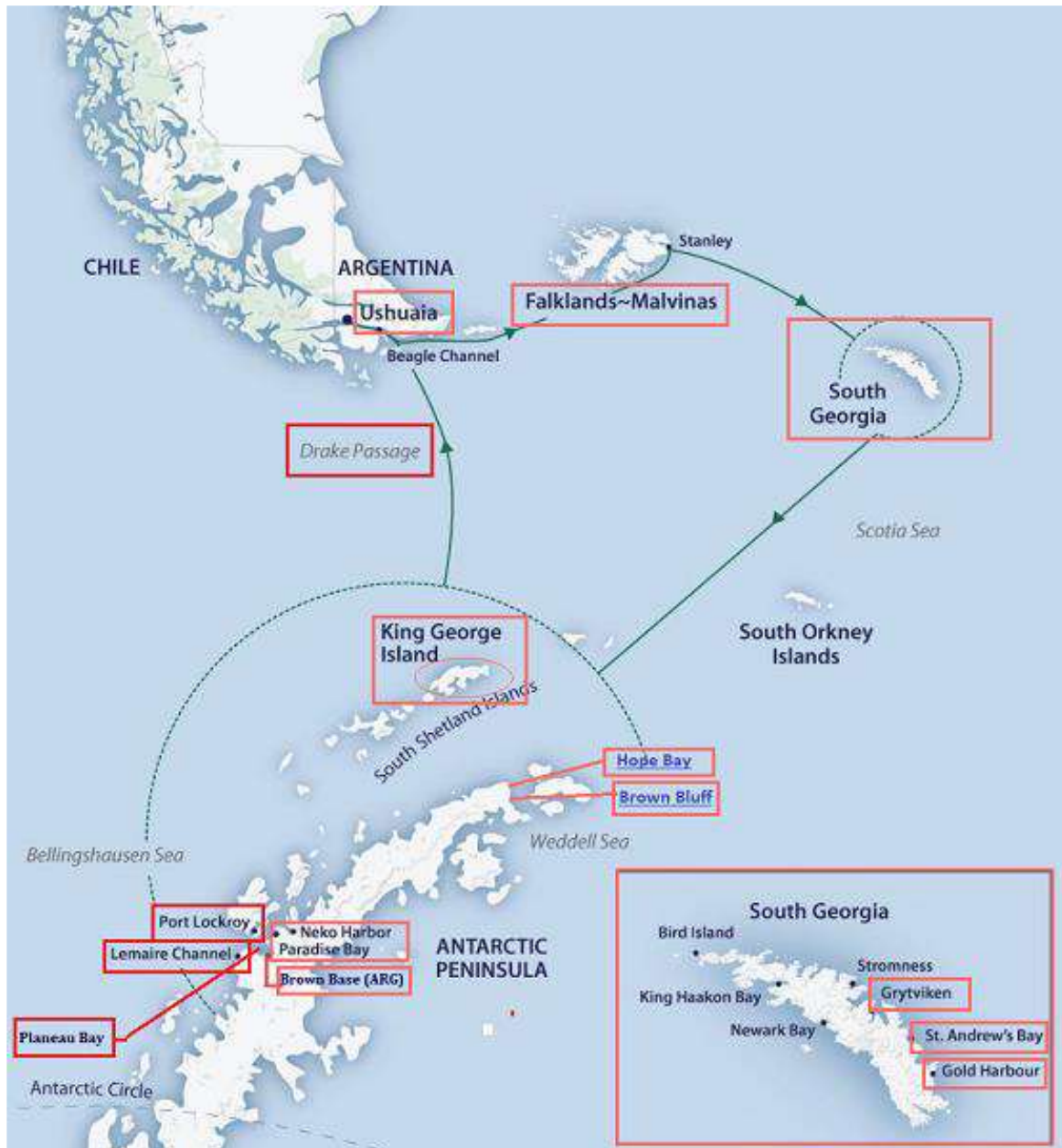


TRAVEL WITH THE MCHALES TO ANTARCTICA (VIRTUALLY)

ROAD SCHOLAR PROGRAM

APRIL 1-5, 2024



TRAVEL WITH MCHALES TO ANTARCTICA (VIRTUALLY) APRIL 1-5, 2024

Road Scholar (Elderhostel) offers a Zoom trip to the Antarctica with Miko Golachowski, a biologist who was stationed at the Polish Antarctic Station “Henryk Arctowski” and became the commander of the 32nd Polish Antarctic Expedition. He lives in Poland. Our Group leader is Nicole Flores Jara, who was born and raised in Chile. This travelogue is 25 pages explaining the history of the continent, the animals, and explorations that occurred. There are 50 pictures included. Make sure you get to the last page for the surprise link!

If you are not familiar with using Zoom, Road Scholar provides assistance to make sure you can connect and enjoy the program. We connected our laptop to our large screen TV so we could enjoy Antarctica “from the comfort of our living room!”

There are 34 people in our group and we met at the southern most point, Ushuaia, Argentina and set sail to the Falkland Islands which are 417 miles away.



Before every lecture we have trivia questions to see how well we are listening:

- 1 – Henry the Navigator was a Prince of 1) Spain, 2) UK, or 3) **Portugal**
- 2 – How do Birds fly over water 1) **dynamic soaring**, 2) dynamic gliding, 3) passive soaring.
- 3 – What do the Falkland islanders call themselves? 1) Falklanders 2) **Kelpers**, 3) Selkies

Our group met in Ushuaia, Argentina, a town at the southern most point from where the ship leaves. We find that the timeline of our trip is approximately February, summer time. Our information about Antarctica is Eurocentric, even though the Chinese had traveled there around 1421, we do not cover their explorations. The Falkland Islands are made up of about 270 small islands with approx. 3,546 people. We stopped at Saunders Island where we take a zodiac to the land and can “walk” around seeing the Rockhoppers (small penguins); then on to Westpoint and Stanley, the capital.



If the poop of the penguin or animal is **red** they eat krill, if white, they eat fish.

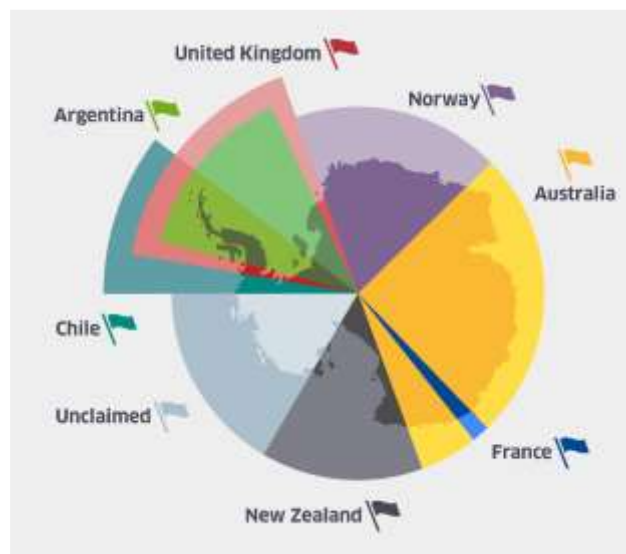
70% of the world's fresh water is in Antarctica. The water or rather the ice is so pure there, containing no minerals so you can't really drink the melted ice without adding minerals.

Birds have pneumatic bones, beak and respiratory system that allows them to soar. The air goes from the lungs to and throughout the air sacs. Types of flight 1) flapping wings, 2) soaring over water so the wing shape is different than soaring over land. Soaring over land uses updrafts; there are no updrafts over water. Above water, they use *dynamic soaring* to conserve energy. Seabirds are long lived, mate for life, and have an incredible sense of smell.

Some of the birds we see and hear are the Giant Southern Petrels, Snow Petrels, Wilson Storm Petrel, Antarctic Prion, Brown Skuas, Snowy Sheathbill, Cape Petrels, Southern Giant-Petrel, Antarctic/Southern Fulmar, Wandering albatross, Antarctic Tern and Kelp Gull. Materials given to us prior to the lectures include descriptions and pictures of all these birds.

There are no native people of the Falkland, so no country can really claim these islands. However, the Dutch, UK, French, UK, France, Spain, and finally UK in 1833 have claimed the islands. When Spain claimed the Falklands in 1811, the Argentinians said they inherited the claim. There is an international law that if you claim a territory for 150 years, then that territory is yours. The British were on the islands since 1833, 149 years later was when the Argentinians invaded in 1982!

No one OWNS the Falklands, but seven countries claim a portion.



April 2 – South Georgia Island (part of the Falklands)

South Georgia island is 100 miles x 20 and had a huge animal population. This is where we saw over 450,000 pairs of Empire Penguins. 450,000 males/450,000 females/450,000 baby chicks! Penguins are counted in mating



pairs and the largest colony of them are here on South Georgia. As far as the eye can see there are penguins covering the beach, the land and stretching toward the mountains.

South Georgia Island is the story of Shackelton and the explorations to the South pole. There were 5 expeditions:

- 1) British National Antarctic Expedition with Capt Robert Falcon Scott on the ship Discovery, 1901-04. Shackelton was the 3rd mate on this voyage. The team got only to the 82nd degree south when they turned back due to the lack of vitamin C and frostbite. They had dogs with them, but didn't know how to use them. Their clothes were wool which is not good in this area, because if they get wet they won't dry.
- 2) Nimrod, 1907-09 which took ponies and dogs with them. On this trip, Shackelton acquired the nickname "the Boss," due to his exceptional leadership skills. The ponies didn't fare well as they sank into the snow/ice. The last pony fell into a crevasse taking the remaining food. The expedition got to the 88th degree and suffered frostbite, low temperatures, snow glare blindness and altitude sickness (9,000 ft). They did achieve several feats: reached further south than anyone else; first ascent of an Antarctic mountain (Mt Erebus), and completed the first crossing of a trans-Antarctic mountain range. After calculating the amount of food left, Shackelton made the decision to turn back. He realized if they continued, they would die on the return trip. Thus, his saying of "Better a live donkey than a dead lion" Summed up his thoughts.
- 3) Race to the Pole in 1911-12. Amundsen got closer to the South pole than Scott who had more men and animals. Amundsen got to the south pole in 100 days and when Scott arrived 3 weeks later, he saw the tents left by Amundsen. This discovery was sad for the Scott team and they all died on the return trip.
- 4) The Endurance (Imperial Trans-Antarctic Expedition, 1914-17 - Shackelton's goal was to cross the continent from the Weddell Sea to the Ross Sea via the south pole. The Endurance arrived at the Weddell Sea with 67-69 dogs and a number of ponies. Then the ship was ice bound and finally crushed on Oct 27, 1915. Shackelton, using small boats, took his crew to Elephant Island. From there with just 5 men Shackelton headed out in a 23 foot boat on a 16 day, 800 mile journey though stormy seas and arrived on the south coast of South Georgia. Shackelton and 2 of his men, Frank Worsley & Tom Crean, set out on

foot to cross the island (22 miles) to the Stromness Whaling Station taking 10 days. A whaling vessel left and rescued his stranded men on the south coast. All told it took 4 months and 4 trips to rescue all the men. Not man died! There are three men who were with Shackleton on several of his trips: Frank Worsley (Capt of the ship), Frank Wild, and Frank Hurley (photographer).



- 5) Shackleton-Rowett Expedition, 1921-22. Frank Worsley and Wild came with him once again. Shackleton had a heart attack and died January 5, 1922. He is buried at Grytviken on South Georgia. We visited the grave and raised a toast to Shackleton. The ashes of Frank Wild, who had been Shackleton's second-in-command on the Imperial Trans-Antarctic Expedition, were moved next to Shackleton in 2011.

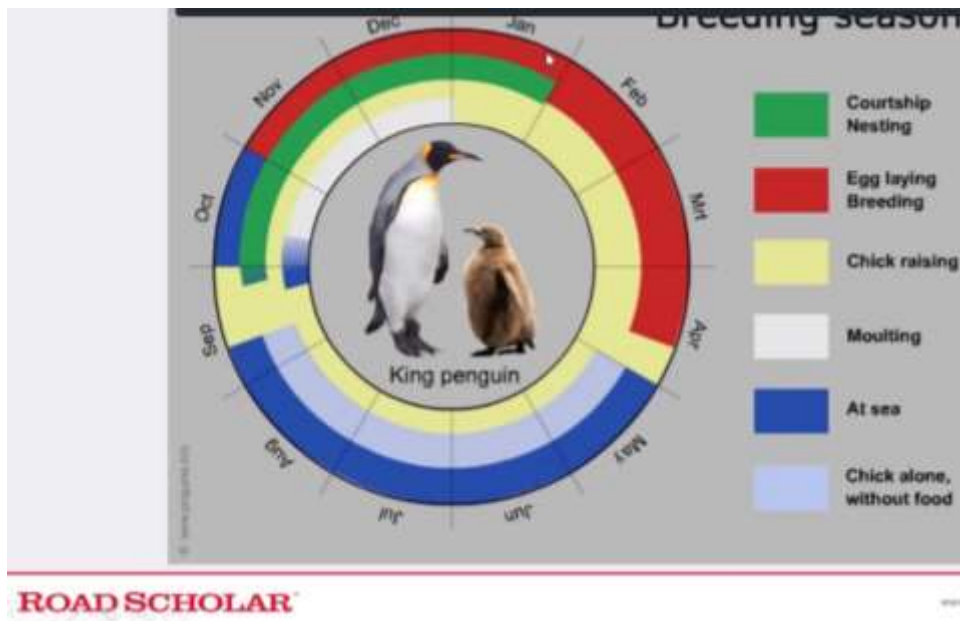


Shackleton grave in Grytviken

The intended path of Shackelton was from the Weddell Sea overland via the South Pole to the Ross Sea.



On to the animals on South Georgia island. The island is awesome with its history, wildlife and landscape. We stopped at 3 places Grytviken, St Andrews Bay, and Gold Harbor. Grytviken was the site of the 1st land-based whaling station established in 1904 by a Norwegian, Carl Anton Larsen. The 2nd stop is a more tricky landing for the landing is on the ocean side and can be rough waves. This is the home of the King Penguins, fur seals and elephant seals. The King penguin weighs about 21-40 pounds and stands 28-39 inches. Mating and raising the chicks is a year long process.



The breeding cycle for penguins is Nov-Apr but visitors will see chicks all year round. Chicks are wooly which keeps them warm while on the land. Once they molt, they get their waterproof feathers and will head to sea. On our excursions we see penguins, fur seals, and elephant seals all roaming together.



Elephant seals are large seals with males weighing 5 tons or more, females are about 1 ton and 9-10 feet. The males fight to become the “master” of the beach. A male can only do this once in his life for he is too worn out to compete a second time. The females control the beach and will select the best male for mating. Once mating is finished, the males are no longer needed for the females raise the young. The males can have up to 100 females in their “harem” and he gets to mate with them all. However, the offspring from this mating cycle are born the following year. This current year the pups born are from last year’s mating. The pups weigh about 60-90

pounds. The younger, defeated males hang around the outside of the harem looking for a chance to “sneak” in and mate with a female.

The fur seals have ears and dense fur and are very aggressive and will bite “your head off!!” The front flippers are used for locomotion.



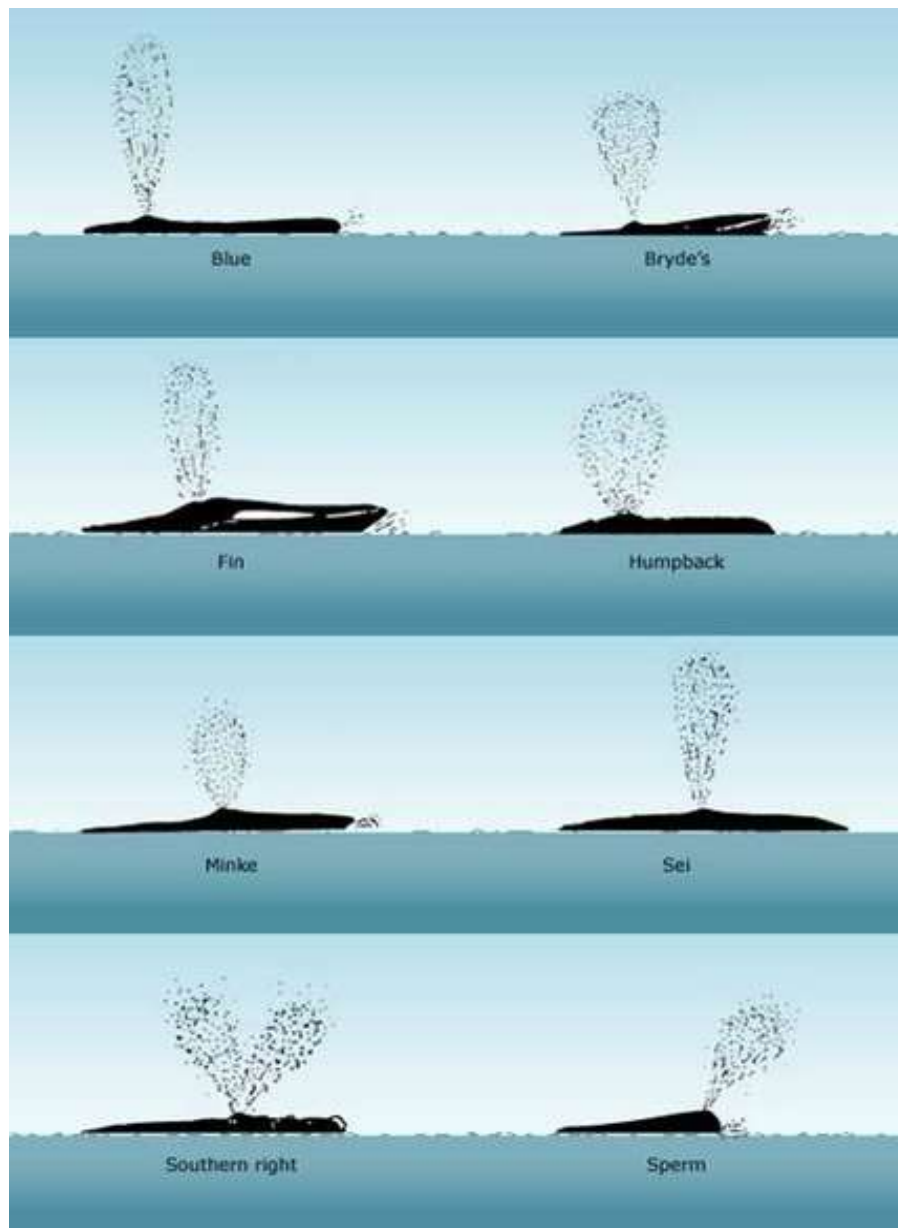
The amazing part about today was the scenery. One thinks of Antarctica as icy and snowy with lots of wind. But during the summer months, there is no snow or ice on South Georgia where the largest colony of penguins live. The land is green and brown with beach sand and rocks.



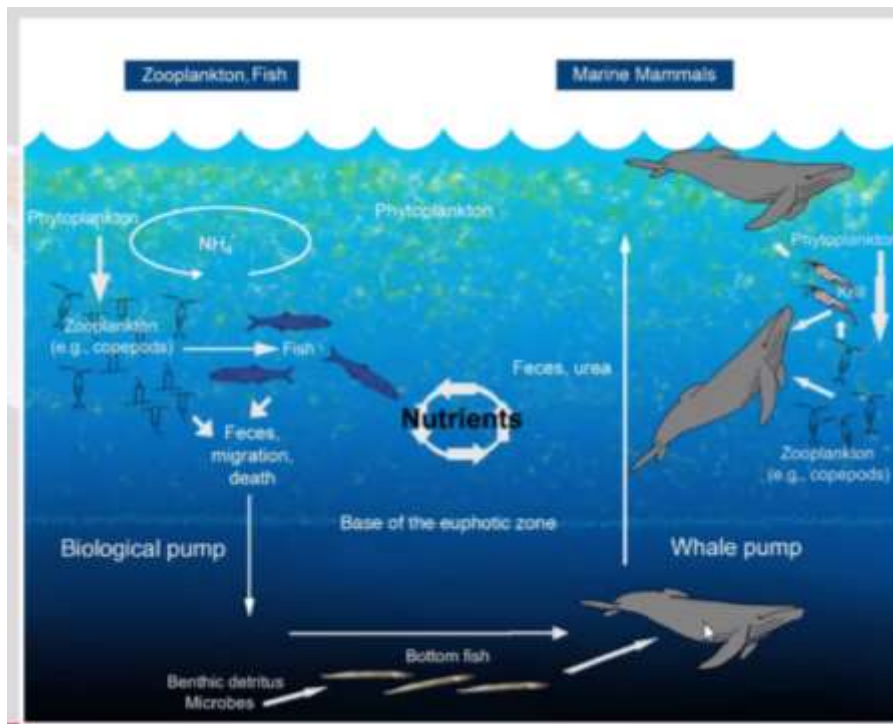
Day 3 – April 3

Our lecture the first hour is on whales and their evolution. Whales have fins & tails and are insulated with a large layer of fat. Their circulation limits heat loss. Of course, their special sense is echolocation. They are Cetaceans and the defining characteristic of cetaceans is a thick and dense lip (pachyosteosclerotic involucrum) of an ear bone (the tympanic). This unique feature is absent in modern terrestrial artiodactyls (from which the cetaceans evolved) and is suggested to be important in underwater hearing.

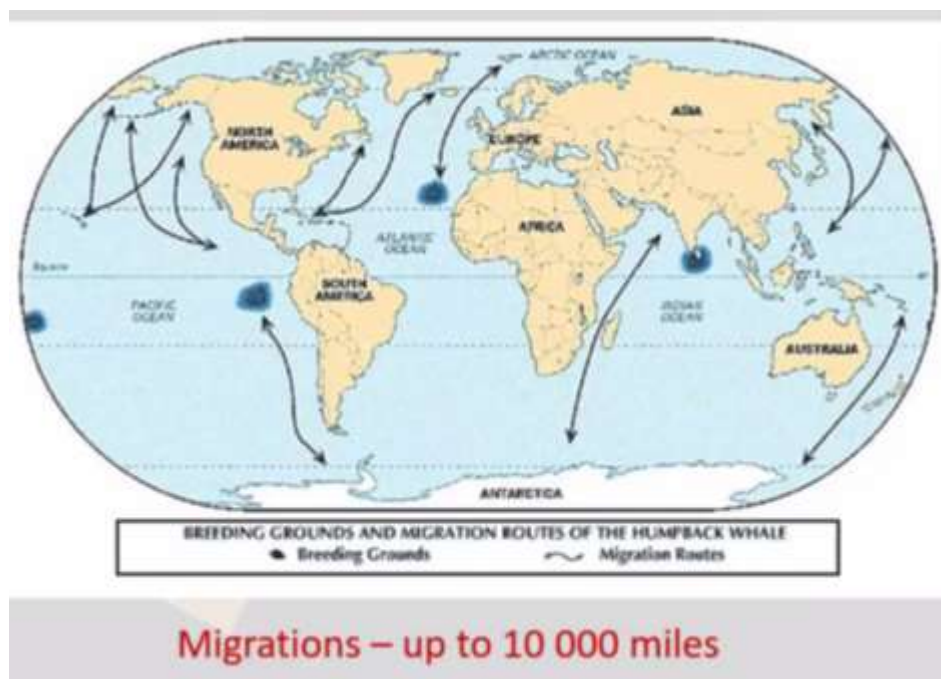
We hear about the different whales with Sperm whales which have the largest brain and are about 60 ft and 57 tons.. They are smart and their head has the sperm oil (spermaceti). Males are much larger than the females. When you see whales blowing, you can identify the type of whale by the shape and size of the blow. The blow is air from the lungs. Blue whales are large at 108 ft and 200 tons. Humpback whales will protect other species from orcas including protecting seals.



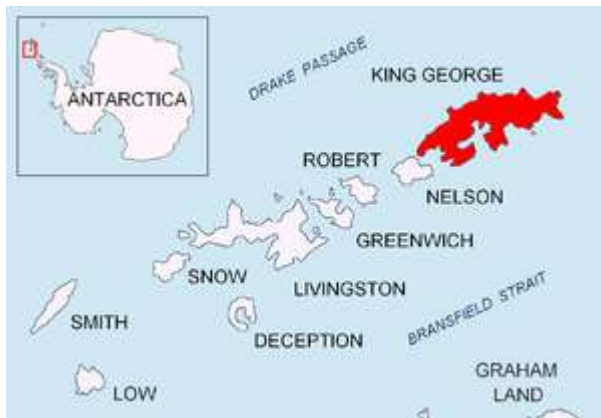
Pollution in the oceans has an affect on the whales. 100 years ago everything in the ocean was edible so the whales and fish could consume everything. Now, there is plastic and other pollutants in the oceans and they haven't learned to differentiate. Whales are the fertilizers of the ocean. The poop they expel is at the surface level and is used by phytoplankton which then captures the CO2. What falls to the bottom is used by the bottom feeders. A question was asked about the death of whales we are seeing now. When the military is actively using sonar you will see an increase in whale deaths.



The migration of whales is shown in this picture. When the northern whales migrate they do so in the summer and the southern whales are not migrating north, so they don't run into each other.



Next, we went to the Shetland Islands and visited the Polish station, Henryk Arctowski, on St George Island. The Shetlands are very volcanic and glacier covered. Miko toured us through the Polish station showing us the common rooms, the kitchen, the recreation area, library, and the storage area for food stuffs. The station has a 3-year supply of food, however, during the winter, ships don't come to bring fresh fruits and vegetables. They have close and friendly relations with all the stations. He showed some of the research that is carried out at the station.



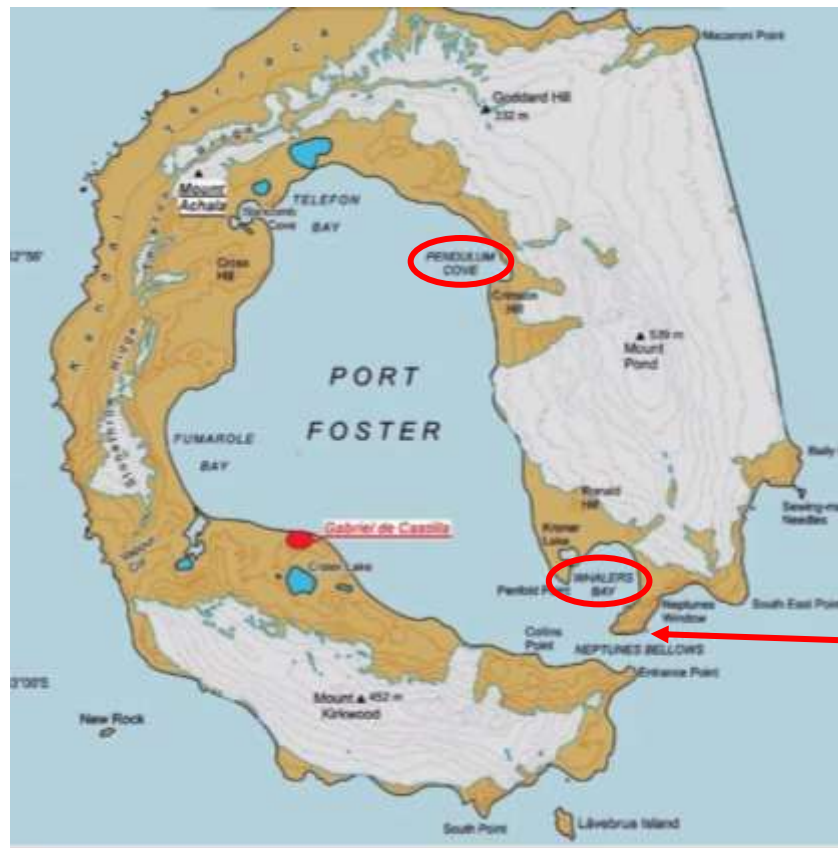
Polish station

US station, Copacabana

We visited Deception Island which is part of the Shetlands.. This too was a volcanic island and the entrance to the 2nd largest natural harbor in the world is through a small pass at the southern end of the island. We left the ship and board a zodiac for our 3 landings.



Deception Island



We made the first stop at Whalers Bay where the views are stunning and fur seals are all around. Fur seals were wiped out in the 1820's which then started the whale harvest. Now both species have returned in abundance. We do see Chinstrap penguins. We stopped at Pendulum Cove and then at Baily Head where the large colony of Chinstrap penguins live. The ground is very white with all the molted feathers, looking like snow flying everywhere. Molting is very stressful for the penguins. They can be aggressive and grumpy.

We returned to the ship and were treated with Orca whales swimming around us. They are friendly & inquisitive creatures.



Nicole reminded us of a doctor who came down with appendicitis in 1961 and there was no way to get him off the ice. He operated on himself to remove the appendix. Chile made a rule that if you apply to go to live at one of the stations that you must have your appendix and wisdom teeth removed!

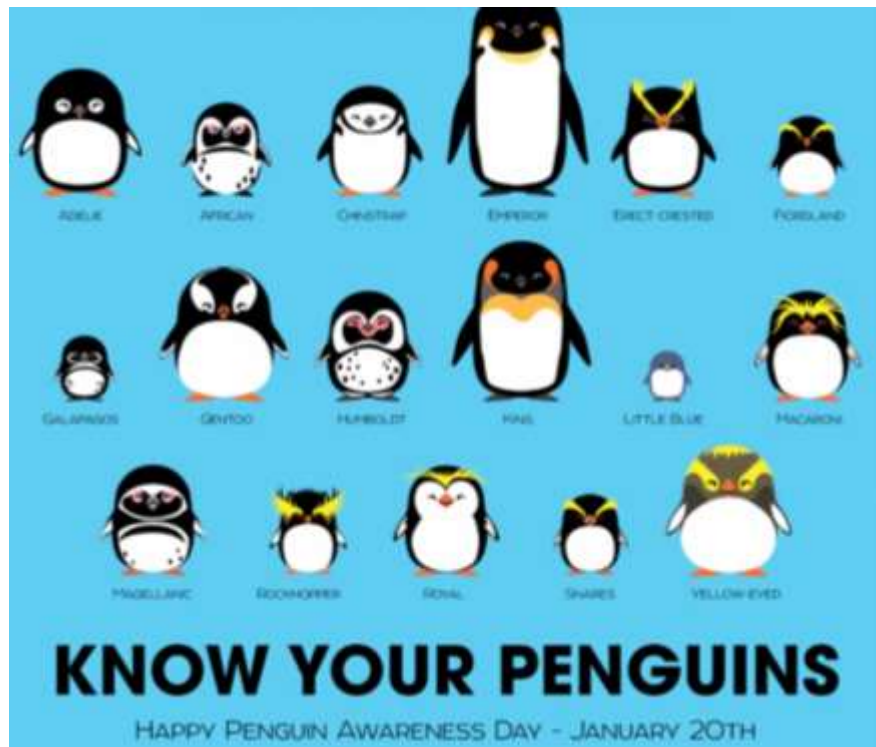
Thursday April 4th

Today we talked about penguins and visited a number of colonies. We will have seen 6 different types of penguins on this trip: Rockhopper, Magellanic, Adelie, Chinstrap, Gentoo, & King. We will not see the Emperor or the Macaroni penguin.



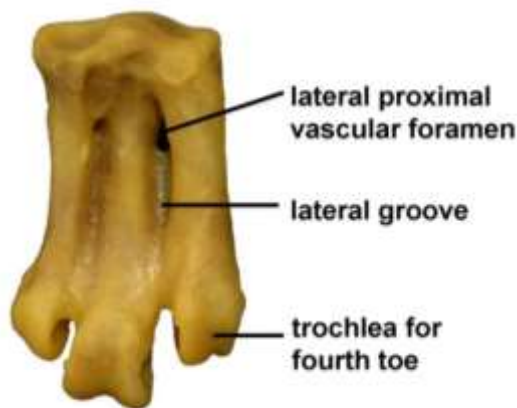
Penguin species have distinguishing heads or "hairdos." The word Penguin comes from a Welsh word meaning white head. The Great Auk was the original northern penguin from which all the rest are descendants. They are flightless birds and all live south of the equator.

They have counter shading meaning that their backs are black so when they are in the ocean, and they are viewed from above they are more difficult to see. Conversely, the stomach is white and when viewed from below the ocean surface they are hard to see.

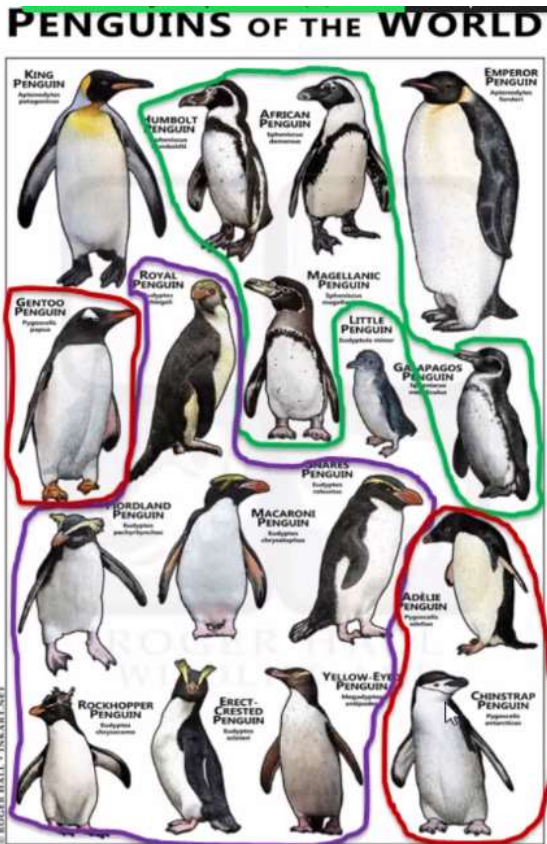


Why are penguins only in the southern hemisphere? Depends on two things 1) evolutionary history and 2) environmental conditions. Penguins evolved around New Zealand and Australia. Once someone transported penguins to Norway, but they didn't survive for the Norwegians forgot that foxes live in the environment! There are penguins around the Galapagos which is the furthest north, but there are also sharks in the waters that love penguins. The waters are colder around the Galapagos for the current comes from the Antarctic.

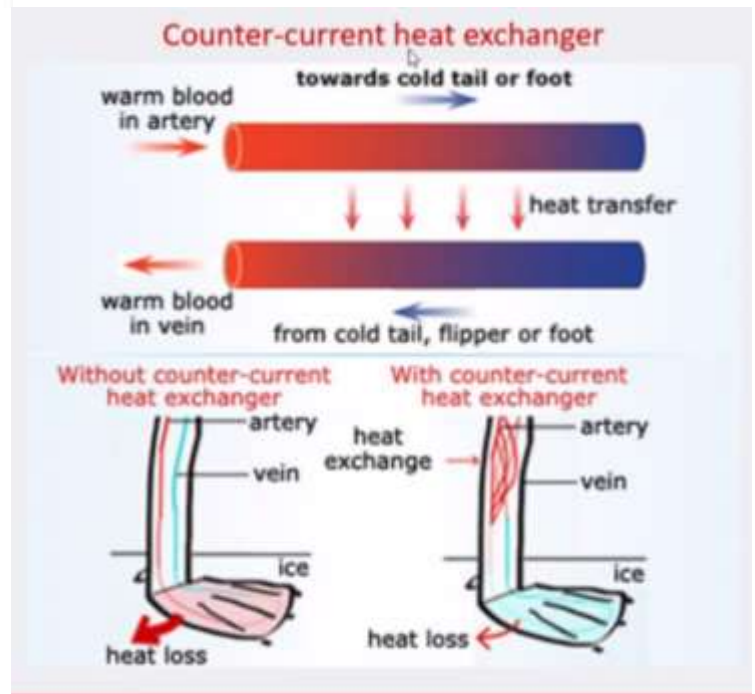
There are 3 major groupings of penguins: Brush-tailed, Crested, & long winged. The first penguin discovered was 62 million years ago, was about 3 ft in height, flightless and with a specific bone – Tarsometatarsus – in the foot.



Since they can measure the tarsometatarsus, the height of the penguin can be determined.



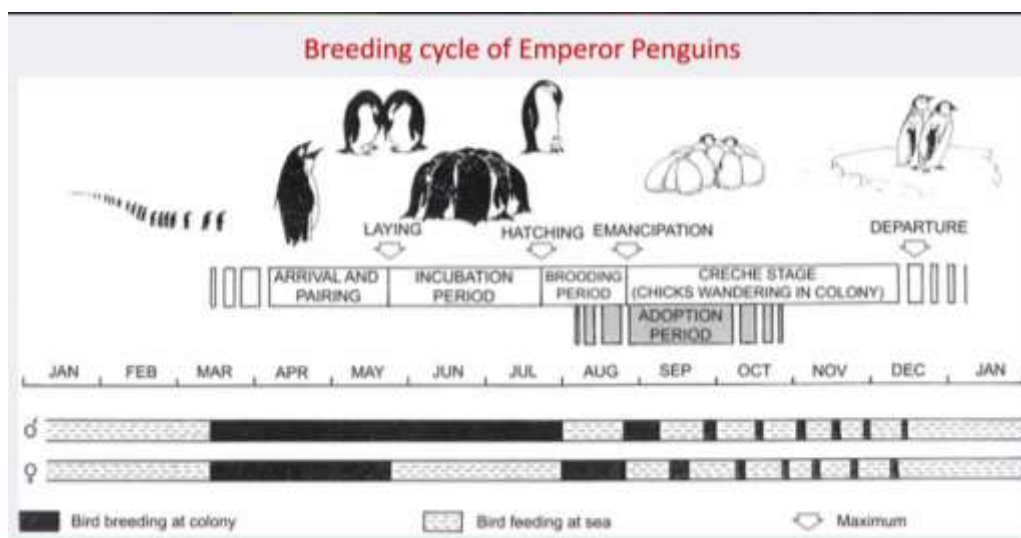
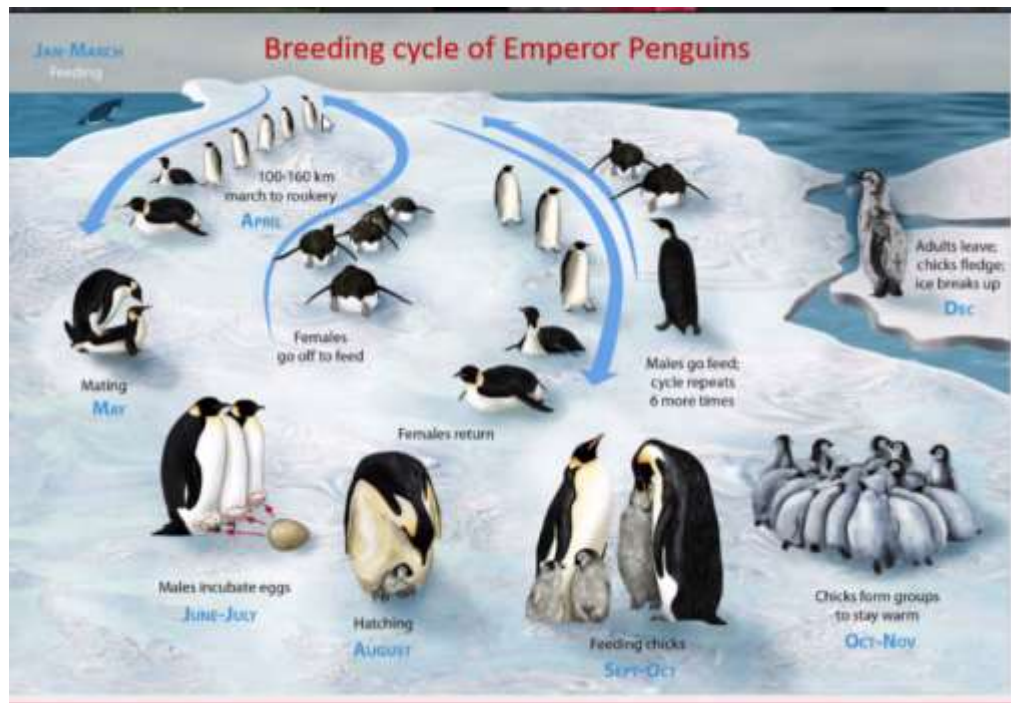
We had a very interesting discussion about the circulation of blood in the penguin. The penguin stands on the ice and the feet do get cold. If the blood circulated to the feet, the warm blood would cool down and be returned to the heart which may cause a heart attack. The penguin has a unique system called a counter current heat exchange. The blood circulates down to the legs where it splits into multiple vessels. Here the warm blood is exchanged with the cold blood from the feet.



As the penguins fly or swim through the water, they squeeze the air from their feathers. This creates a trail of bubbles that allows the body to be propelled with less friction.

The Emperor penguin was the last to be discovered for they are further south on the continent itself. The breeding period for these penguins is longer and the chicks are actually born in the winter. Jan-Mar the penguins are feeding and storing up body fat. In April, they trek 62-100 miles to the rookery across the ice. May is the mating period, and the eggs are laid in June/July and hatched in August. In Aug, the female penguin returns to the sea to feed leaving the male to watch over the chick. Both the eggs and chicks are balanced on the feet of the penguin for the ice would freeze them. The females and males trade times to return to the sea for feeding. Oct/Nov the chicks are roaming around, still with their down coats, and huddling to stay warm. Inside the huddle it can be 60 degrees, outside is -30. In Dec the adults leave, and the chicks leave as the ice breaks up. The chicks wander around the ocean for 3 years then return for mating.

Nests are built with pebbles, either stolen from other nests or carried in their beaks. The nest are 2 wing lengths apart, so if you want to steal a rock from a neighbor, you have to leave your nest which leaves it open for someone to steal from you! As the chicks march to the sea, which is closer because it is summer and the ice has melted, they are sometimes accosted by gulls and terns. The Adelie penguin will come to the rescue as they are known not to be messed with!



The Age of Exploration

The Sixth London Geographical Congress was held in 1895 which addressed the question of what is Antarctica – an island, a continent, or a peninsula. Various expeditions were initiated. The Belgica (Belgium) was in 1897-99 led by Amundsen and Frederick Cook. Cook was a doctor and actually saved everyone on the journey. The Polish scientist Henryk Arctowski was part of the expedition. The expedition was plagued from the beginning. They left one month late; there were 6 nationalities with no one common language; no one was paid; the crew rotated due to death, storms, or accidents. Scurvy was a problem. Cook knew that if you ate meat you could replace the metabolic products to prevent scurvy. Thus, seals and penguins were part of the diet. This expedition took many geological, geomagnetic, and other observations.

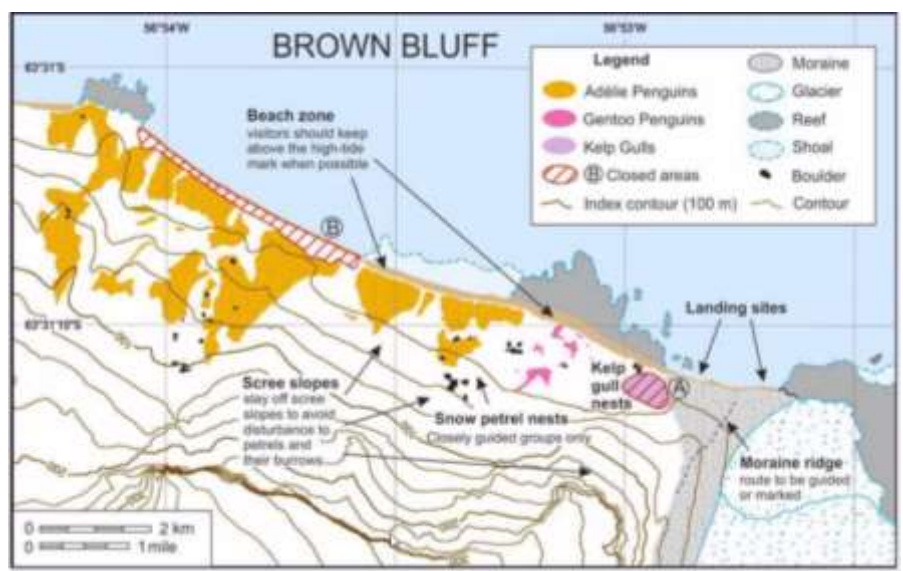
The Swedish expedition was the most amazing because the ship's crew split into three groups and neither of the groups knew what had happened to the other group. The groups were only about 60 miles apart, but of course no communications. They ran into each other by serendipity, and they all made it back to Sweden. The Swedish expedition was 1901-03 led by Nils Nordenskjold and Capt Larson who started the whaling station at Grytviken on South Georgia island in 1904.

In 1903-5 the French Charcot went twice looking for the Swedish expedition and they finally met in Argentina. Charcot brought pigs onboard the ship. One pig became a pet and he was with the ship as it crossed the equator twice. Finally the pig, Toby, died in Antarctica and he was buried there.

1908-10 was the Pourquoi expedition (What for? Is the translation). Argentina was the first country to offer a tourist opportunity to Antarctica in Feb 1959. The tourists were dressed in fur coats and did have the proper clothing to stay warm.

A question was asked – how did the men stay warm when they wintered over in their ice bound ships. They had coal with them and plenty of warm clothes. Another question was how does the chick know its parents. Humans key in on facial recognition, penguins key in on voice calls. The parents and chick recognize the calls of each other.

Our last event of the day was 2 landings and a visit to Paradise Bay. We stopped at Brown Bluff where the Argentinian station is located. Gentoo & Adelie penguins were at this landing. We found that when the chicks are hatched and are fed in the nest they don't leave to go to the bathroom. They project their poop at least 40 inches from the nest. Thus, a ring of poop surrounds the nest.



Cameras are used for many research projects. The camera is mounted to count the penguins, see the arrival and departure, etc. The tour companies assist the scientists by changing out the batteries, the sim cards, and other maintenance on the cameras.



We visit the Gentoo penguins at Neko Harbor, which is named after a whaling ship. We just cruise in the zodiac around Paradise Bay looking at the icebergs, glaciers, and beautiful scenery.







Last Day – April 5th

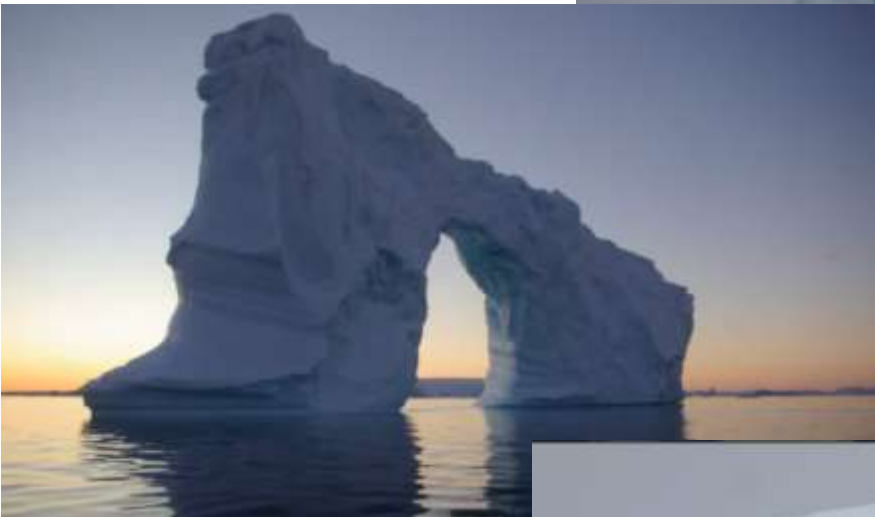
We start out learning about the history of the Antarctic Treaty. Twelve countries were the original signers of the treaty in 1959. The purpose of the treaty is to ensure peaceful cooperation with no political issues. All stations and equipment are open to inspection at any time. The boundary is 60 degrees south. In 1991, 52 nations agreed on an environmental protocol to prohibit mining and marine pollution. In 2041 this treaty will lapse and there may be issues since technology has changed so much regarding mining for there are mineral resources. Fisheries is an issue such that krill is being affected thus reducing the amount of krill for the animals who depend on the Krill. Gentoo & chinstrap penguins eat lots of krill and are moving further south. Tourism is not covered by this treaty.

Climate change was discussed. Several of the stations are monitoring temperature and are seeing a small increase in water temperature causes some sea life to move further south. They see crabs moving south in the warmer temperature and becoming a predator for other species. Change in the air temperature allows more rain to fall rather than snow. Thus, the baby penguins whose coat is fur and is not waterproof. Thus, they get wet, are cold and will die. Whereas if they had their adult feathers they would be insulated from the cold. Scientists have found that ticks live in the penguin ears and are inactive in cold weather but become active when it gets warmer. Microplastics are a problem in the ocean water. Apparently, laundry fibers in fleece jackets are found after washing and now the scientists don't wash their jackets in Antarctica.

More and more tourists are coming to Antarctica. There were 44,000 vessels that landed on the various islands and it is increasing every year. The negative impact is that invasive species tag along on the clothes, shoes, etc and arrive by accident. Everyone going on and off the the ships must walk through a cleansing solution both feet, hiking sticks, & camera pods. As people walk on the defined paths, those paths become more and more ingrained in the landscape. A major positive effect of visitors is that they are ambassadors to the world and carry the story forward. Trips are expensive, thus only the affluent can afford the trips.

Our next discussion topic is about the seals or pinnipeds, those with flipper legs. True seals have no ears and are insulated with blubber. They can put their flippers under their body and move. They are awkward on land but agile in the water. There are 5 species of true seals: elephant seals, crabeater seals, Weddell seals, Leopard seals (which are predators), and Ross seals. The leopard seals catch the penguins and slap them very hard on the water and actually strip the skin off. They stalk their prey but penguins can outmaneuver them.

Our last afternoon we cruise among the icebergs in the Lemaire channel, Pleneau Bay, Antarctic circle, & Port Lockroy. Miko, our guide says that animals bring you to Antarctica, but the ice and scenery brings you back!







Red stars – Day 1 – Ushuaia, Falkland Island

Blue star – Day 2 – South George

Green stars – Day 3 – Shetland Islands, Polish Ice Station, King George Island

Purple stars – Day 4 – Deception Island, Neko Harbor, Paradise Bay, Brown Bluff

Yellow stars – Day 5 – Lemaine Channel, Port Lockroy, Antarctic Circle

The best of all, here is a link to a 5 minute video of our trip! Fantastic trip and we highly recommend it to those who can't travel or who wish to do the trip from the comfort of their living room!

https://drive.google.com/file/d/1SgH_poMo9EgArOUR3N6CMVky42uM69rG/view?usp=sharing

Thank you for coming along on our trip with us! Hope you enjoyed Antarctica as much as we did.

