2.

[25] E. Vollans, 'Medieval Salt-Making and the Inning of the Tidal Marshes at Belgar, Lydd', in *Romney Marsh: The Debatable Ground*, ed. J. Eddison (Oxford, 1995), p. 118.

ther salt works to the east towards Thanet.[26] In east Kent, the salt workings bordering the Wantsum Channel were more extensive, and, even though each salt house may only have been small, the large St Augustine's Abbey manor of Chislet had forty-seven of these which collectively were expected to produce fifty pack loads of salt per year.[27]

Over the next three centuries, the documentary and archaeological evidence, the latter primarily from the Romney Marshes, points to growing levels of salt production, as well as the prosperity of those involved, as seen in the 1334 lay subsidy.[28] The industry had been aided by the demand for salt as a preservative, the value of salt making as an attractive employment opportunity at a time of rising population, and the continuing availability of suitable areas of salt marsh and the proximity of woodland for fuel.[29] However, a century later the industry was in serious decline, a consequence of continuing climatic changes, the balance between land for farming and salt making, the effects of recurrent plague outbreaks, other demands on timber supplies, and alternative sources of salt (see Kowaleski, this volume), especially from Bourgneuf Bay.[30] Thus, even though the tenants of Bilsington Priory were still rendering part of their rents as salt into the 1380s, and some salt was still being made in the Wantsum Channel area into the fifteenth century, thereafter the industry disappeared.[31] The absence of tithe disputes concerning salt in Tudor Kent highlights the demise of this once extremely important coastal industry within the county.[32]

As noted above, the level of availability of fuelwood was crucial concerning the rise and fall of the salt industry. Witney's assessment of Kent's medieval woodland economy stresses the diversity of the tree species across the county and the 'part played by water communications', and both factors are important regarding these final sections on fuelwood as a traded commodity, and shipbuilding that facilitated this and other trade.[33] As a source of fuel, firewood in varying forms was vital domestically and to produce a range of goods. Nevertheless, it was a relatively bulky commodity which

[26] *Domesday Book: Kent*, ed. Morgan, 2:35, 1:3, 2:13, 2:15, 5:141, 7:8.
[27] Ibid., 7:9.
[28] W. Kirk, 'Development of a Medieval Industry: The Emergence and Decline of Coastal Salt Production in East Kent' (unpublished MA dissertation, University of Kent, 1999), pp. 33–9.
[29] Witney, 'Woodland', 32; Vollans, 'Salt-Making', pp. 118–21.
[30] Kirk, 'Development', pp. 39–45.
[31] Vollans, 'Salt-Making', p. 126; Kirk, 'Development', p. 43.
[32] P. Simpson, 'Custom and Conflict: Disputes over Tithe in the Diocese of Canterbury, 1501–1600' (unpublished PhD thesis, University of Kent, 1997).
[33] Witney, 'Woodland', 20.

meant that the rivers and coastal trading networks were frequently far more cost-effective compared to transport overland, even for this initially local trade. Thus, the proximity of woodland to much of the county's coastal belt meant these supply networks were functioning in Roman times, albeit documentary evidence is relatively scarce before the Norman Conquest.[34]

By the thirteenth century, London's rising population offered an expanding market in fuelwood not only from north-west Kentish ports, such as Erith and Dartford, but from coastal settlements as far east as Reculver.[35] Rising prices for fuelwood made the trade especially attractive to local suppliers and London woodmongers, and even though there was an alternative in the form of sea coal, it had to be shipped from Newcastle.[36] Portsmen in the east and south-eastern coastal towns, as well as providing fuelwood for the local market and similarly engaging in this London trade, at least until c.1300, were also trading fuelwood overseas to northern France and the Low Countries.[37] The Kentish ports further to the west and close to the Sussex border were equally engaged in this export trade, the timber brought from the Wealden forests along the River Rother before being shipped overseas.[38]

Even though the late Middle Ages saw a contraction in the number of Kentish ports engaged in the coastal fuelwood trade with London, boats from ports such as Rochester, Milton and Faversham remained suppliers to the capital under the Tudor monarchs.[39] Moreover, those on the eastern and southern coasts were well placed to add English Calais to their previous overseas markets, and local domestic and manufacturing consumers continued to be a vital aspect of the trade in fuelwood.[40] This latter aspect was the longest-lasting aspect of the trade, for by 1600 coal had superseded wood as London's source of fuel, and the loss of the Calais trade was a major setback for the Cinque Ports, in particular.[41]

Notwithstanding the decline in this aspect of Kent's maritime trade during the early modern period, timber, and thus woodland, remained vital for the shipbuilding industry. For the county's maritime communities, this

[34] Ibid., 24, 28, 31–3.
[35] Ibid., 34; J. A. Galloway, D. Keene and M. Murphy, 'Fuelling the City: Production and Distribution of Firewood and Fuel in London's Region, 1290–1400', *Economic History Review* 49 (1996), 459, 463.
[36] Galloway et al., 'Fuelling', 448, 452.
[37] Ibid., 458; Witney, 'Woodland', 34.
[38] Witney, 'Woodland', 34.
[39] Mate, *Trade*, pp. 48–9.
[40] Ibid., p. 81.
[41] Galloway et al., Fuelling', 455.

industry had its roots in prehistory, for example the Dover Bronze Age boat. Further archaeological finds illustrate the continuing importance of shipbuilding during subsequent centuries, and from the Middle Ages this is complemented by documentary sources (see Kowaleski, this volume). Much of this medieval boat building and repair, for both the Crown and others, took place at the various Cinque Ports on the south and eastern seaboard (and at Small Hythe), and at the riverine and estuarine settlements of the Thames and Medway on the north coast.[42] The ports did not need specialised facilities because of the nature of the ships constructed. Apart from a few large vessels, most were shallow draught ships that were used for trading and fishing, as well as providing ship service as required from the Cinque Ports. Furthermore, even though there was a degree of variation regarding tonnage and design of these ships among the ports, their construction was within the capabilities of the shipwrights and other craftsmen who worked at the different coastal settlements.[43]

By Tudor times, however, the monarch's desire for larger warships meant these facilities were no longer adequate (see Ware, this volume), albeit shipbuilding of the smaller, traditional vessels continued, although certain ports, such as New Romney, were no longer able to compete due to problems of silting.[44] In contrast, Small Hythe offered suitable facilities inland from the south coast, as well as easy access to timber and iron from the Weald, while on the north coast the sixteenth century saw the construction of royal dockyards on the Thames and Medway estuaries.[45] This north coastal development grew considerably under the Stuart monarchs, although there were periods of hiatus, which meant that by the early eighteenth century, as David Killingray notes in this volume, the royal dockyards at Deptford, Woolwich, Chatham and Sheerness were providing much-needed warships. Although the shift from 'wooden walls' to iron, and then steel, ships for the Royal Navy and for the merchant navy saw a dramatic fall in the amount of timber required from the early nineteenth century, the traditional far smaller wooden vessels used by fishermen and coastal traders were still constructed at the dwindling number

[42] Whether ever used for these Kentish-constructed ships, it is worth noting that medieval churchmen are known to have consecrated new vessels: D. Harrap, '*Consecratio Navis*: The Politics of Blessing Ships in the Reign of Henry V', *Royal Studies Journal* (forthcoming).

[43] G. Draper, 'Timber and Iron: Natural Resources for the Late Medieval Ship-Building Industry in Kent', in *Later Medieval Kent,* ed. Sweetinburgh, pp. 68–73.

[44] G. Draper and F. Meddens, *The Sea and the Marsh: The Medieval Cinque Port of New Romney* (London, 2009), p. 58; J. Holman, *Medieval New Romney: A Town Shaped by Water. The Archaeology of the First Time Sewer Scheme* (Canterbury, 2020), p. 129.

[45] Draper, 'Timber', pp. 73–5.

of small boatyards. Moreover, this decline accelerated over the twentieth century and today few remain, albeit the traditional skills required for timber-built vessels are still exercised at certain coastal settlements, including Faversham.[46]

Coastal Communities

It is clear that the nature of the coastal communities of Kent is necessarily very closely related to the trade, industry, land ownership, agriculture and occupations, as well as the topographical and geological features discussed in Chapter 2. Together with navigable harbours and smaller landing places with inland connections, these conditions have all determined where people have settled. The chapters in this volume on the coastal communities of Kent cover the period from the Middle Ages to the contemporary and largely reflect the ever increasing availability of sources, which has enabled the historian to expand the range of the population covered by detailed study. Whereas Gillian Draper has looked at an elite community within the Cinque Ports in the medieval period, Ben Marsh and David Killingray have used extensive sources to look at the impact of empire and slavery on the diversity within maritime communities in the early modern period. In the two chapters covering the large majority of the coastal communities from the seventeenth to the twenty-first century, the gradual shift to more available sources for all strata of society becomes rapid from 1801 onwards with the population expansion, regular census records and a plethora of personal accounts. While many of the marshland and other remote settlements remained relatively small until the twentieth century, most of the other settlements grew larger and more complex (see population table, Table 15.1, pp. 348–9). Several of the case studies therefore look in detail at the distinct communities within the larger picture.

It is, however, far more difficult to get a full sense of the communities before the establishment of an identifiable county infrastructure and more consistent detailed records. Studying the communities of the past two thousand years depends on a variety of disciplines. Archaeology, anthropology and landscape studies dominate in the prehistoric period, and thereafter, from the Roman period onwards, it is a combination of archaeology and history, together with the built landscape. The balance between these disciplines shifts as the written record becomes more available and reliable at the same time as local infrastructure, communications, settlements and

[46] I. Jackson and K. Robinson, *Of the North Kent Marshes* (n.k., 2015), p. 81, citing John Bartlett.

buildings become more embedded. Within this structure Martin Welch has argued that the early Anglo-Saxon period up to the seventh century was 'protohistoric rather than prehistoric',[47] coming between the Roman period and the later Anglo-Saxon when the archaeology and written sources are more likely to complement each other.

In *The Archaeology of Kent to AD 800*, Martin Millett has approached the settlement and Roman occupation of Kent in a way that is helpful for considering the coastal communities. Rather than the traditional politico-military interpretation, he has chosen a slightly more radical approach to the impact of Rome on Kent 'as the product of a range of different interactions between the indigenous inhabitants themselves and between them and the Roman state'.[48] He argues that the developing societies were thus acting within the Roman governmental infrastructure, but otherwise continuing to operate within the earlier, late Iron Age, influences of their relations with the near continental cultures of Gaul and Iberia which, Millett argues, also eschewed many of the Roman ideologies in favour of more native development.[49] The transition from Iron Age into Roman was identified in the pre-High Speed 1 excavations (1997–2004) at Springhead (*Vagniacis*), at the head of the Ebbsfleet valley in north Kent, where the springs attracted late Iron Age visitors and the Romans created a shrine with several temples.[50] Although the evidence points to non-maritime purposes, the shrine and its associated town were conveniently placed, with a landing place accessible from the Thames Estuary. Whether Millett's social and economic approach to the Roman occupation of Kent, with settlement, communications and trade as a by-product of imperialism rather than its raison d'être, can be wholly divorced from the politico-military approach is still open to question. The two approaches are the interconnected sides of the same coin as the interdisciplinary studies within this volume show. Nevertheless, his approach does allow more of the realities of the local settlements to be examined.

Millett admits the lack of textual sources to support his arguments.[51] On the other hand Welch regrets that there is no archaeological evidence for shipping between the fifth and the eighth centuries.[52] However, the

[47] M. Welch, 'Anglo-Saxon Kent to AD 800', in *The Archaeology of Kent to AD 800*, ed. J. H. Williams (Woodbridge, 2007), p. 187.

[48] M. Millett, 'Roman Kent', in *Archaeology of Kent to AD 800*, ed. Williams, p. 137.

[49] Ibid., p. 145.

[50] Ibid. pp. 160–1; P. Andrews, E. Biddulph and A. Hardy, *High Speed 1 Excavations at Springhead and Northfleet, Kent: The Late Iron Age, Roman, Saxon, and Medieval Landscape* (Oxford, 2011); C. Andrews, 'Roman Kent', in *HAK*, p. 21.

[51] Millett, 'Roman Kent', p. 151.

[52] Welch, 'Anglo-Saxon Kent', p. 198.

archaeological evidence does show that as Kent was expanding westwards along the Thames as far as the south bank of London in the sixth century, the early established Frankish connections still remained strong, indicating that cross-channel journeys were being undertaken.[53] To counter the lack of textual sources there was cemetery evidence, well-illustrated in the work of Gillian Draper in which, by reviewing more recent research, she argues that, as the cemeteries would have been visible from the Channel, they could have been used as landmarks for cross-channel shipping rather than representing evidence of settlements.[54]

Gradually from 700 AD an understanding of the archaeology, built remains and domestic artefacts of the coastal areas can be enhanced by the written and visual record. One of the major influences on occupations in most of these early settlements was ecclesiastical. From the later Anglo-Saxon period, the Church had a significant impact on the life, both spiritual and temporal, of settlements throughout the county. Welch identifies Æthelberht as the first Christian ruler of Kent in the early seventh century, introducing the first 'accurate' historical sources.[55] From the landholdings of the major priories to the establishment of small local chapels, the Church received dues, employed lay workers, had strong connections with continental Europe, established hospitals and was prominent in developing markets as well as ownership of trading ships and receipt of tolls.[56] Of invaluable importance for the historian, the Church kept written records and was the major producer of textual and illustrated material.

From the prehistoric to the later medieval period there were several well-established and strategically located maritime settlements which today are inland rural communities. They are now mainly quintessential Kentish villages set amid the fine agricultural land of Thanet and east Kent on the route of the lost Wantsum Channel between Richborough and Reculver: Minster, Sarre, Wingham, as well as Fordwich, the ancient port of Canterbury.[57] Reculver is now a modest holiday resort at the eroding edge of the north Kent cliffs, while Richborough, Stonar and what is left of

[53] Ibid., pp. 189, 192–3.

[54] G. Draper, 'New Life in Towns, c. 800–1200', in *Early Medieval Kent*, ed Sweetinburgh, p. 68.

[55] Welch, 'Anglo-Saxon Kent', p. 188.

[56] S. Sweetinburgh, *The Role of the Hospital in Medieval England: Gift-Giving and the Spiritual Economy* (Dublin, 2004); Draper, 'New Life in Towns', p. 17.

[57] See Young, this volume, Figure 2.21, p. 67; C. Andrews, 'Distribution of Roman Sites', in *HAK*, p. 24.

the hamlet of Ebbsfleet[58] together form an inland site north of Sandwich with a modern history of industrial services.[59] The site is on the edge of the marshland, beside the golf club, country park and the remaining access to the sea at Pegwell Bay. Also lost to the sea were Lympne, now inland from Hythe, with evidence of its Roman coastal fortifications still visible on the cliffs, rising from the reclaimed marsh farmland, and the later medieval and Tudor shipbuilding port at Small Hythe (see Kowaleski, this volume) on the River Rother.[60] These once busy maritime sites have provided useful evidence of the nature of early coastal settlements together with those on the north Kent coastal strip and the Hoo Peninsula with their important links to the London and international trades.

One of the clearest indicators of well-established settlements, supporting trade, industry and agriculture in the medieval period, is the number, regularity and size of markets and fairs, providing for the necessities of life, and these are recorded in many of the coastal communities which did not develop into modern towns. On the north Kent coast and Hoo Peninsula, Draper notes twelfth- and thirteenth-century fairs at All Hallows, Cliffe and Higham, with weekly markets at Hoo St Werburgh and Shorne, both of which traded with London and the international market.[61] There were also markets right around the coast of Kent, from Erith and Gravesend to Queenborough on the Isle of Sheppey, Reculver and Broadstairs in Thanet, Stonar and Lydd, as well as in the established maritime towns and Cinque Ports, and the late Anglo-Saxon markets at Sandwich and Sarre on the Wantsum.[62] By the later medieval period, secular and ecclesiastical official records are more plentiful, but not necessarily complete (see Caiazza and Sweetinburgh, this volume). However, for example, in the case of Faversham, a limb of the Cinque Ports, they can tell a lot about both

[58] Not to be confused with the north Kent Ebbsfleet, now the site of the new international station.

[59] F. W. Hardman and W. P. D. Stebbing, 'Stonar and the Wantsum Channel. Part III. The Site of the Town of Stonar', *Arch. Cant.* 55 (1942), 37–49; G. P. Walker, 'The Lost Wantsum Channel: Its Importance to Richborough Castle', *Arch. Cant.* 39 (1927), 91–112.

[60] P. S. Bellamy and G. Milne, 'Searching for the Shipyards', *Arch. Cant.* 123 (2003), 353–82.

[61] Draper, 'Land and Marsh', p. 160; C. Donaldson, *On the Marshes, A Journey into England's Waterlands* (Toller Fratrum, 2017), p. 21.

[62] T. Lawson, 'Markets in the Medieval Period', in *HAK*, pp. 50–1; H. Clarke, S. Pearson, M. Mate and K. Parfitt, *Sandwich – The 'Completest Medieval Town in England': A Study of the Town and Port from its Origins to 1600* (Oxford, 2010), p. 41; I. Riddler, 'Late Anglo-Saxon Kent', in *HAK*, p. 33.

the complex nature of the community, and the growing tensions between Church and state.[63]

With the development of printing, the spread of renaissance ideas, and the Reformation, leading to the demise of the monasteries, a new writing genre became popular to support official secular and ecclesiastical records. Kent is well-served by topographical 'tours' and from Leland's *Itinerary* (1545–53) to Lambarde's *Perambulations* (1570), Camden's *Britannia* (1607) and the *Journeys* of Celia Fiennes (1685–1712), *inter alia*, the observations of travellers, antiquarians and writers have cast light on the communities of the county. By the 1770s Hasted had refined the genre into a historical investigation[64] and the three early twentieth-century *Victoria County History* volumes (1908–32) professionalised this approach, providing carefully researched data.[65] From the nineteenth century to the present photography has provided visual evidence beyond the elite to enhance understanding of local communities and encouraged county-wide local history societies and the newspaper press to use all the tools at their disposal, both professional and amateur, to explore the past. The Kent Archaeological Society was formally established in 1858 and in the same year published the first issue of its journal, *Archaeologia Cantiana*, including articles on archaeology, architecture and history (at note 68). Nearly a hundred years after the first publication within the *Victoria County History* series, the Kent History Project (1994–2016) benefited from the development of academic research in the twentieth century to provide a history of the county. The core of the series covers the political, economic and social history of Kent from c.1500 to c.1914, with two specialist volumes on Rochester and the last three volumes completing the study from prehistoric to the later medieval period. These volumes have provided a sound foundation for the focus of this volume to be turned to the important, but sometimes overlooked, maritime perspective.[66]

[63] D. Harrington and P. Hyde, *The Early Town Books of Faversham c.1251 to 1581* (Folkestone, 2008).

[64] J. Boyle, *In Quest of Hasted* (Chichester, 1984).

[65] In the early twenty-first century the *Victoria County History* project was revived in the England's Past for Everyone series and two volumes on the Medway have been published for Kent: A. Hann, *The Medway Valley: A Kent Landscape Transformed* (Chichester, 2009), and S. Dunster, *The Medway Towns: River, Docks and Urban Life* (Andover, 2013).

[66] See R. Craig and J. Whyman, 'Kent and the Sea', in *The Economy of Kent 1640–1914*, ed. A. Armstrong (Woodbridge, 1995), pp. 160–204, for a general introduction to the maritime economy, including the shipbuilding industry, seafarers, coastal and estuarine trade, smuggling, privateering and holiday resorts.

The digital revolution has greatly enhanced the accessibility of sources, but the personal 'tour' can still add much to our understanding from a modern perspective.[67] Although there may be limitations to the sources before the modern period for some of the smaller seaward-looking maritime communities, references can be found through excavation reports and in journals such as *Archaeologia Cantiana* and *The Romney Marsh Irregular*, as well as through the activities and publications of individual local history societies.[68] On the other hand, many of the towns have fared better, with, for example, recent studies of the early archaeological evidence and later medieval history of Faversham, Folkestone, New Romney and Sandwich.[69]

This volume was completed during the 2020 Covid-19 pandemic and the outcomes of that may affect many of the coastal and maritime communities in unpredictable ways in the following months and years. Covid-19 and Brexit are just the two latest external 'events' to have an impact on the lives of the coastal communities of Kent, the latter particularly on Dover and its transport connections, which David Killingray further updates in his chapter on modern trade and industry. Prehistoric climate and geological change, the invasions of the first millennium AD, and the inexorable move to modernity in the second millennium, particularly industrialisation, population growth, both local and migrant, internal and international trade, as well as politics and international relations, have all had significant and varied effects on the lives of the communities. Some of the impacts have been short-term, like the presence of the WRNS in Dover in the First World War, discussed by Jo Stanley in her case study. Others have been triggers for lasting changes, like the effect on social structure and wage labour resulting from the fourteenth-century Black Death. Much of the industry, building and agriculture has also been important in the support for the military, both army and navy, which has provided an underlying theme to the narrative of the Kent coastal communities during the whole of the historical period. The Thames Estuary and north Kent coast were

[67] See for example a modern walking tour of the Hoo peninsula and north Kent marshes in Donaldson, *On the Marshes*.

[68] *Arch. Cant.*, the journal of the Kent Archaeological Society, now online with all editions dating back to 1858, https://www.kentarchaeology.org.uk/Research/Pub/ArchCant/Intro.htm; Canterbury Archaeological Trust's online *Gazetteer*, http://www.canterburytrust.co.uk/.

[69] P. Reid, D. Harrington and M. Fronsdorff, *Faversham in the Making. The Early Years: The Ice Age until AD 1550* (Oxford, 2018); I. Coulson, ed., *Folkestone to 1500: A Town Unearthed* (Canterbury, 2013); Clarke et al., *Sandwich*; Draper and Meddens, *Sea and the Marsh*; Holman, *Medieval New Romney*.

home to the royal dockyards while Dover, Deal, Folkestone and Hythe were often semi-permanent bases for the military forces. In time of war these locations were generally in the front line of activity and the local communities had to adapt to both the demands for additional provisions and services and to the movement of troops, in and out, refugees and the threat or reality of invasion.

For the past two thousand years or so the maritime nature of the peninsula county of Kent has been an essential part of its economic, social and political history. Working on this fascinating, interdisciplinary project has enabled the editors to bring together the wealth of available material and knowledgeable specialists to provide, if not a comprehensive maritime history, an in-depth study of the maritime and coastal communities, their defence, industries, trade and cultural influences.

PART I

Topography

2

Kent's Changing Coastal Landscape: A View across Space and Time (or 'Where the Land Meets the Sea'!)[1]

Chris Young

Geographically, Kent's position close to France has always made it a significant point of entry into Britain from all over Europe. Some of the entrants have been 'aggressive' invasions, so the fact that Kent's borders are predominantly coastal has resulted in a wide range of coastal fortifications and defence systems that can still be found in a large number of locations that include Roman fortifications at Hythe, Dover, Richborough and Reculver, the medieval Cinque Port fortifications at Sandwich, Dover, Hythe and New Romney, later added to by Henry VIII in 1539–40 with the forts at Walmer, Deal and Sandown, through the Napoleonic defences to radar stations and anti-aircraft guns set up in anticipation of, and during, World War II.[2] However, not all movement in and out of Kent was unwanted and significant trade routes developed, ensuring Kent became an important maritime county, the detail partly depending on how the physical environment changed over space and time.

Kent has a wide range of coastal environments largely due to a varied geology and its influence on relief, but also because of its geographical location with coastlines facing north and south. While many think of coastal erosion as the largest cause for change over time, in Kent sediment deposition has also been important and both have had, and will have, significant impacts on society and its use of the coast.

[1] Cartography: I am extremely grateful to John Hills, Canterbury Christ Church University, for producing the maps.

[2] A. D. Saunders, 'The Coastal Defences of the South-East', *Archaeological Journal* 126 (1969), 201–5.

Kent's Coastal Geology

The coastal geology of Kent is relatively simple (Figure 2.1). It is dominated by north-east dipping Cretaceous strata of the North Weald and Palaeogene strata of the southern London Basin. The sub-parallel nature of the strata exposed at the surface and the relatively rapid lithological changes from sands to clays and back again, together with the chalk, has a strong influence on the relief of the coastline.[3]

The oldest strata seen at the coast is the Cretaceous Weald Clay, exposed at Hythe and visible further west as an ancient degraded cliff line behind Romney Marsh, although the western end of this cliff line is formed of older Hastings Beds. As the coastline is followed east and north marine erosion exposes the full sequence of the Upper Cretaceous strata, the most prominent of which is the Chalk of the truncated North Downs which form the 'classic' White Cliffs of Dover from Folkestone to just north of Kingsdown. North of Kingsdown, a minor syncline forms an area of low-lying ground past Sandwich before a minor anticline in the Chalk leads to the chalk cliffs of Thanet.[4] North Kent, however, is formed of the soft sands and clays of the Palaeocene which lie unconformably on the Chalk, much of the coast being dominated by the London Clay. While the underlying geology controls large parts of Kent's coastline, significant sections have been modified by the deposition of Holocene sediments.

This has created three regions where distinctly different types of change have taken place over time:

- A. East and south-east Kent, where the relief and erosion of the Chalk are dominant.
- B. North Kent, where the soft London Clay and underlying sands dominate.
- C. Areas where Holocene sedimentation has infilled low-lying ground with clays and coastal sediments.

Understanding change in these environments is essential today to ensure current management strategies are appropriate, but it also helps to understand the environments that our ancestors had to cope with in the recent and distant past.

[3] D. K. C. Jones, *Southeast and Southern England* (London, 1981), p. 257; J. A. Steers, *The Coastline of England and Wales* (Cambridge, 1964); J. Whittow, *Geology and Scenery in Britain* (London, 1992), p. 74.

[4] A. M. Coleman and C. T. Lukehurst, *British Landscapes through Maps, 10: East Kent: A Description of the Ordnance Survey Seventh Edition One-Inch Sheet 173* (Geographical Association, 1967).

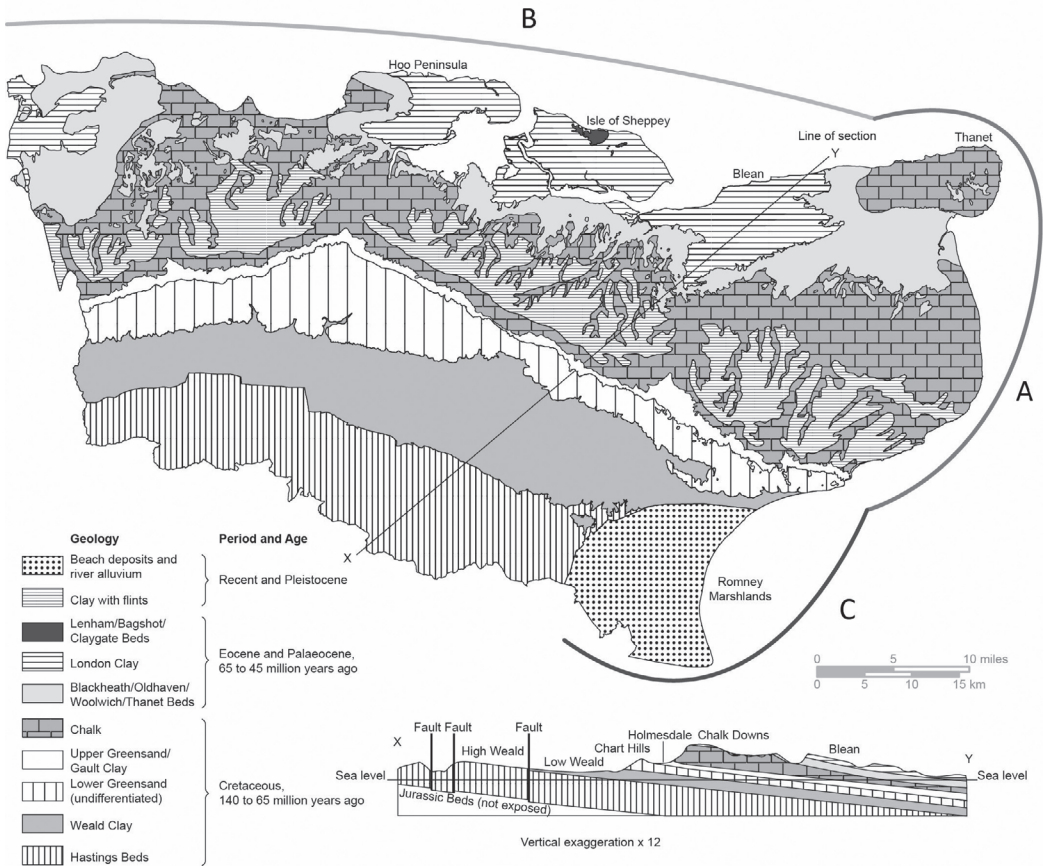

Figure 2.1: The geology of Kent: A – coast dominated by chalk cliffs; B – coast dominated by easily erodible soft geology; C – coast dominated by sedimentation

Long-Term Change

Long before Kent existed, the Wealden Dome or Weald-Artois Anticline created a continuous landmass, a land bridge, which connected the south-east of Britain to France, Belgium and the Netherlands.[5] The high point of the landmass was an extension of the North Downs across the Channel from Dover in the north-west to Calais and Picardy in the south-east (Figure 2.2), an extension that continued until about 450,000 BP (Before Present).[6] Either side of this ridge large bays existed into which rivers flowed. Rivers from northern Europe, including the proto-Thames, flowed into an extended, but dry, North Sea while rivers of southern Britain (the proto-Solent) and the proto-Somme and Seine flowed into a river network flowing down the English Channel.[7] The size and height of the ridge varied over time as sea level fluctuated by up to about 130m through glacial and interglacial climatic changes, but this ridge allowed human colonisation during warm periods between about 600,000 and 750,000 years ago and possibly as early as 850,000 BP or 970,000 BP.[8]

However, the development of one of the largest ice sheets to affect Britain about 450,000 years ago started to change the nature of the upland topography between northern France and Kent. Ice advancing down the North Sea blocked the outlet of northerly flowing rivers to create an extensive proglacial lake. The lake eventually overflowed the ridge between Dover and Calais at a height of 30 to 40m above present

[5] N. Ashton, 'The Human Occupation of Britain during the Hoxnian Interglacial', *Quaternary International* 409 (2016), 41–53; P. L. Gibbard and K. M. Cohen, 'Quaternary Evolution of the North Sea and the English Channel', *Proceedings of the Open University Geological Society* 1 (2015), pp. 63–74; D. K. C. Jones, *The Shaping of Southern England* (London, 1980).

[6] P. L. Gibbard, 'Formation of the Strait of Dover', in *Island Britain – a Quaternary Perspective*, ed. R. C. Preece (London, 1995), pp. 15–26; S. Gupta et al., 'Catastrophic Flooding Origin of Shelf Valley Systems in the English Channel', *Nature* 448 (2007), 342–5; Gibbard and Cohen, 'Quaternary'; S. Gupta et al., 'Two Stage Opening of the Dover Strait and the Origin of Island Britain', *Nature Communications* 8 (2017), 15101. DOI: 10.1038/ncomms15101.

[7] Gibbard, 'Formation'; P. Gibbard, 'Europe Cut Adrift', *Nature* 448 (2007), 259–60; Gibbard and Cohen, 'Quaternary'.

[8] C. Stringer, *Homo Britanicus: The Incredible Story of Human Life in Britain* (London, 2006); Gibbard and Cohen, 'Quaternary'; S. A. Parfitt et al., 'Early Pleistocene Human Occupation at the Edge of the Boreal Zone in Northwest Europe', *Nature* 466 (2010), 229–33; A. Bicket and L. Tizzard, 'A Review of the Submerged Prehistory and Palaeolandscapes of the British Isles', *Proceedings of the Geologists' Association* 126 (2015), 643–63.

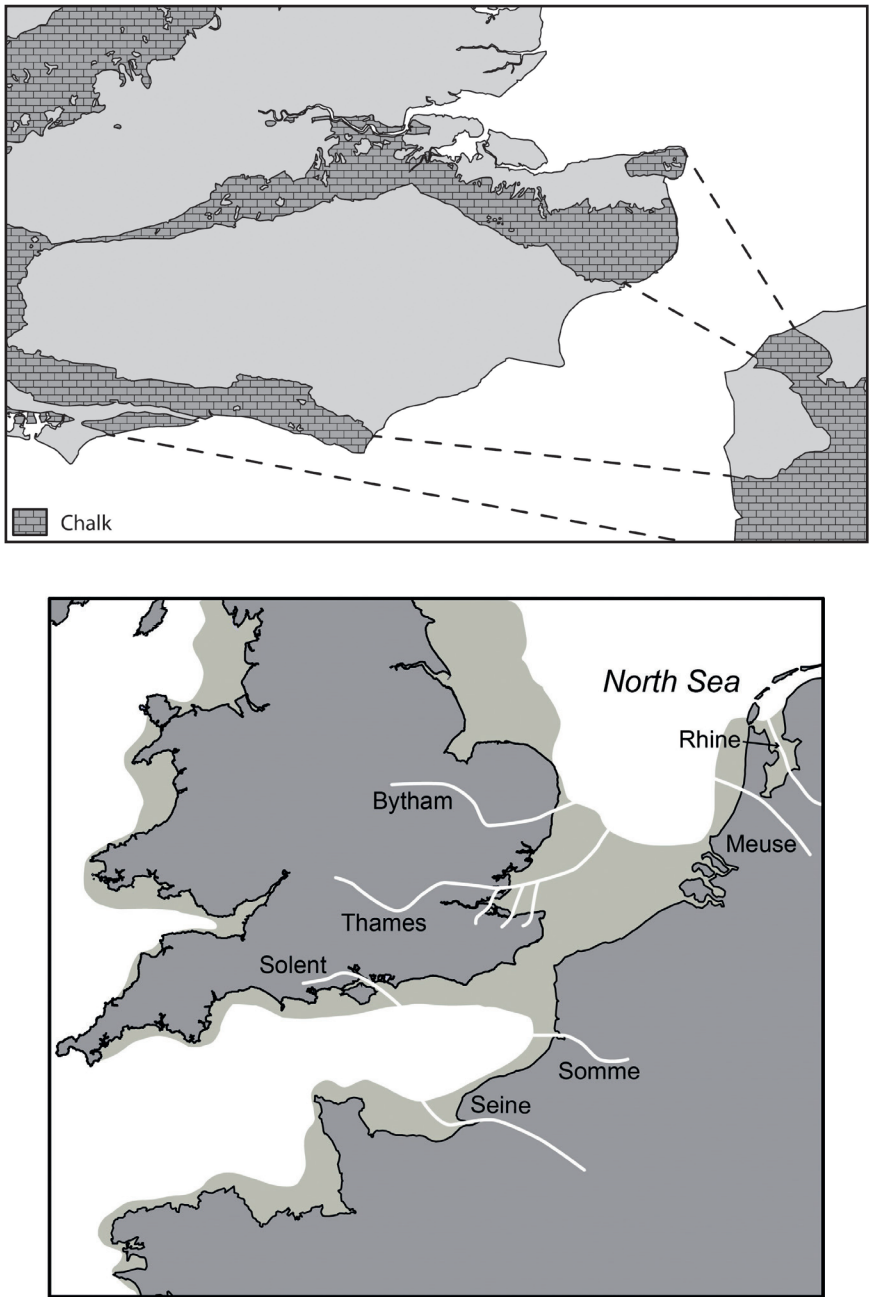

Figure 2.2: The Wealden Dome and its links to France (**a, above**) highlighted by the Chalk; (**b, below**) the 'land-bridge' and probable major rivers during periods of high sea level Early to Middle Pleistocene (0.7Ma)

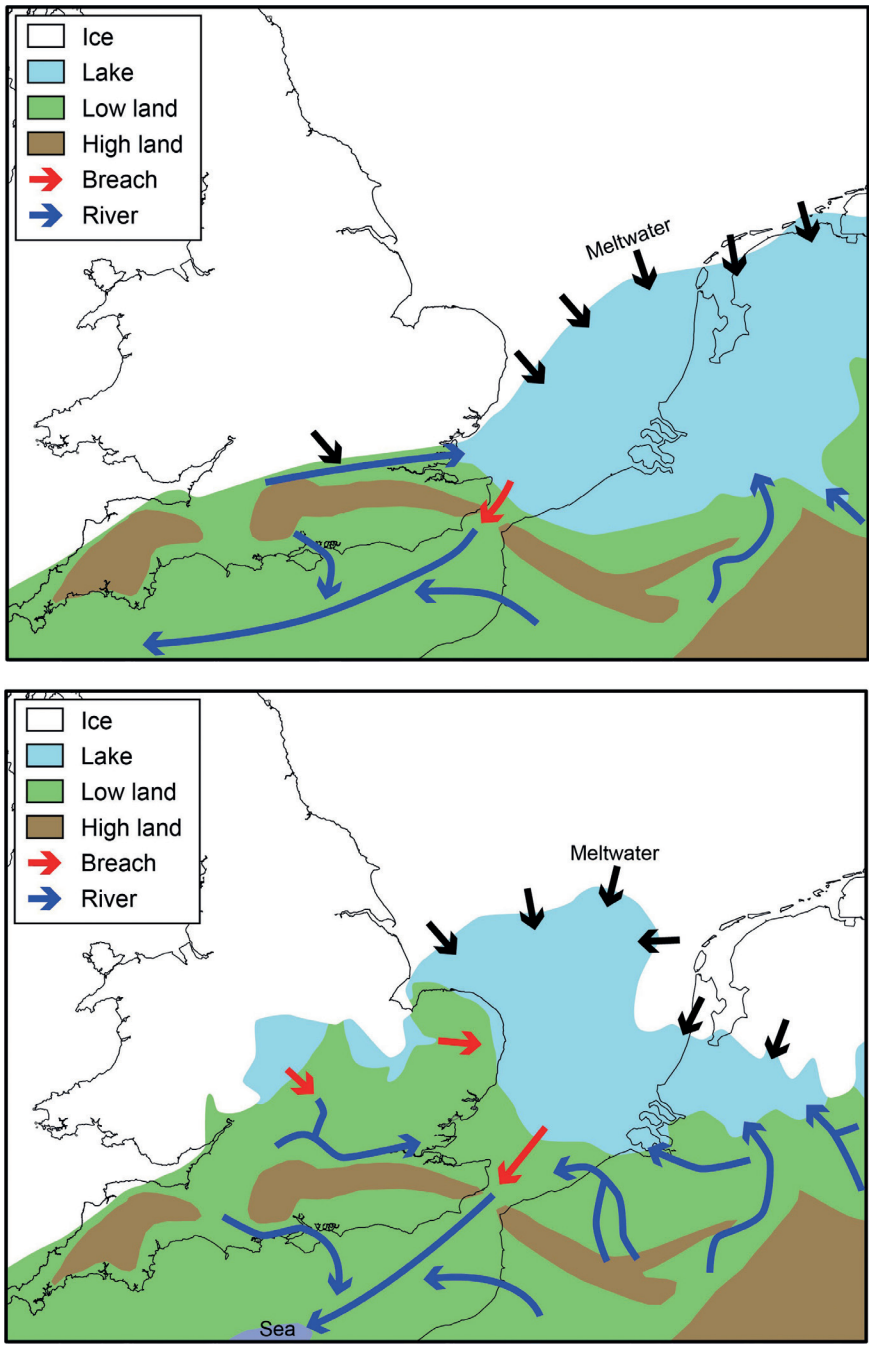

Figure 2.3: The breaching of the Dover Strait. (**a, above**) Anglian glaciation c.450,000 BP. Overflow from the proglacial lake breaching the ridge at c.30–40m Ordnance Datum (OD); (**b, below**) Saalian glaciation c.160,000 BP – the final breach over a ridge c.5m OD

sea level and started to initiate the Dover Strait. Unable to completely breach the ridge, it took a second large ice incursion and its proglacial lake 160,000 years ago to fully break through and complete the formation of the Dover Strait, finally separating what is now Kent from France (Figure 2.3).[9]

With lower sea level during the Last Glacial Maximum, c.26–20,000 years ago, connecting south-east Britain to the Continent again, Kent will have been part of an interfluve between river systems that flowed south from the ridge of the Dogger Bank (formed between 31.6 and 21.5ka) across a lowland plain (Doggerland) in what is now the southern North Sea, through the Dover Strait and down the English Channel.[10] As sea level rose from a low of 120m below present to 40–50m below present 10,000 years ago and to -20 to -18m 8,000 years ago, Doggerland flooded (Figure 2.4).[11] This was almost certainly enhanced by the impact of two significant sea level surges: the first caused by a catastrophic release of water from two North American pro-glacial lakes into the north Atlantic (Lake Agassiz and Lake Objibway) that resulted in a rapid jump in sea level of 0.25 to 0.5m dated at approximately 8200 BP; the second by a tsunami (the Storegga Slide tsunami) originating from a massive landslide off Norway and dated at approximately 8100 BP.[12] As sea level rose, the Mesolithic people of Doggerland moved away and Kent finally separated

[9] Gibbard, 'Formation'; Gibbard, 'Europe'; Gupta et al., 'Catastrophic'; Gibbard and Cohen, 'Quaternary'; Gupta et al., 'Two Stage Opening'.

[10] J. Coles, 'Doggerland: The Cultural Dynamics of a Shifting Coastline', in *Coastal and Estuarine Environments: Sedimentology, Geomorphology and Geoarchaeology*, ed. K. Pye and J. R. L. Allen (London, 2000), pp. 393–401; T. Everest et al., 'New Age Constraints for the Maximum Extent of the Last British–Irish Ice Sheet (NW Sector)', *Journal of Quaternary Science* 28 (2013), 2–7; P. D. Hughes and P. L. Gibbard, 'A Stratigraphical Basis for the Last Glacial Maximum (LGM)', *Quaternary International* 383 (2015), 174–85; D. H. Roberts et al., 'Ice Marginal Dynamics of the Last British-Irish Ice Sheet in the Southern North Sea: Ice Limits, Timing and the Influence of the Dogger Bank', *Quaternary Science Reviews* 198 (2018), 181–207; C. Waddington and K. Wicks, 'Resilience or Wipe Out? Evaluating the Convergent Impacts of the 8.2 ka Event and Storegga Tsunami on the Mesolithic of Northeast Britain', *Journal of Archaeological Science: Reports* 14 (2017), 692–714.

[11] B. D'Olier, 'Subsidence and Sea-Level Rise in the Thames Estuary', *Philosophical Transactions of the Royal Society London*, A272 (1972), 121–30; A. J. Long, 'Sea-Level and Crustal Movements in the Thames Estuary, Essex and East Kent', in *The Quaternary of the Lower Thames*, ed. D. R. Bridgland (Durham, 1995), pp. 99–105.

[12] D. C. Barber et al., 'Forcing of the Cold Event of 8,200 Years Ago by Catastrophic Drainage of Laurentide Lakes', *Nature* 400 (1999), 344–8; B. Weninger et al., 'The Catastrophic Final Flooding of Doggerland by the Storegga Slide Tsunami', *Documenta Praehistorica* 35 (2008), 1–24; Waddington and Wicks, 'Resilience or Wipe Out?'

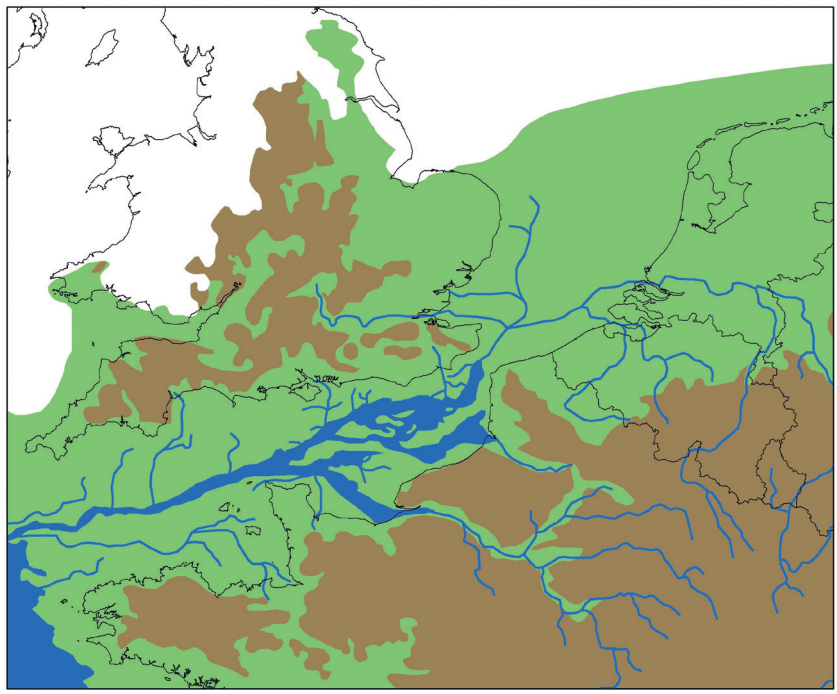

Figure 2.4: **(a)** The rivers around Kent during the Last Glacial Maximum, 26–20,000 BP

from Europe, probably in response to the Storegga Slide tsunami.[13] The rate of land loss is indicated by Moody:

> On the northern and north-eastern sides of Thanet 20 to 33km of land has been lost since 5000 BC [2.8m to 4.7m per year] and between 5 and 10km of land has been lost in the curve between Ramsgate and Deal [0.7m to 1.4m per year].[14]

One significant impact for Kent as the English Channel widened was that erosion and cliff retreat created the distinctive White Cliffs that are seen today.

[13] D. E. Smith et al., 'The Early Holocene Sea Level Rise', *Quaternary Science Reviews* 30 (2011), 1845–60; F. Sturt et al., 'New Models of North West European Holocene Palaeogeography and Inundation', *Journal of Archaeological Science* 40 (2013), 3963–76; Bicket and Tizzard, 'A Review'; Weninger et al., 'The Catastrophic Final Flooding'; Waddington and Wicks, 'Resilience or Wipe Out?'

[14] G. Moody, *The Isle of Thanet from Prehistory to the Norman Conquest* (Stroud, 2008), p. 29.

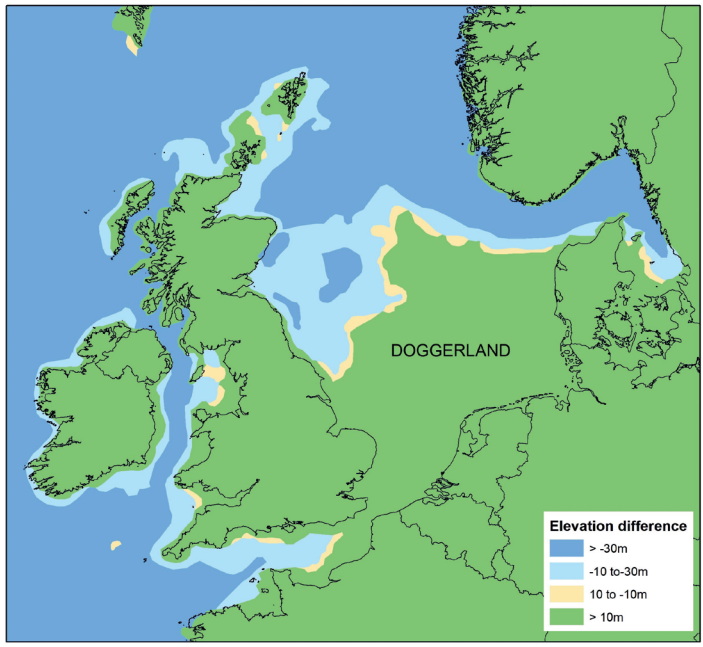

Figure 2.4: **(b)** Doggerland 10,000 BP as it started to flood

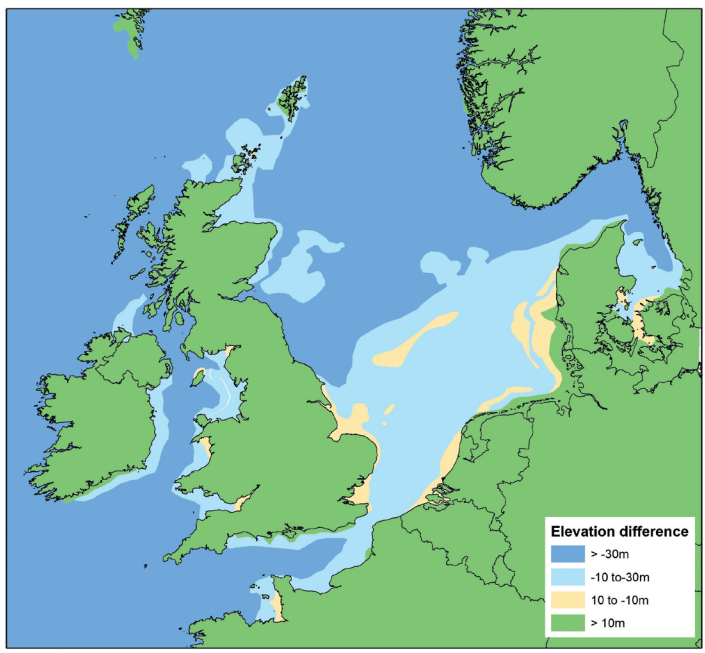

Figure 2.4: **(c)** Flooded Doggerland approximately 7000 BP

Figure 2.5: (**a, above**) South Foreland, showing the regional slope created by the northward dip of the Chalk (dotted yellow line) (Photo: Rémi Jouan 2006, CC BY-SA 3.0 license); (**b, below**) White Cliffs of Dover showing uneven cliff line caused by dry, truncated streams (Photo: Natalia Semenova 2011, CC-BY 3.0)

The Relief and Erosion of the Chalk

The coastal exposures of chalk in Kent form an uneven coastline for two reasons. At large scale the dip of the Chalk towards the north-east, with the minor up-fold which forms Thanet, creates a general cliff line that decreases in altitude from Folkestone, where the cliffs are 150 to 160m high, past the White Cliffs of Dover and North Foreland towards Deal (where there is no cliff), with cliffs rising again to c.15 to 25m in Thanet. At a smaller scale, dry, dip-slope river channels, truncated by cliff erosion, cut into the cliff top to create an undulating cliff line (Figure 2.5b). It may seem odd that valleys can form on permeable chalk, but they will have been cut at a time when Kent was 'periglacial' (Kent has never been covered by ice), during the early part of the Last Glacial.[15] During spring, surface melting over frozen ground

[15] J. B. Murton et al., 'The Devensian Periglacial Record on Thanet, Kent, UK', *Permafrost and Periglacial Processes* 14 (2003), 217–46.

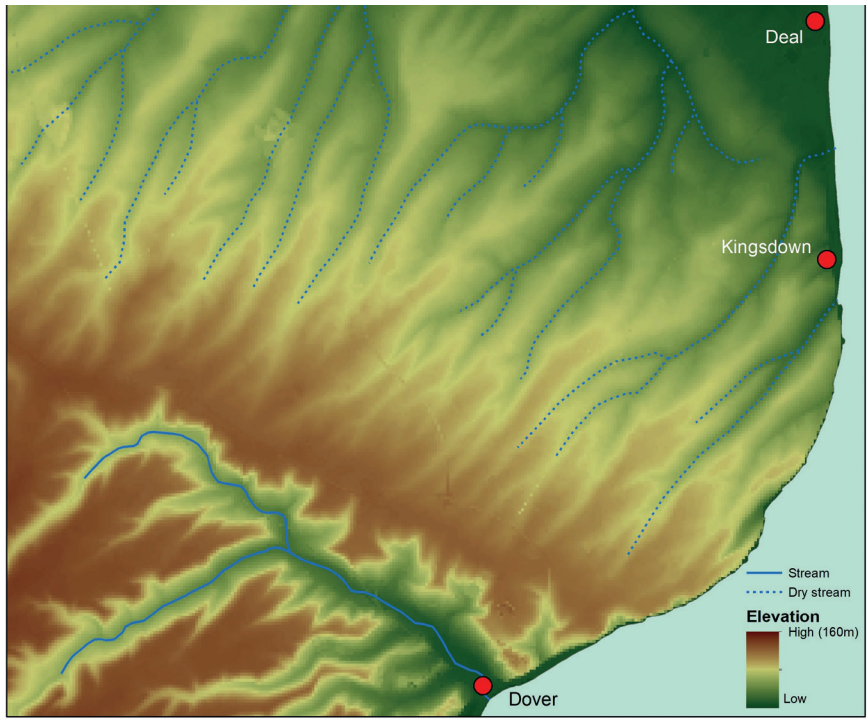

Figure 2.5: **(c)** Relief of the North Downs north of Dover, showing the dry valley system (blue dotted lines)

(permafrost) allowed surface water to flow over the normally permeable chalk which, together with solifluction processes, created the valleys.

Cliff erosion and retreat in any environment is an episodic process, with rates that vary over both space and time. Erosion of the chalk coastline is controlled by two distinct sets of processes. At Folkestone Warren coastal retreat of the chalk, as sea level rose, exposed the underlying Gault Clay at the cliff foot.[16] This created a weakness beneath the chalk cliffs that initiated a series of deep-seated rotational landslips to about 40m below sea level c.5500–2800 BP which extend east from Copt Point, Folkestone, to Abbot's

[16] J. N. Hutchinson, 'A Reconsideration of the Coastal Landslides at Folkestone Warren, Kent', *Geotechnique Institution of Civil Engineers* 19 (1969), 6–38; G. Birch and C. Warren, 'Technical Developments in the Monitoring of the Folkestone Warren Landslide Complex', *International Association for Engineering Geology and the Environment 2006*, Paper no. 78 (2006).

Figure 2.6: **(a)** Aerial view of Folkestone Warren showing deposition updrift of the harbour and the increased erosion in West Cliff Bay (Photo: John Fielding 2013, CC BY 2.0 license. Annotations added)

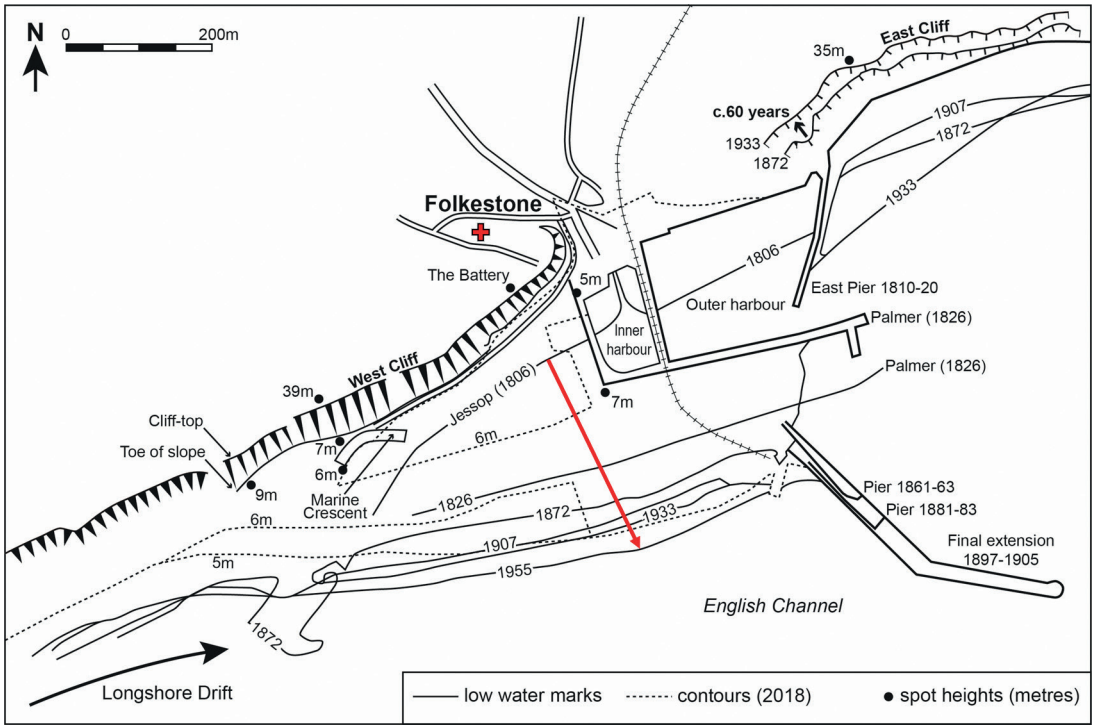

Figure 2.6: **(b)** Details of the sediment aggradation updrift of the harbour between 1806 and 1955. Also showing the approximate location where a hippopotamus was found (red cross)

Cliff, and developing a bay approximately 3km long and 0.5km in width.[17] Despite the apparent age of the Warren, it is clear that anthropogenic activity on the coast over the last 250 years has enhanced erosion rates. Littoral drift in the region is from the west and any disruption to the system reduces the sediment supply leading to depletion of beaches down-drift. Beginning with the construction of groynes in the late seventeenth century and the construction of Folkestone harbour between 1807 and 1810, and the extensions completed in 1863, 1883 and 1905, sediment build up to the west of the harbour wall starved the beach down-drift and created conditions for increased landslips in the Warren (Figure 2.6).[18]

Erosion of the area around Copt Point appears to be 'continuous' and landslips on the Warren occur relatively frequently resulting in the need for continuous monitoring of the Folkestone to Dover railway. Retreat rates varied between 0.1 and 3.6m per year between 1873 and 1933, but were highly variable both seasonally and annually.[19] Even if conservative rates of cliff retreat between 0.1 and 0.5m per year are taken for this time period, the late Iron Age site together with the early Roman villa on East Cliff (c.50 BC to 100 AD) near Copt Point, built on the more easily erodible Gault Clay below the chalk scarp (Figure 2.7), will have been over 200m and quite possibly up to one kilometre from the cliff top.[20] This is consistent with the location of other Roman villas in southern Britain where, if not in an estuary location, none is closer than 200m to the coast and most are over 500m away.[21] In addition, with Roman sea level calculated to be 4m lower just along the coast at Dover (3.93m), the current offshore topography suggests that the coast at the base of the cliff must have been over 500m from the current shoreline.[22]

[17] J. G. O. Smart et al., *Geology of the Country around Canterbury and Folkestone* (Geological Survey, 1966); A. S. Gale, 'Field Meeting at Folkestone Warren, 29 November 1987', *Proceedings of the Geologists' Association* 100 (1989), 73–82; D. K. C. Jones and E. M. Lee, *Landsliding in Great Britain* (London, 1994), p. 360.

[18] J. N. Hutchinson et al., 'Additional Observations on the Folkestone Warren Landslides', *Quarterly Journal of Engineering Geology* 13 (1980), 1–31.

[19] V. May and C. Heeps, 'The Nature and Rates of Changes on Chalk Coastlines', *Zeitschrift für Geomorphologie Supplementband* 57 (1985), 81–94; C. Moses and D. Robinson, 'Chalk Coast Dynamics: Implications for Understanding Rock Coast Evolution', *Earth Science Review* 109 (2011), 63–73.

[20] K. Parfitt, 'Folkestone during the Roman Period', in *Folkestone to 1500: A Town Unearthed*, ed. I. Coulson (Ashford, 2013), pp. 40–2; S. E. Winbolt, 'The Roman Villa at Folkestone', *Arch. Cant.* 38 (1926), 45–50.

[21] D. Tomalin, 'Coastal Villas, Maritime Villas: A Perspective from Southern Britain', *Journal of Maritime Archaeology* 1 (2006), 29–84.

[22] A. C. Waddelove and E. Waddelove, 'Archaeology and Research into Sea Level during the Roman Era: Towards a Methodology Based on Highest Astronomical Tide', *Britannia* 21 (1990), 259.