

MEDIEVAL AND EARLY-MODERN SALT-MAKING AROUND MORECAMBE BAY

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Abstract

Prior to the widespread availability of cheap rock salt from Cheshire, salt-making by the method known as ‘sleeching’ was practised extensively around Morecambe Bay. This involved the gathering of salt-enriched sand from below the high-tide mark and washing the same in troughs to produce a concentrated brine, which was then evaporated in lead pans. Physical, cartographic, placename and documentary evidence shows that, in the medieval and early-modern periods, at dozens of places along the coast from Walney to the Wyre, local people were engaged in the manufacture of salt, largely as a seasonal employment and generally for local consumption.

Introduction

Salt is a necessity. It is essential for preserving bacon, ham, beef and fish. It is a necessary ingredient of cheese and butter and a desirable cooking ingredient and condiment. Its many other uses stretch from tanning and the preparation of parchment to glass-making, and there is its religious role in baptism and holy water. The easiest and cheapest way to get salt is by solar evaporation of sea water. A site where this form of salt-making took place was known in classical times as a *salina* (plural *salinae*), such as the *Salinae Romanae* established at Ostia at the mouth of the Tiber. Unfortunately British summers are too cool and wet for reliable solar evaporation.

Another method of salt-making is mentioned by Nennius (c.830AD), who reported “... the salt springs there [in Britain], from which salt is boiled, wherewith various foods can be salted; they are not near the sea, but rise from the ground” (Nennius, 40). The two main British locations of such springs from at least Roman times were Droitwich (Worcestershire) and the ‘wich’ towns of Cheshire. They were similarly known as *salinae* as can be seen from the *Ravenna Cosmography* (c.700AD) where the placename *Salinis* (locative plural, ‘at the saltworks’) appears twice, probably referring to Droitwich and Middlewich (Rivet & Smith, 1979, 143, 207, 451). Unlike sea water, which typically contains only around 3–4 per cent salt, the inland brine springs contained typically up to 25 per cent, allowing salt to be made with less than a tenth of the fuel that boiling sea water would require. Nevertheless, evidence for obtaining salt by direct boiling of sea water goes back to Neolithic times, as evidenced by the recent discovery of a salt-making site at Loftus, North Yorkshire, dating to 3800–3700BC (Sherlock 2021).

Another method of salt production may have been introduced into England in the early medieval period. This was the method known as ‘sand washing’, but which in the north-west was known as ‘sleeching’. Essentially, this involved enriching the salt content of sea water until it approached that of the brine springs, thus allowing salt to be made with much less fuel than would be the case in boiling water from the sea. For ‘sleeching’ to be viable, though, three conditions were required. The first was a considerable tidal range: this was because the method depended upon sand below the spring-tide line getting soaked by the sea, then drying out over the next fortnight until it was again soaked, thus building up a concentration of salt in the sand. This sand was then scraped away, to be washed in pits to dissolve the salt, adding more sand until the brine approached saturation. Only a tidal range of around 7 to 8 metres seems to have provided the necessary expanse of intertidal sand, a condition which Morecambe Bay, where 10-metre tides are not uncommon, readily met. The second requirement was access to extensive sandy, silty or muddy shores, or salt marshes, backed up by flat land just above the spring-high-tide line, where the process could take place, with adjacent space for

stacking fuel and for dumping the desalinated sand. The third requirement was access to plentiful local supplies of cheap fuel, generally peat.

In those parts of Britain where these conditions did not apply, salt had to be imported, originally from the Bay of Biscay area and later from Portugal, Spain and beyond (Kurlansky, 2003). This was generally known as Bay Salt, to distinguish it from the product of the brine springs of Cheshire or Worcestershire, which was known as White Salt (as it contained fewer impurities than Bay Salt). By 1500 Adshead (1992, 95–6) estimated England needed more than 150,000 cwt of salt a year, of which perhaps 100,000 cwt was Bay Salt, imported through London, Bristol and Exeter. The rest, says Adshead, came essentially from those inland brine springs – although “some ... came from Lincolnshire, whose earth and brine boiling industry experienced a modest revival between 1100 and 1300”. It would seem Adshead was unaware of salt production in north-west England.

However, this omission was to a great extent remedied between 2015 and 2018 when the Morecambe Bay Partnership coordinated a project to investigate salt-making around Morecambe Bay. The output has been published on a website, comprising a desk-based assessment by Wardell Armstrong Archaeology and a paper by Cass, which used probate inventories to explore local salt-making near the end of the industry. There is also an ongoing project by Ecosal-UK to record on a Google Map sites with salt associations in the UK, including many around the Bay (Figure 1).

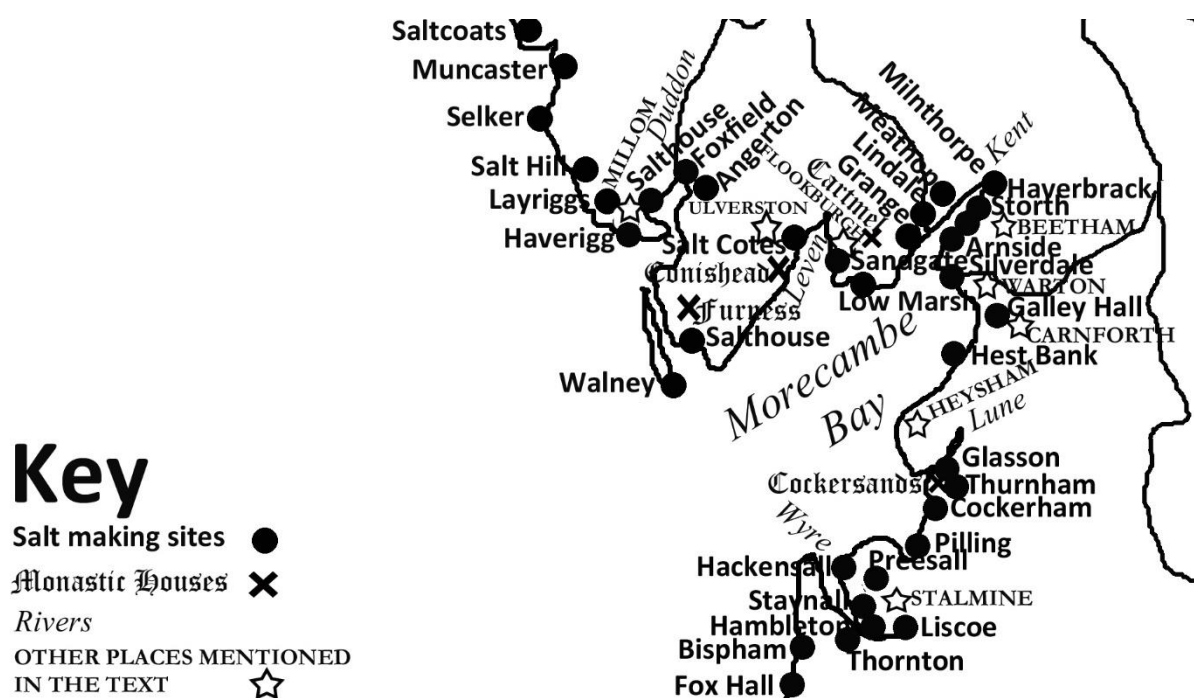


Fig. 1 Coastal salt-making Sites. Distribution of known or inferred sites, in and beyond the Morecambe Bay area, together with locations of monastic houses and other places mentioned in the text.

Contemporary accounts of Sea-Salt-making round the Bay

Passing by the sands of Cockerham in Lancashire in 1539, the antiquary John Leland noted something remarkable.

I saw divers salt cootes, wher were divers hepes of sandis taken of salt strondys [strands] owt of the wich by often weting with water they pike owt [pick out, extract] the saltnes, and so the water is derived into a pit, and after sodde [seethed, simmered] (Smith, 1964, 10).

A little further on, past Cockersand Abbey, he wrote “I roode over the sandes, marking the salt cotes” (Smith, 1964, 11). Although he elsewhere describes the inland brine-springs industry at Droitwich,

Worcestershire, and at Northwich, Cheshire, nowhere else in his travels throughout England does he mention coastal salt-making.

A generation after Leland, Harrison mentioned salt being made “between Wire [Wyre] and Cokermouth” (Harrison, 1577, 403–4) although it may be that he was confusing Cockermouth (in Cumberland) with Cockerham or Cockersand, in Lancashire, as visited by Leland. Soon after, another antiquary, William Camden, was similarly impressed enough to describe this method, which he too had seen in the vicinity of Cockerham, and which for him was “*Salis conficiendi nova ratio*” (A new manner of making salt) (Camden 1587, 512: 1637, 753).

Here along the sea shore you may see in many places heaps of sand, whereupon they powre water, untill it gather a saltish humour, which afterwards with turfes they boile untill it be white salt.

Over the next century, this method of salt-making came to be particularly associated with Lancashire. Speed’s account, largely paraphrased Camden (Speed, 1606, 75) was picked up by John Beal in a letter to *Philosophical Transactions* in 1673, in which he specifically identified Speed’s account as referring to “Wire-water in Lancashire”. Dr Beal’s account was then cited by John Collins, although the latter had little new to say other than to suggest that the local salt was not so white as the salt from the brine springs, and hence was less suitable for the table: it “makes a good kind in Lancashire, but reddish, that is used for curing of Fish, Flesh etc” (Collins, 1682, 14–5).

In 1674, John Ray not only gave us the first definition of “to sleet: To dip or take up water”, but also gave us the fullest account yet of the process, devoting more than a page to “The manner of making Salt of Sea-sand in Lancashire” (Ray, 1674, 177–8).

In Summer-time, in dry weather, they Skimme or pare off the upper part of the Sand in the flats and washes that are covered at full Sea, and bare when the Tide is out, and lay it up on great heaps.

Of this Sand they take and put in troughs bored with holes at the bottom, and thereon pour Water, as Laundresses do upon Ashes to make a Lixivium, which Water draining through the Sand, carries the Salt therein contained down with it into Vessels placed underneath to receive it. So long as this liquor is strong enough to bear an Egg they pour on more Water; as soon as the Egg begins to sink they cast the sand out of the troughs, and put in new.

This Water thus impregnate with Salt, they boil in leaden pans, wherein the Water evaporating the Salt remains behind.

Martin Lister’s work, written in Latin (1684), includes his eye-witness account: “I have seen it, at a distance, made out of sand in the estuaries of Lancashire” (*De sale autem marino e sabulo in aestuario Lancastrensi confecto, illud porro notavi*. Lister, 1684, 5). Then in the following year of 1685, Lancashire antiquary and topographer Richard Kuerden, while engaged in his project of mapping all the roads of Lancashire, noted the existence of salt production on the River Cocker, distinguishing between “ye salt cotes” and “salt works”, with some three furlongs (600 metres) separating them, and with the word “sands” written between them (Figure 2) (Shannon, 2020). It is probable that the former comprised the building where the boiling took place, while the latter was the place where the sleet was done. Later that summer, having crossed the sands to the Cartmel Peninsula, Kuerden noted two more salt cotes, between Lindale and Grange (Cartmel) near the River Winster where today Grange-Over-Sands Golf Club has its course.

Thomas Cox, writing about Amounderness in Lancashire early in the eighteenth century, tells us that sleet salt-making was still continuing in the traditional manner (Cox, 1720–31). For John Lucas of Warton (c.1743), his description of local salt-making at “Gallihaw” (Galley Hall, near Carnforth,

where the River Keer meets Morecambe Bay), was based upon “what I have observed thereof in my youth”. He was able to give us new details of the practice from his personal observation, including harrowing the “Flats” “with a Thorn, or such like Thing”, then leading away the sand in “Caups” (a ‘coup’, a tip-cart) before putting it into “Troughs or Pits lined with fine blue Clay with Holes at the Bottom”, followed by boiling the brine in “leaden Pans” (Lucas, c1743/2017, 214–5). He also, like John Collins, reported that “The Salt made here is indeed not so white as that made at [“Droytwych” and “Shields”]”.

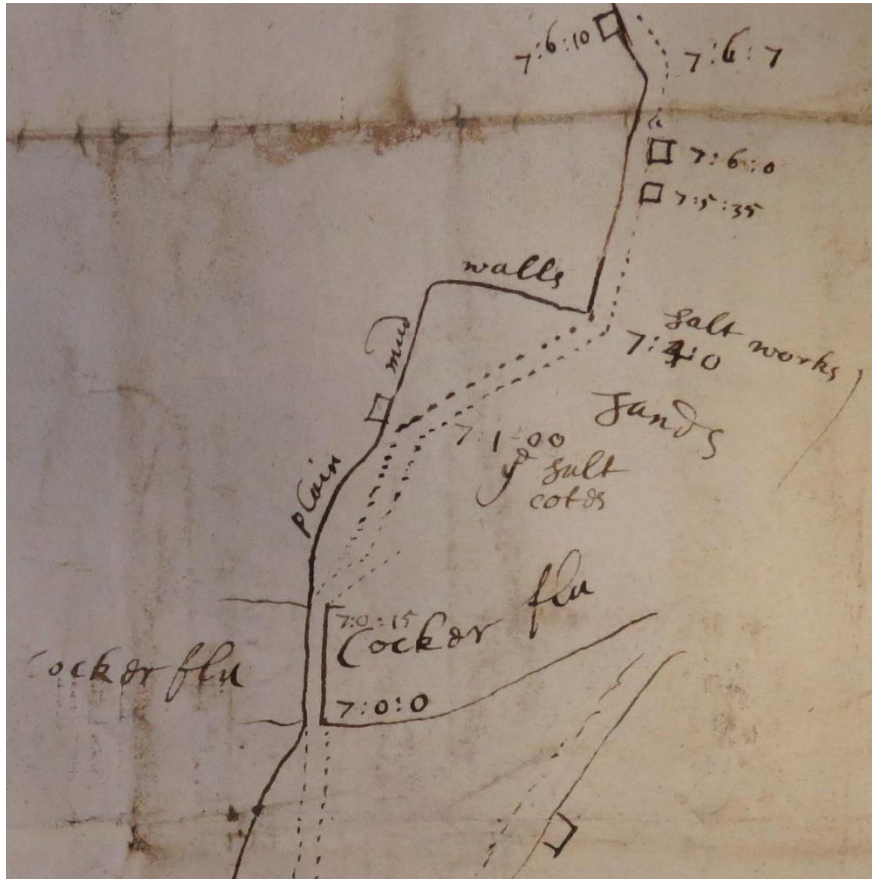


Fig. 2. Richard Kuerden's map of salt works at Cockerham, 1685. The map shows the vicinity of the River Cocker, with “plain mud walls” to the left (south), protecting the farmland from the sea. North (right) of the wall, there is an unenclosed path to seaward of which there are the “sands” on which are located “salt works” and “ye salt cotes”. Reproduced by permission of Lancashire Archives, Lancashire County Council DDX 194/25v.

By the time of William Brownrigg (1748) local sea-salt-making was largely a thing of the past.

There were formerly several works of the same kind at Wire-water, and Medop [Meathop] in Lancashire, and at Milthorp [Milnthorpe] in Westmorland; at which places, pit-coals being scarce, they boiled the salt with turf fires; but since brine salt, and refined rock salt have been made in such plenty in Lancashire and Cheshire, all those sand works have gone to decay; and that method is, in those parts, intirely laid aside; except at one or two very inconsiderable works nigh Ulverstone in Lancashire. (Brownrigg 1748, 137).

Again, the Rev. William Hutton, writing of Beetham in 1770, reported that “Formerly along this south Side of the Sands there were several Salt Steads, or small Salt-Works for Bay-Salt. These were ruin’d by the Great Works at Liverpool & Warrington” (Ford 1906, 104). While this was true, a further blow to the industry in the Cockerham district had been struck by the floods of December 1720, which

overflowed 1500 acres within Pilling, leaving forty families homeless and “carrying away...great quantities of salt...” (Lancashire Archives QSP 1170/17 Pilling 1720).

From the late-seventeenth century, salt production in the Liverpool area had grown using rock salt from Cheshire (discovered in 1670) and coal from the St Helens district of Lancashire. “Between 1500 and 1800 England passed from being a largely salt importing country to being a largely salt exporting one... Of these developments, Liverpool, a village in 1600, the second port of the United Kingdom in 1850, was the prime agent and beneficiary” (Adshead, 1992, 104–5). As a result, increasingly from the eighteenth century, the sleeching industry was essentially a matter for historians, not contemporary reporters. Thus Baines (1836, 554, 555, 569) mentioned production having taken place at Cockerham and having been “anciently in operation” at Slyne-with-Hest. Later that century Stockdale (1872, 573) made an observation regarding Cartmel which is surely relevant for the whole of the region, namely that sleet salt was generally produced and consumed locally rather than being traded out of the region.

All the salt consumed in the parish of Cartmel was made at one time at the Salt Cotes on the sea shore below Carke, at Sand Gate, Low Marsh, Wilson House [Lindale] and some other places on the Coast of the bay.

By the end of the nineteenth century, however, commercial salt-manufacture had begun using brine springs at Preesall and Walney. These developments are outside the scope of this paper.

Documentary evidence for Salt-making around the Bay

The combined evidence of documentary and other sources such as place-names shows the presence of salt manufacture in more than two dozen coastal townships around Morecambe Bay (Figure 1), with many having more than one salt works within that township, notably on the sands of Lune and Cocker, where a rental of 1400 shows 29 salt cotes in the vicinity of Cockerham (France 1954).

During the twelfth century, as monastic houses were built in the district, in each case their benefactors felt that the possession of a *salina*, with ‘sand floors’ and turbary [the right to cut peat], was essential for a successful house. Moreover it is clear that in many cases the *salinae* which were being given to the monks were already in existence – and it is perfectly possible that local salt-making had been around for several hundred years before it is first mentioned in these records.

Furness Abbey moved to its present site in 1127 and one of the earliest references to salt comes in a grant of c1220, which gave a *salina* at *Lairwath*, with associated sands, mosses and marshes (*in sabulis, muscis et mariscus*) (Brownbill, 1916, 531). Where *Lairwath* was is not known: but the likelihood seems to be Layriggs near Kirksanton, on the far side of the Duddon. Nearer home a grant in 1299 gave Angerton Moss, on the Furness side of the Duddon, to the Abbey, with full rights in sands and saltworks (*in...sabulis, in salinis*). A bull of Pope Innocent IV of 1247 named amongst the Abbey’s granges, *Salthus in Furnes et Salthus in Caupland*, suggesting that the monks’ tenants were making salt both at Salthouse, which is today within Barrow-in-Furness, and at the other Salthouse, in Millom (Atkinson, 1887, vol 1, pt 2, 331: vol 1 pt 3, 604).

A crucial part of any grant of *salinae* was the corresponding grant of sufficient ‘sand-floors’ (*aireae, sabula*) from which to dig the salt-rich sand, together with access to enough fuel to heat the lead pans. Although no charter is ever typical, a grant from John de Hudleston to the monks of Furness in 1260–80 is a good example of the language used (although apparently referring, perhaps unusually, to a *salina* with a single pan) *Preterea concessi eisdem patellam ad salem faciendam in dicta salina cum sufficienti turbaria in mussa mea de Millum sine vasto; concessi etiam eisdem ad augmentationem salis duas acras de sabulo meo*. (Next I have conceded a pan for making salt in the said salt works with sufficient turbary in my moss of Millom, without waste: and I concede for the augmentation of the salt two acres of my sand) (Atkinson (1916, vol 2, Part II, no 40, 542).

Meanwhile, in 1249–56, the Furness monks were granted a *salina* on the east side of the Kent estuary with two pans (*cum duas patellis*), sufficient turbary, and wood *ad salinam construendam* (for the construction of the salt-cote) (Atkinson 1916, Vol 2, pt 1, 90). The location is given as Bethum in Ellerschawe sub Flokesti and although the latter two names have not survived, this site is likely to have been at Storth between Milnthorpe and Arnside. Then, further south, in c.1270–90, the Abbey was granted land along the Wyre including *salinae* (Atkinson 1916, Vol 2, pt 1, 249). Later grants suggest that these were at Staynall in Stalmine (where the monks had a grange), while still others were being constructed in the vicinity of Hackensall (Atkinson 1916, Vol 2, pt 1, 26). An Abbey rental dated 1538–9 lists amongst the Abbey’s assets the Grange of Stalmine, at that date in possession of four “salt cotes” (Atkinson 1916, Vol 2, pt III, 642–3).

Also on the Furness peninsula, the priory of Conishead on the Leven was founded c.1170–84, with an initial grant that included a ‘salt works’ and rights of turbary (Lancashire VCH, vol 2, 140). This would have been where Salt Cotes farm, near Canal Foot, Ulverston, now stands. A little later they were granted another *salina* which seems to have been in the vicinity of Haverigg, near Millom, and around 1220 they were given sand plus land for building a *salina* at Haverbrack on the Kent. (Dugdale 1846, Vol 6, 555, 557).

Unfortunately, the records of Cartmel, an Augustinian priory on the peninsula on the other side of the Leven, are sparse, but enough survives to show that its founder granted them (1188) ... *piscariis, in salinas et fabriciis* (fisheries, saltworks and smithies). There is no detail as to location, but the evidence of Stockdale (above) would suggest that these *salinae* were to be found around the southern part of the peninsula (Dugdale 1846, vol 6, 454).

Although their Abbey was located across the Bay, Cockersand’s chartulary includes the grant of *unam salinam* in Midhop [Meathop, on the Cartmel peninsula] in 1184–90, together with common rights in wood (Farrer, 1905, 1010–1). At approximately the same date they were granted a *salina* at *Flokesti* in Beetham, at a place of their choice, anywhere except Arnside – which suggests the Manor of Beetham already had its own *salina(e)* at Arnside. Later, as mentioned above, the Abbey of Furness was also granted a *salina* near *Flokesti* (Farrer, 1905, 1012). Both Meathop and *Flokesti* are some way from Cockersand, one on each side of the Kent estuary.

Perhaps the reason why Cockersand did not have *salinae* near their house lies in the earlier grant of the adjacent manor of Cockerham to the Austin Canons of St Mary’s, Leicester, in 1154, “together with the saltcotes and with common of pasture throughout the Lancaster fee in the hundreds of Lonsdale and Amounderness” (France, 1954, 38–53). Where exactly these *salinae* were located is not stated, nor how many, but in 1400 there were said to be 29 in what was clearly one of the most productive areas for salt-making along the whole coast. It was here where Leland and Camden saw salt-making in progress (France. 1954, 41). How significant this industry was can be seen from a rental of 1400: the rents from its salt cotes amounted to nine per cent of the total income from the manor (France, 1954, 41). Two Customals of the manor, dated 1327 and 1483, give interesting background detail on the management of these *salinae*, stressing that the tenants must only use peat from their own holdings, not bring it in from outside; that they must not tamper with the anciently assigned (*antiquitus assignatus*) boundaries of their turbary and sands; and that they were not allowed to sub-let their “cowte”, unless they paid the lord (St Mary’s Abbey) a fine of a quarter of salt per year (28lbs) (Lancashire Archives DDO 1/7 Exemplification, Cockerham, 1579).

Place-Name and Other Evidence for Sea-Salt-making

Traditional sea-salt-making might be expected to leave physical evidence in the form of pits or ponds (kinches), and heaps of de-salinated sand. The salt-cotes themselves, with their hearths, might be

revealed by excavation but would not leave surface traces. The sand floors, sand rooms and stack rooms mentioned in leases might remain as landscape features. However, physical evidence of sea-salt-making around the Bay is virtually non-existent. A group of ponds on Cockerham Marsh and around the Wyre may have their origins in this industry, while the Westmorland and Furness Historical Environment Record (SMR 43154, Ravenstown Saltern) records earth mounds at Flookburgh that could have originated as sand heaps related to salt-making at Sandgate, Lower Holker.

Placenames and field names provide a more fruitful source of evidence, notably from the tithe maps and apportionments dating from the 1830s to the 1850s. Unfortunately the area around Milnthorpe and the whole of the Cartmel peninsula is excluded, not having been subject to tithes (Kain & Oliver, 1995). Nevertheless, these records allow us to pinpoint precisely a number of locations where salt-making took place, with Salt Cote and Saltcote Wood (Meathop) showing exactly where the *salina* mentioned in the Cockersand Chartulary was situated, together with the associated allotment of wood for use there. The site near Galley Hall, Carnforth, mentioned by Lucas, is clearly named Salt Coats in the tithe apportionment, although by then it was just pasture.

The tithe map for Pilling shows two fields called Great and Little Salt Cote, plus the adjacent Salthouse Parrock, all of them now cut off from the sea by the extensive sea defences erected in the late nineteenth century. Hambleton similarly has a field called Saltcoates, apparently a tidal island within the salt marsh. Across the Wyre is Thornton where the map shows two non-adjacent fields called Salt Cote Hey, which might suggest two salt cotes, while one of them adjoins a Salt Cote Hill, which could be the site where the desalinated sand was heaped.

Other place-name evidence comes from maps, with Yates' map of Lancashire (1786) naming three 'Salt Coats' sites (at Barrow, Foxfield and Lytham, all of them monastic). An earlier manuscript map of Piel Island made for the Duke of Montagu in 1725 shows two buildings on the island, where today the Ship Inn stands, described as 'Old Salt Houses', presumably pre-Reformation and intended for the storage of salt for export made in salt-cotes on the monastic estates. Whether this was commercial, or for the Abbey's daughter houses on the Isle of Man and Ireland, is not known.

The First Edition 6 inches to the mile Ordnance Survey maps, dating from the late 1840s to the mid-1850s, reveals the place-names Salt Coat Brows (Glasson), Salt Coat Bridge (Hambleton), 'Salt Cotes (Ulverston), Salt Cote (Storth, Arnside) and Salt Cote Wood (Low Meathop). The map also shows Plumptre Wells (Salt Springs) near Canal Foot, Ulverston, but it seems unlikely that these springs were exploited for salt production. Baines (1836, 688) refers to them as having "the medical effect of the seawater", which suggests they were seen as spa wells.

Lost placenames may also turn up unexpectedly, such as a reference to "Salt-cotes in the ffrith" spotted in a 'Bargain and Sale' document dated 1739 (Lancashire Archives DDCA 6/129). This refers to properties sold by Thomas Dummer, agent to Lord Montagu, to Sir Thomas Lowther of Holker. The parcel referred to was on the Leven estuary by Frith Hall, in Upper Holker, which had been associated with Cartmel Priory. Although no other record appears to relate to salt-making here, in fact the site is ideal, adjacent to the Hall, with the sandy shores and salt marshes of the Leven estuary, backed up by flat land just above the spring high tide, and with extensive mosslands beyond where peat could be dug. Unfortunately, there can be no strategy for searching out such lost names; one can merely record them when they turn up.

Conclusions

For hundreds if not a thousand or more years prior to the eighteenth century, salt which was a vital

component of agriculture in this region. It did not come from imported Bay Salt nor from the White Salt of Cheshire, but from local sea water, enriched by the sleetting process. At least two dozen locations around the Bay were engaged in this activity. However, it is likely that salt-making was generally a seasonal employment, carried out by husbandmen and their families operating under licence from their manorial lord. Some of the output would have been consumed on their farms, with the rest giving a useful income by being sold to neighbours, particularly those a little inland. It is unlikely that much sleet-salt travelled more than a day's journey from the salt-cote.

Well-known to writers from the sixteenth to the eighteenth century, this industry has since virtually faded from view. Remarkably little has been written about how pre-modern farmers and others got their salt. In general histories of the salt industry, the role of the coast of north-west England has been all but ignored. It hoped that this paper will help redress the balance.

Endnote

The contents of this paper are largely taken from a paper by the author which appeared in *Northern History*, Vol LX:1, March 2023, 28–51 entitled 'Sleet Salt-making from the Solway to the Mersey in the Medieval and Early-Modern Period'.

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