



Eco-pressure: Conserve Biodiversity of Wildlife

Audience: Students (grades 6-9), Teachers, and Parents

SECTION ONE:

Introduction: What is biodiversity? How can you help?

SECTION TWO:

Human Eco-print: Students, teachers, and their parents are provided with five ways (five toes) they can make a smaller “footprint” on Earth. Each impact is connected to an animal and its own footprint. Following the Take Action section is an activity for students to do in the classroom and at home.

What Is Biodiversity?

Definition: “The variety of life in all its forms, levels, and combinations. Includes ecosystem diversity, species diversity, and genetic diversity.”

Biodiversity, short for biological diversity, is the term for the number of kinds of life forms and their interactions. As the definition points out, biodiversity can be measured at different scales from the number of genes in an individual to the number of species in an ecosystem to the number of ecosystems in an area.

Why Is Biodiversity Important?

There are many reasons why biodiversity is important, ranging from scientific to ethical to personal. For example, why do you find it important to eat a variety of foods? On one level, it is personal preference. It is also important for your health to obtain different nutritional elements from different foods. Biodiversity is important for a similar range of reasons.

What Is Happening to Biodiversity?

Biodiversity is decreasing. As we humans shape the world around us, we have impacted the environment of the plants and animals who also inhabit the earth. Our impact can be measured in terms of the natural resources we use. Some people call this our “ecological footprint.” Like a footprint in the soil, the bigger our footprint, the more Earth we displace.

What Can We Do to Protect Biodiversity?

Reducing our impact on biodiversity is a big job but everything helps. The following actions will help you reduce your ecological footprint.

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Biodiversity Activities

TRANSPORTATION & THE PANDA

Take Action: Walk, ride a bicycle, or carpool.

Who Benefits: Giant Panda

Why: Alternative transportation reduces gasoline consumption, which reduces global warming. Changes in climate affect such natural occurrences as the healthy regeneration of bamboo in China, which is the exclusive food source for the giant panda.

At School: Survey your class on its transportation use. Use the provided survey to find out how people get to school a majority of the time (walk, ride bicycle, carpool with other families, or single-family car ride). How does your class compare to other classes? Look at the provided Use Your Feet! list and discuss what would help people in the last two columns (carpooling/bussing and single-family car rides) to change to one of the first column (recognizing that sometimes this is very difficult).

At Home: Make a simple audit of your regular car use: where you drive regularly, how often, and how far. Most trips are under five miles. Could any of these trips be eliminated by combining trips? Could you walk or bike to a destination once a month? Could you carpool with others?

At Work: See if your company would be interested in offering incentives to employees for carpooling. Incentives could be anything from preferred parking to a subsidized shuttle service to paying for gasoline. Other options are having a once-a-month ride-share day.

ENERGY & THE BLACK RHINO

Take Action: Turn off your lights, open your curtains, and let the sun in.

Who Benefits: Rhinoceros

Why: Lights are powered by electricity from the burning of fossil fuels, adding to the greenhouse effect. All species suffer when the planet's climate is changed, but the worst hit are those already endangered, like the black rhino..

At School: Create a student role of "Energy Engineer" whose job it is to monitor electric usage in the classroom by turning off unused lights, appliances, and computers (note: many new computers have a sleep function to help save energy). Print the Energy Checklist for your Energy Engineer to follow.

At Home: Give compact fluorescent lightbulbs a try. These bulbs last eight to ten times longer than standard bulbs and usually use one-quarter the energy. While you're at it, look at this home energy saving checklist to see if there are more ways you can save money while saving rhinos: www.eere.energy.gov/femp/newsevents/home_cklst.html.

At Work: There are lots of incentives to help companies reduce their energy usage. Do a little research on the Database for State Incentives for Renewable Energy at www.dsireusa.org to see if your company is eligible.

Biodiversity Activities

REUSE & THE SPOTTED OWL

Take Action: Reuse materials to save from making new ones.

Who Benefits: Spotted Owl

Why: Reusing paper reduces the need to log forests, helping to keep the spotted owl's home secure.

At School: Make a journal from paper used on one side. Turn the used sides to face each other, fold and staple along the side to bind, and you have a usable notebook! If you want, you can use a dab of glue to stick the pages with the writing together.

At Home: Make notepads from one-sided paper. Cut paper to the desired size. Staple at an edge to keep notes together. You can even glue a magnet to the last page to put it on the refrigerator.

At Work: Double-sided options on many copiers and printers save paper. Does your work organization have these and does everyone use these options? Help increase reuse by making a one-sided paper reuse bin separate from the paper-recycling bin.

ECOLOGICAL HEALTH & THE ARROYO TOAD

Take Action: Put hazardous wastes in their place.

Who Benefits: Arroyo Toad

Why: Misplaced hazardous waste is more than a disgrace, it's dangerous! Amphibians such as the arroyo toad are particularly vulnerable to these types of environmental toxins.

At School: Make a "Battery Bin" for your class. Designate a bin of some kind for putting dead batteries in. Ask all students from class to bring in their dead batteries. Don't forget to regularly take the box to a battery-recycling center in your neighborhood. You can even help start battery bins for the entire school!

At Home: Go through the cans of hazardous materials in your home. Find out which ones are too old to use. Find out when and where the next hazardous waste recycling day is in your neighborhood. Take these materials to the hazardous waste recycling center on the appropriate day. To find a recycling center near you, visit www.earth911.org.

At Work: Does your company have a plan for disposing of aerosol cans, batteries, computers, and other hazardous products? If they don't, help them develop one.

Biodiversity Activities

RECYCLING & THE JAGUAR

Take Action: Put paper in its proper place.

Who Benefits: Jaguar

Why: To make some kinds of paper, tropical forests are cut to make way for paper pulp trees. Jaguars need these forests (not paper) to survive.

At School: Make sure your class participates in a school-wide paper-recycling program. Don't have one? Start one!

At Home: Look in your trash. How good is your family about recycling paper? See if you can't recycle 100 percent of the paper in your home.

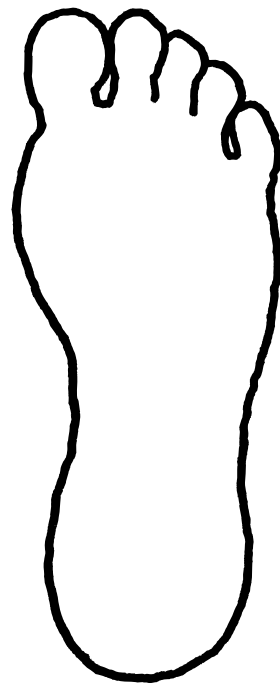
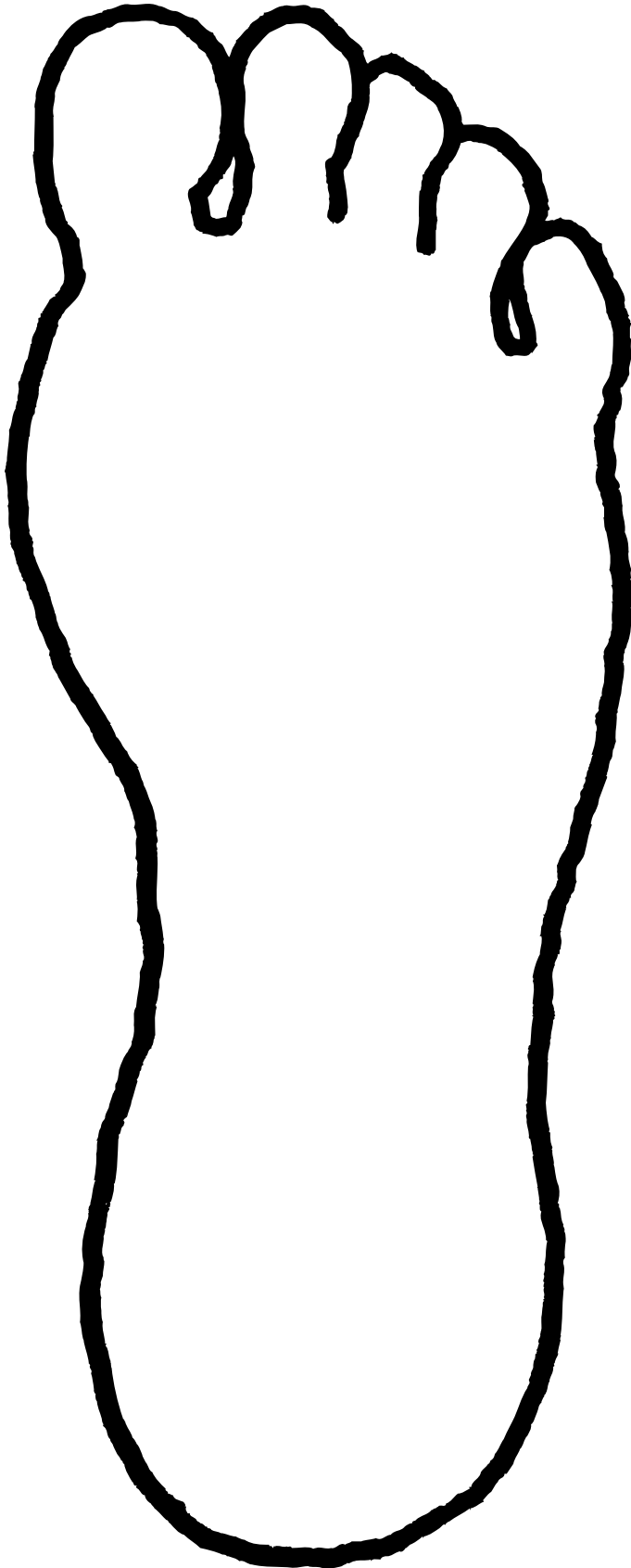
At Work: Businesses use lots of paper. Make sure yours recycles. Even if your business doesn't you could (and get at least one person in your company to join you).

Activity to Help Biodiversity:

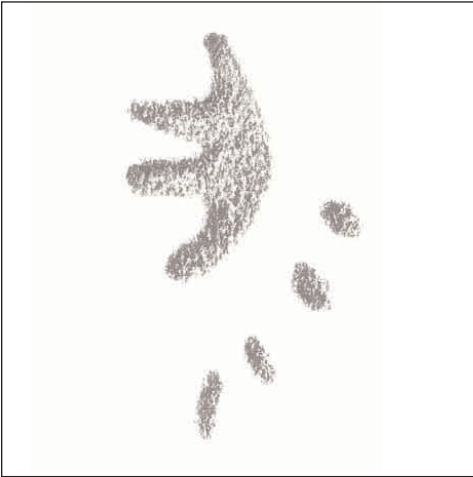
1. Educators are provided with a large printable human foot (8½" x 11" sheet)
2. The foot represents an individual's impact on biodiversity based on the five actions and species introduced on pages 2-4.
3. The educator, along with the class, discusses what students can do to make their footprint smaller based on the information provided on these Web pages.
4. Either each student or the class as a whole begins their project with the large printable footprint. Each child receives a Take Action checklist to use at school and at home. (If possible you can also create such a template for their parents at work so that they can do this activity in conjunction with their children.)
5. Students will receive one animal footprint for each Take Action step they do that coincides with helping a specific animal. After getting one of each of the five prints, students receive a smaller human footprint to post up on a school poster or at home. The object is for them to see how many animal footprints they can collect.

NOTE: Both human footprint templates will be provided and the five animal footprints for educators, parents, and students to make copies and cut out.

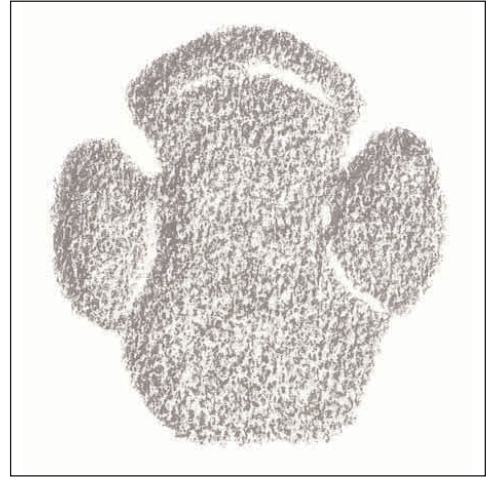
Human Footprint



Animal Footprints



Arroyo Toad



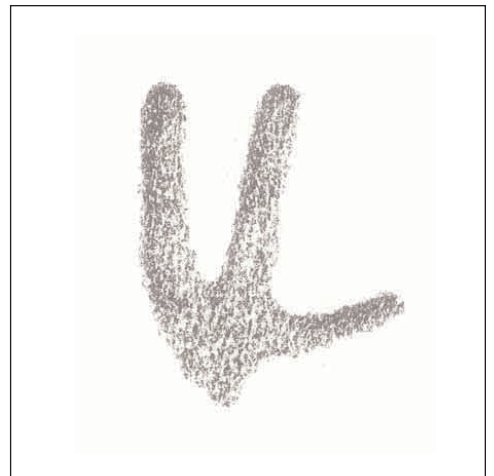
Rhinoceros



Jaguar



Giant Panda



Spotted Owl

Energy Checklist

- Turn off computer monitors: The monitor uses a lot of energy. So if it's not convenient or practical to turn off your whole computer (or if you're not allowed to), you can still save a lot of energy by switching off the monitor.
- Use the sun's energy: Let the sun filter into rooms to help keep the heat down and reduce the need for lights. (On hot days, drawing the shades will keep the sun out and keep you cooler.)
- Don't let windows waste energy: When your school is being heated or air conditioned, the windows should be shut. If they aren't, huge amounts of energy are wasted. Even when windows are closed, a lot of energy can escape if they're not tightly sealed. Report any drafty windows to your teacher or a custodian.
- Report extreme temperatures: If the temperature in your classrooms is controlled centrally, it might be way too hot in the winter or too cold in the summer without the custodian knowing it. If you find you have to open the windows in the winter, or wear a sweater in the summer, be sure to tell the custodian or the principal.
- Turn off lights: It really makes a difference. If you're not using a light, turn it off. If you leave a room, turn the lights off behind you. You may have heard that you should leave lights on if you're only gone a short while, because turning them back on uses a lot of energy. That's not true with today's lights. Always turn them off when they're not being used.
- Use fewer electric lights: If your classroom has several wall switches, experiment with leaving some of them off. You might still have enough light.

Transportation Survey

- In one school week, how many trips do you make using the following modes of transportation: walk/ride bike/skateboard/rollerskate, carpool, single-family ride? Each one-way trip counts as one point. For example, if you bike to and from school four days a week (eight one-way trips), and get a roundtrip ride home with your mom on the fifth day, your survey will look like the one below. (Note: your total should equal 10 points.)

Walk/ride bike/ skateboard/ rollerskate	Carpool/bus	Single-family ride
(Example) 8	0	0

Use your feet!

WHICH OF THE FOLLOWING WOULD HELP YOU GET TO SCHOOL WITHOUT USING A CAR?

1. Walking or biking with a parent.
2. Walking or biking in groups or with a friend.
3. Sidewalks.
4. Traffic lights at intersections.
5. Walk Signals.
6. Marked (striped) crosswalks.
7. Walking and biking route maps.
8. Less backpack weight.
9. Classroom talks and safety videos.
10. Bicycle paths.
11. Bicycle parking.
12. A new bike.