

## 4. Exploitation of Whales

**W**hales have been hunted for centuries for subsistence purposes by coastal aboriginal (native) people all over the world. Subsistence hunting means that these early human hunters used the whales for food, clothing, and housing materials. Whales played such an important role in their lives that for many aboriginal peoples subsistence hunting was incorporated into their cultural traditions as well. Historical evidence indicates that right whales and gray whales were hunted in the North Sea and the English Channel from at least the 9<sup>th</sup> century.

Native people in many countries still hunt marine mammals for subsistence and cultural purposes today. For example, U.S. law permits Native Americans in Alaska (the Inuits) to hunt a limited number of bowhead whales for aboriginal subsistence purposes. However, the impact of such limited hunting pressure on marine mammal populations has been localized and small in comparison to industrialized whaling.

Industrialized whaling is the practice of hunting whales for commercial purposes. It began in earnest in the late 1800s. Whaling became an important industry because of the demand for clean-burning whale oil (from the whale blubber), which was used to light lanterns and gas lamps before electricity was invented. Other products from whales were also collected and sold at a high price, including baleen (a popular material used by women's garment makers in dresses and corsets in the 1800s). Whaling became a very rich industry that supported not only the whalers but shipbuilders, businesses that sold whale oil, and dress makers who used the baleen for dress stays.

Industrialized whaling used larger ships and specialized equipment for harvesting large numbers of whales. It soon severely reduced the numbers of many species of great whales, to the point they are now considered endangered. Endangered means that animals in a population are so few that without protection they may continue to dwindle to extinction.

Two of the most endangered whale populations are the Western North Pacific gray whale, found

in waters near Japan (around 100 animals), and the North Atlantic right whales, near Maine and Nova Scotia (around 300 animals). In recent decades, whale hunting has dropped off dramatically across the globe, due to increased whale protection through national and international regulation. The new rules and international agreements have given whales a break, and fortunately some populations are beginning to recover.

The story of commercial exploitation is long and detailed. It begins in the 12<sup>th</sup> century with the Basques, a group of people who inhabited the coast of France and Spain. They used simple rowboats and handmade harpoons to hunt and kill whales. The Basques killed North Atlantic right whales because they were slow moving, had extremely long baleen, were located close to shore, and had an abundance of blubber. By the 1500s, the Basques had killed off the European North Atlantic right whales and began to make their way across the Atlantic and down the North American coast in search of more whales. This pattern of decimating one stock of whales then moving on to the next species or stock continued until not a species or stock remained untouched. (Stock is a geographically isolated population of whales that does not intermix with whales of the same species living in other parts of the oceans.)

Colonists in the New World were whaling during the 1700s. By 1750, right and bowhead whales were endangered and close to extinction. The gray whale was already extinct on the Atlantic Coast. In the early 19<sup>th</sup> century, American whalers (known as the Yankee whalers) expanded their hunting range into the Pacific and Indian oceans, searching for slow-swimming sperm, right, bowhead, and gray whales.

In the 1860s, the Pacific bowhead whale was specifically hunted by whalers for its long baleen (up to 14 feet). By 1900, bowheads were nearly extinct. When a substitute for baleen was invented (spring steel), the price and demand for baleen dropped and whalers stopped coming to Alaska for bowheads—just in the nick of time for the depleted bowheads.

Until 1880, blue and fin whales were virtually untouched by commercial whaling. They were too large, too fast, and they sank when they were killed. In the 1860s, the more powerful and efficient cannon-fired, explosive-head harpoon was invented. At the same time, faster steam-powered boats were being developed. These two mechanical developments allowed whalers to take large numbers of the faster-swimming blue and fin whales.

In 1900, Antarctica was discovered to be the greatest whaling grounds in the world. Antarctic waters were abundant with blue, fin, and humpback whales that had never been hunted. Humpback whales formed 95 percent of the total catch in the 1910–1911 whaling season, but their numbers quickly began to decline. By 1918, they comprised only 2 percent of the total catch.

Another development that accelerated the whaling industry was the discovery that liquid animal fats could be converted to solid fats by the process of hydrogenation. This gave rise to a thriving industry for the manufacture of soap, margarine, and nitroglycerine, all of which could be derived from whale fat.

At first, the processing of blue and fin whales was conducted from land-based stations. But then, the invention of the stern slipway in 1925 allowed seagoing ships to haul harpooned whales aboard for processing while at sea. The whalers no longer needed to come to shore to process their kills, which saved them time and money and allowed them to stay at sea longer, increasing the kill of whales dramatically from 176 blue whales in 1910 to 37,000 in 1931. In the Antarctic, from 1925 to 1935, there was the greatest slaughter of whales that had ever occurred. Afterward, blue whales became increasingly scarce and catches declined until they became commercially insignificant by the mid-1950s.

Whaling operations basically stopped during World War II as the whaling nations concentrated all of their resources into fighting the war. But the war caused a shortage of whale oil, and the end of the conflict encouraged several nations to begin whaling again. Without large populations of blue whales to exploit, whalers switched to the smaller, more numerous fin whales. By 1960, the fin whale population

had plummeted and whalers began taking even smaller sei (pronounced “say”) whales. By the late 1960s, sei whales became commercially extinct and the whaling effort switched to the even smaller but more numerous Minke (pronounced “minky”) whales. Minke whales continued to be the target species until an international moratorium was enacted in 1986.

The massive take of whales eventually led to a surplus of whale oil on the market. Too much oil meant that the price would come down (they couldn’t charge as much) and the whalers would lose money. When the whalers took the hit in their pocketbook, they tried to self regulate and reduce the amount of oil being harvested, in hopes that the “shortage” they created would drive up prices.

The whalers didn’t know the long-term consequences of their whaling activities. Essentially, there was no management plan for whales...no rules or regulations for them to follow. As it turned out, commercial whaling demonstrated one bad example after another of how NOT to manage a wild animal population. Whalers were not motivated to care about dwindling whale numbers, because there was always another species to move on to.



*Gray whale breaching. (Photo by Pieter Folken.)*

At this point, stop and conduct Activity 10, “What’s your Opinion?” Repeat the activity at the end of the lesson and ask students whether their opinions changed as they gained more information.

The first significant attempt at regulating international whaling activities came in 1946 through the establishment of the International Whaling Commission (the IWC). The IWC attempted to balance conservation with the economics of whaling. The mission of the IWC was “to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry.”

The IWC covers all commercial pelagic whaling activities of member nations. However, the IWC is limited in its ability to inspect and enforce its own rules and regulations. Any nation can “object” to any decision it doesn’t agree with and excuse itself from the limitations of that decision. Member nations can also issue their own permits to take whales for scientific purposes. Although the IWC was established as early as 1946, the reduction in whale populations continued.

The IWC’s system of self-regulation is a bit like “the fox guarding the hen house.” In other words, the IWC was imposing regulations on itself that many of its members weren’t inclined to follow. In fact, in recent years a few nations have issued themselves permits for “scientific purposes,” but not without great skepticism and criticism from other IWC members. Much of that criticism has been generated by the public’s changing attitudes and intolerance of whale harvesting and the resulting outcry and pressure put on the IWC by constituents of member nations.

Early IWC management procedures were based on the Blue Whale Unit (BWU) as a means of setting quotas. It was considered that one blue whale was equal to two fin whales, two and-a-half humpbacks, and six sei whales (based on their relative oil yields). In 1963, the total quota was 10,000 BWU. Whale experts and resource managers began to realize that a new management scheme was needed. The Blue Whale Units could be filled with only one species, which resulted in that species being decimated. The BWU management plan was not a successful program. In 1979, a proposal to end all com-

mercial whaling except for Minke whales was adopted. In 1986 a moratorium was placed on all commercial whaling, with plans for conducting a comprehensive assessment of large whale stocks by 1990.

Enforcement measures still allowed members of the IWC to object to and reject any decision they didn’t agree with. Norway objected to the moratorium and resumed commercial exploitation of Minke whales in the North Atlantic in 1994, even though the moratorium had not (and still has not) been lifted. Products from commercial whaling of Minkes in Norway are used for food, and admittedly, whaling has boosted the economies of coastal Norwegian communities. Finally, it is unlikely that a *limited* Norwegian harvest would harm the now-healthy Minke population. However, the IWC seeks to avoid the total unabated slaughter that brought the Minkes to endangered levels in the first place, and this is why Norway has received such criticism.

In 1994, the IWC accepted a revised procedure for estimating the number of whales that could be taken without causing the affected population to be reduced in numbers. Because some whale populations have recovered, it is possible that the IWC will allow the resumption of commercial whaling of some species (Minke whales, for example). The limited and sustainable harvest of some whale species should not have a negative impact on healthy populations. Some countries are still interested in harvesting whales because whale meat is considered a delicacy in their culture and whalers can charge a premium price for the meat.

United States has been active in whaling and in whale protection. Besides participating in several international marine mammal treaties and being a supporting member of the IWC, the U.S. has also enacted legislation to protect Marine Mammals in U.S. territories. The Marine Mammal Protection Act (MMPA) of 1972 established a moratorium on the taking of marine mammals in U.S. waters and on importing marine mammals and marine mammal products into the U.S. This was the first full protection extended to all species of marine mammals.

Reductions in the number of whales available, new national and international regulations, changing market demands, and changing atti-

tudes about killing large whales for profit have all contributed to the collapse of large-scale, pelagic whaling. People have caused serious damage to marine mammals, and in some cases that damage is irreparable and irreversible. However, as we go into the 21<sup>st</sup> century, we can celebrate some successes in our attempts to protect marine mammals from extinction. For example, populations of most large baleen whales are increasing. These increases can be attributed, in large part, to the international and national regulations and management plans.

We must protect whales using a more comprehensive approach than just setting limits on whaling. Like terrestrial habitats and land animals, humans also impact ocean habitats and their inhabitants. In order to save the whales, our efforts must also entail protecting the places where they give birth and their feeding areas. If we lose these valuable habitats, we also lose the whales.

**History of commercial whaling, at a glance**

1100s	Basques hunt right whales in Bay of Biscay
1500s	Basques hunt in Newfoundland/Labrador, Spitzbergen, etc.
1600s	Bowheads killed at Spitzbergen, Greenland; Atlantic gray became extinct
1700s	Sperm and humpback whaling in N. Atlantic; right whales, bowheads overexploited
1800s	Rights, bowheads, sperms, humpbacks, grays all heavily overexploited
1868	Svend Foyn develops explosive harpoon, harpoon gun, and steam-powered catcher, begins exploitation of blue and fin whales, etc.
1905-1920	Antarctic whaling begins
1925-1939	Heavy blue whaling in Antarctic
1939-1945	World War II—whaling efforts ceased
1946	International Whaling Commission formed to regulate harvest of whales

1935-1965	Heavy fin whaling in Antarctic
1965	Blues and humpbacks given complete protection
1950-1975	Heavy sperm whaling worldwide (highest-quality lubricating oil in the world)
1960-1975	Heavy sei whaling in Antarctic
1972	U.S. passes marine mammal protection act to ban taking marine mammals in U.S. waters.
1979	Proposal to end all commercial whaling except for Minke whales
1970-2003	Limited Minke whaling in Antarctic by Norway and Japan

**List of products from whales**

**Early whaling days**

Whale part	Use
Blubber	Oil for lamps Leather tanning Cooking Soap Oil base for paints
Baleen	Buggy whips Thin, flat pieces were used to stiffen men's shirt collars and ladies' corsets Fishing rods Umbrella ribs
<b>Present-day uses</b>	
Blubber	Hydrogenated into margarine Soap Nitroglycerine
Muscles	Canned and sold in supermarkets Liver is sold in meat markets Pet food Fertilizers
Sperm whale teeth	Scrimshaw—the ivory is etched and blackened for art pieces



## ACTIVITY 9: Exploitation: Whale Populations Then and Now

### Concept

Overharvest has depleted whale populations.

### Materials

- Whale population chart
- Pencils

### Subjects

- Math
- Biology

### Time

$\frac{1}{2}$  hour

### Teacher key

#### Whale population chart answers

Whale	% of whales left	% increase or decrease
Gray	85%	15% decrease
Humpback	13%	87% decrease
Northern right	3%	97% decrease
Antarctic blue	1%	99% decrease
Bowhead	26%	74% decrease
Sperm	81%	19% decrease

Name \_\_\_\_\_

Date \_\_\_\_\_

## Student Worksheet #9

### Whale population chart

Species	Pre-whaling Estimate	Present Population	% left	% Change more + or less -
<i>Baleen whales</i>				
Gray	26,000	22,000		
Humpback	115,000	21,500		
Northern right	10,000	300		
Antarctic blue	150,000	1,400		
Bowhead	30,000	8,000		
<i>Toothed whales</i>				
Sperm	2,400,000	1,950,000		

Divide present population by pre-whaling population to find the percent population left. Subtract from 100 percent to find percent loss or gain in population.

Northern right whales have the most reliable population numbers. The numbers for the other whales represent best estimates. Reliable data is difficult to obtain.

### Sources

#### Original population estimates

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#### Present population estimates

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