



# MARYLAND ZOO

*ZooTrek* : Protecting Wildlife

Grades 9–12



The mission of The Maryland Zoo in Baltimore is to inspire and educate people to join with it in the active support of conservation of wildlife and wild places. Through the actions we take and choices we make, we can all help protect species and their habitats.

## HOW TO USE THE ZOO TREK

Use the animals and exhibits highlighted in this *Zoo Trek* to help focus your Zoo visit .

1. Find the highlighted species on the Zoo Map to help you plan your route. You do not need to follow the *Zoo Trek* in a particular order.
2. At the exhibit for each featured species, read through the *Zoo Trek* information, and talk about the discussion questions with your classmates. Remember, there may not always be one “right” answer!
3. Many of the animals are well camouflaged. The **Viewing Tips** can help you find them in the exhibits.
4. Use the **Discuss!** questions both during your Zoo visit and after you return to school to reflect on some of the most important issues conservation organizations face.

Keep in mind that every day is different at the Zoo. Some animals may be off exhibit during your visit.

Chaperones, please keep your group together and supervise the students at all times.

**START YOUR TREK!**

# POLAR BEAR

Polar bears are great swimmers, but they don't hunt while swimming. Polar bears use sea ice as a hunting platform, where they wait for their prey—seals—to come up for air.

## The Problem

With ice melting earlier in the spring and re-freezing later in the winter, the bears have fewer weeks to hunt. Many starve or drown from exhaustion as they swim farther and farther to reach sea ice.

## What You Can Do

Pull the plug! Plugged-in electronics and appliances use electricity *even when they are turned off*. The more electricity we use that is generated by fossil fuels, the more climate-altering CO<sub>2</sub> we add to the atmosphere.

To decrease the amount of fossil fuels we burn for energy,

- Unplug phones and computers as soon as they finish charging.
- Plug electronics like TVs and Blu-rays into a power strip, and power off the whole strip off when you are not using those items.
- Walk, ride a bike, or carpool as much as possible rather than driving individually.
- Wear a sweater instead of turning up the heat at home.
- Turn the car off instead of idling.

## Viewing Tip

Go inside the Tundra Buggy for a view over the polar bear yards.



## Discuss!

Existing treaties to protect polar bears focus on limits to hunting.

What are advantages and disadvantages of this approach?



## Threatened or Endangered?

You probably know that an endangered species has few individuals left and might soon become extinct.

The International Union for the Conservation of Nature (IUCN) uses a system that is even more specific. A species in danger of becoming extinct is categorized as Threatened. Within that category are degrees of “Threatened-ness”: from *Vulnerable*, to *Endangered*, to *Critically Endangered*.

Be sure to check out signage throughout the Zoo to find threatened species and which degree of threat the species faces.

## AFRICAN PENGUIN

Penguins in Africa? Absolutely!

This species is native to the coasts of South Africa and Namibia. They are warm-weather penguins—adapted to a climate similar to Baltimore’s.

### The Problem

**Question:** What species do you think competes most strongly with African penguins for food?

**Answer:** Humans!

Wild penguin populations suffer from commercial overfishing—as humans take more and more of the fish species that the penguins need to survive, individual penguins have to travel farther and farther just to find the fish they need to survive.

### What You Can Do

Snap the QR code to download the app from the Seafood Watch Program to help you and your family make sustainable seafood choices.



#### Viewing Tip

Go inside the Penguin Education Center for the underwater viewing window.



#### Discuss!

What is the relationship between commercial overfishing by humans and the carrying capacity of the penguins’ marine ecosystem?

## WHITE RHINO

A rhino's horn is made up of keratin, the same material in your hair and fingernails.

### The Problem

All five species of rhino are poached for their horns. In some cultures people think the horns have medicinal powers. In some other cultures, young men receive ceremonial daggers with handles made of rhino horn as a rite of passage.

### What You Can Do

Visit the website of the International Rhino Foundation for ideas of how you can help in the effort to protect rhinos. <http://www.rhinos.org/>

#### Viewing Tip

The rhinos tend to hang out at the far right of the exhibit.



#### Discuss!

Many efforts to stop poaching focus on finding and arresting the poachers themselves.

Do you think this is the most effective strategy for ending rhino poaching? Why or why not?

## AFRICAN ELEPHANT

Elephant tusks are modified teeth. The white material that makes up most of each tooth is known as ivory.

### The Problem

Large numbers of elephants are poached for their ivory tusks. The Wildlife Conservation Society estimates that an average of 96 elephants are killed every day to fuel the ivory trade.

### What You Can Do

Become part of the 96 Elephants campaign to help stop the trade in ivory! Snap the QR code to visit the 96 Elephants website.



### Viewing Tip

The lower level viewing area gets you closer to the elephants, but the overlook generally gives a better view.



### Discuss!

Many musicians and antique dealers are against a full ban on the ivory trade, because some antique instruments and artifacts contain ivory. Do you agree with them that some trade in ivory should be legal? Why or why not?

## PANAMANIAN GOLDEN FROG

These bright frogs are extinct in the wild. In 1999, scientists and government officials decided to remove the last PGFs from the wild. Their goal was to protect the frogs from a disease called chytridiomycosis—or chytrid—which is caused by a fungus.

### The Problem

The Maryland Zoo has successfully bred many PGFs. But PGFs bred in zoo care cannot be returned to the wild because chytrid remains in their ecosystems. Captive populations are needed to keep the species going until scientists can find a solution to chytrid.

### What You Can Do

People have moved chytrid around the world through infected animals bought as pets or for food. To help prevent the fungus from spreading even more, be sure not to release any pet amphibians into the wild.

### Viewing Tip

They are hard to miss!



### Discuss!

What would be the benefits of removing the last members of a critically endangered species from the wild? What could be the drawbacks?

# CHIMPANZEE

Palm oil is an ingredient in many products that we can find in the supermarket and drugstore. Palm oil plants can be grown *sustainably*, which means that growing and harvesting the plants does not harm the environment.

But most palm oil production around the world is grown unsustainably, destroying crucial wildlife habitat.

## The Problem

Once a problem mainly for ape species in Asia, the production of palm oil is moving into Africa. Large areas of habitat for chimps and gorillas are being marked for destruction to make way for palm oil plantations.

## What You Can Do

Make sure you know what you are buying! You can make smart consumer choices with the help of the Sustainable Palm Oil Shopping App. Snap the QR code to access the app download.



Learn more about sustainable palm oil from the Roundtable on Sustainable Palm Oil.

Their mission is to make the production and use of sustainable palm oil the norm rather than the exception.

[www.rspo.org](http://www.rspo.org)

## Viewing Tip



If you can't see the chimps easily, they are probably resting. Look in the corners and back of the exhibit, where many of them make nests to nap in.

## Discuss!

Examine the labels of your favorite snacks or personal care products to see if they are made with palm oil. But beware! Companies use a variety of different names for palm oil. You can find a list of palm oil's undercover identities at <http://www.cmzoo.org/index.php/conservation-matters/palm-oil-crisis/>.



# OKAPI

These animals are close relatives of giraffes. Their coat patterns allow them to blend in to their forest habitat.

## The Problem

War in the Democratic Republic of Congo where okapis are found has destroyed the forest habitats. With no place to go, okapis are being trapped for food by fighters—and those fleeing the fighting. By 2013, the number of okapi dropped from 40,000 individuals in 2003 to only 10,000.

## What You Can Do

Conservation requires more than just understanding biology. Much conflict between humans and wildlife is due to social unrest, corruption, or poverty. Careers in international relations, health care, law enforcement, education, business, and communications can all support conditions that help people protect species.

### Viewing Tip

If you don't see the okapi outside, look inside the Giraffe House.



### Discuss!

Countries at war often cannot provide basic services to their citizens.

What do you think are some of the relationships between people living in poverty and a species at risk of extinction?



# HELLBENDER

Because hellbenders absorb oxygen through their skin, they need moving water to bring a fresh oxygen supply.

## The Problem

Amphibians are very sensitive to changes in the environment. As human activities—such as polluting, cutting down forests, and building dams—change streams, hellbenders are unable to survive and reproduce.

## What You Can Do

These amazing animals are critical parts of their ecosystems. Help with a stream clean-up, and be aware of any chemicals you use that go down the drain or soak into the ground. A healthy home for hellbenders is also a healthy habitat for humans!

### Viewing Tip

Look for wrinkled “rocks”—those are the sides of the hellbender's body.



### Discuss!

What do you think are some of the challenges to getting people excited about protecting species like hellbenders?

*Thank you for helping to protect wildlife and wild places!*