



Whale of a Time

... Antarctica, where our columnist spotted whale, as well as penguins, seals, and pelagic birds.

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Last week we shared with you our voyage to Antarctica on the French ship *Le Lyrial*. In that article we spoke about the various professionals who gave lectures aboard the boat. Currently I would like to focus upon why Antarctica is so rich in marine life; people around the globe are captivated by its whales, penguins, seals, and pelagic birds.

Historically the world's interest in the Falkland, Sandwich, Shetland, and South Georgia Islands was a result of their function in whaling operations. As

early as 1904 Norwegian whaler Carl Anton Larsen established a land-based whaling factory in Grytviken, the first of six stations run by the Norwegian company *Compañía Argentina de Pesca* (Argentine Fishing Co.) on South Georgia. The other stations were Husvik, Stromness, Prince Olav, Ocean, and Leith Harbours. In short course 70% of the world's whale oil was produced at these locations in the Antarctic.





The derelict Stromness whaling station processed whale's (1912-1931) primary for oil used in lamps. Today it is a back drop to the lounging fur seals. The large propellers in the foreground tell of its subsequent use as a ship repair yard until 1961. Author.

In the 1920s reliance on shore-based stations diminished because of pelagic factory ships. Half the plants ceased operations by the 1930s and the remainder by 1965. By then over 175,250 whales had been slaughtered. Seals were harvested for fur, and commercial sealing was also part of the Island's economy from 1786-1913. With the advent of whaling stations, both whales and seals were processed at the some of the same facilities from 1909 to 1964.

Earlier sealing ventures beginning in the late 1700s led to estimates of some 1.2 million being killed for their pelts by 1825, and by 1912 the species was nearly extirpated on South Georgia.

Whale oil was used for lighting, margarine, soap, fertilizer, and as a food supplement for farm animals. Bone and baleen were used in garments for collar stays and corset supports, decorative scrimshaw, sewing needles, fishing poles, carriage springs, knife handles, and an endless array of other items.

Today whaling is primarily illegal except in Iceland, Norway, and Japan. Japan participated in an international moratorium on whaling but resumed commercial catch in 2019. In some regions indigenous peoples can harvest limited numbers, e.g. in Greenland and in Neah Bay, Washington State, USA. Iceland has committed to ending whaling by 2024. I'm not well-versed in the particulars of regulations, but I can say that commercial harvest of whales has never proven to be sustainable in terms of protecting the species, and that is why most of the world's biologists embrace a complete halt to it.

Today it is prohibited to visit the large, rusting relics of deteriorating buildings that remain from the whaling industry. They are dangerous structurally and riddled with industrial hazards like asbestos and fuel oil. The only station open to the public is Grytviken, an eerie memorial to a brutal industry. Its

companion facility is the South Georgia Museum; both specialize in interpretation of the sealing and whaling industry. Unfortunately, on the day of our planned excursion a gale of 75-120 mph winds prohibited our going ashore. We did make landing at Stromness, where that whaling station loomed as a continual backdrop to viewing wildlife on shore. I will offer that the finest whaling museum I have ever visited is the New Bedford Whaling Museum, in Massachusetts, and it's a lot easier for people in our region to visit.

To understand why the waters are so rich in wildlife you have to understand something about the world's ocean currents and where they meet and how they are separated. It begins with continental drift. Envision that South America migrated westward from the large land mass Gondwana. The Andes mountain range, running down the western side of this massive puzzle piece (South America), was blocked at the southern tip from moving with the rest of the land mass by the position of Antarctica. This left islands like those composing Tierra de Fuego; even the Falklands and South Georgia are orphaned pieces of the Andes range. Waters were constricted between the two continents, creating the Drake Passage and its dangerous currents.

Antarctica's surface is visible where mountains tower above the icy surface, but most of the land is covered in ice. It nearly doubles in size in the winter with frozen waters, so how does one know when he has actually arrived there? I've paraphrased this question as posed by shipboard biologist/ornithologist Rich Pagen.

Pagen and other biologists contend it is about water temperature: "You reach Antarctica when you cross the Antarctic Convergence." This is where the warmer northern waters meet the currents around Antarctica. The boundary fluctuates between the Southern Ocean to the south and the Atlantic, Pacific, and Indian oceans to the north, at a latitude of approximately 55° south: this 20-30 mile swath of water is what is known as the Antarctic Convergence.

Below this invisible band of water is the Antarctic Circumpolar Current, an eastward-flowing sea that acts like a natural barrier. The Circumpolar Current is denser, colder, and has a lower salinity than the Convergence which it abuts.

Where these waters meet it causes a magical feeding ground for many species. Circumpolar cold waters sink

beneath warmer waters and these rise to the surface – referred to as upwelling. And when this happens, nutrient-enriched waters are forced to the top: nutrients that support phytoplankton and the krill that feed upon it. Krill is a small crustacean and in Antarctica, krill is king. Although to the untrained eye it resembles shrimp, it is in a different family. And krill are the engine that supports the food chain. Squid eat krill, and squid is a major prey species for sperm whales and seal.



Krill. Photo credit NOAA.

Fish, whales, penguins, seals, seabirds, squid, and a host of others all rely on krill. The only way to know definitively that you have entered the Convergence zone is to monitor the ocean's temperature - or you could simply observe the increased activity on the top of the water. Whales, penguins, seals, birds, birds, and more birds are evident. If the sea bed gets closer to

the surface krill becomes more concentrated and a bonanza of feeding activity often occurs.



Antarctic fur seals primary diet is krill of which a single animal consumes 440,000 pounds of the crustacean each year. They also will eat fish, squid, and seabirds all of which also eat krill. Author.



The rockhopper penguin diet is primarily krill, they eat other crustaceans as well as squid. This nesting rockhopper will incubate for its egg for 33-35 days. Author.

Traversing the Convergence our ship was surrounded by humpback whales; we counted upwards of 14. Each blew a column of moist spray high into the air as it surfaced, then its dorsal fin appeared, and lastly it displayed its signature T shaped tails as it submerged. These creatures move with what appears to be slow, graceful purpose.





With this humpback whale as an example, here is what watchers generally see – first a spout or blow which generally a mist that includes air, mucus, germs and sometimes seawater. Then the dorsal fin is exposed and lastly the signature T shaped tail. With its signature underside markings, liken to an individual's fingerprint each is unique to the animal, allows whales to be cataloged around the world. The website Happy Whale allow amateur and a professional photographers to post these signature sightings. Author.

Our Zodiac pilots were equally enthusiastic about viewing wildlife at

eye level. In Neko Bay a minke whale appeared right at the boat's bow and we also saw a young humpback. On another Zodiac excursion in Port Lockroy a humpback rose up within as few as 100' of our craft, and then others appeared. It was awesome.

Today the industries that support the British Overseas Territory of South Georgia and the neighboring Sandwich and Falkland Islands are fishing, sheep/wool, and tourism. No longer are whales processed for profit on their shores.

Locally, whale have been making headlines as seemingly unprecedented number of dead whales have been washing ashore, with many ideas circulating as to the cause. Whales are becoming more plentiful around the world and that is news to be celebrated. As their populations have increased we hear of more boat collisions, netting incidents, and beach strandings. But we also have increased chances of seeing them. Sitting on the beach in Ocean City I have spotted common minke whales. Cape May tourists also enjoy viewing whales and dolphins from charter boats and the beach.

Only time will tell whether the whales will overcome the ravages of centuries

of hunting. Will there be enough genetic diversity to sustain their populations going forward? It is my hope that future generations will still enjoy the misty blow of a whale and the massive wave of a tail as it resubmerges into the depths of the sea.



Southern right whale. Author.