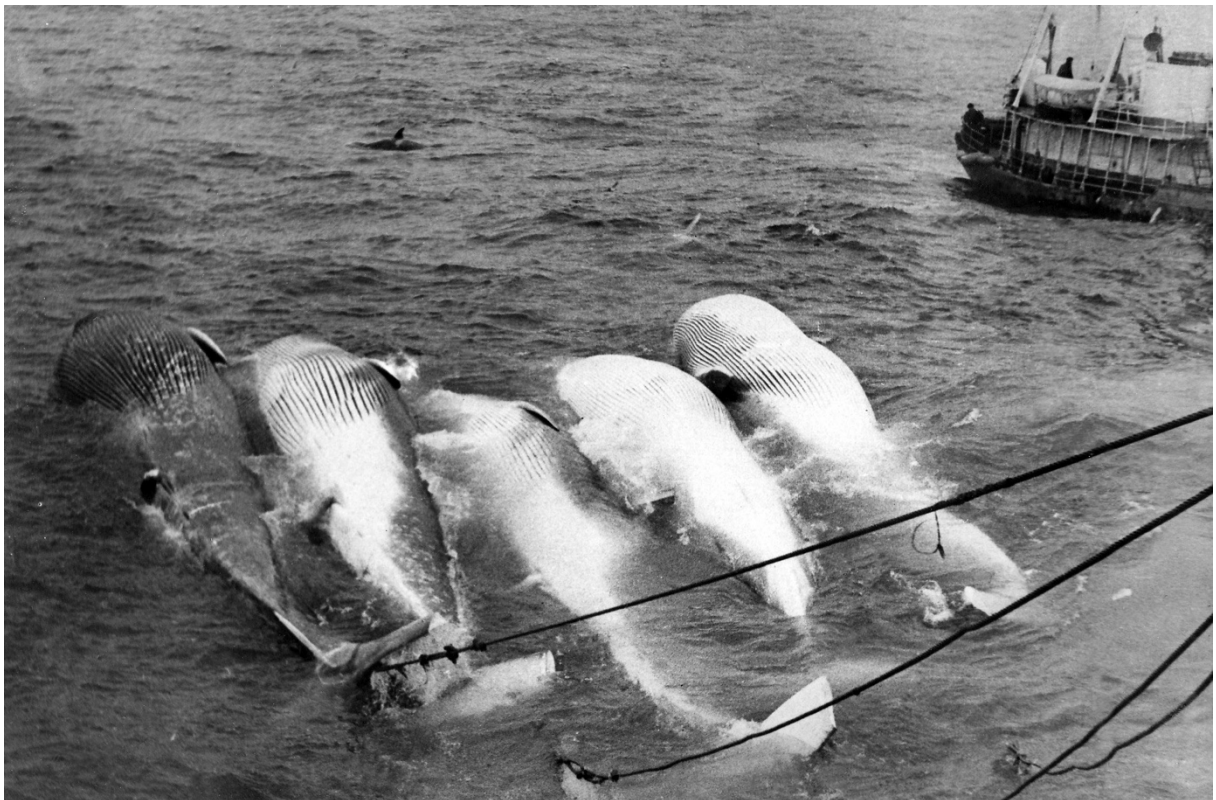


Whaling Policy

In Relation to Animal Welfare and Environmental Protection



Maturitätsarbeit von Leandra Wyss

Klasse 6d

Kantonsschule Hohe Promenade, Zürich

Schuljahr 2022/2023

Betreuerin: Jacqueline Egger

Korreferentin: Prof. Dr. Ulrike Zeuch

Comment on the cover image:

The title photo was part of a report covering the period from 1955 to 1978 written by Soviet scientists working aboard whaling factory ships in the North Pacific. The report was later published in 2006 by Phillip Clapham, Yulia Ivashchenko and Robert Brownell Jr. as a collection for the International Whaling Commission (IWC).¹

The photo itself was released in an article by Sophie Yeo about the illegal whaling that was conducted by the Soviets in the 20th century. In the photo we can see five fin whales being heaved onto a Soviet whale-hunting vessel.²

Throughout the 20th century and especially from the 50s on, the Soviets illegally hunted and killed thousands of whales around the world. Their illegal activities continued until 1972 when the IWC introduced an International Observer Scheme (IOS). (See chapter 3.1., page 5) However, the unregistered hunts were still subsidized by the USSR for many years though on a smaller scale.³

The photograph was provided to Sophie Yeo by Philip Clapham himself. He is acknowledged as one of the world's leading experts on large whales and is a member for the U.S. delegation to the IWC's scientific committee. He is an editor of three scientific Journals⁴ and has published numerous books and papers on whales and other cetaceans.⁵

¹ Phillip Clapham et al., 'Scientific Reports of Soviet Whaling Expeditions in the North Pacific, 1955-1978', 2006

² Sophie Yeo, 'Industrial Whaling of the 21st century was worse than we thought', 2018

³ Cf. 1

⁴ 'Marine Mammal Science', 'Mammal Review', and 'the Royal Society's Biology Letters'

⁵ Pelagic Publishing, 'Philip Clapham', 2022

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Abstract

This paper is a collection and connection of various scientific sources and traces the history of whaling and whale protection. It explains the biological and ecological impact of whaling on the environment and how whale hunting is perceived by the public. It is important to distinguish between commercial and aboriginal whaling. Commercial whaling was the foundation of the industrial revolution but is now an outdated way of farming resources. It is harmful to whale stocks and especially in our time an unreliable source of income. Contrarily, aboriginal whaling provides a vital food resource and cultural identity for marginal communities. Whales are highly beneficial for the environment and initiate certain natural processes that aid us with environmental problems like carbon sequestration. It is important for us to recognize how vital whales are for us and where to focus our attention in our attempts to help them.

1. Introduction

Whaling has always been a hot topic, especially now with climate change and the steady extinction of our large mammals. Big whales as we know them are dying out, but we might be able to stop it. And more importantly; we need to stop it. But is it really just whaling that endangers our marine giants? And why do we have to prevent their extinction?

In this paper I will trace the history of whaling and describe the making of the various laws and restrictions in place. I will also analyze, comment, and critically question their effectiveness and quality; mainly that of Article 65 of the UN Convention on the Law of the Sea. Additionally, I will discuss different national and international whale conservation organizations. For this I will make comparisons to another country, which is often discussed in this area because of its controversies, namely Japan. Besides these mainly historical and political topics, the ecological effects of whaling on the environment as well as on the whale population will be a major part of my work. The basis of this topic will also be partly founded on my personal observations during my stay at the research station Mériscope in Canada. And finally, I will give scientific insight into the reasons for the need of whale protection and suggest methods how this could be achieved or is already practiced.

My goal in this work is to provide a broad and diverse source of information to motivate people to investigate this topic and form their own opinions about it. We all know that the first step to change and improvement is to spread knowledge as widely as possible.

I was invited to this topic by my biology teacher who also works for a non-profit organization called Mériscope. Mériscope is an independent marine research station and a registered environmental charity which promotes and supervises PhD, Master, Bachelor, but also Matura theses.⁶ Every year, they offer to take two high school students to their research station in Canada and one of my friends decided to participate in the program. Through this I learned more about the organization and since I have always been very interested in marine biology, I decided to apply for the program as well. I wanted to gain more experience, as I would like to work in a research field later anyway.

However, I didn't want to write an entirely scientific paper for my Matura thesis, but also leave room for my own thoughts and interpretations and thus I came to this topic; a mixture of biology, history and politics.

2. A Chronological History of Whaling Around the World

Whaling finds its beginnings in prehistoric times. For some cultures it dates back thousands of years. According to the University of Alaska Fairbanks it started at least as early as 1000 BCE.⁷ And in the years 670 and 1059 the use of whale products was mentioned by the Basque whalers, while listing merchandise goods for the markets of Bayonne.⁸ The Inuit and indigenous cultures might have started whaling even earlier but there is little to no information about their history since it had never been documented. Alongside them, the Japanese and the Norwegians are also amongst the first to practice whaling. Records from that time are very fragmentary and incomplete but we can assume that the Norwegians started whaling about 4000 years ago⁹ and the Japanese might have done so even earlier since a depiction of whaling first appears in 古事記 (Kojiki); their oldest historical book, which was

⁶ Mériscope, 'About Us', 2022

⁷ University of Alaska Fairbanks, 'Prehistoric Cultures Were Hunting Whales At Least 3,000 Years Ago', 2008

⁸ Wikipedia, 'History of Basque whaling', 2022

⁹ Wikipedia, 'History of whaling', 2019

written in 700 CE.¹⁰ (Figure 1) During that time the traditional whaling regions were the Pacific with the Japanese, the Arctic Ocean with the Inuit, and the Atlantic where the Basques hunted their whales.



Figure 1: Old-type whaling in Japan. A fleet surrounds the whale and catches it with a net before it is attacked with harpoons. (Japan Whaling Association)

The oldest known hunting methods include dolphin drive hunting, where the animals are herded towards the shore, by positioning the boats between the target and the open sea to beach them, and whaling using drogues. Drogues are semi-floating objects that are tied to arrows or harpoons. The hunters shoot their target and only had to follow the whale while the buoyancy of the drogue tires the animal out and it is eventually caught up by the boats. After that the whale could easily be approached and killed.¹¹ This is the method that has since evolved and is now still practiced in some cultures, though a bit alternated and modernized.

During the Middle Ages and Renaissance whaling gained popularity throughout northern Europe mainly with the goal of obtaining whale oil and baleen, which were valuable commodities. The oil which came from the blubber of the animal was later a catalyst for the industrial revolution due to its reliable flammability. Baleen or also called whalebone are the horn plates that are located on the upper side of a baleen whale's mouth instead of teeth and are used to filter food, like krill, out of the seawater. Together with bones it was used for jewellery and tools including corsets. These luxuries were reserved for the nobility and upper-class citizens.¹²

Over time whaling ventures spread to North America where it quickly evolved and became a global enterprise when America expanded their expeditions to all oceans including whale-rich waters like the Arctic and Antarctic Oceans. This was after it became increasingly difficult to find whales near the Atlantic coast due to overexploitation and increasing competition by the British. The US peaked at around 1830 after the invention of harpoon guns and later grenade harpoons which burst upon impact and blast shrapnel inside the whale's brain and body.¹³ A big contributor in the upswing was the invention of steamships which made the hunt more efficient. By that time whaling had become a multi-million-dollar industry and was exceptionally popular among investors. Due to this immense interest the seamen took many risks which lead to a lot of accidents.¹⁴ One of these incidents, was the sinking of a Japanese vessel due to a storm, when the lives of 111 whalers were lost.¹⁵ Normally the weather conditions that day were considered far from ideal, but the sight of a monetary reward was too tempting for the whalers and their decision to continue the expedition cost them their lives.

¹⁰ Patrick Hearn, 'An Orwhalean Dystopia: The Cultural Significance of Japanese Whaling', 2018

¹¹ Cf. 9

¹² Cf. 9

¹³ WDC, 'Stop Whaling', 2022

¹⁴ Cf. 9

¹⁵ Japan Whaling Association, 'History of Whaling', 2022

At the beginning of the 20th century however, the industry plummeted after fossil fuels, for example kerosene or petroleum, became increasingly popular and created a much more reliable fuel for lighting.¹⁶ Still, whale stocks continued to decline, and it was clear that in order to save whales from dying out, regulations had to be made.

2.1. Target Species

The targets of these hunts varied from time and location. Overall, all big baleen whales, as for example bowhead, sei, blue, fin and right whales were targets along with the toothed sperm whale, but later and even until now, the hunts focused mainly on minke whales due to the continuous over-exploitation of the bigger cetaceans from previous years. Many of the bigger whales were hunted to the brink of extinction, such as the blue, bowhead, and North Atlantic right whale, which were considered the ideal whaling targets¹⁷ or in the latter case the ‘right’ whale to hunt. Because of their size, they are very slow and docile, and when killed, they would float to the surface which made it easier for the shipmen to collect the carcasses.¹⁸ Of the North Atlantic right whale there are now fewer than 350 individuals remaining, with less than 100 breeding females.¹⁹

There are also smaller whales that were prosecuted almost to extinction such as the beluga whale. These small, white whales were most abundant in colder regions and could often be seen in the Gulf of Saint Lawrence. However, during the 1930s, when commercial whaling was at its peak, intensive hunting was subsidized by some governments, for example the Quebecois in Canada, who wished to exterminate the belugas of the gulf of St. Lawrence, because they were considered harmful for the fisheries.²⁰



Figure 2: Butchering of Belugas. Photo by M.P.Heide-Jørgensen (GINR)



Figure 3: Beluga fishing at St. Lawrence Marine Park 1929 (Archives de la Côte-du-Sud, Parks Canada)

2.2. Whale Oil: The Fuel of Early Industrialization

Unlike the indigenous people and other early whaling cultures, the commercial enterprise, that whaling would become later, followed the primary goal of obtaining oil. It was used for lamps and machine lubricant and was a pillar for the industrial revolution.²¹ This oil was made from blubber²², which is a thick layer of fat, beneath the whale skin and at some points in their lives could compromise up to 50% of the whale’s body mass. Blubber poses the whale’s primary fat storage and helps with their thermoreg-

¹⁶ Petroleum Service Company, ‘Understanding the Whale Oil Myth and the Rise of Petroleum’, 2016

¹⁷ Wikipedia, ‘Whale Oil’, 2022

¹⁸ Cf. 17

¹⁹ NOAA fisheries, ‘North Atlantic Right Whale’, 2022

²⁰ Whales Online, ‘What kind of whaling was practiced in the St. Lawrence?’, 2016

²¹ Cf. 9

²² Rodney Barfield, ‘Seasoned by Salt’, 1995

ulation in the water. It also adds buoyancy while swimming, which saves energy for the animal.²³ For processing blubber into whale oil, it had to be removed from the rest of the carcass in a process called flensing. Then it was cut into strips and boiled in a furnace known as a trywork.²⁴



Figure 4: In traditional hunting for subsistence the people collect oil from a freshly caught whale by pressing it out of the blubber. Like these children in Lamalera, Indonesia. Photo by Claudio Sieber

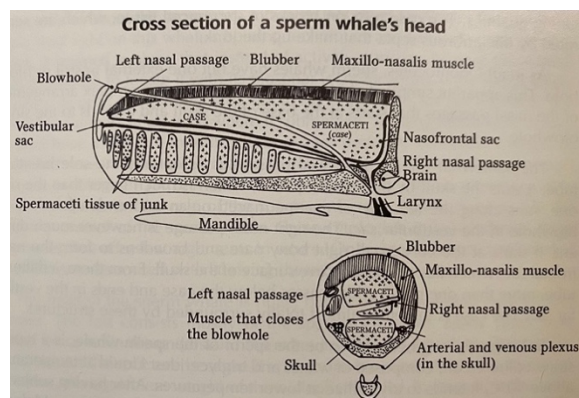


Figure 5: Cross section of a sperm whale's head, by Pierre-Henry Fontaine

Aside from the blubber, oil could also be found in the spermaceti organ of a sperm whale, which is located above the skull of a sperm whale (Figure 5). This sperm oil is more special, because it is quite rare and differs chemically from ordinary whale oil. It has a dense, waxy substance that burns with a bright flame and could be sold for a much higher price.²⁵

Even though whale oil was the primary target, other parts of the whale were also valuable; for example, cartilage which was used in pharmaceuticals and health supplements. Bones and baleen were used to make varied customer goods, such as tools and jewellery, and meat was sold for human consumption or cattle feed.²⁶ Still, the commercial hunts are not nearly as resource efficient as the indigenous' and other early whaling nations. (See chapter 5.3.2., page 13)

3. Laws and Regulations

3.1. Developments During the 20th Century

In 1931, 27 whaling nations, including for example Canada, Denmark, and France, came together to sign a convention for the regulation of whaling. However, it was not enforceable, because the whaling limits were too lax, and that same year, a record of around 43'000 whales were caught. Another convention in 1937 agreed to shorten the whaling seasons and to sparing the rarest whales and those under a minimum size. But again, it did not have the desired effect, as whalers just killed faster and more efficiently during the shorter season.²⁷ To have any effect on the conservation of whales, the measures needed to be more drastic.

In 1946, in a decisive moment for the history of whaling, 15 whaling nations (see 'Attachments': [1]) formed the International Whaling Commission (IWC) with membership also open to non-whaling nations.²⁸ It was established as the global body responsible for the management of whaling and conser-

²³ Wikipedia, 'Blubber', 2022

²⁴ Cf. 16

²⁵ Cf. 17

²⁶ Cf. 13

²⁷ Gare Smith, 'The International Whaling Commission: An Analysis of the Past and Reflections on the Future', 1984

²⁸ Cf. 27

vation of whales. The IWC set limitations on the target species by prohibiting to kill gray, humpback, and right whales, which were targeted the most at the time. The IWC also limited hunting seasons and set an Antarctic limit of 16'000 "Blue Whale Units" per year.²⁹ This was a new system to measure nations respective whale quotas with ratios roughly based on the relative amount of oil that each species yields.³⁰ However, these laws were again not enforceable as they were too loose and the quotas too high. Whale stocks continued to decline.

Some progress was made in the late 60s when the hunting of certain species was banned and the US officially outlawed whaling in 1971. Canada and other nations followed their example shortly after.³¹

A year later, the IWC implemented an International Observer Scheme (IOS) where an official observer was placed on every whaling fleet, tasked with ensuring that the whalers followed the guidelines set by the IWC. This did not work either as the whalers often used tricks to distract the observer while they were hunting a whale that was officially "off-limits". Sometimes this wasn't even necessary as the observers were often complicit, for example by listing smaller whales as larger ones. This kind of corruption was a frequent phenomenon especially in the USSR, a nation that was conducting illegal whale-hunting at the time.³² (Figure 6)

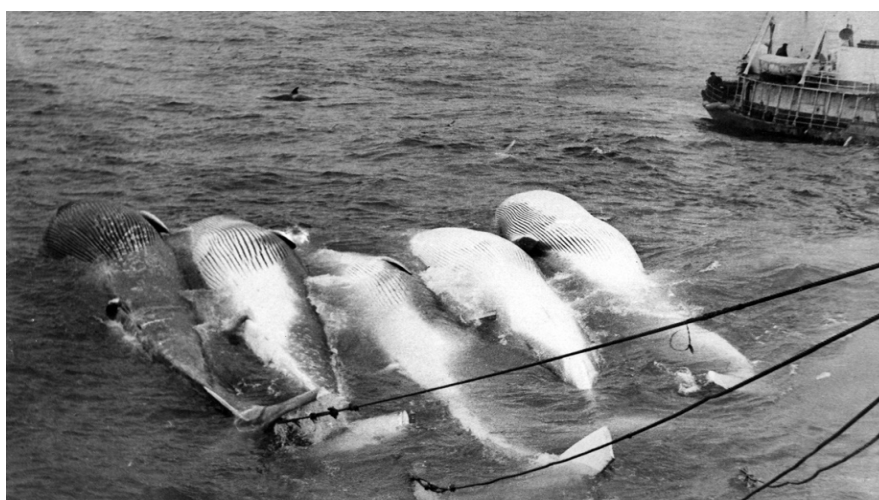


Figure 6: Illegal whaling of fin whales by the Soviets. Photo by Phil Clapham

Seeing as nothing seemed to work, the IWC called for an end to international trade in whale products in 1978 and adopted an Indian whale sanctuary; the first protected zone in the world.³³

3.2. The 1982 Law of the Sea Convention

The Law of the Sea is a branch of international law, dealing with the public order at sea. The convention of 1982, among other things, addressed territorial waters, sea-lanes, and ocean resources, including marine mammals. The primary law states that each country's sovereign territorial waters extend to a maximum of 12 nautical miles (22 km) beyond its coast, but beyond these territorial waters, every country may establish an exclusive economic zone (EEZ) extending 200 nautical miles (370 km) from shore. Within the 200 miles of the EEZ the coastal state has exclusive jurisdiction over all marine living

²⁹ D. Graham Burnett, 'The Sounding of the Whale: Science and Cetaceans in the Twentieth Century', 2012

³⁰ Wikipedia, 'Blue Whale Unit', 2022

³¹ Cf. 27

³² Cf. 2

³³ Cf. 9

resources.³⁴ This was later specified in a customary international law by the IWC called Article 65. (See chapter 3.2.1. below)

During the Law of the Sea convention for the regulation of whaling, the IWC decided to adopt a ban on commercial whaling and implement a complete moratorium, to start in 1986. The convention recognizes three different types of whaling: commercial, aboriginal subsistence and special permit (also known as scientific) whaling. Of these, only commercial whaling is affected by the moratorium, while aboriginal and scientific whaling is still permitted, since special permit whaling is not regulated by the IWC but by national governments.³⁵

The moratorium was adopted after considerable debate and Canada, despite having been an original signatory to the convention in 1946, withdrew from the IWC. This was after the moratorium was installed against the recommendation of the scientific committee, which preferred a stock-by-stock approach rather than a blanket moratorium. Canada believed such decisions should be based on scientific principles rather than political and public perceptions.³⁶

It is true that to the public, a moratorium would seem to be the most effective way to preserve whale stocks. But many people aren't aware of the fact that the IWC is a non-binding body and non-members are under no obligation to follow the IWC's regulations, including the moratorium. Despite this, whaling nations that are not members of the IWC are often referred to as "pirate whalers" and are a subject to condemnation for undermining the effectiveness of the IWC, even though they breach no international law. Additionally, there is a law which states that any member nation of the IWC can object to a moratorium, and even if the majority of all nations would agree to said moratorium, it would not be binding for that nation.

We have established that, unlike the Law of the Sea, which is a branch of international law, the IWC is a non-binding organization. By bringing forth Article 65, which by being a part of the Law of the Sea, is in fact legally binding, the IWC has found a "backdoor entry" to regulate non-IWC members. This way the IWC can set the terms and extent of the "exclusive jurisdiction" over the exploitation of marine living resources within the coastal state's 200-mile zone. The IWC was heavily criticized because of this and still, if we analyze Article 65, we can see that it is an example of a deficient law and shows why whaling and the regulations made by the IWC are still problems we need to work on.

3.2.1. An Analysis of Article 65

"Nothing in this part restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in this Part. States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study." (1982)³⁷

I am going to analyze the wording of the article and point out different ways to interpret it. I will also specifically make references to Canada's interpretation, as they are no longer a member of the IWC.

Article 65 creates a distinct regime for marine mammals separate from that for other marine living resources and it requires that states "stop or at least limit, for as long as marine mammals remain depleted, their exploitation".³⁸ However, the wording of the first sentence of the article states that this

³⁴ Robin R. Churchill, 'Law of the Sea: international law 1982', 2022

³⁵ IWC, 'Commission Overview', 2022

³⁶ Ted L. McDorman, 'Canada and whaling: An analysis of article 65 of the law of the sea convention', 1998

³⁷ UN, 'United Nations Convention on the Law of the Sea', 1982

³⁸ Cf. 37

is only a suggestion. Thus Article 65 does not force states to follow a distinct regime for marine mammals, although states may choose to implement one.

The first sentence also says that either the coastal state or an international organization “as appropriate,” may impose these more rigorous conservation measures. However, based on the wording, there is no certainty as to when it is a coastal state and when it is an international organization that would be appropriate.

The second sentence is not a jurisdiction but a cooperation clause. It says that states are required to involve and “work through the appropriate international organization”. The wording leaves a lot of room for interpretation. There is no obligation to work through more than one international organization and it is not specified which is the appropriate. The plural in the wording suggests, that it is not necessarily the IWC. Many states have decided that the IWC would only be appropriate in the case of big whale stocks, since the IWC only has authority over bigger whales. After this caused a lot of discussions, the UN (United Nations) has listed the IWC, FAO and UNEP as the appropriate organizations.

Additionally, the extent of “work through” is not specified. Canada’s interpretation of this part states, that the terms are met when Canadian scientists participate in the IWC scientific committee, since “work through” doesn’t have to mean compliance, which reduces an obligation to mere consultation. However, it was later specified that for the terms to be met, these scientists would have to share a “positive contribution or sharing of experience, expertise, or information designed to positively assist the work of the international organization.”³⁹

So, in conclusion, even though a certain degree of compliance is necessary, the cooperation obligation does not require a state to adhere to regulations adopted by the IWC.

3.3. Efforts on Whale Protection in the 21st Century

In the 21st century, a lot of progress has been made. There are now numerous whale sanctuaries and protected zones, the two largest ones being the Indian Ocean Whale Sanctuary and the Southern Ocean Whale Sanctuary, which spans 50 million square kilometers around Antarctica. Additionally, a South Pacific Whale Sanctuary had been proposed⁴⁰ but was rejected after Japan campaigned against it. There are also lots of smaller marine parks, such as the Saguenay-St. Lawrence Marine Park, which is located inside of the St. Lawrence Estuary.⁴¹ As of June 2019, there were 14’830 marine protected areas with a total area of 27’495’595 square kilometers, representing 7.6% of the ocean.⁴² Those numbers have not grown much but in 2022, an estimated 8.2% of the ocean is protected according to WDPA.⁴³ (Figure 7)

Sadly, most of these protected areas are still not completely safe as illegal activities remain to be conducted and most of the times, the authorities aren’t able to identify the culprits. There are only very few areas that classify as ‘Blue Parks’. (Figure 8) (See ‘Attachments’: [2]) Even in the Saguenay-St. Lawrence Marine Park, the whale watching boats sometimes do not adhere to the regulations made by the authorities, and the animals still suffer from noise pollution and smaller fishing nets. (See chapter 5.4.3., page 18) As of 2022, almost all countries have ceased commercial whaling, with the few exceptions being Japan, Norway, and Iceland who are responsible for taking 69% of the whales caught between 1988 and 2017. (Japan 22’438, Norway 13’873, Iceland 1’715).⁴⁴

³⁹ Cf. 36

⁴⁰ IWC, ‘Report of the 52nd Meeting’, 2000

⁴¹ Parc Marine, ‘Welcome to the Saguenay-St. Lawrence Marine Park’, 2022

⁴² Marine Protection Atlas (MPA), ‘The Marine Protection Atlas’, 2021

⁴³ Protected Planet, ‘Marine Protected Areas’, 2022

⁴⁴ Wen Foo, ‘Japan resumes commercial whaling’, 2019

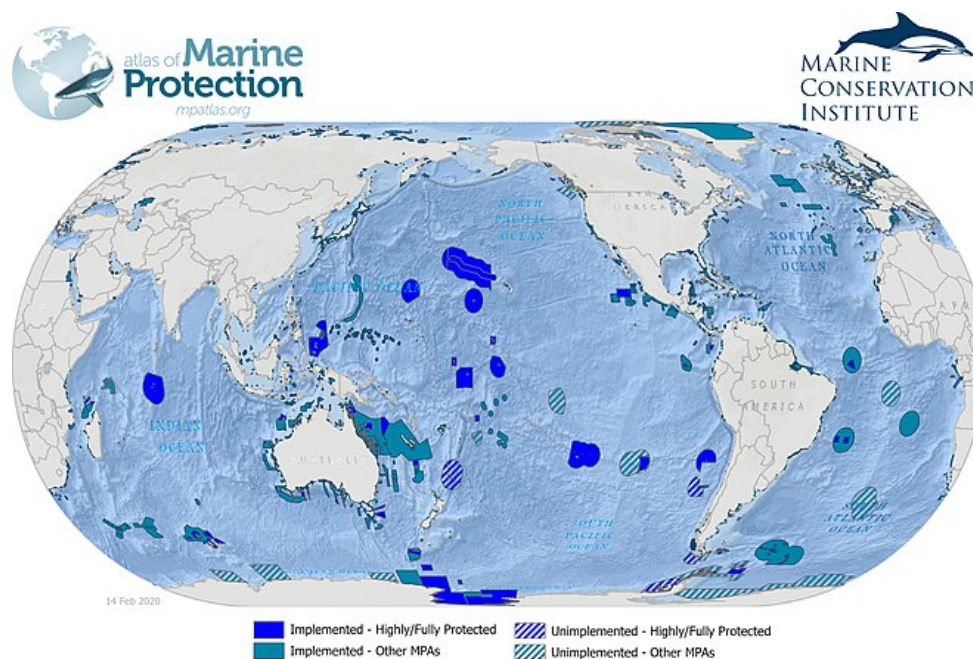


Figure 7: Marine protected areas in 2020 (Marine Protection Atlas)

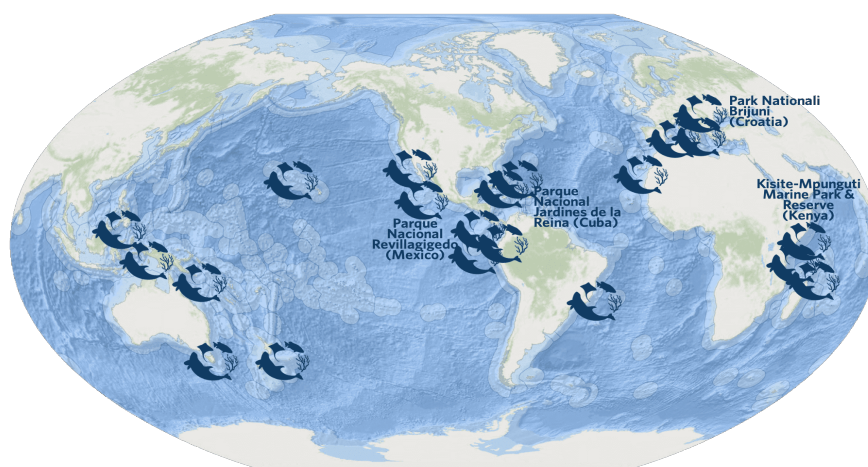


Figure 8: Of all protected areas only 21 were awarded as 'Blue Parks' in 2021. The Blue Park Criteria are science-based standards for conservation effectiveness and biodiversity values (Marine Protection Atlas)

The rapid growth of the whale watching industry has contributed significantly to the decrease of whaling. Its size and increasing popularity have led to complex and ongoing debates on the best use of whales as a natural resource. Whale and seal watching not only represent recreational activities but also serve scientific and educational purposes. According to the International Fund for Animal Welfare (IFAW 2009), 13 million people have gone whale watching for leisure in 2008. This generated 2.1 billion USD in tourism revenue worldwide and employed 13,000 workers in 119 countries. Whale watching is currently by far the largest economic activity reliant on cetaceans, and taking the example of Norway and Iceland, whale watching, and whaling seem to be able to co-exist in a complementary relationship.⁴⁵

However, whale watching also represents multiple problems and disturbances to the eco-system, as these activities generate noise, occupy big areas, and pollute the waters. It disrupts the behaviour of

⁴⁵ Røst Kommunikasjon, 'Recreation', 2016

marine mammals, such as foraging, nursing, socializing, breeding, resting and migration. The result may be a decrease in individual fitness and the general survival rate.⁴⁶

3.3.1. Whale Conservation Organizations

Since 1946, when the IWC had been created, a handful of new organizations have formed that are responsible for different parts of cetacean welfare and the protection of marine mammals. Not all of them share the same point of view. For example, NAMMCO (North Atlantic Marine Mammal Commission) is committed to “the sustainable and responsible use of marine resources by developing effective conservation and management measures for marine mammals, while acknowledging the rights and needs of coastal communities.” Unlike the IWC, NAMMCO does not seek for a general moratorium but instead acknowledges that for many coastal communities, whaling and sealing still represents the primary food source and generates their income, which in turn improves their livelihoods and is the reason why they can maintain a relatively high degree of self-sufficiency in food and material production.⁴⁷

However, NAMMCO has received lots of criticism since its foundation because they do not completely prohibit the hunting of marine mammals and take a less rigorous attempt to the conservation of these species than the IWC.

While the IWC only had 15 member nations when it was founded, almost 88 countries are now a part of the IWC and participate in the Scientific Committee, which is the foundation of the commission and serves as a scientific basis for policymaking around the world.⁴⁸

4. Japan’s Long History of Whaling and Controversies

Japan was amongst the first nations to start whaling. (See chapter 2, page 1) But that is not the only reason why Japan is a heavily discussed country in terms of whaling. Japan was a quickly progressing nation in terms of hunting technique, having invented harpoon and net whaling, but still very isolated from the world until 1853, when they were forced to open up to foreign trade by the US.⁴⁹ About two decades later, they distanced themselves from their traditional hunting methods and adapted to modern (Norwegian) whaling. In the middle of the 20th century, Japan joined the IWC, but since they were and are still a very tradition-oriented nation, they were often involved in conflicts with the commission. After the IWC installed the moratorium in 1982, Japan along with Norway and the USSR filed objections so the ban would not apply to them. Between 1985 and 1987, Japan caught 5’519 whales under objection of the moratorium which had set the catch limit to zero.⁵⁰ (See ‘Attachments’: [3]) While staying with the commission, due to a “loophole” in Article 65, which supports the taking of a certain number of whales for scientific purposes, Japan was able to resume whaling by doing so for “research”.

Japan was involved in many controversies during the time of the general observer scheme (see chapter 3.1., page 4) but it reached a boiling point when in 2014, the Sea Shepherd Conservation Society, an extreme group of activists with questionable methods, caught a Japanese whaling boat loading four dead Minke whales onto their boat in New Zealand’s territorial waters, specifically in the Southern Ocean

⁴⁶ Cf. 46

⁴⁷ Røst Kommunikasjon, ‘Marine mammals as resources’, 2016

⁴⁸ IWC, ‘Commission Overview’, 2022

⁴⁹ Cf. 9

⁵⁰ IWC, ‘Catches taken under objection or under reservation’, 2022

Whale Sanctuary, that is officially off-limits to commercial whaling as part of the 1986 moratorium to which Japan is a signatory.⁵¹



Figure 9: Three dead minke whales on a Japanese whaling vessel in 2014. Photo by Tim Watters (Sea Shepherd Australia)

Under the loose regulations of scientific whaling the Japanese have gained a permission to hunt 935 Antarctic Minkes, 50 Fin whales and 50 Humpbacks annually, a number which is not needed to conduct scientific research, as argued by various nations like for example Australia and New Zealand. In total, Japan has taken 16'919 whales under special permit as of end-2017.⁵² It is also criticized that the meat of the whales killed for science is sold as food.⁵³

Contrary to what one might believe, the market for whale meat in Japan is very weak so whaling actually costs Japan more money than it makes. A report released in February 2013 by the advocacy group International Fund for Animal Welfare (IFAW) estimated that whaling has cost Japanese taxpayers 378 million USD since 1987.⁵⁴ Efforts to improve the market by putting whale meat in school lunches have drawn criticism from parents, some of whom have complained that the flesh can be relatively high in toxic mercury.⁵⁵

There is no apparent reason for the country to continue whaling other than “the elder generation’s national pride”⁵⁶ which is very distinct because of the nation’s whaling history and tradition. A poll commissioned by IFAW in 2011 revealed that more than 50% of Japanese citizens have no opinion on their country’s whaling activities, while 26.8% said they support it and 18.5% are against it.⁵⁷

Masayuki Komatsu, Japan’s then-commissioner of whaling, said in 2001 that Antarctic Minkes are “cockroaches of the sea; plenty in number with a rapid reproduction, and need marine management through scientific whaling.” This attitude was seen in the statistics regarding the target species of the hunt, where the most hunted individuals were minke whales. (Figure 11) He also stated that the IWC had enough regulations in place to allow sustainable harvest. In his opinion: “No nation should try to impose their attitudes on others.”⁵⁸

⁵¹ Brian Clark Howard, ‘Anti-Whaling Activists Put Focus on Complex Law and Bloody Tradition’, 2014

⁵² Cf. 44

⁵³ Cf. 51

⁵⁴ IFAW, ‘Marine Conservation’, 2022

⁵⁵ KYODO, ‘Whale meat back on school lunch menus’, 2010

⁵⁶ Cf. 51

⁵⁷ Cf. 54

⁵⁸ Japan Whaling Association, Homepage, 2022

In 2019, Japan announced withdrawal from the IWC and resumes commercial whaling within its territorial waters. In return they cease to take whales in Antarctic Ocean and southern hemisphere.⁵⁹ Nevertheless, there is still conflict between Japan and neighbouring nations since Japan's EEZ (Exclusive Economic Zone; see chapter 3.2., page 5) overlaps at some points, e.g., with Russia, South Korea, Taiwan, and China. (Figure 10)

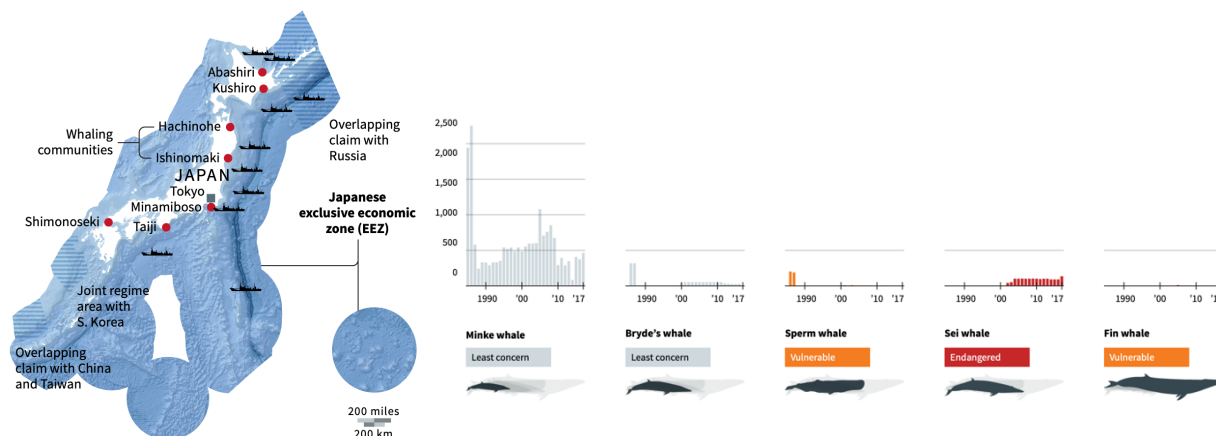
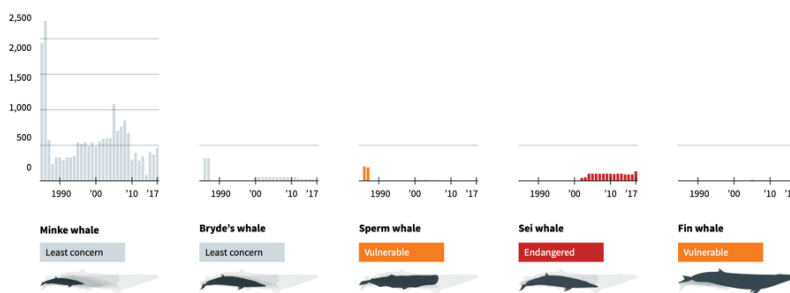


Figure 10: Japan's EEZ (Reuters Graphics)

Figure 11: Records of all whales caught by Japan between 1985 and 2017, and the species' vulnerability (Reuters Graphics)



5. Should Whaling be Consequently Banned?

5.1. A Public Opinion on Whaling

As outlined so far, commercial whaling is politically a highly controversial topic.

Nations that are still active whaling nations are criticized even though they breach no law. However, commercial whaling is not the only type of whaling that is conducted and it's certainly not the only one that is criticized. There seems to be a general disdain towards the hunting of marine mammals, no matter what type it is. Aboriginal whaling, despite being permitted, is perceived negatively by the public. When talking about aboriginal culture, whaling and sealing both play a big part, since the marine mammals represent their primary food source.

5.2. Are Marine Mammals an Endangered Species?

One of the primary arguments about whaling, is that marine mammals are endangered, and because of that we should cease whaling. However, this is only true in some cases. When we look at statistics, less than half of all species are vulnerable or endangered, while almost 50% is of 'least concern'. For the rest, we lack the data that would be necessary to conduct proper research.⁶⁰ (Figure 12)

⁵⁹ Cf. 44

⁶⁰ Edmond Sanganyado et al., 'Towards an integrated framework for assessing micropollutants in marine mammals Critical Reviews in Environmental Science and Technology', 2020

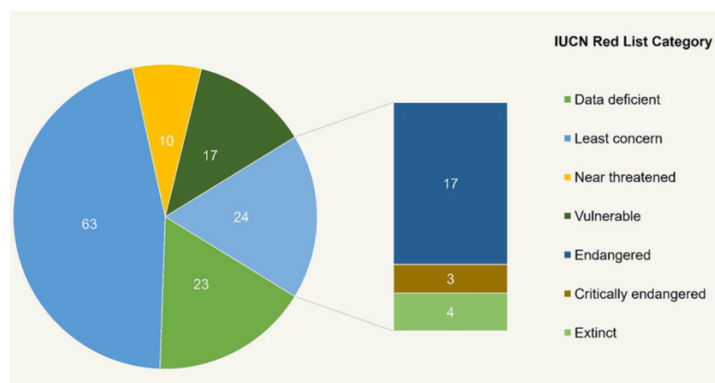


Figure 12: Marine mammals ranked according to their degree of vulnerability based on the IUCN Red list categories (IUCN, 2020)

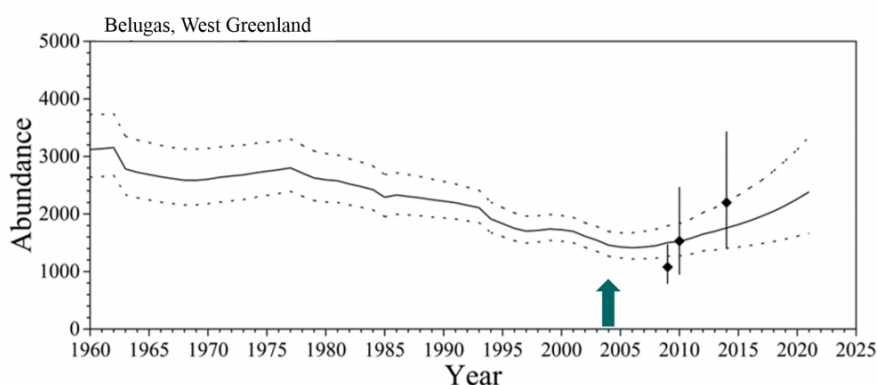


Figure 13: Abundance of beluga whales in West Greenland has been growing after the introduction of quotas in 2004, and is expected to increase even further in the next few years (NAMMCO)

Other statistics show that the sightings and abundance of many whales, for example belugas, have been increasing in the last couple of years. (Figure 13) Taking the humpback whale in the North Pacific as an example, the stocks have been recovering for the past few years after they had been severely decimated by commercial whaling. Analysis of the 2004-2006 North Pacific SPLASH study estimated an ocean-basin-wide annual population growth rate of 4.9 to 6.8%, as of 2006.⁶¹

5.3. Aboriginal Whaling vs. Commercial Whaling

Aboriginal whaling is defined as the hunting of whales by indigenous peoples.⁶²

While it is evidential that commercial whaling has majorly affected whale stocks, aboriginal whaling has not contributed to this industrial frenzy. Over the course of centuries, aboriginal cultures have paid attention to whale stocks and taken their prey in a sustainable manner. Additionally, whaling and sealing is closely watched and regulated by many national and international conservation organizations such as Fisheries and Oceans Canada and WWF.

5.3.1. Marine Mammals: An Abundant Resource

For aboriginal cultures, the hunting of marine mammals represents a justifiable food source to them and there are many factors that support this argument. Marine mammals are present, nearby and abundant,

⁶¹ Ted Cheeseman et al., 'All the humpback whales of the North Pacific: A collaborative and comprehensive photo-ID dataset for basin-wide studies', 2023 (not yet released)

⁶² Camille B. Marchand, 'Which Cultures still practice Traditional Whaling?', 2015

and their year-round availability has enabled small, remote and isolated northern coastal communities to maintain a relatively high degree of self-sufficiency in food and material production.⁶³ When Western civilizations argue that these communities could survive from the same aliments as we do, we forget the fact, that most of these communities are located in the far north and do not have the same agricultural products. They often do not have wheat, cows, or chicken, and to them, fish and marine mammals are one of the only, and thus logical food resources.

It is not our place to tell other cultures how they should conduct their lives, especially when our circumstances are entirely different. Not all communities are as globalized and centralized as for example central Europe and thus it is logical that other more marginal communities have different customs and traditions.

5.3.2. Red, Green and Blue: An Eco-Friendly Food Source

Aboriginal whaling and sealing can be described as a red, green, and blue activity.

Red represents what we, the outside world, see or choose to see when looking at aboriginal whaling and sealing. The Red represents the blood that is spilled. Evidently all forms of the livestock industry also involve blood since it fundamentally derives from the killing of animals. But because whaling and sealing happens in the open and is not enclosed behind walls, it can and is seen by the public. There are many photos and videos on the internet where you can see seal hunts. The contrast between the deep red of the blood and the white snow, where the hunting takes place, has a shocking effect. (Figure 14) Additionally, blood spreads faster in liquids like water. Because of that, the amount of blood that is spilled when a whale is killed, appears far greater than it actually is.⁶⁴



Figure 14: A Greenlandic seal hunter ties a freshly killed seal to the dog leads, Photo by Justin Lewis

Another factor that is deciding in the criticism that whaling and sealing receives by the public is because we are used to the industrial and robotic livestock industry, where the life of an animal is not treated as such; a life. Because whales and seals are wild animals, we assign them a greater value, and when we see them being hunted by the aboriginal people it seems almost personal. The animal is, to a degree, able to defend themselves and try to flee, while in the livestock industry, the animal never had a chance of survival to begin with. We treat the latter one as more humane, solely because we are not able to or choose not to see the desperation of the animal. This is difficult to avoid when we are directly confronted

⁶³ Røst Kommunikasjon, 'NAMMCO', 2016

⁶⁴ Røst Kommunikasjon, 'Red, Green, and Blue', 2016

with pictures of dying animals, and the public reaction is apparent and imminent. An outraged outcry is the consequence.

Green represents the environmental aspects. Despite popular belief, aboriginal whaling is one of the most environmentally friendly non-vegetarian food resources. Overall environmental costs are the few hunted individuals and the activities of the hunting vessels, such as fuel and noise pollution. Even these are on a much smaller scale compared to the industrial animal farms, since the vessels are smaller and often use eco-friendly engines, and hunting expeditions are not conducted every day. On average, an aboriginal community only takes about one whale per month. This, of course, depends on the size of both the whale and the community, and the abundance of other marine mammals. In Figure 15 we can see the approximate number of marine mammals caught by whaling nations each year. These numbers also include pinnipeds (e.g., seals) and other marine mammals.

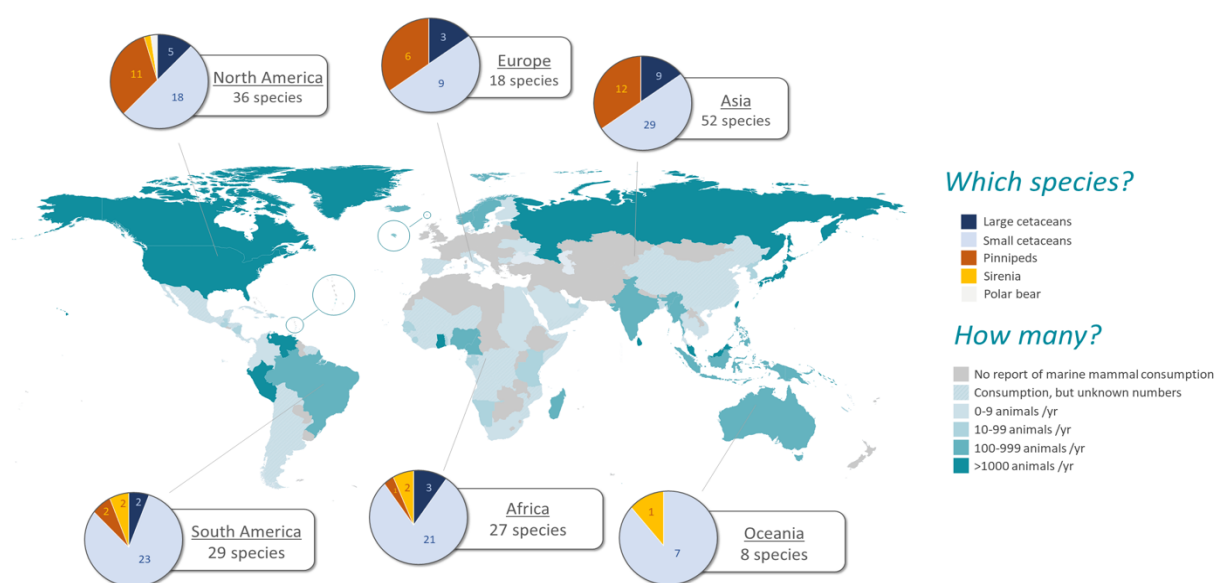


Figure 15: Global Marine Mammal Consumption between 1990-2009 (NAMMCO)

The hunting includes no intensive farming and no destroying habitats. The hunted individuals live freely until they are killed. However, the way, in which they are killed may sometimes be more painful for the animal, than in industrial whaling, since the hunts also include traditional procedures and are not designed for efficient, conveyor-belt-like killing.⁶⁵ (Figure 16) But still, the animals are killed directly in their habitat and don't experience any stress by being transported or confined alive. In comparison, the livestock industry is one of the biggest contributors to serious environmental problems such as deforestation, land degradation, contamination of ground water, pollution of soil and air, release of greenhouse gases, loss of wildlife habitat and release of chemical additives.⁶⁶

In fisheries we see a similar level of destruction: bottom trawling, which is essentially dragging fishing nets along the sea floor, leads to large scale sea-bottom and habitat destruction, uncontrolled and high bycatch through large nets spanning the ocean and traps on the sea floor, and discard of non-target species, which are referred to as bycatch.

In contrast, whaling and sealing are highly selective food production techniques and produce no bycatch or waste of non-target species. The targeted animals can be selected by size, species and sometimes by

⁶⁵ Claudio Sieber, 'Photo Diary of a Whale Hunt', 2018

⁶⁶ Cf. 64

age and sex, thus reducing the threat to the reproductive component of a population.⁶⁷ For example, in NAMMCO management areas, most of the hunts take from stable or increasing stocks.⁶⁸



Figure 16: Traditional whaling in Lamalera, Indonesia. Traditional whaling in this community is conducted with a harpoon. The hunt is important for day-to-day survival and is a source of pride and identity. Many of the kids in the community dream of being whalers and train hard in hopes of eventually earning the esteemed position of 'lama fa': lead harpooner. The lama fa in this picture is called Petrus Glau Blikolulong, "Papa Petro". Photo by Claudio Sieber

Moreover, the carbon footprint of the local exploitation is lower than flown-in aliments. A survey by a pro-whaling lobby organization in 2007 showed that the average emission of carbon dioxide, excluding processing and transport, was 1.9 kilos per kilo of whale meat, compared with the 15.8kg for beef, 6.4kg for pork and 4.6kg for chicken. The carbon footprint of fish ranges between 3.39 to 15.22kg and varies between, for example, offshore net-pen fishing in Norway and industrial Atlantic Salmon.⁶⁹

In short, as long as catches do not exceed the reproductive capacity of stocks, whaling and sealing provide an environmentally friendly contribution to the planet's food supply.

Blue stands for the Blue Economy initiative, which endorses the principle of resource efficiency and thus seeks to maximize the economic value gained from the marine environment in a sustainable way that conserves and protects the sea's resources and ecosystems.⁷⁰

Coastal whaling and sealing for food are traditionally very resource efficient and little goes to waste. For example, aboriginal cultures in Greenland that conduct sealing hunt primarily for sustenance, with the essential product being meat, including flippers and organs, for human consumption. The meat that one seal can provide for a family is worth 200 USD.⁷¹ Surplus is fed to sledge dogs which in turn contribute to hunting and fishing. The skins are used for clothing and along with bones also for tools, tents, kayaks, decoration, and jewellery. (Figure 17) Although the skin is a by-product, it generates the economic value and thus the cash necessary to acquire other resources for commodities and food, as well as covering the cost of the hunting.⁷²

This high degree of resource efficiency is also present in Canadian Inuit and indigenous communities. Besides food, the seal products that are made from the waste of the animal hold significant cultural and traditional value. Sealing also creates job opportunities; Over 25% of households participate in the hunts

⁶⁷ Cf. 64

⁶⁸ Cf. 63

⁶⁹ Cf. 64

⁷⁰ Cf. 64

⁷¹ Canadian Seal Products, 'Culture and Livelihood', 2020

⁷² Cf. 64

and it accounts for 25-35% of their annual income. At the national level, the economic contribution of sealing is small but for more than 6000 individuals it is a significant source of income.⁷³

An income, which is now endangered because of an EU ban on seal products which was implemented in 2009.



Figure 17: Inuit guide and seal hunter Martika Qujaukitsoq in his hunting gear made entirely out of traditional animal products. Photo by Justin Lewis

5.3.3. Seal Fur: Harmful Laws

The 2009 EU ban on seal products and thus the non-use of seal skin was a continuation of a white-harp seal pup fur ban by the European Economic Community imposed in 1983. In the 1970's, people began protesting against sealing after photos of commercial white-harp seal hunts began circulating the globe. However, few protestors distinguished between the commercial hunts that were depicted, and subsistence sealing that had sustained generations of coastal people for centuries. Instead of focusing on commercial sealing they wanted all hunting to be stopped.⁷⁴

In 2009 the ban was extended to all seal products as a response to public moral concerns about animal welfare. While the Inuit and other indigenous communities that are recognized as subsistence hunters are, although regulated, still allowed to place traditionally hunted seal products on the Eu market⁷⁵, the campaign against sealing and the demonization of sealers and their cultures succeeded in destroying European interest in seal products. With Europe having been the primary market for seal products at the time, the indigenous had now lost their main source of income.⁷⁶

The ban does not save the animals since the seals are still hunted for food, and neither does it reduce environmental risks or ecological scarcities. The ban generates waste and decreases resource efficiency, makes livelihood less sustainable and thus decreases human well-being and social equity in indigenous cultures.⁷⁷

Additionally, Justin Lewis described in an Article about an Inuit community in Greenland that because of today's strict hunting restrictions fewer Inuit youth than ever learn how to hunt and because of that, a way of life, and a core element of Inuit culture gets lost.⁷⁸

⁷³ Cf. 71

⁷⁴ Danita Catherine Burke, 'How Europe's ban on seal products turned frontier communities into pariahs', 2021

⁷⁵ European Commission, 'The EU seal regime', 2016

⁷⁶ Cf. 74

⁷⁷ Cf. 64

⁷⁸ Justin Lewis, 'The Seal Hunters of Greenland: A Photo Essay', 2015

5.4. Ethics: Where our Real Focus Should Be

When talking about ethics, there are far more devastating threats to whale stocks than indigenous whaling. We have established that indigenous whaling is not the problem that many believe it to be. And now that most countries have ceased commercial whaling, even that is no longer the whales' biggest threat. So why are whales still being endangered?

Even though the stocks have recovered since commercial whaling was banned, they are still not where they should be. There are many reasons for this but the three biggest threats to whales as of the 21st century are noise pollution, bycatch, and ocean acidity.⁷⁹ That is where our focus should be today.

5.4.1. Noise Pollution

Our oceans are infested with millions of ships and boats, and they all generate noise. While this doesn't disturb us it harms the animals that live in the ocean and especially marine mammals. Whales use sounds to communicate underwater. Most of these are below our frequency range which means we cannot hear them. These sounds can travel for hundreds of kilometers and some whales use them to navigate through the water and locate other whales. This is referred to as echolocation and is mainly practiced by toothed whales.

This entire system of navigation is now disturbed by our marine activities. Over 50% of the noise that ships make are infrasound and cannot be heard by us, for example the vibration of the engine against the body of a ship, and the thousands of water bubbles bursting at the gate of the turbines. But all those things cause major stress hormones in marine mammals. The problem is not only the millions of ships that are crossing our oceans every day, even in marine protected areas (Figure 18&19), but also the modern techniques like SONAR, that states and the military use to detect oil or enemy submarines. SONAR, a technique that sends out seismic blasts every couple of seconds, is somewhat similar to the echolocation used by whales but causes extreme harm to them. These blasts heavily damage the inner ear of whales and can cause bleedings inside their brains.

Another threat of noise pollution is that it leads to marine mammals leaving their natural habitat to unknown and unfitting areas they can't adapt to, which in turn leads to most of them dying. An example of this were mass-strandings in the Bahamas in 2000.⁸⁰

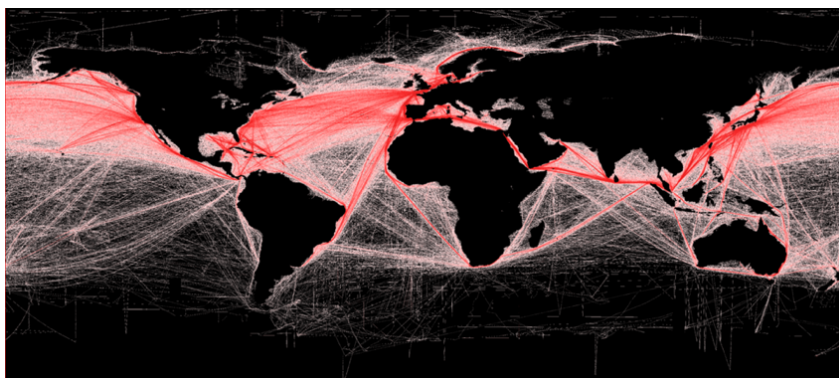


Figure 18: Shipping routes. Graphic by B.S. Halpern

⁷⁹ Melissa Denchak, 'Ocean Pollution: The Dirty Facts', 2022

⁸⁰ Michelle Dougherty et al., 'Sonic Sea', 2017



Figure 19: A minke whale next to a cargo ship in the Gulf of Saint Lawrence: a marine protected area. Photo by Stella Liedtke

5.4.2. Ocean Acidity

The rising ocean acidity is one of the biggest environmental problems we are currently facing. The root cause is the enormous amount of carbon dioxide that we release into the air. About 30% of this is absorbed by seawater into the ocean, where a chemical reaction takes place, and a higher concentration of hydrogen ions is produced.⁸¹ It essentially means that the ocean is becoming more and more an acidic environment which causes chalk-based plants and organisms like phytoplankton to dissolve. This is a huge problem because phytoplankton, a microscopic plant, is the bottom of almost every food chain. Every marine creature is reliant on phytoplankton to survive, whether that is directly or not. When there is no food evidentially there are no whales. And when there are no whales, certain natural processes that would help the environment discontinue, e.g., whale falls or the whale pump. (See chapter 6.1.1., page 19)

Ocean acidity and the dying of algae doesn't only affect the whales but also us directly. Phytoplankton and other algae absorb a third of all human-generated carbon dioxide from the atmosphere through photosynthesis and are responsible for generating between 50 and 85% of our oxygen. This is more than every second breath we take.⁸²

5.4.3. Fishing Nets and Bycatch

Commercial fishing is a huge business nowadays and the nets used are specifically designed to catch as many fish as possible, using large-scale, commercial trawlers. Those nets span hundreds of kilometers as vast walls of netting with thousands of baited hooks and rope lines connected to traps on the sea floor. They are extremely deadly labyrinths, not only for fish. About 40% of a trawler's total haul is comprised of untargeted marine animals, referred to as "bycatch".⁸³ Annually, this is about 10.3 tons of bycatch that is discarded each year, including the 1000 cetaceans caught as bycatch each day. Getting entangled in a fishing net often means certain death for marine mammals since they need air to survive and freeing themselves is a race against time. Additionally, the more they struggle to free themselves to avoid suffocation, the more entangled they become. Some whales tear muscles, break teeth and sheer off fins. Some manage to break free but swim for months with gear wrapped around their bodies, entrapping them and sawing into their flesh until they end up dying from infections or starvation.⁸⁴

⁸¹ American Oceans, 'What is ocean acidification?', 2022

⁸² Dany Zbinden, 'Talk: Phytoplankton, Whales and Climate: What is the ecological relation between phytoplankton and whales and what is their significance for the climate?', 2022

⁸³ Aisling Maria Cronin, 'Tragic image shows the real catch of the day thanks to our appetite for fish', 2015

⁸⁴ Cf. 13

5.5. The Traces Left by Commercial Whaling and Excessive Fishing in the Gulf of Saint Lawrence

Even in protected areas you can see the effect of these fishing nets. In the Gulf of Saint Lawrence, a marine protected area, about 50% of all minke whales have scars from fishing gears. And these 50% only represent the small portion of animals that were able to free themselves from the nets.

When we look at belugas, we can see that in addition to the anthropogenic scars from vessels or entanglements, some of them have puncture scars, either from bullets, harpoons, or arrows. (Figure 20) These scars are a direct trace of the whaling that used to be conducted in the Gulf of Saint Lawrence and they are now used to identify the whales through photo-ID.⁸⁵ Like the minke whale in Figure 21 which was seen for the first time this year. He is now registered under the name ‘Sparrow’ in Mériscope’s photo-identification catalogue holding the data of over 360 different minke whale individuals.

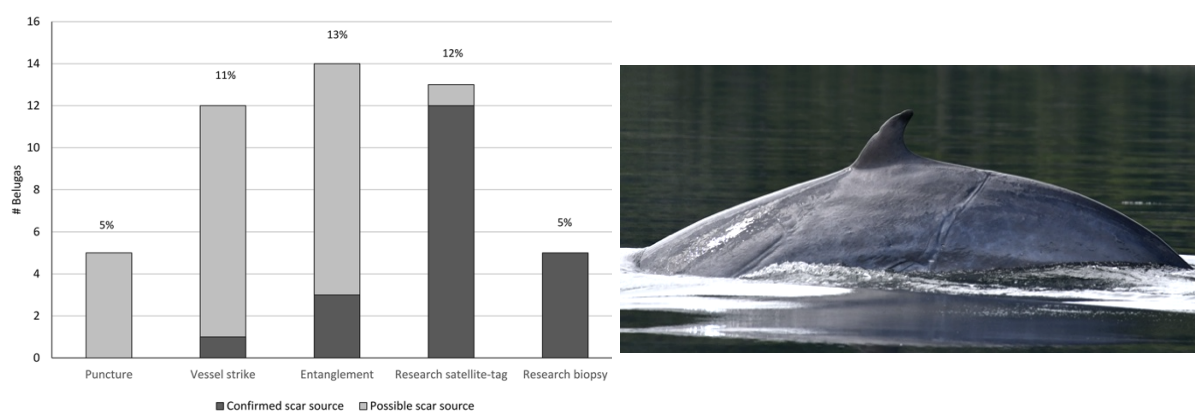


Figure 20: Percentage and number of anthropogenic scars, according to scar type, on Cook Inlet beluga whales from the combined 2005-17 photo-ID catalogue and necropsy datasets.

Figure 21: Minke whale "Sparrow" in the Gulf of Saint Lawrence with scars on his left side and dorsal (Damage categories: LSF, LSC, LSP, DCE, DFT)⁸⁶. Photo by Stella Liedtke

6. Why Excessive Whaling is Our Problem

This Matura thesis has discussed many dangers towards whales. But why is this even necessary? Why do we have to save cetaceans from dying out?

As I outlined earlier, there are certain natural processes initiated by whales that are beneficial for the environment. Whales act as ecosystem engineers. Their impact on the natural oceanic ecosystem may seem small but is actually of much greater importance.

6.1. Ecosystem Engineers

6.1.1. Whale Pump and the Great Whale Conveyor Belt

Whales act as ecosystem engineers by circulating huge amounts of nutrients like iron and nitrogen. They dive deep to feed and then come back to the surface to breath and poo. In the process they release

⁸⁵ Tamara L Maguire et al., ‘Anthropogenic Scarring in Long-term Photo-identification Records of Cook Inlet Beluga Whales, *Delphinapterus leucas*’, 2022

⁸⁶ Left side front, left side center, left side peduncle, dorsal cutting edge, dorsal fin tip

nutrients that are vital for phytoplankton which serve as the basis for the entire marine ecosystem. This process is called Whale Pump and is closely related to the Great Whale Conveyor Belt.

Whales undertake long migrations throughout the year; from high latitude, cold, nutrient-rich regions, where they feed, to low latitude, warm, nutrient-poor regions, where they breed. Through these migrations they transport essential nutrients, either on their skin or in their urine. Like with the whale pump, this is beneficial for other animals and algae since the excretions serve as a brilliant fertilizer for phytoplankton.⁸⁷

6.1.2. Whale Falls

Besides being a transporter of important nutrients, even the death of a whale is beneficial to the environment. Throughout its life, a whale filters massive amounts of carbon from the atmosphere and stores it inside its body. When the whales die, their carcass sinks to the seabed and takes those huge amounts of carbon stored in their body with them. From then on, the carbon is locked away in deep ocean sediments for hundreds or thousands of years and isn't released back into the atmosphere. Their decaying carcass also provides food and a habitat for up to 200 species! It serves as an oasis for marine life.

Whale falls account for roughly 60% of annual carbon sequestration which is more than all salt marsh, sea grass and kelp combined.⁸⁸ (See 'Attachments': [4])

6.2. What Can We Do to Preserve Healthy Whale Stocks

Now we know why we must save the whales but still not how this could be achieved. Obviously, knowledge is the first and maybe the most important step for change. If even a small portion of the world's population fully knew about our planet and its biological networks, we would be able to achieve a lot more in terms of protecting it.

People need to do research from trusted and varying sources; the more the merrier. But for them to even notice the problem, it is vital for those who already know about it to spread information and awareness and encourage people to get involved more with the environment.

The next step would be activism; to a single person it seems like there is little that one can do to help, but in truth everyone can contribute in various ways. Donating to aid organizations is already a good deed, however it is important to do research on their trustworthiness. For many, the only way to help whales is indirectly through plastic reduction, recycling, or food diets. You don't necessarily have to be vegetarian or vegan, it already helps to just be more mindful about what you eat. Especially when buying fish, you should keep an eye on where they come from and how they were caught. For example, pole and line-caught or one-by-one fishing is much more sustainable than the industrial farms that produce thousands of kilos of fish each year.

And for those who live near the sea; you can help in local events like beach cleaning. Because the ocean and our marine giants are worth saving.

⁸⁷ WDC, 'The Green Whale', 2022

⁸⁸ Cf. 87

7. Conclusion

I've learnt a lot about whales and our oceans during my stay at Mériscope in Canada. Additionally, I read a lot of different papers and articles about the matter, allowing me over time to develop my own opinion. It is obvious to me that the laws regarding commercial whaling are insufficient, and some of those regarding aboriginal whaling even counterproductive and downright ridiculous. Public pressure is generally a good thing but may sometimes lead into false directions. In my opinion a public viewpoint should never be a deciding factor in a scientific problem.

On one hand, the disdain towards whaling is very beneficial for marine mammals when talking about commercial whaling. Despite there being almost no laws to regulate the hunting of marine mammals, almost all nations have ceased industrial whaling. With the main exception being of course Japan, Iceland, and Norway. On the other hand, we cannot only care about the whales but must also consider the aboriginal cultures. For the preservation of their cultures and traditions whaling is necessary as it has always played a big role in their culture and daily life. Normally, I wouldn't see this as a good enough reason to continue the hunting of marine mammals but since their hunting activity is not deteriorating whale stocks and is very environmentally friendly as well, I don't see the need to prohibit these hunts.

Before I studied this topic, I wasn't aware of the connection between climate change and whaling. But I came to realize just how closely interlinked these two topics are. All these processes that take place in a whale's life are already impressive but the difference they make for the environment is enormous. I would never have thought that whales are indirectly responsible for cleansing our air and providing us with oxygen.

Throughout the process of researching and writing my thesis my viewpoints changed a lot and I often had to overcome opinions I abided by for many years because I believed them to be the truth. Working on this paper gave me a lot of perspective and one thing that has become more and more prominent is that we really do need to save the whales. Not just for their own sake but also for ours. But we have to truly understand why and how we should protect them. And especially what it is that we must protect them from. Sometimes the most obvious or the easiest answer may not be the correct one.

Acknowledgements

First, I would like to thank Jacqueline Egger, not only for supervising my Matura thesis but also for giving me the amazing opportunity to partake in the Mériscope internship in Canada and for bringing me closer to these wonderful animals. In connection to that I also want to thank Dany Zbinden, the head of Mériscope, for including us in their research and sharing his broad and impressive knowledge about our oceans. I greatly value everything that he has taught us, and his very interesting and helpful insights on whales, the sea, and marine life in general. Everybody at Mériscope was a massive support and the familial environment helped me working on my thesis.

My appreciation especially goes out to my friend Stella who joined me in Canada and also worked on her thesis with Mériscope. Her support and insights were highly appreciated. And she took amazing photos of the whales, some you may find in this thesis.

Thank you to Prof. Dr. Ulrike Zeuch for acting as co-referee and being an inspiring person and teacher overall. And finally, thanks to my family for helping me with technological questions, discussing topics, and reading through my paper.

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Attachments

[1] The 15 original signatories to the creation of the IWC in 1946 are Argentina, Australia, Brazil, Canada, Chile, Denmark, France, The Netherlands, New Zealand, Norway, Peru, South Africa, USSR, United Kingdom, United States

[2] Blue Park Criteria



Figure 22: Blue Park Criteria (Marine Protection Atlas)

[3] Catches taken under objection or under reservation since 1985⁸⁹

NATION	AREA	TYPE	SPERM	FIN	SEI	BRYDE'S	MINKE	TOTAL
1985/86 ANTARCTIC SEASON								
USSR	Antarctic	Pelagic	0	0	0	0	3,028	3,028
Japan	Antarctic	Pelagic	0	0	0	0	1,941	1,941
Total			0	0	0	0	4,969	4,969

⁸⁹ IWC, 'Catches Taken under objection or under reservation', 2022

NATION	AREA	TYPE	SPERM	FIN	SEI	BRYDE'S	MINKE	TOTAL
1986 (AND 1986/87 ANTARCTIC SEASON)								
Norway	NE Atlantic	Small type	0	0	0	0	379	379
Japan	Japan	Coastal	200	0	0	2	311	513
Japan	Bonin Is	Coastal	0	0	0	315	0	315
USSR	Antarctic	Pelagic	0	0	0	0	3,028	3,028
Japan	Antarctic	Pelagic	0	0	0	0	1,941	1,941
Total			200	0	0	317	5,659	6,176
1987 (AND 1987/88 ANTARCTIC SEASON)								
Norway	NE Atlantic	Small type	0	0	0	0	373	373
Japan	Japan	Coastal	188	0	0	11	304	503
Japan	Bonin Is	Coastal	0	0	0	306	0	306
Total			188	0	0	317	677	1,182
1993								
Norway	NE Atlantic	Small type	0	0	0	0	157	157
1994								
Norway	NE Atlantic	Small type	0	0	0	0	206	206
1995								
Norway	NE Atlantic	Small type	0	0	0	0	218	218
1996								
Norway	NE Atlantic	Small type	0	0	0	0	388	388
1997								
Norway	NE Atlantic	Small type	0	0	0	0	503	503
1998								
Norway	NE Atlantic	Small type	0	0	0	0	625	625
1999								
Norway	NE Atlantic	Small type	0	0	0	0	591	591
2000								
Norway	NE Atlantic	Small type	0	0	0	0	487	487
2001								
Norway	NE Atlantic	Small type	0	0	0	0	552	552
2002								
Norway	NE Atlantic	Small type	0	0	0	0	634	634
2003								
Norway	NE Atlantic	Small type	0	0	0	0	647	647
2004								
Norway	NE Atlantic	Small type	0	0	0	0	544	544
2005								
Norway	NE Atlantic	Small type	0	0	0	0	639	639

NATION	AREA	TYPE	SPERM	FIN	SEI	BRYDE'S	MINKE	TOTAL
2006								
Norway	NE Atlantic	Small type	0	0	0	0	545	545
Iceland	Iceland	Small type	0	0	0	0	1	1
Iceland	W. Iceland	Coastal	0	7	0	0	0	7
Total			0	7	0	0	546	553
2007								
Norway	NE Atlantic	Small type	0	0	0	0	597	597
Iceland	Iceland	Small type	0	0	0	0	6	6
Total			0	0	0	0	603	603
2008								
Norway	NE Atlantic	Small type	0	0	0	0	536	536
Iceland	Iceland	Small type	0	0	0	0	38	38
Total			0	0	0	0	574	574
2009								
Norway	NE Atlantic	Small type	0	0	0	0	484	484
Iceland	Iceland	Small type	0	0	0	0	81	81
Iceland	W. Iceland	Coastal	0	125	0	0	0	125
Total			0	125	0	0	565	690
2010								
Norway	NE Atlantic	Small type	0	0	0	0	468	468
Iceland	Iceland	Small type	0	0	0	0	60	60
Iceland	W. Iceland	Coastal	0	148	0	0	0	148
Total			0	148	0	0	528	676
2011								
Norway	NE Atlantic	Small type	0	0	0	0	533	533
Iceland	Iceland	Small type	0	0	0	0	58	58
Total			0	0	0	0	591	591
2012								
Norway	NE Atlantic	Small type	0	0	0	0	464	464
Iceland	Iceland	Small type	0	0	0	0	52	52
Total			0	0	0	0	516	516
2013								
Norway	NE Atlantic	Small type	0	0	0	0	594	594
Iceland	Iceland	Small type	0	0	0	0	35	35
Iceland	W. Iceland	Coastal	0	134	0	0	0	134
Total			0	134	0	0	629	763
2014								
Norway	NE Atlantic	Small type	0	0	0	0	736	736
Iceland	Iceland	Small type	0	0	0	0	24	24
Iceland	W. Iceland	Coastal	0	137	0	0	0	137
Total			0	137	0	0	760	897

NATION	AREA	TYPE	SPERM	FIN	SEI	BRYDE'S	MINKE	TOTAL
2015								
Norway	NE Atlantic	Small type	0	0	0	0	660	660
Iceland	Iceland	Small type	0	0	0	0	29	29
Iceland	W. Iceland	Coastal	0	155	0	0	0	155
Total			0	155	0	0	689	844
2016								
Norway	NE Atlantic	Small type	0	0	0	0	591	591
Iceland	Iceland	Small type	0	0	0	0	46	46
Total			0	0	0	0	637	637
2017								
Norway	NE Atlantic	Small type	0	0	0	0	432	432
Iceland	Iceland	Small type	0	0	0	0	17	17
Total			0	0	0	0	449	449
2018								
Norway	NE Atlantic	Small type	0	0	0	0	454	454
Iceland	Iceland	Small type	0	0	0	0	6	6
Iceland	W. Iceland	Coastal	0	146	0	0	0	146
Total			0	146	0	0	460	606
2019								
Norway	NE Atlantic	Small type	0	0	0	0	429	429
Japan	Japan	Coastal	0	0	0	0	33	33
Japan	NW Pacific	Pelagic	0	0	25	187	11	223
Total			0	0	25	187	473	685
2020								
Norway	NE Atlantic	Small type	0	0	0	0	503	503
Japan	Japan	Coastal	0	0	0	0	95	95
Japan	NW Pacific	Pelagic	0	0	25	187	0	212
Total			0	0	25	187	598	810
2021								
Norway	NE Atlantic	Small type	0	0	0	0	577	577
Iceland	Iceland	Small type	0	0	0	0	1	1
Japan	Japan	Coastal	0	0	0	0	91	91
Japan	NW Pacific	Pelagic	0	0	25	187	0	212
Total			0	0	25	187	669	881

[4] Whale Fall

— When whales die they still help combat the climate crisis —

WHALE FALL

1

WHEN A WHALE DIES, THEIR CARCASS SINKS TO THE OCEAN FLOOR
This is called a 'whale fall'

2

REBUILDING WHALE POPULATIONS WOULD LEAD TO
145,000 TONNES
OF CLIMATE HARMING CARBON BEING LOCKED AWAY INSIDE WHALE CARCASSES EVERY YEAR
This is equivalent to the weight of:

approx 41,000 FEMALE AFRICAN ELEPHANTS	approx 16 EIFFEL TOWERS	approx 21,000 TYRANNOSAURUS REX
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3

THE WHALE CARCASSES STORE THE CARBON FOR THOUSANDS OF YEARS
This process prevents the carbon from being released back into the atmosphere,
helping to combat climate change

4

WHALE CARCASSES ALSO PROVIDE FOOD AND A
HOME FOR UP TO 200 SPECIES

WHALES.ORG

WHALE AND
DOLPHIN
CONSERVATION
WDC

Figure 23: Whale Fall (WDC)

Declaration

I, Leandra Wyss, hereby declare that I have written this thesis «Whaling Policy in Relation to Animal Welfare and Environmental Protection» independently and without the use of other sources or aids than those indicated.

Dietlikon, (date) _____ Signature: _____