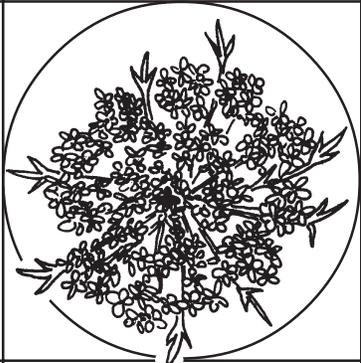
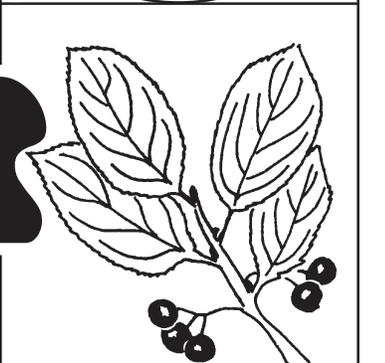
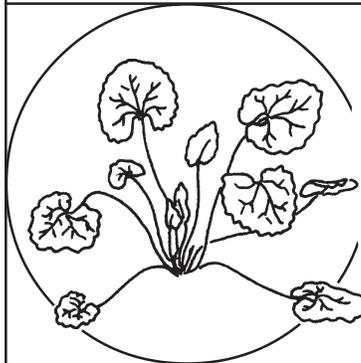
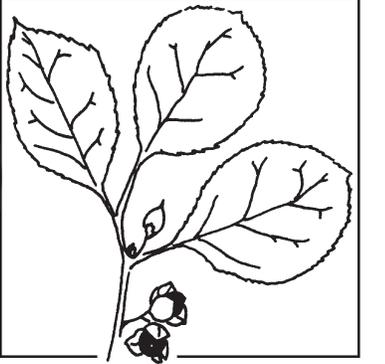
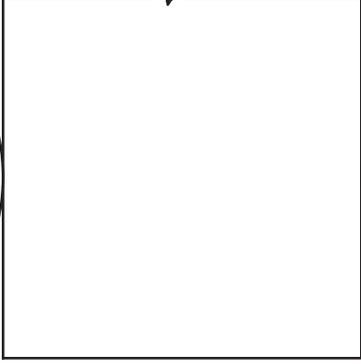


Invaders of the Forest



Educators' Guide to
Invasive Plants of
Wisconsin's Forests



Invaders of the Forest

Educators' Guide to Invasive Plants of Wisconsin's Forests

This activity guide was produced under a 2004 – 2005 grant from the **Wisconsin Environmental Education Board** (grant number 2004-0077).

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Using the Activity Guide 7

Defining the Problem

What are native, non-native, and invasive plants? How do they differ from weeds? How much do we know about them? What do they do?

Global Marketplace (grade 4 – 12) 9

Discover the non-native plants that we depend on for food, fibers, building materials, and medicine.

Wildflower, Weed, or Botanical Bully? (grade 4 – adult) 13

Collect and identify familiar plants and determine if they are native, non-native, non-native invasive, or native invasive.

Sizing Up Weeds (grade 7 – 12) 19

Survey fellow students and neighbors to assess awareness of invasive plants.

Identifying Invasive Forest Plants

What are invasive plants like? What characteristics do they have that make them so successful?

Ad-libbed Aliens (grade 2 – 8) 23

Fill in the blanks and create funny stories about invasive forest plants. Then make a super alien plant!

Invasive or Not? (grade 6 – adult) 29

Find a plant in a forest setting and use a checklist of invasive characteristics to predict whether it is an invasive species.

Field Notes (grade 2 – adult) 35

Practice sketching forest plants and noting their distinguishing features.

The Plant Hunters (K – adult) 39

Start a class herbarium containing local non-native plants.

Understanding Connections

How do invasives change the balance of native communities?

Web of Life (grade 2 – 8) 45

Make connections between the plants and animals that live in a forest environment and watch what happens when invasive plants appear.

Outwit – Outplant – Outlast (grade 5 – 12) 53

Play a series of three simulation games to find out how quickly invasive plants can outcompete native plants.

Garlic Mustard Invasion (grade 2 – adult) 59

Conduct a simple sampling activity to assess the affects that invasive plants have on other plants and animals in the forest.

Bane or Blessing? (grade 5 – 12) 63

Discover the population explosion that occurs when an invasive species like autumn olive is planted and allowed to freely reproduce.

A Can of Worms (grade 4 – adult) 67

Assess the worm population of a forest and investigate the impact of non-native worms on native plants.

Preventing New Invasions

Invasive plants didn't get here by themselves. How do we aid and abet alien invaders?

Plants of the Melting Pot (grade 6 – 12) 75

Research some of the people and plants that immigrated to the United States from the 1700s to the present.

Means & Modes (grade 3 – adult) 79

Brainstorm how seemingly unrelated items could be connected to the spread of invasive plants.

Wanted Posters (grade 4 – 12) 83

Design wanted posters to post in school or community buildings to raise awareness of invasive plants.

Detecting & Monitoring Invasives

Early detection, rapid response, and continued monitoring are the keys to slowing the spread of invasives. How can you find invasive plants before they are a huge problem?

Eyewitness Accounts (K – adult)	85
Know your woods! Use phenology to track changes in native populations and non-native invasions!	
Citizen Scientists (grade 5 – adult)	89
Check out monitoring programs around the state.	
Plotting Plants (grade 4 – 12)	93
Use mapping skills to locate and monitor invasive plants.	
Diversity Index (grade 6 – 12)	99
Calculate the diversity index of beads in the classroom and the diversity of plants in a natural area.	

Controlling Invasive Plants

How do you control invasive plants? Can you eliminate them? What are the options?

Stand Your Ground (grade 9 – adult)	105
Choose sides in the invasive species debate, then write your own “quotable quotes.”	
How to Kill a Dandelion (grade 2 – 12)	109
Use the scientific method to eliminate dandelions from a test plot.	
Checking Out the Options (grade 5 – 12)	113
Determine what the consequences are for various management options.	
Shears, Sawbuck & Co. (grade 5 – 12)	117
Examine the variety of specialized tools available to individuals and land managers trying to kill invasive plants.	
Weed Out! (K – adult)	121
Organize and conduct an invasive plant control project.	
Inspired by Wrath (K - adult)	125
Turn a pile of harvested invasives into art projects or supper!	

Appendices

Activities by Grade	133
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Wisconsin's Model Academic Standards.....	137
Plant Identification Guides.....	139

Additional Resources

You will find listings of helpful resources in the companion to this guide, **Invasive Plants of the Upper Midwest** by Elizabeth Czarapata. See pages 181 – 188 of that book.

Appendix A: Resources for Information about Invasive Plants

(Includes books, journals, manuals, CD-ROMs, curriculums, fact sheets, brochures, posters, videos, and Web sites)

Appendix B: Resources to Help with General Plant Identification

Appendix C: Resources for Natural Landscaping and Ecological Restoration

Using the Activity Guide

We hope you find the lessons in this guide useful as you teach about invasive plants. While this guide is written for Wisconsin educators teaching about invasive forest plants, we trust that creative educators will be able to adapt these activities to other locations and habitats!

Companion Reference

Throughout this guide, you will find references to the book **Invasive Plants of the Upper Midwest: An Illustrated Guide to Their Identification and Control** by Elizabeth J. Czarapata. This book is a complete and up-to-date reference where educators can find both general and species-specific information. It is available in libraries, bookstores, and on the Internet. <www.ipaw.org/order.asp>

Kindergarten - Adult

This guide provides classroom and field activities for formal and non-formal educators working with kindergarten through adult audiences. See the table on page 133 for a breakdown of activities by grade.

Diversity of Activities

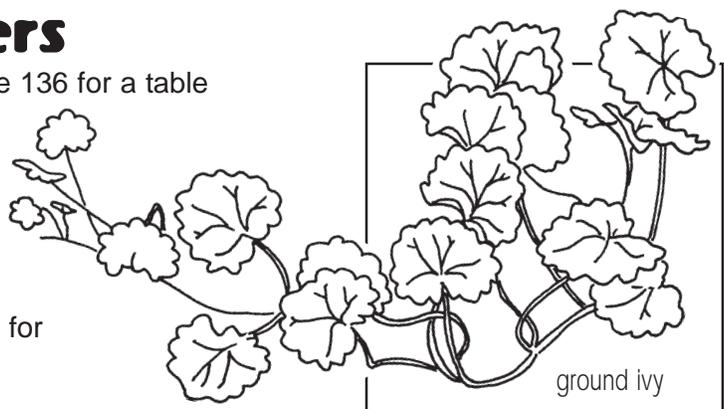
Check out the tables on pages 134 – 135 for a quick look at the variety of subjects and teaching methods in this guide.

Classroom and Field Activities

It's difficult to learn everything there is to know about invasive plants from inside four walls. The table on page 136 gives a quick overview of which activities can be used in the classroom and which need to be done outside.

Field Trip Providers

Non-formal educators should check out page 136 for a table showing activities that fit the time frame of a typical field trip. Some of these activities make great introductions for service learning experiences; others are complete field trips! Extend the learning experience for the students by sending some of the classroom activities in this guide to teachers for use before and after the field trip.



Suggestions for Invasive Plant Units

Grades K – 2

The Plant Hunters
Garlic Mustard Invasion
Eyewitness Accounts
Weed Out!

Grades 3 – 4

Global Marketplace
Ad-libbed Aliens
 or Field Notes
The Plant Hunters
Web of Life
 or Garlic Mustard Invasion
Means & Modes
How to Kill a Dandelion
Weed Out!

Grades 5 – 8

Wildflower, Weed, or Botanical
Bully?
Field Notes
The Plant Hunters
Outwit–Outplant–Outlast
 or Garlic Mustard Invasion
Means & Modes
 or Wanted Posters
Plotting Plants
Checking Out the Options
Weed Out!

Grades 9 – 12

Wildflower, Weed, or Botanical
Bully?
Invasive or Not?
The Plant Hunters
Outwit–Outplant–Outlast
A Can of Worms
Means & Modes
Diversity Index
 or Plotting Plants
Checking Out the Options
Weed Out!

Invasive Plant Units

While most of the activities in this guide are “stand alone” activities, your students will get a more complete picture of the invasive species problem by doing a series of activities. Try to choose at least one activity from each section of the guide so that your students can progress from *Defining the Problem* to *Controlling Invasive Plants*. See the sidebar at left for ideas.

Wisconsin’s Model Academic Standards

Activities have been correlated to Wisconsin’s standards. See correlations with each lesson plan and a listing on pages 137 – 138.

Scout Connections

While invasive plants are not the focus of any specific badges or programs, it is important to connect learning about natural resources to the problems caused by invasive plants. Since invasive plants are threatening the natural areas that scouts treasure, controlling the growth and spread of invasive plants makes for wonderful service learning and conservation projects. See correlations with each lesson plan.

Availability

This guide is available in several formats. It can be downloaded free from the Teacher Pages on the WDNR’s Environmental Education for Kids (EEK!) Web site. <www.dnr.wi.gov/eeek/teacher/invasiveplantguide.htm> The file is in PDF format and requires Acrobat Reader version 5.0 or later. For information about print or CD versions of the guide, contact: Endangered Resources, ER-6, Wisconsin Department of Natural Resources, 101 S. Webster St., Madison, WI 53707, or call (608) 266-7012.

June is Invasive Plant Awareness Month!

June is a great time to be involved in invasives species learning and management projects. Go to the state’s Web site to find out about events around the state and resources you can use in your teaching. <www.invasivespecies.wi.gov>

Share Your Stories

The WDNR Plant Conservation Program staff would appreciate knowing about your successes and challenges. Share *Wanted Posters* that your students create, photos of workdays, stories, and suggestions for additional materials that would help you teach about invasive plants. Send to Bureau of Endangered Resources, ER-6, 101 S. Webster St., Madison, WI 53707, bureau.endangeredresources@dnr.state.wi.us, or (608) 267-5066.