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Historical Archaeology and the Maritime Cultural Landscape of the Atlantic Fishery

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When you fly into St. Anthony in northern Newfoundland, you get the feeling that the last ice age has just ended. The rocky terrain is covered with ponds and bogs, like puddles on that first warm spring day, when the snow melts. The Great Northern Peninsula is still rising up out of the sea—rebounding from the heavy burden of ice it carried only 10,000 years ago. This isostatic rebound has created beach terraces in southern Labrador and northern Newfoundland, which mark the passing millennia. Many people have passed this way: Maritime Archaic Amerindians; Groswater and Dorset Paleoeskimos, more recently Beothuk, Innu, Inuit; and, eventually, Europeans. Each culture has wrested a livelihood from the rich marine life of the region; each has exploited the shoreline of its time; and each can be found on its own beach terraces. To walk inland from the present shoreline is to step upward and therefore backward through time.

One aspect of these beach terraces is puzzling. It is not surprising that the land rebounds upward when the glacial ice cap melts. But why doesn't it do so smoothly, even if its rise slows over time? Why is the landscape stepped, with severe marine erosion alternating with more gradual slopes? A few years ago, I heard a good answer to this question, from geographer Trevor Bell. The ancient beach terraces that we notice on the landscape are offset by steeper zones of rapid erosion that mark unusually destructive wave activity: perhaps the worst storm in 1,000 years, a tsunami, or even an extended period of extremely violent seas. This is a wonderful illustration of the way in which the uniform processes of geological change are intertwined with intermittent catastrophe. This dialectic has a parallel in my own field of archaeology. Archaeology suits the study of what

the French historian Fernand Braudel called the *longue durée*—the long term. But paradoxically, archaeologists learn about long-term patterns of daily life by finding evidence of particular events. We can never do more than sample the past and our sample can never be more than what happened to be spilled, thrown out, or abandoned, at a particular time. (For further discussion of uniformitarianism and of the *longue durée*, see Stephen Bocking and Lyle Dick, respectively, in this volume.)

Braudel was careful to point out that the slow rhythms of the *longue durée* are punctuated intermittently by turning points (*conjunctures*): shifts in political or economic or industrial organization that change the very structure of everyday life.¹ One of the most significant of these surely happened about 1500, when European mariners became aware of the Americas. When Zuan Cabotto (John Cabot) brought back news of the New Found Isle in the North Atlantic, his crewmen seem to have been more interested in the rich fishing grounds near the coasts they had visited. The marine resources of Atlantic Canada made a new industry possible. Or rather, they provided a new place for an old industry, since the northern European commercial salt-cod fishery was already at least 300 years old. Fish remains from Quoygrew in the Orkneys, north of Scotland, become much more uniform in size after AD 1150. This suggests to zooarchaeologists that the commercial production of salt cod was underway at this time, because markets prefer product of a standardized size to a degree that subsistence economies do not. The trade in salt cod from Norway's Lofoten Islands is documented from about AD 1250. In the 15th century crews from Hull and Bristol in England fished for cod along the coast of Iceland, while fishermen from Devon and from the Basque country in France and Spain exploited the coast of Ireland.² Both the technique of wind drying salted cod and the practice of making long-distance seasonal voyages to catch fish were well established by 1500, when European fishermen began to visit what was, for them, a New World.

This chapter describes this forgotten industry and sketches its history, including its impact on both the land and the sea. The idea that generations of transient fishermen created a cultural landscape as they returned to their seasonal fishing stations is the central point. Historical archaeology is one way of researching such landscapes—but what is historical archaeology and how does it relate to documentary history? Perhaps we can clarify how these disciplines relate by considering the relevant documentary and archaeological resources for this particular research topic and also by introducing a technique used by both disciplines for organizing data: the geographical information system (GIS).

The Transatlantic Fishery

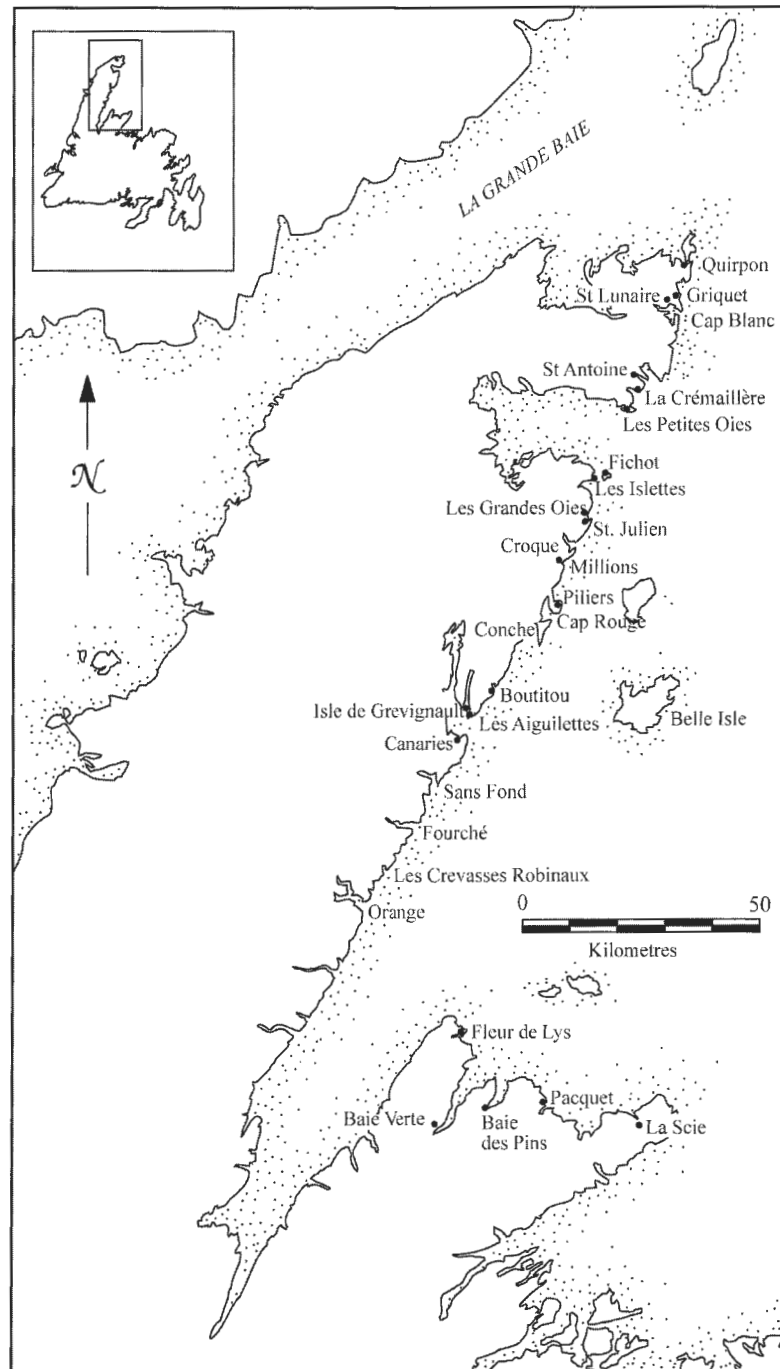
The transatlantic migratory salt-cod fishery is a dinosaur of economic history: once huge, but now extinct. Between about 1500 and 1800, this fishery played an important role in the European world economy. It provided a storable nutritious protein, as well as “train oil” extracted from cod livers—a valuable byproduct that literally greased the wheels of emerging industries. Because southern Europe was the best market for dry salt cod, the trade in fish became an efficient complement to trade from that region, particularly in wine. En route to North America, on the other

hand, fishing ships typically had plenty of cargo space. They came from Europe “in ballast” (that is, essentially without cargo) because supplies for the fishery took up much less space than the fish these ships would have to carry home. This effectively subsidized communications from Europe to North America, by keeping freight rates to Atlantic Canada low. Finally, France and Britain came to see their migratory fisheries as nurseries of seamen—that is, as crucial training grounds for the navies, which they used to protect their commercial interests. Historians have paid serious attention to the economic and political implications of this fishery; they are only beginning to ask about its social and environmental significance.

For centuries, migratory crews seasonally exploited Atlantic Canada, notably Cape Breton, Gaspé, the lower north shore of the St. Lawrence, southern Labrador, and several parts of Newfoundland. This was how Europe first made use of North America. Crews prosecuted the inshore fishery from boats rather than from the ships that brought them across the ocean. The dry salt cure used in the stationary shore fishery worked well in the temperate climate of Atlantic Canada and produced a stable product, well suited to the warm climates of the Mediterranean and the Iberian Peninsula. Whether they came from Portugal, Brittany, Normandy, the Basque Country of France and Spain, or the West Country of England, fishermen were familiar with the land-based dry cure and used it when fishing inshore. (The rule of thumb in your Canadian history survey text—that the English produced dry salt cod while the French supposedly concentrated exclusively on wet-salted fish—is a historians’ folk tale, passed along by scholars too busy to consult the documents or to identify an assemblage of artefacts.)

Migratory fishers were conservative: in any particular period each European region preferred to exploit its own particular part of the North American coasts. For example, in the 17th century, fishing crews from the north of Devon, in England’s West Country, regularly exploited the Newfoundland harbours of Renew and Fermeuse, a few hours sail south of the major East Coast port of St. John’s. A century earlier, this had been the preserve of Portuguese fishers. But by 1600, the Portuguese were gone, and Barnstaple and Bideford crews dominated this part of Newfoundland’s Avalon Peninsula. The Bretons of northern France, from St. Malo and St. Brieuc, fished on the south coast of Newfoundland and, in the north, on the Petit Nord, the Atlantic coast of Newfoundland’s Great Northern Peninsula (Figure 3.1). Breton crews were fishing, for example, at Cap Rouge when explorer Jacques Cartier stopped in 1541 to ask for supplies, on his third voyage up the St. Lawrence. Bretons dominated the productive fishery on the Petit Nord through the 17th and 18th centuries. Meanwhile, the Basques fished in Newfoundland’s Placentia Bay, around Cape Breton, and in the Gulf of St. Lawrence. In 1713, the Treaty of Utrecht confined French fishers in Newfoundland to the northeast coast, though French Basques in fact continued to exploit the west coast. An adjustment of the treaty in 1783 changed the boundaries of the French Shore to legalize this anomaly—but the adjusted French Shore still included the Petit Nord. In the 19th century, migratory Breton crews co-existed uneasily with a growing Anglo-Irish settler fishery in this part of Newfoundland. (By this time, France had surrendered the right to fish elsewhere in North America, except at St. Pierre and Miquelon.) Breton activity dwindled until 1904, when France relinquished its rights to seasonal shore stations in northern and western Newfoundland, as one part of a complicated deal with Britain, celebrated in diplomatic history as the *Entente Cordiale*.³

Figure 3.1 MAP OF NEWFOUNDLAND'S PETIT NORD, WITH SEASONAL FRENCH FISHING STATIONS



The summer stations used by Breton and Norman fishing crews between the early 16th century and 1904 were scattered over hundreds of kilometres of rocky coastline.

Source: Edward Eastaugh, for Archaeology of the Petit Nord.

Cod and Environmental History

The tragic history of cod in the 20th century is, pardon the expression, another kettle of fish. Even people who know little about the fishing industry have heard about the historic collapse of cod stocks that led the federal government to impose a moratorium on this fishery in most of Atlantic Canada in 1992. Using records of cod landings, fisheries biologists have been able to graph recorded catches over time, for the last century or so. When they looked at these graphs, they pinpointed a “killer spike”—an episode of intensive fish harvesting in the 1980s, when modern electronic fish-finding equipment became widely available. There is not much doubt that harvesting of cod beyond sustainable catches reduced cod populations to a few percent of their historic levels. The scale of this ecological disaster was unprecedented, at least for this species in this region, but the phenomenon was not completely new.⁴ Some interpretable historical statistics for cod catches at Newfoundland go back to the last quarter of the 17th century. These early estimates reveal previous swings in abundance, though none as serious as the crash in populations of the late 20th century. Some of these early crises—for example, a steep decline in cod catches around 1681—were understood by contemporaries as the result of overfishing. For Atlantic Canada, at least, climate change (such as the Little Ice Age of the late 17th century) may have been as important a factor in stock fluctuation as short-term overfishing. The technology of the salt-cod fishery changed little between the 16th and the mid-19th centuries, and this technological conservatism helped keep populations of cod in balance with human needs.

Fisheries historians and biologists are still working on the complicated question of the long-term impact of fishers on fish stocks. A two-fold consensus is emerging. First, the history of human impact on natural species cannot be traced species by species: human predation must be understood as affecting ecological systems. For example, human depletion of whale stocks around Spitzbergen, in the European Arctic, seems to have actually favoured population growth of some seabirds. Second, just because we have straightforward statistical data for 1950 or sometimes 1900 does not make either point in time an appropriate baseline for measuring ecological impacts. The virtual extinction of the right whale in the northwest Atlantic by the Basques in the late 16th century, the elimination of southern walrus populations about the same time, and predation on seabird colonies by fishing crews gathering industrial quantities of bait all must have affected the marine ecosystems of the Atlantic coast, as much as the actual take in cod, massive as it was.⁵

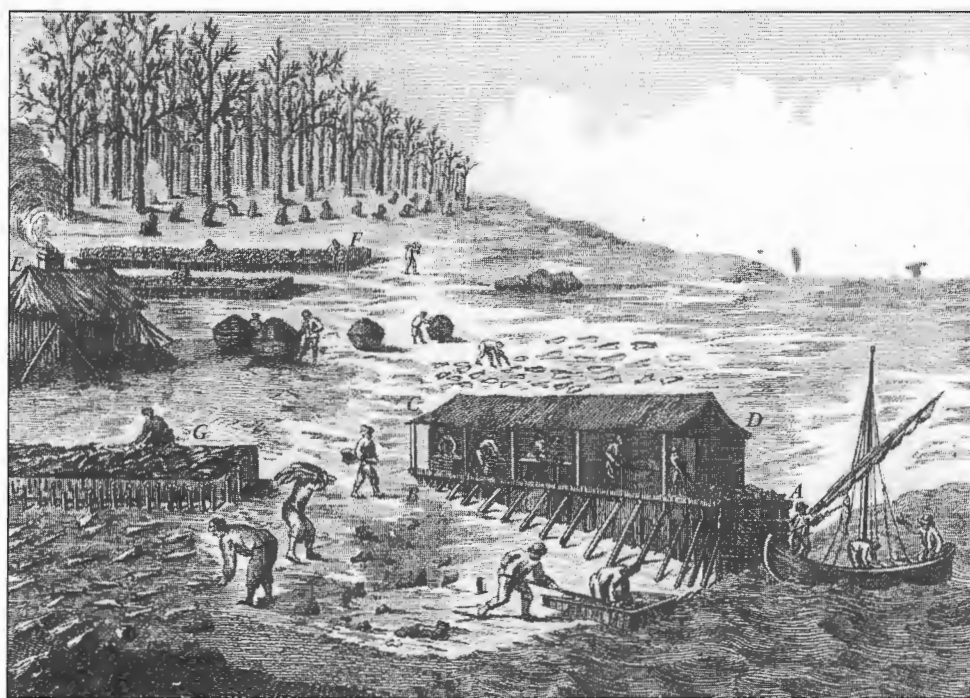
A Maritime Cultural Landscape

What of the impact of the fishery on the Atlantic littoral itself? For example, from about 1510 until France surrendered its rights, migratory fishing crews from Brittany created seasonal shore stations to salt and dry cod on Newfoundland's Petit Nord. Where were these early modern establishments? Or, taking a wider view, what remains of the oldest persistent European landscape in Canada? I am involved in a research program entitled “An Archaeology of the Petit Nord: The maritime cultural landscape of the French, seasonal, shore-based, salt-cod fishery in northern Newfoundland, 1510–1904.”⁶ We are seeking to put the vestiges of these shore stations into the context of the documentary, cartographic, and photographic evidence, enabling us to ask about how such places

were selected and constructed for resource extraction; about their relationships one with another; and about their evolution through time. In brief, we are trying to record an important *maritime cultural landscape*—a concept introduced by the Swedish marine archaeologist Christer Westerdahl to emphasize the interpenetration and interdependence of land and sea in coastal zones.⁷

Participant-observers in the early modern transatlantic fishery, like 17th-century Acadian entrepreneur Nicholas Denys, suggest that the fundamental spatial unit in this industry was the *fishing room*. These were the shore stations needed for splitting, salting, and drying cod caught in daily voyages by boat crews working for a particular fishing master. In the regional context of a harbour or even of whole fishing zones like the Petit Nord, each fishing room was an important landmark, in the sense that fishing crews returned to the same place summer after summer. At the same time, fishing rooms had their own complex internal structure. They were, in their own way, little landscapes. Each fishing room was an arrangement of features—stages for landing fish, cobble beaches and wooden flakes for drying, cookrooms, bread ovens, crosses or calvaries, and so on—and each of these features was a landmark within the miniature landscape of the fishing room (Figure 3.2). How can we study the surviving remnants of these early modern landscapes? And what can we hope to learn?

Figure 3.2 AN EIGHTEENTH-CENTURY FISHING ROOM IN NEWFOUNDLAND



This 18th-century engraving from Duhamel du Monceau's *Encyclopedia of the Fishery* shows a boat (A) landing fish at a stage (D), where the fish was gutted and split (C), before being dried on a wooden flake (G). Also shown is the cookroom where the crew was fed (E), and forest cutting in the background.

Source: Courtesy of Centre for Newfoundland Studies, Memorial University.

Historical Archaeology

Research on the landscape of the fishery grows from an interest in understanding how European mariners interacted with a particular transatlantic environment, rather than growing out of the reading of a particular corpus of documents or excavation of a single site. Such research is, inevitably, multidisciplinary and synthesizes texts and the material record. This is typical of historical archaeology—itsself an interdisciplinary field with a strong eclectic bent. “Historical archaeology” is the North American term for archaeological study of the period after Europeans arrived in North America. When exactly Europeans can be said to have arrived on Newfoundland’s Great Northern Peninsula is a thought-provoking question. L’Anse aux Meadows, the only Norse (or “Viking”) archaeological site identified in North America, lies at the northern extremity of the peninsula, on the Strait of Belle Isle. Birgitta Wallace, who excavated the site for Parks Canada, identifies it as Leif’s Booths, the base camp used by the clan of Eric the Red in a series of exploratory forays from Greenland, around the year AD 1000. So Breton crews, fishing the rich cod resource 500 years later, were not the first Europeans to visit these waters. They were, however, the first Europeans to use the area year after year after year. Their activities in the 16th, 17th and even 18th centuries are not much better documented than those of the medieval Greenlanders. So if we want to learn about them, we have to look for archaeological traces, as well as documentary and oral evidence, where it exists.

If historical archaeology tends to be multidisciplinary, the archaeology of landscape is almost necessarily multiscalar. (For further discussion of issues of scale, see R. W. Sandwell’s chapter in this volume.) Our Archaeology of the Petit Nord project has a research strategy to look at the Petit Nord at several different scales, ranging from the features that together constitute each specific fishing room, to the array of fishing rooms around major harbours, to the choice of harbours by fishers along the coast of the Petit Nord. At the narrowest scale, our research emphasizes archaeological investigation of a particular fishing room, in Crouse Harbour, at Dos de Cheval (or EfAx-09, to use the Borden number with which Canadian archaeologists identify their sites). With historic plans or photos as guides to excavation and interpretation, our archaeological research is clarifying what a fishing room was, by recording typical features, including the vestiges of landing stages, galets (or cobble drying areas) for drying fish, paths, ramps, cookrooms, bread ovens, and ritual places. Historic maps and early fishing censuses play a greater role in interpretation of the distribution of fishing crews around major harbours, such as Fichot, Croque, Crouse, Conche, and Englee. But even on well-documented sites, the collection of exposed artefacts by surface survey of beaches and the digging of strategically located shovel test pits can refine our assumptions about dates of use and cultural affiliation. The broad canvas of the whole Petit Nord, between La Scie and Fleur de Lys in the southeast, to Griquet and Degrat in the Strait of Belle Isle, is based largely on historical cartography, early fishing censuses, and narrative accounts, supplemented by field photography, to capture a landscape record.

Documentary Sources

Contemporary documentation of the transatlantic migratory fishery in the 16th and early 17th centuries is rare. Few documents mention specific North American destinations. Fortunately, Cartier visited fishing stations in Newfoundland and in the Gulf of St. Lawrence, prompting officials in the

French Basque town of Fuenterrabia to put some questions to local fishing masters about his voyage—testimonies that also record their own activities on the Petit Nord, in the early 1540s.⁸ Because these documents shed light on a celebrated explorer who became a national hero for French Canadians in the 19th century, they were transcribed and published long ago. Otherwise, only a few documents about the fishery in this period are in print. The others rest in national or regional archives in France, Britain, Spain, or Portugal. At best, the interested researcher can hope that relevant documents have been copied and included in one of the microfilm series held in Library and Archives Canada in Ottawa—for example, from France, Archives des Colonies, or Great Britain, Colonial Office papers.

Fortunately, the fishing industry is much better documented from about 1660 onward. The late 17th-century colonial bureaucrats of Great Britain and France compiled censuses of the residents and migratory crews who fished for cod along the shores of Newfoundland. The information was politically useful because the settlement of the English Shore, on the east coast of the Avalon Peninsula, and of France's colony of Plaisance in Placentia Bay to the west, were contested at the time. Perhaps more to the point, the Newfoundland fishery was an enormous industry with significant impact on European trade. A little notebook kept by British Secretary of State Sir Joseph Williamson between 1674 and 1677 provides an index of the attention Europeans paid to the fishery. In messy handwriting he described the paperwork he had to digest concerning British interests in the Americas. He devoted a few pages each to Surinam, Nevis, Barbados, the Leeward Islands, and New England, but Newfoundland takes up most of his notebook. In the larger scheme of things, colonial bureaucrats like Secretary Williamson were conscious of Newfoundland's strategic importance. Their curiosity was simply pragmatic.

British naval commodores at Newfoundland filed an intermittent series of "Replies to Heads of Inquiry" from the mid-1670s into the 18th century, which survive in Britain's National Archives. The most detailed cluster was between 1675 and 1684, providing censuses of both the fishery and inhabitants. Similar considerations led France's colonial bureaucracy to take repeated censuses of the recently established French settlements on Newfoundland's south coast between 1671 and 1711. Unfortunately, the French did not survey the cod fishery as an industry in the detail pursued by some Royal Navy officers posted to Newfoundland between 1675 and 1698.

We must turn to other kinds of evidence to obtain some sense of the size and distribution of France's migratory fishing effort. Laurier Turgeon has used French inventories of ships in 1664 and 1686 to calculate vessel and tonnage figures for the Newfoundland fleet. These statistics suggest that about 50 percent of France's effort was directed toward the Grand Banks, predominantly by crews from Normandy. Taking into account the fact that banks fish were salted in a wet brine rather than dry-salted and assuming that the French fishery was as efficient as the British fishery in transport, the 1686 tonnage figures imply a total French live catch in Newfoundland waters, including the Grand Banks, of about 140,000 tonnes. That in turn would mean that the live catch taken and dry-salted by French fishers inshore, predominantly Bretons and Basques, must have been well in excess of 70,000 tonnes—twice Britain's live catch at Newfoundland, which was taken inshore and mostly dry-salted.

How was this enormous French effort distributed or, to put it more simply, where did the French fish and how many men and boats were involved? The best early data we have for answering these questions are not exactly censuses, comparable to the British "Replies to

Inquiries” but, instead, surveys of harbours regularly used by French fishermen, with recommendations about appropriate use. In 1680, Saint Malo’s fishing masters listed individual fishing rooms for over 4,800 men on the Petit Nord and about 960 inshore fishing boats. This means that the French migratory dry fishery in this region alone was comparable in scale to the whole British fishery at Newfoundland, migratory and resident. The 1680 survey does not include the fishing stations on the west coast of Newfoundland, notably Ferrolle, Port au Choix, and Port au Port, which were dominated by the Basques. It also ignores the northeast coast “no-man’s land” in Notre Dame Bay, the refuge of Newfoundland’s native Beothuk people, which was consequently underutilized by both French and British crews.

Data for the northeast and west coasts of Newfoundland survive in reports for 1764 and 1765. These resemble British fishing censuses, in giving the name, home port, tonnage, and crewing of ships actually fishing, by harbour, with the number of boats used, and an estimate of how many boats might potentially use each fishing post. Geographical coverage is excellent, from Bonavista, along the northeast coast, around the Petit Nord, and down the west coast as far as Port au Port, together with St. Pierre and Miquelon, which had just been restored to the French by the Treaty of Paris in 1763. These postwar surveys also contain extracts from captains’ reports, summarizing activity in each of the occupied harbours, including English and Irish settlers in some and British migratory fishers in others. A briefer summary also survives for 1784. When we have specific evidence of catches, these data support several contemporary rules of thumb. The fishery employed about five men for every boat (three to catch and two to clean and salt the fish) and together these five men could produce about 10 tonnes of dry fish every summer, or perhaps a bit more on the south coast, with its longer season. A more detailed survey of the French fishery in 1832 offers valuable comparative data, almost invariably identifying the same fishing rooms as the 1680 survey, although often offering significantly higher estimates of the numbers who could use these rooms.⁹

In the 16th and early 17th centuries, dozens of European ports sent fishing ships to the New World, but as transatlantic trades developed, ports specialized and those best situated for it came to dominate the fish business. The north Breton port of St. Malo, with the aid of merchant financing from the smaller neighbouring Norman port of Granville, came to dominate France’s transatlantic fishery. It is a rare port that is financially self-sufficient, so trade links are almost always more complicated than they seem at first.

Recovering commercial records is not always easy, although France and Spain have great riches in their communal (or municipal) archives and in their notarial records (the documents created by notaries public, employed by European merchants and fishing masters to legitimize their contracts). St. Malo was one of the northern French ports heavily bombed by the Allies during the Second World War, when the communal archives were destroyed. Certain records do survive, however, in the regional Archives départementales d’Ille et Vilaine at Rennes, the capital of Brittany. By luck, among the surviving documents are the *Rapports des capitaines* (captains’ reports). These were summaries of voyages that masters working out of St. Malo were expected to file to the communal “Admiralty” (harbour authority), starting about 1678. The short ones are predictable. A typical entry about the cod fishery might say something like: 1686, Joseph Parete, captain of the *Bénédiction* of St. Malo, 150 tons, 26 men, from Newfoundland via Majorca, with (olive) oil.

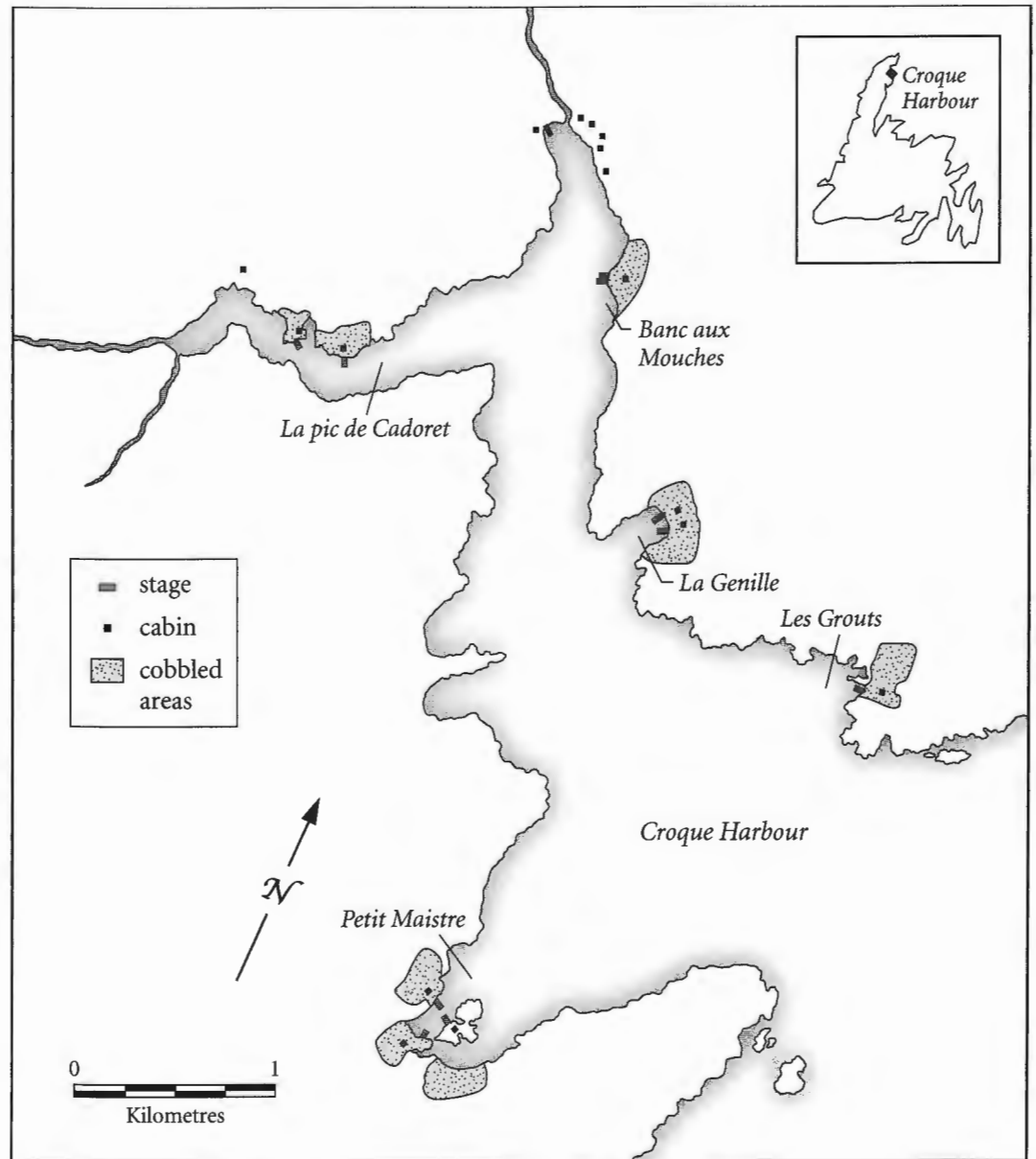
The interesting documents are the long ones, when the captain was worried enough about how the voyage turned out, to make sure that his version of events got into the public record.¹⁰

Several of these captains' reports tells us about life on the Petit Nord. One in particular, filed in February 1685 by Nicolas Arson, tells us something significant about fishing rooms.¹¹ Arson was captain of the 200-ton *Jean Baptiste* of St. Malo, whose crew had fished at Cap Rouge (today Crouse) the previous summer. The traditional international custom of the fishery, known as the admiral system, gave choice of fishing rooms on a first-come, first-served basis. Both France and Britain had published regulations that modified this rule, by requiring fishing masters to choose rooms of a scale appropriate to the size of their crews. Arson complains bitterly that Robert Potier, captain of *La Royale*, had taken a large fishing room, *L'admirauté du degrast de Carrouge*, generally accepted as being suitable for a crew of 90 men—beyond the needs of *La Royale* and its smaller crew, but just right for the crew of a large ship, like Arson's own *Jean Baptiste*. Because Captain Potier would not budge, Captain Arson and his crew had to take another fishing room, *Le havre des grand biches*, which we have identified archaeologically well up present-day Biche Arm. As Arson bitterly complained, this was at least a league (about 6 km) from the best fishing, causing him and his crew a great loss. In other words, not all fishing rooms were equal. Some were bigger, some smaller; some were close to the fish resource, some inefficiently far from it. Arson's complaints underscore another important consideration: the number of usable fishing rooms was limited. The Newfoundland coast may be thousands of kilometres long, but if you need a place where you can count on being able to land a small boat full of fish and then have space to dry it, your choices are surprisingly limited.

The value of knowing exactly where the best fishing rooms were promoted the production of ever more detailed maritime charts of Newfoundland waters. These charts reached a modern form with James Cook's survey of the west and northeast coasts of Newfoundland in the 1760s. But fishers certainly used earlier charts, published by John Thornton in *The English Pilot* (1689) or by the Bellin family in Paris, to find their fishing rooms. The same charts are invaluable today, to make sense of the fishing surveys of the period. Eighteenth- and 19th-century naval officers were expected to have some skills in drawing and cartography. A few plans of individual fishing rooms survive from the 17th century, but by the early 19th century virtually every fishing room on the Petit Nord is sketched, several times over, by succeeding visitors. Even when cartographically questionable, these plans are often rich in cultural detail, giving a distinct impression of how the terrain was put to use (e.g., Figure 3.3). They are invaluable for the interpretation of surviving industrial features and very useful too for finding archaeological sites.

Northern Newfoundland also happens to be the part of what is now Canada that was first extensively recorded photographically. Between 1857 and 1862, French naval officer Paul-Émile Miot took a series of superb glass-plate images (Figure 3.4). Miot had a particular interest in the material culture of the cod fishery, in Native people, and in "livyers," the Newfoundlanders whom the French were starting to employ as winter caretakers or gardiens. This makes his work valuable for historical archaeology, in several ways. He recorded the technology of his time and the contemporary arrangement of the infrastructure of the fishery. Of course, the layout of a fishing room in 1858 did not necessarily reproduce its layout in 1758, 1658, or 1558. On the other hand, knowing the layout of 1858 is a start toward understanding the spatial evolution of a fishing room, especially given that by 1958 most had been abandoned for half a century and today are only partly

Figure 3.3 MAP OF CROQUE HARBOUR, 1767



Based on a 1767 map by Coquelin Latiolais, this chart of Croque Harbour shows the five protected inner coves used for shore stations. Some, such as Petit Maistre in the southwest, had more than one fishing room. Latiolais shows each stage and cabin, as well as cobbled areas for drying fish.

Source: Map adapted from one by Coquelin Latiolais, "Côtes du Petit Nord, plan de la bay du Croq & des Saints Juliens de puis Cap Vent jus qu'au Grandes Oyes," 1767, ms map. France, Bibliothèque Nationale, Cartes et Plans, S.H. (18ième): pf. 129, div. 3, pièce 1(1), the Provincial Archives of Newfoundland and Labrador.

visible, short of excavation. One of the most instructive ways to use Miot's photos is to compare them with recent images taken at the same locations. Such comparisons suggest that certain cultural landmarks persist in the landscape. A good place to land a boat is a good place to land a boat, and landing stages (fishers' wharves) have therefore been rebuilt in the same locations for centuries. The change most visible in photos over the last century and a half is the resurgence of the forest. Clearly, fishermen of Miot's day consumed wood close to the coast much faster than the inhabitants of the Great Northern Peninsula do today. (Newfoundlanders today cut plenty of wood but they also drive pickup trucks, and so can exploit inland stands.)

Historic maps and photographs are valuable guides for archaeological survey—particularly if we have documents that we can use to interpret the visual evidence and to locate the sites we are looking for. The Petit Nord surveys of 1680 and 1832 are such documents. They are extremely valuable as historical geographies because of the attention given specific fishing rooms. The 1680 report uses specialized fisheries terms such as *galet* and *chauffaud* (fishing stage). There are also many references to crosses, calvaries, and *magdelaines*, which were certainly shrines but that also seem to have been used as aids to navigation and sometimes as markers to delineate boundaries between accepted fishing rooms. They raise important questions for archaeologists. Where were they and how were they laid out? Do remains survive today? Is it possible that a church, in a present-day harbour, might occupy the site of a historic calvary? Are the crosses that still stand at certain sites in traditional locations or are they relatively recent innovations?

The 1680 report lists specific establishments in each harbour, the names of which evoke the human geography of the fishery. Let us consider, for instance, the description of La Crémaillère in 1680:

Crémaillère and Savage Point for 15 men
 Anchor Point for 20 men
 The crucifix atop Anchor Point 6 men
 The bank between the stages up to the second (?) 20 men
 The middle calvary 10 men
 The beach between the lower stages 10 men
 The lower calvary 10 men
 The northeast as far as the streams 35 men

Figure 3.4 PAUL-EMILE MIOT, A FISHING ROOM AT CROUSE, 1858



This Crouse fishing room was known as "The Admiralty" because it was the first choice of crews. One of its great advantages would have been the huge cobble beach visible in the background.

Source: Paul-Émile Miot/Library and Archives Canada, PA-202291.

From the stream as far as the bank of the flies 10 men
The bank of the flies and nearby 12 men
La Rochelle 20 men
The west shore Grand Cove 30 men
The head of the bay 10 men

These names present a challenge for the researcher, who needs the traditional knowledge of local residents to give them meaning. (At a recent conference in St. Anthony, residents were quite happy to correct academic confusions.) Many such names are reminders of a particular time and place. Besides the various calvaries and magdelaines, there are “Boat Banks,” “Anchor Points,” and “Bear Coves.” “Savage Point” probably refers to the Inuit who frequented the Crémaillière region in the 17th and 18th centuries. “Bank of Flies” (*Banc aux mouches*) in several harbours is a reminder of one of the difficulties of life along this coast. At Fichot, there is a fishing room called “Shoe Cutter” (*Coupe Soulier*), doubtless a rocky place, and another, certainly not very productive, called the “Bank of Great Poverty.” On the other hand, Conche had a New Castle (*Chateau neuf*)—a promising lead for an archaeologist interested in substantial architectural features. There is a lot of information in these French surveys, especially if they are compared, to highlight the use of a particular fishing room over time. Usually the number of boats and men grew slowly over time; when the fishery expanded rapidly it tended to do so by developing new fishing stations. One way of handling data like this, with a spatial component, is to use a geographical information system.

Geographical Information Systems (GIS)

A GIS is a database in which each fact is associated with a geographical place—a point in two or even three-dimensional space (see Stéphane Castonguay and Diane Saint-Laurent’s chapter in this volume.) This way of assembling information is familiar to archaeologists, because it is what even the simplest catalogue of excavated artefacts does. So a stack of handwritten catalogue forms is a simple GIS, if it enables us to look up what we found in a certain place: all the ceramic shards from EfAx-09, or all the wrought-iron nails in the lowest stratum of square W33S125. Computerizing them makes such catalogues of information much more accessible. Our project uses software called ArcMap, a fairly sophisticated GIS system, although we don’t actually use it to track artefacts. What we need in a study of the historical landscape of the migratory fishery is a way of integrating archaeological evidence about fishing rooms and their features with the information we have found in the documentary record of naval inspections, charts, plans, sketches, photographs and even oral history, collected from people who live in the region today.

Getting a complex GIS off the ground is a big project, usually needing input from more than one person. We wasted a bit of time and money to start with, trying to work up our own digital base maps of the Petit Nord. Then, in an honours essay, one of my undergraduate students used an existing, widely available base map of northern Newfoundland to make a convincing comparison, and it became pretty obvious that we had been reinventing the wheel. We got to work again, now on two fronts. One student is building extra layers of information that can be superimposed on the standard base map. We have a layer, for example, that represents the exact location of fishing rooms. Some of these can be tied to known archaeological sites, which of course have their

own exact locations. Meanwhile, a graduate student is preparing a database that records the information given in the 17th- and 18th-century surveys of the Petit Nord. I like to call this the “textbase,” because it ties the fact that in 1680 the fishing room *Champs Paya* could employ 50 men with the document that reports this and, at the same time, ties that estimate with estimates for 1764, 1832, and any other mention of that place we care to add. Once we have given each fishing room its appropriate latitude and longitude, we will have a set of data that we can import into the GIS to create more layers of information about historic toponymy (use of place names) and about the distribution of men and boats on the landscape, in specific periods.

Like any software, a GIS is only a tool, but it has some distinct conceptual advantages for the analysis of landscape. To be more precise, it suits a landscape study that emphasizes the interpretation of place. Our study of the early-modern Breton shore-base salt-cod fishery in northern Newfoundland aims to unravel how particular persistent landmarks, the fishing rooms, were interconnected, over many centuries, by seasonal use and reuse, to create a specific maritime cultural landscape. Our GIS won’t do this for us, any more than our photocopies of documents, our trays of artefacts, or even our measured drawings of site features will write their own interpretations. Our GIS is, though, a way of bringing an eclectic array of resources together, which makes it a useful tool for the historical archaeology of the fishery.

Excavation

When a team of archaeologists arrives at a traditional fishing room, what do we hope to find? What will excavation tell us that we haven’t already learned from the historic surveys, charts, plans, and photographs that document the landscape of the Petit Nord? The historical record tells us that our site at Long Point in Cape Rouge Harbour, registered with the Provincial Archaeology Office as Dos de Cheval, EfAx-09, was once a fishing room known as Champs Paya. Our local partners, the French Shore Historical Society, have found us a motor boat, in which we depart from the wooden-built hamlet of Crouse. We land carefully at Long Point, along the one rocky ledge where it is safe to bring a boat to shore. Not surprisingly, the nearby cobble beach terrace is where we uncover the landward end of the stages, used for centuries to bring fish ashore, as well as whole strata consisting of little but cod vertebrae and cranial bones, removed during splitting and cleaning. We have landed exactly where our Breton fishers once landed to bring their catches ashore. We know we are on a fishing room not only by the presence of such features, but also because we excavate wrought-iron fish hooks and lead weights for lines and nets, some humorously decorated to resemble grinning fish. (Metal objects rarely survive as surface finds.) Excavation of what appears to be the second beach terrace indicates that the whole deposit is anthropogenic (of human origin). The original beach, extending inland from today’s active shoreline, is now buried by almost a metre of deposits: the organic debris of fish processing; working floors where crews discarded their broken bottles, cook pots, and clay tobacco pipes; some relatively clean beach cobbles and some rough stone pavements. Since there are wrought-iron nails on the cobble surface of the original beach, and since pre-contact Native peoples of the region did not use iron, we can be pretty sure that the whole deposit above the beach is, in one way or another, the work of the fishing crews who used this site between 1540 and 1904. Over all this lies a 10 cm thick blanket of fine dark soil, virtually free of artefacts. That top

stratum is what has washed downhill from the deforested upper beach terrace, since the Bretons abandoned their migratory fishery. It marks the century in which the site has slept undisturbed.¹²

The discovery of an archaeological site sometimes validates specific long-standing hypotheses. For example, Helge Ingstad's identification of L'Anse aux Meadows settled a debate about whether there was a factual basis to the Icelandic sagas, which told of lands to the west of Greenland. But no one questions the age of the migratory shore-based salt-cod fishery, though we might lack details about how it was pursued through time. Archaeologists often make a contribution to historical studies in a different way, by attending to what James Deetz called "small things forgotten."¹³ Artefacts or architectural features recovered raise significant and sometimes difficult historical questions. Archaeology is useful when we find what we are looking for but, in a way, it is even more useful when we find what we don't expect. The deep anthropogenic beach terrace in part of our site was an aspect that we did not foresee. Many substantial features, including ramps, stone foundations, collapsed stone bread ovens, and a large oak cross are visible on the site, without excavation. We assumed that these would be 19th century, since beginning about 1820, French fishing crews had control of a fishing room for five years at a time—long enough to justify a serious investment in labour-intensive infrastructure. And, in fact, these very visible structures do seem to date relatively late. In earlier centuries, however, masters and crews took seasonal possession of fishing rooms anew every year. We expected this would have limited improvements to fishing rooms to those likely to pay off within a single summer. We did not foresee the extent to which moderate improvements year after year, century after century, could substantially alter the landscape of the fishing room. The ongoing modifications we uncovered raise questions about the extent to which fishers were able to use custom or informal negotiation to get access to the same rooms, season after season.

We did, of course, hope to find cod bones among our faunal remains. These can be sampled to make inferences about the average size of fish taken, as James Barrett of Cambridge University has done in the Orkneys. He is also working on the subspecies typing of fish remains, in an effort to use genetic markers to identify fish from regional populations in production zones, like the Petit Nord, with fish from consumer sites in Europe.¹⁴ What surprised us were the other species in our faunal collection, which reflects consumption of beef, pork, rabbit, mutton, chicken and a variety of seabirds. Our crews were apparently well provisioned by the fish merchants of Brittany but supplemented their diet with local ducks and other seabirds. Another unexpected find was the number of musket balls and gun flints recovered from 17th- and 18th-century deposits. These items occur noticeably more often than they do at contemporary fishing rooms on Newfoundland's English Shore. Were French fishers better armed—or simply hungrier? Or were they, perhaps, more afraid of conflict with an aggressive indigenous population, in the person of the Inuit?

One class of finds that we could predict pretty accurately were the ceramic cook pots, bottles, jars, pans, mugs, and bowls that are typical of migratory fishing sites. We knew we would find Normandy stoneware bottles and storage jars. By the 19th century these were well distributed in Brittany and they turned up in significant numbers in our preliminary survey of Petit Nord fishing stations. We had also come to expect brown faience dishes and pans. We had been a bit surprised when these moderately costly kitchen items first turned up at the nearby fishing room at Crouse Beach East (EfAx-10), but they were not so unexpected at a second site, an 18th-century one for which they have become a good marker. We also knew we were likely to recover more examples of

various Breton-style earthenware pots and jars. We have been working for several years with French archaeologists to identify these poorly understood wares by their geological chemistry, through inductively coupled plasma mass spectrometry (ICP-MS) analysis of their geological chemistry. This process identifies the exact proportions of various trace elements in the fabric of excavated pots, which can then be compared with the patterns of trace elements in pots from known production centres to confirm preliminary identifications based on form and colour.¹⁵ What we did not expect was the apparent prominence at this site of one particular coarse earthenware from pottery kilns at Pabu-Guingamp, near the early modern French fishing port of St. Brieuc. This material link between a specific fishing room in Newfoundland and a specific provisioning and crewing port in Brittany raises, again, the question of whether and how crews could return annually to the same site, in the centuries before the rules of the fishery evolved to encourage this practice. How crews enclosed (took control of) rooms is a key question in the history of the fishery. It intersects with issues about enclosure raised by Matthew Johnson in his “archaeology of capitalism.” Johnson sees historical archaeology as an important approach to understanding the economic culture of capitalism. For Johnson, the archaeology of fields and farms provides a kind of record as well as a context for study of the centuries-long process of enclosure of public common land, by landowners who took an increasingly capitalist attitude to the farmlands they controlled.¹⁶ In a parallel way, we might see the fishing rooms of the Petit Nord as both record and context for understanding how fishing masters competed for shore space within an early capitalist industry. Again, historical archaeology has not answered all our questions, but it has posed them in a fresh context.

Perhaps our greatest surprise was when we uncovered the skeletal remains of one of our Breton fishermen. This was a robust, adult male, about 175 cm tall, perhaps middle-aged, judging by his worn teeth. There are indications of violence, particularly a 5 cm diameter circular hole in his forehead. He was interred in a shallow grave cut into the original beach, on his back, his hands clasped in front of him, facing (in Christian fashion) almost exactly magnetic east. A large spike lay across his face and several animal long bones lay under and about his cranium. There was no sign of clothing to help date him, but artefacts in associated strata suggest that the burial dates before 1700. We assume this was a fisherman—but how did he end up in the beach cobble where the stages came ashore? Why wasn’t he buried inland, near the prominent cross that overlooks the site? Or does this interment on the beach terrace suggest that such a ritual place did not yet exist in his day? Was he the victim of violence? Was this more likely a dispute among fishing crews about access to rooms or a dispute with an Inuit band about access to the Petit Nord in general?

If you get the feeling that historical archaeologists end up chasing a lot of loose ends, then you have the general picture. To one degree or another, tracking disparate data is a constant challenge for most research in the social or historical sciences. A GIS helps, if data have a spatial component. But, in whatever way we manage to collate our information, an essential dilemma remains for archaeology, as for any historical discipline. When do we draw the line? When do we have enough evidence to begin to tell our contemporaries how people lived in the past? To be able to explain why the landscape we inhabit now came to have the form it does? To presume to treat one particular feature as a telling vestige of the past, another as a trivial accident? Some questions might be pleasant to research forever, should time and funding permit. But the Social Sciences and Humanities Research Council of Canada, which generously supports our project, quite reasonably likes to see conclusions drawn.

In its own way, so does the Provincial Archaeology Office, which issues our permit to disturb Newfoundland's subsurface historic resources. Our local sponsors in northern Newfoundland, the French Shore Historical Society, have turned the old nursing station in Conche into a charming interpretation centre. They would like to fill it even fuller with artefacts, and they want those artefacts explained. Tourists drive a long and winding road to visit Crouse, and hike for 20 minutes to see our site. We can hardly greet them with a shrug, so we have already had to formulate interpretations of its history. Our academic colleagues press us to contribute to various dialogues about site formation or enclosure or migration or colonization or, indeed, the environmental history of Canada. And so, almost without noticing, we process traces of the past into abstractions. We ask our contemporaries to accept our present perception as an adequate representation of what was, even if we can be pretty sure that this will be, someday, for someone, yesterday's oversimplification.

DISCUSSION QUESTIONS

1. Why did Breton and Norman crews who fished on Newfoundland's Petit Nord every summer never settle there? How might this have affected their interactions with aboriginal peoples?
2. What is a cultural landscape? What is a maritime cultural landscape? Can you give an example of a landscape that isn't cultural?
3. How can historic photographs, maps, and plans contribute to an understanding of the evolution of a cultural landscape?
4. What is a GIS (Geographical Information System)? Is a GIS a tool, method, or theoretical approach? How can it be used in historical research?
5. What is historical archaeology? Can it do more than remind us of "small things forgotten"? How?
6. What are the special challenges of identifying, recording, and understanding seasonally occupied archaeological sites?
7. What time scales might be appropriate for analysis of an industry like the shore-based migratory salt-cod fishery? For the evolution of a cultural landscape? For environmental change?
8. Are political and diplomatic events (for example, the 1696–1713 or 1789–1815 wars between England and France) basically irrelevant to the environmental history of industries like the northwest Atlantic cod fishery? Why or why not?

NOTES

1. Fernand Braudel, *Civilization and Capitalism, 15th–18th Century*, trans. Sian Reynolds (New York: Harper and Row, 1982).
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3. James K. Hiller and Christopher J. B. English, *Newfoundland and the Entente Cordiale, 1904–2004*, Newfoundland and Labrador Studies, Occasional Publication no. 1, 2007.
4. Jeffrey A. Hutchings and Ransom A. Myers, “The Biological Collapse of Atlantic Cod off Newfoundland and Labrador: An Exploration of Historical Changes in Exploitation, Harvesting Technology, and Management,” Ragnar Arnason and Lawrence Felt, eds., *The North Atlantic Fisheries: Success, Failures, and Challenges* (Charlottetown: Institute of Island Studies, 1995): pp. 37–83.
5. Louwrens Hacquebord, “The Hunting of the Greenland Right Whale in Svalbard, Its Interaction with Climate and Its Impact on the Marine Ecosystem,” *Polar Research* 18 no. 2 (December 1999): pp. 375–82; Tony J. Pitcher, Johanna J. (Sheila) Heymans, and Marcelo Vasconcellos, *Ecosystem Models of Newfoundland for the Time Periods 1995, 1985, 1900 and 1450*, Vancouver, University of British Columbia Fisheries Centre, Research Reports 10 no. 5 (2002).
6. We are sponsored by the Social Sciences and Humanities Research Council of Canada, Memorial University of Newfoundland’s Smallwood Foundation and Institute for Social and Economic Research, and the Provincial Archaeology Office of Newfoundland and Labrador.
7. See Christer Westerdahl, “The Maritime Cultural Landscape,” *International Journal of Nautical Archaeology* 21 no. 1 (1992): pp. 5–14.
8. Jacques Cartier, *The Voyages of Jacques Cartier*, [H.P. Biggar and] R. Cook, eds., (Toronto: University of Toronto Press, 1993): pp. 159–68.
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10. Jean Delumeau, “Le commerce malouin a la fin du XVII^e siècle,” *Annales de Bretagne* 66 no. 3 (1959): pp. 263–86.
11. Archives Départementales d’Ille-et-Vilaine, Rennes, Amiraute de Saint-Malo, 09 B art. 447, ff. 7v–9[0].
12. Peter E. Pope, “Archaeology of the Petit Nord, 2006, Preliminary Report” (2006), on file Provincial Archaeology Office, Newfoundland and Labrador.
13. James Deetz, *In Small Things Forgotten*, rev. ed. (New York: Anchor Books/Doubleday, 1996).
14. J. H. Barrett, “Fish Trade in Norse Orkney and Caithness: A Zooarchaeological Approach,” *Antiquity* 71 (1997): pp. 616–38, and James Barrett, personal communication.
15. Peter E. Pope and Michael Batt, “Post-Medieval Breton Earthenwares in Newfoundland,” *Post-Medieval Archaeology*, in press.
16. Matthew Johnson, *An Archaeology of Capitalism* (Oxford: Blackwell Publishers, 1996).

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