

# The Plant Hunters

## Method

Students will collect local invasive plants and press them to serve as a reference collection for their school and community.

## Getting Ready

1. Before collecting any plants (even invasive species!), ask permission from the landowner.

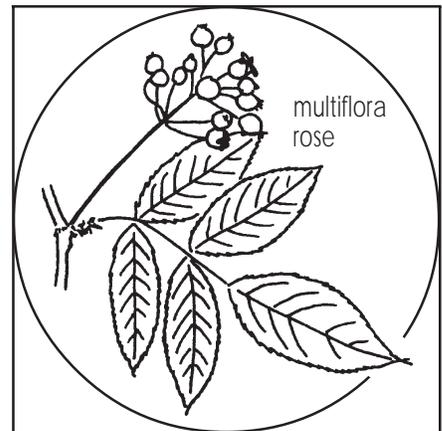
## Introducing the Activity

There have always been plant hunters, but the purpose of the hunt has changed over the years. The first plant hunters were just searching for food! Later when things became a little more settled, the rich sent off others in search of rare bulbs, rootstalks, and fruits that they could plant in their gardens and cultivate. Luca Ghini (1490 – 1556) was the first plant hunter known to have pressed and dried plants to conserve them in a collection. Since that day, plant hunters have gone to the ends of the world to assemble and preserve plants for documentation and study.

Today, herbariums (dried plant collections) play an important role in documenting historical plant communities, tracking the introduction and spread of non-native plants, and monitoring the success of recovery efforts.

## Doing the Activity

1. **Share information about the history of plant collecting.**
2. **Discuss the value of plant collections.**
  - A good plant collection presents a snapshot in time, capturing the plants that once inhabited a given area.
  - Plant collections can track the introduction of non-native species and the range of plants.
  - Plant collections can reveal variations and changes in plants over time.
3. **Visit the State Herbarium.** Take a virtual field trip to Wisconsin's online herbarium. Invite students to look up familiar plants, invasive plants, or all the plants in your county. <[www.botany.wisc.edu/wisflora](http://www.botany.wisc.edu/wisflora)>
4. **Make plant presses.** Follow the directions on page 42 to make a plant press for each student or small group of students.



## Objectives

- Understand that hunting for plants has gone through many changes.
- Investigate the state herbarium and find out about the value of plant collections.
- Collect and press invasive plant specimens.

## Grades

K – adult

## Group Size

Individuals or pairs

## Activity Time

One or two 50-minute periods; ongoing

## Setting

Outdoors and indoors in spring, summer, or fall

## Materials

- Access to the Internet
- Rigid end boards
- Cardboard
- Newspaper
- Rope or rubber bands
- Trowels and pruners
- Water
- Plastic shopping bags
- Labels
- Mounting paper
- Glue

## Connections

See next page.

## Academic Standards

Grades K – 4

- Science: A.4.3, A.4.5

Grades 5 – 8

- Science: A.8.3, B.8.5

Grades 9 – 12

- Science: B.12.4, F.12.5

## Scout Connections

- Bear Cub Scouts: Nature Crafts
- Junior Girl Scouts: Outdoor Creativity

5. **Collect and press invasive species.** Follow the directions on page 43. If your collection expands to include native plants, consider these guidelines:
  - Endangered and threatened plants are extremely rare and should be photographed, rather than collected. A list of rare plants is available on the Internet. <[www.dnr.wi.gov/org/land/er/working\\_list/taxalists/TandE.asp](http://www.dnr.wi.gov/org/land/er/working_list/taxalists/TandE.asp)>
  - Public and private natural areas usually have additional plant collection restrictions. Be sure to check.
  - Never collect a native plant unless there are at least 10 other identical plants within sight. Try to leave enough of the plant for it to survive.

Plant collecting with lower elementary students.

Plant collecting can be a great cooperative activity. After older students have mastered the collecting and pressing techniques, pair them with lower elementary students. Together they can work on a school herbarium. Be sure to set clear guidelines concerning who does which steps and how older students can “help” without “taking over.”

## Assessing the Learning

Create a rubric to assess effort, behavior, and competency in:

- Building a plant press.
- Collecting and pressing plants.
- Labeling and mounting.

## Extending the Learning

**Claim some fame!** The Wisconsin State Herbarium keeps plant specimens from all around the state. If your students are the first to send a particular plant specimen from your county, their names will be listed permanently on that specimen and on the WISFLORA Web site. Check the Web site to see which invasives have not been collected in your part of the state. <[www.botany.wisc.edu/wisflora](http://www.botany.wisc.edu/wisflora)> You can find detailed directions for sending in specimens and an Invasive Plant Report Form on the WDNR’s Web site. <[www.dnr.wi.gov/invasives/futureplants/index.htm](http://www.dnr.wi.gov/invasives/futureplants/index.htm)>



**Get creative with pressed invasives.** Press flowers and leaves from invasive plants for use in art projects. Follow the same pressing procedure, only collect the plant parts to be pressed based on size, shape, and color. You can use pressed leaves and flowers to make:

- Notecards.
- Framed flower/leaf arrangements.
- Leaf prints on fabric or paper.

Be sure to note on your projects that the plants are invasive. The back of notecards could contain a short paragraph that identifies the plant and explains why it is a problem.

## **Finding Out More!**

### **Collecting and Preserving Plants for Science and Pleasure.**

Ruth B. (Alford) MacFarlane. 1985. This book is filled with great ideas!

**WISFLORA: Wisconsin State Herbarium.** University of Wisconsin – Madison. 2005. Online listing of plants by common name, scientific name, habitat, status, and county.  
<[www.botany.wisc.edu/wisflora](http://www.botany.wisc.edu/wisflora)>

# Making a Portable Plant Press

## Parts of the Press

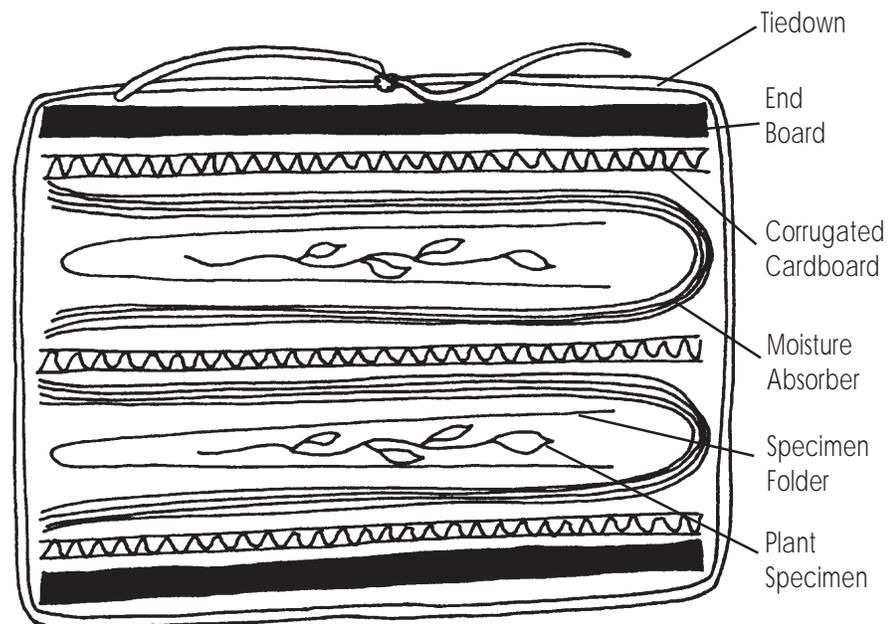
- **End Boards** – Prepare two 9- by 12-inch rectangles of a rigid material. Use plywood, Masonite, pegboard, the backs of two clipboards, the covers from a three-ring binder, or even several pieces of cardboard glued together.
- **Corrugated Cardboard** – Cut up cardboard boxes so the cardboard is the same size as the end boards. Cut so the lines of corrugation run across the shortest distance. This will enhance airflow through the press.
- **Moisture Absorbers** – To wick moisture away from the drying specimens, use sheets of newspaper or paper toweling cut to the same size as the endboards. Sheets of thick blotter paper work well, if available.
- **Newspaper Specimen “Folders”** – Cut folded pieces of newspaper to the same size as the end boards. Arrange specimens inside the newspaper in the same way you would place a document in a file folder.
- **Tiedowns** – Use rope, bungee cords, large rubber bands, or buckle straps to tie the press together.

## Assembling the Press

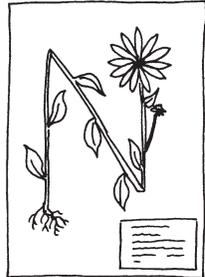
When putting plants in the press, each newspaper specimen folder is sandwiched between moisture-absorbing layers and cardboard. For bulky specimens, extra layers of moisture absorber and cardboard may be needed. Tie the press together tightly. You may need to adjust the tightness as plants dry and flatten out. Include five to ten specimen folders in your press, or as many as you can comfortably carry.

## Alternatives

While a plant press does the best job of drying plants, you can have reasonable success using materials in the classroom. Sandwich the newspapers containing your plants between two pieces of corrugated cardboard. Place several layers of cardboard sandwiches on top of each other. Place several heavy books on top of the cardboard sandwiches. You can also simply place plant specimens in an old telephone book and press with heavy books.



## Collecting a Plant Specimen

1. **Find an invasive species to collect.** This shouldn't be hard! Abandoned fields, vacant lots, and other disturbed areas will probably harbor several invasive species. Try to find a specimen that is flowering.
2. **Record information.** Record the date, the location of the plant, and a description of the habitat. Habitat descriptions should include some indication of the abundance of the invasive species in that location.
3. **Collect specimens.** Using a trowel, dig up the roots of the plant, and wash the soil from the roots. If you are unable to press the plant immediately, wrap the roots in moist newspaper and place the plant in a plastic bag. If the whole plant is too large to collect, prune off a twig that shows branching and leaf attachments. Collect bark, seeds, and/or fruits. Take a photo of the entire plant.
4. **Press the plants.** Arrange each plant on one half of a newspaper folder so that all parts show (i.e., don't overlap flowers with leaves). Turn over one leaf to show its underside. If the plant is too tall to fit on a piece of paper, fold it into a "V", "N," or "W" so that it fits. Close the newspaper folder. See *Making a Portable Plant Press* on page 42 to put your plants into the press. Change the moisture-absorbing newspapers every day or so to speed the drying process. It is critical to dry specimens quickly to avoid decomposition, prevent mold growth, and maintain color.
 
5. **Mount the plants.** Your plants will look better and will be easier to handle and display if they are mounted on paper. Special herbarium sheets are available from most biological supply companies (the American standard is 11.5 by 16.5 inches). If possible, choose a heavyweight acid-free paper. Attach the plant to the piece of paper with a neutral-pH formulation of PVA (i.e., polyvinyl acetate: white glue like Elmer's). Dilute the glue with water for general mounting and use it full strength for specimens that need to be more firmly glued, such as a woody branch that only touches the sheet in a few spots. Paint the glue on the underside of the plant specimen. Press gently with a paper towel to squeeze out and blot up excess glue and to push the plant against the paper.
6. **Label the plant.** Include the information shown on the sample label. See *Writing a Plant Label* on page 44. Place the label in the lower right corner of the sheet. Make a small envelope from acid-free paper to hold seeds or small loose parts. Glue it to the page.
7. **Allow the glue to dry.** Cover the plant with a piece of wax paper so the glue doesn't stick to anything else. Place a square of cardboard over the label to hold it flat while it dries. If there are bulky parts like stems or fruits, add padding to press down the flatter parts of the specimen. Place a sheet of cardboard between specimens to distribute the weight. Then, place a board and heavy books on top of the cardboard. Allow to dry overnight.
8. **Store plant specimens.** Protect the specimens from moisture, light, and insects. Store in a tightly-sealed box or cabinet. If insects do get into the specimens, kill them by freezing the specimens in a very cold freezer (-10° F) for three days or longer. Place the specimens in a plastic bag before freezing, and leave them in the bag until they reach room temperature after coming out of the freezer.
9. **Use the specimens.** Encourage students to use the specimens to verify identification, search for variations, and compare plant distribution from year to year. Display the specimens to educate others about local invasive plants.

## Writing a Plant Label

Follow your teacher's directions to know what to include in your plant label. For inclusion in the state herbarium, specimen labels must have all items marked with a (\*).

Scientific name (genus and species)

Common name

Plant family

Location \*

Include at least one of the following to describe where the plant was found:

- Provide the geographic coordinates using a GPS unit, topographic map, or Gazetteer.
- Locate the position on an online topographic map and print it out.
- Include references to roads, mile markers, or distances from permanent landmarks.
- Indicate county, township, range, section, quarter-section

Description of habitat \*

- Describe the place the plant was growing (e.g., growing through gravel in an abandoned roadway or growing in the shade of a Norway maple).
- List the type of plant community where the invasive was growing (e.g., forest interior, forest edge, old field, prairie, wetland, lakeshore, crop field, pasture, disturbed ground, urban setting).
- List other plants growing in the same area.
- Indicate the size and density of the infestation of any invasive plants.

Plant description

- Describe characteristics that might be lost, such as colors and smells.
- Record the size of the plant if only part was collected.

Name of collector \*

- Include mailing address, phone number, and email address if submitting the specimen to the Wisconsin State Herbarium.

Name of person who identified the plant

- List only if different from the collector.

Date collected \*

- Use the format of day, month, year (e.g., 15 July 2005).

Herbarium of Rockfield School  
Germantown, Wisconsin, USA

### INVASIVE PLANTS OF ROCKFIELD

#### *Hesperis matronalis*

Dame's Rocket  
<Cruciferae>

**WASHINGTON COUNTY:** Just S. of Rockfield Rd. on the NE corner of Rockfield School grounds. (Lat. 43°15'26.1" N, Long. 88°07'41.5" W) Growing at edge of playground where mowed grass meets wooded area. There were 25 dame's rocket plants growing in area about 10 feet long. Flowers: lavender

Francine George, Rockfield School, N132 W18473 Rockfield Rd, Germantown, WI 53022, 262-628-1181  
with Charles Roe and Allen Evers  
17 May 2005