

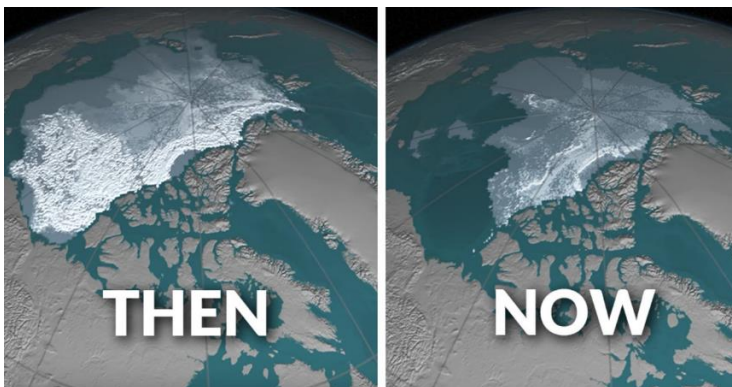
SOBOBA TRIBAL ENVIRONMENTAL DEPARTMENT

ICE CAPS

An ice cap is a thick build up of ice and snow covering less than 19,000 square miles. Any greater than that is considered an ice sheet. Ice caps form by accumulating melting snow. The slightly melted snow then gets harder and compresses changing from fluffy powder to blocked ice. As each year goes by, layers upon layers are accumulated creating an ice cap. Ice caps exist all over the world such as high latitudes (polar ice caps).

Almost 10% of the Earth's landmass is covered with glaciers and ice caps - mostly in places like Antarctica and Greenland (USGS.gov).

POLAR ICE CAPS



Polar ice caps are ice caps located in the south and north pole. The ice caps in the polar regions are melting at a rapid rate affecting the ecosystems and biodiversity. "Then" represents the ice cap in October 1991 and "Now" is the ice cap in September 2016.



BIODIVERSITY

There are a few plants that do thrive in the arctic tundra that include mosses, liverworts, and lichens. Most other plants could not survive due to low water content, harsh winds, and freezing winters.

Animals find it hard to survive in such conditions as well yet, there is a lot of productivity and biodiversity in polar oceans. The main challenges land animals have are 1) little abundance of food, 2) low fresh water availability, and 3) surviving freezing temperatures.

POLAR ICE CAP RESIDENTS

Polar ice cap residents include polar bears, penguins, harp seals, and a wide range of migrant animals.

FUTURE OF POLAR ICE CAPS

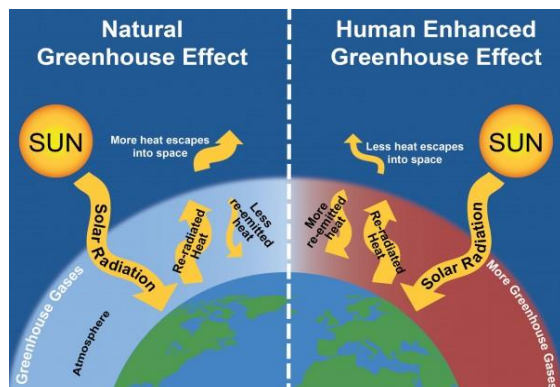
According to greenandgrowing.org, climate experts estimate the world will be eight degrees warmer by 2100. Polar ice caps are highly vulnerable to climate change. We are already beginning to experience consequences of climate change. Polar ice caps are already melting due to trapped greenhouse gas emissions.



ICE CAPS

CAUSES OF MELTING

The burning of fossil fuels such as coal, gas, and oil are causing the earth's temperature to increase. The leading cause of melting ice caps results from the greenhouse effect. The greenhouse effect is heat that is trapped in the earth's surface by "greenhouse gases." Greenhouse gases include carbon dioxide, methane, and nitrous gases. Greenhouse gases occur naturally but since humans have been interfering with the planet's energy balance through the burning of fossil fuels, earth has been trapping extra heat at the surface causing temperatures to rise.



EFFECTS OF MELTING

1. Increasing Sea Level
2. Higher Ocean Temperatures
3. Increased Flooding Risk
4. Rapid Environmental Change



TEMPERATURE REGULATORS

The bright ice caps can reflect large amounts of sunlight back into space. This is called albedo - the proportion of the light or radiation that is reflected by the surface. If there were no ice caps, the overall temperature of earth would increase. Polar ice caps act as earth's temperature regulators. Snow and ice caps have played a vital role in moderating the earth's climate. As a result of earth's increasing temperatures, the ice caps continue to melt. With the ice caps melting, the less albedo and with less albedo, the more heat that enters the earth.

According to NASA, the polar ice caps are melting at an alarming rate of 9% per decade. The thickness of the Arctic Ice has decreased by 40% since the 1960s.

RESOURCES

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