

THE GREAT BUTTERFLY MIGRATION

Summary

Students trace butterfly migration routes.

Grade Level: 5-8

Time: 1 class period

Subjects: science, geography

Skills: research, predicting, communicating

Learning Objectives:

Students will be able to:

- ✓ Define the term migration.
- ✓ Explain how and why some animals migrate.
- ✓ Trace North American butterfly migration routes.

Materials:

- ✓ Copies of blank maps of North America
- ✓ Research sources (internet or reference books)

Background

Approximately 13 species of North American butterflies migrate north in early spring and south in late summer. Most of these migrations go unnoticed, but they are truly spectacular considering the small size of the butterflies and the tremendous distances they travel.

These annual migrations rank high on the list of amazing insect accomplishments. Consider that the monarch butterfly can migrate 4,500 km from eastern Canada to their wintering sites in Mexico. For an animal with a body of about 3 cm (0.03 m), flying a distance of 4,500 km is about 150,000,000 body lengths for a monarch butterfly. An equivalent feat for a 1.8 m (6 ft) tall person would be 270,000 km or about 11 times around the earth. Each year hundreds of millions of butterflies make their way across North America. This is a truly amazing feat!

This activity will allow your students to examine several butterfly migration routes.

Procedure

1. Ask students what they know about migration. *What is it? Which animals do they know of that migrate?* (Examples: whales, many songbirds, zebras, butterflies, caribou, whooping cranes, hummingbirds, manatees.) Make a list on the board.

2. If students do not mention it themselves, point out that several species of butterflies migrate very long distances. *How is this possible? Why would they want to do that?* Make a list of reasons on the board. Be sure to touch on: temperature, climate, food sources, and habitat conditions.

3. Give students blank maps of North America (on pg.16), and a choice of migratory butterflies. (Common buckeye, red admiral, painted lady, mourning cloak, monarch, gulf fritillary, question mark, cloudless giant sulphur, pipevine swallowtail, dwarf yellow, Mexican yellow, sleepy orange, and long-tailed skipper.) Have students conduct research on their butterfly of choice to determine where this species spends its summer and winter, and map out its approximate route along the way. Students should mark these routes on their maps.

4. Ask students, *What threats do these animals face on their migrations? What threats would migratory insects face that might*



not affect other migratory animals? Why would migratory insects face greater threats than animals that do not migrate?

5. Have students study the migratory routes they mapped out and research some of the locations through which their butterfly species travels. *Are there any major cities along these routes? Areas of large human population? Large agricultural areas?* Have students mark these places on their maps as well. *What challenges do the butterflies face along their migratory route?* Have students conduct research and prepare posters showing their butterfly routes and the challenges faced on these routes as they attempt to meet all their habitat needs for food, water, cover, and places to raise young. *Are any of these butterflies considered endangered? Why might that be?*

6. Ask each small group of students to give a poster presentation, explaining their findings to the class.

Note: To participate in an actual migration-monitoring project, visit [The Journey North](http://TheJourneyNorth.org), www.learner.org/jnorth, where students can report their sightings and communicate with other students nationwide. You may also want to visit www.monarchwatch.org for

more information on tracking butterfly migrations.

Extension

✓ Create a large outline map of North America on the ground in a large outdoor area. Using reference sheets you provide, have students create large-scale models of migratory butterfly species out of construction paper and assorted craft materials. Provide student groups with butterfly migration map outlines. (Visit www.monarchwatch.org/tagmig/index.htm for monarchs. Other species require more in depth research and you may need to draw up the map yourself after some research.) Have students trace identified migration routes by walking over the approximate route, demonstrating to others where the butterflies go in spring and fall. If possible, have a couple of students stand still in key locations to show where major cities are located in North America. Ask students volunteers to explain where these butterflies will find food, water, cover, and place for their young along their migration routes.

Assessment

✓ Have students write creative “breaking news” newspaper stories about their migratory butterflies’ arrival, departure, or journey through their key locations, including challenges they face along the way and what they are looking forward to at each location.



NORTH AMERICA MAP

Directions:

Mark the migration route of your chosen butterfly on the map. Mark any major cities, large agriculture areas, and other important landmarks along the butterfly's route.



ACTION PROJECTS



Butterflies are critical components of functioning ecosystems due to their key roles as pollinators and as indicators of ecosystem health. Butterflies are also beloved by the public, which is largely unaware that many species are threatened or endangered. The National Wildlife Federation has joined the American Zoo and Aquarium Association and the U.S. Fish and Wildlife Service in a multi-year Butterfly Conservation Initiative, aiming to enhance recovery of imperiled butterfly populations in North America and raise public awareness about the ecological role of butterflies and the need to preserve them and their habitats.

NWF has many programs that focus on butterflies and provide opportunities to help conserve them, including the *Keep the Wild Alive* campaign, Backyard Wildlife Habitat and Schoolyard Habitats. Drawing on the conservation and education experience of these different programs, NWF would like to provide several model projects that can be easily carried out with or without our assistance.

The main objectives of these projects are: 1) to enhance students' knowledge of butterfly ecology and conservation through hands-on, interactive learning experiences; 2) to raise public awareness of the threats to butterflies and the need to conserve them; and 3) to give students opportunities to contribute to imperiled butterfly protection and habitat restoration.

Project I: Create a Schoolyard Butterfly Habitat

Suggested Age Group: K-8

Educators and students can work together to create a butterfly habitat on school, facility or community grounds. By planting the appropriate native host and nectar plants and providing water sources and other habitat features, you can turn your school grounds into a National Wildlife Federation certified Schoolyard Habitats site — it's easy and fun! Schoolyard Habitats projects provide unique, hands-on, outdoor learning opportunities that cannot be duplicated in the traditional classroom setting and become an important part of your local ecosystem. Your new site will provide outdoor learning opportunities that are interdisciplinary, standards-based, and inexpensive — as well as beneficial to butterflies and other local wildlife. NWF's Schoolyard Habitats program can provide resources, training and curriculum support to participating schools, institutions and community groups. Visit www.nwf.org/schoolyardhabitats for more information.

ACTION PROJECTS CONTINUED

Project 2: Growing and Transplanting Host Plants

Suggested Age Group: K-8

Since 1999, NWF's *Keep the Wild Alive* campaign has been working with grade school students in Concord, New Hampshire to help the endangered Karner blue butterfly. Working with the New Hampshire Fish and Game Department (NHFG), students grow wild lupine (*Lupinus perennis*), the host plant of the endangered Karner blue butterfly, in their classrooms during the winter and then transplant the seedlings to U.S. Fish and Wildlife Service (USFWS) conservation land during spring. This is an especially effective tool in teaching the close relationship between plants and animals and transferring the knowledge gained to a natural, habitat-wide context. This creative project can be replicated in many areas where imperiled butterflies are found, as long as the project is implemented in partnership with the appropriate national, state or local partner charged with conserving threatened and endangered species. In fact, AZA member Roger Williams Park Zoo began working with NWF, NHFG, USFWS and other partners on the New Hampshire project in 2002. NWF can provide contact information for local resource agencies and educational resources to interested classrooms. Contact: (202) 797-6892 or wildalive@nwf.org for additional information. AZA can provide contact information for accredited zoos and aquariums working with butterflies and host plant conservation. Contact: (301) 562-0777 for additional details.

Project 3: Restoration of Butterfly Habitat

Suggested Age Group: Middle and High School

Classrooms and youth service programs can participate in a restoration event hosted by refuges, land trusts, or other organizations overseeing imperiled butterfly recovery, including many AZA institutions. Many endangered butterfly habitats managed by the Fish and Wildlife Service and other resource agencies need help implementing habitat management plans. For butterflies, often the most effective habitat restoration method is the most simple: removal of invasive exotic plants. This activity does not require much expertise and is suitable for almost all ages. It also teaches a valuable lesson on the benefits of native species versus invasive exotics and can advance students' understanding of the intimate relationship between butterflies and plants. NWF's *Keep the Wild Alive* campaign and AZA can help participants identify a local partner to help design a restoration project and host the event, as well as assist educators in preparing students before they participate in the event. Contact: (202) 797-6892 or wildalive@nwf.org for additional information from NWF or (301)562-0777 for information from AZA.