



Conservation of the Polar Bear

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Background Biology

- Polar bears, *Ursus maritimus*, are the largest bear species, males are 2.5 m in height and weigh 500 kg, females are smaller weighing about 250 kg
- Found on coasts that surround the North Pole and as far south as Hudson Bay, also, in northern Canada, Greenland, Alaska, Svalbard, and Russia
- Have thick, dense fur with a warm undercoat and longer guard hairs on top.
- Strong, muscular body with front paws that allow them to be very strong swimmers
- Preferred habitat is on top of sea ice, where they mate, hunt, and rear offspring
- Diet is mostly skin and blubber of seals, located by their sense of smell
- White fur provides camouflage
- Current population is estimated to be 22,000-31,000 bears

Reasons for Endangerment

- Climate change has a greater effect in the Arctic because water temperatures are increasing faster than other areas of the globe
- Sea ice is breaking up sooner in the spring and forming later in the fall
- Bears are forced to use huge amounts of energy to find remaining ice
- With longer travel distances, bears lose muscle and hunting success declines
- Changing climates affect timing of resources and interactions among species
- Females do not eat or drink when cubs are produced during the winter in dens, surviving on stored energy
- Increased temperatures and melting ice make it harder for females to obtain enough food to supply for themselves and their cubs
- Unable to hunt for seals, polar bears are forced to participate in cannibalism
- Forced to look for alternative food such human garbage, sea birds, and their eggs
- Cannot support the polar bears' metabolism

My Conservation Plan

- The U.S and other major contributors to emissions must switch to renewable energy
- Carbon dioxide emissions could be reduced up to 80% compared with levels from 1990 without increasing the cost of electricity
- Must switch from regionally divided electricity sector to micro grids - and local power generation
- Switching to renewable energy will also create more jobs: Renewable energy is labor intensive because solar panels need humans to install them and wind farms need technician for maintenance
- Fossil fuel technologies are mechanized, capital intensive, and polluting
- Education must be provided to the public about our current impact in order for people to agree to this shift

Current Conservation Efforts

- The U.S. Fish and Wildlife Service (USFWS) endorses efforts to mitigate greenhouse gas emissions
- Must rely on the U.S and other nations to address their emissions via laws, regulations, and market-based incentives
- The USFWS uses science-based communication efforts to emphasize the urgent need for sufficient reductions in emissions
- Range States (countries around the region where bears are found: Norway, Canada, Greenland, Russia, and the U.S.) have a Circumpolar Plan that addresses range-wide conservation challenges: greenhouse gas emissions, human-bear conflicts, and illegal trade
- Work with local communities and industries to implement garbage management to reduce human-bear interactions



Effects of Humans on Polar Bears

- Arctic natives hunt polar bears for food, clothing, handcrafts, and skin
- Climate change is accelerated by the energy choices made by humans, especially fossil fuel use
- Water pollution, mainly oil spills contaminate the bears' fur, causing them to lose their insulation
- Pollution affects the seals that polar bears feed on
- Seals ingest the oil which causes organ damage when they attempt to clean themselves after they come in contact with the oil
- If the seals die from oil contamination, this effect will be magnified to the polar bears because they will be without food



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