

Module 6

What You Can Do!

Module Overview

E. O. Wilson, a prominent conservation biologist, believes it would take four more Earths to meet the consumption demands of the current human population, if every human consumed at the level of the average US inhabitant.¹ Yet, *we have only one Earth* and it is imperative for the survival of *all* living things that we take better care of it. In this final module, students are inspired to do their share in conserving the environment by creating their own Class Conservation Action Plan. Every little thing you do to conserve the environment counts. Your Class Conservation Action Plan can be as simple as weighing waste at your school and making suggestions for starting a recycling program—*just do something!* Learning about conservation actions by other young people like themselves will spark student interest and motivate them to take action. To create their Class Conservation Action Plan, students review their Habitat Journals and Action Plan Portfolios, select action steps they have taken that interest them the most, and then integrate them into the development of their Action Plan. By examining artifacts of their learning, and building on knowledge gained through activities in modules 1-6, students comprehend how conservation issues relate directly to their own lives and the choices they make. Facilitating this connection will aid students in creating a personally meaningful, informed, and thoughtful plan of action.

Activities Overview

Core Activity: Create a Conservation Action Plan!

Students review their Habitat Journals and Action Plan Portfolios, select action steps they have taken, and then incorporate them into the development of their own Class Conservation Action Plan. *See p. 64 to see how this activity aligns with national science and social studies standards.*



Extension Activity: Get the Word Out!

Students send us their conservation artwork from their habitat conservation campaigns to be displayed in our online Habitat Gallery. Selected artwork could also be turned into Eco E-card they can send to friends, family, and neighbors to advertise their Class Conservation Action Plan!



Extension Activity: Land-Use Change and Habitats

Students investigate how land-use change could impact habitats through our virtual forest interactive.

Habitat Journal & Action Plan Portfolio

Students review their Habitat Journals and select resources and artifacts from their Action Plan Portfolios to use in creating their Class Conservation Action Plan.

Family Learning Activity: Simple Things You Can Do to Conserve the Environment

Together, families can make wise choices and take simple steps in their daily lives to live more sustainably, help protect the environment, and conserve habitats.



Create a Conservation Action Plan!

Core Activity Lesson Plan

Overview

Students create their own Class Conservation Action Plan. They review and reflect on their Habitat Journals, review action steps they have taken in each module, and select resources from their Action Plan Portfolios to use in taking the final action steps toward creating their plans.

Objectives

Students will:

- become inspired by what other young people and organizations are doing to conserve habitats.
- comprehend that the choices they make can impact the environment positively or negatively.
- examine the responsibilities of conserving the environment.
- create a viable action plan and collaborate with others—locally, nationally, and globally— to conserve habitats.
- publicize and implement their action plans.

National Standards Alignment

Science

Unifying Concepts and Processes; Science as Inquiry; Life Science; Science and Technology; Science in Personal and Social Perspectives

Essential Knowledge, Skills and Processes

identify questions that can be answered through scientific investigations; plan and conduct investigations using appropriate tools and techniques; think critically about relationships between evidence and explanations; construct and analyze alternative explanations; communicate scientific arguments

observe and describe the effect of human interaction in local ecosystems; describe ways that human interaction has altered habitats positively and negatively; compare and contrast disturbances that threaten and those that enhance species survival

identify ability of technological design to address conservation challenges, to meet a human need, or solve a human problem; design a solution or product and implement design/plan

apply scientific understandings and processes to decision-making in personal and social issues such as maintaining environmental health, resource-use, or human impact on the environment; consider and analyze risks and benefits; understand that technological changes are often accompanied by social, political, and economic changes that can be beneficial or detrimental to individuals and society

Social Studies

III People, Places & Environments

Performance Expectations

- c. use appropriate resources, data sources, and geographic tools such as aerial photographs, satellite images, geographic information systems (GIS) to generate, manipulate, and interpret information such as databases, graphs, grid systems, charts, and maps;
- f. describe physical system changes such as seasons, climate, and weather and the water cycle, and identify geographic patterns associated with them;
- h. examine, interpret, and analyze land-use and settlement patterns, the cultural transmission of customs and ideas, and ecosystem changes
- j. observe and speculate about social and economic effects of environmental changes and crises resulting from phenomena such as floods, storms, and drought;
- k. propose, compare, and evaluate alternative uses of land and resources.



Investigation Questions

- What have other young people done to conserve habitats and the species living within them?
- What can I do to help conserve habitats locally, nationally, and globally?
- What action steps inspire me the most and how can I include them in our Action Plan?
- How can I motivate and inspire others to action?
- What types of organizations can I start, join, volunteer at, or collaborate with?

Our Questions for Investigation



The **Student Overview Sheet** (Handout 1) includes these questions and all core student readings.

Teacher Preparation

1. **Review and list the conservation action steps students have taken** in each module. With students, list each step on a large poster board and display it in your classroom.

Action steps you may have already taken include:

1. conducting a biological inventory and monitoring a local habitat. (Module 1)
2. setting up a local species and habitat registry. (Module 1)
3. conducting hands-on and virtual forest field studies. (Modules 2 and 3)
4. tracking local habitat conservation activities in the Action Plan Portfolio. (Modules 2-6)
5. studying flora and fauna of the two most biodiverse temperate-forest regions; noting impacts of habitat loss and fragmentation on species health and biodiversity. (Module 3)
6. monitoring current status of temperate-forest species by consulting the 2002 IUCN Red List and the U.S. Fish and Wildlife Endangered Species list. (Module 3)
7. creating Conservation Profiles. (Module 3)
8. examining energy and feeding relationships in the forest ecosystem. (Module 3)
9. researching “ecosystem services” of temperate forests. (Module 3)
10. learning about research and careers at the National Zoo related to habitat and giant panda conservation. (Module 4)
11. helping create an optimal giant panda habitat for the National Zoo. (Module 4)
12. using graphic organizers to demonstrate how people have used forests for millennia. (Module 5)
13. engaging in a role play and interactive habitat conservation game on the temperate forests of central China and providing suggestions for sustainable development activities that balance the needs of people and wildlife. (Module 5)
14. Making connections between the challenges the giant panda faces in China with those of the black bear in North America. (Module 5)

Final Action Steps for Module 6:

15. planning and implementing new schoolyard wildlife habitat.
16. creating a Class Conservation Action Plan.

2. **You may choose to plan a new schoolyard wildlife habitat as a final Class Conservation Action Plan if time prohibits development of your own Action Plan.** Refer to “Planning New Habitat” in the Teacher Resources section of our website for a step-by-step lesson plan: <http://nationalzoo.si.edu/education/conservationcentral/teacher/resources/>. It would be more meaningful, however, if students created their *own* Class Conservation Action Plan (see Procedure).
3. **Print out and copy student readings and worksheets** (Student Overview Sheet, Conservation Kids (optional), Class Conservation Action Plan).
4. **Review “Basic Guidelines for Developing Your Class Conservation Action Plan”** (see Appendix p. 102). It contains suggestions for managing and creating your action plan and setting clear guidelines. We also provide a sample framework for outlining your action plan based on “Planning New Habitat” (see Teacher Resources at <http://nationalzoo.si.edu/education/conservationcentral/teacher/resources/>).

Vocabulary

action plan, action step, activist, advocate, consumer, lobbyist, non-renewable resource, political will, renewable resource, sustainable, testify

Materials

Student Overview Sheet (Handout 1)	Habitat Journals
Conservation Kids (Optional Handout, see Appendix p. 101)	Action Plan Portfolios
Student Conservation Action Plan Worksheet (Handout 2)	Print and Internet Resources
Basic Guidelines for Developing Your Class Conservation Action Plan (see Appendix p. 102)	



Procedure

1. **Tell students that they will create a Class Conservation Action Plan** by incorporating what they already know about conserving habitats. Discuss reasons why it might be important to create an action plan (to set conservation priorities, to organize their ideas, and to set clear, achievable goals).
2. **Distribute copies of the Student Overview Sheet and discuss Investigation Questions.** Address the role of personal and governmental responsibility in conserving the environment.
3. **Spark student interest and motivation by sharing conservation actions by other young people** (distribute the “Conservation Kids” reading). You may also wish to highlight the several national and international conservation organizations and explore possibilities for conservation collaborations.
4. **As a class, review and list the action steps students have already taken** (see Teacher Preparation for steps). Discuss how their action steps could be incorporated into their Conservation Action Plan (they can also incorporate other ideas from the Student Overview Sheet).
5. **Distribute the “Class Conservation Action Plan” Worksheet to students.** Review Section I, “Review Action Steps and Choose Your Favorites,” with them.

6. **Pair students to review their Action Plan Portfolios and Habitat Journals.** They should choose an issue of interest that they have already written about, collected newspaper or Internet articles on, or taken action steps on. Have them use Section I of the “Class Conservation Action Plan” Worksheet to record their ideas. (*Allow 20 minutes*).
7. **Share ideas with the whole group.** List all ideas students have and vote to determine the top three options students are most interested in developing.
8. **Relate “Basic Guidelines for Developing Your Class Conservation Action Plan” to students** (see Appendix p.102). Use the sample framework as an example for outlining your plan.
9. **Refer students to Section II, “Create a Framework for Your Action Plan,” of “Class Conservation Action Plan” Worksheet.** Organize students into strategy groups of six students each. Groups can outline ideas for an action plan based on one of the three ideas the class previously voted for. Have them use the worksheet to organize their ideas.
10. **Each group chooses a member to present their Action Plan to the class. The class votes to choose the best plan.** Before casting their votes, remind students to consider the scope of the plan in reference to timeline and budget and whether the plan has a clear goal with concrete action steps.

11. **Amend your Class Conservation Action Plan.** Students make changes to the plan. They will be motivated to implement the plan if they have a stake in its development. Vote to keep or strike amendments to create your final plan. To keep the scope of the project manageable, you may want to work with students to refine timeline, budget, benchmarks, and action steps.

12. **Put your Plan into action!** Tell the local media (newspapers, television, cable, radio) and hold a school-wide conservation action event to get the word out. Send an Eco E-card (see **Extension Activity**) to spread your message. Take the action steps you outlined to implement your plan.

Tell us about your Conservation Action Plan! E-mail us your action plan ideas, or your actual Conservation Action Plan (fonz_programs@nzp.si.edu), and we might post it in our Habitat Gallery! Use the suggested framework (see Handout 2) to help organize your plan.



Reflection, Discussion, and Analysis

Allow time for students to examine and reflect on artifacts from their Action Plan Portfolios and to review their Habitat Journals for any ideas they may want to explore for an on-going project, or an after-school conservation club. Summarize key understandings gained in Modules 1-7, and have students make any final additions to their K-W-L Charts. Questions such as the following may help guide discussion:

What was the most interesting, inspiring, surprising, upsetting, or promising thing you learned about habitat conservation? What impact can you have on habitat conservation locally, nationally, and globally? Do you think that governments have responsibility for conserving the environment? Why or why not? What did you learn that motivated you to take action? How can you inspire others to conserve habitats and the species within them?

Teacher Resources — Internet and Print

- **Planning New Schoolyard Habitat**
(see Teacher Resources at <http://nationalzoo.si.edu/education/conservationcentral/teacher/resources/>)
- **Basic Guidelines for Developing Your Class Conservation Action Plan** (see Appendix p. 102)
- **Smithsonian's National Zoo Green Team Tips**
<http://nationalzoo.si.edu/Publications/GreenTeam/>
- **Make a Difference: Be Informed, Be Aware, and Make Choices to Help Biodiversity**
<http://www.nrel.colostate.edu/projects/iboy/bimonth/difference.html>

ADDITIONAL RESOURCES

- **The Human Footprint and the Last of the Wild** (*Bioscience*, October 2002, vol. 52 No. 10)
Humans take up 83 percent of the Earth's land surface to live on, farm, mine, or fish, leaving few areas for wildlife.
http://wcs.org/media/general/human_footprint2.pdf
- **Ecological Footprint Quiz**
Are you walking lightly or stomping around? Students can see what impact their actions have on the environment.
<http://www.earthday.net/footprint/>

The Kid's Guide to Social Action: How to Solve the Social Problems You Choose--and Turn Creative Thinking Into Positive Action (1998). Barbara A. Lewis.

What You Can Do!

Student Overview Sheet

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed it's the only thing that ever has.”

— Margaret Mead

Together as a class, you can make a difference by putting your knowledge into action! Create a public awareness campaign to get the word out and spark action and concern in others! **You will develop a Class Conservation Action Plan based on some of the action steps you have already taken.**

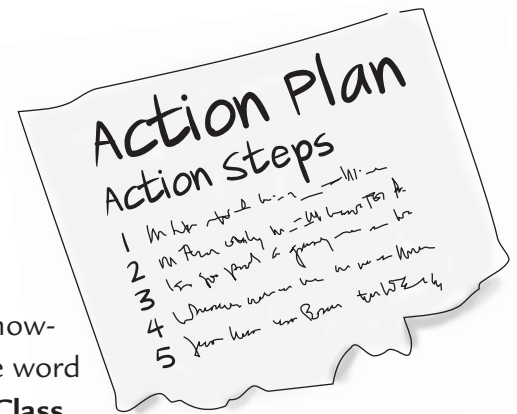
Some of these steps include:

1. monitoring a local habitat.
2. exploring how temperate-forest plants and animals depend on habitats for survival.
3. monitoring the conservation status of species.
4. understanding that humans have a responsibility for conserving habitats and the species within them.
5. developing strategies for sustainable forest use and management to balance the needs of people and wildlife.

Did you even realize just how much you already know?

Here are some other ideas for creating an action plan:

- Research and promote renewable energy sources through a public campaign.
- Conduct an energy audit at home or school and figure out ways to reduce energy use.
- Measure waste at school or home. Monitor how much garbage you produce in a week (carry it around with you and weigh it). Start a recycling or composting program.
- Create a school wildlife habitat.
- Measure the effect your community's activities have on the watershed you live in.
- Get involved with local native biodiversity or habitat conservation.
- Create public awareness on sustainable living, being a wise consumer, or ways to reduce our annual carbon dioxide emissions.



What You Can Do!

Student Overview Sheet

Here are some questions to think about. You should also write your own Investigation Questions.

Investigation Questions

- What have other young people done to conserve habitats and the species living within them?
- What can I do to help conserve habitats locally, nationally, and globally?
- What action steps inspire me the most and how can I include them in our Action Plan?
- How can I motivate and inspire others to action?
- What types of organizations can I start, join, volunteer at, or collaborate with?

My Questions for Investigation



Check out these resources to find out more!

Conservation Kids (Handout)

<http://nationalzoo.si.edu/education/conservationcentral/teacher/resources/>

Can You Help Biodiversity? (Checklist)

http://www.amnh.org/nationalcenter/it_takes_all_kinds/i/i_print.html

How can kids help?

http://endangered.fws.gov/kids/how_help.htm

Natural Resources Defense Council: The Green Squad

(Kids taking action for greener, healthier schools)

<http://www.nrdc.org/greensquad/>

Smithsonian's National Zoo Green Team Tips

<http://nationalzoo.si.edu/Publications/GreenTeam/>

What You Can Do to Help Wildlife and Plants

<http://endangered.fws.gov/kids/whatyoucando.pdf>

The Center for a New American Dream

<http://www.newdream.org>

Keep track of how much natural resources you are saving.

Young people around the world care about conservation too!

http://www.unep.org/children_youth/kids/childrenspeech.htm



Class Conservation Action Plan - Student Worksheet

Name _____ Date _____

Class _____

Our Class Conservation Action Plan

I. Review Action Steps and Choose Your Favorites.

Some of the conservation action steps we have already taken include...

The three action steps from my Portfolio and Habitat Journal that interest me the most are...

Other conservation action ideas from the **Student Overview Sheet** (or other sources) that I would like to explore include...

II. Create a Framework for Your Action Plan

Choose one of the three conservation actions your class voted on. This framework will help you think about the action steps you need to take to achieve this goal and the benchmarks (little goals) along the way.

Conservation Goal: _____

Duration: _____

Possible Project Partners: _____

Ideas for Getting the Supplies We Will Need: _____

Benchmarks:

- | | |
|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> 1. _____ | <input type="checkbox"/> 4. _____ |
| <input type="checkbox"/> 2. _____ | <input type="checkbox"/> 5. _____ |
| <input type="checkbox"/> 3. _____ | <input type="checkbox"/> 6. _____ |

Action Steps We Can Take to Meet Our Goal:

- Action Step 1: _____
- Action Step 2: _____
- Action Step 3: _____
- Action Step 4: _____
- Action Step 5: _____
- Action Step 6: _____

Additional Activities and Ongoing Assessment



Extension Activity

Get the Word Out – Send an Eco E-Card!

Students are invited to send us jpgs of their posters and drawings from their habitat conservation campaigns. We might post them in our Habitat Gallery, or turn several into Eco E-cards that you could e-mail to friends, family, and neighbors to spread your conservation message! E-mail us your jpgs to fonz_programs@nzp.si.edu.



Extension Activity

Land-Use Change and Habitats

Students might enjoy taking the Amphibians as Indicators Walk in the virtual forest interactive, A Walk in the Forest. They can investigate how land-use change could impact habitats: <http://nationalzoo.si.edu/education/conservationcentral/walk/>. As a class, research and investigate how land-use change in your own community or region has effected natural habitats and the plants and animals that live in them.



Habitat Journal

Students review their Habitat Journals for any ideas they might want to incorporate into their Class Conservation Action Plan. Encourage them to continue to use their journals to record their observations about and reflections on habitat conservation.



Action Plan Portfolio

Students review and choose selected articles and artifacts from their Action Plan Portfolios to help them create their Class Conservation Action Plan. Invite them to choose one artifact to include in a Class Conservation Action book. Encourage students to continue to add to their portfolios when they read an article of interest related to habitat conservation.



Family Learning Activity

Together, families can take these easy steps to live more sustainably and to conserve local habitats and the environment. Copy the **Family Learning Activity Sheet**, found at the end of this module, and send it home with students. The activity is also available in PDF format at <http://nationalzoo.si.edu/education/conservationcentral/family/>.



Family Learning Activity: Simple Things You Can Do to Conserve the Environment

In school, your child has been learning about conservation planning, but many of the best conservation opportunities start at home. *Simple choices you make every day can have a tremendous impact!* As a family, integrate some of these simple steps into your daily life. Then use the template to write your own Family Conservation Action Plan! *Check off the conservation steps you can take each day.*

❑ 1. Close the Loop: Reduce, Reuse, Recycle.

Quick Tips: Close the loop by buying recycled products and products in recycled packaging. Reduce waste by avoiding products in excess packaging, by reducing levels of consumption, and composting kitchen wastes. Don't forget to buy recycled toilet paper and paper products to save trees! See products made from recycled materials at <http://www.buygreen.com>.

❑ 2. Save Energy at Home: Conduct a Home Energy Audit, Get Brighter Ideas

Call your utility company for a free home-energy audit to locate the biggest energy wasters in your home and to save money! **Quick Tips:** Caulk your windows. Insulate your water heater (reduce carbon dioxide emissions up to 1,000 pounds per year).² Replace worn-out appliances with energy-efficient ones (reduce emissions by up to 3,000 pounds per year). Replace standard light bulbs with energy-efficient fluorescents, especially in rooms you use most. Replacing *just one* bulb in your home would reduce carbon dioxide emissions by 500 pounds per year! (Source: EnergyStar)

❑ 3. Prevent Pollution Inside Your Home: Get a Green Clean Instead!

"How can I prevent pollution starting at home?" (<http://www.beesinc.org/resource/actsol02.htm>) helps you identify harmful products, dispose of them ecologically, and find greener alternatives. **Quick Tips:** Avoid products with NTA, EDTA, phosphates, chlorine bleach, or sodium hypochlorite. Buy biodegradable and non-toxic cleaning products, or make your own. See <http://nationalzoo.si.edu/education/conservationcentral/family/> for easy and economical Green Clean recipes.

❑ 4. Be Water Wise: Trick with a Brick, Go with the Low-Flow, The Classic Brush Off

Quick Tips: To save water, put a brick in your toilet tank and install low-flow showerheads (reduce carbon dioxide emissions by up to 300 pounds per year). Not running the water while you brush your teeth also saves water.

❑ 5. In Your Yard: Get Zany about Xeriscaping, Poo Poo Pesticides, Protect Pollinators

Quick Tips: Plant less grass and xeriscape with drought-tolerant native plants to conserve water. Avoid fertilizers and let grass go dormant in summer. Avoid pesticides—they kill pollinators and are harmful to people, animals, and the environment.

❑ 6. Be a Savvy Shopper: Wake Up and Smell the (Shade-Grown) Coffee!

Quick Tips: Buy shade-grown coffee to save tropical forest habitats and help conserve biological diversity (see http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Coffee/Bird_Friendly/default.cfm?Actionvar=allroasters) for sources in your state), buy locally-grown organic foods, and purchase certified wood products.

7. **Hoof It!**

Quick Tips: Cut down on carbon-dioxide emissions by walking or riding your bike, taking public transportation, and starting a carpool. If you drive, be sure your car gets 30 miles to the gallon (reduces carbon dioxide 2,500 pounds a year over a car that gets 10 mpg less). Check into competitively priced electric/gas hybrids if you are buying a new car.

8. **Take Action: Get Involved with a Local Conservation Issue.**

Contact conservation organizations to learn about the issue.

Congratulations! Total up the pounds of carbon-dioxide emissions you reduced and the gallons of water you saved. Can your family still make improvements? Create a family conservation action plan, sign your pledge, and post it on the refrigerator. Visit <http://www.newdream.org> to calculate the dollar amount you are saving.

We reduced carbon dioxide emissions by _____ pounds by _____.

We saved _____ gallons of water by _____.

The _____ Family
Conservation Action Plan

1. _____
2. _____
3. _____
4. _____
5. _____

We pledge to take the five action steps above to do our part in conserving the environment.

Signed,

