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Report covering the construction of dataset on Greenland humpback whaling from 1774-1886 based on 'Daybooks of the Royal Greenland Trade'.

By

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This report is a supplement to and an explanation of the database concerning whaling for humpback whales (*Megaptera novaeangliae*) from 1774-1886. The database was constructed at Roskilde University in the summer and autumn months of 2008 by Bo Poulsen assisted in reading by Janina Priebe (BA in history).

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Greenland humpback whaling has received the attention of several scholars in the last hundred years, and a few attempts at quantifying the historical patterns of removals of humpback whales have been carried. In 1902 Herluf Winge published a lengthy report on the mammals of Greenland in which he summarized the qualitative evidence from earlier printed records. Winge thus relied on a level a detail such as 'Disco Bay, 1809 – Many humpback whales sighted, during mating season',¹ while a more fine grained picture is not brought forward. In 1943 Sveistrup published an in depth historical account of the earliest phase of the Danish trading stations in Greenland covering the years 1747-1774.² Here several records of train oil being exported from Greenland give indications of some whaling activity, but Sveistrup did not provide any quantitative evidence of the number of whales caught. Quantitative evidence though, was published by Finn Kapel for the period from 1886 onwards, where as he had to rely on Winge for his earlier accounts.³

This analysis of the Greenland Humpback whaling from 1774-1886 seeks to extend back in time the quantitative evidence of Kapel with another century.⁴ Official government statistics of whaling activities are lacking this far back in time, but approximations of the number of whales caught and sighted, as well as broader information on the day to day whaling operations in Western Greenland can be obtained from the diaries kept at the Danish trading stations along the West coast of Greenland.

Materials and methods

The investigation was planned and carried out as a sample of the diaries named 'Daybooks of the Royal Greenland Trade'. These diaries are books kept on a daily basis at the various trading stations operated by the Royal Danish Trading Company for Greenland. Royal Danish Trade was in place already by the 1740s, and by 1765 the 9 trading stations were located all along the Greenland West Coast namely: Frederikshaab, Godthaab, Sukkertoppen, Holsteinsborg, Egedesminde, Christianshaab, Jakobshavn, Ritenbench and Umanak. Each station was manned by 7-18 men, merchants, carpenters, ship mates as well as assistants to each profession.⁵ In total the diaries span 40 microfilm rolls. The diaries are all presented as short daily entries with information

¹ Winge, (1903).

² Sveistrup, (1943).

³ Kapel, (1979).

⁴ Greenland Daybooks.

⁵ Sveistrup, (1943).

on the weather, encounters with the Inuit population, or Greenlanders as they became, and naturally a focus on the practical side of life. This fortunately for posterity entailed information on whaling, sealing and fishing. However, as the diaries are heterogeneous when it comes to information on whaling, the analyses of the data was carried out as a search for relevant keywords in the diaries, such as the Greenland word for Humpback whale 'keporkak', the modern Danish word, 'pukkelhval', knölhval in Norwegian or 'megaptere'. Whenever a relevant keyword was found in the diaries, it was noted in the database consisting of 32 columns per observation with the following information attached (Table 1):

Table 1. Type of information per entry in database on Greenland humpback whaling			
The database format is compatible with the HMAP/OBIS format, where the greyscaled items have been included for this particular			
ID	InstitutionCode	CollectionCode	DateLastModified
Identification number of entry	Space reserved for database management	Space reserved for database management	date when the dataset was last modified (10 dec 2008)
CASE_STUDY	DATASET	REFERENCE_ARC	REFERENCE_MIC
World Whaling Project	Space reserved for database management	Archival reference: "Daybooks of the Royal Greenland Trade", Royal Greenland Trade Archive, microfilm copies at Secretariat of the International Whaling Commission	Reference to the microfilm index number, where information has been retrieved
REFERENCE_ITEM	Citation	BasisOfRecord	OCEAN_REGION
Reference to the index of daybooks created by Klinowska and Gerslund	Poulsen, B. & J. Priebe, 'Greenland Humpback Whaling, 1774-1886'.	Space reserved for database management	North Atlantic Ocean

LME	LATITUDE	LAT_PRECISION	LONGITUDE
This refers to the Large Marine Ecosystem (LME), in this case LME number 18	This is the latitudinal position of the information containing 'whale'	This refer to the level of precision for the latitude	This is the longitudinal position of the information containing 'whale'
LON_PRECISION	STATION	STATION_NOTES	STATION_AREA
This refer to the level of precision for the longitude	This refers to the place names attached to each entry on whaling, in order to make the database searchable, the place names have been standardised, while in the original documents spelling may vary	This contains information, where sometimes a different spelling was used	In order to distinguish between Northern and Southern trading stations this division between North and South was constructed, with Holsteinborg being the southernmost of the North-stations.
ST_YEAR	EN_YEAR	MONTH	DAY
Starting year of entered activity	End year of entered activity	Month of the year (1-12)	Day of the Month (1-31)
ScientificName	OBSERVATION	OBS_TYPE	OBS_POS
Scientific name of relevant species	This refers to the information as it was listed in the diary, where it was found	For analytical purpose a number of specified types of information is assembled. These are: 'sighted', 'found', 'N/A', 'unknown', 'whaler', 'Vessel', 'products', 'gear', 'hunting'	This refers to further specifications on the location of the entered observation when applicable

OBS_NUMBER	OBS_SIZE	GENDER	NOTES
Number of whales chased, sighted, caught, when this type of information is given in material.	There are sometimes information on whether or not the animal in question was 'big' or 'small'	The gender of the whales in this database, which is unknown	additional information concerning the number of species observed

The investigations into the diaries looking for relevant keywords are complete for the years 1774-1820, where all diaries were analyzed. For reasons of time restraints, the period 1820-1886 was covered through a sample of the material from all even years. A complete analysis of the entire material would require an additional 160 hours of man hours. Guided by the search for relevant keywords the investigation was targeted at providing information on location of sightings/catches, dates and the number killed or sighted.

Since all diaries have a date in the margin, this information was readily available. However, since Humpback whales appear in Greenland waters mainly in the summer months, it was decided to sample the diaries in favour of the months of July, August and September. Whales and whaling taking place in the rest of year would therefore not appear from the database.

Finding the exact location of the observations in the diaries though required further analysis. The diaries were kept at the trading stations, but the information on whaling stem from a total of 21 place names, for which it has been possible to establish the exact location (Table 2). For the sake of accuracy these place names have been maintained in the database and labeled 'stations'.

Unfortunately, it has not been possible to establish the location of the place names; Omenarsuk, Kerrortussok, Kigurtursok, Myhre, Norsoak & Niarkonak, Risefjord and Sirfjord. However, these unknown locations only feature at total of 15 times in the database, so this was not seen as a real flaw in the explanatory power of the database, which has a total of 768 entries for various forms of whale.

Table 2. List of stations (place names) in database with their exact location:

LATITUDE	LONGITUDE	STATION
72,78	-56,14	Upernavik
72,38	-55,55	Pröven
70,68	-52,12	Omanak
69,77	-51,3	Rittenbenk
69,76	-50,89	Ata
69,73	-51,27	Arveprinsens Ejland
69,24	-53,55	Godhavn
69,21	-51,09	Jacobshavn
69,07	-51,11	Claushavn
68,99	-53,35	Kronprindsens Eyland
68,85	-53,11	Hunde Eyland
68,71	-52,84	Egedesminde
68,62	-53,52	Wester Eyland
66,92	-53,66	Holsteinsborg
65,83	-53,33	Kangamiut
65,42	-52,9	Sukkertoppen
64,18	-51,72	Godthaab
63,08	-50,68	Fiskenasset
61,99	-49,66	Frederikshaab
61,17	-48,45	Arsuk
60,72	-46,04	Julianehaab

The third important type of information to come out of the database relates to the type of observation being made by the scribes. In the OBSERVATION column it has been entered what the original information in the diaries relate to, but for analytical purpose a number of specified types of information was assembled in the OBS_TYPE column. These are: 'sighted' for when a whale is recorded as sighted, 'found' when an already dead whale was located. 'Products' is associated with the processing of a whale, which is already captured, while 'whaler', 'vessel', 'gear' and 'hunting' all relate to the human activity linked with whaling. 'N/A' and 'unknown' appear in the case of

information not directly linked to the observation of a whale or whaling. While the anthropogenic centered information is of only circumstantial significance for the estimation of the presence of humpback whales, it is potentially very useful for future studies of the practice of whaling in colonial Greenland.

Interpretation of observations

While the objective of the study was to locate the presence and removals of humpback whales the keyword based search for 'whales' also led to finds of Beluga whale (*Delphinapterus leucas*) and a number of whales for which it was not possible to determine the species. Belugas appear in the records primarily as 'hvidfisk', Danish for a 'white fish'. In modern Danish the same word is used for cod, haddock and saithe, but in these records the content of 'hvidfisk' being chased, caught with large nets and processed for blubber, leaves no doubt that they are Belugas. Moreover, all the records associated with Beluga stem from the most Northerly positioned stations from Upernavik down to the Bay of Disco.

In many cases the Greenland word for Humpback whale, 'Keporkak' is used in the records, although with different spelling. Where ever this is the case, the observations definitely refer to humpbacks (Figure 1). Quite often in the dataset it appears that the record just reads 'whale' (Figure 2). In these instances the time of the year makes it very plausible that the unspecified whales are indeed humpback whales. This is reinforced by the results of lining all observations of sighted and caught humpback whales along 'unspecified' whales (Figure 3). The first record of a humpback whale is one caught in 1803 and more than every other year onwards did humpback show up in the diaries. Meanwhile the unspecified group feature most prominently in the years from 1787-1808, and only once after 1824, in 1870 does an 'unspecified' whale appear in the material. A likely hypothesis for this would be that the Danish tradesmen became more concerned with what product they acquired, while both Danes and the Greenland hunters may have become more skilled in respect of whaling over the years.

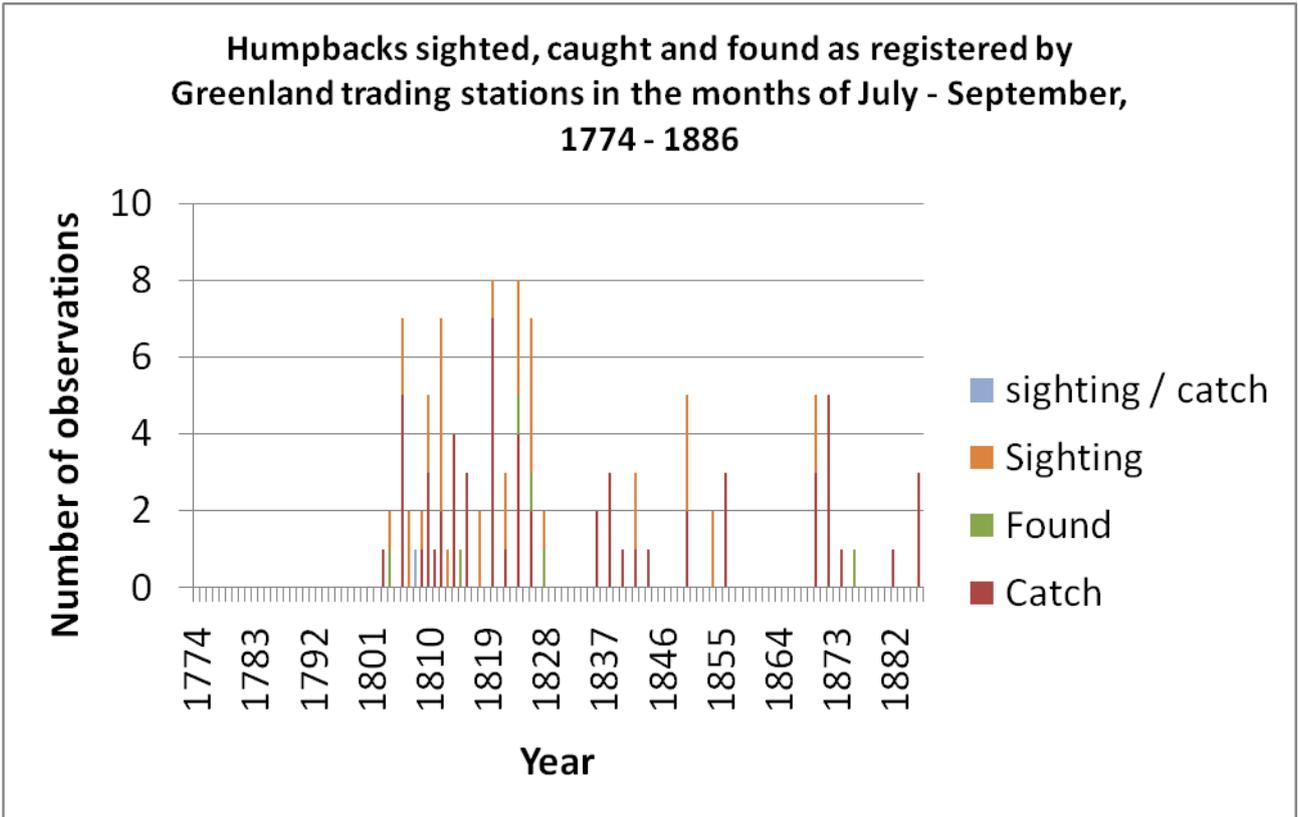


Figure 1

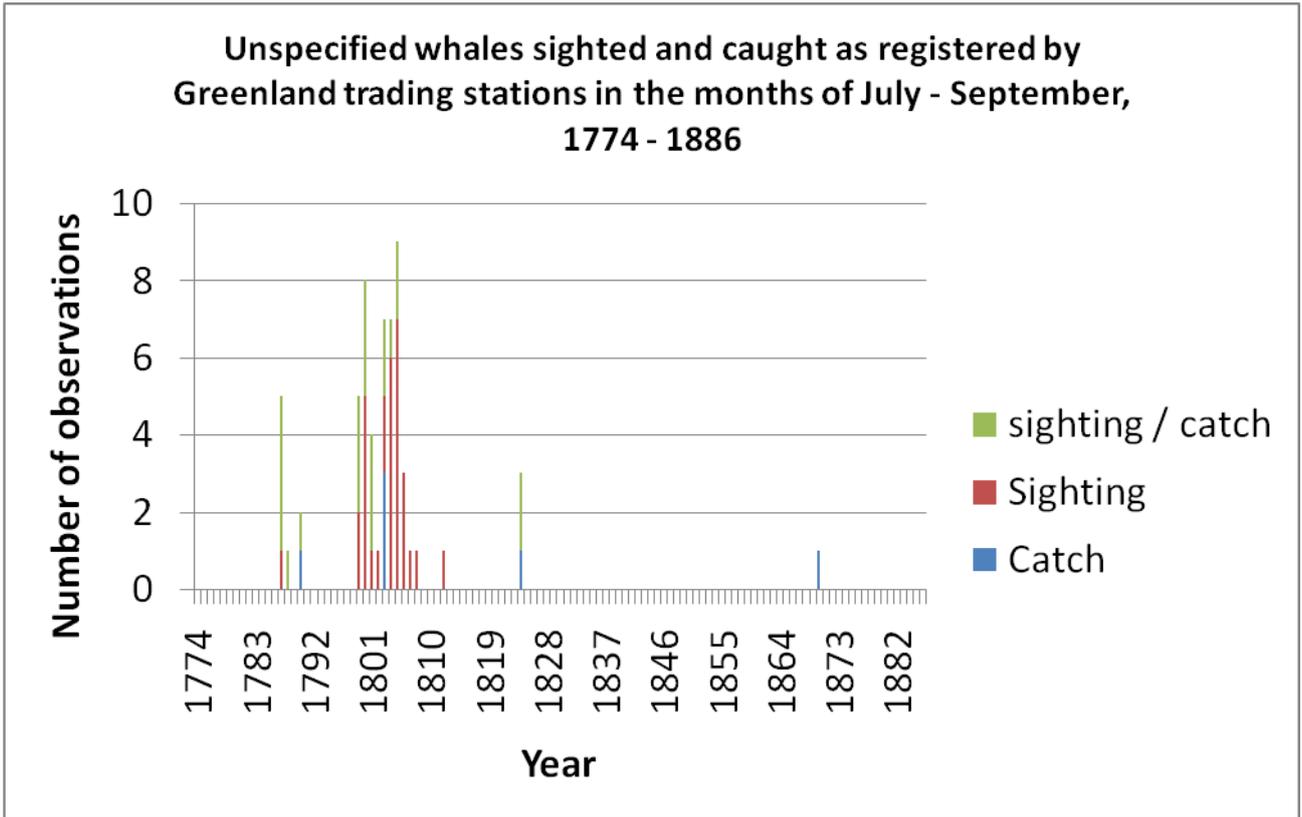


Figure 2.

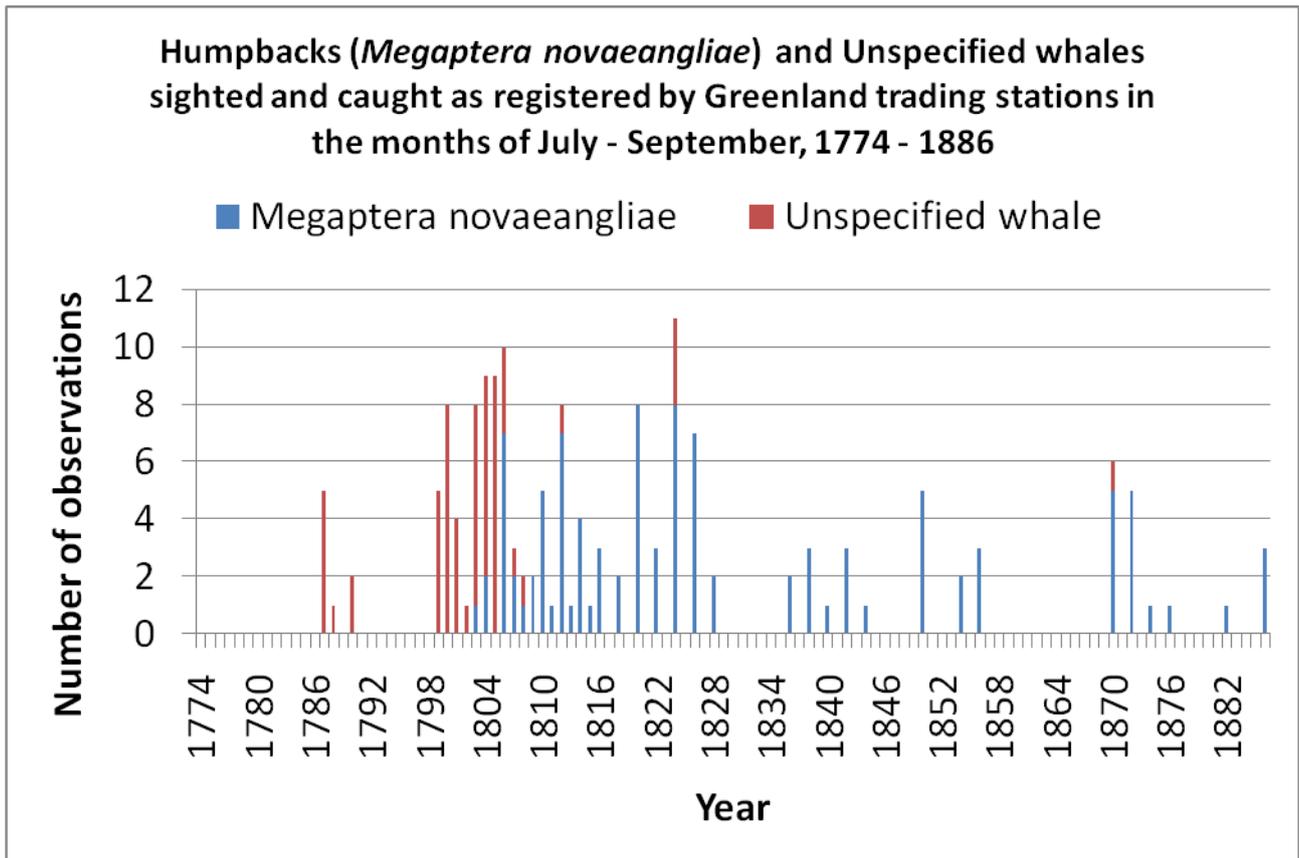


Figure 3.

The size of the whales caught and sighted is a much desired piece of information, but the records hold no standardized units for measurements of size other than the occasional ‘big’ or ‘small’. The only unit mentioned is ‘balie’ which seems to be a unit of volume in which the blubber was contained after processing the caught whales. It was not possible to identify a translation of this unit, and it is not advised to present the observations of processed whale as an addition to the number of whales listed as ‘caught’ and ‘sighted’. The reason for this is that as a rule dates, where processing of whales are registered follows closely the dates, when capture of whales is recorded. Adding the ‘products’ observations would then lead to instances of double counting of whales.

Estimating the number of not just observations, but the number of actual individuals is complicated by the fact that the records on sightings often bear the phrase ‘several whales’. In relation to estimating the actual number of individual these phrases can cautiously be translated to ‘at least two individuals’. When this translation is used consistently the total number of

individuals will tend to be a conservative estimate. The result of this translation of the records is illustrated by Figure 4, where the number of individuals sighted, caught and found dead are listed (Figure 4).

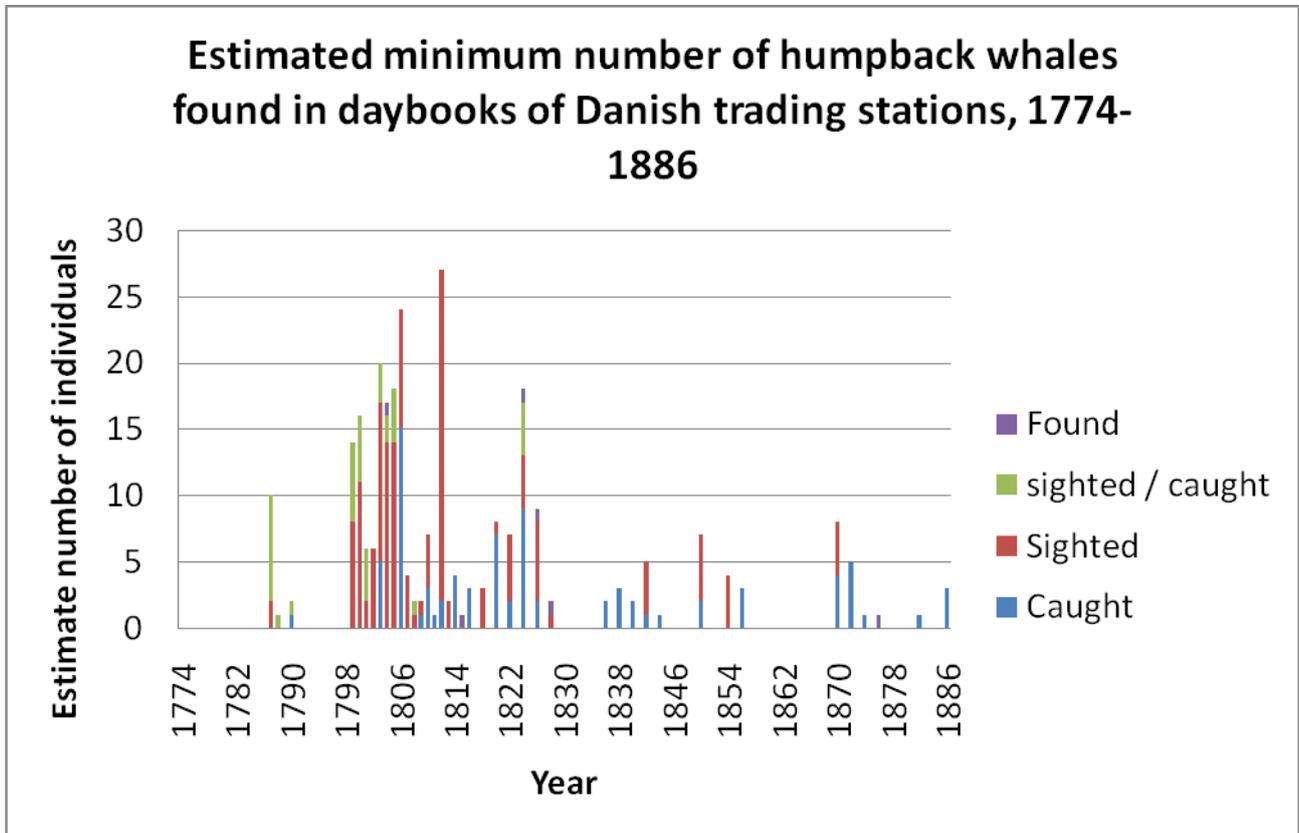


Figure 4.

Comparison with Winge's data

As a further control on the validity of the information collected by Herluf Winge around 1900 as well as the investigation into the daybook material, it is useful to compare the information presented by the two different sources. Winge's account of the humpback whale is based on various qualitative records, he had access to. The information he brings forward concerning the location, time and number of humpback removed is listed in table 3, while his own summary reads like this: 'Humpback whales are common along the West coast of Greenland, at least from Frederikshaab in the South until the Bay of Disco. Arriving in April and staying for as late as November, the humpback swims into the fiords especially at Frederikshaab, Pisugfik North of

Godthaab (Nuuk) and the Bsay of Disco, while no information is certain with regards to its prominence on the East coast of Greenland.⁶

This general picture is also found in the daybooks, but when compared two records are compared, there are striking similarities, but also discrepancies between Winge and the daybooks (Table 3). Winge’s 1812 reference that many humpbacks were swimming in the Bay of Disco is echoed by the local tradesmen, who on 7 July 1812 noted that 18 humpback whales had been sighted near Arveprindsens Eyland and Hundejland in the Western part of Bay of Disco. Other informations from Winge such as the 1844 entry that 13 humpback whales were caught at Frederikshaab did not emerge out of the sampled data from the diaries. However, it does not automatically follow that Winge’s information is erroneous, they could have been caught before or after the sampled time periods, or the person keeping the diary can have left it out, even if it did happened.

Table 3. Comparison between qualitative information in daybooks and account by H. Winge

Year	Caught	Found	Sighted	sighted / caught	H. Winge	Qualitative evidenc in daybooks
1780					Greenlanders hunting at Frederikshaab	no observations found in daybooks
1807			4		H. appear at Disco Bay	1 humpback chased near Rittenbenk on 10 September
1809	1		1		Greenlanders hunting at Frederikshaab, Humpbacks arrive in Fiskenæs in winter, many sighted at Bay of Disco during mating season	Barrels of blubber stored at Frederikshaab, 1 humpback caught by Greenlanders at Rittenbenk
1812	2		25		2 humpbacks chased at Egedesminde, many swimming east-west in Bay of	18 individuals sighted near Arveprindsends Eyland and Hundeejland, in Bay of Disco on 7

⁶ Winge, (1902)

				Disco	July 1812
1823				several at Fredrikshaab, 1 sighted at Fiskenæs	not sampled
1828		1	1	several caught at Frederikshaab	Greenlanders are out for humpback whaling, no catches in daybooks for Frederikshaab, but 1 found dead
1841				all time highest in Frederikshaab with 22 H., a few caught in Godthaab area, a few at Sukkertoppen	not sampled
1844	1			13 humpbacks caught in Frederikshaab. usually 2-3 per year, Greenlanders started catching at Kangamiut north of Sukkertoppen	No observations from Frederikshaab, at least 1 humpback caught and 2 sighted at Kangamiut by Greenlanders
1857				Sukkertoppen hailed as second most important area, many sighted at Bay of Disco	not sampled
1868				H. sighted at Egedesminde, 1 whaler allegedly killed 15 individuals in one year in Bay of Disco	Humpbacks being hunted at Frederikshaab, but no numbers for catch or sightings, The 'whaler' could be the same American whaler referred to 4 times at Sukkertoppen this year

Potential for further results and further investigations

The investigation into the daybooks of the Royal Greenland Trade have reaped a number of promising results. The facilitate extending the existing time series for removals of hump back whales back another century compared with the information presented by Finn Kapel in 1979. Building on the information recovered in this investigation though, the numbers which emerge should be considered as minimum numbers caught and sighted, firstly considering that not all relevant information necessarily emerge through these records, secondly, that the activities related to humpback whaling may not exclusively have taken place in the sampled months of July, August and September, and thirdly, that the accurate estimates of individuals sighted and caught per observation is difficult to reach.

In general though, the location of humpback whaling and whales become well documented through this investigation, where the activities, in support of information presented by H. Winge, are scattered over the Greenland West Coast from Julianehaab in the South until the Bay of Disco in the North. Whaling did take place further to the North, but this was for Belugas.

Corrections to the index constructed by Klinowska and Gerslund.

The following list of corrections to the index of the daybook records was established during the process of sampling the records.

Index (typed) Microfilm rolls S12 700-739

S12.705

Item: 18

Title: Journal ... ved Colonien Rittenbenk

Dates: 1 July 1807 (*not 1806*) – 30 September 1807

Type: Diary from whaling station

Length: 7 exp

S12.708

Item: 16

Title: Journal ... Coloniene Friderichshaab og Godthaab

Dates: 7 October 1811 (*not 1810*) – 16 August 1812 (*not 1811*)

Type: (G.H. Wolff)

Length: 34 exp

S12.709

Item: 31

Title: ... Dagbog fra Colonien Frederichshaab

Dates: 1 June (*not July*) 1815 – 26 August 1816

Type: (Berglund)

Length: 25 exp

S12.714

Item: 7

Title: Egedesminde + Nye Prøve

Dates: 1.7 (*not 6.*) 1824 – 30.6.1825

Type:

Length: 11

S12.725

Item: 28

Title: Skonnerten "Activ"

Dates: 1 October (*not June*) 1858 – 19 August 1859

Type: Ship's Diary

Length: 11

S12.727

Item: 37

Title: Lægen i Sydgrønland (*not Nordgrønland*)

Dates: July 1864 – 30 June 1865

Type: Doctor's report

Length: 2

S12.729

Item: 39

Title: Julianehaab

Dates: 1 April 1871 – 23 July 1871 (*not 1872*)

Type:

Length: 5

S12.730

Item: 37

Title: Julianehaab

Dates: 1 April 1876 – 31 March 1877 (*not 1876*)

References:

“Daybooks of the Royal Greenland Trade”, Royal Greenland Trade Archive, microfilm copies at Secretariat of the International Whaling Commission

Kapel, F. O., ‘Exploitation of Large Whales in West Greenland in the Twentieth Century’, in: *Rep. Int. Whal. Commn* 29, (1979), pp. 197-214.

Smith, T. and Reeves, R., ‘Request for Proposals for Exploration of “Daybooks of the Royal Greenland Trade” for Evidence of Humpback Whaling. (unpublished, January 2008).

Sveistrup, S. S., “Det Almindelige Handelskompagni 1747-1774 med særligt henblik på dets Virksomhed i Grønland’, in: *Meddelelser om Grønland*, 131, 9, (1943), pp. 1-110.

Winge, H., ‘Grønlands Pattedyr’, in: *Meddelelser om Grønland*, 21, 2, (1902), pp. 319-521.