

The Industrial History of Antarctica

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Introduction

Exploitation of marine living resources began shortly after Captains Cook's second expedition aboard the HMS Resolution in 1775 when he discovered South Georgia (Shaw, 2005). It was here on South Georgia Island that millions of fur seals were discovered, and with it began the seal skin's gold rush (Rubin, 2005). The search for resources, specifically the pelts of fur seals, was one of the driving forces behind the initial exploration of the Great Southern Ocean. Many of the islands off the shores of Antarctica were discovered by ships in search of new fur seal breeding colonies.



Industry in the Great Southern Ocean, including Antarctica has been destructive and has shown little or no respect for the natural environment. The seal industry and the followed whale industry were both short-lived industries because the

animals were killed so fast and furiously due to the fact that no preference was given to sex or age of the animal (Shaw, 2005). The absence of planning from these industries has lead to the near extinction of the resource on which it depends.



The Sealing Era

The fur seal industry started in 1791 with a few ships reporting a great abundance of fur seals on the islands surrounding Antarctica (Shaw, 2005). In the following years, hundreds of sealing ships would swarm the Southern Ocean in hopes of obtaining a portion of the skin's gold rush.



Two families containing six seal species inhabit the frigid waters of the Southern Ocean (Chester, 2005).

Phocidai, also known as true seals, are one family group and contain crabeater seals, leopard seals, weddell seals, ross

seals and the elephant seals (Chester, 2005). Otariidae is the second family and includes a single species called the fur seal (Chester, 1993).

The fur seal is the only representative of the Otariidae family in the Southern Ocean, yet it is almost single-handedly responsible for the entire sealing industry (Shaw, 2005). The exception to that is the elephant seals who were harvested for the rich oil stored in their blubber (Rubin, 2005). Unlike other seals in the Southern Ocean that rely on a thick layer of blubber to insulate their bodies from the subzero waters, the fur seal relies on a dense fur coat to keep warm (Chester, 1993). This specialized fur coat was the reason behind why the fur seal was the target of such a horrific slaughter. These seals were destroyed only for their fur coats leaving what was left of the animal to rot. The fur consists of two hair layers, which makes the pelts extremely dense and therefore expensive and desirable for hunters (Rubin, 2005). The fur seal's rich pelt has a density

of about 40 000 hairs per cm^2 . The first layer is longer and provides protection from the abrasive rocks. The second layer is much shorter and closer to the body, and is designed to trap air bubbles close to the body to keep the skin dry and provide a layer of insulating air. The fur seal was hunted ruthlessly and extensively to the point where the species was at grave risk of becoming extinct (Rubin, 2005).

Fur seals were easy to hunt because each year they return to the same sub arctic islands, breed on the same beach, and hundreds of thousands of fur seals can be found in the same location (Rubin, 2005). This mind-boggling density of fur seals insured that the sealing ships would consistently returned to port overflowing with seal fur. Multiple sealing ships would arrive at the beach in the middle of the breeding season and kill every seal in sight (Shaw, 2005).



Understanding the sheer magnitude of the sealing industry is difficult to comprehend because there are virtually no records of the number of seals taken. One report that has helped shed some light on the number of animals harvested is from Captain James Weddell. He estimated in 1825 that, "the number of skins brought from off South Georgia

cannot be estimated at fewer than 1 200 000"(Shaw, 2005). Over one million seal skins taken in a single year is an astronomical number. The horrendous part of the sealing industry was that when the sealing ships would arrive at the breeding beaches they would club the seals on the head and then skin the animal, often times while the animal was still alive (Shaw, 2005).

Whaling

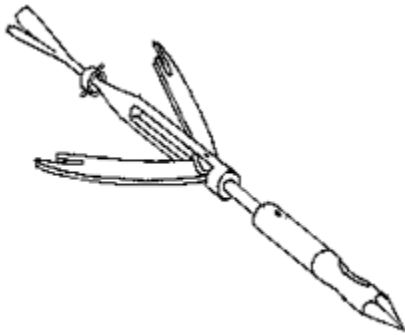


To better understand the once abundant whale species in the waters surrounding Antarctica one can look at their primary food source. Whales are drawn to these waters because they are rich with swarms of krill that feed on the phytoplankton blooms (Shaw, 2005). Phytoplankton blooms are the result of a combination of deep ocean currents that bring nutrients to the surface, and also the twenty-four hours of sunlight that are present during the summer months (Rubin, 2005). This nutrient and sun rich environment is perfect for phytoplankton, which is the primary producer in this environment (Shaw. 2005). The phytoplankton feed the krill, and in turn become the food source for many of the large mammals that inhabit the Antarctic waters (Shaw,



2005).

The whaling industry in the Southern hemisphere started with the opening of the first whaling station on South Georgia Island (Shaw, 2005). The Grytviken station opened in 1904, and the men did not need to travel far to find prey because the first whale was shot in the bay directly in front of the station (Rubin, 2005). In fact, the station was so successful that the first season was cut short by a lack of barrels for their oil (Shaw, 2005). Within a decade of Grytviken's opening, five more stations were opened on South



Georgia, and whaling stations were now present on the South Shetlands and South Orkneys Islands as well. These stations, combined with dozens of factory ships, meant that there were catcher ships racing all over the Southern Ocean.

Whalers and sealers had a similar tragic history of how they feverishly depleted the species their industries rely on. Unlike the seal industry, whaling ships and factories kept exceptional records regarding the number of catches, as well as the number of discoveries made (Shaw, 2005). It was recorded, for example, that in the summer of 1930-1931, the number of blue whales taken from Antarctic waters was 29 410 (British Antarctic Survey, 2004). In just over sixty years whale populations were completely exhausted with estimates suggesting only four or five percent of the original population remains alive (Rubin, 2005). The population was so decimated that in the 1965-66 season, the combined efforts of all Antarctic whaling fleets could find only one solitary blue whale to kill (Shaw, 2005).

It is estimated that between the start of the modern whaling operations in the Southern Hemisphere when Adolfus Amandus Andersen harpooned a humpback in the Straits of Magellan in 1903, and the closing of the last shore whaling station on South Georgia in 1965, that over 1.5 million whales were taken from the waters of the Southern Ocean (Shaw, 2005). Several key inventions played a large role in the efficiency of the whaling industry such as the development of steam powered whale catchers in the 1860s, the exploding harpoon gun patented in 1873 by Sven Foyn, and the increasingly capable whaling factory ships which were able to remain at sea for months on end harvesting whales and processing the whales (Soper, 1994).

In 1925 the first factory ships started whaling in the waters off Antarctica (Rubin, 2005). These large ships allowed the whaling to take place entirely at sea. This meant that the whalers were not operating in a certain country, and so eliminated the regulations on catch size or species taken (Shaw, 2005). There were no regulations regarding the species, age or sex of the whales taken. This had a huge effect on the whale populations in the area because even calving mothers and juveniles were harvested.



The humpback whales were the desired whales at first because they are slow swimmers and were often found close to land. This made hunting these whales easier because there is less searching involved and the hunting boats able to catch humpbacks without too much effort. As the whaling boats became more efficient and started operating away from the port, the blue whale became the preferred species. The boats were now able to catch the faster blue whales and boil out the rich oil that is present in their blubber. The faster and more efficient ships were able to catch the blue whales with increased efficiency, and as a result their population started to decline. As the population of blue whales decreased the whalers looked to fin whales and then to sei whales. Fin and sei whales were banned in the 1970s by international agreement (Shaw, 2005). It was at this time the whaling industry turned to the minke whales, which were not yet band.



Mining

Mining on the continent of Antarctica is currently prohibited. The Antarctic Treaty, signed in 1959, outlines that there is to be no mining on any land portion of the continent (Rubin, 2005). The issue of potential mining was raised again in 1980 and led to the

Protocol on Environmental Protection to the Antarctic Treaty. The Madrid Protocol was signed in 1991 by the signatories to the Antarctic Treaty banning mining, and the Madrid

Protocol became law in January 1998 with a ban on all commercial mining and will not be up for review for proceeding fifty years (Rubin, 2005).

The Madrid Protocol clearly states that there is to be no mining on the continent landmass itself. The protocol does not however, make mention of drilling in the seas surrounding Antarctica. This decision on the drilling and mining on Antarctica and within the surrounding waters will be the focus of many discussions as the fifty-year deadline draws near. Mining and drilling do not currently represent a portion of the history of industry in Antarctica but will it in the near future?

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