

Why antarctica is so special essay sample



**ASSIGN
BUSTER**

About 470 million years ago, the freezing and desolate place that we now know as Antarctica used to be near the equator. This was because it was part of Gondwana (is sometimes referred to as a super-continent) that Australia, India, Africa and South-America now surround.

The mere fact that Antarctica covers a massive amount of the Earth's continental crust is a major aspect when considering just how special and environmentally spectacular Antarctica is. Unlike the Arctic, Antarctica is an actual land mass. But a continental crust covers it with an average of 3 kilometres thick!

In this booklet, I will try and explain why Antarctica is so special and therefore why we need to protect it, keep it as it has always been and not to exploit it.

During the winter Antarctica doubles in size because of the large amount of sea ice that forms at its perimeter!

The warmest it ever gets in Antarctica is 0 degrees Centigrade. Unlikely as it seems, Antarctica is also the driest place in the world. The amount of moisture in the air is about equal to that of in the hottest deserts. It is the windiest place on Earth; 320 km per hour gusts of wind have been recorded. Being almost twice the size of Australia, it covers 13, 661, 000 square kilometres making it the fifth largest continent in the world!

Why Is Antarctica Is So Special?

Geology

The Transantarctic Mountains divide the continent in two parts. West Antarctica, which is south of the Pacific and Indian oceans, is the larger and under the ice it is a continent about as large as Australia. On the other side of the mountains, south of the Atlantic Ocean, is East Antarctica. If the ice were removed, it would be a collection of islands.

The first and probably the least obvious is ice. It's said that the ice covering Antarctica accounts for 90% of the world's fresh water. This could serve a good use by delivering fresh water to places that need it the most.

A non-renewable energy resource that is certain to be plentiful in Antarctica is coal. Being one of the world's most used energy resources, coal is going to be in great demand.

The coal was formed along the coasts of Antarctica between 35 and 55 million years ago when Antarctica was covered in swamps.

There is speculation to whether or not there is actually petroleum in Antarctica or not. Petroleum is formed when small animal remains and plants are left to decompose in a marine environment. The remains build up as hydrocarbons and get trapped up a layer of rock and are not allowed to escape. The cap rocks store up the petroleum underground until it is pumped out of wells.

The speculation comes from when other sources of petroleum were found on other Southern continents which would at one time have been connected.

As well as non-metals, Antarctica also holds many metallic minerals such as cobalt, chromium, nickel, vanadium, copper, iron and platinum. To actually

<https://assignbuster.com/why-antarctica-is-so-special-essay-sample/>

research and find these deposits would mean making costly geophysical surveying and very deep ice drilling.

Emperor Penguin: When you think of wildlife in Antarctica, the first things that spring to mind are Penguins. In the picture below, there are about 22,000 breeding Emperor Penguins at the rookery:

Some 200,000 pairs breed in about 40 colonies scattered around the Antarctic continent and since they are the largest penguin species, they need to be protected from any human interference. They stand about 115 centimetres tall and can live for more than 40 years.

They live on a diet of fish, krill and squid, but before the food can be completely digested, it has to be swallowed and then regurgitated because the food is too cold.

Weddell Seal: The Weddell Seals usually range more to the South of Antarctica. The females can grow up to ten feet, and can weigh up to 1000 pounds!

Since they don't migrate north for the winter, they take cover under the vast sea ice that during the coldest months. They have to keep their breathing holes open by gnawing at the edges of the holes. Although a supply of air is what they need to stay alive, their lives are shortened by sustained damage to the teeth and gums.

Weddell Seals can remain under water for up to an hour, diving to depths of 6000 feet. They use sonar to detect and then hunt food. They breed on the ice in spring.

<https://assignbuster.com/why-antarctica-is-so-special-essay-sample/>

Sperm Whale: The sperm whale is a toothed whale that lives in pods. It has a huge brain that weighs about 20 pounds (9 kg); it is the largest brain of any animal. The sperm whale has a single blowhole that is s-shaped and about 20 inches long. The blowhole is located on the left side of the front of its huge head. The sperm whale has a 4-12 inch thick layer of blubber.

Sperm whales produce ambergris, a dark, waxy substance (related to cholesterol) that is produced in the lower intestines, and is sometimes found containing squid beaks. Ambergris may help protect the sperm whale from the stings on the giant squid, its major food. The sperm whale may vomit large lumps of ambergris up.

Sperm Whales are the largest toothed Whales; Adults can grow up to about 50-60 feet (17-20 m) long, weighing about 40-50 tons (36-45 tonnes). Females are smaller, about 33-40 feet (11-13 m) long, weighing about 14-18 tons.

Sperm Whales are strictly carnivorous and mainly eat giant squid, fish, octopus and skate. They have a life expectancy of up to 70 years and it's estimated that there are only about 200, 000 of them left in the world. This is why we must protect Antarctica and the Whales.

Snow Petrels: Are pure white birds with black beaks and eyes. They are about the size of a pigeon and arguably the most beautiful bird in the Antarctic.

They are usually seen in hundreds and spread out over a large nesting area instead of arranged into colonies like the other Antarctic birds.

They largely feed on krill, so they need to be by the sea in order to fish. Therefore they are mostly found along the coasts of Antarctica.

Blue Whales: For a start, the Blue Whale is the world's largest animal...ever. Now saying that that in it's self is not an extremely important reason to protect Antarctica and it's wildlife would be preposterous.

There are only about eleven thousand Blue Whales left in the world, and because Antarctica has one of the largest populations of Blue Whales, we need to make sure that there is no human interference to unbalance this already fragile environment.

Blue Whales can grow up to 100 feet long and can weigh up to 150 tons. Although their size is enormous, they only eat krill and small crustaceans. They communicate by emitting low frequency that can be heard from distance of 100 miles away.

Possible Threats To Antarctica:

Fishing

Fisheries in Antarctica are huge; in fact they are out of proportion to the rest of the world. But our appetite for fish products is equally huge. With improvements to fishing technology, the past century has seen many repetitions of great and poor sales, where booms of intensive fishing of a species has led to depletion of one species, and a switch to a new species.

Earlier this century Blue Whales, Southern Right Whales and Humpbacks were nearly hunted to extinction, but they are now gradually recovering

thanks to the international regulation of whaling. Today the entire area around the continent of Antarctica has been declared an international whale sanctuary, but many accuse some nations (i. e. Japan) of continuing to hunt Minke whales.

It's the fact that Whales are worth so much that makes people want to hunt them. Japan, being a country that loves fish so much, would pay highly for some whale meat and in some countries the bones are used in some medicines.

Krill has attracted the attention of some countries – Japan and Russian are two – that have sought to convert it to a food for humans, but there have been problems in making it good to eat. Current catch levels are rising, but are probably not at a dangerous level yet.

Even though it is a remote wilderness Antarctica is affected by human activity. Deposits of the pesticide DDT have been found in seals, the eggs and bodies of penguins and in the snow. The scientific research bases situated in Antarctica have created waste, which has been dumped in the sea or on land, and they compete with wildlife for space in the scarce ice-free areas. Some fish species have been depleted after over-fishing by commercial fleets.

But it is hunting that has caused huge declines in seal and great whale populations. The fur and elephant seals were almost wiped out in the 19th century but have gradually recovered. Whale hunting reduced the numbers of all species apart from the smaller Minke whale, to the position where there

were too few to hunt. Blue whales are at less than one per cent of their original numbers and are still not increasing despite years of protection.

Tipping:

Because the world is quickly developing new ways to produce energy, food and materials. The old procedures and mechanical waste have to be scrapped. Many businesses do not want to recycle goods because in some cases it is more expensive than just throwing it away.

Businesses that are working particularly near to Antarctica may see it as a perfect opportunity to dump rubbish and chemicals in the vast and unused space. This creates lots of problems for the natural cycles that happen in Antarctica. Scraps of metal strewn across their own habitat can kill the wildlife that lives there.

Towing Of Ice Bergs:

Now at a first glance, the thought of towing an iceberg all the way from the great ' Place Of Extremes' sounds like a ludicrous idea, but they can be of some use.

Because Antarctica holds 9% of the world's water. Then some people think that a useful thing to do would be to bring some of that vast quantity of water to somewhere that needs it. Places that would benefit the most from the bergs are going to be places with the same extremes, but the opposites of them i. e. countries on the equator.

The bergs also pose a scientific value: because some of them have been frozen for thousands and in some cases millions of years, the air bubbles trapped inside them could help scientists in finding out what the Earth's atmosphere was like a long time ago. Furthermore, it might be able to help explain if Antarctica was always an area of complete wasteland.

Global Warming:

The scientists in Antarctica have discovered that the amount of carbon dioxide in the Earth's atmosphere has been rising at a 'remarkable rate'. This is a great concern because many scientists believe that carbon dioxide acts as a Global warming gas - trapping heat near the Earth's surface and therefore gradually heating up the planet. This change in climate could mean widespread flooding for many people if some of the ice in Antarctica was ever going to melt.

Researchers estimate that if the Global sea level rose because of Antarctica's ice caps melting. Huge cities (New York, London and Honk Kong) of the world would be drowned because the sea level would rise about 230 feet!

The Future Of Antarctica:

I think that the future of Antarctica falls into two possible outcomes; either we exploit Antarctica, or we don't.

The only real option for me is not to exploit it. Hopefully I have shown just why we need to leave Antarctica alone and not destroy it for its wealth of resources.

<https://assignbuster.com/why-antarctica-is-so-special-essay-sample/>

Although I know that the best answer to this fundamental question is not to destroy Antarctica, I'm a realist and therefore I know that someday or other, someone is going to either mine for gold, oil or plutonium, or fish for Blue Whales.

So I think that not one, but two questions stand to answer. One being – What is going to happen to Antarctica in the future? And the second one being – How do we prevent people from exploiting Antarctica?

For the first question, I think that the simplest answer is the easiest; do nothing. Now I know that this is an almost impossible theory to execute, but maybe if we could leave it until its completely vital that we need to use the resources. Hopefully, this won't be for a couple of hundred years or more, but if we could find out another way to produce electricity say (preferably a renewable energy resource) or even better; try and make better use of the renewable energy resources that are available now, then we may never need to use Antarctica.

When I say don't use Antarctica, I mean for it's resources. But I still think that there should be science stations in Antarctica monitoring weather, water levels and the wildlife.

If it's at all possible then maybe an organisation including all nations that have claimed part of Antarctica and all other nations in the world could be created to draw up some rules that everyone can abide by concerning the welfare of Antarctica.

For the second question, I think that a list of offences and then penalties should be made to try and discourage possible lawbreakers.

I believe that at the top of the wildlife list should be whale poaching. Maybe a hefty fine and a year's imprisonment would be just about suitable.

Also, if anyone were caught taking resources from Antarctica then a five-year imprisonment and a very, very heavy fine would do some justice.

If these theory's were implemented then we would hope that Antarctica would still remain the most barren place on Earth, uninhabitable for humans, an area of complete extremes, while keeping it's utter beauty and tranquillity.

How Is Antarctica Looked After Now:

The Antarctic Treaty applies to only the area south of 60 degrees South Latitude. It allows the use of Antarctica solely for peaceful purposes and strictly prohibits all uses of a military nature.

Its aim is to guarantee the freedom of scientific investigation. It prohibits nuclear explosions and the disposal of radioactive waste material in Antarctica.

Its objectives are simple, but effective they are:

* To demilitarise Antarctica, to establish it as a zone free of nuclear tests and the disposal of radioactive waste, and to ensure that it is used for peaceful purposes only.

- * To promote international scientific cooperation in Antarctica.
- * To set aside disputes concerning territories.

The Treaty still remains indefinitely. The success of the treaty has been through the growth in membership. Forty-four countries, comprising 80% of the world's population, have joined it. Voting is open to all countries that have demonstrated their commitment to the Antarctic by conducting significant research.

Twenty-seven nations, including the UK, have the commitment to vote. The Treaty parties meet each year. They have considered over 200 recommendations and have decided upon five separate international agreements. These, together with the original Treaty provide the rules that govern activities in Antarctica. Collectively they are known as the Antarctic Treaty System (ATS).

The five international agreements they settled on were:

- * Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964)
- * Convention for the Conservation of Antarctic Seals (1972)
- * Convention on the Conservation of Antarctic Marine Living Resources (1980)
- * Convention on the Regulation of Antarctic Mineral Resource Activities (1988)
- * Protocol on Environmental Protection to the Antarctic Treaty (1991)

The diagram below shows the claims of Antarctica made that have been made: