FRESNO CHAFFEE ZOO

Learning with Fresno Chaffee Zoo

Species Survival and Palm Oil: Habitat Analysis

Objective

After this activity, students will understand that the needs of humans and other animals are sometimes in conflict, and that human activity can impact other species.

Standards

Maybe MS-LS2-1: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
MS-LS2-4: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Materials

"Palm Oil and Malayan Tigers" reading and worksheet (note: if pages cannot be printed in color, consider projecting on screen/whiteboard/SMART board for easier viewing)

Lesson

Students will read the "Palm Oil and Malayan Tigers" reading, either individually, in groups, or as a class. Encourage students to make note of words that are unfamiliar to them, and to examine the pictures with the reading.
After the reading, students will turn to the worksheet to answer three questions about the reading, as well as analyze visual data provided on two maps. Students should be able to justify the answers to their questions. Encourage critical thinking skills to help students explain their answers.

Extension Ideas

Bonus question: Humans are unlikely to stop using palm oil, which means farmers are unlikely to stop growing oil palms. Considering the human desire for palm oil, can you think of a way to help tigers that still allows farmers to grow their crops?
During their field trip, students may have learned about Cheyenne Mountain Zoo's sustainable palm oil app. Cheyenne Mountain Zoo also has a website regarding sustainable palm oil: *http://www.cmzoo.org/index.php/conservation-matters/palm-oil-crisis/* Use this site and others to learn more about palm oil and how it can be grown sustainably, other animals threatened by palm oil plantations, and more. Have students write a report or otherwise present their findings.

Palm Oil and Malayan Tigers

Palm oil is a vegetable oil made from the fruit of palm trees. You can't buy a big bottle of palm oil to bring home, but you can find it in everything from hair conditioner to ice cream. In fact, there is palm oil in about half of the products for sale at your local grocery store.

A Malaysia Palm oil plantation.

Because it is in such high demand, farmers are planting more and more oil palms. Oil palms are usually grown on large plantations, where all other trees and plants have been cut down. Most kinds of oil palms thrive in tropical habitats.

A tropical forest in Malaysia.

Tropical habitat can be found around the globe, but only close to the equator. There are a few things that make a place tropical. First, it must be warm or hot all year. Second, it must have a wet season and a dry season. Last, when it is wet, it's very wet. A tropical rainforest can get up to 400 inches of rain in one year! Some animals, like orangutans, gorillas, and the Malayan tiger, are specially adapted to live in tropical homes.

Malayan tigers are a small species of tiger. In the wild, they can be found in Malaysia and the southern tip of Thailand. This small range means these tigers are easily impacted by changes in their environment. These large predators require large prey. Malayan tigers commonly hunt deer and wild pigs, but may also hunt young rhino and elephants. Tigers are an ambush predator. Their striped fur gives them camouflage in tall grass and leafy bushes. In the right habitat, they can easily sneak up on their prey.

Malayan tigers are considered critically endangered. Researchers estimate there may be as few as 250 of these tigers left in the wild. Two major threats these animals face is a loss of prey in their habitat, and the loss of parts of their habitat. Instead of having all of their habitat connected, it is now broken apart and separated by places it cannot live. This is called habitat fragmentation. Would it be dangerous for you to get your breakfast if there was a freeway between your bed and your kitchen? This is this danger faced by many Malayan tigers in the wild.

Malayan Tiger

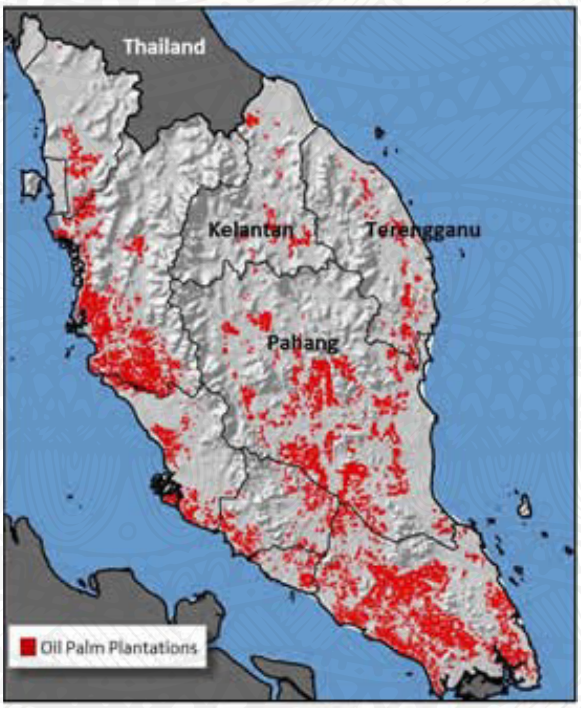
Instructions: after reading "Palm Oil and Malayan Tigers", answer the questions below. You may look back at the first page for information.

1. Compare the pictures of the palm oil plantation and the Malaysian forest on the first page. What differences do you notice?

2. Between the two pictures, which provides better habitat for tigers? Explain why.

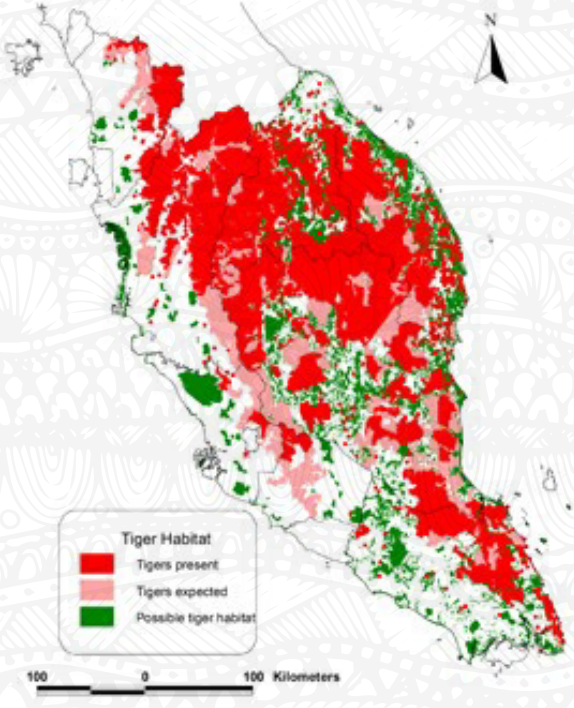
3. The two maps below show palm oil plantations in Malaysia (left) and the current range of Malayan tigers (right). Analyze the two maps and describe what you notice about the location of palm oil plantations and tigers.

MALAYSIA: Palm Oil Plantation Distribution 2010



Source: CRISP; SE Asia Landcover 2010

Tiger Habitat



Forest map source: Forestry Department (2002) and Agriculture Department (1997)