

What is Climate Change

- Climate Change is a long-term change in the atmosphere like freezing cold winters or no rain in the summers.
- Weather is the event such as the blizzard you get one day during the freezing cold.

Why Climate Change

- We chose to do this project on animals getting effected by climate change because we are curious about animals current and future adaptations due to climate change, and if we will still have the species in the world.
- We don't know for sure if the animals will or will not survive climate change but with finding out information, we can take an educated guess.

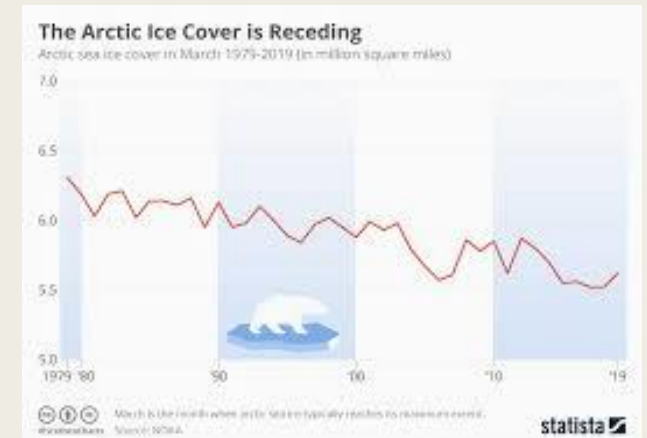
Arctic

- In the high Arctic, the sun sets in late October and doesn't rise again until February.
- The average winter temperature is - 34 degrees Celsius and the summer average temperature is 12 degrees Celsius.
- Average precipitation is 15 - 25 cm.



Effects on Climate:

- The cryosphere (aka arctic climate) is the most sensitive to climate change, because it is getting warmer, animals from overpopulated areas are moving further north to the Arctic.
- These species are killing the underpopulated Arctic animals.
- Temperatures are rising 2 – 3 degrees higher.
- The permafrost is melting, and the ice is thinning.



Polar Bear

- Can swim without stopping for over a week.
- Have traits that help them deal with snow, ice and below freezing temperatures.
- Skin is black to attract sunlight and keep them warm.
- Aren't white, their outer hairs are see through.
- Undercoat is colorless, when the sunlight hits the polar bear's outer coat, all the waves of light bounce off the air pockets, which causes the polar bear to seem white.
- Blubber keeps them warm.
- Estimated to be 22,000 – 31,000 in the world.
- Gestation period is 195- 265 days.
- Eat chicken, fish, blueberries, kelp, oxtails, pigs, seasonal fruit, seals, plants and human garbage.
- Have problems with over heating.
- Have two layers of fur and one layer of body fat.
- Fur prevents most of their heat loss.
- Can overheat when they run.
- Paws can measure up to 30 cm and their claws can be 5 cm long.
- Use their claws to catch fish and hold their prey and to gain traction on the ice.
- Have a lifespan of 17 years.



Effects on Animal:



- The polar bears became endangered because of poaching, irregular hunting, pollution and climate change.
- They are affected by climate change because it is affecting their natural habitat.
- They will not survive if the ice melts as they need to rest somewhere while hunting.
- The mother's leave their babies on the ice to go hunting and when they return the ice has melted and the babies have drowned by the time they get back, because of the ice melting and their babies not being able to swim long enough for them to come back.
- On windy days, they dig a hole to seek shelter.
- Less snow will mean they cannot dig as big of a hole.
- The changing climate is affecting the animals they prey on, so their food source is dwindling causing them to become cannibals and eating their own.

Manitoba Prairie

- The prairie moderately has a dry climate with sharp seasonal temperature changes.
- Temperatures range from -40 degrees Celsius to 38 degrees Celsius.
- The average precipitation is 18.7 inches.



Effects on Climate:

- Precipitation is most likely to vary more and more from year to year.
- Extreme weathers will increase and become more common from heat waves, droughts, floods, forest fires, and intense storms.
- Will have warmer and wetter winters and longer warmer, drier summers.
- Drought and floods will affect the farming communities and economy.
- Warmer weather will make it harder to transport supplies to northern communities.
- Changing ecological conditions will lead to significantly less snow cover.

Red Fox

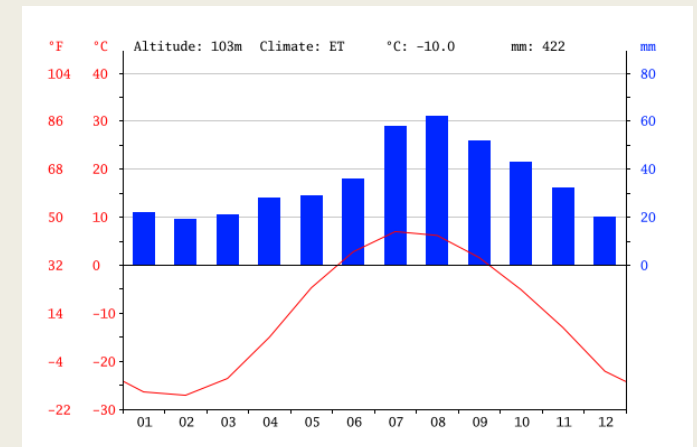
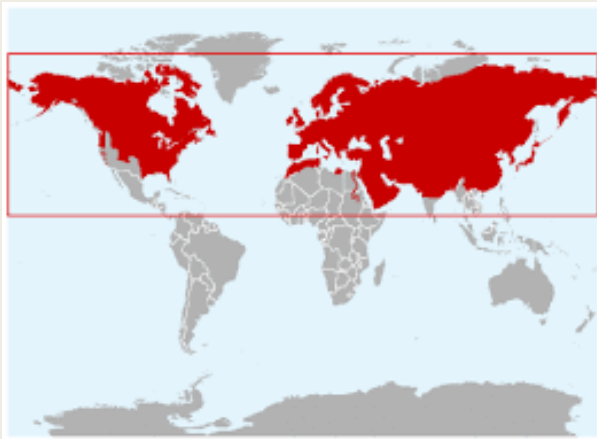
- Is a very adaptive species. Are flexible ecologically and behaviorally.
- Are widely adapted animals, capable of living across a diverse range of habitats.
- Millions of red fox babies are born each spring.
- Their dens are very similar no matter where they live.
- They are confined to their dens to give birth. They have a lifespan of 3 – 6 years.
- They live all over the world from grasslands, forests, mountains and deserts, but most popular in the prairies.
- Their fur can be brown, black, silver, orange, or red.
- Their fur colours can differ from their littermates as they grow. They are related to the dog family.
- Their body figure allows them to be quick on their feet because they have a sharp pointed face and lighter body build.
- The male is called a dog, while the female is called a vixen.
- The male is usually bigger than the females. Females can have a litter of 1 – 10 pups.
- They have their pups between March and May each year.
- The young pups are born blind and it takes 2 weeks for their eyes to open.
- Seven months after the pups are born, they leave their mother to start a life of their own.
- They live on the edge of woodlands, prairies and farmland.
- They mostly feed on rodents, reptiles, birds, small mammals and vegetation.
- They have a flexible diet and can be omnivores when necessary. Due to their adaptability, their population is stable.



Effects on Animal:



- Warmer temperatures are pushing the red foxes to migrate further north and they are killing animals in the Arctic.
- They are being pushed from their habitats by humans and are moving into city environments.
- Climate change has helped expand the population into unsuited habitats such as the north.
- The adaptability of the red fox provides a positive outlook for its population as it relates to the effects of climate change.



Australia

- Australia has a hot and humid summer season and dry and warm winters.
- The area almost never receives rain and can have a temperature of 50 degrees Celsius.
- The winter average temperature is 10 degrees Celsius; summer is 25 degrees Celsius.



Effects on Climate:

- 9 million acres have been destroyed by the wildfires.
- The wildfires started because of the insane heatwave, lightening and human actions.
- Climate conditions are like fuel for the Australian wildfires.
- The fires began on August 1, 2019 and 9 more began on August 17th then spread across the area.
- The ecosystem will be destroyed, but overall effects are not known at this time.

Kangaroo

- The kangaroo lives in Australia.
- It can hop seven meters at 30mph, its cruising speed is 20mph.
- A group of kangaroos is called a mob. Mobs groom and protect each other.
- If a kangaroo senses danger it stomps its feet.
- Kangaroos are herbivores except for the occasional insect. They also regurgitate their food.
- They are pregnant for 21-38 days.
- A baby kangaroo is called a Joey. Newborn kangaroos can be as small as a grain of rice or a bumblebee.
- They stay in their mothers' pouch for 120-450 days.
- Their population is stable prior to the wildfires.
- Kangaroos weigh 45kg.
- A kangaroo's lifespan is 8-12 years in the wild and 23 years in captivity.



Effects on Animal:

- The kangaroo population was stable prior to the wildfires.
- They are getting burns on their faces and paws and humans are having to kill them to stop their suffering.
- All of kangaroo Island has been burned to ashes.
- 480 million animals have died so far in the Australian wildfires.
- The Kangaroo Sanctuary has rescued about 30 Kangaroos so far in 2020.
- Even a 2 degree change in the weather could have devastating effects on the Kangaroo population.



Amazon

- The Amazon's climate is hot and humid.
- The average rainfall is 108 inches per year with an average temperature of 25 degrees Celsius.
- It rarely goes below zero.
- The temperature of the rainforest remains relatively the same throughout the year, mostly because the sun is almost directly over top.



Effects on Climate:

- The Amazon was devastated by fires which started in August 2019.
- Smoke could be seen in the city 3000 kms away.
- It was started by humans, in service of logging, mining, and agriculture.
- After clearing an area of forest, fires are ignited by the farmers using slash and burn technique.
- 60% of the rain forest was burn, and is still burning.
- Rain forest is vanishing at a rate of 20,000 square miles per year.
- If trends continue, the Amazon Rain Forest could disappear within 100 years, wiping out an entire ecosystem.

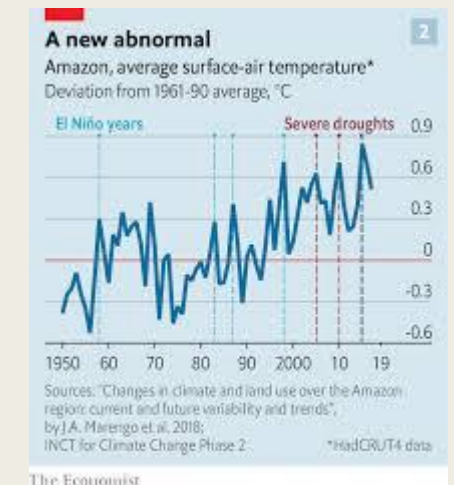
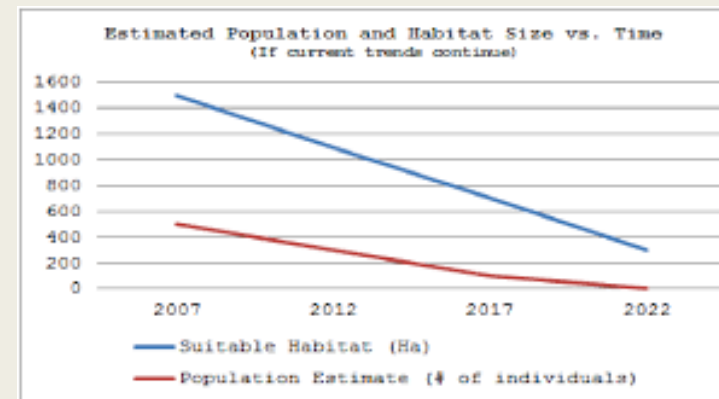
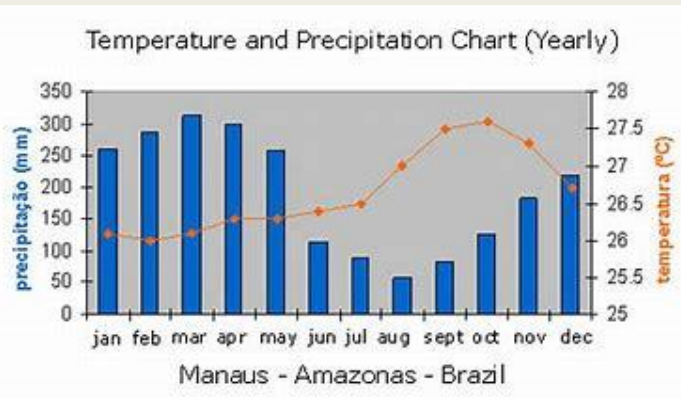
Pygmy Sloth

- Pygmy sloths live in the Amazon.
- They are critically endangered with less than 48 left.
- The sloth has a lifespan of 20 – 30 years.
- They have hooked claws that enable them to hang on trees for longer periods of time.
- They don't eat a lot, so they need to conserve their energy.
- This could be advantageous for them if vegetation decreases.
- They have a system of stomachs which allow them to preserve their energy.
- They make a good habitat for other organisms. Algae can grow on the sloth's fur because of the low activity. Algae takes the nutrients from the sloth's fur.
- They are herbivores and have a very low number of predators.
- They need to be close to their mating partners.
- They sleep 15-20 hours per day. On land they cannot walk, so they must drag themselves.
- The gestation period is 6 months. Their babies hang on their mothers for the first 9 months.
- Once the sloth baby is older the mother leaves the territory and moves to another area.
- Many sloths have extra vertebrae in their neck which allows them to turn their neck 270 degrees.
- They go down once a week to defecate which could become risky if there is less vegetation to camouflage them from predators.



Effects on Animal:

- Sloths have a low body a temperature.
- If sloths get too much sunlight, they can't maintain a stable body temperature.
- They need close access to water sources.
- They have adapted over several years to survive in their changing environment.
- If they have no trees they cannot hang.
- Over 2 million animals were killed by the wildfires.



Human Impact

- There are many factors contributing to climate change; including those made by humans. These include:
- We are polluting the air causing the ozone layer to crumble.
- Cutting down trees, unnecessary or reckless forestry.
- Ruining animal habitats to create housing developments and malls.
- Polluting the seas and oceans.
- Ignoring all the signs that we are killing our earth.
- Over-hunting, fishing and poaching.
- Turning natural habitats into farmland.
- Leaving campfires unattended.
- Careless burning and discarding of cigarettes.
- Careless use of resources.
- Not reusing or recycling products.
- Idling vehicles which result in unnecessary air pollution.
- Taking animals out of their natural environment.
- Introducing species not native to that specific environment.

Suggestions

■ All:

- *Introduce a breeding program.*
- *Introduce conservation efforts.*
- *Tracking collars or microchipping to study behaviors.*
- *Learn from Environmental Activists.*
- *Talk to companies about creating renewable products and using renewable resources.*
- *Protecting our dying environment.*
- *Have more dogs in conservation programs to help with tracking and investigating.*
- *Education people on the effects of climate change and easy ways they can help.*
- *Teach climate change to students and adults.*
- *Introduce conservation efforts related to food sources.*
- *Employee additional conservation officers and biologists to assist with studying animals/environments.*
- *Create a resilient and zero carbon world powered by renewable energy.*
- *Natural habitat rescues (fence off an area of forest or wooded place to rehabilitate that species of animal)*

Suggestions

■ Polar Bear:

- *Make regulated hunting laws.*
- *Make dock iceberg like platforms.*
- *Natural habitat rescues (fence off an area of forest or wooded place to rehabilitate that species of animal)*

■ Red Fox:

- *Trap and release back into natural environment.*

■ Kangaroo:

- *Move to similar environment.*
- *Natural habitat rescues (fence off an area of forest or wooded place to rehabilitate that species of animal)*
- *Replanting trees.*

■ Pygmy Sloth:

- *Move to similar environment.*
- *Replanting trees.*
- *Natural habitat rescues (fence off an area of forest or wooded place to rehabilitate that species of animal)*

	Red Fox	Polar Bear	Kangaroo	Pygmy Sloth
Scientific Name	Vulpes Vulpes	Ursus Maritipus	Macropus Giganteus	Bradypus Pygmaeus
Climate	Manitoba Prairie	Arctic	Australia	Amazon
Population	225,000 (stable)	22,000 – 31,000 (endangered)	24 million (stable)	48 (critically endangered)
Gestation	49 – 58 days	195-265 days	21 – 38 days; stay in pouch 120-450 days	6 months
Lifespan	3-6 years	17 years	8 – 12 years	20 - 30 years
Predators	Humans, eagles, coyotes, wolves, bears, mountain lions	Humans, other polar bears. Wolves for cubs.	Limited predators: humans & dingoes	Has minimal predators Jaguars & eagles

Organizations and People Who Assist in Animal Conservation

■ World Wildlife Federation (WWF)

- *WWF is an organization that helps animals with a risk of extinction. They help restore destroyed habitats, that have been polluted or damaged by other people. You can donate by doing to www.worldwildlife.org. They work in over 100 countries and collaborate with people to make solutions for protecting animals and their environment.*

■ Conservation Officers

- *You can find Conservation Officers all over the world. Conservation Officers enforce all environmental legislation, checking hunting and fishing parties for bag limits, licenses and safety regulations. They issue tickets and subpoenas if they find anything. They also investigate complaints about destroyed wetlands, habitats, pollution, endangered/non-endangered species and poaching reports. They can also have dogs that help them investigate, find wads and shotgun shells.*

■ Rehabilitation Centres

- *Rehabilitation Centres help wild animals who are hurt and need to stay at a safe place until they can get released back into the wild. Rehabilitation Centres and Conservation Officers work closely together.*

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THE END

