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## A Preliminary Analysis of Coastal Minke Whaling in Norway : Where Did It Come from, and Where Will It Go?

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## **A Preliminary Analysis of Coastal Minke Whaling in Norway: Where Did It Come from, and Where Will It Go?**

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### **1. Introduction**

This paper examines the history of whaling in Norway and provides an overview of the current state of minke whaling in the northern part of the country, as well as the domestic commodity chain of minke whale meat. The first section illustrates the short history of whaling in Norway, including the development of the Norwegian type of modern method in the mid-19th century, and the development of pelagic whaling in the Antarctic Ocean in the early 20th century. Using several sets of secondary statistical data, the second section explores the current state of minke whaling in Norway, which started in 1993 when the country resumed commercial whaling after its voluntary moratorium from 1988. Based on data gathered from fieldwork by the author, the third section is a case study of a whale meat processing company operating in the Lofoten Archipelago, Norland County. The fourth and final section present a summary of and conclusions about the Norwegian whaling industry, with a discussion on the increased exportation of minke whale meat to Japan and possible domestic ramifications.

Whaling is not a simple topic, but rather a complex subject that is influenced by the entanglement of a broad range of issues (Morishita 2006). For example, two Norwegian historians, Tønnessen and Johnsen (1982), wrote a comprehensive book on the history of modern whaling in Norway, but focused almost entirely on oil production. Although the book is over 700 pages long, it contains almost no analysis of Norwegian coastal whaling. The only mention is a note that the production of whale oil, as far as Norwegian [coastal] whaling was concerned, has been relatively limited [compared with pelagic whaling], as operations mainly focused on the production and sale of meat for human and animal consumption (Tønnessen and Johnsen 1982: 645). However, as this paper will show, coastal whaling for meat has a long history in Norway, dating back to at least the late 1920s (Foote 1975: 1165; Ris 1993: 157), and continuing until today. On the other hand, large-scale pelagic whaling for oil ceased in the late 1960s (Tønnessen and Johnsen 1982: 629–631). Analysis of this complicated situation requires making distinctions between coastal whaling and pelagic whaling, and between the production of whale meat and that of oil.

The primary data used in this paper were collected through multiple short visits to

Norway since 2013. The author does not speak Norwegian, which unfortunately limits the scope of the present study. To help make up for this limitation, several sets of secondary statistical data have been used.

## 2. The Short History of Modern Whaling in Norway

The captain of a combination ship, Svend Foyn (1809–1894), invented the modern whaling method, also called the Norwegian whaling method, in the 1860s. He was born in 1809 in the port town of Tønsberg in southern Norway. His father, a ship captain, was a wealthy individual who owned a large ship. However, after his father died in an accident at sea in 1813, Foyn and his family experienced poverty, a childhood experience that taught him the value of commerce, and the importance of accumulating capital. At the age of 24, he achieved his longtime dream of becoming a ship captain himself. So that he could perform his duties without hiring an interpreter, he spent time in Britain and France to learn the local languages. Foyn transported timber as his main cargo, but gradually accumulated a small amount of savings for himself by selling products he bought at ports throughout Norway. Foyn understood that this type of business had a limited future, and felt that seal hunting showed more promise. A true entrepreneur, he entered into the sealing business in 1846 with a schooner built exclusively for seal hunting (Tønnessen and Johnsen 1982: 26–28).



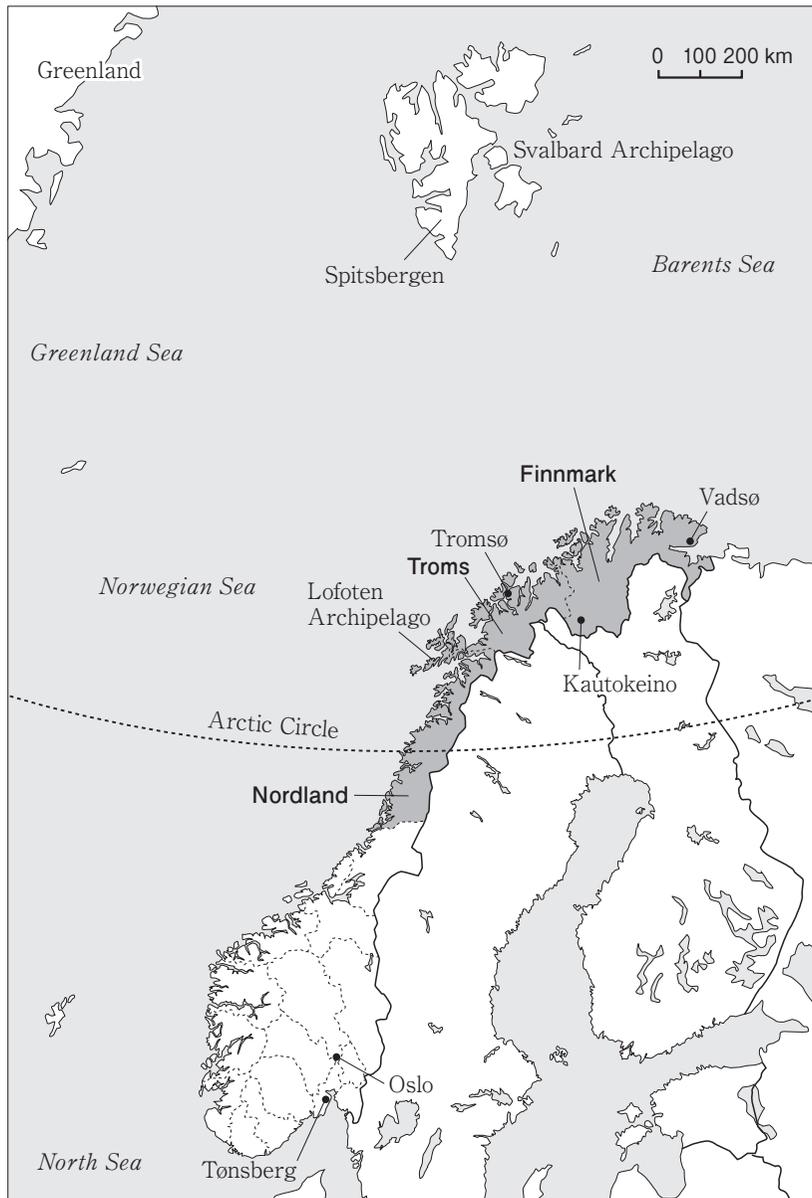
**Photo 1** Statue of Sven Foyn, Tønsberg, Vestfold, Norway (Photo by Jun Akamine, July, 2019)

After having accumulated sufficient funds through his sealing business, Foyn built a steam ship for rorqual hunting in 1863 in Oslo. The economic value of one blue whale (*Balaenoptera musculus*) was equivalent to that of 300 to 400 seals. Moreover, seal hunting required 60 crew members, whereas whaling required only 15 to 30. The whaling ship, named *Spes et Fides* (Hope and Faith), was approximately 30 meters in length and equipped with a 20-horsepower engine that could run it at seven knots. It had seven whaling guns at its prow, similar to a warship, so that it could fire bombardments at whales, with harpoons and shells fired separately.

Foyn caught seven rorquals during his first season in 1864, but still incurred a considerable financial deficit. After repeated trial and error, in 1868, Foyn finally achieved financial success, catching 30 rorquals (Tønnessen and Johnsen 1982: 29–30). (Photo 1)

Foyn's success marked the birth of a

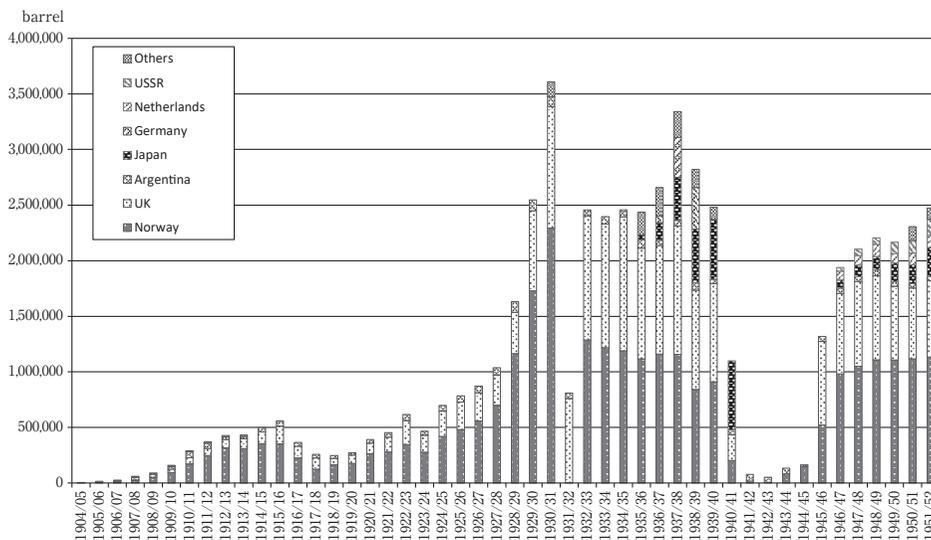
new industry in Norway. As a result, he was given a warm reception by the king of country (Tønnessen and Johnsen 1982: 31). Although Foyn had become a national hero, a troubled relationship emerged between him and the residents of the town of Vadsø, Finnmark County, where his base of operations was located (Tønnessen and Johnsen 1982: 32). There were multiple reasons for this conflict: (1) The residents were upset by



**Map 1** Map of Norway (Made by Jun Akamine)

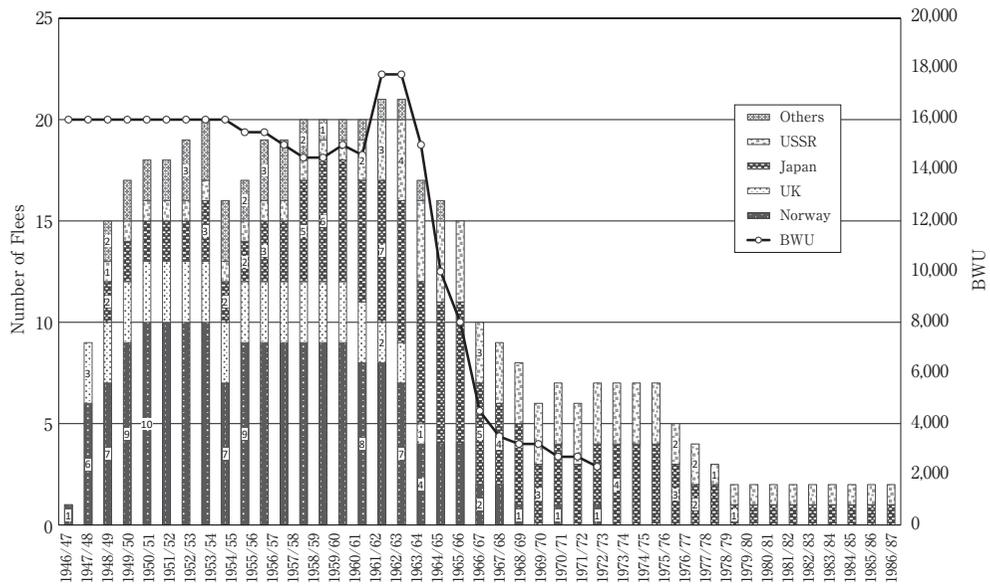
the strong odor of fat-stripped and rotten whale corpses, and the stench created when simmering whale oil and producing fertilizer; (2) As Foyn recruited his crews and purchased food in Tønsberg, there were few financial benefits for the residents of Vadsø; (3) Despite the fact that Foyn accounted for a third of Vadsø's revenue for many years, there was an ongoing dispute over taxes between him and the local town hall; (4) Local fishermen attributed stagnation in the fishing industry to the effects of whaling, which complicated his operations (Tønnessen and Johnsen 1982: 33). Disputes over these issues accumulated, and after an incident in June 1903 where 700 fishermen destroyed the local whaling station, whaling was banned in the three northern counties Finnmark, Troms, and Norland, from February 1, 1904 (Tønnessen and Johnsen 1982: 63–66). Up until that point, 3,500 blue whales, 10,500 fin whales (*Balaenoptera physalus*), 5,000 sei whales (*Balaenoptera borealis*), and 1,000 humpback whales (*Megaptera novaengliae*) are believed to have been caught in the waters around Norway (Tromsø Museum n.d.). (Map 1)

The ban pushed Norwegian whaling operations both farther north, into the waters around Spitsbergen Island (Svalbard Archipelago), and farther south into the Antarctic Ocean. Figure 1 shows international whale oil production from Antarctic whaling over the first half of the 20th century. Production of whale oil dramatically increased from the 1928/29 whaling season, reaching its peak in the 1930/31 season. During the same season, a total of 41 whaling fleets, 27 from Norway, 10 from the UK, and one each from the US, South Africa, Argentina, and Denmark, operated in the Antarctic Ocean. A total of 37,438 rorquals were harvested, including 28,325 blue whales (Omura 1969: 125–126; Itabashi 1987: 43). With the largest catch in history and the dire economic situation after the Great Depression, the price of whale oil plummeted from 25 pounds per barrel to just 10 pounds (Izui 1989: 64). (Figure 1)



**Figure 1** Production of whale oil (baleen whale oil and sperm oil) in the Antarctic Ocean (barrel). (Source: Tado ed. 1985: 162)

Figure 2 shows the number of whaling fleets sent to the Antarctic Ocean and total BWU (Blue Whale Units) caught annually in the decades before the international moratorium on whaling was put into place. Initially, the IWC (International Whaling Commission) managed whales using a BWU conversion method, which converted all species to their equivalent in blue whales based on how much oil they produced. A blue whale with a maximum length of 33 meters and a maximum weight of 150 tons produces up to 52 tons of whale oil (Tønnessen and Johnsen 1982: 4–5). The standard BWU was set at 110 barrels; as each barrel is equivalent to 170 kilograms (Tado ed. 1985: 9), this meant that the standard unit was set at approximately 19 tons of whale oil for one blue whale. A formula was used to convert to other species, so that one BWU was equivalent to two fin whales, 2.5 humpback whales, and six sei whales. Each year a BWU quota was set, and until the 1971/72 whaling season, whaling fleets were allowed to catch any combination and number of species up until the BWU limit. Whalers naturally targeted large rorquals, from which oil could be harvested more efficiently. The IWC changed its management system for the 1972/73 whaling season, retiring the BWU system and setting per-species quotas instead. (Figure 2)



**Figure 2** Number of whaling vessels sent to the Antarctic Ocean and BWU. (Source: Sakuramoto et al. eds. 1991)

Even before the IWC set its species quotas, the hunting of two species had been prohibited, leading to drastic changes in the global whaling industry. The IWC banned the hunting of humpback whales in the 1963/64 whaling season and blue whales in the 1964/65 whaling season. Due to these changes, the UK withdrew from Antarctic whaling

at the end of the 1962/63 whaling season, followed by the Netherlands in the 1963/64 whaling season. Norway completely withdrew from southern whaling at the end of the 1971/72 whaling season, but in practice the country had started its withdrawal four years earlier, sending no fleets in the 1968/69 and 1970/71 seasons.

However, Norway's case was different than that of the UK and the Netherlands. Even after ceasing their Antarctic operations, Norwegian whalers continued to hunt in their country's coastal waters. In contrast, the UK and the Netherlands conducted no coastal whaling during the period. Per Tønnessen and Johnsen (1982), the modern whaling method that Foyt developed was initially meant for whale oil production, and he later modified it for large rorquals. In 1904, when coastal whaling was banned in Norway's three northern counties, Norwegian whalers had no choice but to develop pelagic whaling. Pelagic whaling required tremendous capital, leading to the development of large-scale whaling operations. On the other hand, small-scale coastal minke whaling for meat production developed in the northern part of Norway (Kalland 1995: 692; Kalland and Sejersen 2005: 33). Such small-scale whaling was operated only in the summer, and the whalers were often fishermen that engaged in other types of fishing during the off-season (Andersen 2004: 48). This is still true today, and is an important characteristic of Norwegian coastal whaling.

Whaling cannot be viewed as a single, monotone practice. There are large differences in the scale of capital required for coastal whaling and pelagic whaling, and in the processing and commodity supply chains for meat and oil. In this sense, Norwegian whaling is different than Japanese whaling, which has a history of catching whales for both meat and oil, in coastal waters as well as in the Antarctic Ocean. The unique characteristics of Norwegian whaling help provide a new perspective on whaling and its multifaceted nature. Achieving this perspective is not possible by focusing on the whaling history of a single country like Japan, or one type of whaling. Further, broadening the analysis to include and compare multiple countries such as Japan and Norway provides a deeper understanding of the complex issues surrounding whaling.

### 3. Minke Whaling in Contemporary Norway

Among the 85 known species of cetaceans, the IWC oversees whaling activities for only 14. These include all 11 species of baleen whales and three species of toothed whale, namely the sperm whale (*Physeter macrocephalus*), northern bottlenose whale (*Hyperoodon ampullatus*), and southern bottlenose whale (*Hyperoodon planifrons*). The IWC currently maintains a quota of zero for minke whales, banning all commercial hunts. However, Norway objected to the commission's decision to impose its whaling moratorium in 1982, under Article V of the ICRW (International Convention of Regulation of Whaling). Under this objection, Norway can continue its commercial hunts of minke whales. Note, however, that Norway voluntarily suspended its whaling activities in 1987, then caught 289 minke whales through a special permit from 1988 to 1994 (IWC n.d.a).

This paper will now explore the current status of minke whaling in Norway, based

on documents and statistics obtained from Norges Råfisklag (NFSO: Norwegian Fishermen’s Sales Organization) and Statistics Norway. Figure 3 illustrates: (1) the number of minke whales caught from 1993 to 2017 and (2) the percentage of each year’s catch as a portion of the minke whale quota set by the Norwegian government. An average of 519 minke whales were caught over the span of 25 years from 1993 to 2017.<sup>1)</sup> Although a robust 736 minke whales were caught in 2014, the number of whales harvested in Norway continues to decline after its peak that year. In contrast, in 2006 the quota was increased by 130 percent to 1,052 from the previous year’s 796, then further increased to 1,286 in 2010. While the quota is continuously increased, the actual number of whales continues to decline. (Figure 3)



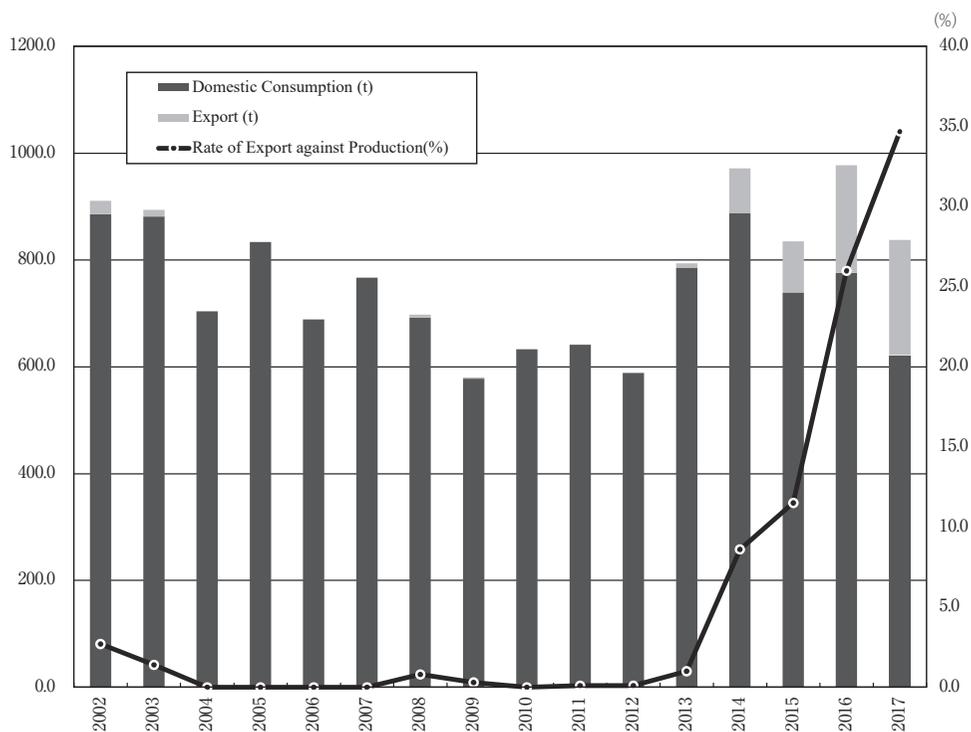
**Figure 3** Number of minke whale caught and its achievement rate against quota. (Source: Norges Råfisklag n.d.)

Figure 4 shows the domestic consumption of whale meat (t), and exports of whale meat from Norway (t). As Table 1 illustrates, in 2002, Norway exported whale meat for the first time since resuming commercial whaling in 1993, exporting 25 tons of whale meat to Iceland and the Faroe Islands. In 2008, Norway resumed exports to Japan, shipping out over five tons of whale meat. Exports to Japan began again in 2013, and increased thereafter. This was probably influenced by the fact that the achievement rates of Norwegian whalers compared to government quotas rose to 32 points from 2012 to 2016, as depicted in Figure 3. (Table 1 and Figure 4)

**Table 1** Minke whale meat exported from Norway (KG)

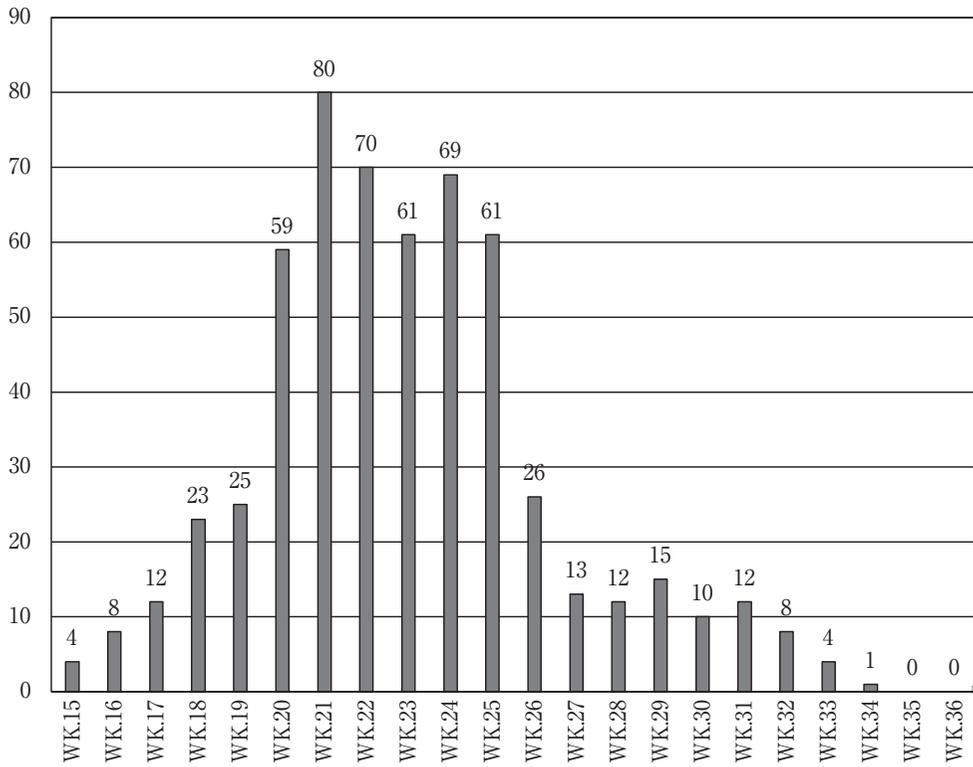
	2002	2003	2004	2005	2006	2007	2008	2009
Faroe Islands (KG)	431	8,345	0	60	250	0	0	1,920
Iceland (KG)	24,605	4,268	0	0	0	0	0	0
Japan (KG)	0	0	0	0	0	0	5,195	0
	2010	2011	2012	2013	2014	2015	2016	2017
Faroe Islands (KG)	0	468	473	994	526	2,160	864	864
Iceland (KG)	0	0	0	0	1,013	3,589	3,102	0
Japan (KG)	0	0	0	7,337	82,394	90,225	197,638	214,765

(Source: *External trade in goods*. Statistics Norway n.d.)



**Figure 4** Domestic consumption (t), export (t), and export/domestic production rate (%) of minke whale meat. (Source: *External Trade in Goods*. Statistics Norway n.d.; Norges Råfisklag n.d.)

The whaling season in Norway lasts about five months, from early April to early September. In Norway, calendar weeks are counted starting from the first Monday in January, a system which also applies to whaling statistics. Figure 5 illustrates average weekly catches during the whaling season from 2001 to 2016. Of the total catches, 69.8 percent occurred during the period from week 20 to week 25. In 2017, the first week began on January 2. The first minke whale of the season was caught during the week 15 (starting April 10), the last was caught during week 36 (ending September 10), and the



**Figure 5** Average number of minke whale caught per week (2001–2017).  
 \*The figures in 2017 are as of Aug 12, 2017.  
 (Source: Norges Råfisklag)

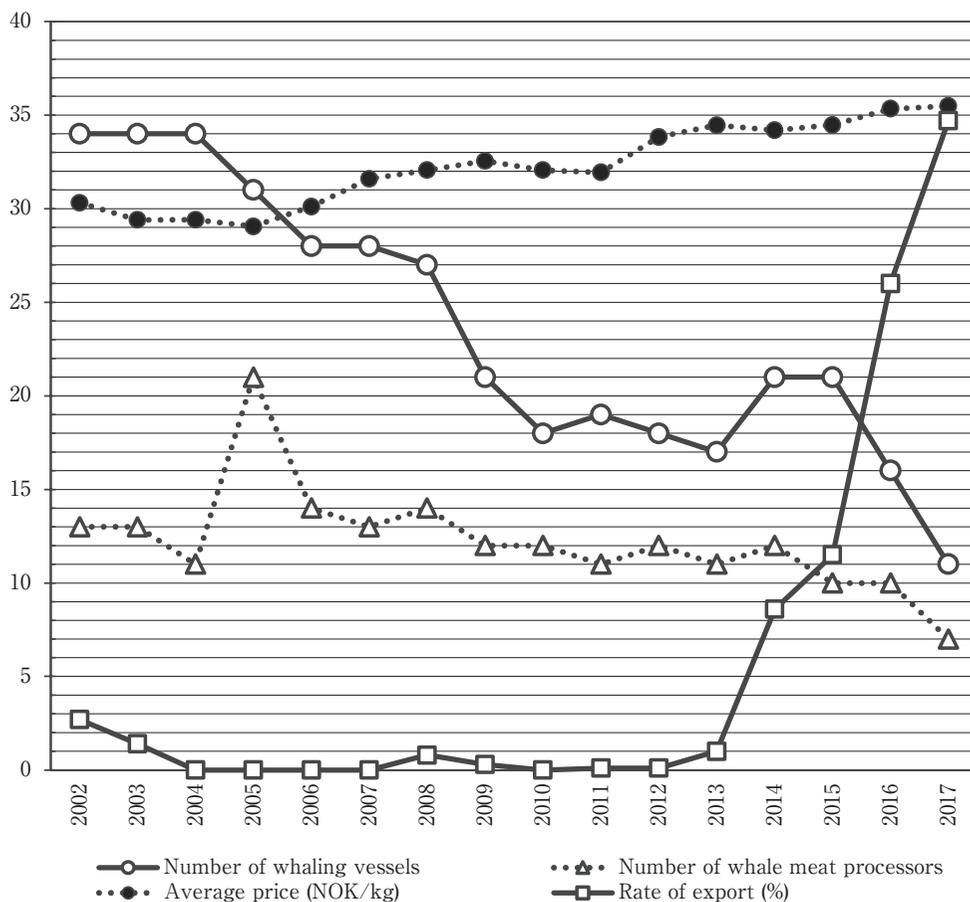


**Photo 2** A vessel for minke whaling, Svolvær, Norland, Norway (Photo by Jun Akamine, August, 2018)

**Table 2** Number of minke whale caught from WK15 to WK 32 in 2017

Vessel	A	B	C	D	E	F	G	H	I	J	K	Total
Catch	118	93	51	41	30	30	17	7	7	2	1	397

(Source: Norges Råfisklag n.d.)

**Figure 6** Number of whaling vessels and whale meat processors, average price, and export rate. (Source: Norges Råfisklag n.d.)

peak was from May 15 to June 25. From this data, it seems safe to conclude that the peak season for minke whaling in Norway is normally the middle of May until the end of June. (Figure 5)

In 2017, 11 ships engaged in coastal whaling. (Photo 2) The catch numbers for each vessel are shown in Table 2. Note, however, that the statistics are incomplete and only include data up until the end of week 32 (August 13). Catches vary greatly depending on the vessel. For example, vessel A caught 118 whales and vessel B caught 93. These two

vessels combined caught 53 percent of the total catch of 397. (Table 2) Figure 6 shows: (1) the number of vessels engaged in coastal whaling, (2) the number of whale meat processors, (3) the average price of minke whale meat bought by processors from whalers, and (4) the export rate against domestic production from 2002 to 2017. One clear trend is that the number of both whaling vessels and whale meat processors are declining. The NFSO suggests that the reason for this decline is the low price of minke whale meat. In contrast to other fish, such as cod and mackerel, whose prices have continually increased by large amounts, minke whale meat has only increased up to 5.5 Norwegian Krone (NOK). The comparatively low price of minke whale meat is increasingly a deterrent for whalers. Another factor may be socio-cultural. Whaling season in Norway overlaps with the summer holiday. It is natural that both whalers and processors want to enjoy the ephemeral summer of the region. This also some relation to the disparity of catches between whaling vessels, an issue that will be discussed in the latter part of this paper. (Figure 6)

#### **4. The Commodity Chain of Minke Whale Meat in Norway**

In contrast to Japan, where consumers eat whale skin, blubber, and offal in Norway lean meat is the exclusive product. Whale meat is most commonly eaten grilled, smoked, stewed, or cooked as a steak. After harpooning, minke whales are butchered for meat on board the whaling vessels. The skin, blubber, intestines, and bones are all discarded into the sea. Only the lean meat is retained, stored on ice in the holds of the vessels. One whaling operation normally lasts between two to three weeks, which is considered a good amount of time to age the lean meat for grilling or to be served as steaks. (Photo 3 and 4)

Processing whale meat requires a specific set of specialized skills. Hunks of meat must be properly sliced into small pieces. In a processing factory run by Company A in Lofoten Archipelago, where the fieldwork for this study was conducted, as many as six skilled meatpackers were employed during the high season from the middle of May to the end of June in 2015. These included one Norwegian, one Slovakian, and four Polish workers. Before and after the high season, one Norwegian and one Slovakian complete the same job. Some of these skilled butchers go to Kautokeino, further inland in northern Norway, to work in a reindeer meatpacking plant after the whaling season. (Photo 5, 6, and 7)

The story of one worker in Company A is illustrative. Jozef (pseudonym) is a skilled meatpacker from Slovakia. He was born in 1972 in Humenné, eastern Czechoslovakia, close to the borders of Poland and Ukraine. Jozef was interviewed in 2018 when he was 46 years old. After he graduated from junior high school at the age of 14, he spent 3.5 years in a vocational school where he learned his meatpacking skills. It was during his vocational school days that the communist government collapsed in 1989. After graduation, he was assigned by the government to a meatpacking factory near Humenné, where he worked for 14 years. In 2003, he read an advertisement in a newspaper calling for meatpackers at a lamb factory in Wales, UK. He applied for the job and was accepted as a seasonal worker. He would work at the factory in the UK from June to February,



**Photo 3** The Steak Skrovaa (NOK300) at Lofotstua, Oslo. A steak of whale meat (ca 200g) pan-fried in butter with onions and tomatoes, served with a dash of sour crème. The restaurant will serve the steak medium to rear only. (Photo by Jun Akamine, August, 2018)



**Photo 4** Arrival of lump of minke whale meat at the factory, Svolveær, Norland, Norway (Photo by Jun Akamine, August, 2018)

then come back to Slovakia in the offseason. In 2013, he changed jobs to a reindeer meatpacking factory in Kautokeino, northern Norway, where he met many Polish workers. He was able to communicate with them in Polish as his birthplace, Humenné, is close to Poland. He was introduced to the whale meat processing factory in the Lofoten Archipelago by a colleague, where he began working in 2015. He comes to the factory at five a.m., and prepares meat for processing by the other workers, who arrive at nine a.m. After the whaling season, he works at Kautokeino, and then goes back home to Humenné before Holy Week.



**Photo 5** Skilled meatpackers, Henningsvær, Norland, Norway  
(Photo by Jun Akamine, June, 2015)



**Photo 6** Cutting lump of meat along its sinew (Photo by Jun Akamine, June, 2015 in Henningsvær)



**Photo 7** Block of minke whale meat cut by the skilled meatpackers (Photo by Jun Akamine, June, 2015 in Henningsvær)

When asked about his reasons for working abroad, Jozef smiled wryly and said “money in Slovakia is small.” Although he has two daughters, he has been working abroad since his thirties as a seasonal migrant worker. Even so, he said he was lucky to be able to be with his family during the Easter holidays in Slovakia.

In June 2015, at the height of the whaling season, Company A employed 21 workers at its processing plant. Only two of them were Norwegian. Most of the workers were unskilled, and almost all of them were Polish. The owner of the factory said he has been hiring Polish workers since he established his company in 2006. Originally he hired workers recommended to him by a friend, who owns a construction company and staffing firm. Now, he finds most of his workers through word-of-mouth, including Jozef.

In the factory, unskilled workers place small cuts of whale meat onto a processing line. These cuts are then further processed into ready-to-pack sizes ranging from 150 to



**Photo 8** Weighing minke whale meat *hvalkjøtt* for packing  
(Photo by Jun Akamine, June, 2015 in Henningsvær)



**Photo 9** Packing the right amount of *hvalkjøtt* (Photo by Jun Akamine, June, 2015 in Henningsvær)

180 grams, depending on customer specifications. (Photo 8 and 9) Slicing is mechanized but packing is done by hand. In August 2018, toward the end of the whaling season, 14 seasonal foreign workers, 13 Polish and 1 Russian, were working as packers. The ages of the workers varied. There were a middle-aged couple and several college students, who considered the work to be their summer job. Workers made NOK199 per hour,<sup>2)</sup> and were paid all of their own costs, including travel, lodging and meals. Their employment was subject to the supply of whale meat, and they were paid only for the hours they worked, with no guaranteed time or daily salary. However, as the tourist season in Norway runs from June to August, the workers could readily find other jobs on their days off from the factory. Those that could speak English could easily find jobs at a restaurant or hotel. As one example, a female university student who assisted this research spoke good English, and worked as a hotel receptionist when no whale meat was expected. Her father was one of the skilled butchers who worked at the factory during the high season. She was delighted to work at the factory, and said it paid more than enough for a summer job.

During the whaling season, fresh minke whale meat is available at local fish shops. For example, a fishmonger at Tromsø sold fresh minke whale meat for NOK189 per kilogram in August 2018. The same shop sold home-made smoked minke whale meat for NOK289 per kilogram. These were sold by weight through face-to-face sales. Wild smoked salmon costed NOK449 per kilogram and smoked cultured salmon NOK279. The price of minke whale was generally considered to be about the same as smoked cultured salmon.

Supermarkets in Tromsø also sold packed (sometimes frozen) whale meat. Minke whale meat for steak (*biff*) that has been cut into 150-gram to 180-gram pieces, called *hvalbiff* (whale steak), was sold for NOK220 per kilogram at one supermarket. A smaller chunk of whale meat is called *hvalkjøtt* (whale meat), good for grilling or stews, and was sold for NOK118 per kilogram, almost half the price of *hvalbiff*. The differences in price seem reasonable if one observes the whale meat being processed at a factory. At Company A, production of *hvalbiff* is prioritized over that of *hvalkjøtt*. The factory's skilled butchers decide whether a piece of meat is suitable for *hvalbiff* or not depending on its quality, which is determined by factors such as texture and smell. Meat that is not high enough quality is processed into *hvalkjøtt*. For comparison, chicken costs between NOK177 and NOK189 per kilogram, pork between NOK170 and NOK192, and beef between NOK317 and NOK572 at the same supermarket. The price range of whale meat was nearly the same as that for chicken and pork. Somewhat surprisingly, for *hvalbiff* whale steak there was no big difference between pre-cut and packed meat sold at supermarkets and cut-to-order meat sold at fish shops. Indeed, often fish shops were cheaper.

Whale meat served at restaurants in Norway was predominately steak. Occasionally carpaccio-like dishes were served at fancy restaurants in Svolvær (NOK165), Tromsø (NOK175), and Oslo (NOK143). At a restaurant in Tromsø, a whale meat steak of 180 grams cost NOK225 per plate in August 2018. Given that this was as expensive as a sirloin steak, one can deduce how highly-prized whale steak is in Tromsø. On the other hand, casual food such as pizza and pasta were priced anywhere from NOK150 to NOK200 per dish, and Asian dishes, such as Chinese or Thai, cost from NOK120 to NOK140 per dish. A Big Mac at McDonald's cost NOK58 for dining in and NOK53 for take away, due to additional value-added tax for eating in. Overall, eating whale meat with wine or beer at a restaurant ends up being quite an expensive experience.

## 5. Summary

The main characteristics of modern Norwegian minke whaling can be summarized as follows:

- (1) Minke whale is mainly consumed in the northern part of Norway. Domestic consumption, when calculated based on domestic production and export volume, comes to 600 tons per year. From this number, statistically speaking, 115 grams of minke whale meat per capita are consumed in Norway annually, which is three times the amount consumed in Japan.
- (2) Norway's whale meat processing industry is heavily dependent on seasonal migrant workers from East Europe, especially those from Poland. Thus, the whaling industry is to some extent connected to regional integration in Europe. Although Norway is not a member of the European Union, the country is part of the Schengen Agreement, which allows unfettered border crossings for citizens of the 26 member countries. Poland joined the agreement in 2004.
- (3) In 2013 and 2014, the production of whale meat increased, but since 2015 the

production of whale meat has steadily declined. The number of whaling vessels and whale meat processors have followed the same pattern.

- (4) There are two possible reasons why the achievement rate against whaling quotas has been decreasing since 2002 in Norway: the quota is simply larger than the demand, and the low price of whale meat discourages fishermen from engaging in whaling. The economics may also be a factor because the high season for whaling is in June, a time when Norwegians, especially those who live in the Arctic region, can enjoy the midnight sun. This provides a rare opportunity for enjoying outdoor activities, such as barbecue parties with family and friends, which would seem to increase the demand for meat for grilling. However, fishermen also enjoy their summers, and whaling increasingly fails to provide the financial incentives for them to give up their vacations. This trend has been further enhanced by the relative success of other key fisheries in Norway, such as cod and mackerel for export.
- (5) Under such circumstances, it is worth noting that Norway has continuously increased its exports of whale meat to Japan, especially since 2014. Whether such exports to the Japanese market will buoy the Norwegian whaling industry is still inconclusive. Japan withdrew from the ICRW at the end of June in 2019, and has recently resumed commercial minke whaling within the country's exclusive economic zone, after a 31-year hiatus. The quota for the end of 2019 was only 52 minke whales, in addition to 150 Bryde's whales (*Balaenoptera brydei*) and 25 sei whales, while the quota for 2020 is still unknown.

## 6. Possible Effects of Minke Whale Exportation to Japan on the Norwegian Whaling Industry

Given the current unclarity surrounding the Japanese whaling industry, Japanese stakeholders such as whale meat processors and restaurant owners are concerned about the domestic whale meat supply. For this reason, some expect larger imports from Norway, at least until Japanese domestic quotas are reached. However, there remains a serious issue that needs to be addressed. Whale meat is cooked as steak in Norway and never consumed raw (with the exception of carpaccio, which is served only as a starter in fancy restaurants). Preparing whale meat for steak requires adequate aging, a practical method for which is storing it on ice in the holds of whaling vessels for two to three weeks during hunting voyages. On the other hand, the demand in the Japanese market is exclusively for whale meat that can be served raw as *sashimi*. The conventional aging method used in Norway introduces bacteria, and while this has been found to be safe and even provide health benefits, the Japanese Ministry of Health, Labour and Welfare prohibits the use of meat containing bacteria beyond the levels approved for sashimi consumption. Therefore, in order for Norwegian exporters to export whale meat for sashimi to Japan, they must change the way they store it, freezing it on board whaling vessels or at processing plants directly after it is dressed. Purchasing the equipment to do this would require large and risky investments for small-scale whalers and whale meat processors, at a time when the whale meat market in Japan appears to be shrinking and

unpredictable. These conditions have produced a widening gap in Norway, between companies that possess the required capital to make such bets and those that don't. The companies that have increased their exports to Japan are those with sufficient funds to invest in the Japanese sashimi market. Company A, where the fieldwork for this study was conducted, is actively searching for a means to export its whale meat to Japan, but has yet to be successful.

The Norwegian government is attempting to address the domestic decrease in whale meat production by loosening its quota system. Prior to 2018, the whaling season was divided into two phases, one through May with no individual quotas for whaling ships, and one from June, where quotas were set based on ship size. Ships with a hull length below 20 meters were given a quota of 20 tons, while those with larger hulls were assigned a quota of 30 tons. To further stimulate whaling, from 2018 the government has removed quotas for individual ships all together. This is a rare exemption for the whaling industry, given that Norway is well known for enforcing its fisheries resource management with strict, individual quotas. The country's successful exports from its cod and mackerel fisheries are partially due to the setting of such quotas.

In the end, Norwegian whalers must decide for themselves whether they will target the Japanese minke whale meat market or continue with the stagnant domestic market. To penetrate the Japanese market, the entire whaling industry must implement drastic structural changes required for sashimi production. It will also be interesting to observe how policies for the sustainable use of minke whale resources may affect the conventional whaling industry in Norway.

The purpose of this research is to help gain a macro view of the global history of whaling and where it fits in to human history, and to gain insight on the future of whaling. To this end, it is necessary to distinguish small-scale coastal whaling for meat and large-scale pelagic whaling for oil. In this sense, Norway makes for a better case study than Japan, where the whaling industry has focused on both meat and oil production, even in pelagic waters. This research is still in its initial stages, and the current report does not detail how coastal minke whaling began in Norway in the late 1920s, or its history until the late 1960s, when Norway sent its whaling fleets to the Antarctic Ocean. Sven Foyn entered the whaling industry after experience hunting seals for fur and oil. Today, only a small quantity of seal meat is commercially distributed in the northern part of Norway around Tromsø. When discussing food and foodways in the Arctic region, either in Eurasia or in America, the general condition of wildlife resources, including marine mammals, must be considered. The whaling history of Norway should be interpreted within the context of the history of the Nordic countries, while also considering global historic trends. Discussions around whaling often entangle these disparate issues, and there is a need to investigate each one independently in the future.

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## Notes

- 1) During the same period, Japan caught a total of 12,866 of minke whales (2,942 common minke whales in the Northwest Pacific and 9,924 dwarf minke whales in the Antarctic Ocean), an average of 515 minke whales per year (397 in the Antarctic Ocean) (IWC n.d.b).
- 2) One Norwegian Krone (NOK) was equal to 13.5 Japanese Yen (JPY) and 0.122 US Dollars (USD) in August 2018.

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 n.d.a Catches Taken: Special Permit. [https://iwc.int/table\\_permit](https://iwc.int/table_permit) (accessed on July 26, 2019)  
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