

# CONNECTING BOTANIC GARDEN EDUCATION PROGRAMS TO PLANET PLANT

The culminating experience of this module is a visit to a local botanic garden. This will give your students the chance to see rare and interesting plants, and to speak with experts working in plant conservation. It might even lead to interesting projects in which to engage your students. The plant collections in botanic gardens vary tremendously, so we offer the following broad list of themes that could structure a tour or activity for students that will enhance what they have learned in this module.

- Endangered species housed at the botanical garden: Where they are from? What is threatening them? What are their unique features? If possible, choose plants that illustrate several different reasons why plants are endangered.
- Locally endangered or threatened plants: What is threatening them? What are the habitats in which they live? What do we know about their pollinator and/or fruit disperser relationships?
- Pollinator and fruit dispersal relationships: Look at photos of the pollinators and fruit dispersers related to specific plants in your botanic garden collection. If possible, use examples that can illustrate how a single plant species can provide support for many other species in its habitat.
- Plants housed at the botanic garden that have medicinal properties: Where do these plants live? What are the threats to them? How are they used as medicines?
- Plants housed at the botanic garden that provide critical habitat for other species.
- Plants housed at the botanic garden that illustrate other ways people use plants (foods, wood types and their specific uses, cosmetics, etc.).

All botanic garden programs, regardless of the plant collections available and regardless of the theme(s) focused on during a class visit, will want to highlight the important work that botanic gardens are doing around the world to help protect plant diversity. Botanic garden educators may also want to mention specific actions that individuals can take to help protect plant diversity.

# SUGGESTIONS for ACTION Projects

Action projects are a great way for students to reinforce and apply what they have learned. Oftentimes, action projects take students out into the community beyond their classroom where they forge special relationships with other people and have a chance to make their education truly relevant. Not all teachers will have the time for such a project, but for those who would like to extend the module so students can act on what they have learned, we have included a list of possibilities. This list is meant to inspire. You and your students may have other, even better, ideas—and these will be the most relevant of all.

- Identify alien plant species on your school property. Coordinate with the grounds crew at your school to see if you can remove these plants and replace them with native species. By doing this, you will help to improve the habitat for other species on your campus.
- Remove alien species from a nearby park or open-land. Maintain alien-free plots in the years to come, and monitor what native species return, if any. You may need to learn about the native plant species for that habitat, and begin planting them.
- Find out what individuals and families can do on their own properties and in their own yards to promote plant diversity. Present your work to your school community, including the parents. Encourage your school and school families to have their properties certified as Backyard Wildlife Habitats through the National Wildlife Federation.
- Find out if your local botanic garden needs volunteers to help with projects or tasks, especially those that relate to improving plant diversity, saving endangered plants, and removing alien species.
- Work with a horticulturist at your local botanic garden to find out how to propagate native plants. Once you've been successful, sell the plants at your school. At the sale, educate people about the value of native plants for plant diversity and habitat improvement. Donate the money you make to an organization working for plant conservation.
- Add your own ideas!

# Plant Conservation Test Study Guide

As you study for the test, please review the following:

1. Threats to plant conservation around the world
  - A. The five major threats and examples of each
  - B. The reasons why alien species can be so detrimental to native plants, especially on islands.
  
2. Practical reasons for conserving plants
  - A. Current and potentially new food sources
  - B. Building materials (construction, cabinetry, furniture, etc.)
  - C. Many other products, including cosmetics!
  - D. Current and future sources of medicine
    - i. why plants produce poisonous compounds
    - ii. why poisons are used in medicines
    - iii. the difference between a poison and a medicine
    - iv. why plant conservation is important to the medical world
  
3. Ecological reasons for conserving plants
  - A. Pollination
    - i. the process of pollination and how it works
    - ii. parts of a flower and the function of each
    - iii. the purpose of a flower
    - iv. various important pollinators and the types of flowers that attract them
    - v. the difference between pollination and fertilization
  
  - B. Fruit/Seed Dispersal
    - i. what a fruit is
    - ii. different ways of dispersing fruits and examples of each
  
  - C. Maintaining habitat diversity and health
    - i. examples of ways plants are critical to maintaining healthy habitats for other living things

# HELPFUL RESOURCES

## Books

Green Inheritance: The World Wildlife Fund Book of Plants by Anthony Huxley (2006). This book provides an excellent summary of plant conservation.

The Forgotten Pollinators by Stephen L. Buchmann and Gary Paul Nabhan (1996). Describes how important pollinators are to the environment and the threats confronting them.

Medicine Quest: In Search of Nature's Healing Secrets by Mark J. Plotkin (2000). Tells of the search for new medicines found in nature, including medicines from plants.

The Private Life of Plants by David Attenborough (1995). A fascinating summary of the plant world. This is a companion to the video listed below.

A Field Guide to Medicinal Plants: Eastern and Central North America by Steven Foster and James A. Duke (1990).

## Videos

The Seedy Side of Plants. (One episode in the PBS series "Nature." It is available on the PBS web site.)

David Attenborough's The Private Life of Plants. (A six-part series produced by the British Broadcasting Corporation, 1995.)