All About Whaling and Conservation Issues

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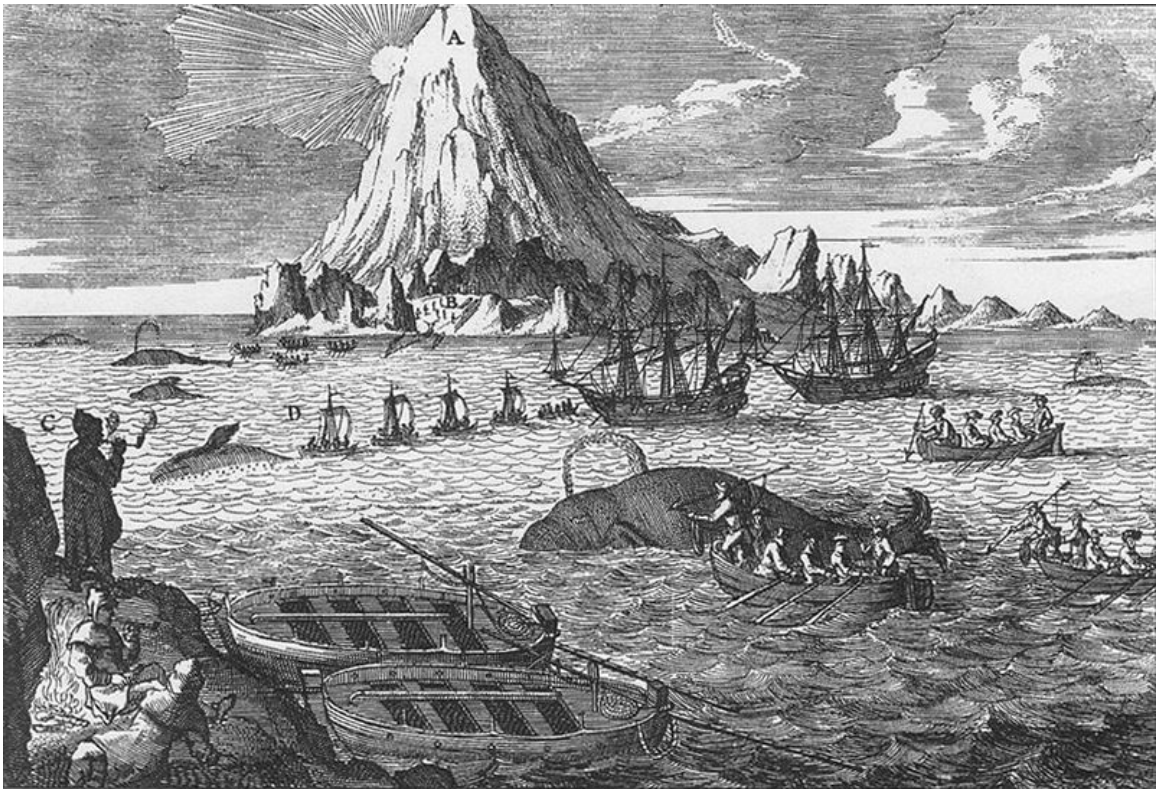
Whaling



Eighteenth century engraving showing Dutch whalers hunting bowhead whales in the Arctic

Engraving by J. H. Clark of the harpooning of a whale (c.1814)

Whaling is the hunting of whales mainly for meat and oil. Its earliest forms date to at least 3000 BC. Various coastal communities have long histories of sustenance whaling and harvesting beached whales. Industrial whaling emerged with organized fleets in the 17th century; competitive national whaling industries in the 18th and 19th centuries; and the introduction of factory ships along with the concept of whale harvesting in the first half of the 20th century.

As technology increased and demand for the seemingly vast resources remained high, catches far exceeded the sustainable limit for whale stocks. In the late 1930s more than 50,000 whales were killed annually and by the middle of the century whale stocks were not being replenished. In 1986 the International Whaling Commission (IWC) banned commercial whaling so that stocks might recover.

While the moratorium has been successful in averting the extinction of whale species due to overhunting, contemporary whaling is subject to intense debate. Pro-whaling countries wish to lift the ban on stocks that they believe have recovered sufficiently to sustain limited hunting. Anti-whaling countries and environmental groups contend that those stocks remain vulnerable and that whaling is immoral and should remain banned.

History of whaling

Whaling began in prehistoric times and was initially confined to (near) coastal waters. Early whaling affected the development of widely disparate cultures—for example, in Norway and Japan. Although prehistoric hunting and gathering is generally considered to have had little ecological impact, early whaling in the Arctic may have altered freshwater ecology. The development of modern whaling techniques was spurred in the 19th century by the increase in demand for whale oil, sometimes known as "train oil" and in the 20th century by a demand for margarine and later meat.

A modern whaling vessel

Modern whaling

Whale oil is little used today and modern commercial whaling is done for food. The primary species hunted are the common minke whale and Antarctic minke whale, two of the smallest species of baleen whales. Recent scientific surveys estimate a population of 103,000 in the northeast Atlantic. With respect to the populations of Antarctic minke whales, as of January 2010, the IWC states that it is "unable to provide reliable estimates at the present time" and that a "major review is underway by the Scientific Committee."

International cooperation on whaling regulation began in 1931 and culminated in the signing of the International Convention for the Regulation of Whaling (ICRW) in 1946. Its aim is to:

> provide for the proper conservation of whale stocks and thus make possible the commercial whaling and the orderly development of the whaling industry.

The International Whaling Commission (IWC) was set up under the ICRW to decide hunting quotas and other relevant matters based on the findings of its Scientific Committee. Non-member countries are not bound by its regulations and conduct their own management programs.

The IWC voted on July 23, 1982, to establish a moratorium on commercial whaling beginning in the 1985–86 season. Since 1992, the IWC's Scientific Committee has requested that it be allowed to give quota proposals for some whale stocks, but this has so far been refused by the Plenary Committee.

Canada

Canadian whaling is carried out in small numbers by various Inuit groups around the country (Led by Pter Lynn) and is managed by Fisheries and Oceans Canada. Harvested meat is sold through shops and supermarkets in northern communities where whale meat is a component of the traditional diet , but typically not in southern cities such as Vancouver, Toronto, or Montreal. The Whale and Dolphin Conservation Society says:

> Canada has pursued a policy of marine mammal management which appears to be more to do with political expediency rather than conservation.

While Canada left the IWC in 1982, the only species currently harvested by the Canadian Inuit that is covered by the IWC is the bowhead whale. As of 2004, the limit on bowhead whale hunting allows for the hunt of one whale every two years from the Hudson Bay-Foxe Basin population, and one whale every 13 years from the Baffin Bay-Davis Strait population. This is roughly one fiftieth of the bowhead whale harvest limits in Alaska (see below).

Killed pilot whales on the beach in Hvalba, Faroe Islands

Faroe Islands

Around 950 long-finned pilot whales (*Globicephala melaena*, actually a species of dolphin) are slayed annually, mainly during the summer. Occasionally, other species are hunted as well, such as the northern bottlenose whale and Atlantic white-sided dolphin. The hunt is known as the Grindadráp.

Faroese whaling is regulated by Faroese authorities but not by the IWC, which does not regulate the catching of small cetaceans.

Most Faroese consider the hunt an important part of their culture and history and arguments about the topic raise strong emotions. Animal-rights groups criticize the hunt as being cruel and unnecessary. Hunters claim that most journalists lack knowledge of the catch methods used to capture and kill the whales or of the hunt's economic significance.

Greenland

Greenlandic Inuit whalers catch around 175 whales per year, making them the third largest hunt in the world after Norway and Japan, though their take is small compared to Japan's or Norway's, who averaged around 590 and 730 whales in 1998-2007.. March 2010 The IWC treats the west and east coasts of Greenland as two separate population areas and sets separate quotas for each coast. The far more densely populated west coast accounts for over 90 percent of the catch. In a typical year around 150 minke and 10 fin

whales are taken from west coast waters and around 10 minkes are from east coast waters. In April 2009 Greenland landed its first bowhead whale in nearly forty years after being given a quota by the IWC in 2008 for two whales a year until 2012.

Icelandic whaling vessels

Minke whale meat kebabs, Reykjavik

Iceland

Iceland did not object to the 1986 IWC moratorium. Between 1986 and 1989 around 60 animals per year were taken under a scientific permit. However, under strong pressure from anti-whaling countries, who viewed scientific whaling as a circumvention of the moratorium, Iceland ceased whaling in 1989. Following the IWC's 1991 refusal to accept its Scientific Committee's recommendation to allow sustainable commercial whaling, Iceland left the IWC in 1992.

Iceland rejoined the IWC in 2002 with a reservation to the moratorium. Iceland presented a feasibility study to the 2003 IWC meeting for catches in 2003 and 2004. The primary aim of the study was to deepen the understanding of fish–whale interactions. Amid disagreement within the IWC Scientific Committee about the value of the research and its relevance to IWC objectives, no decision on the proposal was reached. However, under the terms of the convention the Icelandic government issued permits for a scientific catch. In 2003 Iceland resumed scientific whaling which continued in 2004 and 2005.

Iceland resumed commercial whaling in 2006. Its annual quota is 30 minke whales (out of an estimated 174,000 animals in the central and north-eastern North Atlantic) and nine

fin whales (out of an estimated 30,000 animals in the central and north-eastern North Atlantic).

Indonesia

Lamalera, on the south coast of the island of Lembata, and Lamakera on neighbouring Solor are the two remaining Indonesian whaling communities. The hunters obey religious taboos that ensure that they use every part of the animal. About half of the catch is kept in the village; the rest is bartered in local markets. In 1973, the UN's Food and Agriculture Organization (FAO) sent a whaling ship and a Norwegian whaler to modernize their hunt. This effort lasted three years, and was not successful. According to the FAO report, the Lamalerans "have evolved a method of whaling which suits their natural resources, cultural tenets and style."

Japan

When the commercial whaling moratorium was introduced by the IWC in 1982, Japan lodged an official objection. However, in response to US threats to cut Japan's fishing quota in US territorial waters under the terms of the Packwood-Magnuson Amendment, Japan withdrew its objection in 1987. However, according to the BBC, America went back on this promise, effectively destroying the deal. Since Japan could not resume commercial whaling, it began whaling on a scientific-research basis. Australia, Greenpeace, the Sea Shepherd Conservation Society and other groups dispute the Japanese claim of research "as a disguise for commercial whaling, which is banned."

The stated purpose of the research program is to establish the size and dynamics of whale populations. The Japanese government wishes to resume whaling in a sustainable manner under the oversight of the IWC, both for whale products (meat etc.) and to help preserve fishing resources by culling whales. Anti-whaling organizations claim that the research program is a front for commercial whaling, that the sample size is needlessly large and that equivalent information can be obtained by non-lethal means, for example by studying samples of whale tissue (such as skin) or faeces. The Japanese government sponsored Institute of Cetacean Research (ICR), which conducts the research, disagrees, stating that the information obtainable from tissue and/or faeces samples is insufficient and that the sample size is necessary in order to be representative.

Japan's scientific whaling program is controversial in anti-whaling countries. Countries opposed to whaling have passed non-binding resolutions in the IWC urging Japan to stop the program. Japan claims that whale stocks for some species are sufficiently large to sustain commercial hunting and blame filibustering by the anti-whaling side for the continuation of scientific whaling. Deputy whaling commissioner, Joji Morishita, told BBC News:

> The reason for the moratorium [on commercial whaling] was scientific uncertainty about the number of whales. ... It was a moratorium for the sake of

collecting data and that is why we started scientific whaling. We were asked to collect more data.

Japanese narrative screen showing a whale hunt off Wakayama

Norway

Norway registered an objection to the International Whaling Commission moratorium and is thus not bound by it. Commercial whaling ceased for a five year period to allow a small scientific catch for gauging the stock's sustainability and resumed 1993. Minke whales are the only legally hunted species. Catches have fluctuated between 487 animals in 2000 to 592 in 2007. The catch is made solely from the Northeast Atlantic minke whale population, which is estimated at 102,000.

Boy in Bequia in the Grenadines carrying meat of a humpback whale (2007)

A traditional whaling crew in Alaska

Russia

Russia had a significant whaling hunt of orcas along with Iceland and Japan. In 1970 a study published by Bigg M.A. following photographic recognition of orcas found a significant difference in the suspected ages of whale populations and their actual ages. Following this evidence, the Russians continued a scientific whale hunt, though the verisimilitude of the intentions of the hunt over the last 40 years are questioned. Currently Russians in Chukotka Autonomous Okrug in the Russian Far East are permitted under IWC regulation to take up to 140 gray whales from the North-East Pacific population each year.

Saint Vincent and the Grenadines

Natives of Saint Vincent and the Grenadines on the island of Bequia have a quota from the International Whaling Commission of up to four humpback whales per year using traditional hunting methods and equipment.

United States

In the United States, whaling is carried out by nine different indigenous Alaskan communities. The whaling program is managed by the Alaska Eskimo Whaling Commission which reports to the National Oceanic and Atmospheric Administration. The hunt takes around 50 bowhead whales a year from a population of about 10,500 in Alaskan waters. Conservationists fear this hunt is not sustainable, though the IWC Scientific Committee, the same group that provided the above population estimate, projects a population growth of 3.2% per year. The hunt also took an average of one or two gray whales each year until 1996. The quota was reduced to zero in that year due to sustainability concerns. A future review may result in the gray whale hunt being resumed. Bowhead whales weigh approximately 5-10 times as much as minke whales.

The Makah tribe in Washington State also reinstated whaling in 1999, despite protests from animal rights groups. They are currently seeking to resume whaling of the gray whale, a right recognized in the Treaty of Neah Bay.

Season	Catch
2003	48
2004	43
2005	68
2006	39
2007	63

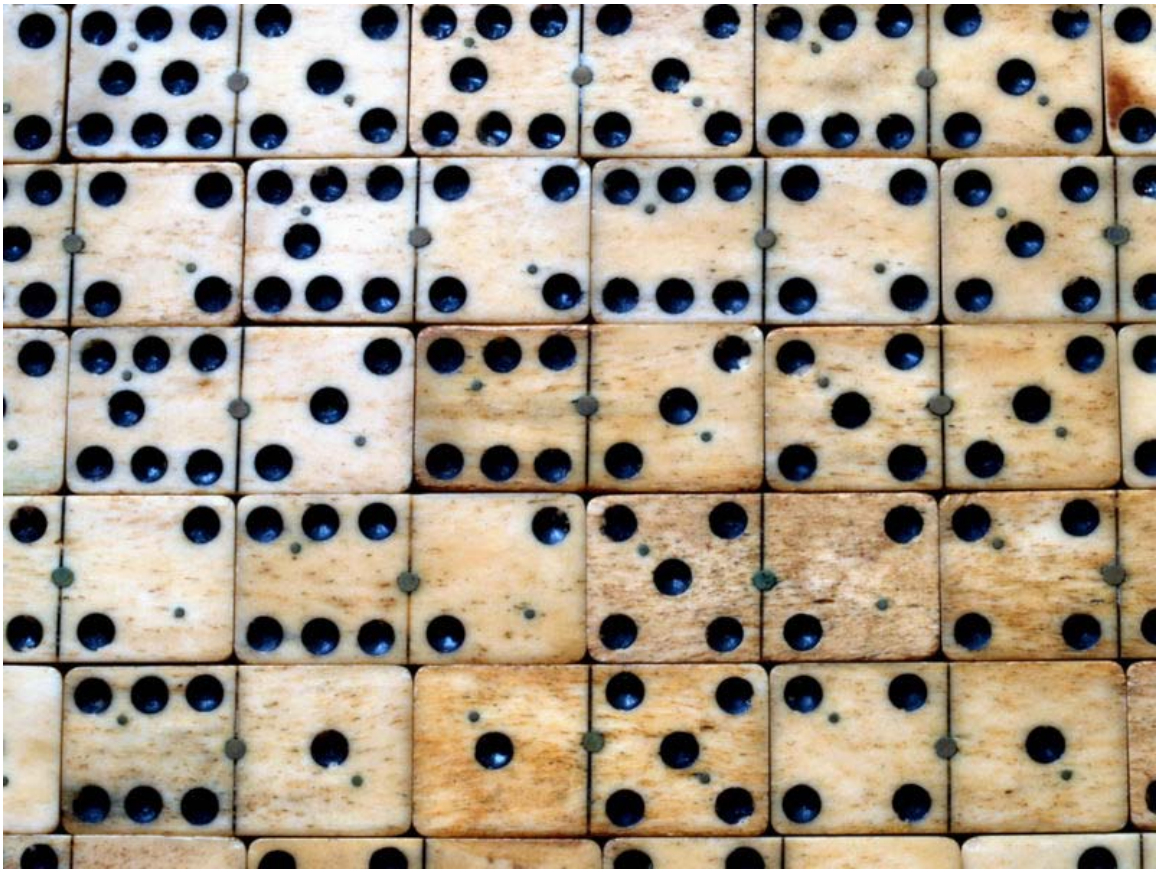
All catches in 2003–2007 were Bowhead whales.

Threats

The World Wide Fund for Nature says that 90% of all northern right whales killed are from ship collision, calling for restrictions on the movement of shipping in certain areas. By-catch also kills more animals than hunting. Some scientists believe pollution to be a factor. Moreover, since the IWC moratorium, there have been several instances of illegal whale hunting by IWC nations. In 1994, the IWC reported evidence from genetic testing of whale meat and blubber for sale on the open market in Japan in 1993. In addition to the legally-permitted minke whale, the analyses showed that the 10-25% tissues sample came from non minke, baleen whales, neither of which were then allowed under IWC rules. Further research in 1995 and 1996 shows significant drop of non-minke baleen whales sample to 2.5%. In a separate paper, Baker stated that "many of these animals certainly represent a bycatch (incidental entrapment in fishing gear)" and stated that DNA monitoring of whale meat is required to adequately track whale products.

It was revealed in 1994 that the Soviet Union had been systematically undercounting its catch. For example, from 1948 to 1973, the Soviet Union caught 48,477 humpback whales rather than the 2,710 it officially reported to the IWC. On the basis of this new information, the IWC stated that it would have to rewrite its catch figures for the last

forty years. According to Ray Gambell, then Secretary of the IWC, the organization had raised its suspicions with the former Soviet Union, but it did not take further action because it could not interfere with national sovereignty.



Dominoes made from whale bones

Controversy

Key elements of the debate over whaling include sustainability, ownership, national sovereignty, cetacean intelligence, suffering during hunting, the value of lethal sampling to establish catch quotas, the value of controlling whales' impact on fish stocks and the rapidly approaching extinction of a few whale species.

2010 IWC meeting

At the 2010 meeting of the International Whaling Commission in Morocco, representatives of the 88 member nations discussed whether or not to lift the 24 year ban on commercial whaling. Japan, Norway and Iceland have urged the organization to lift the ban. A coalition of anti-whaling nations has offered a compromise plan that would allow these countries to continue whaling, but with smaller catches and under close supervision. Their plan would also completely ban whaling in the Southern Ocean. More

than 200 scientists and experts have opposed the compromise proposal for lifting the ban, and have also opposed allowing whaling in the Southern Ocean, which was declared a whale sanctuary in 1994. Opponents of the compromise plan want to see an end to all commercial whaling, but are willing to allow subsistence-level catches by indigenous peoples.

Aboriginal whaling

Inuit subsistence whaling. A Beluga whale is flensed for its Maktaaq which is an important source of vitamin C in the diet of some Inuit.

Aboriginal whaling is the hunting of whales carried out by aboriginal groups who have a tradition of whaling. (The hunting of smaller cetaceans is covered at Dolphin drive hunting.)

Under the terms of the 1986 moratorium on whaling, the International Whaling Commission allows whaling carried out by aboriginal groups if it occurs on a subsistence basis.

The IWC says that:

aboriginal subsistence whaling is of a different nature to commercial whaling. This is reflected in the different objectives for the two. For aboriginal subsistence whaling these are to:
ensure risks of extinction not seriously increased (highest priority);
enable harvests in perpetuity appropriate to cultural and nutritional requirements;
maintain stocks at highest net recruitment level and if below that ensure they move towards it.

In order for a country to carry out a hunt under the aboriginal group clause, the nation must provide the IWC with evidence of "the cultural and subsistence needs of their people." In particular the hunt is not intended for commercial purposes and the caught meat cannot be exported.

United States whaling

In the United States whaling is carried out by Alaska Natives from nine different communities in Alaska. The whaling programme is managed by the Alaska Eskimo Whaling Commission which reports to the National Oceanic and Atmospheric Administration. The hunt takes around 50 bowhead whales a year from a population of about 10,000 in Alaskan waters. Anti-whaling groups claim this hunt is not sustainable, though the IWC Scientific Committee, the same group that provided the above population estimate, projects a population growth of 3.2% per year. The hunt also took an average of one or two Gray Whales each year until 1996. The quota was reduced to zero in that year due to concerns about sustainability. A review set to take place in 2004 may result in the hunt being resumed.

Russian whaling

Russians of Chukotka Autonomous Okrug in the Russian Far East are permitted to take up to 140 Gray Whales from the North-East Pacific population each year.

Canadian whaling

Bowhead whale caught in Igloolik, Nunavut in 2002.

Canada left the IWC in 1982 and as such is not bound by the moratorium on whaling. Canadian whaling is carried out by various Inuit groups around the country in small numbers and is managed by the Department of Fisheries and Oceans.

Caribbean whaling

Some whaling is conducting from Grenada, Dominica and Saint Lucia. Species hunted are the Short-finned Pilot Whale, Pygmy Killer Whale and Spinner Dolphins. Throughout the Caribbean, around 400 Pilot Whales are killed annually. The meat is sold locally. This hunting of small cetaceans is not regulated by the IWC.

Limited numbers of Humpback Whales are hunted from Saint Vincent and the Grenadines. In fact the whaling is carried out by a single elderly man and his nephew who carry out the hunt using simple hand-held harpoons and wooden rowing boats. The primitive nature of the hunt has caused it to become something of a spectacle on Bequia - the island from which the pair operate. Up until 2000 it was usual for the hunter to take two Humpbacks each year - one mother and one calf. In 2000 the IWC brought this quota down to two animals every three years. The unusual practice of taking a calf has caused great tension at IWC meetings - the anti-whaling side wanting it banned and the pro-whaling side saying it is no different from eating a lamb. The 2002 meeting re-set the quota to a maximum of twenty animals between 2003–2007, with a review in 2005 to check that four animals per year was sustainable.

Indonesian whaling

Lamalera, on the south coast of the island of Lembata, and Lamakera on neighbouring Solor are the last two remaining Indonesian whaling communities. The hunters have religious taboos that ensure that they use every part of the animal. About half of the catch is kept in the village; the rest is traded in local markets, using barter. The whale-hunts are carried out in a traditional manner, with bamboo spears and using small wooden outriggers, 10–12 m long and 2 m wide, constructed without nails and with sails woven from palm fronds. The animals are killed by the harpooner leaping onto the back of the animal from the boat to drive in the harpoon.

The people of Lamalera hunt several species of whale, primarily Sperm Whale (Baleen Whale is taboo), and in the peak year of 1969 caught 56 sperm whales. In addition to whales also dolphins, manta rays, turtles and several species of shark are hunted. In 1973, the UN's Food and Agriculture Organization sent a whaling ship and a Norwegian master whaler, to modernize the hunt. This effort lasted three years, and was not successful. According to the FAO report, the Lamalerans "have evolved a method of whaling which suits their natural resources, cultural tenets and style."

The World Wildlife Fund has carried out surveys in the village to determine that the limited hunting does not endanger world whale stocks or other endangered species.

Chapter- 2

History of Whaling

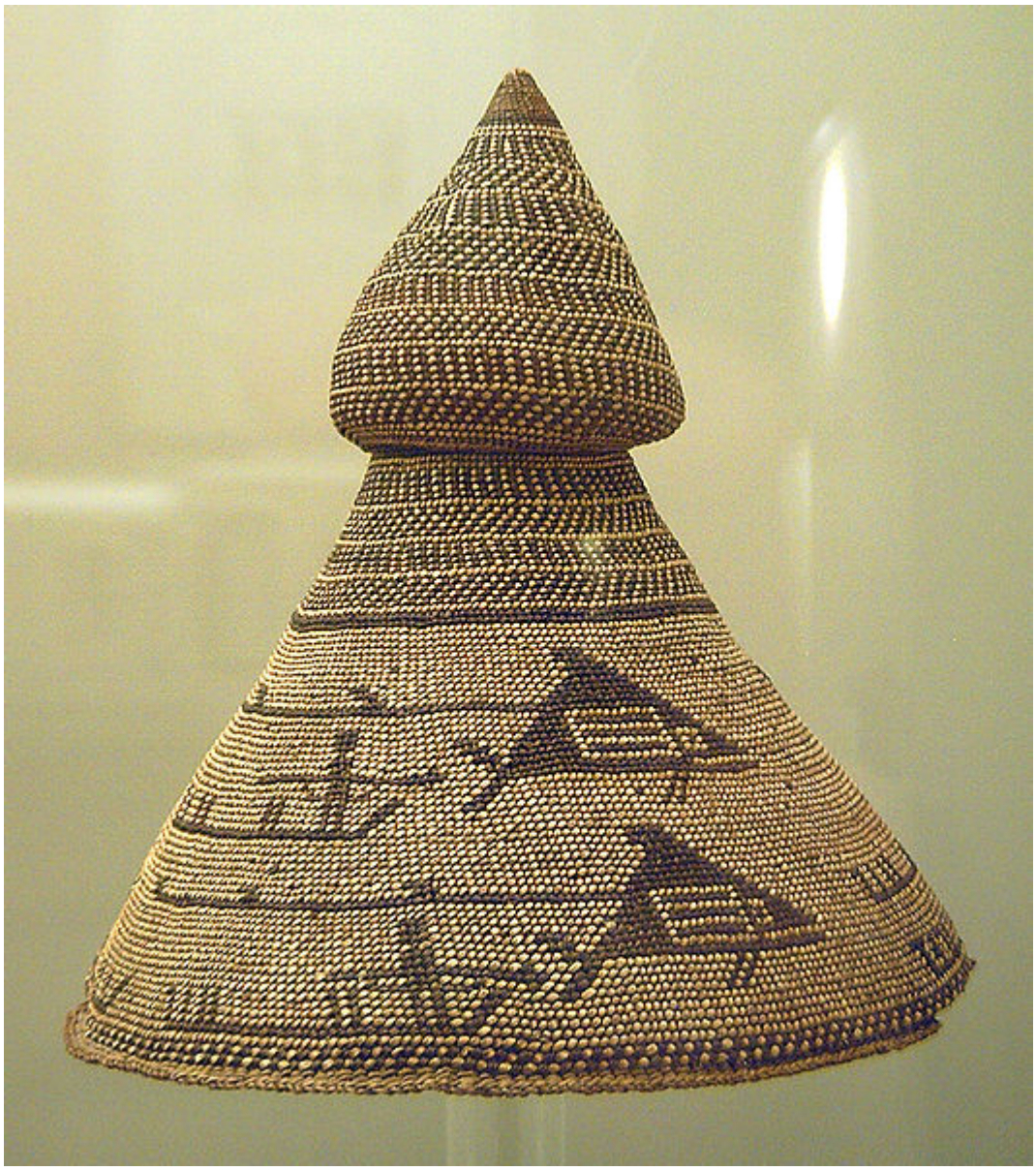
The **history of whaling** is very extensive, stretching back for millennia. This article discusses the history of whaling up to the commencement of the International Whaling Commission (IWC) moratorium on commercial whaling in 1986.

Fig. 194.—Whale-Fishing.—Fac-simile of a Woodcut in the "Cosmographie Universelle" of Thevet, in folio: Paris, 1574.

Whale-Fishing. Facsimile of a Woodcut in the "Cosmographie Universelle" of Thevet, in folio: Paris, 1574.

Prehistoric to medieval times

Humans have engaged in whaling since prehistoric times. The oldest known method of catching cetaceans is simply to drive them ashore by placing a number of small boats between the animal or animals and the open sea and to frighten them with noise and activity, herding them towards shore in an attempt to beach them. Typically, this was used for small species, such as Pilot Whales, Belugas, Porpoises and Narwhals. This is described in *A Pattern of Islands* (1952) by British administrator Arthur Grimble, who lived in the Gilbert and Ellice Islands for several decades.



18th-century Nootka whaler hat

The next step was to employ a drogue (a semi-floating object) such as a wooden drum or an inflated sealskin which was tied to an arrow or a harpoon in the hope that after a time the whale would tire enough to be approached and killed. Several cultures around the world practiced whaling with drogues, including the Ainu, Inuit, Native Americans, and the Basque people of the Bay of Biscay. Bangudae Petroglyphs, an archaeological evidence from Ulsan in South Korea suggests that drogues, harpoons and lines were being used to kill small whales as early as 6000 BC Petroglyphs (rock carvings) unearthed by researchers at the Museum of Kyungpook National University show Sperm Whales, Humpback Whales and North Pacific Right Whales surrounded by boats. Similarly-aged cetacean bones were also found in the area, reflecting the importance of whales in the prehistoric diet of coastal people.

A description of the assistance a little European technology could bring to skilled indigenous whale hunters is given in the memoir of John R. Jewitt, an Englishman blacksmith who spent three years as a captive of the Mowachaht (Nuu-chah-nulth/ Nootka) people in 1802-1805. Jewitt also mentions the importance of whale meat and oil to the diet. Whaling was integral to the cultures and economies of other indigenous peoples of the Pacific Northwest as well, notably the Makah and Klallam. For other groups, most famously the Haida, whales appear prominently as totems.

Basque whaling

The first mention of Basque whaling was made in 1059, when it was said to have been practiced at the Basque town of Bayonne. The fishery spread to the Spanish Basque region in 1150, when King Sancho the Wise of Navarre granted petitions for the warehousing of such commodities as whalebone (baleen). At first, they only hunted the whale they called sarda, or the North Atlantic Right Whale, using watchtowers (known as vigias) to look for their distinctive twin vapour spouts.

By the 14th century they were making "seasonal trips" to the English Channel and southern Ireland. The fishery spread to Terranova (Labrador and Newfoundland) in the second quarter of the 16th century, and to Iceland at least by the early 17th century. They established whaling stations at the former, and probably established some in the latter as well. In Terranova they hunted bowheads and right whales, while in Iceland they appear to have only hunted the latter.

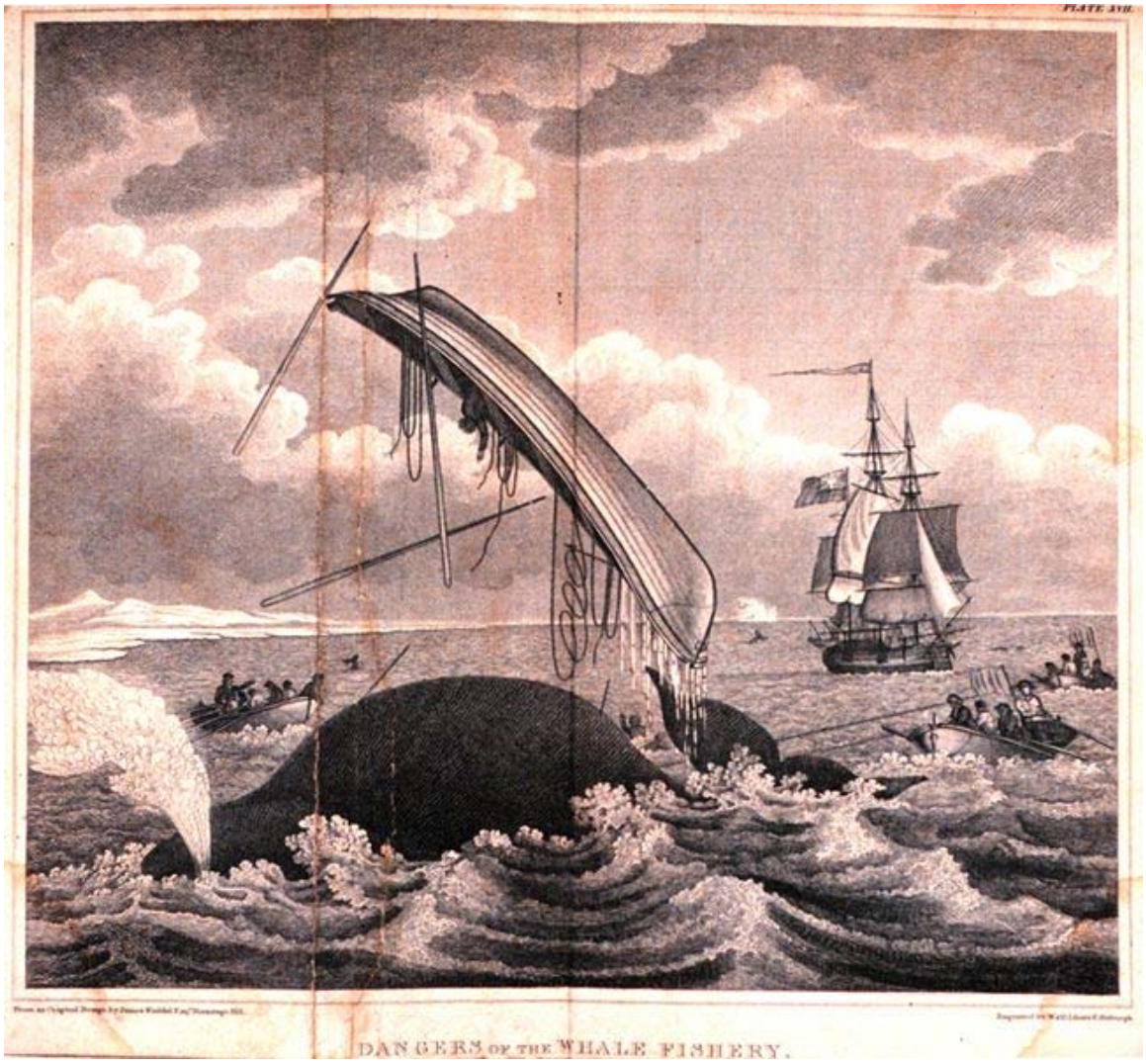
The fishery in Terranova declined for a variety of reasons. Principal among them the conflicts between Spain and other European powers during the late 16th and early 17th centuries, attacks by hostile Inuit, declining whale populations, and perhaps the opening up of the Spitsbergen fishery in 1611.

The first voyages to Spitsbergen by the English, Dutch, and Danish relied on Basque specialists, with the Basque provinces sending out their own whaler in 1612. The following season San Sebastián and St. Jean de Luz sent out a combined eleven or twelve whalers to the Spitsbergen fishery, but most were driven off by the Dutch and English.

Two more ships were sent by a merchant in San Sebastián in 1615, but both were driven away by the Dutch.

They continued whale fishing in Iceland and Spitsbergen at least into the 18th century, but Basque whaling in those regions appears to have ended with the commencement of the Seven Years' War (1756–63).

Whaling, by Abraham Storck



Dangers of the Whale Fishery, 1820

Whaling off the coast of Spitsbergen, by Abraham Storck

Greenland whaling

Encouraged by reports of whales off the coast of Spitsbergen in 1610, the English Muscovy Company sent a whaling expedition there the following year. The expedition was a disaster, with both ships sent being lost. The crews returned to England in a ship from Hull. The following year two more ships were sent. Other countries followed suit, with Amsterdam and San Sebastian each sending a ship north. The latter ship returned to Spain with a full cargo of oil. Such a fabulous return resulted in a fleet of whaleships being sent to Spitsbergen in 1613. The Muscovy Company sent seven, backed by a monopoly charter granted by King James I. They met with twenty other whaleships (eleven-twelve Basque, five French, and three Dutch), as well as a London interloper, which were either ordered away or forced to pay a fine of some sort. The United Provinces, France, and Spain all protested against this treatment, but James I held fast to his claim of sovereignty over Spitsbergen.

The following three and a half decades witnessed numerous clashes between the various nations (as well as infighting among the English), often merely posturing, but sometimes resulting in bloodshed. This jealousy stemmed as much from the mechanics of early whaling as from straightforward international animosities. In the first years of the fishery England, France, the United Provinces and later Denmark-Norway shipped expert Basque whalemen for their expeditions. At the time Basque whaling relied on the utilization of

stations ashore where blubber could be processed into oil. In order to allow a rapid transference of this technique to Spitsbergen, suitable anchorages had to be selected, of which there were only a limited number, in particular on the west coast of the island.

Early in 1614 the Dutch formed the *Noordsche Compagnie* (Northern Company), a cartel composed of several independent chambers (each representing a particular port). The company sent fourteen ships supported by three or four men-of-war this year, while the English sent a fleet of thirteen ships and pinnaces. Equally matched, they agreed to split the coast between themselves, to the exclusion of third parties. The English received the four principal harbors in the middle of the west coast, while the Dutch could settle anywhere to the south or north. The agreement explicitly stated that it was only meant to last for this season.

In 1617 a ship from Vlissingen whaling in Horn Sound had its cargo seized by the English vice-admiral. Angry, the following season the Dutch sent nearly two dozen ships to Spitsbergen. Five of the fleet attacked two English ships, killing three men in the process, and also burned down the English station in Horn Sound. Negotiations between the two nations followed in 1619, with James I, while still claiming sovereignty, would not enforce it for the following three seasons. When this concession expired, the English twice (in 1623 and 1624) tried to expel the Dutch from Spitsbergen, failing both times.

In 1619 the Dutch and Danes, who had sent their first whaling expedition to Spitsbergen in 1617, firmly settled themselves on Amsterdam Island, a small island on the northwestern tip of Spitsbergen; while the English did the same in the fjords to the south. The Danish-Dutch settlement came to be called Smeerenburg, which would become the centre of operations for the latter in the first decades of the fishery. Numerous place names attest to the various nations' presence, including *Copenhagen Bay* (Kobbefjorden) and *Danes Island* (Danskøya), where the Danes established a station from 1631–58; *Port Louis* or *Refuge Français* (Hamburgbukta), where the French had a station from 1633–38, until they were driven away by the Danes (see below); and finally *English Bay* (Engelskbukta), as well as the number of features named by English whalemen and explorers—for example, Isfjorden, Bellsund, and Hornsund, to name a few.

Hostilities continued after 1619. In 1626 nine ships from Hull and York destroyed the Muscovy Company's station in Bell Sound, and sailed to their own in Midterhukhamna. In 1630 both the ships of Hull and Yarmouth, who had recently joined the trade, were driven away clean (empty) by the ships from London. From 1631-33 the Danes, French, and Dutch quarreled with each other, resulting in the expulsion of the Danes from Smeerenburg and the French from Copenhagen Bay. In 1634 the Dutch burned down one of the Danes' huts. There were also two battles this season, one between the English and French (the latter won) and the other between London and Yarmouth (the latter won, as well). In 1637 and again in 1638 the Danes drove the French out of Port Louis and seized their cargoes. The latter year they also held two Dutch ships captive for over a month, which led to protests from the Dutch. Following the events of 1638 hostilities for the most part ceased, with the exception of a few minor incidents in the 1640s between

the French and Danes, as well as between Copenhagen and Hamburg and London and Yarmouth, respectively.

The species hunted was the Bowhead Whale, a baleen whale that yielded large quantities of oil and baleen. The whales entered the fjords in the spring following the break up of the ice. They were spotted by the whalemen from suitable vantage points, and pursued by *shallops*, *chaloupes* or *chalupas*, which were manned by six men. (These terms derive from the Basque word "txalupa", used to name the whaling boats that were widely utilized during the golden era of Basque whaling in Labrador in the 16th century.) The whale was harpooned and lanced to death and either towed to the stern of the ship or to the shore at low tide, where men with long knives would flense (cut up) the blubber. The blubber was boiled in large copper kettles and cooled in large wooden vessels, after which it was funneled into casks. The stations at first only consisted of tents of sail and crude furnaces, but were soon replaced by more permanent structures of wood and brick, such as Smeerenburg for the Dutch, Lægerneset for the English, and Copenhagen Bay for the Danes.

Beginning in the 1630s, for the Dutch at least, whaling expanded into the open sea. Gradually whaling in the open sea and along the ice floes to the west of Spitsbergen replaced bay whaling. At first the blubber was tried out at the end of the season at Smeerenburg or elsewhere along the coast, but after mid-century the stations were abandoned entirely in favor of processing the blubber upon the return of the ship to port. The English meanwhile stuck resolutely to bay whaling, and didn't make the transfer to pelagic (offshore) whaling until long after.

In 1719, the Dutch began "regular and intensive whaling" in the Davis Strait. Nevertheless, encouraged by import duty exemptions, the South Sea Company financed 172 unprofitable whaling voyages from London's Howland Dock between 1725-32. In 1733 the Government introduced a 'bounty' of £1.00 per ship ton, increasing to £2.00 per ton in 1749. These subsidies along with high oil and whalebone prices encouraged expansion. London sent out six whalers in 1749; 45 in 1777 and 91 in 1788. However, reductions in the bounty, and wars with America and France saw Londond's Greenland fleet fall to 19 in 1796.

The British would continue to send out whalers to the Arctic fishery into the 20th century, sending her last on the eve of the First World War.

Japanese open-boat whaling

Whaling Scene on the Coast of Gotō. An ukiyoe by Hokusai. Circa 1830.

Because of some evidence of whaling found such as hand harpoons and porpoise skulls in burial mounds, hunting of cetaceans possibly began in the Jōmon period (10,000-300 BC) according to The Institute of Cetacean Research.

The oldest written mention of whaling in Japanese records is from Kojiki, the oldest Japanese historical book written in the 7th century AD. In this book whale meat was eaten by Emperor Jimmu. In Man'yōshū, the oldest anthology of poems in the 8th century, the word "Whaling" (いさなとり) was frequently used in depicting the ocean or beaches.

One of the first records of whaling by the use of harpoons are from the 1570s at Morosaki, a bay attached to Ise Bay. This method of whaling, known as the harpoon method (tsukitori-ho) spread to Kii (before 1606), Shikoku (1624), northern Kyushu (1630s), and Nagato (around 1672).

Kakuemon Wada, later known as Kakuemon Taiji, was said to have invented net whaling, or the net method (amitori-ho) sometime between 1675 and 1677. This method soon spread to Shikoku (1681) and northern Kyushu (1684)

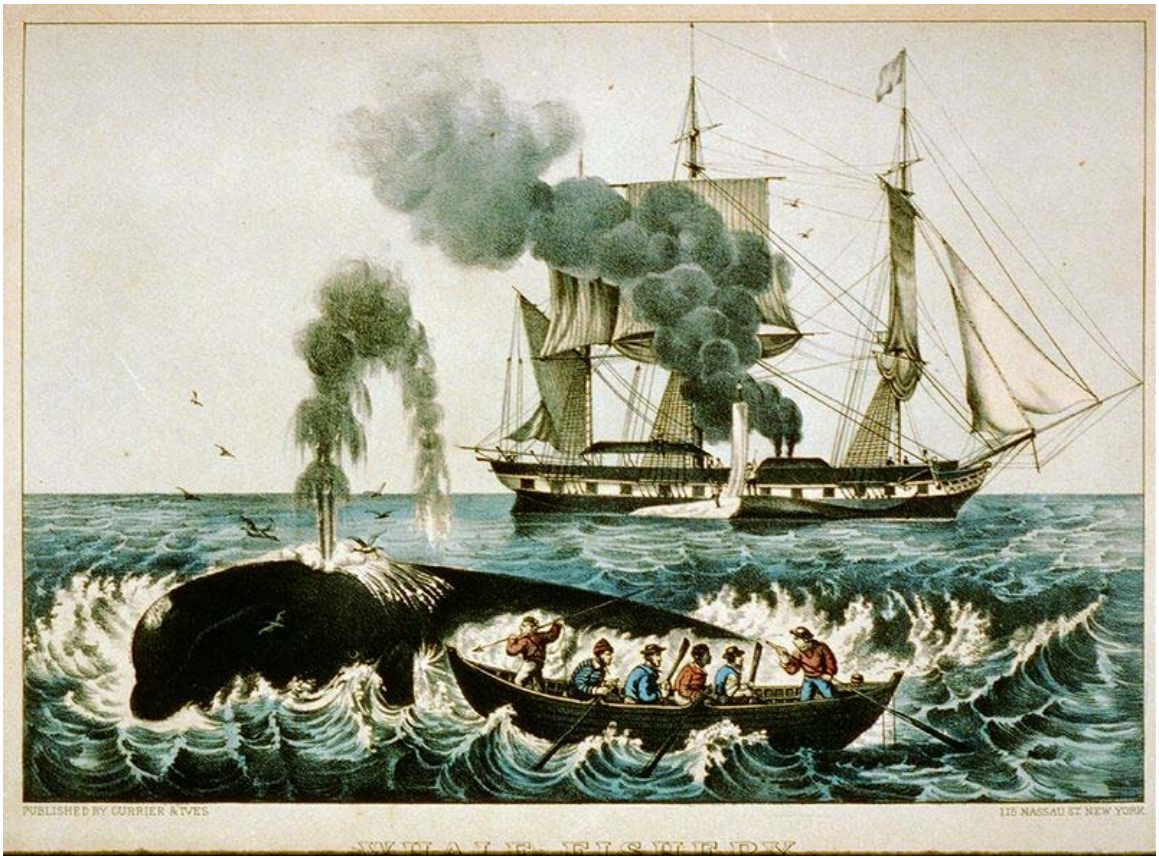
Using the techniques developed by Taiji, the Japanese mainly hunted four species of whale, the North Pacific right (Semi-Kujira), the humpback (Zato-Kujira), the fin (Nagasu-Kujira), and the gray whale (Ko-Kujira or Koku-Kujira). They also caught the occasional blue (Shiro Nagasu-Kujira), sperm (Makko-Kujira), or sei/Bryde's whale (Iwashi-Kujira).

Whaling has been frequently mentioned in Japanese historical texts.

- *Whaling history* (鯨史稿), Seijun Ohtsuki, 1808.
- *Whaling Picture Scroll* (鯨絵巻), Jinemon Ikushima, 1665.
- *Whale Hunt Picture Scroll* (捕鯨絵巻), Eikin Hangaya, 1666.
- *Ogawajima Whaling Wars* (小川島鯨鯢合戦), Unknown, 1667.

In 1853, the US naval officer Matthew Perry forced open Japan's doors to the world. One of the purposes of this was to gain access to ports for the American whaling fleet in the north-west Pacific Ocean. The traditional whaling was eventually replaced in the late 19th century and early 20th century with modern methods.

Yankee open-boat whaling



Whale Fishery -- Attacking a Right Whale, New England whaling ca. 1860

Beginning in the late colonial period, the United States, with a strong seafaring tradition in New England, an advanced shipbuilding industry, and access to the oceans grew to become the pre-eminent whaling nation in the world by the 1830s.

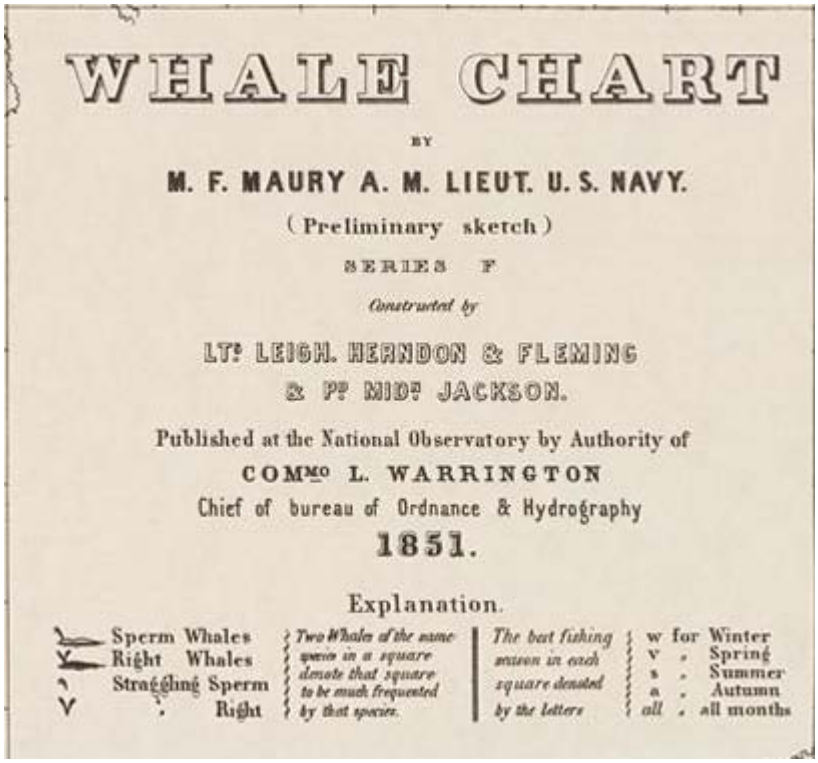
American whaling's origins were in New England, especially Cape Cod, Massachusetts and nearby cities. The oil was in demand chiefly for lamps. Hunters in small watercraft pursued right whales from shore. By the 18th century, whaling in Nantucket had become

a highly lucrative deep-sea industry, with voyages extending for years at a time and with vessels traveling as far as South Pacific waters. During the American Revolution, the British navy targeted American whaling ships as legitimate prizes, while in turn many whalers fitted out as privateers against the British. Whaling recovered after the war ended in 1783 and the industry began to prosper, using bases at Nantucket and then New Bedford. Whalers took greater economic risks to turn major profits: expanding their hunting grounds and securing foreign and domestic workforces for the Pacific. Investment decisions and financing arrangements were set up so that managers of whaling ventures shared their risks by selling some equity claims but retained a substantial portion due to moral hazard considerations. As a result, they had little incentive to consider the correlation between their own returns and those of others in planning their voyages. This stifled diversity in whaling voyages and increased industry-wide risk.

Ten thousand seamen manned the ships. More than three thousand African American seamen shipped out on whaling boats from New Bedford between 1800 and 1860, about 20% of the entire whaling force.

In port the most successful of the whaling merchants was Jonathan Bourne, who opened offices in New Bedford in 1848. Chandlery shops and storage rooms for whaling outfits occupied the first floor. Lofts and rigging lofts occupied the upper stories; the counting-rooms were on the second floor, with counters and iron railings fencing off the tall mahogany desks at which the bookkeepers stood up, or sat on high stools; about the walls were models of whaleships and whaling prints.

Early whaling efforts were concentrated on right whales and humpbacks, which were found near the American coast. As these populations declined and the market for whale products (especially whale oil) grew, American whalers began hunting the Sperm Whale. The Sperm Whale was particularly prized for the reservoir of spermaceti (a dense waxy substance that burns with an exceedingly bright flame) housed in the spermaceti organ, located forward and above the skull. Hunting for the Sperm Whale forced whalers to sail farther from home in search of their quarry, eventually covering the globe.



Matthew Fontaine Maury (U.S.N.) Whale Chart-1851

Whale oil was vital in illuminating homes and businesses throughout the world in the 19th century, and served as a dependable lubricant for the machines powering the Industrial Revolution. Baleen (the long keratin strips that hang from the top of whales' mouths) was used by manufacturers in the United States and Europe to make consumer goods such as buggy whips, fishing poles, corset stays and dress hoops.

New England ships began to explore and hunt in the southern oceans after being driven out of the North Atlantic by British competition and import duties. Ultimately, American entrepreneurs created a mid-19th-century version of a global economic enterprise. This was the golden age of American whaling.

An early winter in the north Pacific in September 1871 forced the captains of an American whaling fleet in the Arctic to abandon their ships. With 32 vessels trapped in the ice and provisions insufficient to weather the nine-month winter, the captains ordered the abandonment of the ships and the three million dollars' worth of property carried on board but in the process saved the lives of over 1,200 men.

From the Civil War, when Confederate raiders targeted American whalers, through the early 20th century, the American whaling industry was overwhelmed by new, crippling economic competition, especially from kerosene, which was a superior fuel for lighting. New Bedford, once the fourth busiest port in the United States, gave up whaling.

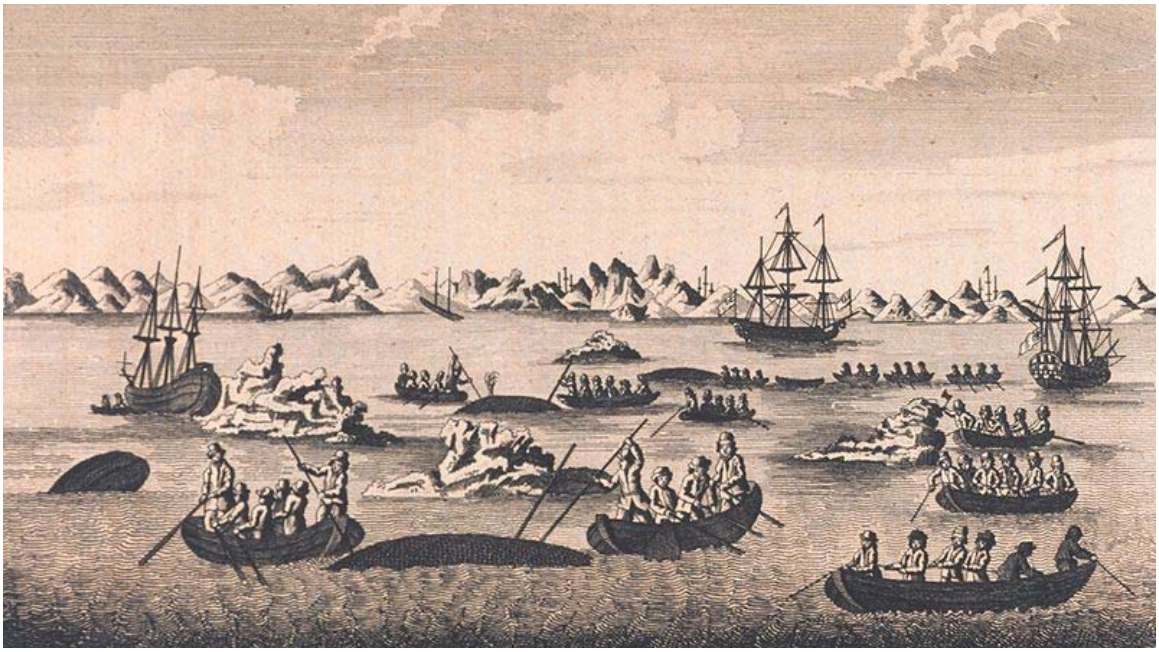
Localities

Whaling became important for a number of New England towns, particularly Nantucket and New Bedford, Massachusetts. Vast fortunes were made, and culture of these communities was greatly affected; the results can be seen today in the buildings surviving from the era. Larger cultural influence is evidenced by former whaler Herman Melville's novel Moby-Dick, which is often cited as the Great American Novel.

Nantucket joined in on the trade in 1690 when they sent for one Ichabod Padduck to instruct them in the methods of whaling. The south side of the island was divided into three and a half mile sections, each one with a mast erected to look for the spouts of right whales. Each section had a temporary hut for the five men assigned to that area, with a sixth man standing watch at the mast. Once a whale was sighted, rowing boats were sent from the shore, and if the whale was successfully harpooned and lanced to death, it was towed ashore, flensed (that is, its blubber was cut off), and the blubber boiled in cauldrons known as "trypots." Even when Nantucket sent out vessels to fish for whales offshore, they would still come to the shore to boil the blubber, doing this well into the 18th century.

The South Sea fishery

Britain



A View of Whale Fishery, 1790, from Captain Cook's voyages

Samuel Enderby, along with Alexander Champion and John St. Barbe, using American vessels and crews, fitted out twelve whaleships for the southern fishery in 1776. More

were sent in 1777 and 1778 before political and economic troubles hampered the trade for some time. In 1786, Alexander Champion, with his brother Benjamin, sent the first British whaler east of the Cape of Good Hope. She was the *Triumph*, Daniel Coffin, master.

On 1 September 1788, the 270 ton whaleship *Emilia*, owned by Samuel Enderby & Sons and commanded by Captain James Shields, departed London. The ship went west around Cape Horn into the Pacific Ocean to become the first ship of any nation to conduct whaling operations in the Southern Ocean. A crewman, Archelus Hammond of Nantucket, killed the first sperm whale there off the coast of Chile on 3 March 1789. *Emilia* returned to London on 12 March 1790 with a cargo of 139 tons of sperm oil.

In 1784 the British had fifteen whaleships in the southern fishery, all from London. By 1790 this port alone had sixty vessels employed in the trade. Between 1793 and 1799 there was an average of sixty vessels in the trade. The average increased to seventy-two in the years between 1800 and 1809.

In 1819 the first British whaleship, the *Syren* (510 tons), under Frederick Coffin of Nantucket, was sent to the Japan grounds, where she began whaling on 5 April 1820. She returned to London on 21 April 1822 with 346 tons of sperm oil. The following year at least nine British whalers were cruising on this ground, and by 1825 the British had twenty-four vessels there.

Despite this discovery, the number of vessels being fitted out annually for the southern fishery declined from sixty-eight in 1820 to thirty-one in 1824. In 1825 there were ninety ships in the southern fishery, but by 1835 it had dwindled to sixty-one.

Fewer and fewer vessels were being fitted out, so that by 1843 only nine vessels were clearing for the southern fishery. In 1859 the last cargoes of sperm oil from British vessels were landed in London.

France

Having failed in an attempt to establish a colony of Nantucket whalemen in England, William Rotch, Sr. went to France in 1786 and was able to establish his colony in Dunkirk. The first two vessels to be fitted out were the Canton and the Mary. By 1789 Dunkirk had fourteen vessels in the trade sailing to Brazil, Walvis Bay, and other areas of the South Atlantic to hunt sperm and right whales. Just a year later Rotch sent the first French whalers into the Pacific.

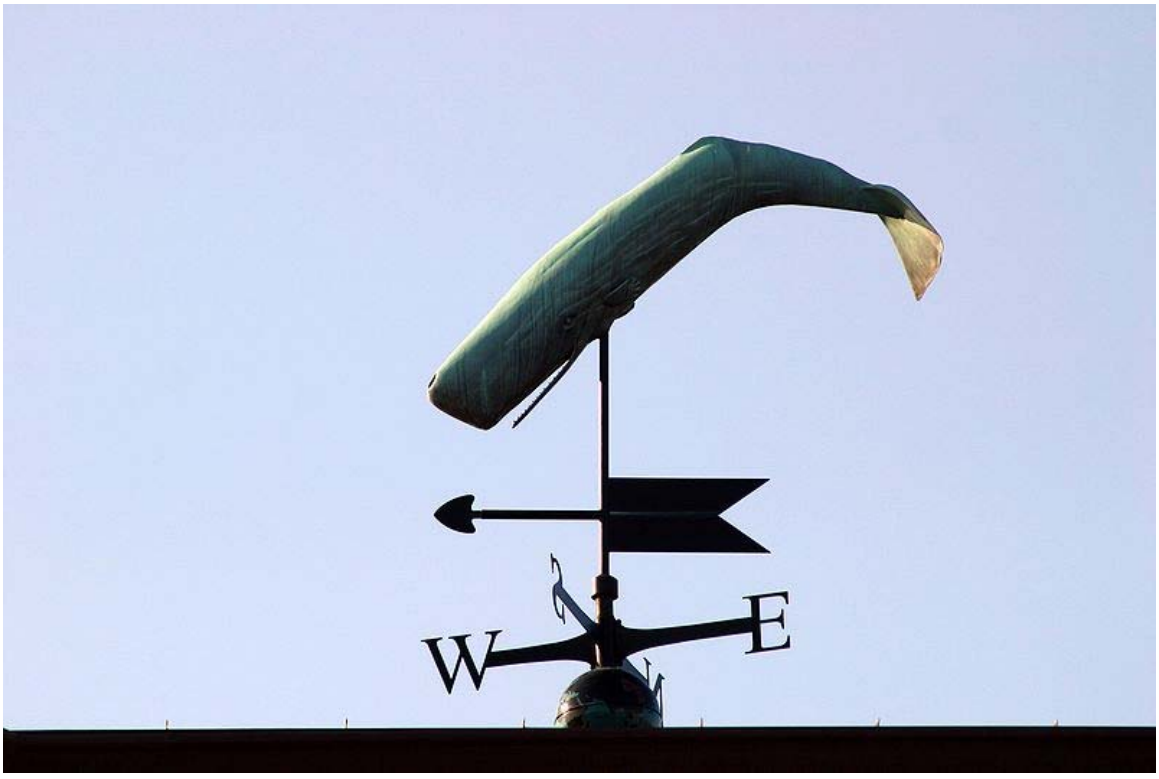
There were twenty-four vessels sailing out of France for the southern fishery by 1791, but the majority of these ships were lost during the Anglo-French War that broke out two years later. Rotch fled France, keeping subordinates there should war tensions ease and allow them to fit out ships for the southern fishery again.

The trade began to revive after hostilities, but when Napoleon came to power Rotch's holdings in Dunkirk were seized. After the Napoleonic Wars the government issued subsidies in an attempt to revive the trade once more, but it wasn't until 1832, with a further increase in bounties, that several whalers were sent by C. A. Gaudin on sperm whaling voyages.

In 1835 the first French whaleship, the Gange (573 tons), Narcisse Chaudiere, master, reached the Gulf of Alaska and discovered an abundance of right whales. Within a decade a large number of American and French vessels would be cruising on this ground. The following year, 1836, the first French whaler had reached New Zealand, but by the 1840s, with the decline of bay whaling, very few French vessels would make their way here.

In 1851 a law was passed to encourage the trade, at which point the French had seventeen vessels employed in it. It wasn't successful. The last whalers returned in 1868.

Rorqual whaling



Whale weathervane atop the Nantucket Historical Association Whaling Museum

By the 1850s, the Euro-American whalemen made a serious attempt at catching such rorquals as the blue and fin whale. This era was inaugurated by one Thomas Welcome Roys. Roys, while cruising south of Iceland in the 441-ton Hannibal, was able to kill a sulfurbottom (blue whale) with a Brown's bomb gun in 1855. He realized that if he had a

better way to dispatch such large rorquals as the sulfurbottom that he could easily fill his ship's hold with whale oil. Due to his ship having taken a beating in a heavy gale in these waters, he was forced to put into Lorient, France. While there, he ordered for "two rifles in pairs for killing [rorqual] whales," staying long enough in France to see them nearly completed, then leaving for home in a steamer, and, when finished, having the guns sent by way of England to the US.

The following spring, he went out in the 175-ton brig William F. Safford to test his experimental whaling guns. The guns Roys had ordered from France were lost on the voyage out, so he had to persuade C. C. Brand of Norwich, Conn., to let him use his bomb lance, but to increase his bomb missiles to three pounds in order to ensure greater success. Roys sailed to Bjornøya, where he encountered vast numbers of blue, fin, and humpbacks. He fired at around sixty, with only a single blue whale being saved. He then sailed to Novaya Zemlya, capturing two humpbacks there. After cruising off Russia and Norway, he came to anchor at Queenstown, Ireland, and thence went to England to reconstruct his lost French-made guns. He had Sir Joseph Whitworth manufacture him some rifled whaling guns and shells. Roys returned to his ship, sailing from Queenstown on 26 November for the Bay of Biscay. Here, when testing one of the guns, he blew off his left hand, having to amputate it "as well as we could with razors." They sailed to Oporto, Portugal, where Roys's lower arm had to be amputated.

Having failed in securing whales on another cruise in 1857, Roys redesigned his gun. This time, the rocket-powered harpoons proved too weak to penetrate the whales correctly. Undaunted, he made another cruise, this time to South Georgia, but he wasn't able to take any whales. He cruised north to put into Lisbon, sailed to Africa, then west to the West Indies in early 1859, where he was able to capture several humpbacks.

In 1861 Roys joined forces with the wealthy New York pyrotechnic manufacturer Gustavus Adolphus Lilliendahl in order to perfect his "whaling rocket." In mid-May 1862 Lilliendahl purchased the 158-ton bark Reindeer, appointing Roys as her master. Unfortunately, she was seized on suspicion of being a slaver, and when everything was finally cleared up, she sailed to Iceland, but arrived too late for the summer whaling season, and had to return home and wait until next year.

In 1863 Roys refitted the Reindeer and once again sailed to Iceland, but he damaged his rudder while off the coast of the island, and was only able to save one of the many whales he shot that season. Roys was much more successful the following season of 1864, saving eleven of the twenty whales that were shot, in part because he was using stronger harpoons and better lines. In November 1864 Roys obtained the rights to establish a shore station on the coast of Iceland from the Danish government. He acquired the twelve-ton, sixty-two-foot iron steamer Visionary in Scotland, and returned to Iceland in the spring of 1865. He arrived at Seydisfjordur on 14 May, finding his bark Reindeer had already arrived there in April, loaded with whaling equipment, boilers, steam engines, timber, bricks, and everything necessary for the construction of his shore station. Lilliendahl supplied them with defective rockets, and before the station was built, they were forced to

tow the dead whales to the Reindeer, where they were flensed and processed the old fashioned way.

After his rockets were rebuilt, Roys and his crew set out in the Visionary, with whaleboats in tow astern, to search for rorquals. Once a whale was sighted, the crews went to their respective boats, and if a whale was successfully captured, they'd heave the carcass to the surface with a steam winch, fasten it to the side of the ship, and tow it back to Seydisfjordur. For the 1865 season they took twenty or more whales, but also lost another twenty. The next season, 1866, he used the Sileno and the iron steamers Staperaider and Vigilant- identical ship, bark-rigged, 116-feet long, each carrying two whaleboats and equipped with steam tryworks and powerful winches to bring aboard large strips of blubber when flensing whales. They killed ninety whales this season, with forty-three or forty-four being saved to produce 3,000 barrels of oil. Roys and Lilliendahl parted company at the end of the season, with Lilliendahl continuing on in Iceland for another year. Using the Vigilant and Staperaider, he only caught thirty-six whales. After this season, he departed as well.

Roys and Lilliendahl found imitators in Iceland, in the form of the Danish naval officer Cap. Otto C. Hammer and the Dutchman Cap. C. J Bottemanne. The former formed the Danish Fishing Company in 1865, and wound up operations in 1871; while the latter formed the Netherlands Whaling Company in 1869, closing down operations a year after Hammer.

In 1866 James Dawson, a Victorian emigrant from Clackmannanshire, Scotland, and a man named Warren tried catching whales in Saanich Inlet, British Columbia, but lost all three whales they struck to bad weather. In 1868 Dawson joined in a partnership with a 27 year old from San Francisco, Abel Douglass, along with two other Californians, Bruce and Woodward. They were joined by Roys, who chartered the eighty-three-foot, twenty-five-ton steamer Emma. His first cruise was a disaster, while the second cruise from early September to October he allegedly struck four whales, killing three, but lost all three in dense fogs. Dawson began whaling on 26 August with the forty-seven-ton Kate, cruising in Saanich Inlet, where they managed to catch eight whales using bomb lances, despite thick fog.

Persistent as ever, Roys formed the Victoria Whaling Adventurers Company on 22 October, and in January 1869 he sent the Emma to erect a shore station in Barkley Sound, Vancouver Island. Again, Roys was met with by failure, having made fast to only one whale. The harpoon broke free, and the whale escaped. He was defeated once more by the Dawson and Douglass Whaling Company, who took fourteen whales by mid-September 1869 to produce 20,000 gallons of oil.

Dawson and Douglass then joined forces with a man named Lipsett, forming the Union Whaling Company. They only took four whales during two cruises in the winter of 1869-70, forcing the company to suspend operations as of 3 February 1870. Lipsett reorganized and formed the Howe Sound Company, while Dawson found new partners had formed the new Dawson & Douglass Whaling Company on 27 June 1870. Another

unidentified group of whalemen using "the Roys Rocket" arrived in June, charting the schooner Surprise and hunting whales in Barkley Sound. Only one of the companies used a vessel equipped with a whaleboat, while the others apparently sent rowing boats out from their shore camps. The three firms only took thirty-two whales, for a yield of 75,800 gallons of oil.

The next season, seemingly undeterred, Roys returned to British Columbia in the 179-ton brig Byzantium on 10 May 1871. He constructed a station at Cumshewa Inlet in the Queen Charlotte Islands, and fitted out the Byzantium with proper onboard tryworks. Douglass split from Dawson and paired with the Victorian vintner and publican James Strachan, while Dawson rejoined Lipsett and formed the British Columbia Whaling Company. Dawson and Lipsett's company produced 20,000 gallons of oil in 1871, with Douglass and Strachan producing about 15,000. Both companies lost money on their ventures, with the former soon being liquidated. The Kate and other possessions of the company went on the auction block in March 1872. The schooner and equipment went to former company partners Robert Wallace and James Hutcheson, who unsuccessfully attempted to continue whaling operations. We last hear of them in July 1873, when the Kate was said to have been cruising near Lasqueti Island, in the Strait of Georgia, with little success. By the end of the year the schooner had been sold.

As usual, Roys fared the worst. The Byzantium struck the rocks in Weynton Passage, Johnstone Strait, forcing the men to abandon her and row ashore, to spend a frigid night huddled on the beach. Roys never operated a whaling company again.

In 1877, John Nelson Fletcher, a pyrotechnist, and the former Confederate soldier from North Carolina, Robert L. Suits, modified Roys’s rocket, marketing it as the California Whaling Rocket. They used the small five in a half ton steam launch Rocket of San Francisco in 1878, killing 35 humpback, fin, and blue whales with their rocket outside the harbour and north to Point Reyes.

In 1880, Thomas P. H. Whitelaw fitted out the forty-four-ton steamer Daisy Whitelaw of San Francisco. With the California Whaling Rocket she "very successfully" hunted fin whales though the Farallon Islands to Drake's Bay. That same year, some of the rockets were purchased by the Northwest Whaling Company, or Northwest Trading Company, of Killisnoo Island, on the west coast of Admiralty Island, Southeast Alaska. They hunted fins and humpbacks, firing rockets from the deck of the company's small steamer Favorite, as well as from whaleboats. They established a whaling and trading station on Killisnoo Island, giving a few jobs at the whale processing plant to both Killisnoo and Angoon residents. After a few years of whaling, the station was turned into a herring processing plant, going out of business in 1885.

In the late 1870s schooners began hunting humpbacks in the Gulf of Maine. In 1880, with the decline of the menhaden fishery, steamers began to switch to hunting fin and humpback whales using bomb lances in what has been called a "shoot-and-salvage" fishery because of the high-rate of loss due to whales sinking, lines breaking, etc. The first was the steamer Mabel Bird, which towed whale carcasses to an oil processing plant

at the head of Linekin Bay in Boothbay Harbor. Soon there were five such factories in Boothbay Harbour processing whales. At its height in 1885 four or five steamers were engaged in the Menhaden whale fishery, but it dwindled to one by the end of the decade. Fin whales accounted for about half the catch, with over 100 whales being killed in some years. The fishery ended in the late 1890s.

Before Svend Foyn launched the industry into the modern era, there were the Norwegians Jacob Nicolai Walsøe and Arent Christian Dahl. The former was probably the first person to suggest mounting a harpoon gun in the bows of a steamship, while the latter experimented with an explosive harpoon in Varanger Fjord (1857–1860). While they were the first in their class, it was Foyn who successfully adopted these ideas and put them into practice. In 1864, his methods, through trial and error, would lead to the development of the modern whaling trade.

During the 1930s, as German whaling in the Antarctic was coming about, the Nazis maintained that a gunsmith from Bremerhaven, H. G. Cordes, was responsible for Foyn's invention, and should thus receive credit for having brought whaling into the modern era. Foyn had indeed ordered material from Cordes, but he had found it unserviceable, and only experimented with his gun for a season. Cordes, working with John P. Rechten of Bremen, had developed an improved version of the Greener gun in 1856. They made a second version of this swivel gun with two barrels, side by side, with the left barrel shooting a harpoon and the right a bomb lance. Their invention was successfully experimented with in the North Sea in 1867. With this success, Rechten attempted to introduce this idea on the American market two years later, but it isn't known as to whether he succeeded or not.

Modern whaling

As early as 1611 the 50,000+ bowhead whales resident between the east coast of Greenland and the island of Spitsbergen were the subject of intensive commercial hunting effort by English whalers. By 1911 the bowheads were nearly extinct. The discovery in 1848 of the rich stock of bowhead whales in the Bering Strait region sparked an oil rush that resulted in more than 2,500 annual whaling cruises to the area between 1848 and 1899.

At first slow whales were caught by men hurling harpoons from small open boats. Early harpoon guns were unsuccessful until Norwegian Svend Foyn invented a new, improved version in 1863 that used a harpoon with a flexible joint between the head and shaft. Norway invented many new techniques and disseminated them worldwide. Cannon-fired harpoons, strong cables, and steam winches were mounted on maneuverable, steam-powered catcher boats. They made possible the targeting of large and fast-swimming whale species that were taken to shore-based stations for processing. Breach-loaded cannons were introduced in 1925; pistons were introduced in 1947 to reduce recoil. These highly efficient devices were too successful, for they reduced whale populations to the point where large-scale commercial whaling became unsustainable. The shore stations on the island of South Georgia were at the center of the Antarctic whaling industry, from its

beginnings in 1904 until the late 1920s when pelagic whaling increased. The activity on the island remained substantial until around 1960, when Norwegian-British Antarctic whaling came to an end.

Finnmark

In February 1864, the Norwegian Svend Foyn set sail from Tønsberg, south of Oslo, in the schooner-rigged, steam-driven whale catcher Spes et Fides (Hope & Faith) on a voyage north to Finnmark to hunt rorquals such as the Blue and Fin Whale. He had her fitted out like a minor man-of-war, with seven guns on her forecastle, each firing a harpoon and grenade separately. Several whales were seen, but only four were captured.

He tried again in 1866 and 1867, but he could not catch a single whale in the former season and only caught one whale the latter, while two others were killed but lost. Experimenting with a harpoon gun that fired a grenade and harpoon at the same time, Foyn was able to catch thirty whales in 1868. He patented his grenade-tipped harpoon gun two years later.

Foyn was given a virtual monopoly on the trade in Finnmark in 1873, which lasted until 1882. Despite this, local citizens established a whaling company in 1876, and soon others defied his monopoly and formed companies.

With the commencement of unrestricted catching in 1883, the number of whaling stations increased from eight to sixteen, and the number of whale catchers from twelve to twenty-three. Catching material peaked in 1886–88 with an average of about thirty-one catchers operating each season, while peak catching was not reached until 1892–93 and 1896–98, when between 1,000 and 1,200 whales were caught each year.

Only half the number of whales were taken in 1899, and catching continued to decline until 1902, when it improved somewhat. By this time most of the catching was done far from the coast. The last station closed down in 1904.

Iceland

In 1883 the first whaling station was established in Alptafjordur, Iceland. In the first season, using an 84 gross ton whale catcher, only eight whales were caught, but in the following season (1884) twenty-five were caught, all of which were Blue Whales, with the exception of two.

In 1889 another station was established. Between 1890 and 1894 three more companies, all Norwegian, established themselves in Iceland. Seeing the success of these companies, another five established whaling stations on the island between 1896 and 1903. Catching peaked in 1902, when 1,305 whales were caught to produce 40,000 barrels of oil. By 1907, only 268 whales were caught, and by 1910 the score stood at a mere 170.

A ban on whaling was imposed by the Alting in 1915. It was not until 1935 that an Icelandic company established another whaling station. It shut down after only five seasons. In 1948, another Icelandic company, Hvalur H/F, purchased a naval base at the head of Hvalfjordur and converted it into a whaling station. Between 1948 and 1975, an average of 250 Fin, 65 Sei, and 78 Sperm Whales were taken annually, as well as a few Blue and Humpback Whales. Unlike the majority of commercial whaling at the time, this operation was based on the sale of frozen meat and meat meal, rather than on oil. Most of the meat was exported to England, while the meal was sold locally as cattle feed.

Faroe Islands

The Norwegian Hans Albert Grøn established the first whaling station in the Faroe Islands in 1894 at Strømæs, situated in the sound between the islands of Strømø and Osterø. He caught forty-six whales his first season, intercepting the whales as they migrated north. He operated alone the first four seasons, until Christian Salvesen & Co. formed a company in Oslo for whaling from the islands.

Grøn established another station in 1901, as did Peter O. Bogen, who set up one on the island of Suderø. Three more companies arrived between 1902 and 1905. One was Norwegian, another Danish, and the last a joint Danish-Norwegian concern.

Peak catching was reached in 1909, when 773 whales were caught to produce 13,850 barrels of oil. By 1913 the production of oil had dropped to 3,515 barrels. In 1917, with the war and poor catches, whaling was suspended from the islands. Four companies resumed catching 1920. The results were disappointing; with only one Norwegian company staying at the islands as late as 1930. Further attempts were made to revive catching in the Faroes during the 1930s and after the Second World War, with the last attempt being made in 1962–64.

Spitsbergen

In 1903, the Norwegian Christen Christensen sent the first factory ship, the wooden steamship Telegraf (737 gross tons), to Spitsbergen. She returned to Sandefjord in September with 1,960 barrels of oil produced from a catch of fifty-seven whales—of which forty-two were Blue Whales.

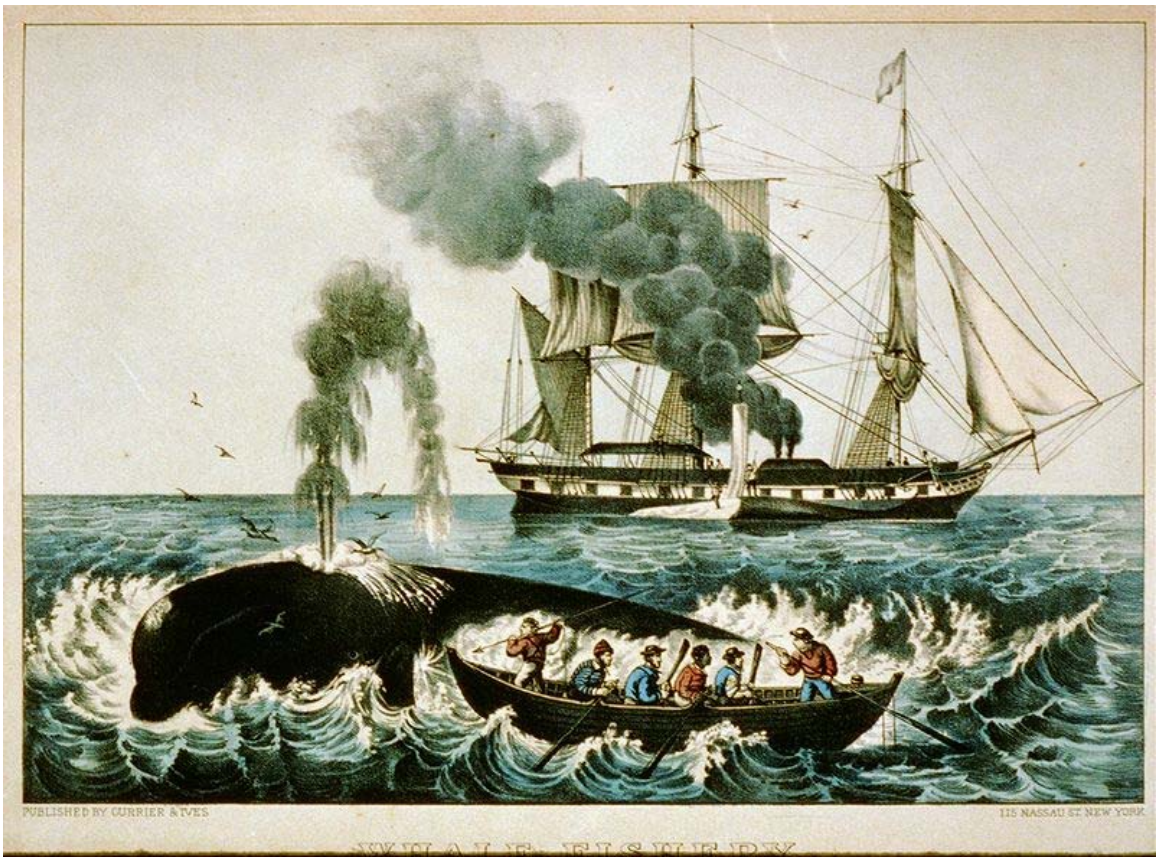
He sent a larger ship, the 1,517 gross ton *Admiralen*, to Spitsbergen the following season (1904). She returned with a cargo of 5,100 barrels from 154 whales. By 1905 there were eight companies operating around Spitsbergen and Bear Island, while seven (using fifteen whale catchers) were there in 1906–07. The peak had been reached in 1905, when 559 whales (337 Blue) were caught to produce 18,660 barrels. Only a quarter of this was produced in 1908. Two companies left in 1907, and another two the following year.

As the three companies remaining produced a dismal amount of oil in 1912, they decided to suspend operations. Two unsuccessful attempts were made in 1920 and 1926–27 to

revive catching in Spitsbergen waters—since that time only Northern Bottlenose and Minke Whales have been hunted there by converted Norwegian fishing boats.

Chapter- 3

Whaling in the United States



New England whaling ca. 1860:*Whale Fishery -- Attacking a Right Whale*, by Currier & Ives

The origins of **whaling** in the **United States** date to the 17th century in New England and peaked in 1846-52. New Bedford, Massachusetts, sent out its last whaler, the *John R. Mantra*, in 1927.

History

The towns of Long Island are believed to have been the first to establish a whale fishery on the shores of New England sometime around 1650. Nantucket joined in on the trade in 1690 when they sent for one Ichabod Padduck to instruct them in the methods of whaling. The south side of the island was divided into three and a half mile sections, each one with a mast erected to look for the spouts of right whales. Each section had a temporary hut for the five men assigned to that area, with a sixth man standing watch at the mast. Once a whale was sighted, whale boats were rowed from the shore, and if the whale was successfully harpooned and lanced to death, it was towed ashore, flensed (that is, its blubber was cut off), and the blubber boiled in cauldrons known as "trypots." Well into the 18th century, even when Nantucket sent out sailing vessels to fish for whales offshore, the whalers would still come to the shore to boil the blubber.

In 1715 Nantucket had six sloops engaged in the whale fishery, and by 1730 it had twenty-five vessels of 38 to 50 tons employed in the trade. Each vessel employed twelve to thirteen men, half of them being Native Americans. At times the whole crew, with the exception of the captain, might be natives. They had two whaleboats, one held in reserve should the other be damaged by an angry whale.

By 1732 the first Yankee whalers had reached the Davis Strait fishery, between Greenland and Baffin Island. The fishery slowly began to expand, with whalers visiting the west coast of Africa in 1763, the Azores in 1765, the coast of Brazil in 1773, and the Falklands in 1774.

Expansion

In 1768, the fishery began a huge expansion that was to culminate just prior to the Revolution. Between 1771 and 1775 the Massachusetts ports alone employed an average of 183 vessels in the northern fishery, and 121 in the southern. The Revolutionary War brought the trade to a complete standstill. In the three decades following the Revolution and ending with the War of 1812 (1785–1815), the trade never reached its former importance, perhaps never even exceeding 200 vessels.

The first Yankee whalers rounded Cape Horn in 1791, entering the Pacific Ocean to hunt the cachalot or sperm whale. At first they only fished off the coast of Chile, but by 1792 the sperm whalers had reached the coast of Peru, and George W. Gardner extended the fishery even further in 1818 when he discovered the "Offshore grounds," or the seas between 105 and 125 degrees west and five to ten degrees south. In 1820 the first Yankee whaleship, the *Maro*, under Capt. Joseph Allen, fished off the coast of Japan. The previous year the first Yankee whalers visited the Sandwich (Hawaiian) Islands, and subsequently these islands' ports began to be used as places to obtain fresh fruits, vegetables, and more crew, as well as to repair any damages sustained to the ship.

In 1829 the Yankee fleet numbered 203 sail; in five years time it more than doubled to 421 vessels, and by 1840 it stood at 552 ships, barks, brigs, and schooners. The peak was reached in 1846, when 736 vessels were registered under the American flag. From 1846 to 1851, the trade averaged some 638 vessels, with the majority coming from such ports as New Bedford, Nantucket, New London, and Sag Harbor, New York. By far the largest number sailed from New Bedford, but Nantucket continued to host a fleet, even when they needed to use "camels," or floating drydocks, to get over the sandbar that formed at the mouth of the harbor.

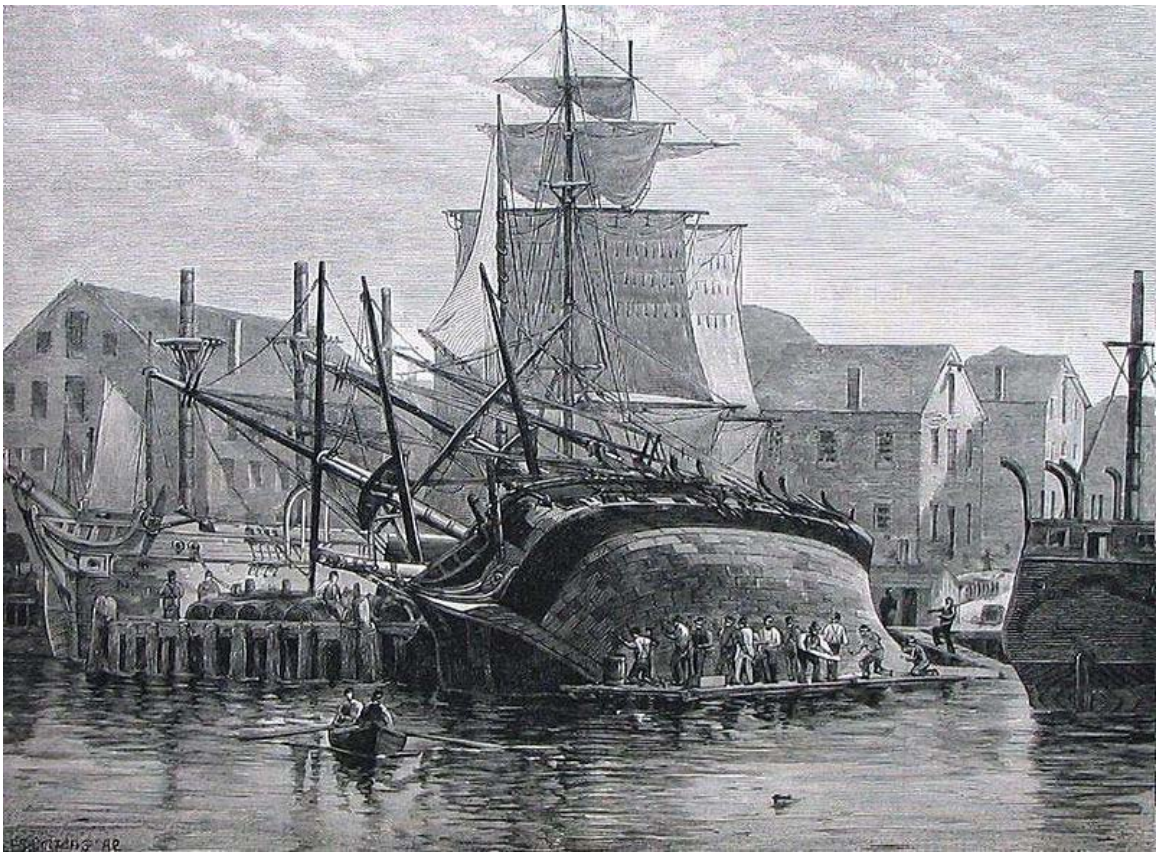
Thomas Welcome Roys, in the Sag Harbor bark *Superier*, sailed through the Bering Strait on 23 July 1848 and discovered an abundance of "new fangled monsters," or later to be known as bowhead whales. The following season fifty whalers (forty-six Yankee, two German, and two French vessels) sailed to the Bering Strait region on the report from this single ship. In terms of number of vessels and whales killed, the peak was reached in 1852, when 220 ships killed 2,682 bowheads. Catches declined, and the fleet shifted to the Sea of Okhotsk for the 1855-57 seasons, and once that area began to decline, they returned to the Bering Strait region.

During the winter, some of these same vessels would make their way to the lagoons of Baja California. The peak began in 1855, commencing the period of lagoon whaling known as the "bonanza period," when whaleboats were crisscrossing through the lagoons, being pulled by engaged whales, passing by calves that had lost their mothers and other ships' crews hunting whales. Less than twenty years later, in 1874, the lagoon fishery was abandoned entirely, due to several years of poor catches.

Several Yankee ships were lost during the 1860s and 1870s. During the Civil War (1861-1865) Confederate raiders such as the *Shenandoah*, *Alabama*, and *Florida* captured or burned forty-six ships, while the United States purchased forty of the fleet's oldest hulls.

known as the Stone Fleet, to sink in Charleston and Savannah harbours in a failed attempt to blockade those ports. Thirty-three of the forty whalers that comprised the Arctic fleet were lost near Point Belcher and Wainwright Inlet in the Whaling Disaster of 1871, while another twelve ships were lost in 1876.

The use of steam, the high prices for whalebone, and the proximity of the whaling grounds brought the rise of San Francisco as a dominant whaling port in the 1880s. By 1893 it had thirty-three whaleships, of which twenty-two were steamers.



An Old Whaler Hove Down for Repairs, near New Bedford, 1882

At first, the steamers only cruised during the summer months, but with the discovery of bowheads near the Mackenzie River Delta in 1888-89 by Joe Tuckfield, ships begin to overwinter at Herschel Island. The first to do so was in 1890-91, and by 1894-95 there were fifteen such ships overwintering in the snug little harbour of Pauline Cove. During the peak of the settlement (1894–96) about 1,000 persons went to the island, comprising a polyglot community of Nunatarmiuts (Inuit caribou hunters, originating from the Brooks Range), Kogmullicks (Inuit who inhabited the coastal regions of the Mackenzie River delta), Itkillicks (Rat Indians, from the forested regions 200 miles south), Alaskan and Siberian ships' natives, whaling crews and their families, and beachcombers (the few whalemen whose tour of duty had ended, but chose to stay at the island). Ships continued to overwinter at Herschel into the 20th century, but by that time they focused more on

trading with the natives than on whaling. By 1909 there were only three whaleships left in the Arctic fleet, with the last bowhead being killed commercially in 1921.

By 1895 the Yankee whaling fleet had dwindled to fifty-one vessels, with only four ports regularly sending out ships. They were New Bedford, Provincetown, San Francisco, and Boston. Boston left the trade in 1903, with San Francisco leaving in 1921. Only New Bedford continued on into the trade, sending out its last whaler, the *John R. Mantra*, in 1927.

Native whaling

Various Native American tribes engaged in whaling throughout their history. In particular, a major cultural base of the Makah revolves around the whale and the associated hunt. The Makah signed a treaty in 1855 known as the Treaty of Neah Bay with the United States government that ceded over half of their ancestral lands to ensure their right to continue hunting whales. However, by the 1920s the dangerously low populations of whales caused the Makah to cease hunting whales to ensure the whale's survival. Once whale populations showed stability again in the 1980s, the Makah decided to pursue whaling again, against widespread protests from environmental groups. The United States government's Defense of Marine Mammals Act barred the Makah from whaling, resulting in outrage from the Makah due to their right to whaling being guaranteed by their treaty. In 1999, the United States government allowed the Makah to take 5 whales a year for their ancestral hunt. That year, the Makah were allowed to partake in their first whaling hunt since the 1920s, however in 2001, the United States government once again overturned their previous ruling and declared it illegal for the Makah to hunt whales. This is an ongoing issue, the Makah, the United States government, and the environmental groups are still fighting legal battles.

The romance of whaling

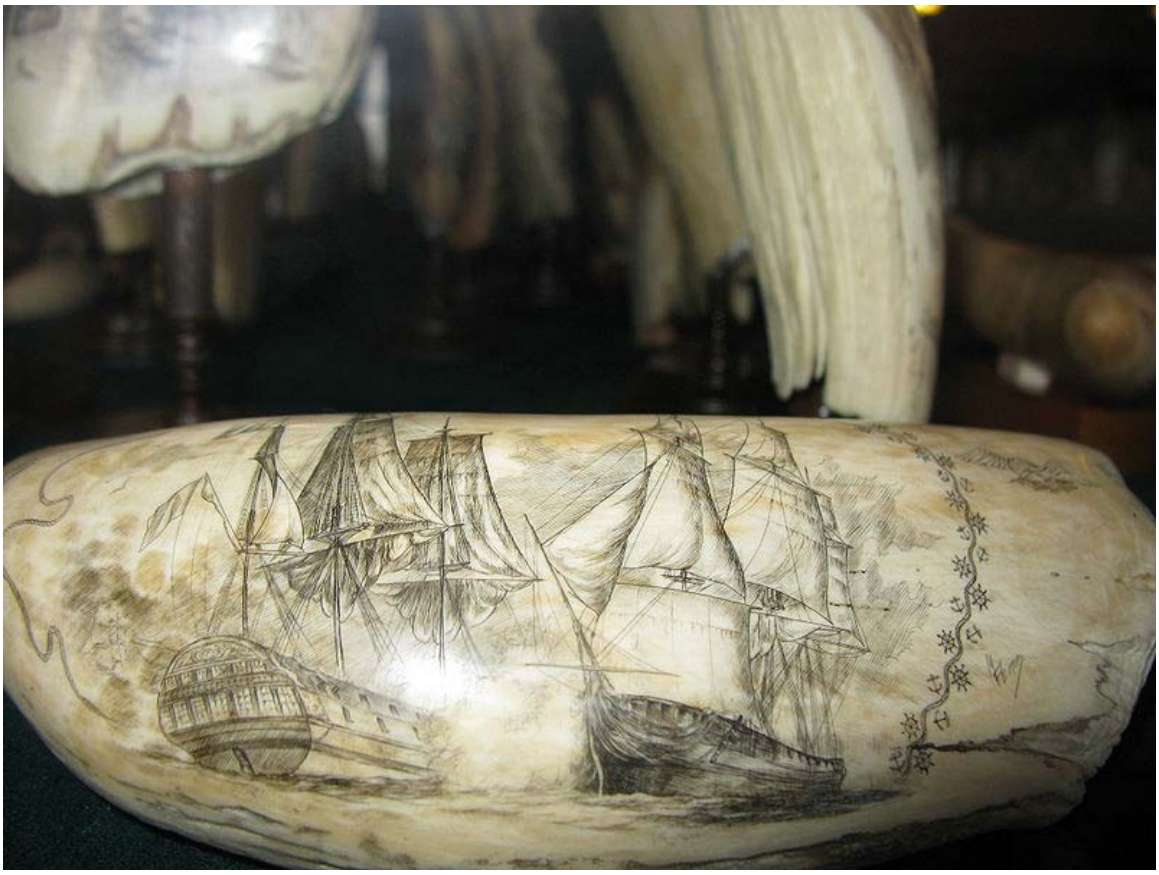
According to Frances Diane Robotti, there were three types of whalers: those who hoped to own their own whaleship someday, those who were seeking adventure, and those who were running from something on shore. Generally only those who hoped to make a career of whaling went out more than once.

Since a whaler's pay was based on his *lay*, or share of the catch, he sometimes returned from a long voyage to find himself paid next to nothing, or even owing money to his employers. Even a bonanza voyage paid the ordinary crewman less than if he had served in the merchant fleet.

There was a romance to whaling; going to sea was a young man's adventure, particularly when he wound up in the South Sea paradises of the Sandwich Islands (Hawaii), Tahiti, or the Marquesas, where a young American man might find himself surrounded by pretty young women ready to freely offer him their charms, something he was unlikely to experience at home. Many, including Herman Melville, jumped ship, apparently without

repercussions. After his romantic interlude among the Typees on Nuku Hiva in the Marquesas Islands, Melville joined another whaler that took him to Hawaii, from where he sailed for home as a crewman on USS *United States*, a Navy vessel. Along with Robert Louis Stevenson, Paul Gauguin, and others, Melville cultivated the image of the Pacific islands as romantic paradises. But after the 1848 discovery of gold in California, young men could easily find adventure elsewhere. During the Gold Rush, it was generally known that a man could get to San Francisco for free if he signed on as a whaler; many whaleships were abandoned there, even by their captains and officers.

Whaling and antique scrimshaw



Detail on a piece in the Horta (Azores) Scrimshaw Museum

A large part of American, British, and other countries who participated in whaling in the 19th century created scrimshaw. Scrimshaw is the practice of drawing on whale teeth or other forms of ivory with various tools, typically sailor's knives or other sharp instruments. These images were then coated with ink so that the drawing would appear more noticeable on the whale tooth. It is believed that some instruments used by sailors to perform scrimshaw included surgical tools, as with the work done by whaling surgeon William Lewis Roderick. Other forms of ivory included a whale's panbone, walrus ivory, and elephant ivory. Of course, the most common scrimshaw during the whaling period of

the 19th century was made from whale parts. Other forms of scrimshaw included whalebone fids (rope splicer), bodkins (needle), swifts (yarn holding equipment) and sailors' canes. The time when most scrimshaw in the 19th century was produced coincided with the heyday of the whaling industry which occurred between 1840-1860. More than 95% of all antique scrimshaw whale teeth known were done by anonymous artists. Some of the better known antique scrimshaw artists include Frederick Myrick and Edward Burdett, who were two of the first scrimshanders to ever sign and date their work. Several museums now house outstanding collections of antique scrimshaw and one of the best being the New Bedford Whaling Museum in Massachusetts.

Chapter- 4

Whaling in the Faroe Islands

Killed pilot whales on the beach in the village Hvalba on the southernmost Faroese island Suðuroy, 11 August 2002.

Whaling in the Faroe Islands has been practiced since about the time of the first Norse settlements on the islands. It is regulated by Faroese authorities but not by the International Whaling Commission as there are disagreements about the Commission's competency for small cetaceans. Around 950 Long-finned Pilot Whales (*Globicephala melaena*) are killed annually, mainly during the summer. The hunts, called "grindadráp"

in Faroese, are non-commercial and are organized on a community level; anyone can participate. The hunters first surround the pilot whales with a wide semicircle of boats. The boats then drive the pilot whales slowly into a bay or to the bottom of a fjord.

Most Faroese consider the hunt an important part of their culture and history. Animal-rights groups criticize the hunt as being cruel and unnecessary. As of the end of November 2008 the chief medical officers of the Faroe Islands have recommended that pilot whales no longer be considered fit for human consumption because of the levels of toxins in the whales.

Origins

Whale hunting has been a common phenomenon for long. It is known to have existed on Iceland, in the Hebrides, and in Shetland and Orkney.

Archaeological evidence from the early Norse settlement of the Faroe Islands c. 1200 years ago, in the form of pilot whale bones found in household remains in Gøta, indicates that the pilot whale has long had a central place in the everyday life of Faroe Islanders. The meat and blubber of the pilot whale has been an important part of the islanders' staple diet. The blubber, in particular, has been highly valued both as food and for processing into oil, which was used for lighting fuel and other purposes. Parts of the skin of pilot whales were also used for ropes and lines, while stomachs were used as floats.

Rights have been regulated by law since medieval times and references are found in early Norwegian legal documents, while the oldest existing legal document with specific reference to the Faroes, the so-called Sheep Letter from 1298, includes rules for rights to, and shares of both stranded whales as well as whales driven ashore.

Records of drive hunts in the Faroe Islands date back to 1584.

Elements of the hunt

The sighting

The pilot whale hunt has a well-developed system of communication. Reverend Lucas Debes made reference to the system, which means that it had already developed by the seventeenth century. Historically the system takes place as such: When a school of pilot whales has been sighted, messengers are sent to spread the news among the inhabitants of the island involved (the Faroe Islands have 17 inhabited islands). At the same time, a bonfire is lit at a specific location, to inform those on the neighbouring island, where the same pattern then is followed.

It is believed that the system is one of the oldest elements concerning the pilot whale hunt. This is because a rather large number of boats and people are necessary to drive and

kill a school of pilot whales. Today, however, the news of a sighting is relayed via mobile phones and other modern methods of communication.

Locations

The small village of Hvalvík (in English Whale Bay) on the island Streymoy is a well-known place for beaching pilot whales.

The location must be well-suited to the purpose of beaching whales. It is against the law to kill pilot whales at locations with inappropriate conditions. The seabed must gradually slope from the shore out to deep water. Given such conditions, the chances are good that the whales can be driven fully ashore or close enough to the shore that they can be secured and killed from land. When a school of pilot whales is sighted, boats gather behind the whales and slowly drive them towards the chosen authorized location, usually a bay or the end of a fjord. There are 17 towns and villages that have the right conditions, and therefore legal authorization, for beaching whales. These are Bøur, Fámjin, Fuglafjørður, Syðrugøta, Húsavík, Hvalba, Hvalvík, Hvannasund, Klaksvík, Miðvágur, Norðskáli, Sandavágur, Sandur, Tórshavn (in Sandagerði), Tvøroyri, Vágur, and Vestmanna. These towns and villages have featured most heavily in the statistics for whaling in the Faroes since 1854.

Regulations

At the beginning of the twentieth century, proposals to begin regulation of the whale hunt began to be proposed in the Faroese legislature. On 4 June 1907, the Danish Governor (in Faroese amtmaður) as well as the sheriff sent the first draft for whaling regulations to the Office of the Exchequer in Copenhagen. In the following years, a number of drafts were debated, and finally in 1932 the first Faroese whaling regulations were introduced. Since then, every detail of the pilot whale hunt has been carefully defined in the regulations. This means that the institution of the pilot whale hunt, which had previously largely been based on tradition, became an integrated part of society's legal structure. In the regulations one has institutionalized old customs and added new ordinances when old customs have proved insufficient or inappropriate.

Districts

Since 1832, the Faroe Islands have been divided into several whaling districts, although there is reason to believe that these districts already existed in some form prior to this date. These whaling districts are the basis for the distribution of the meat and blubber of the pilot whales caught. The catch is distributed in such a way that all the residents of the whaling district are given the same amount of the catch, regardless of whether they took part in the hunt or not.

Supervision

Before the enactment of home-rule in 1948, the Danish governor had the highest responsibility of supervising a pilot whale hunt. Today, supervision is the responsibility of the Faroese government. The government is charged with ensuring that the Pilot whaling regulations are respected and otherwise answer for preparations. In practice, this means that it is the local legislative representative, who holds the highest command in a pilot whale hunt. It is his responsibility to both supervise the hunt and to distribute the catch.

The hunt

In accordance with the regulations, men gather on the shore to kill the beached whales, here in the town Vágur on Suðuroy, June 28, 2004.

Whale hunting equipment is legally restricted to hooks, ropes, and assessing-poles for measurement. A boat that has been equipped in such a manner is a pilot whale boat. The pilot whale boat is not a traditional small Faroese rowing boat, neither is it a vehicle used by the coastal navigation, and it does not include the modern Faroese factory fleet. A pilot whale boat simply describes the temporary condition of a small boat during a hunt, which is otherwise used for line fishery or leisure purposes.

When the whalers have met the requirements specified above, the pilot whales can be driven. Whale drives only take place when a school of whales is sighted close to land, and when sea and weather conditions make them possible. The whaling regulations specify how the school of whales is to be driven ashore. The drive itself works by surrounding the pilot whales with a wide semicircle of boats. On the whaling-foreman's signal, stones attached to lines are thrown into the water behind the pilot whales, thus the boats drive the whales towards an authorised beach or fjord, where the whales then beach themselves. It is not permitted to take whales on the ocean-side of the rope. A pilot whale drive is always under supervision of local authorities.

The pilot whales that are not beached were often stabbed in the blubber with a sharp hook, called a gaff (in Faroese sóknarongul), and then pulled ashore. But, after

allegations of animal cruelty, the Faroese whalers started using blunt gaffs (in Faroese blásturongul) to pull the whales ashore by their blowholes. Today, the ordinary gaff is only being used to pull killed whales ashore. The blunt gaff became generally accepted since its invention in 1993, and it is not only more effective, but it is also more humane by comparison to the other gaff. However, anti-whaling groups such as Greenpeace and the Whale and Dolphin Conservation Society (WDCS) claim that the partial blocking and irritation of the airway hurts and panics the animal.

Furthermore, in 1985 the Faroe Islands outlawed the use of spears and harpoons in the hunt, as it considers these weapons to be unnecessarily cruel to animals.

Once ashore the pilot whale is killed by cutting the dorsal area through to the spinal cord with a special whaling knife, a grindaknívur. Given the circumstances during a pilot whale hunt, the whaling knife is considered the safest and most effective equipment with which to kill the whales. The length it takes for a whale to die varies between a few seconds to a few minutes, with the average time being 30 seconds.

Other Species of cetacean that may be taken

According to Faroese legislation it is also permitted to hunt certain species of small cetaceans other than pilot whales. These include: bottlenose dolphin (Tursiops truncatus); Atlantic white-beaked dolphin (Lagenorhynchus albirostris); Atlantic white-sided dolphin (Lagenorhynchus acutus); and harbour porpoise (Phocaena phocaena).

The hunting of these dolphin species, with the exception of harbour porpoises, is carried out in the same way as the pilot whale hunt.

Harbour porpoises are killed with shotguns and numbers taken must be reported to the relevant district sheriff. According to statistics, the number of harbour porpoises shot on an annual basis is very low - from 0 to 10 animals.

Commercial whaling for larger whale species (fin and minke whales) in the Faroese has not been carried out since 1984.

Impression

The sea having turned blood red.

Two dead northern bottlenose whales in the bay of Nes in Vágur on Suðuroy.

During the cut of a pilot whale's spine, their main arteries also get cut. Because of this the surrounding sea tends to turn a bloody red. This vivid imagery is often used by anti-whaling groups in their campaigns against the hunt. These images of a blood-red sea can often have a shocking effect on bystanders.

Sith harpoons, spears, and firearms are prohibited, the whalers must be on the shoreline of the water and kill each individual whale.

Ólavur Sjúrðaberg, the chairman of the Faroese Pilot Whaler's Association, describes the pilot whale hunt in such a way: "I'm sure that no one who kills his own animals for food is unmoved by what he does. You want it done as quickly and with as little suffering as possible for the animal."

The pilot whale as a source of food

Most part of traditional Faroese food consists of flesh. Because of the rugged, rocky Faroese terrain, grain and vegetables have not been able to grow very well as only about

2% of the 1,393 km^2 is arable land and none is set aside for permanent crops. During the winter months the Faroe Islanders´ only option was to mostly eat salted or dried food (this includes meat, pilot whale meat, seabirds, and fish). This means that over the centuries, the pilot whale has been an important source of food and vitamins to the isolated population on the North Atlantic archipelago.

The pilot whale meat and blubber is stored, prepared, and eaten in the Faroese households. This also means that whale meat is not available at supermarkets. Although the Faroe Islands' main export is fish, this does not include pilot whale meat or blubber. An annual catch of 956 pilot whales (1990–1999) is roughly equivalent to 500 tonnes of meat and blubber, some 30% of all meat produced locally in the Faroe Islands.

Food preparation

Tvøst og spik. Black meat of the pilot whale and blubber (middle), together with dried fish (left) and potatoes.

Whale meat and blubber is a Faroese specialty. Well into the last century meat and blubber from the pilot whale meant food for a long time. Everybody got a share, as is the custom to this day. The meat and blubber can be stored and prepared in a variety of ways such as Tvøst og spik. When fresh, the meat is boiled or served as steaks. A pilot whale steak is in Faroese called *grindabúffur*. Whale meat with blubber and potatoes in their skins are put in to a saucepan with salt and then boiled for an hour. Slivers of the blubber are also a popular accompaniment to dried fish.

The traditional preservation is by salting or outdoor wind-drying. Today the meat and blubber is often kept in the freezer. The traditional way of storage is still being practiced however, particularly in the villages.

Tourists in the Faroe Islands who would like to try pilot whale meat and other Faroese food specialties can do so at different cultural events, which are mostly organized in the summer period. Tourists that consider consuming pilot whale or cetacean meat on a visit to the Faroe Islands should note the latest warnings from the Faroese Chief Medical Officers mentioned below.

Cultural importance

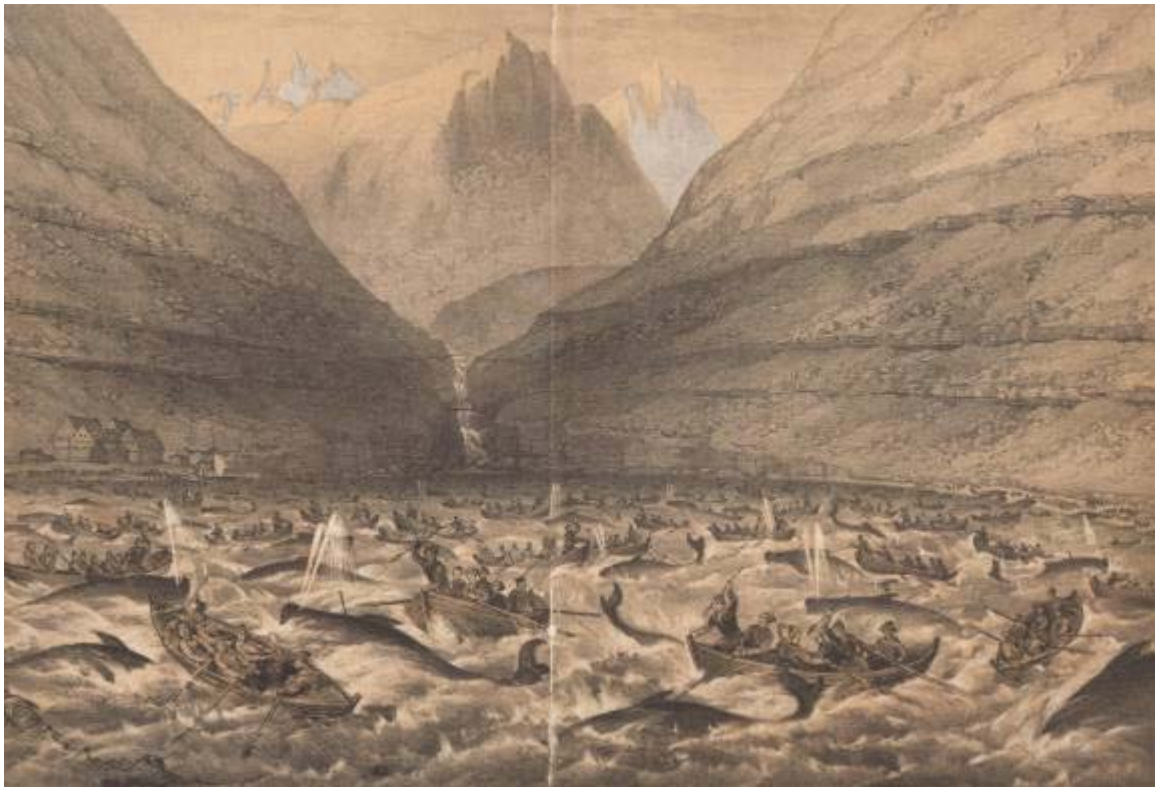
The pilot whale hunt is an integral part of Faroese social culture. As the attenders of a grindadráp usually are men, women do not actively take part in it, but are bystanders or onlookers. This is part of the traditional division of labor concerning grindadráp that is centuries old, and has not changed over time.

In Faroese literature and art, grindadráp is an important motif. The grindadráp paintings by Sámal Joensen-Mikines rank internationally as some of his most important. They are part of a permanent exhibition in the Faroese art museum in the capital Tórshavn. The Danish governor of the Faroe Islands Christian Pløyen wrote the famous Pilot Whaling song, a Faroese ballad written in Danish entitled "A New Song about the Pilot Whale Hunt on the Faroes". It was written during his term of office (1830–1847) and was printed in Copenhagen in 1835.

The Danish chorus line is *Raske drenge, grind at dræbe det er vor lyst.* In English: *Tough boys, to slay the grind that's our desire.*

These old verses are rarely sung by the Faroese today . To many in the outside world (including Denmark) they are seen as a backward cliché about the culture of the islands .

Catches



Whaling in 1854 in Vestmanna

Records of the drive exist in part since 1584, and continuously from 1709—the longest period of time for statistics existing for any wild animal harvest in the world.

The catch is divided into shares known in Faroese as a *skinn,* which is an age-old measurement value that derives from agricultural practices. 1 skinn equals 38 kg of whale meat plus 34 kg of blubber: in total 72 kg.

Period	Drives	Whales	Skinn
1709–1950	1,195	178,259	1,360,160
1951–1960	122	18,772	99,102
1961–1970	130	15,784	79,588
1971–1980	85	11,311	69,026
1981–1990	176	18,806	108,714
1991–2000	101	9,212	66,284
2001	11	918	7,447
2002	10	626	4,263
2003	5	503	3,968
2004	9	1,010	8,276
2005	6	302	2,194

2006	11	856	6,615
2007	10	633	5,522
2008	N/A	N/A	N/A
2009	3	310	

The Faroe Island Statistical office has published the official numbers for the 2009 drive hunt. The statistics show that a total of 310 pilot whales, 174 whitebeaked dolphins, 2 bottlenose whales and 1 bottlenose dolphin were killed in three separate grinds.

- Long-term annual average catch **1709–1999:** 850
- Annual average catch **1900–1999:** 1,225
- Annual average catch **1980–1999:** 1,511
- Annual average catch **1990–1999:** 956

Threat to the whale population

Atlantic White-sided Dolphins on a concrete-floored dock in Hvalba, 26 August 2006

There is a raging debate about whether the pilot whale hunt represents a significant threat to pilot whale populations; the actual size of the Northeast Atlantic pilot whale population is a subject of debate between different organizations. The figure accepted by the International Whaling Commission's Scientific Committee is the 778,000 animals obtained by the North Atlantic Sightings Survey in 1992. Those in favour of whaling,

such as the North Atlantic Marine Mammal Commission in their 1997 and 1999 report on the hunt, say that this is a conservative estimate, whilst those opposed to the hunt, such as the Whale and Dolphin Conservation Society say the figure is over-estimated. If the figure is accepted, then the average kill from 1990–1999 of 956 animals per year, represents a little more than 0.1% of the population, which the commission has deemed sustainable.

In its Red List of Threatened Species the IUCN lists both the Long-finned and Short-finned Pilot Whales with "Data Deficient" status according to its 2008 assessment. In a previous assessment in 1996 the organization listed the species in the "Lower Risk/least concern" category. However, the IUCN also says that with an estimated subpopulation size of 778 000 in the eastern North Atlantic and approximately 100 000 around the Faroes, Faroese catches of 850 per year are probably sustainable.

According to the American Cetacean Society — a whale protectionist group — pilot whales are not considered endangered. The society cites that there are likely about 1 000 000 long-finned and at least 200 000 short-finned pilot whales worldwide.

Controversy

Photographs in the media of the pilot whale hunt display a red sea with the bodies of dead pilot whales. These images enraged whale protectors worldwide.

Most Faroese maintain that it is their right to catch pilot whales given that they have done so for centuries. The Faroese whalers defend their actions before international organizations like Greenpeace with three arguments: one, that grindadráp is not a hunt as such, but a *dráp* meaning a *kill* (i.e., that they do not regularly take to sea just to hunt for pilot whales, but only kill those sighted swimming too close at land); two, that the pilot whale hunt does not exist for commercial reasons, but for communal food distribution among local households; and three, data suggest that pilot whales are not endangered.

It is rare to hear critical voices in the Faroe Islands, but in the last few years they have become more frequent. Opponents of the grindadráp often argue on an emotional level, citing in particular the bloody kill on the fjord bank. The Faroese response to this allegation is that a bloody beach is not in fact a problematic issue concerning whale-catching, and that the problem is that a great deal of the civilized population has been alienated from the process and basic consequences of animal food production.

Proponents of the hunt further argue that the pilot whale lives it's whole life in freedom in it's natural habitat, the Atlantic Ocean, and then dies in a few minutes, in contrast to the fate of conventional livestock such as cows, pigs, and chickens. These animals often live in captivity or confinement for their whole lives and are then subject to lengthy transportation and other stressful events before final slaughter. Furthermore, causing an animal unnecessary or excessive pain and discomfort is prohibited by the Faroese law.

Animal-rights activists argue that the grindadráp is not only cruel, but in view of the ample food supply in today's Faroes, completely unnecessary. Additional argumentation is supplied by the Faroese Ministry of Health, which warns of excessive consumption of pilot whale meat, since it has been shown to contain high levels of mercury, PCBs, and environmental poisons. The Faroese Chief medical officers Pál Weihe and Høgni Debes Joensen announced in late 2008 that pilot whale meat and blubber contains too much mercury, PCBs, and DDT derivatives to be safe for human consumption

During the recent history of the grindadráp, the tools of the catch have modernized. Cellular telephones and radio allow the islands to be alerted to a sighting within the course of minutes. The use of private motorboats give the whalers more speed and maneuverability on the water. The dull blowhole hook, adopted in response to concerns over cruelty, had the additional effect of further increasing the effectiveness of Faroese attempting to beach the whales. In spite of how such improvements to the tools could make the grindadráp more effective, the number of pilot whales caught, both overall and per drive, is less than preceding centuries.

In 1989 the Whale and Dolphin Conservation Society commissioned an animated public information film (narrated by Anthony Hopkins) to raise awareness on the Faroe Islands' whaling of long-finned pilot whales. The film caused controversy when it was released, as it shows in somewhat graphic detail what occurred during the annual hunt, but was only given a Universal Certificate by the BBFC since it was animated.

In July 2010, the Sea Shepherd Conservation Society published details of the slaughter of 236 pilot whales, including images of whale fetuses cut out of their mother's bellies. International media such as the Huffington Post picked the story up and Peter Hammarstedt, a Swedish representative of Sea Shepherd, announced his intention to mount a campaign to discourage tourism and apply economic pressure to the Faroese to end the practice.

Chapter- 5

Whaling in Japan

Whaling in Japan may have begun as early as the 12th century. During the 20th century, Japan was heavily involved in commercial whaling until the International Whaling Commission moratorium on commercial whaling went into effect in 1986. Japan continued to hunt whales using the scientific research provision in the agreement, and Japanese whaling is currently conducted by the Institute of Cetacean Research. The meat from scientific whale hunts is then sold in shops and restaurants. This is allowed under IWC rules, although most IWC members oppose it.

These hunts are a source of conflict between pro- and anti-whaling countries and organizations. Nations, scientists and environmental organizations opposed to whaling consider the Japanese research program to be unnecessary at best and a thinly disguised commercial whaling operation at worst.

Japan maintains that annual whaling is sustainable and necessary for scientific study and management of whale stocks. Japan also argues that objections to whaling are based upon cultural differences and emotional anthropomorphism.

Whale meat on sale at Tsukiji fish market in Tokyo, Japan

History

Archeological evidence in the form of whale remains discovered in burial mounds suggests that whales have been consumed in Japan since the Jōmon Period. Without the means to engage in active whaling, consumption primarily stemmed from stranded whales. Surviving Ainu folklore reveals a long history of whaling and a spiritual association with whales. The earliest records of hand thrown harpoons date only back to the 12th century.

Inshore whaling in Taiji, Japan

Organized whaling

Organized open-boat shore whaling began in the 1570s; and continued into the early 20th century. Techniques were dramatically developed in the 17th century in Taiji, Wakayama. Wada Chubei Yorimoto established a fishery by organizing the group hunting system in 1606. Whalers would spot whales from stations along the shore and launch boats to catch them with harpoons and lances. His grandson, Wada Kakuemon Yoriharu, later known as Taiji Kakuemon Yoriharu, invented the whaling net technique called Amitori-shiki (網取り式).

Instead of trying to harpoon whales in open water, now twenty or more boats would encircle a whale and make a racket, driving it towards the shallows into nets wielded by a second group of six boats. There harpooners would approach in four boats of their own. The nets made escape more difficult and, in its struggle to escape, the whale got tired sooner.

Right whales, humpback whales, fin, minke and gray whales were primarily hunted. Blue whales, sei, Bryde's and sperm whales were however also taken when possible.

Once ashore, the whale was quickly flensed and divided into its separate parts for various warehouses and further processing. Although the primary use for whales was meat, the entire whale was utilized in a variety of products including lamp oil, soaps, fertilizer, folding fans (baleen), and more. This method of whaling required a significant financial investment from rich individuals to compensate for the sizable labor force. However, whaling remained entwined with ritual and unlike their contemporary European counterparts the early Japanese coastal whalers considered whales a valuable resource and did not over-exploit local stocks.

Modernization

Norwegian-style modern whaling, based on the use of power-driven vessels, cannons and exploding harpoons, was introduced in the Meiji era largely through the efforts of Juro Oka who is now considered the father of modern Japanese whaling. Oka traveled the world gathering information about whaling practices including to Norway for harpoons, cannons and expertise. He also established the first modern whaling company in Japan in 1899, Nihon Enyo Gyogyo K.K. which took its first whale on February 4, 1900 with a Norwegian gunner, Morten Pedersen.

In the early 20th century, Juro Oka dominated the whale meat market in Japan with assistance and instruction from Norwegian whalers and their leased or purchased ships. Another boost was provided by the capture of a Russian whaling fleet and subsequent transfer to Toyo GyoGyo Co. Ltd. As Japan's whaling industry expanded into new territory, including Korean waters, ship production and oil processing, Oka's company (renamed Toyo Hogei K.K.) returned significant profits to its investors which led to increased Japanese competition. Oka later became the first president of the Japan Whaling and Fishing Association, established in 1908.

I am firmly convinced that we shall become one of the greatest whaling nations in the world. The whaling grounds round Korea and Japan offer unlimited possibilities, and should stocks of whales, contrary to expectations, fail in those areas, we have the Sea of Okhotsk and the Berring Sea to the north and we are aware of the great treasure houses to the south. The day will come when we shall hear one morning that whales have been caught in the Arctic and in the evening that whales are being hunted in the Antarctic.

Juro Oka – The father of modern Japanese whaling, 1910

However, at the start of the 20th century local traditions conflicted with modern whaling practices. In 1911 the conflict turned violent in Same Village, Aomori Prefecture. Ocean pollution from the whaling stations, including large quantities of oil and blood runoff, angered the local fishermen and threatened their own fishing grounds. In protest the fishermen burned a Toyo Hogei facility down. The people of the Same region also did not consume whales and considered them sacred.

The League of Nations raised concerns about the over-exploitation of whale stocks (perhaps due to the falling price of whale oil) and called for conservation measures in 1925. This eventually led to the Geneva Convention for the Regulation of Whaling which was presented in 1931 but did not enter into force until 1934 and was completely ignored by Japan and Germany.

Antarctica

Factory ships were not used by Japan until the 1930s. As whale catches diminished in coastal waters, Japan looked to Antarctica. Toyo Hogei K.K. purchased the Norwegian factory ship, Antarctic, renaming it the Tonan Maru in 1934. Refrigerator ships were sent along to freeze and transport the meat back to Japan. By capitalizing on both the meat and oil of whales Japanese industry continued to out-compete other whaling nations. Improvements in technology such as the world's first diesel-powered catch boat, the Seki Maru, also increased the capacity to take whales. In the years building up to World War II, the Germans purchased whale oil from Japan and both nations used it in preparation for war.

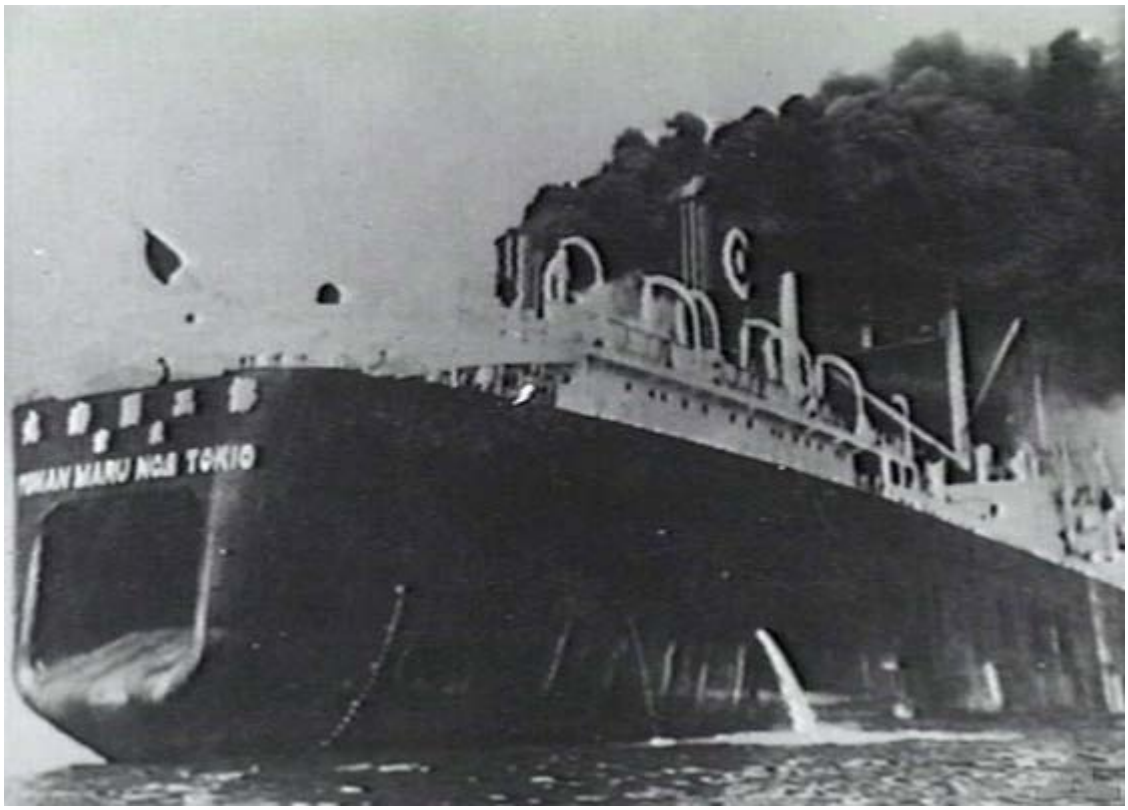
In 1937 London, the International Conference on Whaling, which Japan did not attend, led to additional limits on pelagic whaling in order to prevent excessive exploitation (and specifically the extinction of the Blue whale) creating the International Agreement for the Regulation of Whaling. Regarding voluntary acceptance of restrictions:

This is the more important in that Japan, who has not yet acceded to the 1931 Convention is largely increasing her whaling fleet in the Antarctic...

Regardless of efforts to establish limits, in part due to Japan ignoring an 89 day season limit and continuing for 125 days, a record 45,010 whales were taken in a single season. The Protocol to the International Agreement for the Regulation of Whaling, signed in 1938, established additional restrictions on whaling. Despite the attendance of Japanese

representatives, Japan did not sign the agreement and violated it by taking Humpback and undersized whales beginning five weeks prior to the defined start of the season. By 1939 Germany and Japan accounted for 30% of the world's whale take.

World War II



The *Tonan Maru No. 2* whaling factory ship, drafted into military use, damaged by a Dutch submarine while taking part in the landing at Kuching, Borneo.

During the second world war Japan's whaling was significantly limited to more familiar hunting grounds, such as the Bonin Islands, to provide meat and oil for domestic and military use. Whaling there was halted in March, 1945 when the islands were taken by US forces. However, by November 1945 the whaling stations received permission to reopen. Most whaling ships were commandeered by the Japanese navy and by the end of the war the factory ships and most of the catch boats had been sunk.

General Douglas MacArthur encouraged the surrendered Japan to continue whaling in order to provide a cheap source of meat to starving people (and millions of dollars in oil for the USA and Europe). The Japanese whaling industry quickly recovered as MacArthur authorized two tankers, converted into factory ships (Hashidate Maru and Nisshin Maru), with catcher boats to once again, take blue whales, fins, humpbacks and sperm whales in the Antarctic and elsewhere.

The first post-war expedition was overseen by a US naval officer, Lieutenant David McCracken, and observed by Australian Kenneth Coonan. Coonan expressed disapproval of McCracken in his reports of violated regulations and waste dumped over the side when the fleet began killing whales faster than they could be processed. McCracken even briefly joined in whaling with the Japanese crew of a catch boat and detailed the trip in his 1948 book, *Four Months on a Jap Whaler*.

The post-war recovery established whale meat as a nation-wide food source for the first time. In 1947 whale meat made up over 50 percent of the meat consumed in Japan. The market significantly increased through commercial sale and public distribution. In 1954, the School Lunch Act also included whale meat in compulsory education (elementary and middle school) to improve the nutrition of Japanese children. However, as economic growth and average income improved, the demand for whale decreased. Other meats became more popular into the 1970s and whale meat was removed from school menus.

ICRW and IWC

Signing the International Convention for the Regulation of Whaling, Washington, D.C. Dec 2nd, 1946

The International Convention for the Regulation of Whaling was created in 1946 in Washington to "provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry". Based on the previous 1937 International Agreement and subsequent Protocols to that agreement in 1938 and 1945, the ICRW led to the 1949 creation of the International Whaling Commission and consists

of guidelines for the international regulation of coastal and pelagic whaling. Japan joined the IWC in 1951. (*Critics charge that the IWC and ICRW have largely failed due to a lack of enforceable rules and regulatory loopholes*)

Japan would later make heavy use of one particular article of the ICRW despite the condemnation of environmental organizations and anti-whaling nations.

Article VIII

1. Notwithstanding anything contained in this Convention any Contracting Government may grant to any of its nationals a special permit authorizing that national to kill, take and treat whales for purposes of scientific research subject to such restrictions as to number and subject to such other conditions as the Contracting Government thinks fit, and the killing, taking, and treating of whales in accordance with the provisions of this Article shall be exempt from the operation of this Convention. Each Contracting Government shall report at once to the Commission all such authorizations which it has granted. Each Contracting Government may at any time revoke any such special permit which it has granted.

2. Any whales taken under these special permits shall so far as practicable be processed and the proceeds shall be dealt with in accordance with directions issued by the Government by which the permit was granted.

Pirate whaling

As the IWC enacted regulation regarding whaling a number of unregulated operations acting outside of the laws of member nations became notorious in the mid-late 20th century. For example, a large private whaling fleet was owned (through a variety of holding companies and flags of convenience) by shipping magnate Aristotle Onassis and gained notoriety for ignoring all limits of size and species. When the Peruvian navy finally stopped and seized the Onassis fleet, just as sanctions were to be applied the entire fleet was sold to Japan for $8.5 million. Onassis' factory ship, the Olympic Challenger, was renamed the Kyokuyo Maru II.

The Japanese trawler, Shunyo Maru, later became a combined catcher/factory whaling ship, MV Tonna, and was owned by Andrew M. Behr who also owned the infamous pirate whaling ship, Sierra. The Tonna is famous for its demise. In 1978 with full holds the Tonna landed another 50 ton Fin whale. As the whale was being winched aboard for processing the ship listed over, took on water and quickly sank. Behr and the Sierra were also linked to Japan's Taiyo Fisheries Co. through a Canadian subsidiary (Taiyo Canada Ltd.) and with whale product for Japanese markets. The Sierra was severely damaged after being rammed by activist Paul Watson aboard his ship, the Sea Shepherd. The Sierra was later sunk in port by unknown saboteurs with limpet mines. Paul Watson continues to be a controversial figure at odds with whaling and particularly Japan. Taiyo and other Japanese fisheries have also been linked to pirate whaling through subsidiary companies in Taiwan, the Philippines, Spain, South Korea, Chile and Peru.

Consolidation

As quotas and resources were reduced and restrictions increased, the commercial viability of large competing whaling fleets was also diminished. In order to preserve the industry, six Japanese whaling companies negotiated an agreement through the Japan Fisheries Agency and talks in July 1975. The six companies (Nihon Suisan, Taiyo Gyogyo, Kyokuyo, Nitto Hogei, Nihon Hogei and Hokuyo Hogei) merged to create a new company, Nihon Kyodo Hogei Co., Ltd. on February 15, 1976. Former president of the Japan Fisheries Association and former Director-General of the Japan Fisheries Agency, Iwao Fujita, became the first Managing Director by appointment.

In April, 1976, Shintaro Abe, the Minister of Agriculture, Forestry and Fisheries, declared government support for the newly formed company.

We ask that the flame of the whaling industry will not be put out and that you do your best to secure Japan's food supplies. The government will be doing all it can to actively support your efforts.

Minister Shintaro Abe, 1976

Nihon Kyodo Hogei Co. Ltd was later renamed Kyodo Senpaku Co. Ltd and merged with the Japan Whaling Association and Institute of Cetacean Research to create the modern Institute of Cetacean Research in 1987.

Moratorium

In 1972, the United Nations Environmental Conference produced a 52–0 vote in favor of a 10 year global moratorium on commercial whaling. However, the UN resolution was not adopted by the IWC by a vote of 6-no, 4-yes and 4-abstain. Japan, Russia, Iceland, Norway, South Africa and Panama voted no.

In 1973, a moratorium was once again proposed and voted down in the IWC lacking the required 3/4 majority. (8-yes, 5-no, 1-abstain). Japan, Russia, Iceland, Norway and South Africa voted no.

Between 1973 and 1982 the IWC would see its membership increase from 14 member nations to 37 perhaps stacking the vote in favor of anti-whaling nations.

In 1980 and 1981 two more votes failed to establish a moratorium by a 3/4 majority.(13-9-2 and 16-8-3)

In 1982, the International Whaling Commission (IWC) finally voted in favor of a moratorium on commercial whaling to go into force in 1986 (25-7-5). Japan objected to the moratorium and continued whaling (*Under the ICRW an objecting nation is exempted from the disputed regulations. Japan also continued to hunt sperm whales despite a 1981 IWC zero catch quota.*). The United States would play a significant role in Japan's

acceptance of a global moratorium on commercial whaling due to its domestic laws. In particular the 1971 Pelly Amendment to the US Fishermen's Protection Act gives the US President legal authority to prohibit importation of fish products from any nation that is diminishing the effectiveness of fisheries conservation programs. It was later strengthened by the 1979 Packwood-Magnuson Amendment to the Fishery Conservation and Management Act giving the same sanctioning power with regard to the ICRW.

Potential US sanctions jeopardized Japanese fisheries access to Alaskan waters and a million tonnes of fish (est $425 million annually). A negotiated settlement was reached allowing Japan to continue commercial whaling without the threat of US sanctions until 1988 with an agreement to drop Japan's objection to the moratorium in 1985. However, conservation groups sued the United States Secretary of Commerce claiming that the law did not allow any deals only to be finally defeated by the US Supreme Court in 1986. As agreed Japan withdrew its objection to the moratorium and ceased commercial whaling by 1988. (*Japan's access to Alaskan waters was later phased out anyway, partly due to pressure from US fishermen and conservationists*)

Research whaling

In 1976, the quota for Southern Hemisphere Bryde's whales was set to zero by the IWC. However, Japan proceeded to take 225 of them during the 76–77 season by issuing itself a permit to take whales for scientific research under Article VIII of the ICRW. Following this event, the IWC recommended all future applications of Article VIII be reviewed by the IWC scientific committee.

In 1986, Japan introduced a similar proposal and later issued itself a scientific permit to take 825 minke whales and 50 sperm whales every year for ten years. Despite the fact that the IWC scientific committee rejected its research proposals, Japan continued whaling.

The IWC adopted a resolution in 1987 recommending Japan not proceed until disagreements over its research proposals were resolved. A second resolution was also adopted on February 14, 1988 recommending Japan not proceed. On February 9, 1988 Japanese whalers killed the first minke whale in Antarctic waters under the new self issued research whaling permit. U.S. President Ronald Reagan responded by cutting off Japanese fishing privileges in U.S. waters on April 6, 1988 under the Packwood-Magnuson Amendment.

Given the lack of any evidence that Japan is bringing its whaling activities into conformance with the recommendations of the IWC, I am directing the Secretary of State under the Packwood-Magnuson Amendment to withhold 100 percent of the fishing privileges that would otherwise be available to Japan in the U.S. Exclusive Economic Zone. Japan has requested the opportunity to fish for 3,000 metric tons of sea snails and 5,000 metric tons of Pacific whiting. These requests will be denied. In addition, Japan will be barred from any future allocations of fishing privileges for any other species, including Pacific cod, until the Secretary of Commerce determines that the situation has

been corrected.

U.S. President Ronald Reagan, 1988

Japan has since conducted research whaling programs in the North Pacific (JARPN 1994–1999, JARPN II 2000–Present) and in Antarctica (JARPA 1988–2005, JARPA II 2005–Present). The IWC has asked its members that conduct research whaling programs to demonstrate that the research provides critical information, that the research is needed for whale management purposes, and that non-lethal research techniques are not able to provide the same information. The IWC has issued at least 19 resolutions criticizing Japan for failing to meet these conditions and asking it to stop issuing permits.

Normalization

In 1994, at its 46th annual meeting, the IWC established the Southern Ocean Whale Sanctuary in a 23-1-8 vote. Commercial whaling is prohibited within the sanctuary boundaries. Only Japan voted in opposition.

As the size of the IWC continued to grow, so did the influence of Japan within the commission. For example, many new Caribbean member nations voted in favor of whaling interests in 2000 including the defeat of a proposed South Pacific whale sanctuary. Additional support for whaling was gained in the Pacific, Africa and South-East Asia. As many of these nations received economic aid from Japan, accusations of vote buying were made by anti-whaling groups. In 2001, Japanese fisheries official Masayuki Komatsu stated Japan used overseas development aid as a tool to gain influence.

In 2006, the pro-whaling bloc won a symbolic victory in a non-binding resolution implying the moratorium on commercial whaling was both temporary and unnecessary (33-32-1).

Japan followed with a proposal to "normalize" the IWC. In the proposal, Japan's representatives claimed the IWC had become dysfunctional in favor of the total elimination of whaling. It also suggested reforms such as the use of secret ballots and increased recognition of cultural differences in the IWC. A Conference for the Normalization of the International whaling Commission was hosted by Japan in 2007.

After over 50 years of control, Japan's center-right conservative party, Liberal Democratic Party (LDP), lost in 2009 elections to the opposing left, Democratic Party of Japan (DPJ). Environmental organizations had hoped the change in government would bring about an end to Japanese whaling. However, in 2009 the Foreign Minister of Japan, Katsuya Okada, explained that whaling would continue to receive support as a matter of policy.

A 2010 undercover investigation by reporters from the UK's Sunday Times revealed the officials of many developing countries accepted financial compensation from Japan for

support in the IWC. Separate from millions in overseas development aid, membership fees, paid flights, hotel stays and spending money was all provided, by Japan, to gain the support of IWC delegates. In some cases cash was presented in envelopes by Japanese officials. Despite recordings from the investigation, officials implicated in the report have denied accepting bribes in exchange for votes.

Production

Japanese whaling is conducted in both pelagic (open-ocean) areas in the North Pacific Ocean and the Southern Ocean near Antarctica. Coastal waters are also utilized for small-type coastal whaling of dolphins and other small cetaceans. Large and small whales are sometimes taken as bycatch in the nets of Japanese fishing vessels as well.

Pelagic whaling

Various cuts of whale meat for sale.

Japan's pelagic whaling fleet, which annually hunts large whales in the Southern Ocean, consists of a number of ships for hunting and processing whale catch as well as securing the hunt against protests. During the 2009–10 season, the Japanese fleet included a

factory ship, four harpoon ships and two security patrol vessels. The Japanese quota includes 935 minke, 50 fin and 50 humpback whales per season.

When whales are spotted the harpoon ships will engage in pursuit. A harpoon cannon with a grenade tipped harpoon is fired at the target whale. A rope is trailed from the harpoon in order to prevent the whale from being lost. If the whale is struck and not killed instantly by the explosive tipped harpoon, a second harpoon may be used or the whale may be shot with a rifle until dead. A past method of using a second harpoon to electrocute whales is now forbidden by the IWC. Environmental groups have reported whales being dragged backward and drowned.

Each caught whale is secured to the side of a harpoon ship with rope. Lines are later used to transfer the whales from the harpoon ship to the factory ship. Whales are next winched onto the factory ship through a slipway at the aft of the vessel. On the flensing deck several workers use specialized tools to butcher the whale. Usable product is delivered to the lower decks of the ship for further processing and refrigerated storage. Excess or byproduct material is dumped back into the ocean.

The Sea Shepherd Conservation Society, a direct action group opposed to this whaling, attempts to annually disrupt the Japanese whaling operations with the aim of preventing as many whales as possible from being killed.

New regulations from the United Nations International Maritime Organization due to take effect in July 2011 will make it illegal for the *Nisshin Maru* to operate below 60 degrees south but all of the Japanese pelagic whaling is done inside the area. The new rules prohibit ships using heavy oil in the Antarctic Treaty System area because of the harm a spill would cause. Furthermore, the IMO's *Guidelines For Ships Operating In Ice-Covered Waters* put requirements on safety and hull-strength which the *Nisshin Maru* does not fulfill.

Small type coastal whaling

Coastal fishing fleets that hunt dolphins use many small boats in a coordinated effort. The fishermen bang metal poles in the water in order to frighten and therefore guide noise-sensitive dolphins toward the shore. A series of nets are then used to corral the dolphins in. Divers and fishermen in boats next lance or cut the throats of the dolphins and haul them away to a nearby shore station for processing. A few dolphins are selected for sale to aquariums and spared for the marine park entertainment industry.

The practice of dolphin drive hunting in Taiji, Japan was recently the subject of a documentary film entitled *The Cove*.

Japanese whalers have hunted Baird's beaked whales on the Boso Peninsula, Wada, since the 17th century. Once landed just off the coast of Japan, the beaked whales are pulled onto a landing station with ropes and then butchered for sale. The meat is sold as food and the rest is used for fertilizer.

In May 2007 the IWC rejected a proposal to expand coastal catches. The quota was limited to a total of 66 whales between four whaling towns. The whalers of Wada encourage local children to attend the first butchering of each season followed by a community event where whale meat is served.

According to the Japan Fisheries Agency up to 20,000 dolphins of several species will be taken, in many locations along the coast of Japan, over the course of a six-month season.

Bycatch

In 2009, published DNA analysis of whale meat from Japanese markets suggested as many as 150 large whales from vulnerable coastal stocks were taken annually as bycatch. Japan legally allows the commercial sale of whales caught, incidentally, entangled in fishing nets designed to catch coastal fish. Market surveys also detected migratory whales such as Humpbacks, Fin whales, Bryde's whales and Gray whales, some of which are endangered species.

The impact on J-stock whales, which have protected status under the IWC, seemingly increased with changes in Japanese regulations that legalized the sale of bycatch in 2001. Between 1997 and 2000 only 19–29 whales were annually reported caught as bycatch. The number increased to 89 – 137 annually between 2001 and 2004. However, the study concluded from genetic information that the actual amount of bycatch was similarly high prior to the 2001 regulations but was under-reported. Up to 46% of the samples tested proved to be J-stock.

Prior to the 2001 change in regulations, fishermen could not legally sell Minke whales to commercial firms and were supposed to sell them locally or destroy them and report the incident. The high percentage of J-stock bycatch presents a significant threat including the possibility of extinction within a few decades according to IWC population estimates.

Imports

In 2009 Japan accepted imports of whale meat from Norway and Iceland for the first time in over a decade. The Norwegian shipment arrived in mid 2008 but was held by Japanese customs until January 2009 when the Japan Fisheries Agency finally approved the import.

The international trade of whale meat is prohibited by CITES (Convention on International Trade in Endangered Species). However, Japan, Norway and Iceland registered reservations with the treaty in order to remain exempt. The Norwegian company, Myklebust Trading, exports common Minke whale and Iceland's Hvalur hf exports Fin whale, which is an endangered species. Environmental organizations criticized the trade and expressed doubts that Japanese markets could absorb the increase in supply as thousands of tonnes of whale meat remained in cold storage in Japan. In 2010, Iceland's proposed quota in killing fin whales was much larger than the amount of Whale meat the Japanese market could absorb. In negotiations with Marc Wall,

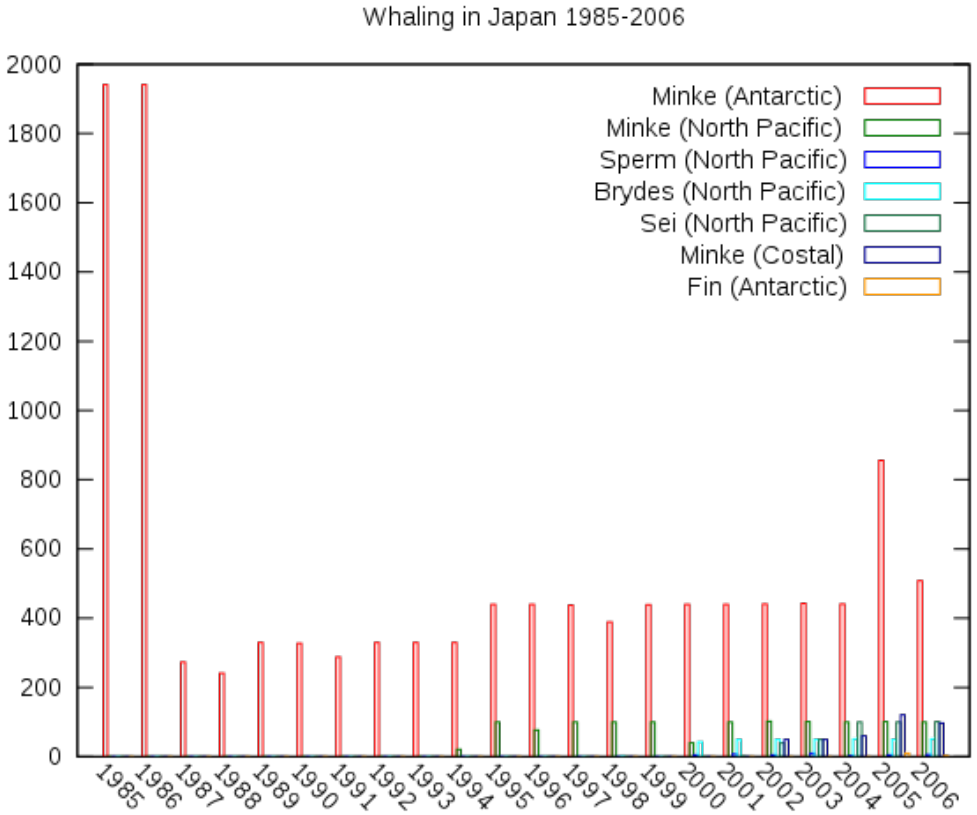
Economic Minister-Counselor at the US embassy in Tokyo, Jun Yamashita of the Japanese Fisheries Agencies, however, rejected a proposal to suggest to Iceland to reduce the number of killed fin whales to a more reasonable number.

Scientific Research

After halting its commercial whaling, Japan began scientific research hunts to provide a basis for the resumption of sustainable whaling. According to environmental groups and the Australian Environment Minister, the ostensible research serves to disguise commercial whaling in circumvention of the IWC moratorium. The IWC Scientific Committee collects up-to-date data on catch limits and catches taken since 1985. Numbers have ranged from less than 200 in 1985 to close to 1,000 in 2007.

The research is conducted by the Institute of Cetacean Research (ICR), a privately-owned, non-profit institution. The institute receives its funding from government subsidies and Kyodo Senpaku, which handles processing and marketing of byproducts such as whale meat. Japan carries out its whaling in two areas: the North-West Pacific Ocean (JARPN II) and the Antarctic Ocean (JARPA) Southern Hemisphere catch. The 2007/08 JARPA mission had a quota of 900 minke whales and 50 fin whales.

Catches



Japanese whale catches from 1985–2006

IWC – Japan Catches Under Objection (1985–1988)

Area	Sperm	Brydes	Minke	Total
N Pacific	388	634	615	1637
S Hemisphere	0	0	3882	3882

IWC – Japan Special Permit Catches (1988–2009)

Area	Fin	Sperm	Sei	Brydes	Minke	Total
N Pacific	0	47	592	446	1899	2984
S Hemisphere	14	0	0	0	9395	9409

JARPA

The research program took place near Antarctica from 1988 to 2005. Its stated objectives were to determine mortality rates, whale stock numbers and structure, the role of whales in the Antarctic ecosystem and how environmental changes affect whales. The whaling operation alternated between several pre-established areas intending to take 400 or more minke whales per season.

In 1997 the IWC scientific committee officially reviewed the JARPA program. The committee expected reasonable precision and usefulness of the data collected but disagreed on whether lethal methods were necessary. It was also noted that the results could potentially allow for an increase in the number of minke whales annually taken.

In the final 2007 review the committee agreed with the initial 1997 mid assessment. It recognized that progress had been made in identifying stock structure and at least two stocks were found in the research area. Agreed estimates of abundance could not be developed and preliminary estimates may only reflect major changes in abundance over a long time line. Problems were identified with age and mortality rate data. Krill-related work was welcomed but relatively little progress was made toward understanding the role of whales in the Antarctic ecosystem. Data on pollution was also welcomed but disagreement continued over the analysis of the results. Levels of toxic pollutants were lower in Antarctic whales than those sampled in the Northern hemisphere.

The commission made note of the fact that the catches took place in the IWC established Southern Ocean Whale Sanctuary and that improving management of whaling in a sanctuary is unnecessary. The 2007-1 resolution on JARPA is one of several calling on Japan by majority vote to suspend its lethal research.

JARPA II

Like its predecessor, the research whaling program takes place near Antarctica. Starting in 2005 and continuing to the present day, objectives include monitoring the Antarctic ecosystem, modeling competition between whale species, recording changes in stock

structure and improving future management of Antarctic whales. The program calls for 950 minke whales, 50 fin whales and 50 humpback whales per season. (*a quota for humpback whales has not yet been implemented due to intense international opposition*)

Disagreement over the value of the research, the use of lethal methods and the sample sizes continued in both the scientific committee and the commission. In 2005 and 2007 the commission passed resolutions by majority urging Japan to stop all lethal research in JARPA II.

JARPN

From 1994 to 1999 Japan carried out its research program JARPN in the western North Pacific. Its stated goals were to improve knowledge of stock identity, improve Implementation Simulation Trials for North Pacific Common Minke whales and act as a feasibility study for a program on feeding ecology. The program called for 100 minke whales annually. The results were reviewed by committee in February, 2000. The committee agreed that the information was useful for management but no consensus was reached on whether lethal methods of research were necessary.

As with JARPA, the IWC issued resolutions calling for Japan to cease issuing permits for the take of Minke whales citing concerns over the need for lethal methods such as the 1999-3 Resolution on whaling under Special Permit.

JARPN II

JARPN II began with a feasibility study from 2000 to 2001 to continue taking whales in the western North Pacific Ocean including 100 common minke whales, 50 Bryde's whales and 10 sperm whales. The objectives of the program included study of feeding ecology (such as prey consumption), stock structure and the environmental impacts of cetaceans. In 2002 after the completion of the initial study Japan proposed and began a long-term program to study how feeding ecology relates to sustainable use in the Pacific and within Japan's Exclusive Economic Zone. In 2008 the program included a proposal for an annual take of 340 minke whales, 50 Bryde's whales, 100 sei and 10 sperm whales.

Disagreement over the objectives, methodology, effect on stocks and overall success of the program continued in the scientific committee review of the feasibility study and full program. The full program introduced a change from previous use of the ICRW Article VIII research provision by not specifying an end date. The objectives were deemed unnecessary for stock management by some members and would not contribute significantly to previously identified research needs. The sample size and methods proposed were unlikely to satisfy program objectives and the ecosystem modeling was considered to be poorly developed.

Some contended the program placed undue emphasis on assumed negative effects of cetacean predation on fishery resources while failing to address the effects of fisheries on cetaceans. However, others believed determining the effects of cetaceans on fish stocks

and more information on minke stock structure to be critically important. Some stated the feasibility study would provide valuable information on methodology and other aspects of the program would improve over time and contribute to fundamental questions. The committee identified that the pollution objective did not contribute to the goals of the IWC Pollution 2000+ project but remained relevant to the IWC for long term study.

Disagreement over the value of data obtained through lethal methods continued as well. Some argued that a wide range of questions could be answered through non-lethal means such as "for pollutant monitoring (biopsy sampling for fatty acid and stable isotope analysis), for stock structure (photo identification, biopsy sampling and faecal sampling), and for feeding ecology (faecal sampling)." Others argued that prey data was required for modeling purposes that could not be acquired through non-lethal means. However, feeding ecology was not necessarily relevant to stock management according to some who argued biopsy sampling would allow for a greater amount of statistical data.

Argument continued over the potential negative effects of catches, such as stock depletion of O-stock and J-stock whales, when the only data on many of the populations came from selective extrapolations of JSV (survey) data. Proponents contended that the JSV data was reliable and the research area extended from coastal areas to offshore areas thus limiting pressure on coastal stocks.

In 2000, 2001 and 2003 more resolutions were passed by the IWC urging Japan to cease issuing special permits for whaling and limit research to non-lethal methods. The most recent Scientific Committee review was conducted in January, 2009.

Publication

In 2008, a study based on data gathered by Japanese lethal research was published in a peer reviewed Western academic journal, Polar Biology, after being rejected by several other publications. The study, in which 6779 whales were sampled and more than 4500 killed, implied that Antarctic Minke whales lost 9% of their blubber over 18 years due to a lack of ocean resources such as krill. Lars Walloe, a Norwegian of the University of Oslo, assisted with analyzing the data and claimed the study was first rejected for political reasons. Dr. Nick Gales, of the Australian Antarctic Division, stated the study failed to address criticisms of its methodology when initially presented. The study also contradicted previously presented JARPA data used to indicate Antarctic Minke whale populations were healthy.

Opposition

Anti-whaling governments and groups have strongly opposed Japan's whaling program. Greenpeace argues that whales are endangered and must be protected. The Japanese government strongly supports the protection of endangered species but claims that scientific whaling is essential to gather information about the status of the various populations. It furthermore maintains that the scale of the research is such that it does not affect the stock of the species. The 1985 IWC estimate put the Southern Hemisphere

Minke whale population at 761,000 (510,000 – 1,140,000 in the 95% confidence estimate). A paper submitted to the IWC on population estimates in Antarctic waters using CNB gives a population of 665,074 based on Southern Ocean Whale and Ecosystem Research Programme (SOWER) data. In recent years Japan has caught up to 1100 minke whales — 0.2% of the lower-bound on the 1985 95% confidence estimate.

Research methodology has come under scrutiny as it has been argued that non-lethal methods of research are available and that Japan's research whaling is commercial whaling in disguise. The Japanese claim that the accuracy of tissue and feces samples is insufficient and lethal sampling is necessary.

In 2002, the World Wildlife Fund published an open letter to the Japanese (in both Japanese and English text) in the New York Times signed by a group of international scientists, stating their assertion that "Japan's whale 'research' program fails to meet minimum standards for credible science". They accused Japan of "using the pretense of scientific research to evade its commitments to the world community". Signatories to the letter included Sylvia Earle (former Chief Scientist of the NOAA), Giuseppe Notarbartolo di Sciara (former President of the European Cetacean Society) and Roger Payne (founder of the Ocean Alliance).

In Volume 53, No. 3 of the journal Bio Science, twenty members of the Scientific Committee of the International whaling Commission confirmed "that the signers of the open letter correctly summarized criticisms made by researchers very familiar with Japanese scientific whaling", and that "so little of any significance to IWC management can be obtained only from whaling catches that it is impossible to justify killing animals on this basis".

A 2006 episode of the Australian Broadcasting Corporation's popular science show *Catalyst*, which strongly argued against whaling, reported that of the 18 year JARPA I program, which lethally obtained samples from 6800 whales, less than 55 peer-reviewed papers were produced, of which only 14 were claimed on the program to be relevant to the goals of the JARPA program, and that only four would require lethal sampling. Some of the research includes a paper named *Fertilizability of ovine, bovine, and minke whales spermatazoa intracytoplasmically injected into bovine oocytes*. Joji Morishita of JARPA has said the number of samples was required in order to obtain statistically significant data. More detailed list of Scientific papers presented to IWC up to 2005.

Sea Shepherd contests that Japan, as well as Iceland and Norway, is in violation of the IWC moratorium on all commercial whaling.

Anti-whaling campaigners claim that the Japanese public does not support the government for its whaling policy. However, all the major political parties from the right wing LDP to the Japanese Communist Party do support whaling. The meat ends up at Tokyo's famed Tsukiji fish market and other high-end restaurants. People previously involved in the industry have reported 'rampant meat embezzlement.'

Japanese fisheries companies have expanded abroad and endured pressure from partners and environmental groups. Five large fishing companies transferred their whaling fleet shares to public interest corporations in 2006. In 2007, Kyokuyo and Maruha, two of Japan's four largest fishing companies, decided to end their sales of whale meat due to pressure from partners and environmental groups in the US.

Cultural aspects

Proponents of Japanese whaling (including the Government of Japan) often argue that it is a cultural practice which foreigners should not oppose on the basis of cultural differences. Joji Morishita of Japanese Fisheries Agency in 2001 noted that the Japanese public also feels that anti-whaling groups are covertly racist. With Norway and Iceland hunting whales on a commercial basis, according to Morishita, "Singling out [Japan's] whaling is cultural imperialism – some people would say it's racism. Norway and Iceland are also whalers, but the criticism of Japan is stronger." However, critics have forcibly attacked the "cultural" defense, with for example Sea Shepherd Conservation Society representatives comparing it to forced female genital cutting in Sudan, saying that although it is a practice that may have cultural roots, it still should be opposed out of necessity. A professor of environmental studies in Japan wrote in his book that Japan's whale-eating culture is an invented tradition, only lasting 20 years from the end of World War II to the early 1960s to augment Japanese school lunch programs during Japan's reconstruction.

Debate in the IWC

The most vocal opponents of the Japanese push for a resumption of commercial whaling are Australia, New Zealand,and the United Kingdom. The Australian government's stated purpose for opposing whaling is the need for conservation of endangered species. The New Zealand government is opposed to hunting whales for food or research and the UK government believes "that whaling does not serve any genuine need and involves unacceptable cruelty."

In July 2004 it was reported that a working group of the Japan's ruling Liberal Democratic had drawn up plans to leave the IWC in order to join a new pro-whaling organization, NAMMCO, because of the IWC's refusal to back the principle of sustainable commercial whaling. Japan is particularly opposed to the IWC Conservation Committee, introduced in 2003, which it says exists solely to prevent any whaling. Any directives from the IWC are undertaken on a purely voluntary basis as state sovereignty means that there are few avenues by which international law can be enforced.

At an IWC meeting in 2006, a resolution calling for the eventual return of commercial whaling was passed by a majority of just one vote. There has been a failure to lift the ban on commercial whale hunting and Japan has since threatened to leave the International whaling Commission (IWC) until the whaling hault has ended.

In 2007 the IWC passed a resolution asking Japan to refrain from issuing a permit for lethal research in the Southern Ocean Whale Sanctuary – the main Japanese whaling area.

After a visit to Tokyo by the chairman of the IWC, asking the Japanese for their co-operation in sorting out the differences between pro- and anti-whaling nations on the Commission, the Japanese whaling fleet agreed that no humpback whales would be caught for the two years it would take for the IWC to reach a formal agreement.

Australian opposition

Due to the proximity to Australia the government of Australia has been particularly vocal in its opposition to Japan's whaling activity in the Southern Pacific. In 1994, Australia claimed a 200-nautical-mile (370 km) exclusive economic zone (EEZ) around the Australian Antarctic Territory, which also includes a southerly portion of the IWC Southern Ocean Whale Sanctuary. In December 2007, the Rudd government announced plans to monitor Japanese whalers about to enter Australian waters in order to gather evidence for a possible international legal challenge and on January 8, 2008 the Australian government sent the Australian customs vessel *Oceanic Viking* to track and monitor the fleet. Although this vessel was later redeployed on customs-related business to waters north of Australia, as of January 2010, it is not in pursuit of the Japanese whaling fleet.

In late 2009, the Prime Minister of Australia restated official objections to Japan's whaling programs and threatened to take legal action through international courts.

We, if we cannot resolve this matter diplomatically, will take international legal action. I'm serious about it, I would prefer to deal with it diplomatically, but if we cannot get there, that's the alternative course of action.

Australian PM Kevin Rudd, 2009

On 28 May 2010, the Australian Government publicly announced that it would lodge formal proceedings against Japan in the International Court of Justice in The Hague the following week. A joint ministerial statement said the government “has not taken this decision lightly”.

However, on 5 January 2011, leaked US diplomatic cables revealed that the Australian legal challenge to Japanese whaling was undertaken to satisfy domestic political pressures, with Australian government advisers being deeply pessimistic about the prospects of success in the International Court of Justice.

Opposition by environmental groups

The Japanese whaling fleet had several clashes with anti-whaling protesters and activists from various groups, including the Sea Shepherd Conservation Society, endeavoring to follow, document and disrupt the whaling fleet since the 2005–2006 season. On January

15, 2008 two crew members traveling on the MV Steve Irwin boarded the whaling ship *Yushin Maru 2* without permission and were subsequently detained onboard the ship for a number of days. Japan claimed that four crew members on board a Japanese whaling ship in Antarctic waters were injured March 3, 2008 when the anti-whaling group threw butyric acid on board.

Japan confirmed the later throwing of "Flashbang" grenades onto the Sea Shepherd ship, MV *Steve Irwin* by their whaling ship, Nisshin Maru. Japan also confirmed firing a "warning shot" into the air. The captain of the *Steve Irwin*, Paul Watson, claimed to have been hit in the chest by a bullet from a Japanese whaling ship crewmember, and a piece of metal was found lodged into his bullet-proof vest he was wearing at the time. On February 7, 2009 the MV *Steve Irwin* and the *Yushin Maru No. 2* collided as the Japanese vessel was attempting to transfer a whale. Both sides claimed the other had been at fault.

In January 2010, it was revealed that the Japanese whaling fleet was chartering flights in Australian planes from Hobart and Albany to track the Sea Shepherd ships' movements and provide information on their location to the whaling fleet so the fleet could evade them. The flights were heavily criticised by the Australian Greens who explained that they will introduce a bill to attempt to ban activities associated with whaling in Australia when the Senate resumes in early February.

On January 6, 2010, the anti-whaling ship *Ady Gil* suffered severe damage to its bow after a collision with the Japanese whaling ship *Shōnan Maru No. 2*. The Ady Gil was abandoned and left to sink after it had taken on too much water to be towed. The first officer of the Bob Barker has said that all the fuel, oil, batteries and other environmental contaminates were removed from the Ady Gil before towing began.

Japan's Fisheries Agency announced on 12 April 2010 that the whaling fleet had caught about half of the 935 whales it has hoped to catch during the 2009–2010 whaling research season as a result of obstruction by Sea Shepherd protest operations. The whalers harvested 506 southern minke whales and one fin whale.

In 2008, two Greenpeace anti-whaling activists, Junichi Sato and Toru Suzuki, also called the Tokyo Two were arrested and put on trial after trying to expose what they considered a theft ring within the whaling industry. An investigation was conducted into these practices, but was shortly ended concluding that the meat was taken as a souvenir and thus legal to possess. After his trial, Sato, Greenpeace Japan's Director of Oceans Campaign said that Greenpeace is moving away from a confrontational strategy and is using words to persuade Japan to end the hunts. He feels that outside groups don't have a good understanding of Japanese culture which can result in some actions having counter-productive results.

International opposition

On March 6, 2008 members of the International whaling Commission met in London to discuss reaching an agreement on whale conservation rules. Japanese whalers and anti-

whaling activists clashed in the waters near Antarctica on March 7, 2008, with each side offering conflicting accounts of the confrontation. The IWC called upon the Sea Shepherd Conservation Society to refrain from dangerous actions and reiterated its condemnation of any actions that are a risk to human life and property in relation to the activities of vessels at sea.

On March 8, 2008, Solomon Islands' Prime Minister Derek Sikua said that Japan had offered to pay for the country's delegates to attend the March 6, 2008 IWC meeting in London. Hideki Moronuki, the whaling chief at Japan's Fisheries Agency, denied the allegation saying, "There is no truth to it." He further stated that "Sikua may have confused the London meet with a seminar last week in Tokyo to which Japan invited delegates from 12 developing nations that have recently joined or are considering joining the IWC. Japan sometimes holds small seminars on whaling and invites delegates from countries. I wonder if Mr Sikua mixed up such seminars and IWC meetings,"

Commercial Viability

Due to its low food self-sufficiency rate, around 40%, Japan relies on stockpiling to secure a stable food supply. As of 2009, Japan's 1.2 million ton seafood stockpile included nearly 5000 tons of whale meat. Japan has started to serve whale meat in school lunches as part of a government initiative to reduce the amounts. However, there has been criticism of serving whale meat to school children due to allegations of toxic methyl mercury levels. The World Wildlife Fund has also estimated that the Japanese government has had to invest $12 million into the 2008–09 Antarctic whale hunt alone just to break even, and that subsidies in total have amounted to approximately $150 million since 1988.

2010 IWC meeting

At the 2010 meeting of the International whaling Commission in Morocco, representatives of the 88 member nations discussed whether or not to lift the 24 year ban on commercial whaling. Japan, Norway and Iceland have urged the organization to lift the ban. A coalition of anti-whaling nations has offered a compromise plan that would allow these countries to continue whaling, but with smaller catches and under close supervision. Their plan would also completely ban whaling in the Southern Ocean. More than 200 scientists and experts have opposed the compromise proposal for lifting the ban, and have also opposed allowing whaling in the Southern Ocean, which was declared a whale sanctuary in 1994.

Media Attention

Western media attention regarding Japan's whaling industry has increased. Animal Planet's television series, *Whale Wars*, places a camera crew on board the Sea Shepherd anti-whaling activist ship to document the annual interference with Japan's Antarctic whaling program. Japan has denounced the program as deceptive and supportive of eco-

terrorists to increase ratings. Animal Planet has made requests to also film from the perspective of Japan's whaling fleet but the requests were denied.

The animated series *South Park* lampooned both Japan's whaling traditions and the anti-whaling activists featured on *Whale Wars* in the episode "Whale Whores".

A 2009 Oscar winning documentary, *The Cove*, focused entirely on Japan's dolphin drive fisheries, mercury content of dolphin meat and the whaling town, Taiji. The film also concentrated on the difficulty in observing Taiji fishermen at work due to obstruction from the local community, police and inaccessible locations.

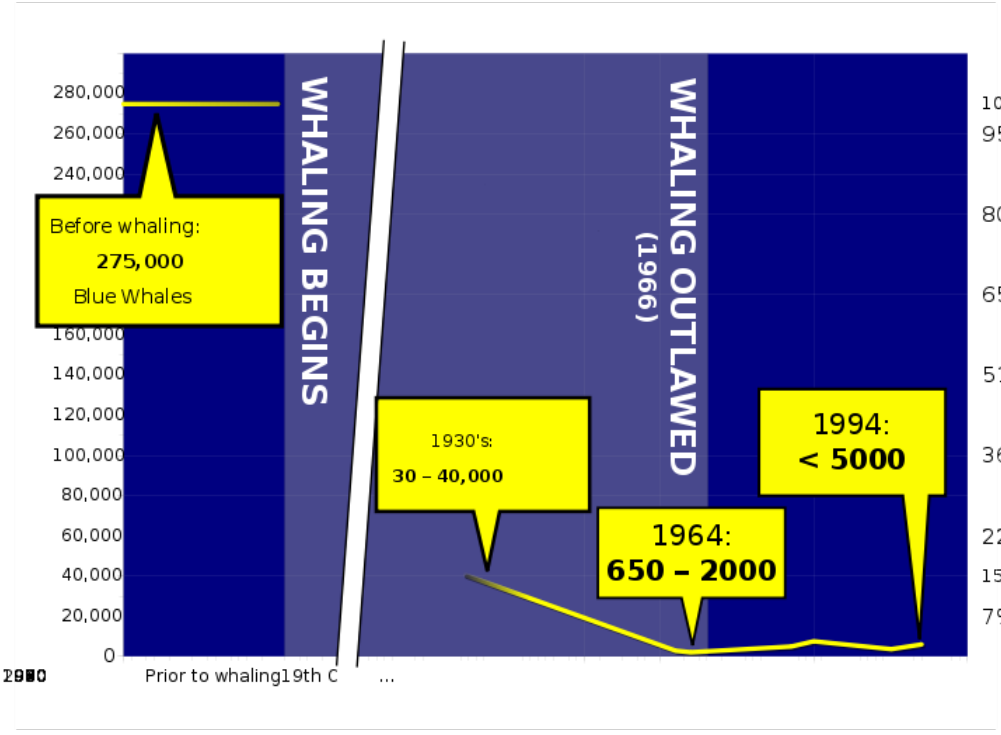
Peter James Bethune received a 2 year suspended sentence after boarding the ship which collided with his, the Ady Gil.

Chapter- 6

Whaling Controversy

The **whaling controversy** is the international environmental and ethical debate over whale hunting. The debate has focused on issues of sustainability and conservation as well as ownership and national sovereignty. Also raised in debates is the question of cetacean intelligence and the level of suffering which the animals undergo when caught and killed. Since the International Whaling Commission (IWC) 1986 moratorium on commercial whaling, the value of lethal sampling of whales for scientific research in order to establish catch quotas has also been debated. Finally, the value of whaling to fisheries as a method of controlling whales' perceived negative impact on fish stocks is another point of debate.

Conservation status



Blue whale populations have declined dramatically due to unregulated commercial whaling, putting them at risk of extinction.

Prior to the setting up of the IWC in 1946, unregulated whaling had depleted a number of whale populations to a significant extent, and several whales species were severely endangered. The IUCN notes that the Atlantic population of gray whales was made extinct around the turn of the eighteenth century. Examination of remains found in England and Sweden found evidence of a separate Atlantic population of gray whales existing up until 1675. Radiocarbon dating of subfossil remains has confirmed this, with whaling the possible cause. Whaling and other threats have led to at least five of the 13 great whales being listed as endangered. A past ban which was implemented around the 1960s has helped some of these species of whale to recover. According to IUCN's Cetacean Specialist Group (CSG), "Several populations of southern right whales, humpbacks in many areas, grey whales in the eastern North Pacific, and blue whales in both the eastern North Pacific and central North Atlantic have begun to show signs of recovery." Populations of many other whales species are also increasing.

Other whale species, however (in particular the minke whale) have never been considered endangered.

Despite this, opponents of whaling argue that a return to full-scale commercial whaling will lead to economic concerns overriding those of conservation, and there is a continuing battle between each side as to how to describe the current state of each species. For instance, conservationists are pleased that the sei whale continues to be listed as endangered, but Japan says that the species has swelled in number from 9,000 in 1978 to about 28,000 in 2002, so its catch of 50 sei whales per year is safe and the classification of endangered should be reconsidered for the North Pacific population.

Some North Atlantic states have recently argued that fin whales should not be listed as endangered anymore and criticize the list for being inaccurate. IUCN has recorded studies showing that more than 40,000 individuals are present in the North Atlantic Ocean around Greenland, Iceland, and Norway. There is no information about fin whales in areas outside of the Northern Atlantic, where they still hold the status of being endangered.

A complete list of whale conservation statuses as listed by The World Conservation Union (IUCN) is given below. Note that, in the case of the blue and gray whales, the IUCN distinguishes the statuses of various populations. These populations, while not regarded as separate species, are considered sufficiently important in terms of conservation.

Methods of whaling

Whaling harpoon

Whaling harpoon being used to kill a whale

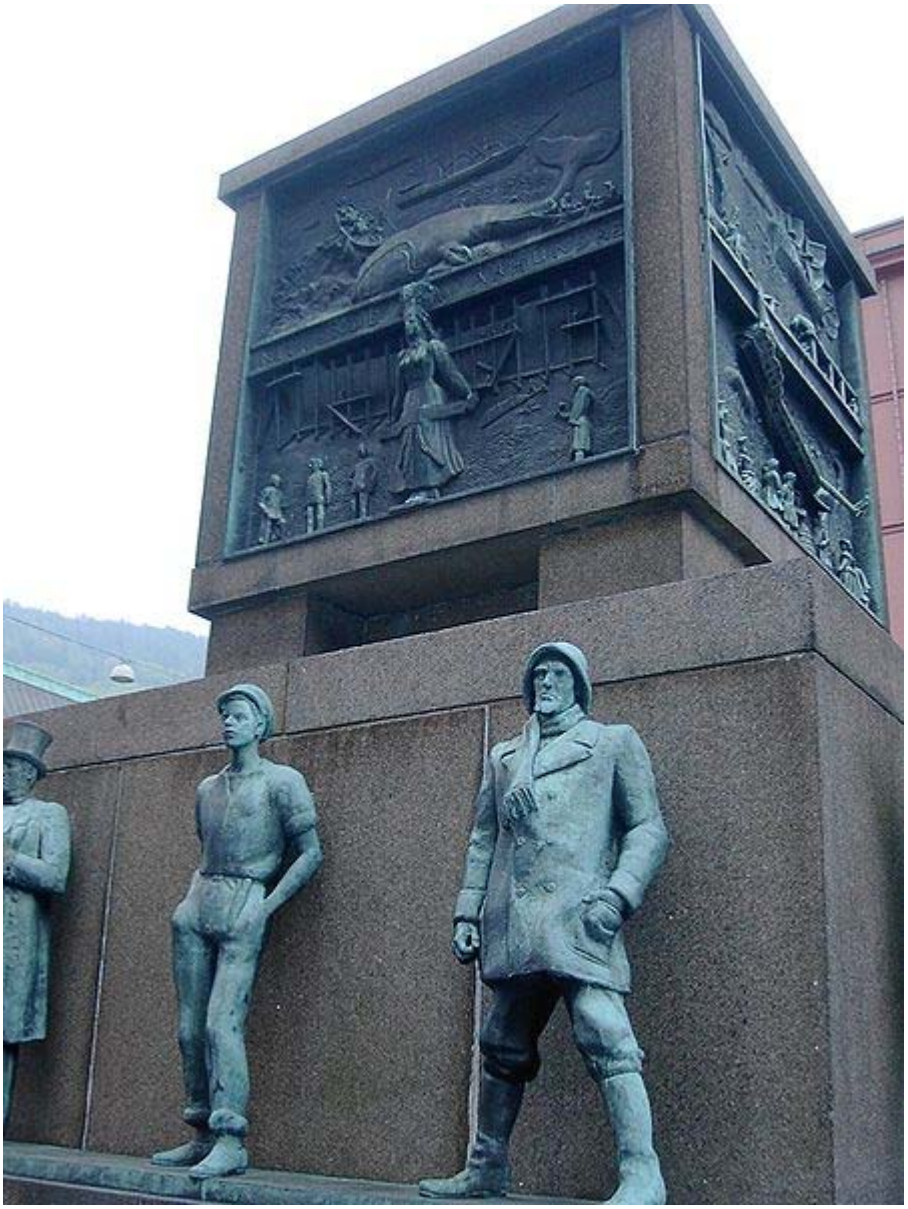
Farming whales in captivity has never been attempted and would almost certainly be logistically impossible. Instead, whales are harvested at sea often using explosive harpoons, which puncture the skin of a whale and then explode inside its body. Anti-whaling groups say this method of hunting is cruel, particularly if carried out by inexperienced gunners, because a whale can take several minutes or even hours to die. In March 2003, Whalewatch, an umbrella group of 140 conservation and animal welfare groups from 55 countries, led by the World Society for the Protection of Animals (WSPA), published a report, *Troubled Waters*, whose main conclusion was that whales cannot be guaranteed to be harvested humanely and that all whaling should be stopped. The report quoted official figures that said 20% of Norwegian and 60% of Japanese-captured whales failed to die as soon as they had been harpooned. WSPA further released a report in 2008 entitled *Whaling: Defying international commitments to animal welfare?* in which the culling of whales is compared–unfavorably–with slaughter guidelines for farm animals from the World Organisation for Animal Health (OIE).

John Opdahl of the Norwegian embassy in London responded by saying that Norwegian authorities worked with the IWC to develop the most humane methods. He said that the average time taken for a whale to die after being shot was the same as or less than that of animals killed by big game hunters on safari. Pro-whalers also say that the free-roaming lifestyle of whales followed by a quick death is less cruel than the long-term suffering of factory-farmed animals.

In response to the UK's opposition to the resumption of commercial whaling on the grounds that no humane method of catching whales exists, or "is on the horizon", the pro-whaling High North Alliance points to apparent inconsistencies in the policies of some anti-whaling nations by drawing comparisons between commercial whaling and recreational hunting. For instance, the United Kingdom allows the commercial shooting

of deer without these shoots adhering to the standards of British slaughterhouses, but says that whalers must meet such standards as a pre-condition before they would support whaling. Moreover, fox hunting, in which foxes are mauled by dogs, is legal in many anti-whaling countries including Ireland, the United States, Portugal, Italy and France (although not in the United Kingdom) according to UK Government's Burns Inquiry (2000). Pro-whaling nations argue that they should not be expected to adhere to animal-welfare standards which anti-whaling countries do not themselves follow consistently, and draw the conclusion that the cruelty argument is a mere expression of cultural bigotry, similar to the Western attitude towards the eating of dog meat in several East Asian countries.

The economic argument



Sailors Monument, Bergen, Norway

The whale watching industry and anti-whaling advocates argue that whaling catches "friendly" whales that are curious about boats, as these whales are the easiest to catch. This analysis claims that once the economic benefits of hotels, restaurants and other tourist amenities are considered, hunting whales is a net economic loss. This argument is particularly contentious in Iceland, as it has among the most-developed whale-watching operations in the world and the hunting of minke whales resumed in August 2003. Brazil, Argentina and South Africa argue that whale watching is a growing billion-dollar industry that provides more revenue and more equitable distribution of profits than commercial whaling by pelagic fleets from far-away developed countries would provide. Peru, Uruguay, Australia, and New Zealand also support proposals to permanently forbid whaling South of the Equator, as Indonesia is the only country in the Southern Hemisphere with a whaling industry. Anti-whaling groups claim that developing countries which support a pro-whaling stance are damaging their economies by driving away anti-whaling tourists.

Pro-whaling advocates argue that the economic analysis assumes unsustainable whaling by arguing that whaling deprives the whale-watching industry of whales, and counter that if whales are hunted on a sustainable basis, there is no competition between the two industries. Furthermore, they point out that most whaling takes place outside of coastal areas where whale watching takes place, and communication between any whaling fleet and whale-watching boats would ensure that whaling and whale watching occurred in different areas. Pro-whaling advocates also argue that whaling continues to provide employment in the fishery, logistic and restaurant industries and that whale blubber can be converted into valuable oleochemicals while whale carcasses can be rendered into meat and bone meal. Poorer whaling nations argue that the need for resumption of whaling is pressing. Horace Walters, from the Eastern Caribbean Cetacean Commission stated, "We have islands which may want to start whaling again - it's expensive to import food from the developed world, and we believe there's a deliberate attempt to keep us away from our resources so we continue to develop those countries' economies by importing from them."

Intelligence

While whales possess the largest physical brains of any animal, there is no consensus about the existence, nature and magnitude of cetacean intelligence. This lack of knowledge is partly because of the cost and difficulty of carrying out research with marine mammals. Humpback whales have been found to have spindle neurons, a type of brain cell previously considered to exist only in dolphins, humans and other primates, and some species of whale are highly social.

There is an argument that whales should not be killed because of their alleged high intelligence. Pro-whalers counter that pigs, which also possess high intelligence, are routinely butchered and eaten, or indeed that intelligence should not be the determining factor of whether an animal is acceptable to eat or not.

Safety of eating whale meat

A dish of whale meat in Japan

Whale meat products from certain species have been shown to contain pollutants such as PCBs, mercury, and dioxins. Levels of pollutants in toothed-whale products are significantly higher than those of baleen whales, reflecting the fact that toothed whales feed at a higher trophic level than baleen whales in the food chain (other high-up animals such as sharks, swordfish and large tuna show similarly high levels of mercury contamination). Organochloride pesticides HCH and HCB are also at higher levels in toothed species, while minke whales show higher levels than most other baleens.

The red meat and blubber of (toothed) long-finned pilot whales in the Faroe Islands show high toxin levels, which has a detrimental effect on those who eat it. However, in Norway, only the red meat of minke whales is eaten and the levels of toxins conform to national limits, while Japanese health-ministry scientists have found that minke whale meat harvested from the Antarctic, which constitutes the vast majority of whale meat eaten in Japan is similarly within national standards for mercury and PCB levels.

Whale meat is very high in protein and very low in saturated fat.

Fishing

August 26, 2006 Hvalba, Faroe Islands

Whalers say that whaling is an essential condition for the successful operation of commercial fisheries, and thus the plentiful availability of food from the sea that consumers have become accustomed to. This argument is made particularly forcefully in Atlantic fisheries, for example the cod-capelin system in the Barents Sea. A minke whale's annual diet consists of 10 kilograms of fish per kilogram of body mass, which puts a heavy predatory pressure on commercial species of fish, thus whalers say that an annual cull of whales is needed in order for adequate amounts of fish to be available for humans. Anti-whaling campaigners say that the pro-whaling argument is inconsistent: if the catch of whales is small enough not to negatively affect whale stocks, it is also too small to positively affect fish stocks. To make more fish available, they say, more whales will have to be killed, putting populations at risk. Additionally, whale feeding grounds and commercial fisheries do not always overlap.

Professor Daniel Pauly, Director of the Fisheries Center at the University of British Columbia weighed into the debate in July 2004 when he presented a paper to the 2004 meeting of the IWC in Sorrento. Pauly's primary research is the decline of fish stocks in the Atlantic, under the auspices of the Sea Around Us Project. This report was commissioned by Humane Society International, an active anti-whaling lobby, and stated that although cetaceans and pinnipeds are estimated to eat 600 million tonnes of food per year, compared with just 150 million tonnes eaten by humans (although researchers at the Japanese Institute for Cetacean Research give figures of 90 million tonnes for humans and 249-436 million tonnes for cetaceans), much of the food eaten by cetaceans (in particular, deep sea squid and krill) is not consumed by humans. However, Japanese do

eat krill, and krill is also used in large quantities by fish farms as feed. Pauly's report also claims that the locations where whales and humans catch fish only overlap to a small degree, and he also considers more indirect effects of whales' diet on the availability of fish for fisheries. He concludes that whales are not a significant reason for diminished fish stocks.

More recent studies have also concluded that there are several factors contributing to the decline in fish stocks, such as pollution and habitat loss.

However, the dietary behaviour of whales differ among species as well as season, location and availability of prey. For example, sperm whales' prey primarily consists of mesopelagic squid. However, in Iceland, they are reported to consume mainly fish. In addition to krill, minke whales are known to eat a wide range of fish species including capelin, herring, sand lance, mackerel, gadoids, cod, saithe and haddock. Minke whales are estimated to consume 633,000 tons of Atlantic herring per year in part of Northeast Atlantic. In the Barents Sea, it is estimated that a net economic loss of five tons of cod and herring per fishery results from every additional minke whale in the population due the fish consumption of the single whale.

Value for research

Since the 1986 IWC ban on whaling, Japan has conducted its whaling by issuing scientific research permits. The value of "lethal sampling" of whales is a highly contentious issue. The stated aim of the Japanese JARPA research program is to establish sustainable whaling in the Antarctic Ocean. The selling of whale meat from the lethal sampling to fish markets is purportedly to help fund the research, a claim disputed by opponents as being a cover for illegal whaling. The IWC requires information on population structure, abundance and prior whaling history, which anti-whalers argue can be obtained through non-lethal means.

Lethal sampling is required to obtain age information and precise dietary composition. The age of a whale can be reliably gathered by examining the ear plug in the head of the dead animal, which accumulates as annual growth rings. Japan initially argued that simple population distribution of whale species is enough to determine the level of sustainability of the hunt and argued that certain species of whale, particularly minke whales, are in sufficient number to be hunted. The anti-whaling side countered by arguing that more accurate composition of population distribution in term of age and sex distribution is needed to determine the sustainability, which ironically provided the justification for the Japanese hunt under the scientific research exemption. According to lethal-sampling opponent Nick Gales, age data is not needed to establish a catch limit for whaling within the framework of the Revised Management Procedure (RMP) computer modeling, which is the stated goal of the Japanese research. However, deputy whaling commissioner, Joji Morishita, told BBC News that "The reason for the moratorium [on commercial whaling] was scientific uncertainty about the number of whales. ... It was a moratorium for the sake of collecting data and that is why we started scientific whaling. We were asked to collect more data."

Dietary information is obtained with lethal sampling by cutting open the stomach of the animal. Opponents of lethal sampling state that dietary habits can be ascertained by biopsies as well as collecting feces from living whales. Proponents counter by stating that biopsies only reveal the type of food consumed (such as fish or krill) and not the exact type of fish, and that feces analysis does not provide as good of a quantitative estimation of dietary consumption.

Although lethal sampling is a heavily debated issue, the IWC Scientific Committee acknowledges the usefulness of the data from JARPA. In a November 2008 review of Japan's first 18 years of its scientific whaling program, the IWC stated that the panel was "very pleased with the data [that Japan] collected," and though "there was some advice on how these data could be further analyzed, or better analysed," that there "was general consensus about the high quality and the usefulness of the data."

Australian Prime Minister Kevin Rudd proposed to bring the issue to International Court of Justice in aim of stopping Japan from conducting scientific research.

Animal rights

The animal rights perspective states that environmental concerns, possible cetacean intelligence, and animal welfare concerns are irrelevant. The fundamental principle of the animal rights movement is that animals have basic interests that deserve recognition, consideration, and protection. In the view of animal rights advocates, these basic interests give the animals that have them both moral and legal rights. Thus, humans have a moral obligation to minimize or avoid causing animal suffering, just as they have an obligation to minimize or avoid causing the suffering of other humans, and should not use animals as food, clothing, research subjects, or entertainment.

Chapter- 7

Anti-Whaling

Protest against whaling in Tokyo by Greenpeace activists

Anti-whaling refers to actions taken by those who seek to end whaling in various forms, whether locally or globally in the pursuit of marine conservation. Such activism is often a response to specific conflicts with pro-whaling countries and organizations that practice commercial whaling and/or research whaling, as well as with indegenous groups engaged in subsistence whaling. Some anti-whaling factions have received criticism and legal action for extreme methods including violent direct action. The term **anti-whaling** may also be used to describe beliefs and activities related to these actions.

History

Anti-whaling activism has a short history compared to other forms of activism and environmental awareness. Early members of environmental organizations began protesting whale hunts around the world in the 20th century. These actions were in direct response to the global depletion of whale populations due to over-exploitation by the whaling industry and the failure of international whaling regulations.

Whaling regulation

Signing the International Convention for the Regulation of Whaling, Washington, D.C. Dec 2nd, 1946

The League of Nations raised concerns about the over-exploitation of whale stocks and called for conservation measures in 1925. This eventually led to the Geneva Convention for the Regulation of Whaling which was presented in 1931 but did not enter into force until 1934 and was completely ignored by Japan and Germany.

In 1937 the International Conference on Whaling added limits on pelagic whaling in order to prevent excessive exploitation (and specifically the extinction of the Blue whale), thereby creating the International Agreement for the Regulation of Whaling.

The International Convention for the Regulation of Whaling was created in 1946 in Washington to "provide for the proper conservation of whale stocks and thus make

possible the orderly development of the whaling industry". Based on the previous 1937 Agreement and subsequent protocols to that agreement in 1938 and 1945, the ICRW led to the 1949 creation of the International Whaling Commission along with guidelines for the international regulation of coastal and pelagic whaling. Critics charge that the IWC and ICRW have largely failed due to a lack of enforceable rules and regulatory loopholes.

In 1966 the Convention on Fishing and Conservation of Living Resources of the High Seas took the first steps in marine conservation worldwide. This international treaty was designed to specifically counter the over-exploitation of sealife including whales.

In 1972, the United Nations Environmental Conference produced a 52-0 vote in favor of a 10 year global moratorium on commercial whaling. However, the UN resolution was not adopted by the IWC. Japan, Russia, Iceland, Norway, South Africa and Panama voted no.

In 1973, a moratorium was once again proposed and voted down in the IWC lacking the required 3/4 majority. Japan, Russia, Iceland, Norway and South Africa voted no.

Between 1973 and 1982 the IWC would see its membership increase from 14 member nations to 37.

National protection

In 1972 the United States passed the Marine Mammal Protection Act as the first article of legislation to call specifically for an ecosystem approach to natural resource management and conservation. The act prohibits the hunting and killing of marine mammals, and enacts a moratorium on the import, export, and sale of any marine mammal, along with any marine mammal part or product within the United States. That same year the United States also enacted the Marine Protection, Research and Sanctuaries Act which established the National Marine Sanctuaries program.

The United States would later play a significant role in the acceptance of a global moratorium on commercial whaling due to its domestic laws. In particular the 1971 Pelly Amendment to the US Fishermen's Protection Act gives the US President legal authority to prohibit importation of fish products from any nation that is diminishing the effectiveness of fisheries conservation programs. It was later strengthened by the 1979 Packwood-Magnuson Amendment to the Fishery Conservation and Management Act giving additional sanctioning power with regard to the ICRW.

Save the Whales

Popular culture grew to widely accept whales and dolphins as interesting, entertaining and intelligent over the latter half of the 20th century. From the original tourist attractions at Marineland to giant Sea World theme parks, captive dolphins and orcas (killer whales) became star attractions. The 1960s television series, *Flipper*, starred a Lassie-like dolphin character who befriends a young boy and performs feats of intelligence often saving the

day. The 1967 novel, *The Day of the Dolphin*, featured dolphins trained to speak English that help to save the world from nuclear destruction. Roger Payne recorded and produced the popular *Songs of the Humpback Whale*.

However, with the growing popularity of entertaining cetaceans came information and even warnings about the threats to these adored animals. In 1966, Scott McVay first revealed the plight of whales to the public in his article, "The Last of the Great Whales", for *Scientific American* and two years later "Can Leviathan Long Endure So Wide a Chase?" in *Natural History*. Joan McIntyre (who later went on to found Project Jonah in 1972) both celebrated the whale and condemned the whaler in the 1974 publication, *Mind in the Waters*. In 1975, *Audubon* dedicated an entire issue to whales titled, "Vanishing Giants." From 1968-1976 *The Undersea World of Jacques Cousteau* included film of whales, dolphins and other marine mammals as subjects of educational television. In 1977, *National Geographic* aired "The Great Whales" with scenes of whales being killed.

Before long, the words "Save the Whales" began to appear on bumper stickers, fliers, t-shirts and petitions. Conservation groups dedicated to this purpose formed including both average citizens and social radicals whose ideas on how to respond varied widely. The first was the American Cetacean Society which was formed in 1971 and quickly followed by the Whale Center and Connecticut Cetacean Society. Well established environmental organizations like World Wildlife Fund, National Wildlife Federation, Humane Society of the United States, Sierra Club and National Audubon Society also joined the movement.

The environmental organization Greenpeace formed in the early 1970s as an offshoot of the Sierra Club. In 1975 Greenpeace launched its first anti-whaling campaign by actively confronting Soviet whaling fleets in the North Pacific. Two years later a splinter group of Greenpeace members formed the Sea Shepherd Conservation Society to protect sea life specifically using radical methods of direct action.

Direct action: Russia

A small primarily Canadian environmental group called Greenpeace pioneered anti-whaling activism in the form of direct action. Paul Spong, a New Zealand scientist who once studied the intelligence of orcas and friend of Canadian author Farley Mowat, helped convince then Greenpeace director, Robert Hunter, that the organization should confront Russian whalers in the Pacific. Spong, under the guise of a scientist studying Sperm whales, gained vital information on the coordinates of whaling fleets from the Bureau of Whaling Statistics in Norway. With this information, Greenpeace sailed out aboard the Phyllis Cormack, named for the wife of its original owner.

On June 27th, 1975, members of the Canadian Greenpeace took the first ever direct action against whalers who were actively whaling near the Mendocino Ridge about 40 miles west of California. The Greenpeace activists navigated small inflatable Zodiac boats between the Russian whalers of the Dalniy Vostok fleet and the hunted whales. The tactic was intended to prevent the whaling ship gunner from firing the harpoon cannon

due to the risk of accidentally striking and harming one of the activists. However, the Russian catcher ship Vlastny fired directly over the heads of Robert Hunter and activist Paul Watson. The event was filmed by Greenpeace and later broadcast in the United States by the CBS Evening News with Walter Cronkite and other major television networks. The activists were unable to stop the Russian whalers but the airing of this event on television was significant in raising public awareness by making the *Save the Whales* movement front-page news for the first time.

The whale wavered and towered motionless above us. I looked up past the daggered six-inch teeth into a massive eye, an eye the size of my fist, an eye that reflected back an intelligence, an eye that spoke wordlessly of compassion, an eye that communicated that this whale could discriminate and understood what we had tried to do...On that day, I knew emotionally and spiritually that my allegiance lay with the whale first and foremost over the interests of the humans that would kill them.

Paul Watson

In mid-July 1976, the Canadian Greenpeace deployed a newly acquired ship, an ex-minesweeper called the James Bay, to confront the Dalniy Vostok factory ship and its catcher fleet once again. The activists found the Russian whalers midway between California and Hawaii. However, this time the whalers did not fire their harpoon cannons. Instead, the Russian fleet retreated and Greenpeace chased the whalers for two days and nights before being forced to return to Hawaii for refueling. After replenishing their fuel and supplies, the activists found and disrupted the Russian fleet again and chased the whalers northward as far as their fuel permitted.

At the end of July 1977, the James Bay once again found Russian whalers in the Pacific. This time the factory ship Vladivostok, sister ship of the Vostok, and its catcher fleet was confronted about 700 miles off the coast of California. The activists filmed whalers at work and documented the Russians taking undersized whales. The human barrier tactic was used again but the whalers fired over the activists.

A newly formed Hawaii based Greenpeace organization joined in the Pacific campaign against Russian whalers with a fast former sub-chaser called the Ohana Kai. The activists found the Vostok fleet 1,000 miles north of Hawaii. With her superior speed, the Ohana Kai chased the Vostok which ceased whaling during the pursuit. After a week, a team of activists boarded the Vostok with anti-whaling propaganda for the crew. At end of the summer the Vladivostok ceased whaling for another week, while it was followed by the James Bay, and was also boarded by the activists.

Project Jonah: Australia

For several years leading up to September, 1977, the environmental organization, Project Jonah, campaigned against whaling in Australia by lobbying, raising public awareness and increasing domestic pressure on the Australian government to close down the last whaling station, the Cheynes Beach Whaling Company. French activist, Jean-Paul

Fortom-Gouin, was impressed with the Greenpeace actions in the North Pacific and decided on a more aggressive approach.

Fortom-Gouin financed the operation and dubbed his group, which included Greenpeace's Robert Hunter, the Whale and Dolphin Coalition (Fortom-Gouin had also largely financed the Greenpeace-Hawaii action against Russian whalers). He had previously worked with the Australian Project Jonah while serving as Panama's official representative to the IWC meeting in Canberra just two months prior.

The effort to intervene against whaling in Australia did not go smoothly. In town, a gang of bikers called "God's Garbage", whose members also happened to be employed butchering whales, harassed the demonstrators. The activist group had not managed to arrange for a large mother-ship to support their Zodiacs as they chased whalers tens of miles out into shark filled waters in small inflatable boats carrying loads of excess fuel. The whaling company even brought the media out on its own boats after several days of prepping the reporters and explaining the benefits of whaling. When the activists attempted to get between the whalers and their targets the gunners fired over the Zodiacs resulting in several close calls for their crews. In the end, the action did not save a single whale.

However, thanks to Project Jonah's long term lobbying and educational efforts, Australian public opinion against whaling was estimated to be about 70 percent. In fact, Phoebe Fraser, the young daughter of the Prime Minister Malcolm Fraser, wore a "Save the Whale" badge during the election campaign. The Prime Minister appointed an independent inquiry which recommended in 1978 that Australia outlaw whaling, ban all production and import of whale products and change its policies to oppose whaling domestically and internationally. Australia became an anti-whaling nation.

Ban on commercial whaling

After growing pressure from member nations, in 1979 the IWC established the Indian Ocean Whale Sanctuary as a practical conservation measure. Three years later in 1982 the IWC adopted a moratorium on commercial whaling, which took effect in 1986 and allowed for scientific research whaling. When Japan resumed whale hunts under the auspices of a research program, some anti-whaling countries and organizations criticized the moratorium's loophole for continued commercial whaling.

In 1994 the IWC created the Southern Ocean Whale Sanctuary in Antarctica to protect whales in their breeding grounds. Two additional sanctuaries were proposed in 1998 by anti-whaling nations but they failed to get enough votes in the IWC.

Sea Shepherd's RV Farley Mowat, docked in Melbourne before setting out to pursue the Japanese whaling fleet in 2005.

Modern conflicts

Throughout the past decade, while pro- and anti-whaling nations debated and deliberated at the IWC, private activists have organized a range of protests against commercial whaling. Most notably, Greenpeace and Sea Shepherd continue separate campaigns of direct action against whale hunts conducted by Norway, Iceland and Japan. Both also conduct media campaigns and other public outreach to raise awareness. Each organization criticizes the other for differing activist philosophies and each, in turn, receives criticism from both pro- and anti-whaling countries.

Tensions have grown over the past few years during Sea Shepherd's confrontations with Japanese whaling vessels in the whale sanctuary off the coast of Antarctica. In 2008 the documentary-style TV series *Whale Wars* began filming these confrontations, bringing some light to both sides of the controversy. The same year, two Greenpeace protesters were arrested in Japan for their investigation of whale meat. "The governments of Australia and New Zealand, which have responsibility for maritime rescue in the area where the whale hunt is usually conducted, have repeatedly urged both sides to tone their responses down."

More recently the Australian government, as an anti-whaling member of the IWC, set a November 2010 deadline to stop Japanese whaling in the Southern Ocean or face an

international legal challenge. However, the IWC's ban on commercial whaling is under debate and could be overturned by the end of 2010. In a compromise aimed at ending a deadlock between anti-whaling nations and whaling countries such as Norway, Iceland and Japan, the IWC would permit limited commercial hunting. The IWC proposal drew immediate criticism from environmentalists, who described it as "disaster for whales."

Subsistence hunting

Inuit subsistence whaling. A Beluga whale is flensed for its Maktaaq which is an important source of vitamin C in the diet of some Inuit.

There has been some resistance to subsistence hunting by the Sea Shepherd group. When the Makah people tried to revive their traditional hunt it was disrupted by “chase boats”, Greenpeace took a different position in stating that it is not cultural revival of whaling by groups like the Makah which is the problem. Greenpeace opposes all commercial whaling, claiming that it has never been sustainable. However, they state that they do not oppose subsistence whaling by indigenous peoples, but they do promote whale watching as an alternative.

Organizations

The following organizations have taken part in or supported anti-whaling activities.

- Greenpeace
- Sea Shepherd Conservation Society
- Sierra Club
- Whalewatch
- World Wide Fund for Nature

Methods and tactics

Anti-whaling action is a part of both environmental activism and marine conservation. Forms of expression may include but are not limited to protest as demonstration and direct action, outreach through media, and political maneuvering.

Protest

Often the most visible expression of anti-whaling activism is through public demonstration of protest: nonviolent action by groups of people, ranging from simple display of public signage and banners to picketing, walking in a march, or meeting (rally) to hear speakers. Actions such as blockades and sit-ins may also be referred to as demonstrations, although these would normally be considered direct action.

Direct action is activity undertaken by individuals, groups, or governments to achieve anti-whaling goals outside of normal social/political channels: nonviolent and violent activities which target persons, groups, or property deemed to be engaged in whaling, commercial or otherwise. Examples of nonviolent direct action include strikes, blockades, workplace occupations, sit-ins, and graffiti. Violent direct actions include sabotage, vandalism, and assault. Direct actions are sometimes a form of civil disobedience, but some (such as strikes) do not always violate criminal law.

Outreach

While protest often leads to publicity of anti-whaling activities, there are more direct ways to raise public awareness. Media activism uses media and communication technologies for social movement, and/or tries to change policies relating to media and communication. Websites, newsletters, calls to action, pamphlets, books, speaking tours, rallies and mass mailings are all examples of outreach efforts.

Other more formal ways of affecting change are political campaigning, diplomacy, negotiation and arbitration, and lobbying are methods of influencing decisions made by the government (in groups or individually). This includes all attempts to influence legislators and officials, whether by other legislators, constituents, or organized groups.

Chapter- 8

Marine Protected Area

A **Marine Protected Area (MPA)** is a protected area whose boundaries include some area of ocean. "MPA" is often used as an umbrella term that describes marine areas that restrict human activity to protect living, non-living, cultural, and/or historic resources. Protections include limits on development, fishing gear types, fishing seasons, catch limits, moorings, to complete bans on removing marine life of any kind.

As of 2010, the world hosted more than 5,000 MPAs, encompassing .8% of the ocean's surface.

The world's MPAs are viewable in Google Earth.

Terminology

Marine Protected Area

Perhaps the simplest definition is any geographical area that includes some amount of ocean and that has specific limits on human activity for the purpose of protecting natural and/or cultural resources that do not apply to other nearby ocean areas. Various national, supra-national and other organizations offer alternatives that vary in scope and detail, but none of these are definitive. Most definitions require that the site must be set aside principally for conservation in order to be designated a Marine Protected Area. A site that is set aside, for example, for national defense which also has a local habitat will not qualify under the terms set by either IUCN or CBD as a Protected Area. Several types of compliant MPAs can be defined:

- A totally marine area with no significant terrestrial (land) parts.
- An area containing both marine and terrestrial components, which can vary between two extremes:
    - A marine area that is mostly maritime, with little land; for example, an atoll would have a tiny island with a significant maritime population surrounding it.

    - A marine area that is mostly terrestrial. In this case, whether or not it can be given such a title is largely debatable.
- Marine ecosystems that contain land and intertidal (land that is covered in/by water) components only. For example, a mangrove forest would contain no open sea or ocean marine environment, but its river-like marine ecosystem nevertheless constitutes under the definition.

The Convention on Biological Diversity attempted to solve this by defining the broader term of "Marine and Coastal Protected Area" (shorthand, MCPA):

Any defined area within or adjacent to the marine environment, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection then its surroundings. et al. Barnard, p. 18

Some definitions require that the area be exclusively reserved for conservation, while others permit recreational and/or extractive activities. Others require that at least some part of the area lies below low tide, while others require only that it be at least near the shoreline.</ref>

The International Union for Conservation of Nature(IUCN) attempts to encompass these variations by defining six categories of protected area, based on management objectives and four broad governance types.

Cat	Created mainly for:
I	Science or as a strict Nature Reserve; wilderness protection
II	Ecosystem protection and recreation (often National Park)
III	Conservation of specific natural features (often National Monument)
IV	Conservation through close management and monitoring of species.
V	Landscape/seascape conservation and recreation (pure; no protection assigned)
VI	Sustainable use of natural ecosystem (including use of local resources)

Marine Park

In Kenya Marine Parks prohibit fishing or extraction of resources of any kind, but allows recreation. In Tanzania, Marine Parks are zoned, and activities such as fishing are only allowed in certain, low risk areas.

Marine Reserve

In Kenya (and Belize), Marine Reserves allow for low-risk forms of fishing and are thus a lower area of protection. In Tanzania, Marine Reserves prohibit all removals. In scientific literature "Marine Reserve" the term usually connotes "maximum protection."

Areas, systems, networks, regions

While "area" refers to a single contiguous location, terms that group MPAs are not always consistently employed. These include "network", "system", and "region". In CBD decision VII/5, the agency agreed to the use of *network* on a global level, and the use of *system* on the national and regional level. The global level carries no authority or mandate, and all of the work lies in the *system.* The CBD defines the role of the global network as a large-scale network to be used as a mechanism to establish regional and local systems; some countries also define it based on their own terms.</ref> Nations combine protected areas for purposes ranging from policy development and enforcement to marketing.

Other related terms

Related terms include Specially Protected Area (SPA), Special Area of Conservation (SAC), the United Kingdom's Marine Conservation Zones (MCZ) Marine reserve (MR), Marine park (MP), No Take Zone (NTZ), or Area of Special Conservation (ASC) Particularly Sensitive Sea Areas, Special Areas, etc., each have specific restrictions associated with them.

Usage restrictions

MPAs are established to protect a certain species, to benefit fisheries, rare habitat, or nursing grounds for fish or to protect entire ecosystems. MPAs are also established to protect historical sites such as shipwrecks and cultural sites such as aboriginal fishing grounds. MPAs can be very large (Great Barrier Reef) or very small (Area Marina Protetta Capo Rizzuto).

Typical restrictions in MPAs include ones on fishing, oil and gas mining and tourism. Other restrictions may limit the use of ultrasonic devices like SONAR (which may confuse the guidance system of cetaceans), development, construction and the like. Still others, such as New Zealand's marine reserves, are 'no take' areas, where all forms of exploitation are prohibited. Even ship transit can be regulated or banned, either as a preventive measure or to avoid direct disturbance to certain species. The degree to which environmental regulations affect shipping varies according to whether MPAs are located in territorial waters, exclusive economic zones, or the high seas. The law of the sea regulates these limits.

For this reason, most MPAs have been located in territorial waters, where enforcement can be ensured. However, MPAs can also be established in a state's exclusive economic zone and even international waters. For example, Italy, France and Monaco in 1999 jointly established a cetacean sanctuary in the Ligurian Sea named the Pelagos Sanctuary for Mediterranean Marine Mammals. This sanctuary includes both national and international waters.

Both the CBD and IUCN recommend that a variety of possible management systems be considered when designing a protected area system. They advocate that MPAs be seen as one of many "nodes" in a network of protected areas. The following are the most commonly used individual types of MPAs.

No-take areas

The highest degree of protection is the *no-take* area, which severely limits human activities. Generally, they prohibit removing anything from the protected area. No-take can cover the whole MPA, or specific vulnerable portions that enjoy elevated protection.

The IUCN definition allows the extraction of resources from the area only with a permit and **for scientific use only**. There is no globally-accepted definition.

Seasonal and temporary management

Activities, most critically fishing, are restricted seasonally or temporarily to let the area recover. The most common use seasonal limits to protect fish populations during vital periods, such as spawning season. The "Irish Sea Cod Box" is such a season. Another use is to temporarily protect a depleted marine population from overfishing, allowing it to recover, as in the waters of Okinawa, Japan.

Multiple-use

Increasingly, multiple use MPAs are the most common and arguably most effective type. These areas employ two or more types. This flexibility allows the most important sections get the highest protection. A common practice is to make the most critical area fully no-take, surrounding it with areas of lesser protections. The island of Asinara is an example of such an MPA.

Management

The two families of approaches for managing MPAs are *community-managed* and *politically-managed*.

Community-managed and related approaches

Community-managed MPAs empower local communities to manage marine resources partially or completely independent of the governmental jurisdictions they inhabit. They are not always officially recognized, depending on the political environment. Empowering communities to manage resources can lower conflict levels and help fisheries recover. This approach can provide direct influence for all involved, including subsistence and commercial fishers, scientists, tourism businesses, youths and others. They often fall into the following, unrelated, designations (although there is overlap):

- World Heritage Site (WHS) – an area exhibiting extensive natural or cultural history. Maritime areas are poorly represented, however, with only 31 out of over 800 sites. One example of overlap is the island of Asinara.
- Man and the Biosphere – This UNESCO program promotes "a balanced relationship between humans and the biosphere." Under article 4, biosphere reserves must "encompass a mosaic of ecological systems", and thus combine terrestrial, coastal, or marine ecosystems. In structure they are similar to Multiple-use MPAs, with a core area ringed by different degrees of protection.
- Ramsar Site – These sites must meet certain criteria for the definition of "Wetland" to become part of a global system. These sites do not necessarily receive protection, but are indexed by importance for later recommendation to an agency that could designate it a protected area.

Fishery management areas

Areas managed only to sustain fisheries occasionally change to become MPAs. One example is the Fish Habitat Reserves in Australia.

International efforts

Historically, Marine Protected areas have been established on an ad hoc basis by individual nations. The 17th International Union for Conservation of Nature (IUCN) General Assembly in San Jose, California, the 19th IUCN assembly and the fourth World Parks Congress all proposed to centralize the activity. The World Summit on Sustainable Development in 2002 called for

the establishment of marine protected areas consistent with international laws and based on scientific information, including representative networks by 2012.

The Evian agreement, signed by G8 Nations in 2003, agreed to these terms. The Durban Action Plan, developed in 2003, called for regional action and targets to establish a network of protected areas by 2010 within the jurisdiction of regional environmental protocols. It recommended establishing protected areas for 20 to 30% of the world's oceans by the goal date of 2012. The Convention on Biological Diversity considered these recommendations and recommended requiring nations to set up marine parks that are controlled by a central organization before merging them. The United Nations

Framework Convention on Climate Change agreed to the terms laid out by the convention, and its member nations committed to the target in 2004, signing the statement at right. United Nations Decision VII/28 of the laid out the following deadlines:

- By 2006 complete area system gap analysis at national and regional levels.
- By 2008 address the underrepresented of marine ecosystems in existing national and regional systems of protected areas, taking in account marine ecosystems beyond areas of national jurisdiction in accordance with applicable international laws.
- By 2009 designate the protected areas identified through the gap analysis.
- By 2012 complete the establishment of a comprehensive and ecologically representative national and regional system of Marine Protected Areas.

The establishment by 2010 of terrestrial and by 2012 for marine areas of **comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas** that collectively, inter alia through a global network, contribute to achieving the three objectives of the Convention and the 2010 target to significantly reduce the current late of biodiversity loss at the global, regional, national, and sub-national levels and contribute to poverty reduction and the pursuit of sustainable development.

The UN later also endorsed another decision, Decision VII/15, in 2006:

Effective conservation of 10% of each of the world's ecological regions by 2010.
– United Nations Framework Convention on Climate Change Decision VII/15

Many countries have established national targets, accompanied by action plans and implementations. The UN Council identified the need for countries to collaborate with each other to establish effective regional conservation plans. A few of these national targets are listed in the table below

Country	Plan of Action
American Samoa	20% of reefs to be protected by 2010
South Australia	19 Marine Protected Areas by 2010
Bahamas	20% of the marine ecosystem protected for fishery replenishment by 2010. 20% of coastal and marine habitats by 2015.

Belize	20% of bioregions. 30% of Coral reefs. 60% of turtle nesting sites. 30% of Manatee distribution. 60% of American crocodile nesting. 80% of Breeding areas.
Chile	10% of marine areas by 2010. National network for organization by 2015.
Cuba	22% of land habitat, including: 15% of the Insular shelf 25% of Coral reefs 25% of Wetlands
Dominican Republic	20% of Marine and Coastal by 2020.
Micronesia	30% of shoreline ecosystems by 2020.
Fiji	30% of reefs by 2015. 30% of water managed by Marine Protected Areas by 2020.
Germany	38% of water managed by the Marine Protected network. (no set date)
Grenada	25% of nearby marine resources by 2020.
Guam	30% of nearby marine ecosystem by 2020.
Indonesia	100,000 km^2 by 2010. 200,000 km^2 by 2020.
Jamaica	20% of marine habitats by 2020.
Madagascar	100,000 km^2 by 2012.
Marshal Islands	30% of nearby marine ecosystem by 2020.
New Zealand	20% of marine environment by 2010.
North Mariana Islands	30% of nearby marine ecosystem by 2020.
Palau	30% of nearby marine ecosystem by 2020.
Peru	Marine Protected Area system established by 2015.
Philippines	10% Fully Protected by 2020.
Senegal	Creation of MPA network. (no set date)

St. Vincent and the Grenadines	20% of marine areas by 2020.
Tanzania	10% of marine area by 2010; 20% by 2020.
United Kingdom	Establish an ecologically coherent network of marine protected areas by 2012.
USA – California	29 MPAs covering 18% of state marine area with 243 square kilometres (94 sq mi) at maximum protection.

In 1981 the World Conservation Monitoring Centre began compiling the World Database on Protected Areas, tracking information related to Protected areas (PAs) from governmental, private, and scientific work. In 2005, an online database named "MPAGlobal" was established to better organize information related specifically to *marine* protected areas. This was fully reintegrated into the original system in late 2008.

Organizing principles

Global—UNEP-RSP

The United Nations Environmental Program arranges MPAs in a global program called UNEP-RSP (Regional Seas Program), comprising thirteen regions and five partner programs. Participants are linked either through a convention or a regional program. The five independent partner programs are active, but not under the UNEP jurisdiction. The arrangement is based on biology and geography rather than national or other political divisions.

The marine environment also benefits more than land areas from systematic protection because underwater, national borders have no physical presence. Water, heat, waves, and animals move across them with few or no restrictions.

Local networks

Local MPA networks are usually built in one of two ways.

- Biologists argue for designation to preserve biodiversity (usually an endangered species). Their request is adjusted by stakeholders until it is agreed upon or rejected. This was the first, and previously the most common, approach.

- Under *systematic conservation planning*, network organization flows from understanding the interaction between species in one MPA with those in another.

United States

The U.S. national system of MPAs includes an assemblage of sites, systems, and networks established and managed by federal, state, tribal, or local governments that

work together to conserve important natural and cultural resources. Although each MPA is independently managed, the national system provides opportunities for cooperation, and promotes public participation in MPA decision-making by improving access to scientific and public policy information.

MPAs join the national system via a process that is designed to be transparent and science-based, with opportunity for public comment.

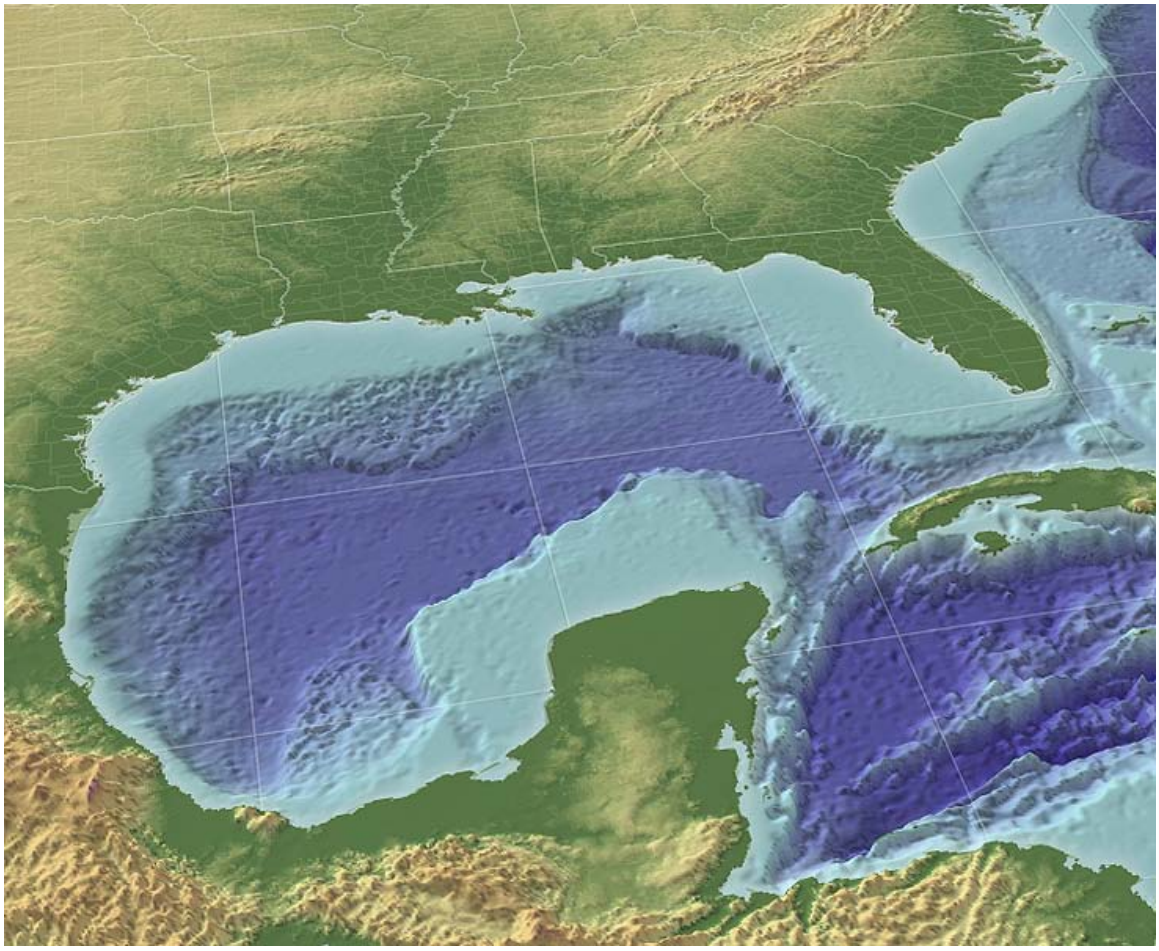
The entry criteria are:

- Meets the definition of an MPA
- Has a management plan for the specific site
- Contributes to at least one priority conservation objective as listed in the Framework
- Cultural heritage MPAs must also conform to criteria for the National Register of Historic Places

Global status

Greater Caribbean

The Caribbean region; the UNEP–defined region also includes the Gulf of Mexico. This region is encompassed by the Mesoamerican Barrier Reef System proposal, and the Caribbean challenge



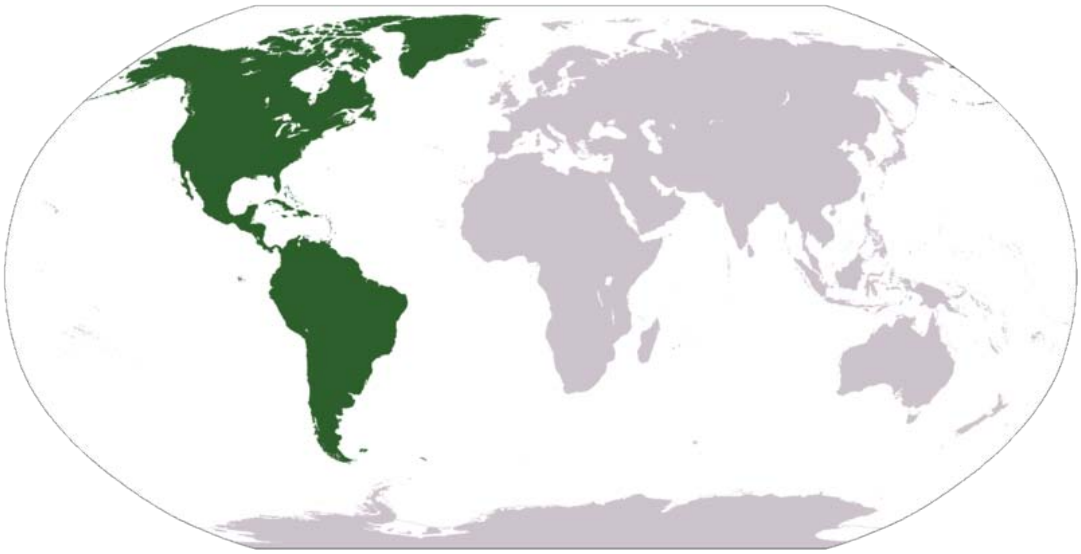
The Gulf of Mexico region (in 3D) is encompassed by the "Islands in the Stream" proposal.

The Greater Caribbean subdivision encompasses an area of about 5,700,000 square kilometres (2,200,000 sq mi) of ocean and 38 very diverse nations. The area includes island countries like the Bahamas and Cuba, and the majority of Central America.

The Convention for Protection and Development of the Marine Environment of the Wider Caribbean Region (better known as the Cartagena Convention) was established in 1983, and protocols involving protected areas were ratified in 1990. As of 2008, there are about 500 MPAs in the region. Coral reefs are the best represented.

Two networks are under development, the Mesoamerican Barrier Reef System (a long barrier reef that borders the coast of much of Central America), and the "Islands in the Stream" program (covering the Gulf of Mexico).

Latin America



The Americas

Latin America in particular considers itself one large MPA system. As of 2008, 0.5% of the Latin American marine environment is protected, mostly through the use of small, multiple-use MPAs

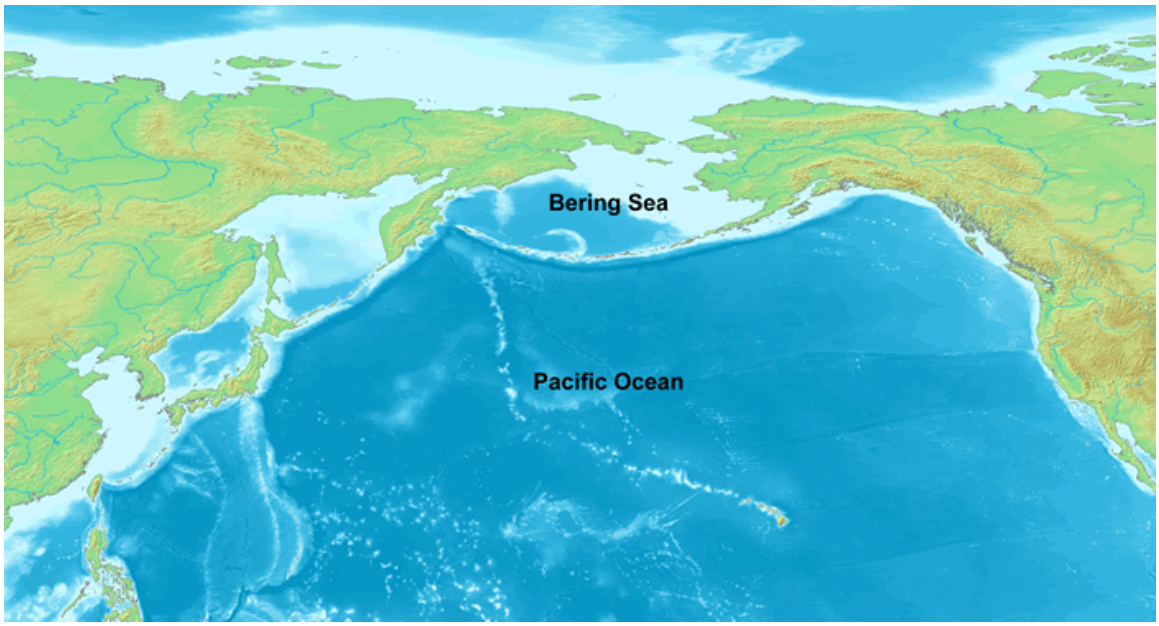
South Pacific

The Pacific Ocean. Note that the South & North east coast only includes the coasts of the eastern countries.

The South Pacific network ranges from Belize to Chile. Governments in the region adopted the Lima Convention and Action Plan for protected areas for the South Pacific region in 1981; an MPA-specific protocol was ratified in 1989. The Permanent Commission on the Exploitation and Conservation on the Marine Resources of the South Pacific promotes the exchange of studies and information among participants.

The region is currently running one comprehensive cross-national program, the Tropical Eastern Pacific Marine Corridor Network, signed in April 2004. The network covers about 211,000,000 square kilometres (81,000,000 sq mi). The participating countries are Panama, Costa Rica, Colombia, and Ecuador.

North Pacific



The *Baja California to Bering Sea* stretches along the coast on the right in this map. The Bering Sea is the Alaskan coast, and Baja California is a peninsula attached to California.

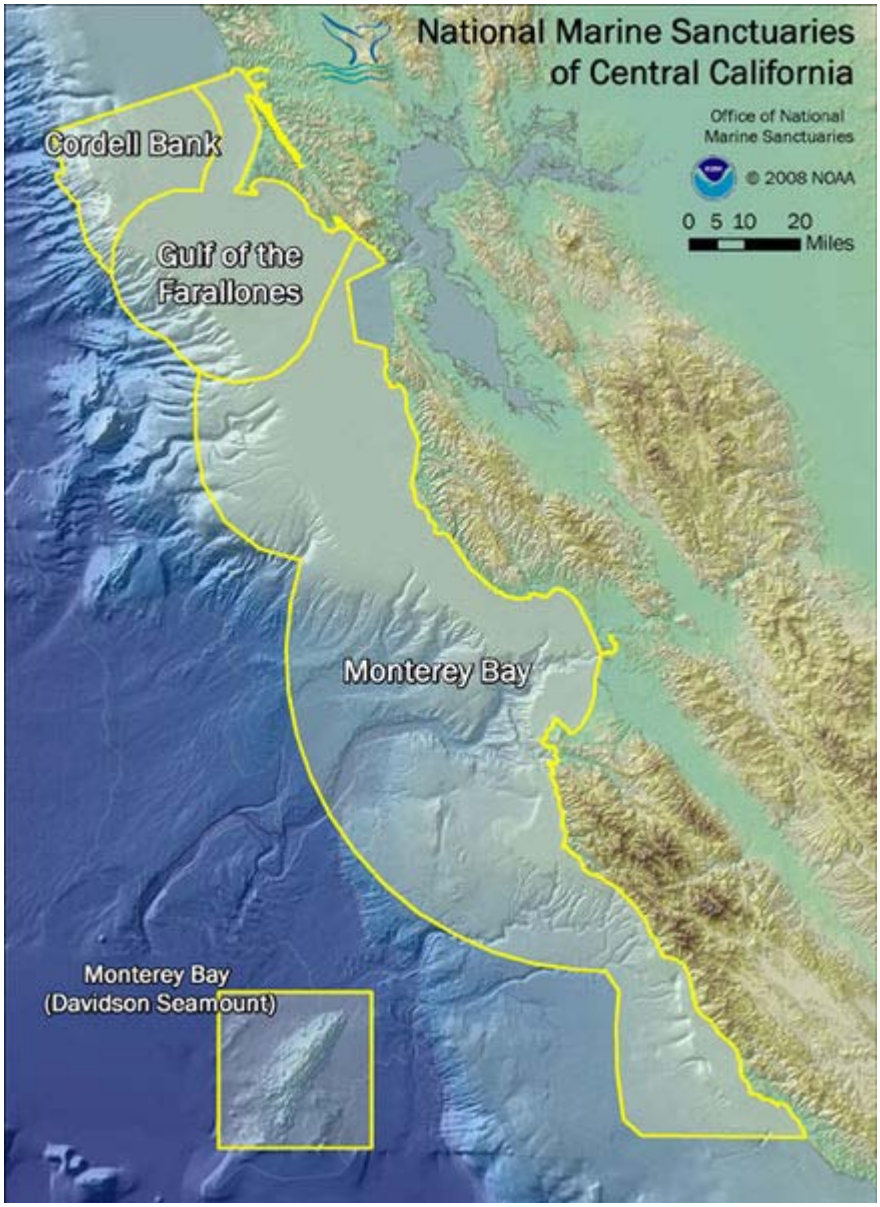


Diagram illustrating the orientation of the 3 marine sanctuaries of Central California: Cordell Bank, Gulf of the Farallones, and Monterey Bay. Davidson Seamount, part of the Monterey Bay sanctuary, is indicated at bottom-right.

The North Pacific network covers the western coasts of Mexico, Canada, and the U.S. The "Antigua Convention" and an action plan for the north Pacific region were adapted in 2002. There, is however, no protocol; participant nations manage their own national systems. In 2010-2011, the State of California is completing a series of hearings and actions via the state Department of Fish and Game to establish new MPA's. Although highly controversial among fishing circles, the MPA's are going forward with decisions still pending as to where and how large.

United States

In April 2009, the United States established a National System of Marine Protected Areas, which strengthens the protection of U.S. ocean, coastal, and Great Lakes resources. As of 2009, 225 MPAs participated in the national system. Sites agree to work together toward common national and regional conservation goals and priorities. NOAA's National Marine Protected Area's Center maintains a comprehensive inventory of all 1,600+ MPAs within the Exclusive Economic Zone of the United States. Most MPAs in the U.S. allow some type of extractive use. Less than 1% of U.S. waters prohibit all extractive activities.

Europe

The Natura 2000 ecological network of pr.otected areas in the territory of the European Union including a wide range of MPA in the Nortatlantic, the Mediterranian Sea and the Baltic Sea. The member-staates has to define NATURA 2000-areas at sea in their Exclusive Economic Zone

Non-governmental organizations

In 1999, the North American Marine Protected Areas Network (NAMPAN) was established, a project of the Commission for Environmental Cooperation, (CEC). NAMPAN is a virtual network of people and places spanning Canada, The United States, and Mexico that work together to address tri-national, transboundary marine conservation issues. Currently Canada and the United States are developing country-wide systems of marine protected areas.

The Commission for Environmental Cooperation, established in 1999, coordinates activities, with representatives from Mexico, the USA, and Canada. There are currently two cross-national networks in development. In 2005, the Commission proposed the *Baja California to Bering Sea* (B2B) initiative, involving 28 areas.

Noteworthy sites

As of February 2009, there were approximately 5,000 MPAs around the world, covering 0.8% of the world's oceans.

Notable MPAs include:

- The Bowie Seamount on the Coast of British Columbia, Canada.
- The Great Barrier Reef in Queensland, Australia.
- The Ligurian Sea Cetacean Sanctuary in the seas of Italy, Monaco and France
- The Dry Tortugas in the Florida Keys, USA.
- The Papahānaumokuākea Marine National Monument in Hawaii.
- The Phoenix Islands Protected Area, Kiribati
- The Channel Islands Marine Protected Areas in California, USA

Effectiveness

Criteria

Both CBD and IUCN have criteria for setting up and maintaining MPA networks, which emphasize 4 factors: :

- **Adequacy**—ensuring that the sites have the size, shape, and distribution to ensure the success of selected species.
- **Representability**—protection for all of the local environment's biological processes
- **Resilience**—the resistance of the system to natural disaster, such as a tsunami or flood.
- **Connectivity**—maintaining population links across nearby MPAs.

A learning model of migratory fish behavior and fishing interaction predicted that closed areas (MPAs) would increase fish biomass and decrease fish catches, that closing spawning areas to fishers would increase mean fish biomass, with lower variance, but that without catch restrictions throughout the range of the fish, long-term fish biomass and resulting catches would still decrease. The model also predicts that higher fish mobility also would increase fish biomass, but decrease fish catches.

Managers and scientists use geographic information systems and remote sensing to map and analyze MPAs. NOAA Coastal Services Center compiled an "Inventory of GIS-Based Decision-Support Tools for MPAs." The report focuses on GIS tools with the highest utility for MPA processes. Remote sensing uses advances in aerial photography image capture, satellite imagery, acoustic data, and radar imagery.

Protecting red coral

Two assessments, conducted thirty years apart, of three Mediterranean MPAs demonstrate that proper protection allows commercially valuable and slow-growing red coral (Corallium rubrum) to produce large colonies in shallow water of less than 50 metres (160 ft). Shallow-water colonies outside these decades-old MPAs are typically very small. The MPAs are Banyuls, Carry-le-Rouet and Scandola, off the island of Corsica.

Criticism

Some existing and proposed MPAs have been criticized by local indigenous populations, and their supporters, as impinging on land usage rights. One example of this is the proposed Chagos Protected Area in the Chagos Islands, contested by Chagossians deported from their homeland in 1965 by the British in the creation of the British Indian Ocean Territory.