

Kids' pages

Are you ready to learn about the bay?

News for the kids
of Tampa Bay!

Winter 2016



Got a Question? Ask a Scientist!

In This Issue:

- Surviving in the Arctic
- Meet Arctic Inhabitants
- Climate Change in the Arctic
- Fun Facts
- Track Polar Bears!



Bring the Whole Family!

Join us for the Great American Cleanup on Saturday, March 12 from 9 am until Noon. The perfect event for the whole family, we will be cleaning up our local coastlines and keeping trash from entering our waterways and endangering our amazing wildlife.

Sign up to volunteer at
TAMPABAYWATCH.ORG.

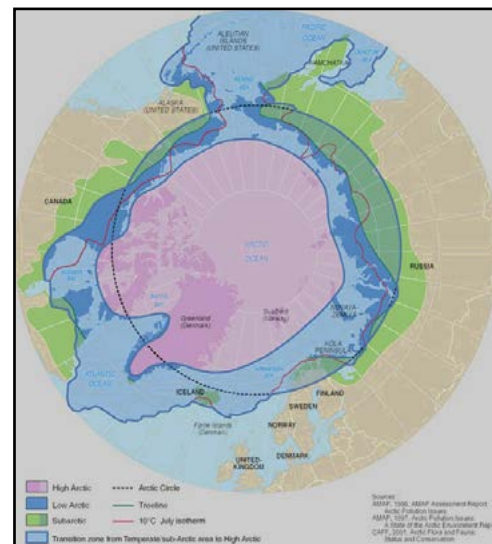


Q We've had some pretty cold days this winter in Florida. How do animals survive in the cold snowy places like the Arctic?

A The Arctic is a special area of land and water around the North Pole of our Earth. Technically, it is the region north of 66.5 degrees N latitude, an imaginary line that circles the top of the globe. North of this line, the sun doesn't set on the summer solstice (the longest day of the year, around June 21st) and does not rise on the winter solstice (the shortest day of the year, around December 21st). The "polar day" is during the summer where the sun does not set due to the tilt of the Earth's axis. The Arctic can also be defined by the area where the average summer temperature is less than 50 degrees Fahrenheit (10 degrees Celsius) or above the "treeline"—the area where trees can no longer grow.

To live in an area where trees cannot grow, animals must be well-adapted to these harsh conditions! Adaptations are how organisms adjust or change their behavior or structure to become better able to live in their environment so they are more likely to survive.

Migrating and hibernating are two ways many animals have adapted to the Arctic. They are able to move to areas that are more



Arctic boundaries

comfortable as conditions change. Many animals, like the arctic hare, huddle together in groups to stay warm. Musk oxen have thick fur with long, hollow hairs that are great insulators and don't allow their body heat to escape. The arctic ground squirrel and many other animals line their den with leaves and lichens and hibernate for several months to escape the cold conditions until the weather warms up. During this time, their bodies slow down to reserve energy and their body temperature can drop down to near freezing! 🐾

Sources: www.conservationinstitute.org;
polardiscovery.who.edu; www.mnh.si.edu;
nsidc.org

Expand Your Mind!

Meet & Greet:

Animals Adapted to the Arctic



ARCTIC FOX

Alopex lagopus

Foxes rely mostly on meat like lemmings, fish, and sea birds for their meals. To survive in the cold arctic, the arctic fox's body is designed to hold in body heat. Its legs are short, its ears are small and round, and its muzzle is short, allowing them to survive in temperatures as low as 58 degrees Fahrenheit! As an extra defense against the Arctic conditions, they have a fur coat and a thick undercoat that helps to trap the warm body heat. Source: animals.nationalgeographic.com/animals



GREENLAND SHARK

Somniosus microcephalus

These sharks live in the Northern Atlantic and Arctic oceans. They have been known to swim near the surface in the winter and to dive down to 600-1800 feet during the summer. It has very small eyes, a small dorsal and pectoral fins, and a short, rounded snout. The teeth in its upper jaw are thin and pointy, while its lower teeth are square and wide. Like other sharks, the greenland shark also has denticles, or small tooth-like scales, covering its body and giving it a rough texture. Source: www.flmnh.ufl.edu



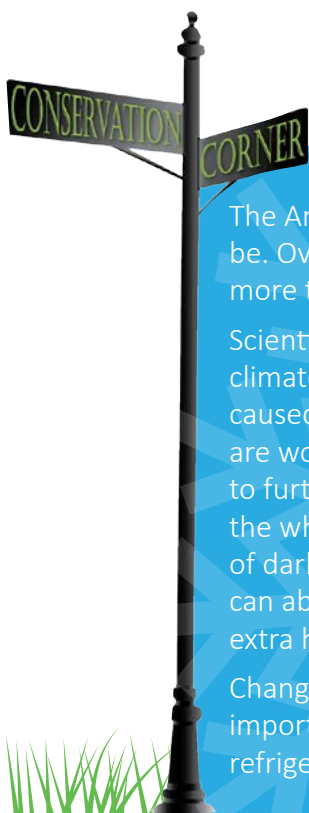
POLAR BEAR

Ursus maritimus

Polar bears are one of the most well-known land-based Arctic animals. They may look soft and fluffy, but their fur coat is actually very oily! This helps keep the water away from their skin—even when they're in the water—which helps them to stay warm as they hunt around the sea ice looking for their prey: seals. Their oily fur is also very long and heavy, which traps air, like the arctic fox. Under the skin, they have a layer of blubber that gives them extra insulation. They can reach weights of 900-1600 pounds. Scientists estimate there are currently 20,000-25,000 polar bears in the wild; they are currently listed as **threatened** by the Endangered Species Act. Source: www.defenders.org/polar-bear



Our education programs get kids into the bay!



Climate Change in the Arctic

The Arctic region is warmer than it used to be. Over the past 30 years, it has warmed more than any other region on earth!

Scientists agree that Arctic weather and climate are changing because of human-caused climate change. These changes are worrisome because they could lead to further warming. For instance, when the white sea ice melts in summer, areas of dark open water are exposed which can absorb more heat from the sun. That extra heat helps melt even more ice.

Changes in the Arctic climate are important because the Arctic acts as a refrigerator for the rest of the world;



it gives off more heat to space than it absorbs from outside, which helps cool the planet.

So changes in the Arctic climate could affect the climate in the rest of the world!

Sources: nsidc.org/cryosphere/arctic-meteorology; wwf.panda.org

Fun Facts *about the Arctic!*

- The name “Arctic” comes from the Greek word “Arktos” meaning “near the bear.”
- To maintain their weight in the lean seasons, polar bears gain most of their fat reserves between late April and mid-July.
- On the snow and ice, polar bears’ large paws work like snowshoes. Even though they can weigh as much as a small car, they can walk on ice that is too thin for humans to cross.
- The food-free season for a polar bear can last three to four months or longer in some places!



Did You Know...

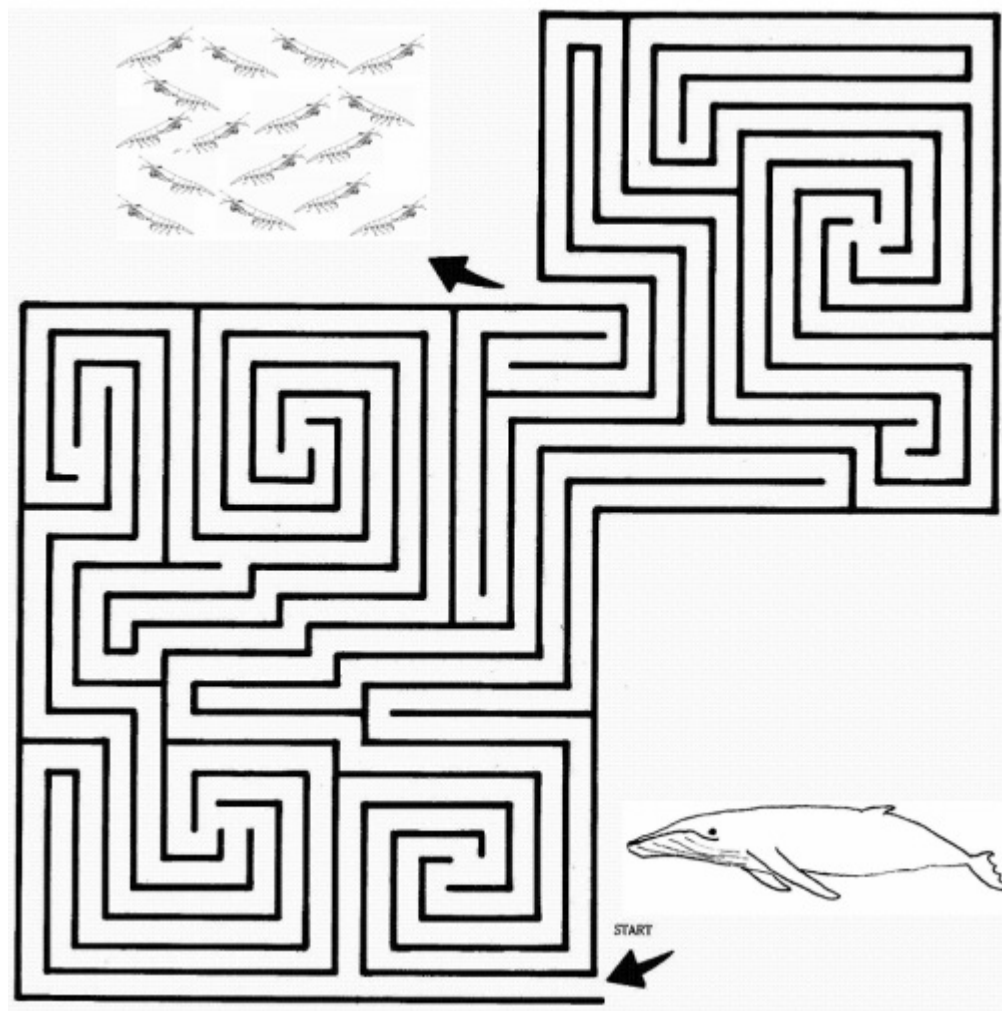
The Arctic is *not* a continent; under the snow and ice, it is just water—the Arctic Ocean!



Do this at home!

Help this humpback whale find his dinner!

Humpback whales feed on krill (small shrimp-like crustaceans) and various kinds of small fish. Each whale can eat up to 1 ½ tons of food a day!



Source: oceanservice.noaa.gov

Track Polar Bears!

With the help of polar bear researchers, the World Wildlife Fund (WWF) is following the bears' travels in the Arctic! Their positions are beamed from collars on the bears' necks, via satellite to scientists, and then to the website below. It allows researchers to get regular updates about how the polar bears behave in their arctic environment and how they may be affected by climate change.

On the internet, search for "Polar Bear Tracker WWF" or type in this URL:

http://wwf.panda.org/what_we_do/where_we_work/arctic/wildlife/polar_bear/tracker/

Maze solution from activity at left:



TAMPA BAY WATCH

Restoring the Bay Every Day

Kids' Pages is a quarterly newsletter supplement to the Tampa Bay Watch Log. Please get your kids involved and sign them up to be a member today! eMail mtepper@tampabaywatch.org or visit TAMPABAYWATCH.ORG.

Cover masthead artwork drawn by Sarah Kelly, one of Tampa Bay's talented youth artists.

Estuary EDventures



TAMPA BAY WATCH

Education through Restoration

Kids' pages Investigations

Topic: The Arctic



Winter 2015-2016

Instructions: Read through the appropriate *Kids' Pages* edition and answer the questions below. Once all the questions have been completed, refer to the Answer Key to check your work.

Multiple Choice (choose one):

- Around which region does the Arctic reside?
 - Antarctica
 - South Pole
 - North Pole
 - United Kingdom
- What is the name for the summer day in which the sun never sets in the Arctic?
 - Winter Solstice
 - Polar Day
 - Winter Day
 - North Solstice
- What is the term for the area where trees can no longer grow?
 - Demarcation Line
 - Tundra Line
 - Growth Incline
 - Treeline
- Which animal reduces their energy during hibernation, resulting in their body temperature reaching near freezing?
 - Musk ox
 - Arctic ground squirrel
 - Arctic hare
 - Polar bear
- What is the maximum diving depth for Greenland sharks?
 - 600 feet
 - 800 feet
 - 1,000 feet
 - 1,800 feet

Fill in the Blank:

- How an organism adjusts their behavior or structure to become better-able to survive within their environment is called an _____.
- The status of the polar bear is listed as _____, according to the Endangered Species Act.
- The name "Arctic" comes from the greek word "Arktos" which means "_____" (3 words).
- Underneath the region known as "the Arctic" resides not a continental mass, but the _____ (2 words).

Short Response:

- Closely analyze the graph in the Conservation Corner of *Kids' Pages*, showing the amount of concentrated sea ice in millions of square kilometers every September since the year 1980. What was the ice concentration amount in September of 1980? Which year had the highest amount of ice? What is the overall rate of change per decade, and is the trend positive or negative? How do you think this trend will continue into the next decade after 2012 and how will that trend affect the Arctic ecosystem?

Kids'pages Investigations

Topic: The Arctic



Winter 2015-2016

ANSWER KEY

Multiple Choice

1. C. It has an imaginary line at the 66.5 degree N latitude line that circles the globe.
2. B. This name refers to the northern pole of our Earth.
3. D. This is typically where summer temperatures do not rise above 50 degrees F.
4. B. They also stay warm by insulating their den with leaves.
5. D. This is their maximum depth in the summer; they stay closer to the surface in winter.

Fill in the Blank:

6. How an organism adjusts their behavior or structure to become better-able to survive within their environment is called an **adaptation**.
7. The status of the polar bear is listed as **threatened**, according to the Endangered Species Act.
8. The name "Arctic" comes from the greek word "Arktos" which means "**near the bear**" (3 words).
9. Underneath the region known as "the Arctic" resides not a continental mass, but the **Arctic Ocean** (2 words).

Short Response:

10. Answers will vary. *Example answer: Looking at the graph, the ice concentration amount in September of 1980 was just below 8 million square km. Despite 1996 having a record high ice concentration of 8 million square km, the overall rate of change per decade is a negative 13.3 percent, meaning there is 13.3 percent less concentrated ice measured every 10 years. If this trend continues, we will see far less ice accruing over the years, which will result in less habitat space for the animals that rely on and have adapted to the Arctic for survival. Additionally, that extra ice melting will cause notable change in rising sea levels globally, threatening coastal cities which may be vulnerable to damage.*