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History of White whale (*Delphinapterus leucas*)

Exploitation in Eastern Hudson Bay and James Bay

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Edward Mitchell

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Cover photograph: White whales being brought ashore for butchering at Povungnituk, northern Québec, autumn 1960.
Photograph by Peter J. Green.

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Randall R. Reeves and Edward Mitchell

Department of Fisheries and Oceans
Arctic Biological Station
Sainte-Anne-de-Bellevue, Quebec H9X 3R4

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Contents

Abstract

REEVES, R. R., AND E. MITCHELL. 1987. History of white whale (*Delphinapterus leucas*) exploitation in eastern Hudson Bay and James Bay. Can. Spec. Publ. Fish. Aquat. Sci. 95: 45 p.

The history of exploitation of white whales, *Delphinapterus leucas*, in eastern Hudson Bay (the Eastmain) and James Bay was studied primarily by reference to documents in the Hudson's Bay Company Archives. Judging by patterns of whale distribution, exploitation history, and published morphometric comparisons, the animals in this region probably belong to a stock or stocks separate from those summering in western Hudson Bay, Hudson Strait, Ungava Bay, and farther north.

The most intensive and productive whale fisheries on the Eastmain were at the mouths of the Great Whale and Little Whale Rivers. Both Eskimos and Indians hunted whales at these estuaries for subsistence prior to the establishment of a commercial fishery. Occupation of other areas by white whales, including much of James Bay, Richmond Gulf, the Nastapoka River estuary, and the vicinity of the Belcher, Ottawa, and Sleeper islands, is demonstrated by catch and sightings data.

A commercial white whale fishery at Little Whale River was organized by the trader at Richmond Fort during the 1750's. It was not profitable, and Richmond Fort closed in 1759. Sporadic attempts were made subsequently to resume the commercial fishery, but not until the 1850's did it become firmly established. The highest catches were 1 043 at Great Whale River in 1857 and 1 511, probably also at Great Whale River, in 1860. Whaling with nets continued at the two rivers through the 1860's, but catches declined. Most hunting since the late 1860's has been done from boats, using harpoons and rifles.

At least 8 294 white whales were taken at the two rivers combined between 1854 and 1868, inclusive. The peak decade was 1854–1863, when a minimum of 7 176 whales was caught. Considering that the record of catches is incomplete and that we used conservative assumptions in estimating the catch, the "initial" (1853) population was almost certainly 6 600 or more whales.

Recent aerial surveys and catch statistics for settlements on the Eastmain coast demonstrate that white whales still occur in eastern Hudson Bay and James Bay and that they occupy the Little Whale and Nastapoka estuaries and Richmond Gulf during summer. However, the size of the aggregate Eastmain population appears to have diminished greatly since the mid-nineteenth century. It appears that the Great Whale River estuary, once visited by several thousand white whales during July and August, is no longer a significant summering ground for these animals.

More detailed historical research for the Eastmain is unlikely to add much to the overall picture presented here. Field studies to test hypotheses about homing and stock identity should be given a high priority, and the remnant population of white whales should be closely monitored to ensure that habitat modification and hunting practices do not deplete it further. If a recovery to levels of abundance approaching those of the nineteenth century were to become a management goal, then the estuaries presently and formerly used by white whales would need to be protected.

Résumé

REEVES, R. R., AND E. MITCHELL. 1987. History of white whale (*Delphinapterus leucas*) exploitation in eastern Hudson Bay and James Bay. Can. Spec. Publ. Fish. Aquat. Sci. 95: 45 p.

L'histoire de l'exploitation des bélugas (*Delphinapterus leucas*) dans l'est de la baie d'Hudson (l'Eastmain) et dans la baie James a été étudiée principalement en faisant référence à des documents se trouvant dans les archives de la Compagnie de la baie d'Hudson. À en juger par les modes de distribution des baleines, l'histoire de leur exploitation et les comparaisons morphométriques publiées, les animaux se trouvant dans cette région appartiennent probablement à un stock ou à des stocks distincts de ceux qui passent l'été à l'ouest de la baie d'Hudson, dans le détroit d'Hudson, la baie d'Ungava et plus loin au nord.

Les pêches les plus intensives et productives de baleines sur l'Eastmain avaient lieu à l'embouchure des Grande et Petite rivières de la Baleine. Les Esquimaux et les Amérindiens chassaient les baleines dans ces estuaires pour leur subsistance avant que ne s'établisse une pêche commerciale. L'occupation de ces secteurs par les bélugas, y compris une bonne partie de la baie James, le golfe de Richmond, l'estuaire de la rivière Nastapoka et les parages des îles Belcher, Ottawa et Sleeper, est démontrée par les données sur les prises et les données d'observation.

Pendant les années 1750, les négociants de Richmond Fort ont organisé une pêche commerciale de béluga à la Petite rivière de la Baleine. Cela n'a pas été profitable et Richmond Fort a fermé en 1759. Des tentatives sporadiques ont été faites ultérieurement pour reprendre la pêche commerciale, mais ce n'est pas avant les années 1850 qu'elle est fermement établie. Les prises les plus élevées ont été de 1 043 individus à la Grande rivière de la Baleine en 1857 et de 1 511, probablement au même endroit, en 1860. La chasse à la baleine à l'aide de filets s'est poursuivie pour les deux rivières dans les années 1860, mais les prises ont diminué. Depuis la fin des années 1860, la plus grande partie de la chasse s'est faite à partir d'embarcations, au moyen de harpons et de fusils.

Nous estimons à 8 294 le nombre de bélugas capturés aux deux rivières entre 1854 et 1868. C'est au cours de la décennie de 1854 à 1863 qu'on a enregistré les plus fortes prises, alors qu'on a capturé au moins 7 176 baleines. Étant donné que le registre des prises est incomplet et que nous avons fait des hypothèses prudentes pour estimer les prises, la population «initiale» (1853) était presque sûrement supérieure à 6 600 baleines.

Des relevés aériens récents et des statistiques de prises pour les établissements situés sur la côte de l'Eastmain démontrent que les bélugas se rencontrent encore à l'est de la baie d'Hudson et de la baie James et qu'ils occupent les estuaires de la Petite rivière de la Baleine et de la rivière Nastapoka et le Golfe de Richmond en été. Cependant, la taille de la population globale de l'Eastmain semble avoir diminué considérablement depuis le milieu du XIX^{e} siècle. Il semble que l'estuaire de la Grande rivière de la Baleine, une fois visité par plusieurs milliers de baleines blanches en juillet et août, n'est plus un quartier d'été important pour ces animaux.

Il est peu probable que des recherches historiques plus détaillées concernant l'Eastmain ajoutent beaucoup d'éléments au tableau général présenté ici. On doit accorder une grande priorité aux études sur le terrain visant à vérifier des hypothèses au sujet du homing et de l'identité des stocks et surveiller de près la population résiduelle de baleines blanches pour veiller à ce que la modification de l'habitat et les méthodes de chasse ne la réduisent davantage. Si un rétablissement visant à atteindre des niveaux d'abondance s'approchant de ceux du XIX^{e} siècle devait devenir un objectif de gestion, il serait alors nécessaire de protéger les estuaires fréquentés actuellement et auparavant par les baleines blanches.

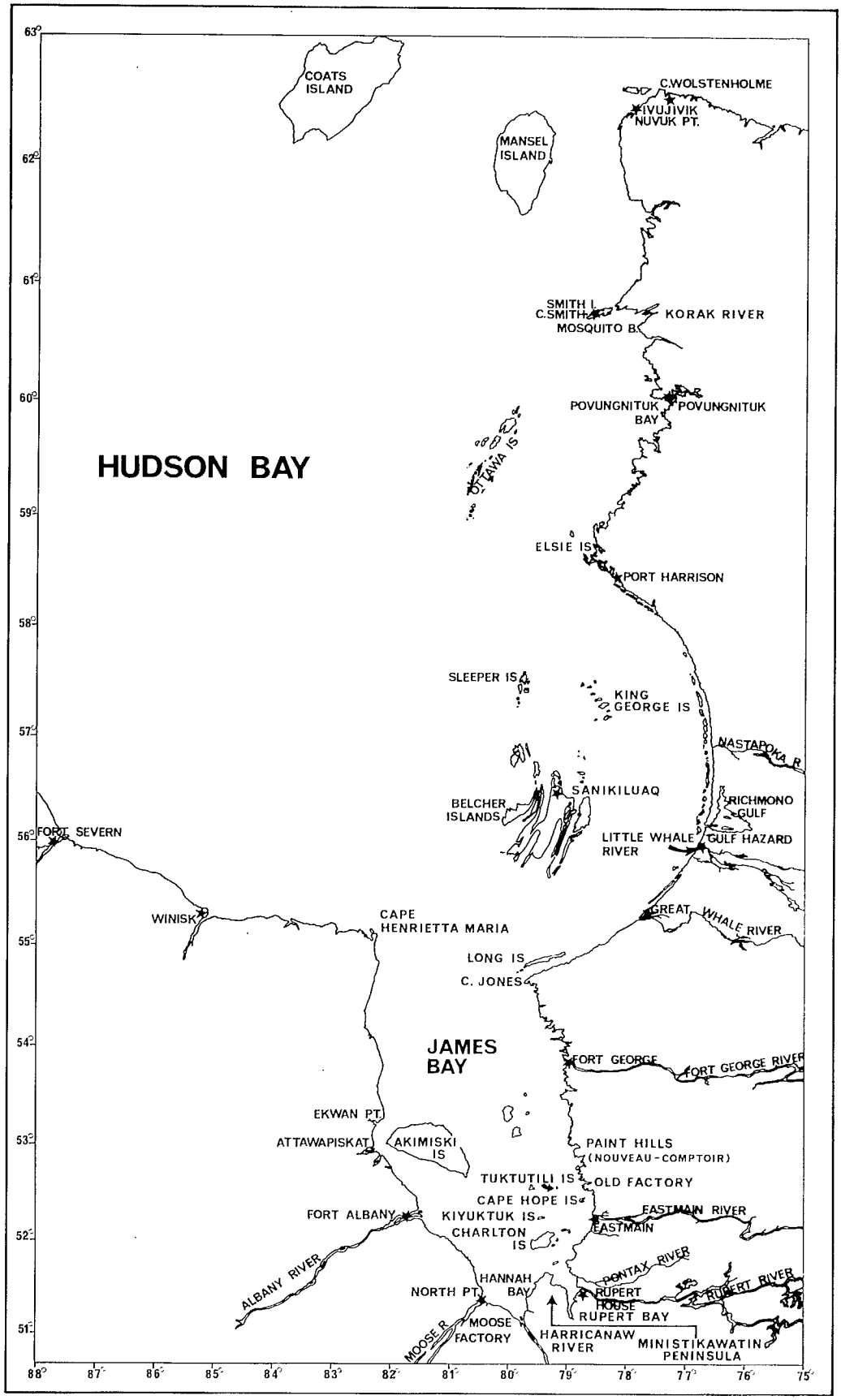

FIG. 1. Eastern Hudson Bay and James Bay, showing place names mentioned in text.

Introduction

Certain rivers along the east coast of Hudson Bay (Fig. 1), an area sometimes called the Eastmain, were traditionally visited in summer by large herds of white whales or belugas, *Delphinapterus leucas*. Beginning in the middle of the eighteenth century, the Hudson's Bay Company (HBC) attempted to exploit the whales in these large estuarine concentrations. The oil and hides of the whales had commercial value, while their meat was prized as winter dogfood at the trading posts. The HBC fisheries at Great Whale River (GWR; Poste-de-la-Baleine or Whapmagoostoo) and Little Whale River (LWR) have been mentioned in summaries of Hudson Bay resources (e.g. Rae 1868; Gordon 1887: 63; Ogilvie 1891: 21; Low 1906: 274; Melvill 1915: 26; Tremblay 1921: 321; Sergeant 1968: 393), and a nontechnical article on the history of the Eastmain whale fisheries has appeared (Francis 1977). In their study of the fur trade in eastern James Bay between 1600 and 1870, Francis and Morantz (1983) described some aspects of the Great Whale and Little Whale River whale fisheries, including the general chronology of events and catch levels for some years. However, no detailed analysis of the catch records, and their implications for the biology and conservation of white whales, is available.

Two types of concern have arisen in recent years regarding the status of the "Eastmain stock" of white whales (Finley et al. 1982). One is that the continuing subsistence catch by Inuit of northern Quebec (Boulva 1981; Betteridge 1985) may be at too high a level to be sustained over many years. The other is that existing and planned hydroelectric diversion projects may make some of the river mouths traditionally used by white whales less suitable for the whales' summer occupancy (Perrin 1980: 115).

Central to both concerns is the question of how present-day whale population levels compare to historic (pre-commercial exploitation) levels. Two estimates of "initial" population size, both based only on catch data presented by Francis (1977), have been made for the GWR and LWR population. Breton-Provencher (1980) reasoned that catches at the two rivers totaling 4 509 in the 7-year period 1854–1860 would have required an initial total population of at least 3 500 whales, assuming a gross annual recruitment rate of 8%. Finley et al. (1982) concluded that a "reasonable" estimate of the number of white whales in southeast Hudson Bay during the 1840's would be "as many as 5,000 animals." Smith and Breton (1986), citing an earlier draft of the present paper, mentioned our estimate in that draft of 7 000 as the initial population size. Smith and Hammill's (1986) mention of 6 000–7 000 as the pre-1854 population size may have come from the same source, though they cited only Breton-Provencher (1978) and Finley et al. (1982).

A preliminary examination of archival materials led us to conclude that the information contained in Francis (1977) and used by previous workers to assess early population size was incomplete. Thus, one objective of the present paper was to provide a more complete account of the catch history and to use all available data in making a new estimate of initial population size. Our search for data focused on years before about 1950, as available HBC records generally do not extend past the Second World War. Harvest statistics for recent years (since at least 1975) have been presented and discussed by others (NHRC 1982a, 1982b; Breton-Provencher 1980; Boulva 1981; Finley et al. 1982; Betteridge 1985).

A second objective relates to ongoing field work in the Eastmain region by other researchers (e.g. Caron and Smith 1985; Smith and Breton 1986; Smith and Hammill 1986). Census surveys, observations of behavior, and biological sampling might be accomplished and interpreted more efficiently if the following historical facts were known:

(a) which river mouths were traditionally visited by white whales;

(b) approximate dates of arrival at and departure from the river mouths by the whales;

(c) routes followed and patterns of movement between rivers;

(d) relative age- and sex-compositions of populations or parts of populations using the different river mouths;

(e) year-to-year or within-year changes in "condition" of whales (e.g. gauged by their reported oil yield or by the qualitative comments of those who caught and flensed them); and

(f) observations of social structure and behavior of whales, as observed and noted by early visitors to the Eastmain coast.

It was our hope that some of the quantitative and qualitative information recorded in old, unpublished manuscripts would prove to be not only of intrinsic historical interest, but also useful to those studying present-day abundance, population dynamics, and behavior of the white whales in eastern Hudson Bay.

Data Sources

In our compilation, we relied principally on materials in the Hudson's Bay Company (HBC) Archives, Winnipeg, Manitoba. Microfilm copies of all the pre-1871 and some post-1870 HBC material are available at the Public Archives of Canada (PAC) in Ottawa. The voluminous HBC holdings are generally well indexed, and we were able to identify what is likely the bulk of existing material relevant to our study (Table 1). We examined everything we could find concerning GWR, LWR, Richmond, Port Harrison, the Belcher Islands, Povungnituk, and Cape Smith. Journals and correspondence from Fort George, Rupert's House, Eastmain, Moose, Albany, and Attawapiskat were sampled, with special attention to the period *ca* 1850–1870, when the fisheries at GWR and LWR were at their peak. HBC Archives documents are cited below as: (H.B.C., reference code, folio number).

A search was also made in the Anglican Church of Canada General Synod Archives (GSA), Toronto, Ontario. In particular, we examined the correspondence and journals of T. H. Fleming, J. Horden, and E. A. Watkins, missionaries who visited GWR, LWR, Moose, and Fort George during the period 1856–1870. Most of these papers belong to the Church Missionary Society (CMS), London, but are available on microfilm at the GSA (Mf. 78-13). We also examined relevant portions of the E. J. Peck Papers, 1850–1924, in the GSA (M 56-1). Peck was a missionary for the CMS at LWR, 1878–1885; Fort George, 1885–1893; and Cumberland Sound, 1894–1905. GSA documents are cited below as (G.S.A., reference code, C.M.S. microfilm reel number if appropriate).

TABLE 1. Hudson's Bay Company Archives materials examined in this study for information on white whales. See Fig. 1 for localities.

Name of post (or individual)	Bordering on	No. of journals	Other materials	Periods	Archival codes
Mansel Island	Hudson Bay/ Hudson Strait	3	—	1930–32	B.438/a/1–3
Cape Smith	Hudson Bay	10	—	1922–26, 1930–35, 1938–39	B.398/a/1–10
Povungnituk Bay	Hudson Bay	10	—	1923, 1926–29, 1933–35, 1938–39	B.468/a/1–10
Port Harrison	Hudson Bay	18	—	1920–35, 1939	B.467/a/1–18
Port Harrison Fur Farm	Hudson Bay	4	—	1928–31	B.416/a/1–4
Belcher Islands	Hudson Bay	2	—	1938–40	B.388/a/1–2
Richmond Fort	Hudson Bay	15	—	1750–59, 1921–27	B.182/a/1–15
Richmond Fort	Hudson Bay	—	London Inward Corresp.	1749–59	A.11/57
Little Whale River	Hudson Bay	11	—	1857–74, 1874–77, 1879–80, 1882–84, 1887–90	B.373/a/1–10; B.372/a/8
Little Whale River	Hudson Bay	—	Corresp.	1854–55, 1867–78	B.135/b/53; B.373/b/1
Little Whale River	Hudson Bay	—	London Inward Corresp.	1853–68	A.11/26
Great Whale River	Hudson Bay	22	—	1814–16, 1861–65, 1878–80, 1881–83, 1884–88, 1890–1917, 1938–41	B.372/a/1–21; B.373/a/7
Great Whale River	Hudson Bay	—	Corresp.	1857–60, 1890–1908	B.372/b/1–3
Great Whale River	Hudson Bay	—	Reports on District	1815–16	B.372/3/1–3
Great Whale River	Hudson Bay	—	London Inward Corresp.	1857–69	A.11/22
Fort George (Big River)	James Bay	18	—	1805–07, 1816–24, 1837–38, 1852–54, 1857–58, 1862–64[a]	B.77/a/1–11, 28–34
Rupert's House	James Bay	18	—	1853–61, 1889–1911, 1938–41	B.186/a/85–91, 103–113
Moose	James Bay	17	—	1852–61, 1892–1904, 1912–22	B.135/a/156–75, 188–91
Sir George Simpson	[Lachine, Quebec]	—	London Inward Corresp.	1851–60	A.12/5–10
William Mactavish	[Fort Garry]	—	London Inward Corresp.	1860–62	A.12/42
Eastmain	James Bay	8	—	1812–16	B.59/a/89–96
Attawapiskat	James Bay	5	—	1919–29, 1938–41	B.243/a/1–5
Albany	James Bay	7	—	1705–07, 1711–13, 1849–52	B.3/a/1–4, 159–61

[a] B.77/a/30 is a journal covering activities at Great Whale River in 1856–1858.

A limited search of government documents in the PAC (see Reeves and Mitchell 1985 for details) also provided some data used in this paper. PAC documents are cited below as: (P.A.C., Record Group number, volume number, file number).

Methods

Geographic Nomenclature

The region of Canada historically known as the Eastmain has undergone a series of place-name revisions in recent years. Not only have new names been given to many sites in recognition of the rights of their native inhabitants, but the assertion of *quebecois* hegemony in "Nouveau Quebec" has resulted in the application of French-language names as well to most named places on the east coast of Hudson Bay. Because this paper is primarily historical, we use the often-antiquated English names for most places. Native and French-language names, as appropriate, are given in parentheses the first time the English name is used in the text.

Whale Nomenclature

Until the mid-1800's, HBC employees generally referred to *D. leucas* as the white whale. British whalers and traders in eastern Canada did not use the term "beluga" or "belukha," although as early as the eighteenth century Pennant (1792: 212) applied the term *Beluga* to this species, attributing its use to Russian fishermen, who incidentally added the term *Morskaia*, meaning "of the Sea," to distinguish the whale from the sturgeon also called *Beluga*. At posts in eastern and southern Hudson Bay, the term "whale" was usually adequate, as white whales were virtually the only cetaceans found there (see below).

White whales were sometimes called "white fish" on the Labrador and elsewhere (H.B.C., A.12/5, fo. 457). In certain contexts the term "fish" can be taken to mean white whales. However, it is important to bear in mind that along the Eastmain coast, fish were a significant subsistence resource. Coregonids, some of which are called whitefish, have been intensively fished in many estuaries along the Eastmain coast.

Judging by the terminology used in journals and correspondence, it was during the early 1850's that the term "porpoise" began to supplant "white whale" or "whale" (although Nicol Finlayson referred to a whale seen at LWR in 1830 as "a young whale or rather porpoise" — Davies 1963: 104; and later to "white whales or porpoises" — Davies 1963: 116). After this time, HBC personnel at Hudson Bay and James Bay as well as Arctic posts often called white whales "porpoises" or, occasionally, "white porpoises." This nomenclature was borrowed from fishermen in the St. Lawrence River, who traditionally called white whales *marsouins blancs*, or white porpoises.

At the Montreal exhibition in 1850 George Simpson, the HBC's governor in North America, was impressed by the work of Henri Têtu. A resident of Rivière-Ouelle on the south shore of the St. Lawrence River, Têtu had developed special techniques for refining oil and tanning hides from white whales caught in the local *pêches aux marsouins*. It was his awareness of Têtu's work that inspired Simpson to initiate large-scale fisheries for these animals in Hudson Bay (H.B.C., A.12/5, fos. 476d, 480, 598). Although Simpson believed it "probable the white whale of Hudsons Bay is the same animal known as the white porpoise in the Gulf of St. Lawrence" (H.B.C., A.12/5, fos. 598–598d), some uncertainty remained. All doubt was removed when Edouard Bélanger, "considered the best porpoise fisherman in the Gulf" (H.B.C., A.12/5, fo. 480), went to the Eastmain and confirmed that they were identical. In a letter to Simpson in July 1852, Bélanger explained (H.B.C., A.12/6, fo. 158d): ". . . je dit marsouins car la Baleine Blanche d'ici [the Eastmain] n'est pas autre chose que le marsouin du St. Laurent il n'y a aucune difference."

In this paper the terms "porpoise" and "white whale" are used interchangeably, just as they were by the northern traders of the nineteenth century.

Conversion Factors

The barrels or casks used at GWR and LWR for packing porpoise oil contained 50–54 imperial gallons (H.B.C., A.11/22, fo. 17d). In estimating whale numbers by reference to oil production figures, we assumed barrels or casks contained 50 imperial gallons.

The oil production from 34 whales caught at LWR in 1852 was only 800 imperial gallons, or about 24 imperial gallons per whale (H.B.C., A.12/6, fo. 250; Fig. 2). Robert Hamilton commented (H.B.C., A.12/6, fo. 253d):

> The Porpoise of Hudsons Bay do not appear to have the same quantity of Blubber on them as those in the St. Lawrence, the ones we took not having averaged more than twenty gallons of Oil each.

He went on to caution that some of the whales taken were young, and that flensing and rendering procedures were inefficient. However, the following year, after processing about 150 whales taken at LWR, Hamilton was still convinced that the porpoises "are small at this River and will not run more than 20 Gal'ns at least with our present way of working" (H.B.C., A.11/26, fo. 11). He hoped to get a higher yield "when we get all properly arranged." However, it is clear from the oil yields in later years (see Tables 3, 4, and text below) that no appreciable increase was achieved. The mean yield of white whales in the St. Lawrence, by contrast, was in the order of 40–50 imperial gallons (Vladykov 1944: 155; Reeves and Mitchell 1984: 78).

Alexander Christie, a company official who visited both Whale rivers in 1819, reported that "a tolerable sized fish" taken at GWR would yield one hogshead of oil. According to Christie, it generally took three whales caught at LWR to make a similar quantity of oil (Davies 1963: 287). Indians told the trader at Richmond in 1756 that at GWR "they can kill 3 Whale, for one Here [LWR], and that they are as big again" (H.B.C., B.182/a/8, fo. 40). Seven "very small" whales taken at LWR on 30 July 1753 "did not Quite fill two Hogs Heads" (H.B.C., B.182/a/4, fo. 54d). However, it should be noted that in July 1753, for example, a whale was taken at LWR "which almost fills one Hogshead" (H.B.C., B. 182/a/4, fo. 52d).

It is possible that within-year or year-to-year changes in the condition of whales were due to fluctuations in their level of nutrition. In 1855 James Anderson observed at LWR (H.B.C., A.12/8, fo. 66d):

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Breadth & Soundings of Big Whale River.

The broadest part of River measured was 430 yards, - Soundings in the middle 3½ & 3¾ fms, - inclination of Banks on each side rapid, finding 2 fms at 30 yards from the shore: At the narrowest part the River measures 331 yards in breadth, - Soundings in the middle 5 fms and 2½ & 3 fms at 30 yards from the shore, thence increasing gradually to centre; Heighth of Spring tides in the River 6 ft 10 in, neap Tides 5 ft 3 in - Soundings were taken at low water.

Little Whale River

Breadth of River at the narrowest place 198 yards, the deepest water is to be found on each side the River about 20 yards from the shore, where it measures, at low water between 10 & 12 feet, in the middle of the River there is a shoal of about 15 yards in breadth with only 1½ ft water on it at low tide; at the narrowest part there is, with falling tide, a pretty strong current, but about a hundred yards farther up the River where it widens to 410 yards the water is pretty slack & the Soundings much the same except that the shoal in the middle is broader; Porpoise pass down each side of this shoal & over it at high water.

Statement of Oil extracted from 34 Porpoise

7 Hogsheads } first quality of about 60 gallons
1 Barrel } of .. " 36 do

⅔ Hogshead } second quality
2 Barrels }
3 Barrels third quality

(Signed) Robt Hamilton
L. Whale R. 15th October 1852.

FIG. 2. Physical characteristics of Great Whale and Little Whale rivers in 1852, from "Report on the exploration in search of Porpoise in James' & Hudson's Bay," by Robert Hamilton, 15 October 1852 (H.B.C., A.12/6, fo. 254; courtesy Hudson's Bay Company Archives). Also given here is the oil production from 34 white whales taken at Little Whale River in 1852.

> . . . instead of getting fatter towards autumn, as was the case in summer '54 we found that they [the porpoises] got much thinner in fat. This we can account for in no other way than that the stormy summer was as injurious to them as to us. The porpoise caught in the autumn did not yield much over one half the quantity of fat as those of the same size caught in spring.

Anderson attributed the low oil production in the GWR and LWR fisheries in 1861 to a "want of food" which not only "kept them [the whales] from entering the Rivers freely," but meant that those taken were "in such bad condition that they did not yield more than half the usual quantity of oil" (H.B.C., A.11/22, fos. 5,22).

Other workers have used 30 (Sergeant 1962) or 40 [imperial?] gallons (Brodie 1970) as a mean oil yield for converting production statistics to estimate the white whale catch in Cumberland Sound. An analysis of the available statistics on the LWR and GWR catches (notwithstanding the possible differences in yields between the two rivers) probably would give an average yield closer to 30 or less, than to 40 gallons. However, since the catches during key years for the Eastmain were given in number of whales rather than amount of products obtained, we saw little point in calculating our own estimate of average oil yield. Where necessary, we have used 40 gallons per whale to convert oil production to whales caught.

Results and Discussion

Stock Identity

Sergeant and Brodie (1969: 2577) suggested that higher air temperatures and a greater volume of river discharge make Hudson Bay estuaries warmer than those in the High Arctic, allowing white whales to give birth to smaller young in Hudson Bay. They found that the white whales in western Hudson Bay, when compared with those in several other areas outside Hudson Bay, grow to a relatively small maximum adult size. Sergeant and Brodie had no sample from eastern Hudson Bay or James Bay, so they did not include animals from these areas in their discussion of body size differences among white whale populations. Some historical evidence suggests that the whales taken on the Eastmain may have been small, at least in comparison to those from the St. Lawrence (H.B.C., A.11/26, fo. 36d; see discussion above, under Conversion Factors).

Finley et al. (1982) compared samples of white whales taken from the Nastapoka River ($N = 18$), Ungava Bay ($N = 12$), and GWR ($N = 19$; from Breton-Provencher 1980) in summer and Hudson Strait ($N = 29$) in autumn, with the samples from western Hudson Bay and Cumberland Sound examined by Sergeant and Brodie (1969) and Brodie (1971), respectively. They found the eastern Hudson Bay, Hudson Strait, and Ungava Bay whales morphometrically similar to those from western Hudson Bay. Finley et al. (1982) nevertheless argued for the recognition of three "separate stocks for management purposes": the Ungava Bay, Eastmain, and west Hudson Bay groups. Their criteria for such recognition were the apparent lack of mixing in summer, traditionality of occupation of specific areas, and documented declines in abundance for at least the first two of the three groups.

Some overwintering of white whales in James Bay has been documented (Jonkel 1969). However, the limited extent of reliably open water and the small numbers of whales actually observed by Jonkel leads us to question whether an entire population of more than 7 000 white whales (see below) could have overwintered in eastern Hudson Bay and James Bay. Breton-Provencher (1980) reported "sizeable open water leads" in March 1978 only northwest of Long Island and at the entrance to Richmond Gulf (Lac Guillaume-Delisle); no white whales were seen in these leads. Schwartz (1976: 118) claimed that in winter the white whales of James Bay "retreat to areas of open water west of Charlton Island, where they [are] occasionally trapped by encroaching ice." This statement seems to be corroborated by entries in Rupert's House (Fort Rupert, Waskaganish or Waskaghaganish) post journals. For example, some time before 12 Feb. 1901 Charlton Island Eskimos killed 47 large white whales (H.B.C., B.186/a/108, fo. 47). Shortly before 4 Feb. 1904 they "found 14 Porpoise and Killed 11 of them" (B.186/a/110, fo. 8). The 17 Feb. 1905 entry states: "The Huskies [Eskimos at Charlton] have landed 7 porpoises to date and expect to get some more" (B.186/a/110, fo. 28d).

It seems likely that some, possibly a large, proportion of the Eastmain population traditionally left the region in late fall to overwinter in Hudson Strait, Ungava Bay, and possibly lower Davis Strait, where the probability of mixing with other white whale populations (e.g. west Hudson Bay, Ungava Bay, Cumberland Sound) would be high. Since white whales breed mainly in April and May (Brodie 1971; Sergeant 1973), the potential for genetic exchange among these putative "stocks" probably exists. We nevertheless agree with Finley et al. that it is appropriate to recognize at least provisionally an Eastmain stock. For the discussion and analysis in this paper, we treat all the white whales summering on the east side of Hudson Bay (including the vicinities of the Ottawa, Sleeper, and Belcher islands) and in James Bay as one biological population.

The homing tendencies of white whales may mean that groups assembling traditionally at specific estuaries in summer are distinct population units, and there may be some basis for treating various population units using geographically distant estuaries in summer as separate "management stocks" (Perrin 1980). Thus, the whales found at the mouth of the Korak River in Mosquito Bay or in the Nastapoka River may have had little effective interchange (at least in the short term) with those summering at LWR and GWR. Tag–recapture data, more detailed morphometric or biochemical analyses than have been performed to date (cf. Fraker et al. 1985), or long-term studies of identified individuals are necessary to test the degree of allegiance to specific summering sites (e.g. Caron and Smith 1985; Smith and Hammill 1986).

Whaling Sites

GWR and LWR were unquestionably the HBC's most important whaling rivers on the Eastmain coast. However, the Company, and in particular George Simpson, had a long-standing interest in extending the porpoise fisheries to other parts of eastern Hudson Bay and into James Bay. It was thought for a time that the "best and most enduring fisheries" for white whales would, in fact, be established in southern

James Bay, on "the Albany coast" (H.B.C., A.12/6, fos. 479, 499). Intelligence gathered from Indians and Eskimos, as well as the first-hand observations of HBC personnel, provide some insight on where, in addition to the two Whale rivers, white whales were found.

James Bay

Simpson believed in 1851 that white whales were "at times, very numerous in the York and Moose rivers" as well as eastward and northward along the Eastmain (H.B.C., A.12/5, fo. 476d). Some HBC employees expected the Company, once its fisheries at the Whale rivers were firmly established, to extend them "in the direction of Albany, or in Hanna Bay whichever place on examination might be found the most eligible" (H.B.C., A.12/6, fo. 499). The presence of white whales near Albany is confirmed by the sightings of a small group on 11 July 1949 near the south end of Akimiski Island (Manning and Macpherson 1949: 129) and a large group (*ca* 200) off Ekwan Point on 11 July 1978 (Reeves et al. 1983: 38). Recent aerial surveys have shown white whales to be widely distributed in James Bay in summer (Smith and Hammill 1986).

Supposedly there were "several small Rivers in Hannah Bay up which Porpoise occasionally make their way" (H.B.C., B.372/b/1, fo. 21). One of these was probably the Harricanaw, which had been considered as early as the 1780's as a site for a small whale-fishing outpost (Rich 1959: 127). Simpson's belief about the Moose River was to some extent borne out when in June 1852, ten white whales were caught near North Bluff, within 18 mi of Moose Factory (see below), "at a place which was not previously considered one of the haunts of that animal" (H.B.C., A.12/6, fo. 152–152d).

Peter Freuchen claimed that white whales were found "in fairly considerable numbers as far south as James Bay, and quite a number are caught at Moose Factory" (Degerbøl and Freuchen 1935: 265). His statement is not corroborated by the Moose post journals we examined (Table 1), but it is important to emphasize that our coverage of Moose materials was far from complete. Freuchen elaborated on an unusual method of catching white whales, which he said was practiced "in a river running into James Bay":

> The river is only connected with the sea at flood tide, so that the whales which get in at high water find their egress barred by sandbanks at the mouth. The whalers lie quiet and wait till the whales have moved into the river; when the tide turns they run up the river, which is not very large, and by throwing stones and shooting into the water the whales are scared into the shallows, where they are all killed.

Freuchen claimed to be acquainted with several of the men who participated in this fishery, and that they had been engaged in it "for several years on end."

We suspect Freuchen was referring to the fishery at Trout Creek, about 8 miles north of Rupert's House (Gordon 1923; H.B.C., B.186/a/105; Table 2). Trout Creek was about 10 yd wide at its mouth and even narrower further up. The numerous sandbars at its mouth were exposed at low tide. An initial attempt was made to trap white whales in this creek on 24–26 October 1894 by employees of the Rupert's House HBC post. A barrier net was used to prevent whales that entered the creek from escaping into the bay when the tide fell. In 7 years of whaling, at least seven whales were secured (Table 2). Some others were shot and escaped carrying pieces of netting (Gordon 1923).

The hunt's purpose was to obtain winter dogfood. Whaling was attempted only between 1 October and 26 October. The greatest number of whales described as having ascended Trout Creek at one time is 5 or 6 individuals. Those taken were described as "large." It is clear from entries in the post journals that the whale hunt was discontinued after the 1900 season. According to Gordon (1923): "Eventually the whales stopped entering the creek, so our whale hunting was abandoned, and we had to look for dog feed elsewhere." In February 1901 two sleds arrived at Rupert's House from Charlton Island with "the meat of 3 Whales," the natives having killed 47 "large Porpoise among them" (H.B.C., B.186/a/108, fo. 47). Charlton Island supplied whale (and seal) meat to Rupert's House for dogfood in a number of winters following that of 1901 (e.g., Feb.–March 1904, Feb.–March 1905 — B.186/a/110, fos. 9d,28d,30). In at least 1901 some porpoise skins were sent to Rupert's House from Charlton Island (B.186/a/109, fo. 24). Moose Factory also was, at least occasionally, supplied with oil from Charlton Island (e.g. H.B.C., B.135/a/190, fo. 156; 191, fo. 50).

According to Schwartz (1976: 118), native people formerly hunted white whales "over a large area of southeast James Bay, from north of Old Factory [Vieux-Comptoir] to near Rupert Bay and out into the bay past Tuktutili and Kiyuktuk islands, an area of some 3,000 square miles." In 1852 Robert Hamilton, the trader at LWR, accompanied by Bélanger, made an "exploration in search of Porpoise [in] James' & Hudson's Bay." His report, dated 15 October 1852 (H.B.C., A.12/6, fo. 252–254; Fig. 3), stated:

> . . . while passing the Point of Menistick:awatam it was pointed out to us a place where both Porpoise & Seals were said to be numerous in the autumn. . . .

Bélanger judged this point to be poorly suited to a fishery as it was exposed to the open sea and had a strong current. The Ministikawatin Peninsula borders the west side of Rupert Bay, at the mouth of the Rupert River. The Pontax River (or Creek), about 12 mi from Rupert's House, was also of interest. Hamilton stated:

> . . . regarding the small river there are conflicting opinions, some stating that rarely & in small quantities the Porpoise make their way up it, whilst others say that great numbers are seen in it at least twice or three times every autumn when the season is well advanced.

(We recognize that Trout Creek may have been a local name for Pontax Creek, but it would then be surprising that Hamilton's use of "Pontax" antedated the use of "Trout" by Factor D.C. McTavish and his men during the 1890's). At least one instance is mentioned in the Rupert's House post journals of "porpoises" entering the Rupert River (H.B.C., B.186/a/108, fo. 5; 18 Oct. 1899).

Between Rupert's House and Fort George in mid-July, Hamilton saw "only one or two" whales. However, a local resident told him that during August "a few Porpoise are in the habit of entering" the Eastmain River, "on a bar lying to the S.W. side of the River over which they usually pass." During an exploratory survey Ogilvie (1891: 21) saw three

TABLE 2. Information on the white whale fishery in Trout Creek, near Rupert's House, 1894–1900. Source: HBC post journals. Also see Gordon (1923).

Date	Comments	Catch	B.38/a/
23 Oct. 1894	"Will start for Trout Creek in the morning with a Whale Net and try our luck."		105, fo. 31d
25 Oct. 1894	Set the net; "Tide was low and nothing came up the River."		105, fo. 31d
26 Oct. 1894	"Returned from Trout Creek without anything, but I am sure it is a suitable place to seine fish and stop whale."	0	105, fo. 31d
1 Oct. 1895	Seven men left for Trout Creek in 2 canoes "to kill Porpoise for dogs food."		106, fo. 1
7 Oct. 1895	"Men could not start to set the whale Net again. On Friday [4 Oct.] a large whale was closed in but the net being too short it got out. I shall try once more."	0	106, fo. 1d
10 Oct. 1895	Men left "to try for Whales."		106, fo. 1d
12 Oct. 1895	"Men came back but were not able to take a whale."	0	106, fo. 2
5 Oct. 1896	Eight men left "to try and kill whales for Dog Food."		106, fo. 37d
6 Oct. 1896	"Tide low, saw no whales."	0	106, fo. 37d
7 Oct. 1896	"Whales came up Trout Creek about noon. Tide was very high. Three had gone above the net when we hauled it across. The tide was half out when they returned. It was nearly dark & left them to next day."		106, fo. 37d
8 Oct. 1896	"The whales did not try to get through or break the net. When the tide was low, we went in two Canoes & drove them up to shallow water & when they were working to get over a shoal, more than half of them being out of the water we fired bullets, and soon killed three large whales, each of them being as heavy as one of our oxen. When the tide got high we hung up the net to dry & towed the three to the mouth of the creek...."	3	106, fo. 38
9 Oct. 1896	"With a light net, say, made of No 9 Twine, so it would be easily & quickly handled I am sure whales can be enclosed & killed every Fall, without much trouble or expense."		106, fo. 38
12 Oct. 1896	"Got more than five pork barrels of Blubber from two whales. The people of the place got the other one among them besides all the tit bits, such as Tongue, Heart, Fins etc. Everyone got a share."		106, fo. 38d
11 Oct. 1897	Seven men left for Trout Creek in a large canoe "to try and catch Porpoise for dogs food."		106, fo. 72d
16 Oct. 1897	"The Whale Hunters killed one large Whale. They shut two in. One must have got under the Net."	1	106, fo. 73
18 Oct. 1897	Men left "to try for Whales again."		106, fo. 73
21 Oct. 1897	"Men are away at Trout Creek."		106, fo. 73
23 Oct. 1897	Men returned. "They managed to kill another whale. At one time they shut in five whales but they broke the net. If we had a good Whale Net we could get all the Dog food we required and it would be a great saving to the Company."	1	106, fo. 73d
25 Oct. 1897	With the 2 whales, "we are now all right for Dog Food."		106, fo. 73d
26 Oct. 1897	The 2 whales yielded 2 hogsheads of blubber, "besides the meat which will last the Dogs most of the winter."		106, fo. 73d
13 Oct. 1898	Returned from Trout Creek. "I have been there since the 5th to try for whales. Killed a large one on the 10th. Very stormy weather all the time we were there.... The men still there."	1	107.fo.32
17 Oct. 1898	The whale was cut up at the post.		107, fo. 32d
14 Oct. 1899	Nine men left on the 9th "taking the hay boat and two canoes" to Trout Creek "to try and catch porpoise for dogs food."		108, fo. 4d
15 Oct. 1899	"No luck with the Porpoise so far."	0	108, fo. 4d
21 Oct. 1899	Factor McTavish and crew returned from Trout Creek in a canoe. "The Boat is still away there as they are to try again next week. They have had no luck so far."	0	108, fo. 5
23 Oct. 1899	Men left "to try again for Whales."		108, fo. 5
29 Oct. 1899	"Very unfortunate with the Whales, we require them so much for our Dogs."	0	108, fo. 5d
2 Oct. 1900	Eight men left for Trout Creek "to try for Whales."		108, fo. 36d
11 Oct. 1900	"I have been at Trout Creek for the past nine days. The men killed a large whale yesterday."	1	108, fo. 36d
13 Oct. 1900	Men brought in the whale to cut up.		108, fo. 36d
15 Oct. 1900	Men left again "to try for whales."		108, fo. 36d
22 Oct. 1900	Men "went whaling again."		108, fo. 37d
27 Oct. 1900	"Whale Hunters came back no more luck."		108, fo. 37d

Rec'd Nov 23/52

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Report on the exploration in search of Porpoise in James' & Hudson's Bay

Sir George Simpson
Hudson's Bay House
&c &c
Lachine

HUDSON'S BAY COMPANY

On the morning of the 7th July we took our departure from Moose Factory & reached Rupert's House on the 9th; while passing the Point of Monsiebik awatam it was pointed out to us as a place where both Porpoise & Seals were said to be numerous in the autumn; examined it, but Mr. Belanger is of opinion that as it lies completely exposed to the open Sea and the current also being very strong, it would be a difficult & for the nets, perilous place to fish. Left Rupert's House on the 10th & visited Pontax Creek, distant from the Post about twelve miles; regarding this small River there are conflicting opinions, some stating that rarely & in small quantities the Porpoise make their way up it, whilst others say that great numbers are seen in it at least twice or three times every autumn when the season is well advanced; if found to be worth while the River is one that can be easily fished, partly with nets & partly with seines. Reached Fort George on the 18th saw only one or two Porpoise on our way. Learned from a Half-Breed residing at East Main River that during the month of August a few Porpoise are in the habit of entering that River, on a bar lying to the S. W. side of the River over which they usually pass. Mr. B. is of opinion that a seine Fishery might be set, that is, should the Porpoise be found sufficiently numerous to render the attempt worth while. Took our departure from Fort George on the 21st having been detained by adverse winds & fogs, no Porpoise worth speaking of

FIG. 3. Robert Hamilton's "Report on the exploration in search of Porpoise in James' & Hudson's Bay," undertaken in 1852 in collaboration with Edouard Bélanger on behalf of the Hudson's Bay Company (H.B.C., A.12/6, fos. 252–253d; courtesy Hudson's Bay Company Archives).

that at the distance of about sixty miles to the southward of Little Whale River, there is another large River called Nastabucksy, where Porpoise are said to be very abundant; also in Richmond Gulf, distant from L. H. R. about ten miles, there is a small River apparently not more than fifty yards wide, up which Porpoise are in the habit of passing & round the bar at its entrance they are said to be very numerous.

The Porpoise of Hudsons Bay do not appear to have the same quantity of Blubber on them as those in the St. Laurence, the ones we took not having averaged more than twenty gallons of oil each; several of them, however, were young ones and owing to the bad weather, carelessness of Indians & want of Tubs for holding the Blubber a vast quantity of Oil was lost; Mr Belanger thinks that with proper attention & a sufficiency of Tubs &c they should average nearly a Barrel each

The greatest difficulty to be overcome in establishing these Fisheries will be the procuring of wood, both for Buildings & for Burning, for the former purpose none can be found nearer than Fort George, and at Little H. River, even such as would answer for the latter is so scarce that all will be required for the use of the Trading Post &c &c by establishments there; at the Large River it is in fact more plentiful & about seventy miles to the Southward large quantities of drift wood could be collected on the Islands, that would make Blubber fires.

On the 2nd September we took our departure from Little H. River & after a rather boisterous passage reached Moosefactory on the afternoon of the 5th.

FIG. 3. *(Continued)*

abundant; Being informed that the Porpoise would, perhaps soon begin to take their departure, we determined ere proceeding farther with our exploration, to make a trial of the net (made of 18 & 24 thd Cod Lines) brought from Moose for that purpose; the weather having been exceedingly unfavorable for our operations. we did not get all prepared until the morning of the 25th when at high water, the Porpoise being up the River, we got it set (it reached about half way across) and then with Canoes drove the Porpoise down to it; they did not, as I had been led to expect they would, from reports on former trials, strike the Net in a body, but in spite of the endeavours of twenty Canoes to keep them down the greatest body of them when they saw the net turned again & headed up the River, creating a swell that almost upset the Canoes, We experienced some difficulty in getting our net ashore owing to its having become entangled round a large stone at the bottom, and during the time we were working at it several of the Porpoise became unmeshed, but were subsequently driven ashore; when we at length succeeded in getting our net out, we found that we had in all 34 Porpoise, and altho' the net was made of such small Twine, only five meshes were broken; Constant rainy & stormy weather together with a scarcity of Cooling Tubs & Vats for holding Blubber prevented us from getting finished with the Oil melting before the 30th when the season being so far advanced, we were of opinion that it would not be advisable to continue our exploration any farther to the Northward, especially as Mr Belanger was assured that at the two Whale Rivers alone he would have ample employment for at least two years. From information derived from Indians, it would appear that

FIG. 3. *(Continued)*

of verbe that River; Constant head winds retarded our voyage to Big Whale River a most tedious one, succeeded in reaching it only on the evening of the 8th August, reaching to be seen of Whales along the Coast.

We had been led to expect that on arriving at Big Whale River we would find the Porpoise in abundance & Sam's happy to say we were not disappointed, our expectations having been more than realized; the River, which measured in the narrowest part, 331 yards, is at times completely filled with Porpoise so much so that on a calm evening I have seen a swell, caused by them, running upwards of six inches high on the banks; it is almost impossible to give an idea of the numbers that enter the River at one time, I should say at least several thousand; when the tide is about a quarter flood they cross the Bar & make their way up the River to a distance of about three miles & at turn of tide they again proceed out to Sea, Mr Belanger is of opinion that this will be an exceedingly difficult River to fish owing to its width, depth and strength of current; The Porpoise also having been so much hunted by the Indians are very wild and on a Canoe being launched on the River they at once rush out into deep water; notwithstanding all this, however, he thinks that with nets of a sufficient strength and with Ropes, Anchors &c to correspond he will succeed in having it; in which case it must without doubt prove a very valuable Fishery; Detained by adverse winds & fogs until the 10th during which time our men employed measuring the River, taking soundings &c; On the evening of the 11th reached Little Whale River distant from C. H. R. about seventy miles. This River has several advantages over the other, being nearly as broad deep & rapid, & in it the Porpoise are quite as

abundant

FIG. 3. *(Concluded)*

white whales ascend the Eastmain River to past the trading post. He commented that the species "visits the southern part of [James] bay in June, immediately after the ice breaks up, but does not remain long, moving northward or out into deep water in July." Lower (1915: 49) claimed white whales were "very common" throughout James Bay, especially in the northern rather than the southern parts. He considered it "by no means an uncommon sight to see fifty or a hundred of them from the deck of one of the small schooners used in that country." A game report from the RCMP detachment at Moose Factory dated 30 June 1958 noted that white whales were "not as numerous as the previous year" in the vicinity of the Cape Hope Islands (52°26′N, 78°46′W; between Nouveau-Comptoir and Eastmain). The whales were said to be "never plentiful at the best of times" in this area.

George Atkinson, an employee at the Eastmain post, heard from the "Northward Indians" in 1788 that "there were nearly as many whales off the Eastmain coast as there were further to the north" (Davies 1963: 277). From the context, it seems clear that "the Eastmain coast" in this instance meant near the Eastmain post, as Atkinson anticipated the establishment of a "local fishery" at Eastmain the following spring. The local Indians managed to kill four whales in 1788 but were not as adept at whaling as were the "Northward Indians" (H.B.C., A.11/57, fo. 84).

Hamilton and his associates saw no whales while en route from Fort George to GWR in late July and early August. They learned that "no Porpoise worth speaking of" enter the Big River (now LaGrande River) (Fort George). Nevertheless, James Anderson wrote to Simpson in 1855: "Immediately after Big River is established we will most likely proceed further north to establish other fisheries" (H.B.C., B.135/b/53, fo. 30B). It is unclear whether Simpson actually intended for a fishery to be conducted at Fort George, or instead that the fisheries at the Whale rivers would be supplied and run by personnel based at Fort George. In the Fort George journals for 1819 (B.77/a/7, fos. 1,4d) and 1820 (B.77/a/7, fo. 28) reference is made to Indians delivering individual whales to the Fort George post. It is unclear whether these few whales were caught to the northward (at GWR or LWR) or locally near Fort George (see Fig. 4).

FIG. 4. A white whale taken at Fort George in 1943. (Photo by Mrs. A.L. Hamilton, courtesy Hudson's Bay Company, file no. E-347).

There is no doubt that a subsistence fishery for white whales was conducted by the Indians at Fort George. Upon arriving at Horse Island, near the mouth of Big River, to re-establish the HBC post in 1837, Thomas Corcoran found "a host of Indians encamped, pursuing their amusement of 'white whale hunting'" (H.B.C., B.77/a/11, fo. 4). The principal motive for the hunt was to secure muktuk and meat, "which they prefer as an article of food to any other sort of fish" (H.B.C., B.77/a/11, fo. 5). It is thus implied that, at the end of July and early in August at least, white whales congregated at the mouth of Big River. It also appears that a party was sent from Eastmain post to Big River "for the whale hunt" on 29 June 1791 (Davies 1963: 278). Some Fort George Indians who arrived at GWR on 3 Aug. 1901 had killed four porpoises that summer, apparently in or near Big River (H.B.C., B.372/a/15, fo. 62d).

The LaGrande River was modified recently for a hydroelectric project (Berkes 1982). Cree hunters from Fort George and Paint Hills (Wemindji or Nouveau-Comptoir) occasionally took white whales during the 1970's (James Bay and Northern Quebec Native Harvesting Research Committee 1982).

Richmond Gulf, Nastapoka River, and Points North

In Richmond Gulf, only about 10 mi from LWR, "there is a small River apparently not more than fifty yards wide, up which Porpoise are in the habit of passing & round the bar at its entrance they are said to be very numerous" (H.B.C., A.12/6, fo. 253d). The Eskimos reported that there were "several rivers in the north of Richmond Gulf which the Porpoise are in the habit of frequenting" (H.B.C., B.135/b/53, fo. 30B). In early July 1884 several men traveled in a canoe from the LWR post to the "head of Gulf Lake (so called) to see about the feasibility of making a porpoise fishery in a small river there" (H.B.C., B.373/a/8, fo. 44d). They saw "a great many" porpoises in this river and killed at least one. In early July 1888 another attempt was made "at the head of Richmond Gulf in a small River there", but it was unsuccessful (H.B.C., B.373/a/9, fos. 25d–26).

References are made repeatedly in journals and correspondence to white whales being abundant in the Nastapoka River (variously called Nistapoca, Netapuko, Nistapuko, Nistabucky, Nistabuckay, or Nistabacquo; also Cataract River — Davies 1963: 284, 336) and in Richmond Gulf (e.g. H.B.C., A.12/6, fos. 250–250d, A.12/6, fos. 253–253d; A.12/6, fo. 262). With respect to Richmond Gulf, James Anderson reported in 1855 that "porpoise are said to frequent some of the Rivers falling into it, though not in large numbers" (H.B.C., A.11/26, fo. 19). The "Netapuko" was a place "where the Esquimaux are in the habit of killing Porpoise" (H.B.C., A.11/26, fo. 19; Fig. 5). It had been identified at least as early as 1814 as "a likely place" for the HBC to conduct a net fishery (Davies 1963: 284). On 4 August 1870 several hunters arrived at LWR from "Nistapoca", having killed 5 white whales and reportedly having seen Eskimos there (H.B.C., B.373/a/5, fo. 5d). In considering future needs for a cargo vessel to visit the Eastmain, one company representative mentioned in 1855 that the "Nistapuko" would need to be taken into account, "in case the returns of that river should amount to so much" (H.B.C., A.11/26, fo. 20d). Two Eskimos arrived at LWR on 6 August 1883, having taken 7 porpoises at the Nastapoka

FIG. 5. A white whale taken in northern Québec sometime between 1912 and 1929. The only data associated with the photo is the marginal notation: "A White Whale caught. Good food for Eskimos." (Courtesy Notman Archives, McCord Museum, McGill University, Montreal, MP026/76(47)).

(H.B.C., B.373/a/8, fo. 17). A boat was sent to that river to bring back all the blubber; it arrived at LWR on 18 August loaded with both porpoise and seal blubber (H.B.C., B.373/a/8, fo. 18).

Low (1906: 274–275) saw "great numbers of white whales in the mouths of the rivers to the northward of Little Whale river, notably so in that of the Nastapoka." Manning (1946: 84) saw about 150 white whales in and near the mouth of the Nastapoka River on 15 Aug. 1944 and reported a sighting of at least 50 there in mid-August 1907. Recent investigations have demonstrated the continuing use of Richmond Gulf and the Nastapoka River by white whales in summer (Breton-Provencher 1980; Finley et al. 1982). In fact, the number observed in the Nastapoka by Finley et al. in summer 1980 (149) was very similar to that estimated by Manning 36 years earlier. Smith and Hammill (1986) made a photographic count of 139 whales at the Nastapoka River on 2 August 1985 and reported that 150 were seen there by other workers on 15 July 1982.

In 1853 Hamilton made further inquiries while at LWR, particularly about Ungava "& the country lying between that, and Richmond Gulf" (H.B.C., A.12/6, fos. 478–478d). He learned nothing of consequence, however, as the Indians and Eskimos at LWR had never been "in the direction of George's River." Anderson wrote to Simpson in 1855 that he knew of "another river which the porpoise are said to frequent . . . that river in the charts north of Hopewell Head" (H.B.C., A.12/8, fo. 67d). We take this to be a possible reference to Povungnituk Bay.

In 1858 a trip was made on the HBC's behalf along the east coast of Hudson Bay to as far north as the northeast end of Mosquito Bay (H.B.C., A.11/22, fos. 2,17–17d). Except for one small river at the head of the southeast branch of that bay (Korak River?), where "not more than 150 Porpoise" were seen going upriver with the rising tide, no other "fishery river" was found. It was feared that any attempt to establish a fishery at this small river would prove impractical, since the catch would be modest and many sunken rocks and shoals along the coast north of LWR would make the site difficult to supply. Apparently the Nastapoka River was completely overlooked or ignored by this expedition. On the way north from LWR, "very few" whales were observed, and those that were seen "were hurrying South as fast as they could." The expedition departed LWR on 15 July (H.B.C., B.373/a/1, fo. 43) and returned to that place on 5 September (H.B.C., B.373/a/1, fo. 47d).

Some movement of white whales between LWR and GWR during summer is indicated by Rev. Horden's observation of "a herd" there in early August 1862 (G.S.A., Mf 78–13 reel 16 (A-89), C.M.S., C1/0 App. B).

Chronological Review of the Hudson's Bay Company Fisheries at Great Whale and Little Whale Rivers

The mouths of Great Whale and Little Whale rivers were the sites for the most ambitious white whale hunting operations carried out by the HBC in eastern Hudson Bay (Figs. 6 and 7). Some of the physical characteristics of these two estuaries, as they existed in the 1850's, are given in Fig. 2. Catches are summarized in Tables 3 and 4.

1750–1759

The HBC post called Richmond House or Richmond Fort was established in the summer of 1750 on Winipeke Bay, Richmond Gulf (Rich 1958: 619; Davies 1963: xxi–xxiii;

FIG. 6. The Hudson's Bay Company post at Great Whale River, year unknown. (Notman Archives, McCord Museum, McGill University, Montreal, Coward Album # 1, MP024/76(51)).

FIG. 7. The Hudson's Bay Company post at Little Whale River, 12 June 1874. (Notman Archives, McCord Museum, McGill University, Montreal, Malloch Collection, MP391(18)).

TABLE 3. Quantitative data on the white whale fishery at Little Whale River (LWR), 1751–1901. For non-quantitative information, which in some instances provides the basis for estimates in this table, see the text. Note that "—" means no data are available; "*ca*" means the figure has been estimated by the authors; " + " means there was a catch of unknown magnitude or, when following a number (e.g. "10 + ", "June 12 + ") that the catch is known to have been higher, or the date later, than indicated. Asterisk (*) indicates this is date of first (or last) whaling effort or of first (or last) catch of season.

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1751								Indians from Richmond went to LWR to hunt whales.	B.182/a/1,3
1752	18 VI	14 VII*				0	40	5 hogsheads and 2 barrels of whale blubber, 10 casks of whale oil.	B.182/a/3,4
1753	10 VII*	11 VIII*				0	49	"Only One Ton of Oil" secured up to 22 July.	B.182/a/4; B.182/a/5, fo. 4
1754	1 VII*	8 VIII*				0	91		B.182/a/6
1755	13 VII*	2 VIII*	28 VII	29 VII(1) 30 VII(13) 31 VII(13) 1 VIII(6)	14 VIII (due to storm)	33	15	First mention of "Ye Whale Nett."	B.182/a/7
1756	10 VII*	5 VIII*	—	—	—	—	31	"Only 2 Tons of Blubber" secured up to 28 July.	B.182/a/8
1757	7 VI	29 VII*	—	—	—	—	3	Indians in starving condition, water too muddy for whaling.	B.182/a/9
1758	22 VI	14 IX*	—	—	—	—	90	"Swarms of fish in Ye River but Can not Sett our Whale Nett for Want of Indians."	B.182/a/10,11
1759	17 VI	21 VIII	27 VII	28 VII	21 VIII	93	18		B.182/a/11

TABLE 3. *(Continued)*

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1814						*ca* 80	2+	Longboat arrived GWR from LWR with "about 3 Tons of Blubber only" on 13 August; 3276 gals oil, both rivers combined.	B.372/a/1; Davies 1963: 286
1815						—	+	1 hogshead.	B.372/a/1; B.372/a/3; B.372/e/1; B.372/e/2, fo. 1
1816			Not set			0			B.372/a/3, fo. 27d
1817						—	—		B.77/a/4
1818						+	—	1½ tons of blubber.	B.77/a/6
1819						—	—		B.77/a/7
1852				21 VIII		34		"... about 800 gallons" of oil; 7 hhds of *ca* 60 gals and 1 barrel of *ca* 36 gallons — all 1st qual. oil; plus ⅔ hhds + 2 bbls 2nd qual. and 3 bbls of 3rd qual.	A.11/26, fo. 1d; A.12/6, fos. 250, 253, 254
1853			29 VIII			0			A.11/26, fo. 1d
1854	end of June		8 VII	10 VII(123) 31 VII(300)		423		9600 gal oil.	A.11/26, fos. 9, 11, 14–14d; A.12/7, fos. 400d, 407, 254, 254d, 410
1855	2 VII	14 IX	12 VII	12 VII (12+) Early August(?) 23 VIII (315) 4 IX(157)		651–707 (*ca* 679)		"13,644 gallons of oil and about 1000 half skins"; "380 casks of oil."	A.11/26, fos. 19–21d, 23d, 28; B.135/b/53, fos. 29, 35; A.12/8, fos. 61, 66
1856		20 IX	*ca* 10 VII		20 IX	743		"Our fishery was very late in commencing (the 19th July)."	A.11/26, fos. 23d, 28; A.12/8, fos. 258, 449
1857	20 VI	30 IX	14 VII	18 VII(69) 25 VII(86)	11 VIII	323		33 puncheons of 1st-quality oil and 7 bbls of 2nd-quality oil as of 8 Aug; 645 half-skins and 5001 gals of oil all told.	A.11/22, fos. 7d, 11; B.373/a/1
1858	13–15 VI	22 IX	*ca* 10 VII	9 VIII (50–60)		10+	6		B.373/a/1; G.S.A., Mf 78–13 reel 16, (A-89), C.M.S., C1/0 App. B; A.11/22, fo. 20
1859						336+–743+			A.11/22, fo. 3; A.12/10, fo. 336d
1861								34⅕ tuns of oil [from 1860 catch?]	A.11/22, fo. 26
1862	21 VI	4 IX	*ca* 14 VII	18 VII ("a few")		0			A.11/26, fo. 47; B.373/a/3; G.S.A., Mf 78–13 reel 16, (A-89), C.M.S., C1/0 App. B
1863	12 VI	7 IX	8–11 VII	10 VIII (50)	27 VIII	8			B.373/a/3
1864	12 VI	11 IX	23 VII	5 VIII (50–60) 23 VIII (40–50) 27 VIII (7–8) 31 VIII (70–80)	8 IX	133–140			B.373/a/3; A.11/22, fos. 30–30d

TABLE 3. *(Concluded)*

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1865	18 VI	27 VIII	18 VII	3 VIII (60–70) 9 VIII (*ca* 100)	23 VIII	125–130	2	Whales "small, and in very poor condition, and returned very little oil."	A.11/26, fo. 60; B.373/a/4
1866	13 VI	6 IX	14 VII		*ca* 28 Aug	0	4		B.373/a/4
1867	8 VI	1 IX	19 VII	20 VII (*ca* 20)	26 VIII	28–30	9(2)		A.11/26, fo. 65d; B.373/a/4
1868				7 VII (28)		28			A.11/22, fo. 34d; B.373/b/1, fos. 21, 22, 25, 26
1869			20 VII		14 VIII	0			A.11/22, fo. 36; B.373/b/1, fo. 55
1870	9 VI	28 VIII	Not set			0	11(2)		B.373/a/5
1871	17 VI	1 IX	Not set			0	6		B.373/a/5
1872	8 VI	25 VII*	Not set			0	21(1)		B.373/a/5
1873	7 VI	3 IX	Not set			0	8–9		B.373/a/5; B.373/b/1, fo. 119
1874	28 VI	2 IX					6		B.373/a/6
1875	13 VI	27 VIII					19(1)		B.373/a/6
1876	12 VI	31 VIII					1		B.373/a/6
1879	12 VI	8 IX					29(1)	From Nastapoka river "... 7½ barrels full of cut porpoise Blubber & 6 porpoise half Skins."	B.372/a/8
1880	12 VI	15 VII					13(2)		B.372/a/8
1882	12 VI	26 VIII					4(1)		B.373/a/7
1883	14 VI	16 VIII					8(1)		B.373/a/8
1884	14 VI	17 VII					11(2)		B.373/a/8
1887	26 VIII(?)	5 IX					1		B.373/a/9
1888	11 VI	17 VIII					2	18 halfskins returned on *Mink*.	B.373/a/9; B.372/b/2, fo. 11
1889	8 VI	2 IX					4(3)	25 halfskins returned on *Mink*.	B.373/a/10; B.372/b/2, fo. 10
1890	23 VI	18 VII					4(1)		B.373/a/10
1891	10 VII*						5	10–15 July.	B.372/a/11, fo. 42
1892							*ca* 16	182 gal. oil obtained before 8 July.	B.372/a/12
1893							8		B.372/a/12
1894	7 VI						6	"... brought [from LWR] 1 Hhd & 1 barrel porpoise Oil and 12 half porpoise skins."	B.372/a/13, fo. 4d
1898							1		B.372/a/14, fo. 38d
1900							4	3 barrels oil.	B.372/a/15, fos. 25d, 27d

[a]Numbers in parentheses indicate whales reported as shut in above the barrier. The lack of consistency between the total shut in during the season and the total caught by netting that season can be taken to mean that some escaped after being shut in.

[b]Numbers in parentheses indicate whales reported as struck but lost.

TABLE 4. Quantitative data on the white whale fishery at Great Whale River (GWR), 1814–1940. For non-quantitative information, which in some instances provides the basis for estimates in this table, see the text. Note that "—" means no data are available; "*ca*" means the figure has been estimated by the authors; "+" means there was a catch of unknown magnitude or, when following a number (e.g. "10+", "June 12+") that the catch is known to have been higher, or the date later, than indicated. Asterisk (*) indicates this is date of first (or last) whaling effort or of first (or last) catch of season.

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1814							1+	9 hogsheads of oil, minimum.	B.372/a/1
1815	5 VII*					*ca* 40	1+	3 tons of oil; 1638 gals oil from both rivers combined.	B.372/a/1; B.372/a/3; B.372/e/1; B.372/e/2, fo. 1; Davies 1963: 286
1816	14 VII*	middle of September	27 VII		11 VIII	2	1+	5 tons or 20 hogsheads of oil.	B.372/a/3; B.372/e/2, fo. 8d; B.372/e/3, fo. 1; B.77/a/3
1817						—	+	3 hogsheads of oil.	B.77/a/3,4
1818	16 VII (first mention)						+	More than 2 hogsheads of oil.	B.77/a/4,6
1819						+	+		B.77/a/7
1820						+?	+?	Some hogsheads of oil.	B.77/a/7
1821						+?	+?		B.77/a/8
1856	24 VII*	21 IX (last mention)					4		B.77/a/30
1857	1 VII		24 VII	31 VII (1300)		1 043		1325 half hides, 21021 gals oil.	B.373/a/1; B.372/b/1; B.77/a/30; A.11/22, fo. 11
1858	8 VI		*ca* 22 VII	31 VII		*ca* 800–1 000	7	*ca* 800 barrels oil.	B.77/a/30; A.11/22, fo. 20; B.372/b/1; B.373/a/1; G.S.A., Mf 78–13, reel 7 [A-80], C.M.S.
1859		5 IX	*ca* 24 VIII			300	—	About 500 whales escaped after second raise.	B.373/b/1; A.11/22, fo. 3; A.11/26, fo. 34–34d; B.372/b/1; A.12/10, fo. 336d
1860						1 511	—	About 1,000 barrels of oil.	A.11/26, fo. 40–42d
1861						+	—	1956 half skins and 145 tuns of oil reported for GWR in 1861, probably mainly production from 1860.	A.11/22, fo. 5, 25
1862	28 VI	3 IX	4 VIII	6 VIII ("about 350")	1 IX	226	3		A.11/26, fo. 47–47d; B.372/a/5
1863	23 VI	24 VIII	21 VII	23 VII (259) 4 VIII (521) 21 VIII (0)	24 VIII	780–786	2	*Ca* 600 barrels of oil.	A.11/26, fo. 51d; B.373/a/3, fo. 51d, 52d, 55; B.373/a/5
1864	27 VI	12 IX	22–25 VII	8 VIII (80–100)	25 VIII	*ca* 20+	5(2)		A.11/22, fo. 30–30d; B.373/a/3, fo. 78d; B.372/a/6
1865	5 VII	14 VIII	7 VIII				4(4)		B.372/a/6
1866				13 VIII (500) 28 VIII		500+	—		B.373/a/4, fo. 48d, 50

TABLE 4. *(Continued)*

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1867					2 IX	100	—		A.11/26, fo. 65d; B.373/b/1, fo. 22; B.373/a/4
1868			*ca* 1 VIII	*ca* 6 VIII		160			A.11/22, fo. 34d; B.373/b/1, fo. 35
1869			Not set			0			A.11/22, fo. 36; B.373/b/1, fo. 70
1871			Not set			0			B.373/b/1
1872						+			B.373/a/5, fos. 52d, 54d, 57; B.373/b/1
1873						+			B.373/a/5, fo. 75d
1875								Fishery not attempted.	B.373/b/1, fo. 170a
1876								Fishery was attempted; "... only 18 porpoises ...."	B.373/b/1, fo. 185; B.373/a/6, fo. 62
1877		23 VIII			18 VIII	0		Fishery was attempted.	B.373/b/1, fos. 196, 204
1879	15 VI	12 IX					2		B.372/a/7
1881	20 VI	28 VIII					2(1)		B.373/a/7
1882								"No porpoises killed yet" as of 25 August.	B.373/a/7
1884	29 VIII*	3 IX							B.372/a/9
1885	22 VI	IX					9		B.372/a/9
1886	31 V	26 VII					10		B.372/a/9
1887	11 VII*	3 IX					7(2)		B.372/a/10
1889								Two barrels porpoise oil sent to Fort George on *Mink*, 31 July.	B.372/b/2, fo. 14
1890	24 VI (heard)	24 VIII					3	11 porpoise halfskins sent to Moose on *Mink*, 13 July.	B.372/a/11; B.372/b/2, fo. 33
1891	20 VII*	6 IX					6(1)	At least 128 gals porpoise oil; 72 halfskins.	B.372/a/11; B.372/b/2, fos. 37–52
1892	9 VI	15 IX					18	51 halfskins; at least 56 gals oil.	B.372/a/12; B.372/b/2, fos. 68d–70
1893	12 VIII*	12 IX					5	28 halfskins;,92 gals oil.	B.372/a/12; B.372/b/2, fos. 83–93
1894	7 VI							22 halfskins.	B.372/a/13; B.372/b/2, fos. 111–114
1895	2 VII							9 halfskins.	B.372/a/13; B.372/b/2, fos. 143, 146
1896	20 VII*	21 VIII					2	8 halfskins; at least 36 gals oil.	B.372/a/13; B.372/b/2, fos. 181, 185
1897								32 halfskins.	B.372/b/2, fos. 215, 221
1898	11 VII*	29 VII					3		B.372/a/14
1899	23 VI*	30 VIII					5		B.372/a/14
1900	30 VI*	23 VIII					10		B.372/a/15
1901	19 VIII (1st mention)	28 VIII					4		B.372/a/15
1902	7 VII*	1 IX					10		B.372/a/15; B.372/a/16
1903	17 VII*	3 IX					5		B.372/a/16
1904	21 VI*	24 VIII					12	64 halfskins.	B.372/a/16; B.372/b/3, fo. 60

TABLE 4. *(Concluded)*

Year	First sighting	Last sighting	Barrier set	Barrier raised[a]	Barrier removed	Netted catch	Harpooned catch[b]	Comments	Sources
1905	30 VI	9 IX					10(2)	12 halfskins; 1½ tuns oil.	B.372/a/16; B.372/b/3, fo. 83
1906	7 VII	4 IX					5(1)		B.372/a/17
1907	13 VII*	26 VIII					7+	16 porpoises found "driven ashore behind the Post"; nearly 2 tuns oil.	B.372/a/17; B.372/b/3, fo. 122
1908	9 VII*	31 VIII					4(1)		B.372/a/17
1909	8 VII*	23 VIII					9		B.372/a/18
1910	12 VII*	31 VIII					10(1)		B.372/a/18
1911	29 VII*	24 VIII					2		B.372/a/18
1912	18 VII*	13 VIII					5		B.372/a/18
1913	19 VII*	6 VIII					4		B.372/a/19
1914	27 VII*	8 VIII					4		B.372/a/19
1915	11 VI*	7 VII					1		B.372/a/19
1916	29 VI*	15 VIII					3[c]		B.372/a/19
1917							—[d]		
1930							—[e]		
1940							1		B.372/a/19

[a]Numbers in parentheses indicate whales reported as shut in above the barrier. The lack of consistency between the total shut in during the season and the total caught by netting that season can be taken to mean that some escaped after being shut in.

[b]Numbers in parentheses indicate whales reported as struck but lost.

[c]14 [units?] "porpoise" for Outfit 1916.

[d]24 [units?] "porpoise" for Outfit 1917.

[e]4 bbls "porpoise oil" shipped from Charlton Is. on S.S. Ungava (H.B.C., Unclass Docs, Bay 1, Shelf 8, "Oil" folder).

Francis and Morantz 1983: 67; H.B.C., A.11/57). The company's hopes for this post centered initially on the mining of lead, silver, and copper. The returns from mining proved disappointing, but the prospects for trade with the Nascopie Indians and the potential for a white whale fishery provided sufficient incentive to sustain the company's interest in Richmond for nearly a decade (Rich 1958: 621; Hearne 1971 [1795]: 394).

Although white whales were sometimes sighted near Richmond (e.g. 25 May 1751 — H.B.C., B.182/a/1, fo. 57), the whale hunting took place mainly at LWR, where "vast shoals of white whale" had been reported (Barrow 1852: 66). A subsistence whale fishery at LWR existed before the arrival of the HBC. The factor at Richmond quickly learned that the local Indians there were unavailable for other work in July, "being obliged at this Season to attend Ye Whale Fishery" (H.B.C., B.182/a/1, fo. 75). Dried whale meat and "trane oil" were among the provisions brought back to Richmond by the Indians following their hunt (H.B.C., B.182/a/1, fo. 77d). In 1756, when the company tried to recruit more Indians from GWR, it was learned that the Indians there were already killing whales, being "retained" for that purpose by Sennescom (apparently an Indian chieftain) (H.B.C., B.182/a/8, fos. 40–40d). Indeed, when Thomas Mitchell and John Longland explored the Eastmain coast on the HBC's behalf in 1744, they found more than 150 Indians at GWR "busily engaged killing white whales" (Davies 1963: xix–xx; also Francis and Morantz 1983: 66). So it appears that subsistence hunting by Indians antedated the HBC's arrival at both the Whale rivers. Turner (1894: 182–183) noted that the coastal Indians of southeast Hudson Bay and James Bay were exceptional among their race in that they hunted white whales and relished the flesh and blubber of these animals (also see Morantz 1983: 31; Francis and Morantz 1983). Dried whale meat was preferred by the "Northward Indians" (those living on the Eastmain coast north of Eastmain post) "before any other provisions" (Davies 1963: 277; see H.B.C., A.11/57, fo. 84). Nicol Finlayson, while en route to Ungava Bay to establish Fort Chimo (Kuujjuaq) in 1830, had difficulty persuading his Indian guides to leave LWR, where a young white whale was "lying on the rocks, to leave which without feasting on it was a hardship they could not easily forget" (H.B.C., B.38/a/2, fo. 5). Thomas Alder reported in 1816 that the "principal hunters" arrived at GWR on about 21 July; "from this time, untill the middle of September, Whales are procured, on which they [the Indians] subsist" (H.B.C., B.372/e/2, fo. 1).

Some whale oil was obtained at Richmond in trade from the Indians in 1751 (H.B.C., B.182/a/3, fo. 4d), but it was not until 1752 that the HBC became directly involved in the fishery. That year John Potts, the chief trader at Richmond, went to LWR in June to "attend" the whale fishery (H.B.C., B.182/a/3, fo. 60d *et seq*). As many as 35 canoes were engaged at one time to kill whales. Potts explained that it was necessary for him to retain many Indians, even though some of them would not kill a single whale during the season. He noted (H.B.C., B.182/a/4, fo. 3):

> Its Impossible to kill Whale Unless there is a great No. of Indians in Cannoes to Stop ye Mouth of the River when ye fish Come into it, then Robinson Crouseo ['who Understands killing Whale better then Any Other Indians'] with Some of ye most Expert Indians Strikes the Whales, which when Struck Darts Out of ye River with great Swiftness they are then Joyned by those Indians that Stops ye Rivers Mouth; and ye fish Drags them Out to Sea Some times two or three miles before ye fish is Dead & Some times Over Letts their Cannoes.

Those Indians who participated in the hunt until the end of the season were guaranteed a bottle of brandy and some

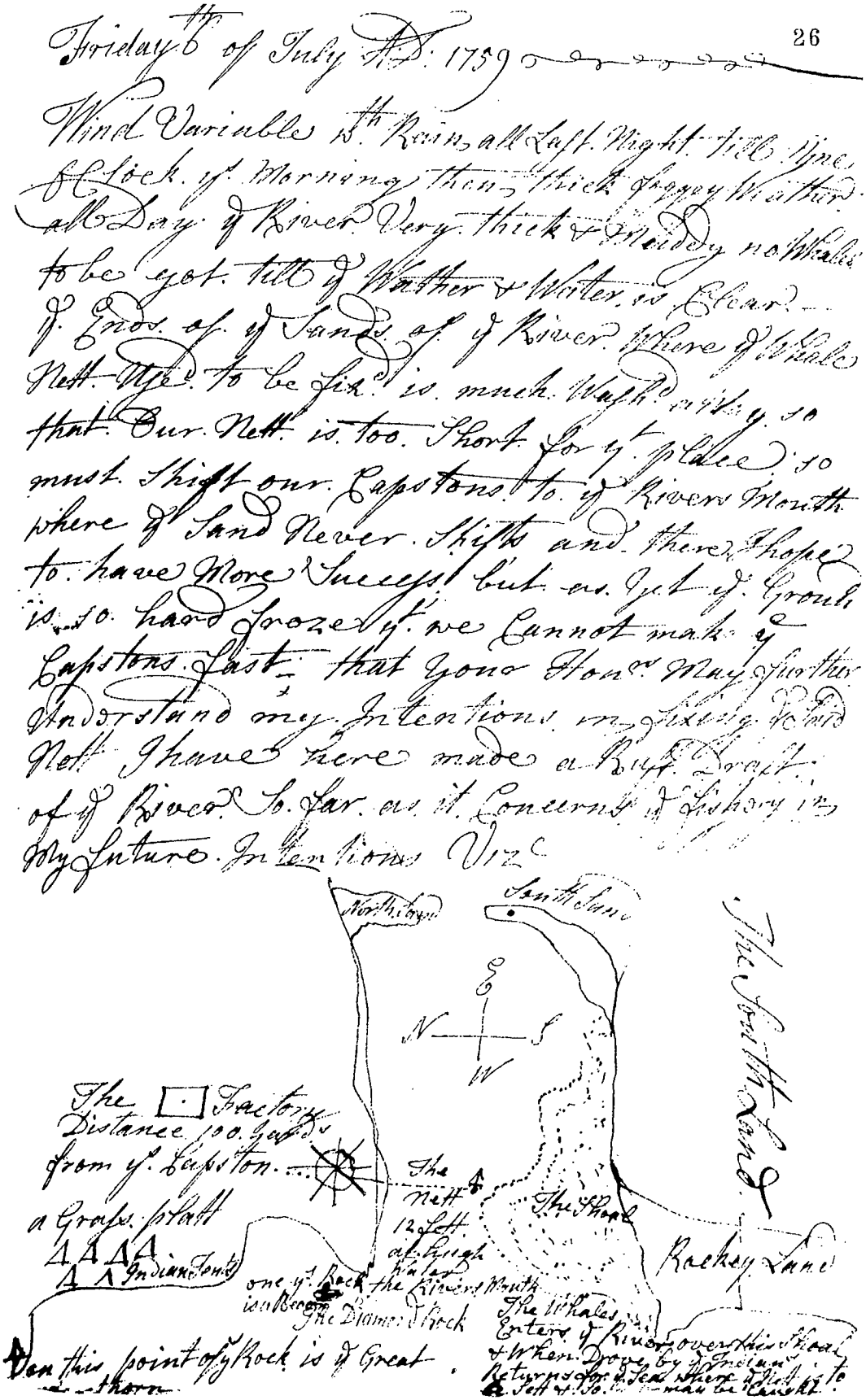


FIG. 8. Page from the Richmond post journal, 6 July 1759, with a sketch showing the placement of the whale net as well as the factory house and Indian tents. The comments in the lower right corner state: "The Whales Enters ye River over this Shoal & When Drove by ye Indians Returns for ye Sea where ye Nett is to be Sett Y So may be Caught" (H.B.C., B.182/a/11, fo. 26; courtesy Hudson's Bay Company Archives).

necessities (e.g. powder and shot), "whether they killed a fish or not." Those who caught whales received additional brandy as well as tobacco. In return, the HBC received the oil and hides. In most seasons, the Indians feasted on the first few whales taken, and the oil from these was not traded.

By 1754, the HBC had erected Whale River House at LWR, to be used in summer as a base for the whale fishery. A whale net was introduced in 1755. It was designed to block the river's entrance once a number of whales had passed upriver with the tide (Fig. 8). In principle, the net functioned as a replacement for the line of Indian canoes formerly used as a cordon at the river mouth. When the net was up, whales could be driven into it and lanced as the tide ebbed and they attempted to leave the river. On 30–31 July 1755, for example, "a great No. of Whales" were trapped in the river, and the Indians killed and secured 26 of them (H.B.C., B.182/a/7, fo. 45d). Potts complained in 1759 that he had to pay the Indians "ye same price for each fish as formerly because they Drive ye Whales into ye Nett" (H.B.C., B.182/a/11, fo. 29). The exact origin of the whale netting techniques used on the Eastmain is not known, although our impression from the Richmond journals is that the barrier net used at LWR in 1755 was the first of its kind employed there. In 1815 the fishery at LWR was said to be conducted "in the old Indian method, with small nets" (H.B.C., B.372/e/1, fo. 4d).

The HBC fishery was plagued with problems. Provision of adequate amounts of brandy and tobacco proved very expensive, particularly once Eskimos were seen near Richmond. Many of the Indians were afraid of the Eskimos and thus reluctant to remain at LWR for an entire whaling season (Francis and Morantz 1983). The 1757 season was disastrous: only three whales were landed. All the Indians had dispersed by 10 August, "being in a Starving Condition, the Continual Rains has Caused great freshes in ye River, and made the Water So muddy that the Indians can not get any Whales" (H.B.C., B.182/a/9, fo. 38d). In spite of relatively large catches in 1758 (at least 90 whales — H.B.C., B.182/a/11) and 1759 (at least 111 whales — H.B.C., B.182/a/11), the commercial fishery ended, and Richmond was abandoned in August 1759 (Rich 1958: 624; Davies 1963: xxiii).

The catch statistics for this period consist of daily journal entries made by an HBC representative who was at LWR during the hunt. For some years, we feel certain that all whales secured are noted in the journals; for other years, available journals clearly do not cover the entire whaling season. Additional information is available in the annual list of trade returns, showing 106 "whale skins" (unclear whether halfskins or whole skins) traded from 1754–55 to 1758–59 and 72 hogsheads or puncheons of oil traded from 1751–52 to 1752–53 (Francis and Morantz 1983: table 6).

1760–1806

The HBC did not give up hope that a white whale fishery could be conducted profitably on the Eastmain (Davies 1963: xxviii). The Indians and Eskimos at LWR and GWR were encouraged to trade their oil to representatives of the post at Eastmain. At least one group of Indians indicated their unwillingness "'to follow the whale fishery' as the small quantity of oil they could trade over and above their own needs would not compensate them for their trouble" (Davies 1963: 276; also see H.B.C., A.11/57, fo. 72). On 30 July 1786 George Donald, aboard the *Moose* sloop, noted that six tents had recently been pitched along the north side of GWR by Indians engaged in killing white whales (H.B.C., A.11/45, fos. 54d–55). In 1787 it was suggested that the company either send a sloop each summer from Moose or Eastmain "to catch white whale about Whale River," or have a crew overwinter at a temporary station in order to be ready for whaling as soon as the ice cleared from the rivers in spring (H.B.C., A.6/14, fos. 11d–12). The intention was to have company employees do the whaling rather than merely to trade the products from the natives. Both approaches were tried, with indifferent results. In 1792 a schooner, with a professional "harpooner" as master, visited at least one of the Whale rivers and returned to Eastmain with 492 gallons of oil (Davies 1963: 279). In 1793 an attempt was made "to establish a temporary stockaded house" at LWR, but the men who wintered there in 1793–94 were killed (Francis and Morantz 1983: 117). In 1795 a sloop was sent from Moose "to recover any property that might remain, to fish for white whales, and to trade oil with the Indians" (Davies 1963: 280–81). The HBC whale fishery was abandoned from about 1796 to 1802.

In 1802 a shallop was dispatched from Eastmain to GWR. It returned with only 10 hogsheads of oil (Davies 1963: 281). A more extensive trip north along the Eastmain was made in 1804, when GWR, LWR, and Richmond were visited. The HBC had established a post at Big River in 1803–04, in part to counter the efforts of the North West Company, which also had a "settlement" there. Representatives of the North West Company's posts at Charlton (Island) and Big River visited GWR in summer of 1804. Thomas Alder, the leader of the HBC expedition, resolved to pursue the whale fishery at GWR and LWR with nets in subsequent years. However, in 1805 and 1806 the HBC's efforts appear to have been limited to trading oil from the Indians. The North West Company abandoned its posts on the Eastmain in 1806, and the urgency for maintaining the HBC's Big River post was removed.

1807–1822

In 1807 the post at Big River (Fort George) was still carrying on at least a sporadic trade with the Indians at GWR. In that year, Alder complained (H.B.C., B.77/a/2, fo. 11d):

> The Whale-fishing business . . . is entirely neglected; as it will be impossible, at this advanced season, to conduct it without interference with the fur trade.

He only got somewhat more than a hogshead of oil in trade from the GWR Indians and apparently did not even bother taking the "whale nett" when he visited GWR in August (H.B.C., B.77/a/2, fo. 27). Alder's superior, George Gladman, wanted to establish a post at GWR and to close the one at Big River. Although Alder had reported white whales to be "very plentiful" at GWR, Gladman was concerned that there was not "any proper station for placing the Seine" at GWR. "Little Whale River is the only station for that purpose" (H.B.C., B.77/a/2, fo. 27d).

The next Fort George (Big River) post journal available after the one ending in 1807 begins in 1816. During the interim, the "oil business" seems to have been based at Eastmain. Alder experimented (unsuccessfully) with a whale net at GWR in 1808; he obtained about 20 tons of oil and

blubber in trade from the Indians there (Davies 1963: 282–83). He obtained less oil the following year, in spite of the strong encouragement from his superiors who recognized the increase in value of whale oil caused, at least indirectly, by the war in Europe. In 1810 the whaling effort was extended to include LWR. In 1812 the schooner *Gipsey* transported blubber from LWR and GWR to Eastmain for boiling (H.B.C., B.77/a/89, fo. 36; Davies 1963: 284). Rum remained an "essential article" for the whale fishery (H.B.C., B.59/a/89, fo. 38), presumably as it was traded to the hunters for whale blubber. A frame for a house was sent to GWR in summer 1813, and the "now useless" post at Big River was finally "evacuated" (H.B.C., B.59/a/89). The HBC resolved in 1814 that "the whale fishery must continue at Eastmain" and that a post "must be set up at Little Whale River" (Rich 1959: 314).

The GWR post journals for 1814–1816 refer explicitly to fisheries being attempted at both Whale rivers (H.B.C., B.372/a/1,3). In 1814 a "permanent boiling House" was constructed on the north shore of GWR. Details are sketchy, but it is clear that (1) attempts were made to use whale nets at both rivers, (2) Indians were retained to hunt porpoises from their canoes using harpoons, and (3) oil was the main product of the fisheries. The HBC house at GWR was on a point about 1 mi from the sea, at a place where the river was about 3/4 mi wide (H.B.C., B.372/e/1, fo. 2). At low water, the middle of the river was often dry, leaving a channel on the south side about 200 yd wide and 3–4 fathoms deep. The channel on the north side was "very shoal." Alder tried to use his large net in the south channel, "as it is through here, the fish [sic] for the most part escape when pursued by the Indians." When not greatly disturbed, the whales were said to enter the river "every flood tide" a mile or "much farther" above the house, returning with the ebb. Although in 1816 a new whale net was set at GWR, the season was ruined by unfavorable ice conditions. The ice also proved too heavy for transporting the net to LWR.

The catch in all 3 years appears to have been modest. LWR produced about 3 tons of blubber, and GWR a little more than nine hogsheads of oil in 1814 (total of 3 276 gals of oil — Davies 1963: 286). Not much more than 3 tons of oil was produced at both rivers combined in 1815 (total of 1 638 gals of oil — Davies 1963: 286). In 1816 the secured catch was almost certainly less than ten. Alder blamed the failure of the fisheries on the Indians' reluctance to hunt — "only necessity would drive them to kill whales" (Davies 1963: 285). The final entry in the GWR post journal for 1816 is for 15 September; at the time, the Indians were starving and the outlook for the post sounded grim. There is a hiatus of 45 years between this journal and the next one available for GWR (1861).

From late 1816 to 1821 Fort George (Big River) was the headquarters of the "oil trade" on the Eastmain, and "the whale fishery . . . operated from there" (*Moccasin Telegraph*, Winter 1970, p. 104). The company had been "entirely starved out" from its Whale River (GWR) settlement (H.B.C., B.77/a/3, fo. 4d), but the site "continued as a Summer Settlement" (H.B.C., B.77/a/3, fo. 32d). In 1817 only about 3 hogsheads of oil were procured, all of this from GWR (H.B.C., B.77/a/4). Alder attempted to conduct fisheries at both GWR and LWR in 1818, but his men and boat were recalled from LWR in July by Alder's superiors. In his words (H.B.C., B.77/a/6, fo. 3):

> Consequently the Oil trade must inevitably be relinquished, and tis matter of much regret as the Wales are more plentifull than on former Seasons last past, and I had sanguine hopes of doing better than heretofore.

The returns from the two rivers amounted to little more than 2 hogsheads of oil and 1½ tons of blubber.

Alder's efforts were frustrated again in 1819 by problems with the availability of vessels. At least four whales were traded from Indians at Fort George, and some were netted at GWR (H.B.C., B.77/a/7). An inspector who reached GWR on 27 July found the Indians there harpooning whales "without the bar, in the open sea — a tedious process" (Davies 1963: 287). Only five had been taken to date, barely enough to meet the Indians' subsistence needs. At the end of July the same inspector reached LWR, where he found "a small net set in the usual channel on the north side of the river."

Some catch was made in 1820, and a fishery at least was attempted in 1821 (H.B.C., B.77/a/7,8). The fisheries at both GWR and LWR were said to have "failed" in the summers of 1819 and 1820, and in 1822 "the stores and most of the utensils used in the oil business were removed from Great Whale River" (Davies 1963: 288). In 1824 the post at Big River was closed (Francis and Morantz 1983: 120).

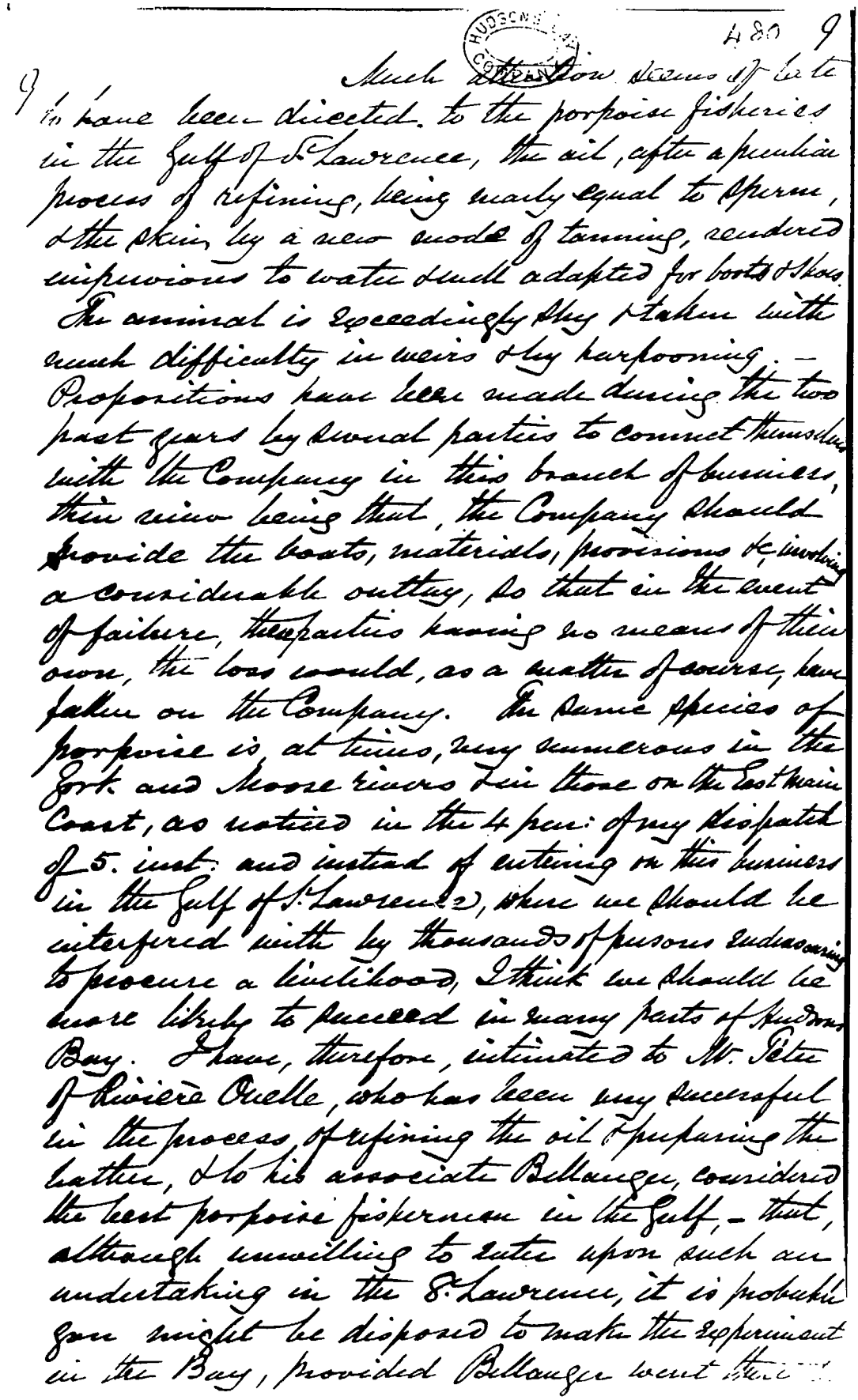
There is no doubt that the Indians and Eskimos continued to hunt white whales, mainly for subsistence, after 1822 (e.g. Davies 1963: 104). They also traded whale products, mainly oil, to the HBC sloop which made annual trips to GWR, and in some years LWR (Francis and Morantz 1983: 136–39). Five Eastmain Indians who delivered some canoes to the HBC's Fort Chimo post in June 1836 were expected to proceed to "the Gulf," presumably Richmond Gulf, "and hunt some whales," then return to the Eastmain post in early winter (H.B.C., B.38/a/2, fo. 68). At the middle of the nineteenth century the Eastmain whale fisheries were of "limited scale, being confined to such as can be shot or harpooned" (H.B.C., A.12/5, fo. 460d). There was no further attempt at an organized commercial whale fishery until the 1850's.

1851–1853

An ambitious program to re-establish major white whale (porpoise) fisheries on the Eastmain was begun by the HBC in 1851. For several years previously, entrepreneurs in the St. Lawrence region had been trying to engage the HBC in a cooperative porpoise fishing venture, but their proposals were steadfastly resisted (Fig. 9). As noted above, Têtu's patented processes for preparing white whale skins and oil made a strong impression on George Simpson, and it was the anticipated value of these products that finally spurred the HBC initiative. Simpson resolved in 1851 (H.B.C., A.12/5, fo. 480d):

> . . . instead of entering on this business in the Gulf of St. Lawrence, where we should be interfered with by thousands of persons endeavouring to procure a livelihood, I think we should more likely succeed in many parts of Hudsons Bay.

The HBC never played a major role in white whale exploitation in the St. Lawrence (Reeves and Mitchell 1984). Simpson nevertheless became impressed by Têtu's associate, Bélanger, and on the strength of the latter's experience with



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Much attention seems of late to have been directed to the porpoise fisheries in the Gulf of St. Lawrence, the oil, after a peculiar process of refining, being nearly equal to Sperm, & the skin by a new mode of tanning, rendered impervious to water & well adapted for boots & shoes. The animal is exceedingly shy & taken with much difficulty in weirs & by harpooning. — Propositions have been made during the two past years by several parties to connect themselves with the Company in this branch of business, their view being that the Company should provide the boats, materials, provisions &c involving a considerable outlay, so that in the event of failure, the parties having no means of their own, the loss would, as a matter of course, have fallen on the Company. The same species of porpoise is at times very numerous in the Ft. and Moose Rivers but those on the East main Coast, as noticed in the 4 par: of my despatch of 5. inst: and instead of entering on this business in the Gulf of St. Lawrence, where we should be interfered with by thousands of persons endeavouring to procure a livelihood, I think we should be more likely to succeed in many parts of Hudsons Bay. I have, therefore, intimated to Mr. Peter S. Rivière Quelle, who has been very successful in the process of refining the oil & preparing the leather, & to his associate Bellanger, considered the best porpoise fisherman in the Gulf, — that, although unwilling to enter upon such an undertaking in the St. Lawrence, it is probable you might be disposed to make the experiment in the Bay, provided Bellanger went there ...

FIG. 9. Part of a letter from George Simpson to the Governors and Committee of the Hudson's Bay Company in which he extolls the commercial value of white whales ("porpoises") and justifies his decision to establish a fishery in Hudson Bay rather than the St. Lawrence (H.B.C., A.12/5, fo. 480; courtesy Hudson's Bay Company Archives).

porpoise fishing in the St. Lawrence, agreed to put the Eastmain venture in his hands. Bélanger was thus guaranteed half the net profit from the first year of porpoise fishing on the Eastmain, plus one-fourth of the profits for the succeeding five years (H.B.C., A.12/6, fos. 55–55d).

Accompanied by Robert Hamilton, Bélanger reached Moose Factory on 31 May 1852 (H.B.C., A.12/6, fo. 155). Blocked from proceeding to GWR because of ice, they decided to conduct an experimental fishery in the Moose River. Bélanger dispatched three boatloads of servants and Indians to North Bluff at the river mouth. They used 10 000 poles to construct a weir, similar to those employed in the St. Lawrence. It took less than 10 days(16–24 June) to prepare the weir, and in its first 3 days of operation (25–27 June) 10 white whales were caught. The experiment was judged "very successful," and Bélanger departed Moose Factory confident that whales would "in his absence, be taken at the North Bluff weir, which will be regularly attended & the produce or catch conveyed to the Factory from time to time" (H.B.C., A.12/6, fos. 155–155d). Actually, only five more whales were caught at the North Bluff weir in 1852 (H.B.C., B.135/a/157). At the end of July, heavy gales "carried off the greater part of the Willows forming the weir," and it took 7 weeks to repair the damage. The weir was attended until the last week of October.

On 5 August 1852 Bélanger and Hamilton finally reached GWR where, in Simpson's words, "their most sanguine expectations were more than realised, as the fish [white whales] were seen going up the river in shoals of several thousands, so as to cause a swell as they passed sufficient to endanger small canoes" (H.B.C., A.12/6, fo. 250). Porpoises were similarly abundant at LWR, and there on 21 August "an experiment was made with the net." In one "haul" they secured 34 porpoises. The 800 gallons extracted from these was sufficient to fill all the casks on hand — an "entirely successful" experiment according to Simpson.

It was, in fact, a less auspicious start than Simpson wished to admit. The net, "made of 18 & 24 ___ Cod Lines," only "reached about half way across" the river (H.B.C., A.12/6, fo. 253). Twenty canoes drove the porpoises downriver toward the net, but the animals did not, as Hamilton expected, "strike the net in a body." Instead, most of them turned upon approaching it and headed back upriver, creating a swell that almost upset the canoes. The net was "entangled round a large stone at the bottom," and the men struggled to get it ashore. As they did, a few porpoises became "enmeshed" and were "subsequently driven ashore."

As the season was late by the time the oil was packaged at LWR, Bélanger and Hamilton decided not to continue their exploration to the north, and they returned south. The plan was for Bélanger to conduct a full-scale fishery at LWR in 1853, overwinter at Fort George, and launch the fishery at GWR in 1854. During the winter of 1852–1853, Simpson and Bélanger arranged for a large cargo of equipment — 2 000 cedar and 200 oak barrels, copper boilers, plate-iron coolers, "porpoise twine" made with "nothing but the best hemp" and "well twisted," and a frame for a house to be erected at GWR — to be sent to the Eastmain on board the *Prince Rupert* the following summer (H.B.C., A.12/6, fos. 262–264d,307–308).

The 1853 commercial whaling season on the Eastmain was a complete failure. Hamilton blamed Bélanger for being too slow and painstaking in his preparations at LWR (H.B.C., A.11/26, fos. 1–2). "Had Mr. Bélanger's fishery been completed by the 15 August he would without doubt have made an immense haul" (H.B.C., A.12/6, fo. 498). Not only were no porpoises caught, but Bélanger drowned in a boating accident at the mouth of the LWR in October 1853 (H.B.C., A.12/7, fo. 35). His estate's sole claim against the HBC was half the proceeds from the sale of 800 gallons of oil procured in 1852 (H.B.C., A.12/7, fo. 36d).

1854–1856

In April of 1854 Simpson appointed James Anderson, who had been at the Île Jeremie post in the St. Lawrence, to take charge of the LWR porpoise fishery (H.B.C., A.12/7, fo. 90). Soon afterward, Simpson created a separate Eastmain Coast district, consisting of Fort George and the Whale rivers, with Anderson as Chief Trader (H.B.C., A.12/7, fo. 163).

Anderson did not reach LWR in time to supervise the porpoise fishery there in 1854. In his absence, Hamilton managed to catch 423, producing 9 600 gallons of oil ($x = 23$ gal). The barrier net was raised at the mouth of the river on 10 July, shutting in all but one of "a small band" of porpoises; 123 were secured (H.B.C., A.12/7, fos. 254,407). Operations were interrupted for a few days while the net was sunk to allow a vessel to pass. A second shut-in made on 31 July resulted in a catch of 300 more porpoises.

Hamilton and his men modified procedures as their experience dictated, and gradually they developed their own techniques for catching porpoises (see Rae 1868). Initially, the barrier net (H.B.C., A.12/7, fo. 254):

> . . . was stretched across the bottom of the river, near its mouth, which by an arrangement of capstans & tackle could be quickly raised to the surface, which being done after the porpoises had passed up the stream prevented their return to sea, when they were either meshed in the net or harpooned.

Upon finding that the barrier net alone was inadequate for actually securing the animals, they devised what Simpson called a "floating fishery" upstream of the barrier (H.B.C., A.12/7, fo. 254d). Hamilton described deployment of the pond net as follows (H.B.C., A.12/7, fo. 407):

> After shutting the Porpoise into the Pond we cast off the anchors that held the net in position and then applying capstans to the chain attached to the lower Backing Rope, we gradually contracted the Pond until it became so small that we were enabled speedily to lance & shoot all the largest & strongest which were most likely to break our tackle — and again having recourse to the Capstans, drew the whole body into such shallow water as to be left dry when the tide fell; in this way we took in two hauls 173 Porpoise.

In early 1854, Simpson gave instructions to R.S. Miles, the factor at Moose Factory, to "endeavour from Moose, to establish & carry on weir fisheries upon the coast towards Albany" (H.B.C., A.12/7, fo. 56). Weirs, although they required a substantial initial investment of manpower, were less costly and, in some areas, more practical than netting operations. Simpson expected Miles to construct as many as a dozen weirs during spring of 1854, "for the management whereof one careful, handy man, aided by 2 or 3 Indians would no doubt be sufficient."

On 22 June 1854 Miles sent Alexander McLeod and James Linklater, with five Indian assistants, to Hannah Bay where they were to establish two "porpoise weirs" (H.B.C., B.135/a/161, fos. 4d,7). It was not until the first half of October that a catch was made. Word reached Moose on 16 October that two porpoises had been taken at the weir fishery. The party returned from Hannah Bay on 10 November, apparently having made no further catch. It was noted on 16 October: "The very unusual high water from the Interior together with the High tides of this season of the year is much against them as the water does not subside sufficiently low to ground the fish inside the weirs" (H.B.C., B.135/a/161, fo. 22d). In spite of this season's failure, McLeod maintained that "two rivers could be fished there [in Hannah Bay] to advantage with Nets" (H.B.C., B.135/a/161, fo. 25). There is no evidence in the Moose post journal for 1855 that any attempt was made to conduct a porpoise fishery (H.B.C., B.135/a/163). Rae (1868) referred to weir-fishing for white whales in the Moose River.

Anderson gave Hamilton "entire charge of the fishery" at LWR in 1855 (H.B.C., B.135/b/53). Furnaces were built of brick and stone, and the processing of whales ran smoothly at last:

> No carrying of skins and blubber this year, all is run up in the carriage from the waters edge into the melting house, where it can be worked at under cover (Letter from Anderson to Simpson, 14 July 1855, H.B.C., B.135/b/53, fo. 29d).

Anderson insisted that Hamilton's techniques were superior to those of Bélanger, noting that by mid-July the clay was still frozen so hard that "pickets" could not have been driven. Moreover, "no porpoises have been seen far enough up the river to have been enclosed by his nets" (H.B.C., B.135/b/53, fo. 29).

The barrier was raised at least three times, and a large catch was made. A letter from Simpson to company officials in London indicates a total catch in 1855 of 651 whales, producing 13 644 gallons of oil and 1 000 half-skins (H.B.C., A.12/8, fo. 61). However, a letter from Anderson dated 16 September 1856 states that "the number of Porpoises we have flensed & prepared for shipment [in 1856] only exceeds that of last year by 36" (H.B.C., A.11/26, fo. 23d). The catch in 1856 was 743 whales (H.B.C., A.11/26, fo. 28).

The following winter, Anderson noted that although he expected the LWR fishery to produce similar numbers of porpoises in future years, he did not expect so many skins to be saved (H.B.C., A.12/8, fo. 66). He had found it very expensive to retain so many Indians and reasoned that, with the opening of porpoise fisheries at other sites, the size of the LWR contingent would have to be reduced.

Although Simpson and Anderson had hoped to establish a porpoise fishery at GWR in 1856, logistical difficulties precluded their doing so, and their plans had to be deferred for a year. Some hunting was done by harpoon at GWR in 1856, the Indians at least having taken four whales on 19 July (H.B.C., B.77/a/30, fo. 35d).

It was another very successful year at LWR, with a total of 743 porpoises taken between 19 July and 20 September (H.B.C., A.12/8, fos. 258,449). The porpoises were found to be "in better condition," yielding more oil than in 1855 (fo. 235d).

Simpson wrote in early 1857 that the outlay for the Eastmain porpoise fishery had, to date, exceeded the return. Yet he continued to hope that, with the opening of the GWR fishery, the company could expect an annual production of 150–200 tuns (31 500–42 000 imperial gallons) of porpoise oil from eastern Hudson Bay (H.B.C., A.12/8, fo. 406d).

1857–1860

Although large numbers of white whales were present at the mouth of LWR in late June and late September of 1857, many fewer than usual entered the river during the fishing season (H.B.C., B.373/a/1). As a result, only 106 barrels (H.B.C., A.11/22, fo. 7d) or 5 001 gallons (H.B.C., A.11/22, fo. 11) of oil were secured. Daily entries in the post journal mention 155 different whales secured this season in two raises (B.373/a/1). A total of 645 halfskins was returned (H.B.C., A.11/22, fo. 11), indicating a secured catch of at least 323 whales.

In comparison, the first year of net fishing at GWR was a spectacular success. Hamilton wrote to Simpson concerning the shut-in made the night of 31 July (H.B.C., B.372/b/1; Fig. 10):

> I speedily ran short of barrels . . . & a very considerable quantity of Oil was lost, as at one time I had the Blubber of upwards of 400 Porpoise anchored in the River, and as some of it had to be there for a length of time, it was, in consequence, a good deal wasted [also see B.77/a/30].
>
> The total number of Porpoise taken here this Season amounts to 1 043 and if we had met with no detention we would have had a good number more, as many still remain inside the Barrier [on 20 September], which we are unable to work off this Autumn; we must have enclosed fully 1 300 when we raised our Barrier & it did not appear to diminish the number outside, as they continued very numerous on the Bar for a length of time.

The total production at GWR in 1857 was 1 325 half-skins and 21 021 gallons (H.B.C., A.11/22, fo. 11).

The following year was another poor one at LWR. Again, large numbers of porpoises were reported at the river's mouth in late June, and on 22 July "with the morning tide the porpoise came up in great numbers to opposite the Skin house" (H.B.C., B.373/a/1, fo. 42d). Only one shut-in was made, however, which secured 50–60 whales, at least 10 of which were shot, harpooned, and brought ashore. At least six more were taken by the Eskimos before the net fishery commenced. Production for the season was merely "one Kettleful of Blubber" (H.B.C., B.373/a/1, fo. 47d).

The fishery at GWR was again highly successful in 1858. Hamilton reported that "altho' we have not taken quite so many Porpoise as last year we have made a good deal more Oil" (H.B.C., B.372/b/1, fo. 12; also see A.11/22, fo. 20). He went on to note:

> I have never seen Porpoise so numerous as they were this Season on & about the Bar of our River, even yet there are a great number on the coast, but the season is too far advanced for them to enter the River.

According to Reverend John Horden, who was at GWR when the barrier was raised (he arrived there on 26 July), "about a thousand were caught which will yield eight hundred barrels of oil" (G.S.A., Mf 78–13, reel 7 [A-80], C.M.S.).

Great Whale River 20th Sept. 1857

Sir George Simpson

Dear Sir

On the 19th June I had the honor of addressing you from Eliot, when I gave you, up to that date, all information concerning the affairs in this quarter

I came forward here during the latter end of June & used every exertion to hurry forward the preparations for our Fishery; all of which I am happy to say were completed by the time that Porpoise commenced to enter the River; as our Men, however from Moose did not reach here until the 25th July, I was much pressed, & only got my most necessary work completed the same day I raised the Barrier

Barrier Net &c On the 30th July I laid down our Barrier Net & the same night at about 12 made our Haul when I am happy to say we made a most successful shut in; Our operations went on most smoothly, & so very expeditiously, that I speedily ran short of Barrels, as I could fill them much faster than our large Boat was capable of transporting them from the other River; owing to this drawback our Fishery was, of course, much retarded & a very considerable quantity of Oil lost, as at one time I had the Blubber of upwards of 400 Porpoise anchored in the River, and as some of it had to lie there for a length of time, it was, in consequence, a good deal wasted

By arrival of the "Marianne" on the 9th inst. I received a good supply of Empty Barrels, and since then our work has gone on well; the Vessel is now fully loaded, & I will still have a considerable quantity of Oil on hand which she is unable to take, probably

FIG. 10. Letter from Robert Hamilton to George Simpson, dated 20 September 1857, recounting the results of porpoise fishing at Great Whale River in 1857. A total of 1 043 white whales were taken that year (H.B.C., B.372/b/1, fos. 1–1d; courtesy Hudson's Bay Company Archives).

nearly one hundred Barrels; By Bill Lading which Mr. Anderson sends, You will see the quantity of Oil shipped & I sincerely hope that our fishery of this Season may prove satisfactory

Mr. Anderson was kind enough to come forward here the day before I raised the Barrier, & rendered me much valuable assistance at the commencement of my operations, he is again here at present for the purpose of clearing the vessel, so that I am enabled to devote the whole of my time to the fishery work.

The total number of Porpoise taken here this Season amounts to 1043 and if we had met with no detention we would have had a good number more, as many still remain inside the Barrier, which we are unable to work off this Autumn; we must have enclosed fully 1300 when we raised our Barrier & it did not appear to diminish the number outside, as they continued very numerous on the Bar for a length of time

I must plead press of time for writing You so briefly, for I have very much at present to attend to, as my Nets & Fishing Material being still in the River

Respectfully I remain
Your Most Obt Servt
&c &c Robt Hamilton

2

Great Whale River 24th Dec 1847

Code'n Gladman Esq
Ruperts River District

Sir

Several of the Indians attached to this Post have made complaint that Mauk-coush & other Indians belonging to Rupert's River District, have, at various times, & more especially during the past Winter, made encroachments upon their Lands, and been the cause of injuring

FIG. 10. (Concluded)

LWR made a strong resurgence in 1859. The sources we examined did not indicate the exact number of porpoises caught, but by 15 August, 336 had been secured and more were expected before the season closed (H.B.C., A.12/10, fo. 336d). Anderson reported on 23 September: "At L.W. River the number of porpoise caught exceeds that of former years and the 'Anne Lucy' returns with good cargo" (H.B.C., A.11/22, fo. 3). Elsewhere (A.11/26, fo. 34d) he said it differently: "We have been more fortunate in the number of Porpoise caught, than for the last two years." The largest catch at LWR to date was the 743 taken in 1856. In the "last two years" (1857 and 1858), the catches were more modest, 323 being the highest figure we could document. Thus, we suspect that the 1859 catch was higher than 336 and possibly greater than 743.

GWR fared less well in 1859 than the company had come to expect. "The continuous rains increased the height & strength of the current to such an extent that after a large number of porpoise had been shut in the Barrier gave way twice & over 500 escaped" (H.B.C., A.11/22, fo. 3; also see A.11/26, fos. 34–34d). Nevertheless, by 15 August 300 porpoises had been secured (H.B.C., A.12/10, fo. 336d).

By 1859, the Eastmain porpoise fisheries were showing signs of economic distress. Anderson proposed the following measures to restore their profitability (H.B.C., A.11/22, fo. 3d):

1) Have a cargo vessel come to the Eastmain from England every other year rather than annually;
2) Use a small boat to carry fur returns to Moose Factory in years when no vessel visits the Whale rivers;
3) Reduce the number of servants involved in the fisheries;
4) Use iron tanks to store oil, thereby reducing leakage; and
5) Fish the rivers alternately "so as to give the Porpoise full play in the Rivers every second year."

Consideration was also given to the opening of new fisheries. Hamilton wrote to Simpson (H.B.C., B.372/b/1, fos. 20d–21):

> With regard to the establishment of Weir Fisheries in the Bay I can only say on this Coast there is no place adapted for anything of the kind, but from what I have heard of Hannah Bay & the coast towards Albany, I should say that something might be done there, altho' before expressing any decided opinion I would like to see the Coast & ascertain that the Porpoise were in the habit of visiting the same places year after year . . . as for Stake or Weir Fisheries, I am now of opinion that they will never succeed so well as those set with Nets, altho' I have no doubt they would at the establishment be less expensive.

There is little information available concerning the 1860 season. It is nevertheless clear that Francis's (1977) and Francis and Morantz's (1983: 147) statement that more than 2 300 whales (over 1 500 at LWR and "another" 800 at GWR) were taken in 1860 is wrong. Anderson wrote to Simpson on 28 December 1860, from LWR, that a total of 1 511 porpoises had been killed, expected to produce about 1 000 barrels of oil (H.B.C., A.11/26, fo. 40). Francis and Morantz cited this letter as the source of their statement that over 2 300 whales were taken at the two rivers that year, but there is nothing in the letter suggesting a total catch of more than 1 511. This large catch may have been made at LWR. However, in another letter from Anderson, of the same date but addressed to W.G. Smith in London, he claimed to be giving "the final results of last Summers fishery at Great Whale River": 1 511 porpoises yielding 1 000 barrels of oil (H.B.C., A.11/26, fos. 42–42d.) Hamilton at GWR had stated in July 1860 that "porpoise are now becoming pretty numerous on the Bar of this River" (H.B.C., B.372/b/1, fo. 32d). He was "in hopes we will have a successful Fishery." However, his subsequent correspondence in October of the same year makes no mention of the fishery.

On 20 September, by which time all the gear had been stowed for the winter, "a very large number" of hides remained uncleaned (H.B.C., A.11/26, fo. 40). Anderson wrote of his intention to have them cleaned and salted "as soon as the weather permits in Spring" (H.B.C., A.11/26, fos. 40–40d). Thus, this large haul could not have been shipped until summer 1861. The returns from GWR in 1861, presumably comprising mainly the production from the 1860 fishery, included 1 956 porpoise halfskins and 145 tons of oil (H.B.C., A.11/22, fo. 25). Our conclusion is that 1 511 porpoises were taken in 1860, probably all or most of them at GWR. Note that Francis and Morantz (1983: table 9) gave returns of 1 929 halfskins in 1860 and 412 in 1861 for the Eastmain District, including both GWR and LWR.

George Simpson died in the autumn of 1860, and although he had managed to preside over the heyday of porpoise fishing on the Eastmain, substantial catches were still to be made at the Whale rivers.

1861–1867

We have no information on a catch at LWR in 1861. Some catch was made at GWR, but according to Anderson the fishery there was "not very productive" (H.B.C., A.11/22, fos. 5,22).

A report by Bishop Horden attests to a poor season at LWR in 1862 (G.S.A., Mf 78–13, reel 16 [A-89], C.M.S., C1/0 App. B):

> The master & men were in a state of great anxiety: day & night they watched the whales, hoping to see them enter the river, that they might shut them in: but in they would not come. On the bar and outside they were in hundreds, but the barrier net, which would prove so fatal to them, they would not approach.

The season was, in fact, a complete failure in spite of an intensive effort by post employees from early July through late August (H.B.C., B.373/a/3). A "few" were shut in on 18 July, but "not enough to make it worth keeping on the kegs." On 31 July it was noted in the post journal: "I have never seen them more numerous in the mouth of the river . . . ."

At GWR, on the other hand, several hundred porpoises were taken in 1862. On 7 August Hamilton had what he estimated to be "about 350" in the pond net. Journal entries through 3 September account for 226 porpoises actually secured and processed (H.B.C., B.372/a/5). The amount of porpoise oil produced at GWR in 1862 was 8 000–9 000 gallons (H.B.C., A.11/26, fo. 47), which if converted conservatively at 40 gallons per whale, would represent a catch of about 200–225 animals. Bishop Horden (G.S.A., Mf 78–13, reel 16 [A-89], C.M.S., C1/0, App. B) observed that by the close of the porpoise fishery at GWR this year,

"food was abundant . . . and meat was hanging about in all directions."

The discouraging performance at LWR continued in 1863. Porpoises came up the river repeatedly in "good numbers," but the barrier was raised only once (H.B.C., B.373/a/3). About 50 were shut in, of which about 30 were taken in the pond net. Of this number, only eight were finally brought ashore. GWR made a strong showing in 1863. Two successful raises in late July and early August yielded a total of 786 porpoises (H.B.C., B.372/a/5), producing close to 600 barrels of oil (H.B.C., A.11/26, fo. 51d).

During the next two years, 1864 and 1865, porpoises were numerous at both rivers. For example, an estimated 600–700 were on the bar at LWR on 10 July 1864 (H.B.C., B.373/a/3, fo. 10), and 800–1 000 off Sandy Point at the mouth of GWR on 27 July (H.B.C., B.372/a/6, fo. 27). In early September 1864 they were "more numerous in the [Great Whale] River than we have ever seen them . . . [with] a great number of young ones amongst them" (H.B.C., B.372/a/6, fo. 34d). Despite great effort, however, the catch was modest. In four raises at LWR in 1864, only about 140 porpoises were secured (B.373/a/3); in two raises in 1865, about 130 (B.373/a/4; A.11/26, fo. 60). Of the porpoises taken in 1865 it was written (H.B.C., A.11/26, fos. 60–60d):

> . . . they were small, and in very poor condition, and returned very little Oil. It is very fortunate we got what we did, as it has given us meat for our dogs for this winter.

The fishery at GWR was dismal both years. In 1864, "not more than" 80–100 were shut in on 8 August, and only 20 of these were finally secured (H.B.C., B.372/a/6); in 1865 the net fishery was a "total failure" (H.B.C., A.11/26, fo. 60).

In 1866 porpoises were again "very numerous" and seen "in great numbers" at LWR during late July and early August, but a sufficient number never swam upstream of the barrier to make a raise worthwhile (H.B.C., B.373/a/4). The only information we have on the fishery at GWR in 1866 is that contained in the LWR post journal (H.B.C., B.373/a/4). The barrier was raised at least twice with "upwards of 500" porpoises shut in on 13 August and an unspecified number on 28 August.

Only 28 porpoises were secured from the single raise made at LWR in 1867 (H.B.C., B.373/a/4). About 100 were taken at GWR — "we have not been as successful as last year" (H.B.C., A.11/26, fo. 65d). The trader at GWR, George McTavish, reported that he had never seen the porpoises more numerous "off the mouth of the river" than they were this year. McTavish, incidentally, had been present at GWR for the good catches in 1863 (*ca* 780) and 1866 (*ca* 500).

1868–1877

Contrary to the impression given by Francis (1977) and Francis and Morantz (1983: 147) that the commercial porpoise fisheries at GWR and LWR were abandoned permanently in 1869 and 1870, respectively, we have definite evidence that the HBC continued to conduct such a fishery, however unsuccessfully, at GWR through at least 1877.

McTavish decided after struggling to catch 160 porpoises at GWR in August 1868, to give the river "a thorough rest for a few years, when I have not the least doubt the Porpoise will resume their former habits, and admit of the barrier being set in the same place it was at first, where the river is broader, & the current not so strong" (H.B.C., B.373/b/1, fo. 35). So in 1869 the net fishery was attempted only at LWR. McTavish set the barrier net there on 20 July and "kept it down" until 14 August. The porpoises, however, "would not go far enough up the river to give us a chance of shutting in a few" (H.B.C., B.373/b/1, fo. 54). Not only did this mean the company would take a financial loss on its fishery, but the shortage of dogfood would be felt acutely at both posts the following winter. Although in the above letter McTavish noted that porpoises were "numerous" at GWR in August 1869, he did not regret his earlier decision to suspend the fishery there. He reflected that winter (H.B.C., B.373/b/1, fos. 69–70):

> As I happened to be at Great Whale River at the usual time for the porpoise to enter the river, I watched them closely, but they never once went up, even to where our barrier is generally placed, so that it was just as well that no preparations were made for fishing that river last summer.

Both rivers remained unfished during 1870 and 1871, except for the harpoon hunting done by the Indians and Eskimos, much of it on the company's behalf. Having heard that the porpoises ascended GWR "in considerable numbers" in summer of 1871, however, J. Lockhart, the new factor at LWR, resolved to resume the fishery at GWR in 1872 (H.B.C., B.373/b/1, fo. 101). He made plans to go to GWR "to superintend all the preparations for the porpoise Fishery" there (H.B.C., B.373/b/1, fo. 105). The only further information we could find concerning the 1872 fishery was in the LWR post journal (H.B.C., B.373/a/5). On 24 July, an Indian who just returned from GWR reported that there had been "no raise for porpoise yet." On 28 August several men were put to work "digging a hole for Dogs Meat when it comes from G.W.R.," and on 5 October a boat arrived from GWR "with a load of dogs meat." From these events, it can be inferred that Lockhart followed through with his plans to prosecute the fishery and that a catch of porpoises was made at GWR in 1872.

A similar series of inferences can be made to establish that a fishery was conducted at GWR in 1873. In July of that year, the factor at LWR, now John Clarke, recruited a number of Indians from the vicinity of his post to go to GWR and assist James Cotter with the porpoise fishery there (H.B.C., B.373/a/5, fo. 75d; Letter dated 13 July 1873, B.373/b/1, fo. 119; also fo. 121). Once again, several boat loads of "dogs meat," that is, whale meat for winter dogfood, were shipped from GWR to LWR, implying a successful porpoise fishery at the former locality (B.373/a/5, fos. 78–79).

There is less information about the GWR fishery in 1874. In a letter sent from Fort George, 13 January 1875 (H.B.C., B.373/b/1, fo. 160b), we find:

> It is a pity that you did not send the Porpoise Twine to Great Whale River by the boat last fall. Millar I believe is going to send for it. I would like to know the amount of 2 & 2½ inch Staple Rope now at Little Whale River. You will send it all to Great Whale River next summer.

Thus, the interest in a porpoise fishery at GWR appears to have remained alive, but we cannot confirm that any shut-in was actually attempted in 1874. At LWR on 27 August 1875 (H.B.C., B.373/a/6):

> Porpoise up the River in great numbers every day for nearly the last fortnight. They come up far enough to make a good shut in if there was Nets for the purpose and another Boat at the place.

Operations were definitely suspended in 1875, then resumed in 1876. James L. Cotter wrote from Fort George to William Millar at GWR, 26 February 1875 (H.B.C., B.373/b/1, fo. 170a): "There will be no fishery next summer but the year after that I intend to come to Great Whale River to conduct the operations." Cotter apparently planned to visit GWR in summer 1875 in order to decide on a favorable location for the "upper barrier." He also noted that a new chain had been ordered for the GWR barrier net. Cotter wrote to Millar from Fort George on 11 April 1876 (H.B.C., B.373/b/1, fo. 185):

> If you can gather enough hands to make the ——— and the drive before I come, and if you get a good chance of a shut in, of course you will do it. I look to you to carry on the work and to make every ——— to get things in readiness against the time the porpoise go up the River.

The fishery was "almost a failure," with only 18 porpoises taken at GWR (H.B.C., B.373/a/6, fo. 62). Again, it appeared to some that a good chance was missed at LWR (H.B.C., B.373/a/6, fo. 62d):

> The Porpoise were up to opposite the House today [31 August 1876] in great numbers — a Splendid chance to shut in more than were got at G.W.R. the last 3 fisheries together. It is too bad so many porpoises & no means of getting any and about a Score of poor Starving Dogs to be kept at the place this winter.

Cotter remarked in July 1876 that "If the Whale Fishery is to be carried on [at GWR], a somewhat stronger staff of men will be required" (H.B.C., B.77/e/11).

The barrier nets may have been used for the last time in 1877. That year, the factor at LWR was ordered to send a contingent of his best "Homeguard Esquimaux" to GWR "with their families on the last ice," in order to assist with the planned porpoise fishery in summer (H.B.C., B.373/b/1, fo. 196). The "total failure" of the porpoise fishery at GWR in 1877 was described in a letter from Miles Spencer at Fort George to Samuel Parsons at Moose Factory, 30 September 1877 (H.B.C., B.373/b/1, fo. 204):

> When I last wrote I mentioned how the porpoise had behaved up to that date and I was in hopes after the Mink [a boat] left that they would enter the river with high tides as freely as in former years, but I am sorry to say it only proved a disappointment as they never went even once over the barrier. I kept the nets down and watched until the 18th ulto: seeing then that there was no use waiting any longer and the Indians anxious to get away I gave up in despair and left for here on the 20th.

Spencer ventured to explain the fishery's failure not by a lack of porpoises but by the combination of unusually good weather, land winds, and low tides. In his experience, white whales tended not to enter the rivers "freely" in calm weather, and he thought they got plenty of "fresh water outside the bars when the wind is off the land" (see below). He also was not willing to abandon the prospect of resuming the fishery at LWR, where the porpoises supposedly had "entered that river in large numbers and freely during the last few years."

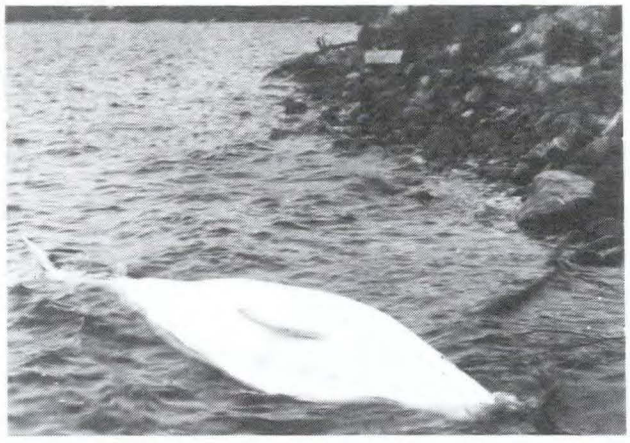

FIG. 11. A white whale taken at Great Whale River, year not known. (Photo courtesy Hudson's Bay Company, file no. W-20).

1878–1899

From 1878, white whale hunting continued at both GWR and LWR, but apparently only by harpooning and shooting (Figs. 11, 12, and 13; Tables 3, 4). Up to 34 whales were taken in one season (1892) during this period at the two rivers combined. A Fort George report dated 1885 indicates that "since 1869 Great Whale River has been kept up wholly for a porpoise fishing & landing station" (H.B.C., B.77/e/12). An inspector remarked in 1891 that the rundown condition of the buildings at GWR was "owing to the fact that, since the failure of the fisheries, the place has been practically abandoned until last year when the business was removed to it from Little Whale River" (H.B.C., B.235/e/32a; B.372/e/5).

1900–1950

According to Doan and Douglas (1953: 1), the HBC resumed commercial white whale hunting at the Whale rivers at "about the turn of the present century." This episode supposedly ended about 1905, due both to a decrease in the abundance of whales and to concern about "severely decreasing a source of native food." These authors claimed the records of the operations "are now destroyed." Melvill (1915: 26) may have been referring to this attempt when he wrote: "Of late years an effort has been made to re-establish this fishery, but without success." Our reading of the GWR correspondence for 1890–1908 suggests that there was no major porpoise fishery at either river during this period (Table 5). We take Turner's (1894: 174) claim that white whales were caught at LWR "to the number of 500 each year, although the capture is steadily decreasing," to refer to the years before 1878.

We found little evidence of substantial catches at the Whale rivers after about 1905 (Tables 3, 4, 5). However, the

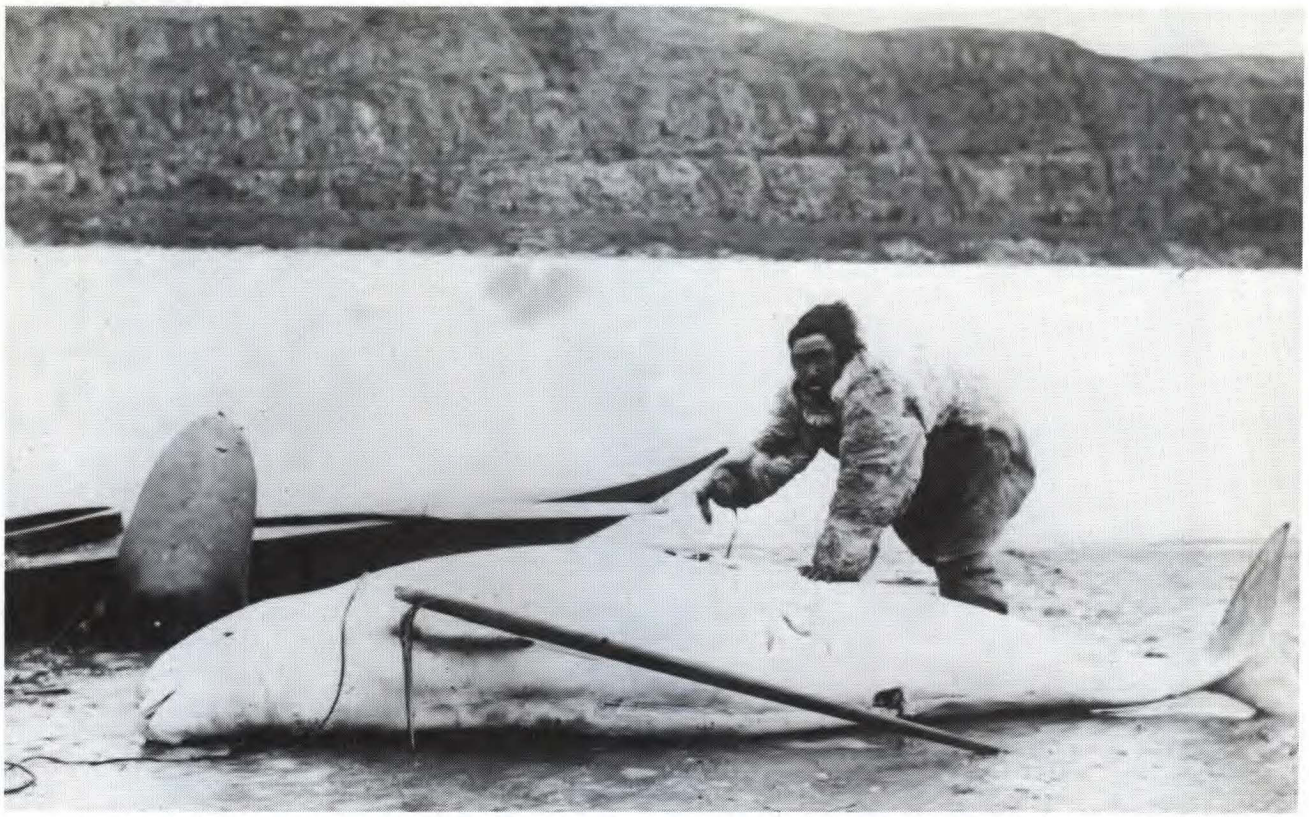

FIG. 12. A white whale taken by a hunter at Little Whale River, 1872. The hunter is holding the harpoon head, attached to a dan, or sealskin float. (Malloch Collection, MP381(7), and HBA Album 1, no. 63, in Notman Archives, McCord Museum, McGill University, Montreal; photo by J. L. Cotter).

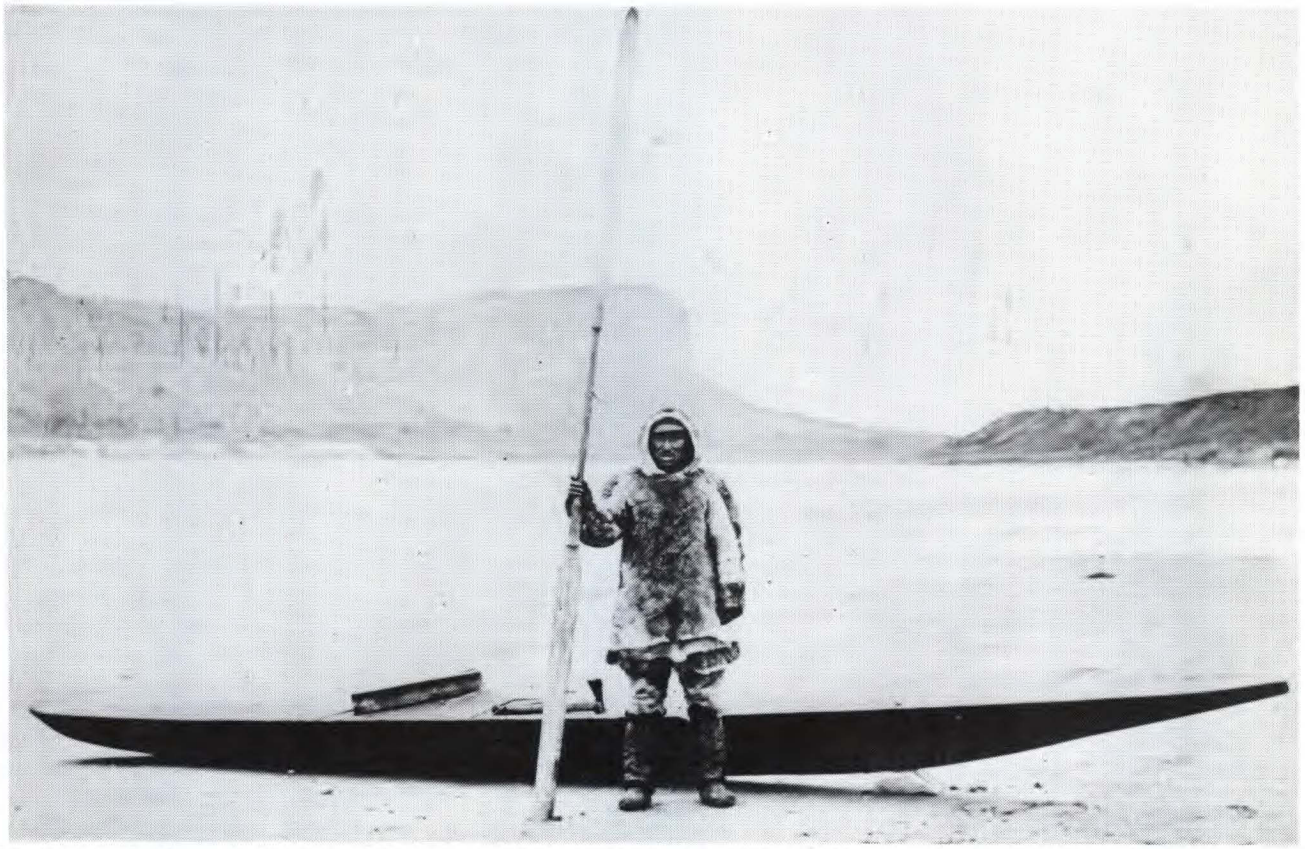

FIG. 13. A native hunter with his kayak at Little Whale River sometime between 1865 and 1875. (Notman Archives, McCord Museum, McGill University, Montreal, MP391(8)).

TABLE 5. Returns of porpoise halfskins and porpoise oil from GWR, 1888–1905. Source: H.B.C., B.372/b/2–3.

Year	Halfskins	Unit value ($)	Valuation ($)	Porpoise oil (gals)	Valuation ($)
1888	18	1.46	26.28	—	—
1889	25	1.46	36.50	72 (2 bbls)	—
1890	11	2.80	30.80	—	—
1891	72	1.85	133.20	128	—
1892	51	0.50 dry (5) 1.10 salted (46)	53.10	56	—
1893	28	1.10	30.80	92	—
1894	22	1.20	36.40	36	8.62
1895	9	0.80	7.20	—	—
1896	8	0.95	7.60	36	—
1897	32	0.84	26.88	—	—
1904	64	1.50	96.00	—	—
1905	12	—	—	1½ tuns	—

TABLE 6. Cargo landings from the *Discovery* in London, 1905–1911. Source: H.B.C., A.95/94.

Year	Product	Amount	Weight
1906	Porpoise skins (marked "GWR")	16 lg. 6 med. 4 sm.	3 cwt, 1 qrs, 0 lbs
1906	Dry Porpoise (marked "GWR")	8 med.	0 cwt, 1 qrs, 0 lbs
1906	Dry porpoise (marked "GWR")	1 bag	1 cwt, 2 qrs, 6 lbs
1911	½ Porpoise Hides (marked "GWR")	1 cask	2 cwt, 1 qrs, 26 lbs
1911	Oil (marked "GWR")	11 casks (or 19? casks)	—
1911	Porpoise Hides (marked "GWR")	1 cask	2 cwt, 3 qrs, 21 lbs
1908	½ skins Porpoise, Salted (marked "GWR")	2 casks: 23 lg. 22 med. 9 sm. 9 stretched	6 cwt, 0 qrs, 4 lbs
1907	Porpoise sides (marked "GWR")	13 lg. 2 med. 4 sm.	2 cwt, 0 qrs, 23 lbs

steamship *Discovery* carried goods to and from Charlton Island for the HBC from 1905 through 1911 (H.B.C., C.4/1, fos. 37d,38; C.1/267–272), and records of her landings in London indicate porpoise hides were still being exported from GWR (Table 6). Only in her last two years of this service (1910, 1911) did the *Discovery* visit anywhere other than Charlton Island. Thus, it can be assumed that any porpoise products returned by the *Discovery* in 1905–1909 were from the James Bay (or Eastmain) district.

The RCMP inspector at GWR reported in 1921 that the native population of 450 (mainly Eskimos) remained at the post in summer, "making no effort to hunt, although the coast was alive with white whales and seals" (Perry 1922: 35). In 1927 Burwash (1927) visited GWR and remarked on the "many white whales" seen at its mouth. He implied that there was no large-scale hunt at this time. Balikci (1960: 149) noted that in 1957 hunting returns were low around GWR because the area was "generally poor in sea mammals".

In August 1921 the HBC reestablished a post at Cairn Island, Richmond Gulf (H.B.C., B.182/a/12). A French company, Revillon Frères, opened a post nearby in 1922. Whale nets were set near the HBC post in July 1925, and by the 11th, three white whales had been taken in them (H.B.C., B.182/a/14). That autumn, a trip was made "to one of the islands for Whale & Walrus meat which has been cached there." This was mainly for winter dogfood. In December and the following March (1926), another cache of whale meat in the southwest part of the gulf was used. During the summer of 1926, the company took at least three white whales in its nets, and local natives harpooned or shot six more (H.B.C., B.182/a/15). The HBC net was set in the Clearwater River. In November 1926 a cache of whale meat on the east side of the gulf was used. Shortly before the Richmond post closed permanently in mid-July 1927, natives left in "the Dinghy . . . to go whale hunting in the East side of the Gulf." They returned with two whales. Returns for the Richmond post included 38 lbs of porpoise hide in 1926 and 99 lbs in 1927 (G. Whitman, pers. comm., 12 March 1980).

In 1962 the trading store (presumably the HBC) in GWR extended credit to people wishing to participate in a "Richmond Gulf [whale?] fishery" (P.A.C., RG 85, vol. 634, file 251-3-22, part 3).

Difficulty of Determining Catches in Some Years

It is often difficult to judge from the post journals exactly how many whales were taken in a season. For example, at GWR in 1864 the first (and only) raise was made on 8 August. The writer estimated that "not more than" 80–100 porpoises were in the river above the barrier (H.B.C., B.372/a/6, fo. 29). When they buoyed the pond net and made a drive, he guessed that 80 were shut in, "at a rough estimate." He noted that "all but about half a dozen were shot the same evening, & six of the dead ones were taken ashore for food for the Indians." The next day they "contracted the Pond & took ashore the Net, out of which we have as yet taken only 14 porpoise, but we fully expect to get double that number yet

from the same Pond" (fo. 29d). On 11 August, "got one Porpoise from our Pond, a large White one." The supply vessel *Fox* attempted to leave the post on 12 August and became fouled with the barrier net. After describing the difficulty experienced in getting the vessel free, the writer noted: "a very fortunate thing it was for us there happened to be no porpoise above our Barrier or this event might have lost us some" (fo. 30). On the same day, "found another porpoise below to day — but we may have over estimated them in the Pond, our first sight the day our drive was made." Later in the week (18 August) we learn that the women cleaning porpoise skins had "only managed to clean 8 Whole Skins, as the Skins are very hard to clean." No further mention is made in the journal of how many whales were netted at GWR this season.

From the information available in the GWR post journal, we would estimate that between 16 and 74 were killed and secured. In this instance, it is fortunate that the LWR journal contains supplementary information. On 16 August the vessel *Chimo* arrived at LWR with the news that "A poor raise of porpoise was made at G.W. River only 20 good porpoise" (H.B.C., B.373/a/3, fo. 78d). To be conservative, then, we consider the netted catch to be only 20 whales this season at GWR, although it seems likely that at least a few more than this were killed (but perhaps not recovered).

White Whale Hunting in Other Areas

Belchers and Other Islands of Eastern Hudson Bay

We have located little new information on white whale hunting at the Belcher and Sleeper islands, although these islands' inhabitants are known to have hunted white whales "with some regularity" during much of the twentieth century (Sergeant 1968: 393; also Flaherty 1918; Twomey and Herrick [1942]: 174, 289, 310, 319; Schwartz 1976). The catch apparently was never large (e.g. McLaren and Mansfield 1960), although as many as 14 whales were reportedly taken at Sanikiluaq (Eskimo Harbour) in 1977 (Mitchell 1982: table 4). Evans (1958: 24) estimated the annual catch throughout the Belchers as 20 whales. At least during the 1950's and 1960's, whales were driven "into a restricted place such as a river mouth or cove, where they [were] either killed and recovered from the bottom, or driven ashore and stranded" (Freeman 1964: 59). The occurrence of white whales near the islands "is almost exclusively limited to the open-water season"; small numbers occasionally become trapped by rapidly forming sea ice and are forced to overwinter in deep sheltered bays (Freeman 1967). The eastern shore of Snape Island (Omarolluk Sound) was a good site for hunting white whales in summer (McLaren and Mansfield

TABLE 7. Information on white whales, from Port Harrison and Port Harrison Fur Farm post journals. See appendix 6 of Finley et al. (1982: 54–55) for additional data extracted from this set of journals.

Date	Comments	Archival Code: B.467/a/-
11 July 1921	Native sent to Nowliapik R. to set whale nets for the company; party left to film Eskimos harpooning whales there. [Not 11 *June* as in Finley et al.]	2, fo. 14
9 Aug. 1921	Total of 5 [not 2 as in Finley et al.] white whales netted.	2, fo. 21
25 April 1923	Native sent to Povungnituk to "prosecute the Trout and Whale fishery there. We hope to secure thereby immense quantities of dog feed, at a low price...."	3, fo. 35
19–29 July 1923	Took one white whale from net.	4, fo. 8
2–3 Aug. 1923	Sent *Nonsuch* 20 mi S to retrieve whale net. [Not 2 *July* as in Finley et al.]	4, fo. 9
28 Aug. 1923	"At work... at whale oil."	4, fo. 11
22 June 1925	"Joe Gibbons and crew have got forty one seals, Six square Flippers and two Porpoise since last heard from [9 June]."	7, fo. 4
17 July 1925	"Two whale nets were put out in the narrows."	7, fo. 11
10 Sept. 1926	"Setting whale net."	8, fo. 22
8 Oct. 1926	Two natives "went off... with whale nets."	8, fo. 24
11 Oct. 1926	The natives who got "a fine white whale" were the ones who set their nets on 8 Oct.	8, fo. 24
1927	Returned 85 lbs. of porpoise hide; according to G. Whitman (pers. comm., 12 March 1980) the return was 346 lbs this year.	[Unclass. Docs, Bay 1, Shelf 8, "Statistics" folder]
27 July 1928	*Seal* returned from hunt (apparently to Walrus Island) with no walruses but 2 white whales.	9, fo. 29
1928	Returned 236 lbs. of porpoise hide.	[G. Whitman, pers. comm., 12 March 1980]
22 June 1930	Party returned from the "outer islands" with a white whale and some seals.	10, fo. 7
23 Sept. 1930	Rupert returned from hunt for dogfood; went as far as Ottawa Islands; got 7 polar bears, saw many seals "but no whales or walrus."	10, fo. 44
30 Jan. 1931	Natives travelling from Povungnituk to Port Harrison "found two dead whales."	10, fo. 80
4 May 1931	A white whale seen at floe edge within 50 mi. N. of Port Harrison.	[B.416/a/3, fo. 76]
27 May 1931	HBC employee making a whale net.	10, fo. 111

1960: 7). Bell (1886: 14DD) saw some white whales near Gilmour Island, central Ottawas, in 1885; and Manning (1976: 33) saw a group of 12 off the west central Belchers on 22 September 1971. Natives on the South Belchers killed one white whale in late July 1938 and 3–4 in early July 1940 (H.B.C., B.388/a/1–2). One kayak-hunter took three whales in 1959 and again in 1960 (Freeman 1964: 59; also see McLaren and Mansfield 1960).

A few references to white whales are contained in the Mansel Island HBC post journals covering the years 1930–1932 (H.B.C., B.438/a/1–3). One was killed in the harbor on 10 October 1930 for dogfood; another, found later the same month beached. On 21 August 1945 three white whales were shot near the coast of Mansel Island by Eskimos accompanying a Geodetic Service crew (Manning 1949: 119).

Port Harrison

The Port Harrison (Inukjuak or Inoucdjouac) HBC post was established in 1921, and there are 18 post journals for the period 1921–1939. Finley et al. (1982: 54–55) extracted data from eight of these. We checked all 18 journals for information on white whales (Table 7). The catching of white whales appears to have been casual at this HBC post during the period covered by the journals. During at least the 1920's and 1930's, the Revillon Frères post at Port Harrison was active as well; so the HBC records probably account for only part of the white whales caught and traded there at this period. It was stated in the Cape Smith post journal in September 1933 that "the Hudson's Bay Co. and Revillons Frères Co. are in open opposition at Harrison and Povungnituk" (H.B.C., B.398/a/7, fo. 20; also see B.398/a/1, 1922–23).

Manning (1946: 84) found in 1944 that the Port Harrison hunters took only "a few" white whales and made no special hunt for them. Finley et al. (1982) summarized information from the RCMP game reports on white whale hunting at Port Harrison during the 1950's, noting that most of the catch was made at the Nastapoka River. The annual catch was estimated as 40 whales during the 1950's (Evans 1958: 24). In 1962 a group of Port Harrison hunters took 57 whales at the Nastapoka River in one day (P.A.C., RG85, Vol. 634, file 251-3-22, part 3). This was described as "a usual occurrence each year at the Nastapoka." Plans were made within the Industrial Division, Northern Administration Branch, Department of Northern Affairs and National Resources, to assist the Port Harrison whalers in expanding the fishery at the Nastapoka. Some white whales also occur north of Port Harrison in summer, judging by the sighting of a small group near Elsie Island on 3 August 1949 (Manning and Macpherson 1949: 129).

Povungnituk

The HBC post at Povungnituk Bay was opened in 1923. There are 10 post journals covering the period 1923–1939 (Table 1). Finley et al. (1982: 55) extracted some data from these journals, but our reading revealed additional information (Table 8). Judging by the journals, white whale hunting and netting were not important activities at this post during the period covered. Much of the hunting at Povungnituk (and at the Belcher Islands) is said to have involved shooting from canoes and whale boats (see Balikci 1960: 145) over deep but clear water, with no attempt made at harpooning (Doan and Douglas 1953: 20). Carcasses, "readily seen lying on the bottom," were retrieved with grappling hooks. Hunting loss in this fishery was presumably high (also see Evans 1958: 24).

A kill of 128 white whales made at Povungnituk in 1948, apparently by driving, was considered exceptional, as "normally only small numbers were taken" (Finley et al. 1982: 17). However, another drive resulting in a catch of more than 100 had occurred in 1944 or earlier (Manning 1946: 84). The estimated annual catch during the 1950's was 30 whales (Evans 1958: 24). A catch of 103 whales was made one year during the 1960's (Finley et al. 1982: 17). Recent catches by the settlement at Povungnituk are not included in official catch statistics (Boulva 1981; Finley et al. 1982).

Cape Smith

The HBC post at Cape Smith (Akulivik) was established in 1922. There was an active interest in the porpoise hide trade at this post (Table 9). Whale nets were set by the natives on their own behalf and by the HBC. Apparently most catches were made with nets, although some driving and shooting of whales also occurred. Floe-edge whaling could begin as early as 11 April and last through June. In one year (1930) a whale net was set as early as 2 July, but generally netting was not very successful until late August, through September and into early October. White whales were sometimes hunted in

TABLE 8. Information on white whales, from Povungnituk Bay post journals. See appendix 7 of Finley et al. (1982: 55) for additional data extracted from this set of journals.

Date	Comments	Archival Code: B.468/a/-
9 Oct. 1923	Whale net set "just outside the South point of the Bay."	1, fo. 3
4 May 1927	Post employees started making whale nets.	2, fo. 42
27 Aug. 1927	Neengusik "secured" (not *saw*) only 6 whales this year (*contra* Finley et al.'s entry for this date).	3, fo. 1
9 July 1935	"One of Revillon's natives got a small whale a few days ago."	8, fo. 7
6 July 1938	"Two or three schools of white whales were in the Harbour."	9, fo. 6
21 Aug. 1938	One whale taken from whale net.	9, fo. 11
3 Sept. 1938	Whale net taken in.	9, fo. 12
18 April 1939	Some whale oil and meat stolen from oil shed.	9, fo. 45

TABLE 9. Information on white whales, from Cape Smith post journals.

Date	Comments	Archival Code: B.398/a/-
5 Sept. 1922	Boat crew left for native camp to "See if they could get any Whale or Partridges."	1, fo. 27
21 Sept. 1922	"Quite a few whale Pass this morning." Traded for "Some Porpoise hide."	1, fo. 33
22 Sept. 1922	Seven whales killed by shooting near Cape Smith Is., "Saw aful lot of them."	1, fos. 33–34
27 Sept. 1922	A whale shot at, not secured.	1, fo. 34
17 Oct. 1922	"Eskimo Boat arrived with Porpoise Hide"; 4 kayakers took 1 whale.	1, fo. 39
30 Oct. 1922	Native took a whale — "Bagest they ever Saw & Bagest I ever saw. 13′ & 8½″ Long 3′ & 6½″ Brash."	1, fo. 42
4 Nov. 1922	A whale removed from native's net, hide traded.	1, fo. 43
31 Dec. 1922	Reference to the large whale [a bowhead] found at Digges Is. by Wolstenholme natives.	1, fo. 58
1 Oct. 1923	A whale removed from "whale net."	1, fo. 69
23 Oct. 1923	"Quite a few" whales seen; a young one shot.	1, fo. 74
29 Oct. 1923	Attempt made to drive whales into net, unsuccessful. A whale seen "going in to Mead Island Bay."	1, fo. 75
1 Nov. 1923	A large [white] whale killed.	1, fo. 76
1928	Returned 140 lbs. porpoise hide.	[Unclass. Docs, Bay 1, Shelf 8, "Statistics" folder]
1929	Returned 230 lbs. porpoise hide.	[Unclass. Docs, Bay 1, Shelf 8, "Statistics" folder]
2 July 1930	Whale net set in post harbor.	4, fo. 15
19 Aug. 1930	"No whales here" yet; took up whale nets.	4, fo. 19
22 Aug. 1930	Whale nets re-set on "mainland-side"; natives report "white whales are still very scarce . . . as up to date not a single one has been seen."	4, fo. 20
26 Aug. 1930	New whale net secured from native camp on mainland; HBC now has 2 set.	4, fo. 21
1 Sept. 1930	Two whales "have been caught in one of the native's nets."	4, fo. 24
6 Sept. 1930	Two whales taken from HBC nets. The first to be brought in "was examined for parasites as requested but none were found."	4, fo. 25
13, 23 Sept. 1930	Total of 8 whales taken from nets.	4, fos. 27, 29
24 Oct. 1930	Whale nets taken up for season.	4, fo. 38
14 Sept. 1931	Natives took 3 whales in nets in Cove, 2 more shot during last 4 days, "quite a number . . . seen in deep water."	5, fos. 3–4
29 Sept. 1931	Arrivals report 6 whales caught — "our [HBC's] share being a whale and a half."	5, fo. 7
7 Oct. 1931	Natives took 4 whales in nets.	5, fo. 9
28 April 1932	"The natives at Evuyavik have made a great kill of white whales. Evidently the beasts got into a pond and the natives have just to 'pick them off'. Ochpaliuk, while on his way home, managed to get two, although it is the Wolstenholme natives who are profiting. Our men are going up there on Monday."	5, fo. 49
17 May 1932	A Wolstenholme hunter at "our native camp" shot a whale.	5, fo. 54
30 June 1932	"Today we had over ten white whales visiting us. They seemingly mistook our brook for Churchill River and lay quite content at the mouth fishing. One shot . . . was sufficient to scare them into deeper water."	6, fo. 10
12 July 1932	Whales and seals "making regular appearances."	6, fo. 13
23 July 1932	Natives took a whale, "saw many more" — "lack of cartridges prevented their making the sort of 'Wapinshaw' they would have liked."	6, fo. 16
31 July 1932	"Lately one of our men got a white whale down near the Korak River, and at present Koucharlie and crew are down there to try their luck."	6, fo. 19
14 Aug. 1932	Three more natives "will also go to the whale-hunt near the Korak River."	6, fo. 22
17 Aug. 1932	Native family landed at Kingwak but "no whales were seen."	6, fo. 23
19 Aug. 1932	HBC set whale nets in Cove.	6, fo. 23
31 Aug. 1932	All whale nets being worked, but no catch so far.	6, fo. 27
3 Sept. 1932	A "few" whales in harbor, none shot; one taken in a native's net was eaten by the natives.	6, fo. 28
11, 12 Sept. 1932	Two whales taken in nets by natives.	6, fo. 30
14 Sept. 1932	"Quite a number" of whales in Cove.	6, fo. 30
20 Sept. 1932	One whale taken in HBC net.	6, fo. 31
23 Sept. 1932	Natives drove 2 whales into net (one of them "very small"); both were "cached."	6, fo. 32

TABLE 9. *(Continued)*

Date	Comments	Archival Code: B.398/a/-
24 Sept. 1932	Natives on "other side of the island" report having seen "many" whales.	6, fo. 32
25, 29, 30 Sept. 1932	Three whales taken in HBC nets.	6, fo. 33
11 Oct. 1932	Whaling finished for season.	6, fo. 33
31 Oct. 1932	Catch of 10 for season (6 to HBC, 4 to natives) considered "not a great help for Winter dogfeed as far as the hunters are concerned."	6, fo. 42
30 June 1933	Whales "fairly numerous at the floe, but none have been caught yet."	7, fo. 6
24 Aug. 1933	Mending whale net.	7, fo. 18
31 Aug. 1933	"A few whales in the Cove now."	7, fo. 19
1 Sept. 1933	Whale nets set in cove.	7, fo. 20
5–20 Sept. 1933	Seven whales taken in nets.	7, fos. 21–24
20 Sept. 1933	Nets taken up for repairs; "lots" of whales seen.	7, fo. 24
26 Sept. 1933	HBC net got its second whale.	7, fo. 25
27 Sept. 1933	"All the nets will be taken up for good when the 'last run' of whales is over this week."	7, fo. 25
2 Oct. 1933	All whale nets taken up.	7, fo. 26
11 Aug. 1934	Natives shot 6 "fairly large whales down at Korak the other day."	8, fo. 16
18 Aug. 1934	Group of natives shifted their camp "down to the Cove for the whale fishing."	8, fo. 18
20 Aug. 1934	A "school of whales" in the harbor.	8, fo. 18
24 Aug. 1934	Three whale nets set in Cove.	8, fo. 19
6 Sept. 1934	"A few" whales in Cove.	8, fo. 21
10, 17 Sept. 1934	"Small" whales taken in nets; one each day.	8, fos. 22–23
18 Sept. 1934	Four whale nets now in water.	8, fo. 23
3 Oct. 1934	As natives had "insufficient dogs-feed", they intended to "fish the whale nets until late in the Fall."	8, fo. 27
11 April 1935	A native took a whale at the floe edge yesterday; "a bunch of them came in with a few yards of muk-tuk each to trade."	8, fo. 61
8 June 1935	"Calamity in with some whale-meat, part of a large one he shot the other day."	9, fo. 2
24 June 1935	Matthewsie brought in "half the hide of a whale he shot at the floe edge the other day."	9, fo. 6
14 July 1935	The 3 Eeyitook men not as fortunate "in the matter of seals and whales as were those who stayed on the island."	9, fo. 10
27 Aug. 1938	Natives got 2 white whales from nets.	10, fo. 19
8 Sept. 1938	Man arrived with "load of porpoise meat."	10, fo. 22
20 Sept. 1938	Two native camps between C. Smith and Knights Harbour "had been getting a few white whales from the nets."	10, fo. 25
23 Sept. 1938	"Had a shot at some white whales in the harbour, but never 'bagged' any" — 4 taken in "the last few days."	10, fo. 26
18 Oct. 1938	"Seals and white whales scarce" on the mainland.	10, fo. 31
25 Oct. 1938	"Large school of white whales" in the bay; "too far off to have a shot."	10, fo. 32
28 April 1939	Native killed a white whale.	10, fo. 68

summer (August) at the mouth of the Korak River in Mosquito Bay. As elsewhere, white whales were valued as human food and as winter dogfood.

Notes on Economics

Although oil seems to have been the principal whale product sought by the HBC before the mid-nineteenth century, the following curious statement appears in a letter from Thomas Alder at Fort George to the Governor of the Southern District, dated 1 August 1817 (H.B.C., B.77/a/3, fo. 29):

> Seal and Whale skins. I have given encouragement for, you may expect to receive all we procure, and they are found here for shoe leather, and snow shoe netting very good.

An Indian hunter at Fort George "brought in some Parchment of Whale skins, which he traded for Powder & Shot" in 1819 (H.B.C., B.77/a/7, fo. 4).

Simpson expressed concern about the price obtained in London in 1852–53 for the first shipment of porpoise oil from LWR (H.B.C., A.12/6, fo. 327). "Being a new article it is probable it may not at first be duly appreciated." Part of the reason for the low price may have been the crude manner in which the oil was processed at LWR. Bélanger had wondered whether there would be sufficient time available at the rivers to clarify all the oil at the end of a fishing season (H.B.C., A.12/6, fo. 264d). He suggested that it be sent directly to England unclarified and that Têtu's patented clarification process be applied there. The objective was to make the oil suitable for burning in lighthouses, a major use of porpoise oil in the St. Lawrence region. By 1915 the value of

a large white whale, yielding about 100 gallons of oil, was said to be $15 (Lower 1915: 49). White whale oil was worth 65–70 cents a gallon in 1928 (Anderson 1934: 74). In 1962 the retail price for a 45-gallon barrel of whale oil at Port Harrison was $28 (P.A.C., RG85, vol. 634, file 251-3-22, part 3).

Porpoise hides were salted in the field and split into half-skins before being shipped to England. "Small skins were not marketable, as the manufacturers had no use for skins weighing less than 60 pounds salted and dried" (Anderson 1934: 74 — referring to the year 1928). In Canada, the hides were valued as leather, "the quality of which is considered very fine, & particularly adapted for the manufacture of waterproof boots" (H.B.C., A.12/6, fos. 360–360d). This porpoise leather was "very soft & close in texture." Since no hair was present to require currying, it would take a finer polish than other kinds of leather.

According to Simmonds (1877: 395–96) G. Roberts of the HBC was instrumental in developing the porpoise leather trade in Great Britain and Europe. After receiving the first shipment of skins from the Eastmain, Roberts brought samples of the skin as well as the leather made in Canada from them to the attention of British and French tanners. Apparently a Monsieur Bossard of Bermondsey eventually produced a leather from split skins "which up to this time has not been surpassed".

Catch Composition

It appears from data in the post journals that the catches at both Whale rivers included animals of various size and age classes. For those whales in the harpooned catch that were described in the journals (Fig. 14), we assigned three categories: A = large, white (adults), B = mid-size, gray (juveniles or young adults), and C = small, blue (calves). The GWR sample included 23 A, 16 B, and 32 C whales. This would suggest that "calves" predominated (45%), followed by large adults (32%) and mid-size animals (23%). At LWR there were 38 A, 6 B, and 33 C whales, suggesting 49% large adults, 8% mid-size animals, and 43% "calves."

These proportions should not be taken too seriously. Our calculations include only those whales taken (or struck and lost) which the journal-keeper described in enough detail to allow a determination of their color or size category. There may well have been a bias in reporting caused by that person's tendency, for example, to describe more fully small or large animals than mid-size animals. Also, there may have been substantial selectivity on the part of the hunters. Calves (and accompanying adults) may have been relatively easy to capture. If so, the landed (or struck) sample would not be representative of the population in the river mouths during the hunting season. According to Breton-Provencher (1980), the present-day white whale hunters at GWR hunt selectively for adult males, but their technology (motor-powered canoes and rifles) differs from that used during the mid to late nineteenth century (hand-propelled canoes or kayaks and hand harpoons and lances).

Netted samples should not be biased in the same ways as harpooned or shot samples. However, if, for example, mothers and calves favor shallow waters where the nets are set, then there would be a particular bias in the netted catch (e.g. Brodie 1971). Although we found no data in our manuscript sources that could be used to estimate percent composition of the netted catches at GWR and LWR, we did find comments demonstrating the presence of all three broad age categories (A, B, and C, above) at these rivers. "Several" of the 34 whales taken at LWR on 21 August 1852 were "young ones" (H.B.C., A.12/6, fo. 253d). On 11 September 1864, the fishermen at GWR "noticed a great number of young ones amongst them [the numerous porpoises]" (H.B.C., B.372/a/6, fo. 34d).

The problem raised by the alleged difference in oil yield between whales caught at GWR and LWR (see "Conversion Factors," above; Davies 1963: 287) has no obvious resolution. However, the following possibilities need to be considered: (1) that a segregated part of the stock (juveniles?) summered mainly at LWR or (2) that the whales at the two rivers belonged to different stocks, the LWR stock consisting of smaller-sized whales.

Experimental netting operations at the Belcher Islands in 1960 resulted in a catch of 15 white whales (Fig. 15). "Fourteen of the belugas were large white animals although the seal nets used would have taken smaller animals, and all were males" (Sergeant 1968: 394). All 15 were caught between 31 August and 23 September, near the south end of the archipelago (McLaren and Mansfield 1960). A larger sample from the Belchers would be useful in answering the question of whether adult males occur there as a segregated component of a wider population during the open-water season.

White Whale Natural History

The HBC's porpoise fishermen on the Eastmain spent long periods watching their quarry, and they developed plausible explanations for some of what they saw. Most of the fishermen considered white whales to be sensitive to noise and easily disturbed: "so much so that the least noise keeps them from entering the rivers" (H.B.C., A.11/26, fo. 36d). Robert Hamilton's description of the whales' use of the GWR estuary in 1852 is useful because it refers to a time before large-scale netting began there (H.B.C., A.12/6, fo. 252d):

> [The river] measures in the narrowest part, 331 yards, is at times completely filled with Porpoise so much so that on a calm evening I have seen a swell, caused by them, running upwards of six inches high on the banks; it is almost impossible to give an idea of the numbers that enter the River at one time, I should say at least several thousands; when the tide is about a quarter flood they cross the Bar & make their way up the River to a distance of about three miles & at turn of tide they again proceed out to sea.

Hamilton noted that the GWR whales had already been so intensively hunted by the Indians at GWR that they were "very wild." When a canoe was launched on the river, "they at once rush out into deep water." Once the barrier net was sunk and a raise anticipated, all hunting from canoes was suspended in order not to deter the whales from penetrating far up the rivers. In 1868 George McTavish went so far as to divert all trading traffic to Fort George and away from GWR, "in order that Great Whale River may not be disturbed by craft entering it" (H.B.C., B.373/b/1, fo. 35).

It is nevertheless clear that the whales persisted in their visitation of these rivers in the face of many years of intensive hunting and other disturbance there. The inducement for white whales to visit estuaries during summer has yet to be satisfactorily explained. Bélanger believed white whales

1867 — June —

Thursday 20th the fore part of the day not bad, afternoon turned out to be very bad, raining, blowing and cold, about 8 PM a thick fog came on, wind North West, when it was day light same men were employed at the "Chimo" the others at the wood pile, afternoon Moore employed in his work shop, Edward and George at the making of a stove, for the "Chimo" — them and Jamie at nets, Gordon and Mates in the oilhouse. — Edward killed three Loons and one duck Siem two ducks and one Loon, this few evenings back they go down to the South point and something or other. —

Friday 21st A better day than yesterday, Harvey, Moor Edward and them employed at the "Chimo" — Geo and Jamie at sundry jobs, Gordon and Mates out with their Kayaks, Gordon got fast to a large Porpoise, but his line broke, so he lost his line and Buoy keg, he had to return, and shortly afterwards Frost killed one, a small one, a good few porpoise seen outside. —

Saturday 22nd A very fine day, one of the best we have had yet, Men employed about the "Chimo", got her into the water about ½ 12 noon, every thing went on well. — Gordon and Mates hunting, no luck to day, Jim and Cochunwak returned with only a few gulls Eggs, and 28 aborted ducks, rather soon for Eggs yet, they say they did not get in to the Gulf, on account of ice, Ice not so close in, to day as yesterday. — Had all the Foxskins out dry to the Sun, got a thorough drying, A few Porpoise seen outside the River for a short time only. —

Sunday 23rd Like yesterday, very fine, A good few porpoise to be seen close by the River, Gordon kills one Porpoise, a nice large one, Jamie killed a Seal at the South point, but sunk before got to it, Edward got a couple of small ducks, the Widow a few small fishes, — Mosquitoes turned out. —

FIG. 14. Entries in Little Whale River journal for Thursday, 20 June, to Sunday, 23 June 1867. Details are given on the relative sizes of the white whales harpooned — one "large" whale struck but lost and a "small" one taken on the 21st; a "large" one taken on the 23rd (H.B.C., B.373/a/4, fo. 74; courtesy Hudson's Bay Company Archives).

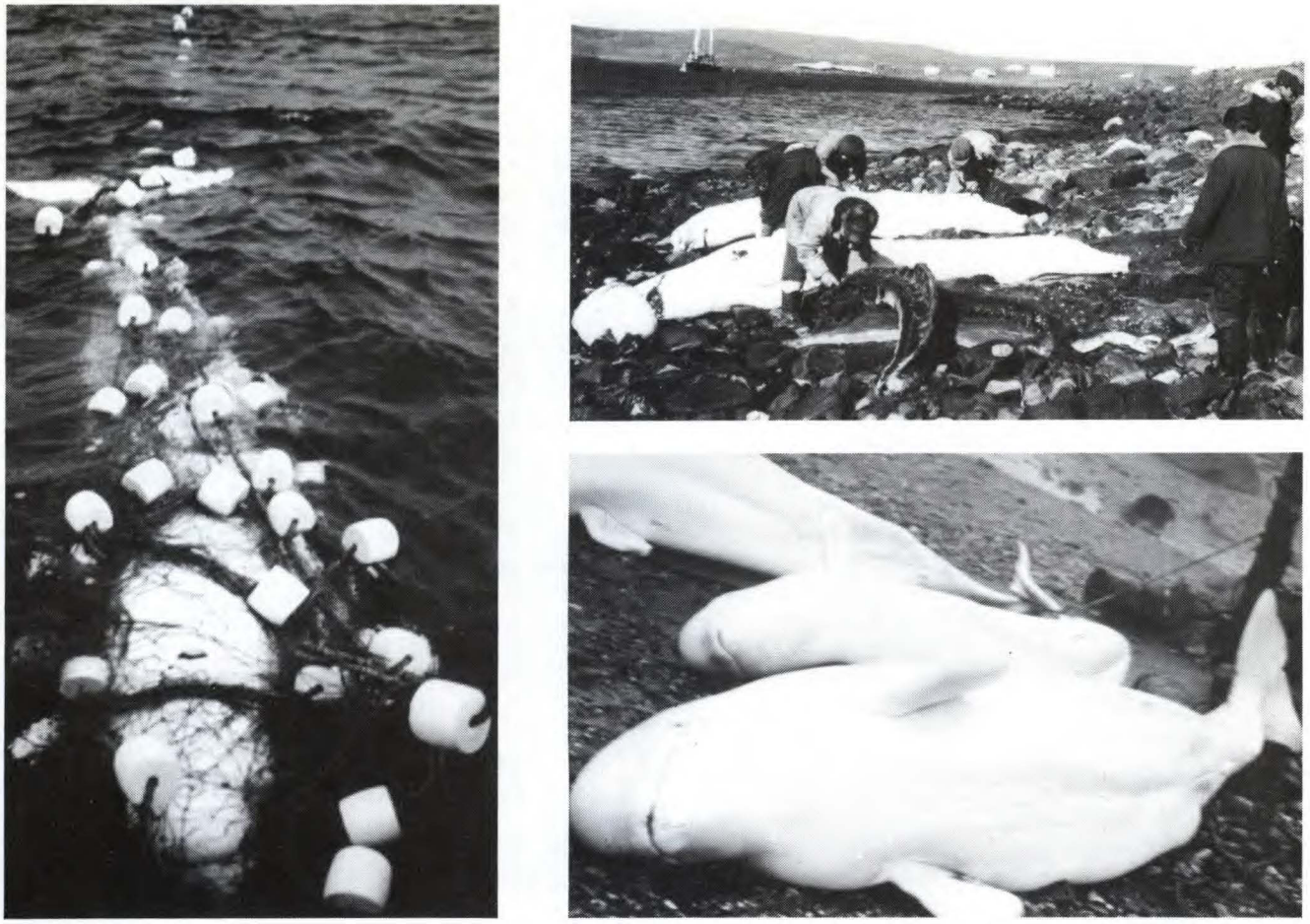

FIG. 15. White whales taken in experimental netting operations at the Belcher Islands in 1960. Fourteen of the 15 whales taken were white adult males. (left) One individual wrapped in a net; (bottom right) Three whales dragged onto the beach; (top right) Natives processing the carcasses. (Photos courtesy A.W. Mansfield).

"have a preference for warm water, probably for the purposes of copulation — which induces them to enter the rivers" (H.B.C., A.12/6, fo. 308). This view is not consistent with what is known about the species's reproductive biology, as breeding appears to occur mainly during April and May (Brodie 1971; Sergeant 1973), well before the white whales appeared at GWR and LWR (Tables 3, 4). Finley (1982) suggested that estuaries may provide warm nurseries and places for white whales to molt.

Robert Hamilton, an experienced porpoise fisherman, called the 1862 season "one of those seasons of which I have heard the Indians speak when Porpoise do not enter the Rivers as usual; I am happy to say it is the first time I have myself experienced anything of the kind" (H.B.C., A.11/26, fo. 47). He had observed them in large numbers on the coast in early August. In fact he considered them to have been more numerous "about the Bar" at GWR this year than ever in his experience. The whales' failure to enter the rivers he attributed to the unusually calm weather. Because of it, "the Porpoise did not seem desirous of entering the River; finding, I presume, abundance of fresh water on and outside the Bar." Hamilton apparently believed that a need or desire for fresh water attracted the white whales to river mouths. George McTavish made similar observations in 1864 (A.11/22, fos. 30–30d):

> Both Messrs Anderson & Hamilton have observed that in calm weather the porpoise do not enter the rivers freely, as they can get fresh water outside the bars when the wind is off the land, and this season I had a chance of confirming their opinions — from the time we first laid our barrier, on the 22nd July, until we gave up all hopes of making a good shut in — about the 25th August — we had no strong wind from the NWest to raise sufficient swell on the Bar to make the porpoises enter the river, but after I had all of my fishing gear out of the river, a storm came on and the Porpoise at once came up the river as freely as ever . . . . This circumstance . . . convinced me that it was not through fear of the river or our nets that the Porpoise had not entered before and the Indians told me that they never saw them more numerous about Great W. River than they were this season.

The meaning of these observations is obscured by the fact that the nets and fishery activity may have influenced the whales' behavior independently. However, in future studies of why and how white whales make use of estuaries, weather conditions and their relationship to patterns of freshwater discharge should be considered carefully.

On only one occasion mentioned in the journals and correspondence examined for this study were the stomach contents of killed whales reported. Simpson wrote in 1853 that Bélanger "does not think the porpoises go up the rivers after

fish, as none were found in the stomaehs of those he opened" (H.B.C., A.12/6, fo. 308). Considering, however, that a period of ehasing and net entanglement may have immediately preeeded these whales' deaths, it is possible that their digestive traets were emptied by regurgitation and defeeation.

Manning (1946: 84) found "remains of a white-fleshed fish, probably a roek eod," in the stomaeh of an adult female killed along with its ealf in mid-August 1944 at the mouth of the Nastapoka River. Breton-Proveneher (1980) examined the stomaehs of 21 white whales killed mainly at the mouths of LWR and GWR and in Riehmond Gulf. Of these, more than half (11) were empty. However, the two whales at LWR and the two at GWR whose stomaehs were sampled all eontained large amounts of food. Thus, she eoneluded that "these two estuaries are feeding sites."

Beeause the first sighting of the season was a notable event at the whale hunting posts on the Eastmain, it is possible to establish mean dates of the whales' arrival based on samples of a number of years (Tables 3, 4). At LWR, the white whales were usually first seen between the seeond and fourth weeks of June (mean date: 15 June; median: 12–14 June; $n = 30$); at GWR, somewhat later (mean date: 21 June; median: 23 June; $n = 15$). Thomas Alder gave "about the middle of July, untill the middle of September" as the period during whieh whales were present at GWR (H.B.C., B.372/e/1, fo. 2). This pattern tends to support the inferenee that the animals arrived from the north and moved southward along the eoast during the summer (e.f. Breton-Proveneher 1980: 23). The suggestion of a north-south migration along the eoast is also supported by the data from other posts along the east eoast of Hudson Bay to the north of LWR (Tables 7, 8, 9; Finley et al. 1982). The earliest report at Cape Smith was in April and the latest in Oetober. South of Cape Smith white whales appear to have been rare along the eoast before June (the GWR reeord for May is 31 May; the Riehmond reeord is 25 May). Also, they seem to have disappeared in most years after mid-September (the Riehmond kill for the latter half of September was on 26 September).

Initial Population Size

The HBC fisheries at GWR and LWR were intensive, and eatehes deelined steeply after only a few years of operation. Although to some extent the failure of the fisheries may have been eaused by the whales' reluetanee to enter the rivers after several years of sueeessful shut-ins, we assume the eateh deereased primarily due to a marked reduetion in stoek size. Thus, it is possible to use eumulative eatehes for the peak period of fishing to estimate initial population size (see Mitehell and Reeves 1981). There is general agreement that the gross annual reproduetive rate of white whales is no greater than 0.12 (Braham 1984). Assuming the net reeruitment rate is substantially less than 0.12, the positive bias in any cumulative eateh estimate eaused by reeruitment during a eatehing period of 10 years would be relatively minor. Moreover, if the stoek survived in numbers eapable of supporting eontinued large harvests, whieh it did in this instanee, then mueh of the reeruitment during the deeade of high eatehes ean be eonsidered to aeeount for the survivors and thus be ignored.

The peak period of removals from the Eastmain stoek was from 1854 to 1868 (Tables 3 and 4). A minimum of 8 294 whales were taken during this 15-yr period, ealeulated using the lower numbers for years when a range in the eateh is given, making no allowanee for years when a eatch of unknown size was made ("+" in the tables), and with no eorreetion for hunting loss. If less eonservative assumptions are made, i.e. using the highest figures in our tables for eaeh year, imputing a eateh of 10 to eaeh "+" in the tables, and assuming 100% mortality of (doeumented) struek whales, the total is 9 045. In view of the incompleteness of the reeords eonsulted for this study, even the latter total is probably eonservative (see below). Based only on the number of whale halfskins returned for the Eastmain District (Fort George, LWR, and GWR) (Franeis and Morantz 1983: table 9), a minimum of 6 715 whales were taken from 1854 to 1868.

Using only the peak deeade of removals (1854–1863), a very eonservative estimate of "initial" (1854) population size, based on eumulative eateh, would be 7 176. The halfskin returns alone (Franeis and Morantz 1983: table 9) give a minimum eateh of 5 857 from 1854 to 1863, inelusive. If the less eonservative approaeh (deseribed above) for summing removals during the peak deeade were used, the estimate would be 7 875. Using an average annual net reeruitment rate of 0.05 and the lowest yearly kill figures from Tables 3 and 4, we baek-ealeulated to estimate the population size in 1854. This gave a eonservative estimate of 6 637 whales in 1854. Using the higher kill figures (as described above), the back-ealeulation estimate would be 7 011. We conclude that 6 600 is a erude minimum estimate of the population size in 1854, based on doeumented removals.

We think our estimate is eonservative beeause:

1) During the 5 years following the peak deeade, at least 1 118 whales were taken at the two rivers.

2) The statements by HBC personnel quoted earlier in this paper eoneerning the abundanee of white whales at both the GWR and LWR after 1863 and through the 1870's attest to the survival of substantial numbers after the peak deeade of harvest (e.g., "Upwards of a thousand" were seen in GWR on 12 Sept. 1864 — H.B.C., B.372/a/6, fo. 35).

3) The removals used for the estimate do not inelude undoeumented eatehes made from the same stoek by aborigines at sites north of LWR, south of GWR, and at the Beleher, Sleeper, and other offshore islands. Nor do they inelude the undoeumented harpooned eatehes for GWR and LWR in some years.

4) The data from post journals used to estimate netted eatehes in years for whieh no preeise eateh figures eould be found have been interpreted eonservatively.

5) Compared to available estimates of net reeruitment in delphinid eetaeeans and other odontoeetes such as the sperm whale, an estimate of 0.05 for white whales appears high. If it is, then the use of 0.05 in our baek-ealeulations would eause the initial population to be underestimated.

Other Cetaceans Found in Eastern Hudson Bay and James Bay

The eoasts of eastern Hudson Bay and James Bay are almost devoid of eetaeeans other than white whales. Low (1899: 131) eoneluded that "bone whales", by whieh he probably meant mystieetes generally and the bowhead (*Balaena mysticetus*) speeifieally, "are praetically unknown to

the Eskimos of this coast [the Eastmain]." He believed that what whalebone (baleen) they obtained came through trade with Eskimos farther north. The Eskimos north of LWR, for example, had a "small amount of whalebone" to trade when they were encountered by the *Moose* sloop in 1786 (Davies 1963: xxv). There are, nevertheless, a few records of bowheads. Low (1906: 257) learned from Eskimos that bowheads had been seen "in the depth of winter off Mansfield [= Mansel] and some of the more southern islands of the east side" of Hudson Bay. On 18 May 1857 "the Jaws of the Large Whale that drifted ashore" were brought to the GWR post (H.B.C., B.77/a/30, fo. 5d); this presumably was a bowhead. On 19 October 1931 Inuit hunters at Port Harrison reported (H.B.C., B.467/a/11, fo. 44):

> Some big sea animal has got into the inlet at their camp, at a high tide and can't get out, they also say they have used all their cartridges trying to kill it. From their description it sounds like a Sperm Whale.

Sperm whales (*Physeter catodon*) are present at least occasionally in Ungava Bay (Reeves et al. 1986), but we have no reason to believe they visit eastern Hudson Bay. The whale seen near Port Harrison probably was a bowhead.

Mansfield (1971) illustrated a "former known whaling ground" for bowheads around the Ottawa Islands. In 1912–1913 the *Active* of Dundee overwintered at the Ottawa Islands, catching 6 bowheads and losing 4 more (Newspaper Clipping, P.A.C., MG 29, A58, Vol. 8, File 5; also see Flaherty 1924: 37). This vessel supposedly wintered twice at the Ottawas (also see Binney 1929: 8; H.B.C., A.74/20, fo. 62). Flaherty (1918: 455) reported finding a bowhead carcass "on a small outlier northeast of the main [Ottawa] islands." He added that "the sight of it was a novelty to the natives who were with me at the time." Bell (1886: 14DD) reported seeing the skeleton of a large whale on a small island about 2 mi southwest of Gilmour Island, at about the center of the Ottawas, in 1885.

More recently, a bowhead was seen on 24 August 1967 just south of LWR (Reeves et al. 1983: 38), and another was reportedly seen on 11 July 1978 off Ekwan Point, northeast of Attawapiskat in James Bay, with about 200 white whales (Reeves et al. 1983: 45). Manning (1976: 33) reported seeing the blows of one or more whales, presumably bowheads, on 18 August 1971, about 30 km east of the center of the Ottawa Islands. In winter 1981–1982 residents of GWR purchased some "black coloured baleen" on the Belcher Islands; the whale (probably a bowhead) from which it came was apparently killed in 1981 (C.A. Coté, pers. comm., via J. Lovrity, 2 May 1983; in letter to authors, 5 December 1984).

A report from Moose Factory in 1949 noted that "two blue whales" had been seen, apparently in James Bay or near the Belcher Islands (P.A.C., RG85, vol. 1084, file 401-2, part 2). We suspect the source of this report mistakenly called bowheads blue whales, or alternatively was referring to young white whales. The writers of HBC post journals often called young white whales blue whales, owing to the bluish cast of juvenile pigmentation.

Although minke whales (*Balaenoptera acutorostrata*) are known to frequent Ungava Bay (P.A.C., RG85, vol. 634, file 251-3-22, part 3) and Hudson Strait (Finley et al. 1982), we know of no evidence for their occurrence in eastern Hudson Bay or James Bay. Killer whales (*Orcinus orca*) have been seen occasionally in western Hudson Strait (Soper 1944: 251) and southern Foxe Basin (Manning 1943: p. 57). Doan and Douglas (1953: 20) reported the "sporadic" occurrence of killer whales in Hudson Bay, particularly near Tavani and Churchill on the west side. Sergeant and Brodie (1969: 2578) stated that the killer whale "enters western Hudson Bay in August where it has been reported close to the herds of white whales." The narwhal (*Monodon monoceros*) is locally and seasonally common in parts of Hudson Strait, northern Hudson Bay, and southern Foxe Basin (Soper 1944; Mansfield et al. 1975; Mitchell and Reeves 1981), but we know of no records along the Eastmain coast or in James Bay (cf. Low 1906: 275). The harbour porpoise (*Phocoena phocoena*) "is unknown in Hudson strait and bay" (Low 1906: 274).

In the unpublished HBC material examined for this study, we found no indication that any cetaceans other than white whales, and very rarely bowheads, were seen on the Eastmain coast or in James Bay.

Status of the Eastmain Stock

Fishermen and other observers firmly believed that the whales modified their behavior as a response to fishing operations, becoming increasingly reluctant to enter the rivers. Low (1899: 130) stated:

> . . . the experience of the Hudson's Bay Co. and others is against a permanent, successful porpoise fishery, as after a few captures they will not enter the rivers.

Some surmised that the whale population was not large enough to sustain the catches made during the 1850's. For example, in December 1859 James Anderson considered it improbable that "larger catches of Porpoise in one season will ever be made at the Whale Rivers than have already been taken" (H.B.C., A.11/26, fo. 36d). Gordon (1887: 63) made the unlikely suggestion that the whales stopped visiting LWR "owing . . . to the silting up of the channel, at the mouth of the river."

The first census of white whales on the Eastmain coast was conducted in 1978 (Breton-Provencher 1980). At that time, 300–400 white whales were estimated to summer between Richmond Gulf and Long Island (south of GWR). Having estimated the population as at least 4 509 before commercial exploitation on the Eastmain, Breton-Provencher (1980: 11) concluded:

> . . . even if we should have underestimated the abundance of the present population by counting only animals near the shore, it is still true that — compared to what it was 126 years ago — the current population is low.

Catches by hunters from Poste-de-la-Baleine (GWR) since 1954 reported by Breton-Provencher (1980: 14, table 4; also see Bauer 1981; Betteridge 1985) probably have been high enough, particularly when hunting loss is taken into account, to prevent the recovery of a population numbering only 300–400. The "minimum" secured catch of 38 between the Nastapoka estuary and Long Island in 1978 (Breton-Provencher 1980: 26) would have been 9.5–13% of the total estimated population at the time.

Finley et al. (1982: 20–21) counted only 162 white whales in aerial surveys along the Eastmain coast (within 5 km of the

coast from Wolstenholme [Ivujivik] to Long Island) during late July 1980. No whales were seen south of Richmond Gulf. More extensive surveys in 1985 produced estimates of 1 124–1 904 white whales in eastern Hudson Bay and 740–1 970 in James Bay (Smith and Hammill 1986). An important aspect of these surveys is that they covered offshore areas as well as coastal embayments. A total of 474 whales were counted in the Nastapoka and Little Whale river estuaries and Richmond Gulf. On the assumption that the whales in the estuaries and offshore belong to one east Hudson Bay stock, Smith and Hammill calculated a "safe harvest level" of 56 whales per annum (5% of 1 124).

Using 6 600 as an estimate of "initial" population size and the midpoint of Smith and Hammill's range of values (1 514) as an estimate of present stock size, we conclude that this stock is at about 23 percent of initial. As the IWC's Scientific Committee concluded in 1981 that the eastern Hudson Bay stock was at less than 10% (Perrin 1982: 114) or 7% (p. 115) of initial, the situation as presently evaluated appears, in spite of a much higher estimate of initial (6 600 rather than 5 000), to be better than was previously thought. If Smith and Hammill's estimate for James Bay (midpoint 1 355) were included, the aggregate present stock size would be estimated as 2 869, or 43% of 6 600.

Summary and Conclusions

1) Although hypotheses concerning stock relationships cannot be tested conclusively with the evidence available at present, it is reasonable to assume that the white whales of eastern Hudson Bay and James Bay belong to a separate stock or stocks from those summering in western Hudson Bay, Hudson Strait, Ungava Bay, and elsewhere. The main lines of evidence in support of this assumption are: (a) the traditional pattern of estuarine occupation, suggestive of various summering herds homing annually on specific areas; (b) the presence of some whales in James Bay during winter; and (c) differences between areas in the timing of declines in abundance, presumably caused by overexploitation.

   Dates of sightings and catches at different points along the Eastmain tend to support the hypothesis that white whales migrate southward as the ice breaks up in spring, then northward in autumn before freeze-up. During the nineteenth and early twentieth centuries, they generally appeared at LWR and GWR in June and disappeared in September.
2) White whales apparently used the Moose, Harricanaw, Rupert (also Pontax Creek), Eastmain, and Big rivers in moderate or low numbers during the nineteenth century. The GWR and LWR estuaries contained the largest known concentrations of white whales in any part of eastern Hudson Bay or James Bay. Concentrations also occurred in Richmond Gulf, the estuary of the Nastapoka River, Povungnituk Bay, and Mosquito Bay (possibly the Korak River estuary in particular). Although white whales have long been hunted or seen amongst the Belcher, Sleeper, and Ottawa islands, no specific estuaries on the coasts of these islands are known to have been occupied consistently.
3) White whales were important to the subsistence of native people. The Inuit from LWR north and the Indians from GWR south hunted them for food before a commercial fishery for oil and hides was organized in 1752. A barrier net was used, with limited success, to block the channel at the mouth of LWR and shut off white whales during the 1750's. A century later a similar approach was tried at both estuaries, resulting in several spectacular catches. Desultory attempts were made to catch white whales in weirs in James Bay, but this technique did not prove effective there as it had in the St. Lawrence River.
4) The peak period of removals by the fishery was from 1854 to 1868. During this time at least 8 294 white whales were captured at GWR and LWR. Most of this catch was made with the assistance of barrier and "pond" nets. After 1860, when 1 511 whales were taken, the catch declined dramatically. The net fishery was discontinued at LWR after the 1869 season. It was revived sporadically and with indifferent results at GWR during the 1870's. Harpooning and shooting of white whales continued at GWR and LWR (as well as elsewhere on the Eastmain), but we have no definite evidence that a major commercial fishery was attempted again at either river after 1877.
5) HBC employees continued after 1860 to remark in journals and correspondence about the abundance of white whales at GWR and LWR. More often than not, they interpreted the failure of the fisheries either to the whales' reluctance to ascend the rivers above the barrier nets or to unfavorable environmental conditions.
6) Using the documented catch over a 10-year period (1854–1863), we estimate that a minimum population of 6 600 white whales used the GWR and LWR estuaries during the mid-nineteenth century.
7) There is no conclusive evidence that the GWR whales belonged to a different population from that of the LWR whales. Statements about much different oil yields from whales caught at the two rivers, however, are provocative. The meager data on composition of the catches (by relative size and color) do not suggest that there was segregation within the population(s).
8) Recent census results suggest that the aggregate population of white whales on the Eastmain coast is depleted. It appears that GWR has been virtually abandoned as a white whale summering ground.
9) All relevant historical materials that we know to be available on HBC whaling along the Eastmain coast north from GWR have been checked. There is no reason to believe that any major commercial whale fisheries existed in James Bay. However, interesting and useful information on white whale distribution (particularly their winter occurrence), use of estuaries, and small-scale local fisheries in James Bay may come from a more extensive search of Albany, Moose, Rupert's House, Eastmain, and Fort George records. Some materials covering the activities of the Revillon Frères trading company are in the PAC. Our cursory examination of them revealed nothing of significance to this study. However, a wider search for Revillons Frères records might provide additional information on white whale exploitation along the Eastmain. It should

be emphasized that the French company is not known to have engaged in organized whaling. They did, however, participate in the trade of oil and skins, and they set nets near their posts to catch whales and seals.

10) A high priority for further research is the question of stock identity. Inferences from historic and present patterns of movement and distribution are necessarily inconclusive. Direct evidence from tag–recapture or telemetry studies is required to establish that long-distance movement occurs, to evaluate a population's tendency to disperse, and to determine winter distribution.

11) Management decisions concerning the "Eastmain stock" of white whales should be made on the understanding that the aggregate population which summered at the mouths of LWR and GWR during the middle of the nineteenth century numbered at least 6 600 animals. Under existing environmental conditions, that is, considering the damming and diversion projects that have occurred, the widespread use of motors in water transportation, and the extent of harbor development in some estuaries, it may be impossible for the whale population to regain its former abundance. However, it would seem important to manage hunting and developmental activities in such a way that further exclusion of whales from suitable summering sites and local extirpations can be prevented.

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