

# Young Restoration Checkup

## Activity Overview

Students inventory and determine the health of the restoration based on the presence of prairie and weed species.

## Objectives

Students will:

- Determine species present in the restoration
- Collect data and evaluate existing condition of the restoration
- Make predictions of the future health of the restoration

**Subjects Covered:** Science

**Grades:** 3 through 12

**Activity Time:** 1-3 hours, depending on student level

**Season:** Fall

**Materials:** Species list for restoration and plant field guides

## State Standards

### Science:

Use scientific sources & resources (B.4.1)

Describe reasoning to make conclusions (B.8.4)

Use data to answer questions (C.4.5)

Communicate results (C.4.6)

Support conclusions with logic (C.4.7)

Ask new questions (C.4.8)

Use inferences and observations (C.8.4)

Use knowledge, models, and theories to explain results (C.8.5)

State learning from investigations (C.8.6)

Explain data & conclusions (C.8.7)

Use computer software to organize data (C.8.8)

## Background

During the first years after a planting of a prairie, weeds often dominate the site while the prairie plants hide underneath. Seeds germinate in the first year, but put most of their growth into their root systems. In fact, 60% to 90% of the plant's biomass is formed underground during the first year. Therefore, weeds are visually more obvious than the forbs and grasses. Usually annual weed species such as foxtail, pigweed, and horseweed will appear. Finding annuals growing in the restoration is usually not a problem, but they should not be allowed to go to seed.

During the second year, native biennial species such as black-eyed Susan, evening-promrose, and Canada wild-rye will begin blooming. Exotic biennials are often evident as well; biennials that are a concern in an early planting include thistles, Queen Anne's-lace, sweet-clovers, mustards, and wild parsnip. Other plants that may be of concern in your young prairie include persistent perennial invaders like quackgrass, red clover, bindweed, reed canary grass, and dandelion. Action to control persistent invasive weeds is necessary. For more information on control of invasives see the Additional Resources at the end of this activity.

Often by the third year, a restoration begins to look more "presentable" with many native species beginning to bloom.

## Activity Description

### 1. Take a pulse:

Inventory the internal pulse of the restoration as measured by biodiversity. Determine species present. Create a checklist of native and non-native species. Native seedlings and invasive weeds may be identified using a pictorial key. Indicate if a species is flowering. Check off the lifestyle (annual, biennial or perennial) of each species.

### 2. Diagnosis:

Analyze the results to see if the species present have a positive (intentional native species) or negative (unintentional invasive species) or neutral (unintentional, but not a problem) impact on the future health of the restoration, given the lifestyle of each species. What symptoms help to determine the health of the restoration?

### 3. Prescription:

What action(s) can be taken to improve the quality of this restoration? If possible, include a timetable for action.

### 4. Prognosis:

How does the future look for this restoration? Use features to support your prediction(s).

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## Young Restoration Checkup (cont.)

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Evaluate questions, hypotheses, conclusions (C.8.9)

Discuss results (C.8.10)

Identify further questions (C.8.11)

Present results (C.12.6)

Evaluate articles & reports using scientific criteria (C.12.7)

Explain survival and population growth of species (F.8.9)

**Source:** Nancy Schlimgen, Patrick Marsh Middle School, Sun Prairie, WI

### Extensions

- Identify lessons learned for future restorations.
- Use the resources below to research management alternatives.
- Carry out management actions (species removal, mowing, etc.).
- Repeat the checkup at regular intervals.

### Additional Resources

- Boyer, France, Dickinson, Richard (1999). *Weeds of the Northern U.S. and Canada*, A guide for identification. Edmonton; University of Alberta Press and Renton; Lone Pine Publishing.
- Czarapata, Elizabeth J. (2005). *Invasive Plants of the Upper Midwest: An illustrated guide to their identification and control*. Madison University of Wisconsin Press.
- Dittmer, Lora, Jackson, Laura. (1997). *Prairie seedlings illustrated: An identification guide*. University of Northern Iowa, Dept. of Biology, University of Northern Iowa, Cedar falls, IA 50614
- Kurtz, Carl. (2001) *A Practical Guide to Prairie Reconstruction*, University of Iowa Press
- Powers, Randy R. (2000). "Help! I planted wildflowers and ended up with a weed patch!" Self-published. Prairie Future Seed Co., LLC, PO Box 644, Menomonee Falls, WI 53052-0644,
- "Weeds of the North Central States." (1981). University of Illinois at Urbana-Champaign, IL., (Available at County Extension Offices.)
- Shirley, Shirley. (1994). *Restoring the tallgrass prairie: An illustrated manual for Iowa and the upper Midwest*. Iowa City: University of Iowa Press.
- Solecki, Mary Kay (1997). "Controlling Invasive Plants," in Packard, S., Mutel, C.F. eds. *The Tallgrass Restoration Handbook*, Washington, D.C.: Island Press.
- Thompson, Janette R. (1992). *Prairies, forests, and wetlands: The restoration of natural landscape communities in Iowa*. Iowa City: University of Iowa Press.

### Assessments

- What is a native plant? Name three native plants growing in your restoration.
- What is a non-native plant? Name three non-native plants growing in your restoration.
- Identify one non-native plant growing in your restoration and explain why it is or isn't a concern based on its lifestyle and other factors.

