

LESSON 11: EMPOWERMENT—WHAT CAN YOU DO?

Duration: One or two 45-minute class periods

Background information:

Encroachment of invasive exotic plant species is a real issue in the Southern Appalachian region. Not only do invasive exotics infringe upon native plant and animal habitats, they are also very expensive to eradicate. Many hours are necessary to locate and rid invasive exotics from natural ecosystems in our area. In many cases, exotic invasive species are so tenacious that eradication efforts have to be repeated. Costs for eradication include human resources, chemicals, machinery, etc.

The economics of exotic invasive species have not been completely studied in the United States, but the U. S. Forest Service estimates that economic impacts to agriculture, natural areas, and gardens are \$35 billion a year.

Often students feel powerless to create solutions to major environmental issues. In part, this disenfranchisement stems from their inability to change governmental policy or the large expense involved in many solutions. The problem of exotic invasive plant species is one that easily allows small-scale solutions by youth.

Sources:

National Park Service, Great Smoky Mountains, online at
<<http://www.nps.gov/grsm/pphtml/subplants29.html>>

Bright, C. 1998. Life Out of Bounds: Bioinvasion in a Borderless World. New York: W.W. Norton & Company, Inc.

U. S. Forest Service, Southern Research Station. Compass 2005, Volume 1, number 2 (spring).

Objectives:

Raise students' awareness of action they can take at their age to address the environmental issue of exotic plants invading Southern Appalachian ecosystems.

Prepare in advance:

- Copy Handout 1—Possibilities—for each student and make an overhead transparency
- Have multiple copies of Handout 2 (Outreach Contacts) and Handout 3 (Opportunities) available

Materials:

- overhead projector
- overhead markers

Description:

Students will envision and discuss solutions to the local exotic invasive species problem.

Instructional sequence:

(10 –15 minutes)

- **Break** students into groups of four.
- **Explain** to students that they will brainstorm ideas for solutions to the local exotic invasive plant problems the students can engage in.
- **Instruct** students to discuss possible ideas for interventions and solutions within their small groups. One student will record the ideas.
- **Request** reports from each small group and **write** all ideas on the board.
- **Discuss** viable options.

(5 –10 minutes)

- **Give** each student a copy of Handout 1 (Possibilities).
- **Instruct** students to read thoroughly the possibilities for action(s) they might consider taking.
- Direct students to place a check mark beside ideas they are interested in.

(10 –15 minutes)

- **Display** transparency of Handout 1 (Possibilities) on the overhead projector.
- **Request** feedback from small groups and individuals.
- **Indicate** level(s) of interest in various ideas with tallies.
- **Discuss** viable options for action as: a class, a small group, an individual
- **Encourage** students to choose realistic goals.
- **Distribute** copies of Handout 2 (Outreach Contacts) and Handout 3 (Opportunities) to students to use to begin planning their actions.

Teacher note: The discussion of possibilities will most likely carry over to the next class meeting.

- **Assignment:** Students will create an action plan to deal with the local exotic invasive plant problem. As students create the plan they should consider the availability of the following: time, money, political connections, community connections, transportation needs, tools, laborers, etc.

Source: Hungerford, H.R., Litherland, R.A., Peyton, R. Ben, Ramsey, J.M. & Volk, T. L. 1996. Investigating and Evaluating Environmental Issues and Actions: Skills Development Program. Champaign IL: Stipes Publishing Company.

Handout 1: Possibilities

Awareness and understanding: You and your community

- Conduct a *community awareness survey* on exotic invasive plant species.
- Conduct a *public awareness campaign* on the threats of exotic invasive species.
- Write an article for the school newspaper to tell others about exotic invasive plant species.
- Write a newspaper column for a local paper to educate members of the community about exotic invasive plant species.
- Produce public service announcements about exotic invasive plant species and distribute them to the media.
- Develop and distribute an invasive species awareness brochure.
- Sponsor an exotic invasive plant species seminar for both students and the community. Topics could include exotic invasive plants, endangered plant species, sources of exotic invasives (e.g., local nurseries and mail order catalogs), and environmentally sound alternatives to harmful practices.

Habitat restoration

- Hold a school native plant species Arbor Day planting. Invite local officials.
- Replant river or creek banks with native plants to anchor the soil and provide wildlife habitat.
- Plant a native species garden on your school grounds to attract native wildlife, birds, and butterflies.
- Adopt an area of your school's playground, and then develop a plan to improve it with native plant species.
- Participate in a native plant habitat restoration project sponsored by your local community.
- Find old and new aerial photographs of a habitat near where you live and compare them. Find out if exotic invasive plants threaten sensitive habitats in your area.

Source:

U.S. Fish and Wildlife Service, *Endangered Species, Kids' Corner, How Kids Can Help*, online at http://www.fws.gov/endangered/kids/resources/how_help.html#Habitat

Handout 2: Outreach Contacts

1. Southeast Exotic Pest Plant Council
North Carolina Chapter
Contact: Johnny Randall, NC Botanical Garden
Phone: 919/962-0522. FAX 919/962-3531. Email: jrandall@email.unc.edu
<http://www.se-eppc.org/northcarolina/>
Tennessee Chapter
Contact: Tennessee Exotic Pest Plant Council, P.O. Box 936, Fairview, TN 37062
<http://www.tneppc.org/>
2. USGS contacts available for expert assistance
EASTERN REGIONAL OFFICE
1700 Leetown Road,
Kearneysville, WV 25430.
Contact: David E. Bornholdt, Deputy Regional Chief Biologist
Phone: 304 725 8461 ext: 502. Fax: 304 728 4534. Email: david_bornholdt@usgs.gov
Alternate: Anthony M. Frank.
Phone: 304 724 4503. Fax: 304 724 4505. Email: anthony_frank@usgs.gov.

USGS Emeritus
Dr. William (Bill) P. Gregg
U.S. Geological Survey, MS 301, 12201 Sunrise Valley Drive, Reston, VA 20192
Phone: 703 648 4067. Fax: 703 648 4238. Email: william_gregg@usgs.gov
<http://biology.usgs.gov/invasive/expertise.htm>
3. Blue Ridge Parkway
A Ranger in Your Classroom! Contact: <http://www.nps.gov/blri/>
4. Big South Fork Educational Program
Off-Site Programs
Contact: http://www.nps.gov/biso/bsf_ed.htm
5. North Carolina Division of Parks and Recreation
Office of Environmental Education, Outreach Programs
Contact:
NC Dept. of Environment and Natural Resources
Division of Parks and Recreation.
1615 Mail Service Center, Raleigh, North Carolina 27699-1615
Phone: 919 - 733-4181
<http://www.eenorthcarolina.org/edresources/denrprograms/outreachprograms.htm>
6. NC Museum of Natural Sciences
Contact: Linda Sach, 11 West Jones Street, Raleigh, North Carolina 27601-1029
Phone: 919 - 733-7450

Handout 3: Opportunities

1. **Southern Appalachian Volunteer Environmental Monitoring (SAVEM)**
Mission: Help save our biological treasures! SAMAB is training volunteers from around the southern Appalachian area to monitor ecological health in their community. The volunteers are involved in hands-on invasive exotic plant and water quality surveys. Resulting data are used to determine the best approaches for effective management as well as improve public awareness of the threats. If you are interested in volunteering for SAMAB's SAVEM Program, contact Andy Brown, the program coordinator, at andy@equinoxenvironmental.com

2. **The Asheville Weed Team**
Mission: The Asheville Weed Team's primary goal is to take action to control invasive exotic plants in the Asheville area. It is a diverse group of volunteers who conduct invasive plant control efforts at various locations on both public and private land. This group is augmented by funding from the National Fish and Wildlife Foundation's "Pulling Together Initiative." The group has been coordinating field projects, providing training to volunteers, and providing materials for training, education, and field work. Participants are from the nursery industry, volunteer organizations, universities, general citizenry, environmental organizations, and state and federal agencies. If you have any questions, news, or information on invasive plants, please contact Jack Ranney (jwranney@utk.edu or 865-974-3938).

3. **Appalachian Highlands Science Learning Center at Purchase Knob**
P.O. Box 357, Lake Junaluska, NC 28745-0357
Mission: The purpose of the Appalachian Highlands Science Learning Center at Purchase Knob is to integrate educational opportunities for students and teachers into the substantial research that occurs at Great Smoky Mountains National Park and the Blue Ridge Parkway.
Contact Information: Phone: 828-926-6251 Fax: 828-452-0767, Email: Susan_Sachs@nps.gov, online at www.nps.gov/grsm/pksite/index.htm

4. **Great Smoky Mountains Institute at Tremont**
Great Smoky Mountains National Park, 9275 Tremont Road • Townsend, TN 37882
Program/Site Features: The Great Smoky Mountains National Park is our classroom. In this classroom, visitors gain a better appreciation not only of the Park, but also of their world in general and their responsibility toward it. Natural historians and educators may attend weekend or weeklong educational workshops. School groups may attend a 3- or 5-day residential program to investigate nature via their own custom-made schedule. Adventure Camp and Discovery Camp are summer programs that provide outdoor experiences for young campers. Specialty workshops include Photography, Bird Identification, Geology or Environmental Education and the Arts, and Adult Backpacking programs occur throughout the year.
Contact information: Jennifer Arnold, School Program Director
Phone: 865-448-6709 • Fax: 865-448-9250, E-mail: mail@gsmit.org, online at www.gsmit.org

5. **Clemmons Educational State Forest**
2411 Old US 70 West, Clayton, NC 27520
Program/Site Features: Clemmons Educational State Forest offers 20 Ranger conducted classes on topics relating to the ecology of managed forests (contact office for a program guide), Project Learning Tree Workshops and Investigating Your Environment Workshops (for teachers, natural resource professionals, scout leaders, etc.).
Contact Information: Phone: 919-553-5651 Fax: 919-550-8050, Email: clemmonseshf@mindspring.com, online at <<http://www.dfr.state.nc.us/education/esf.htm>>
6. **North Carolina Museum of Natural Sciences**
11 West Jones Street, Raleigh, North Carolina 27601-1029
Video Available: *Plant It and They Will Come...Using Native Trees and Shrubs to Attract Wildlife*. A joint effort between the Museum and Pettigrew State Park, this publication is designed to provide information about our native species of trees and shrubs that have value for attracting wildlife. Over 30 species of woody plants are discussed with information on how to propagate them and where best to plant them. For each plant, teaching tidbits for educators are included. It provides valuable information for those wishing to enhance their grounds as both a place for wildlife and for learning. Cost: \$7.00.
Contact: Mike Dunn, Coordinator of Teacher Education, Phone: 919 - 733-7450 ext. 620, online at <<http://www.naturalsciences.org>>
7. **Southeast Exotic Plant Management Team**
In order to manage invasive plants on National Park lands, 17 Exotic Plant Management Teams (EPMTs) have been formed across the country. The Southeast team is based at the Blue Ridge Parkway. For information visit
<<http://www.nature.nps.gov/biology/invasivespecies/>> or
<http://www.nature.nps.gov/biology/invasivespecies/presentations/SE_EPMT.pdf>
National Park Service Biological Resource Management Division