



Grade Level:
3rd Grade

Time:
90 Minutes

Season:
Winter

Objectives:
Students will be better able to...

- Identify two methods of prairie restoration (sowing in the field, sowing in the greenhouse and planting seedlings in the field)
- Name two kinds of prairie plants (grasses and forbs)
- Name at least one prairie plant species
- Plant prairie seeds in the field
- Explain why people restore prairie
- Enjoy making a difference improving the health of the prairie



Prairie Wetlands Learning Center

Restoring the Prairie

3rd Grade Plant and Animal Behavior Series

Summary

Students design an investigation about prairie restoration driven by their own questions. They participate directly in restoring the prairie by planting seeds in the prairie. (If possible, they may also be able to make observations of seedlings in the greenhouse and/or plant seeds there.) Lastly, they reflect upon their discoveries and answer their investigation questions.

Background

In this lesson, students use the prairie as their classroom to investigate and participate in prairie restoration. The KWHL chart and method often used in reading is applied to science, providing structure to their investigation. The specifics of their investigation are driven by the questions they generate. Providing a hands-on, direct opportunity for students to make a difference for the prairie increases their loci of control and sense of connectedness to the land which they will be responsible for stewarding as adults.

There are many ways to restore prairie. One way is by sowing seed in late winter or early spring when the snowpack is melting. The seeds can be sprinkled into the snow and mud, and then walked over to ensure that direct contact is made with the substrate so the wind cannot blow them away. As the snow continues to melt, the seeds are pulled down to the soil surface. Prairie Wetlands Learning Center staff selects the best location for sowing such as gopher mounds, thinly vegetated slopes, construction sites, or burned areas. They choose places where the prairie canopy is scant or where recent disturbance to the canopy allows plenty of sunlight to penetrate to the soil surface. Such openings help the seeds germinate with less competition from other plants.

Minnesota Academic Standards

Subjects Covered:
Science

Helps support 16 standards and 16 benchmarks. See section “2019 Minnesota Academic Standards in Science” and “2010 Minnesota Academic Standards in Language Arts.”



Background, *continued*

Materials:

- Harvested or purchased prairie seeds and/or classroom set of 6-pack pots and soil
- Rulers
- Magnifiers
- colored pencils

Skills Used

investigating,
following directions,
asking and answering questions,
observing,
measuring,
sketching, reflecting,
collecting data,
analyzing data,
restoring habitat,
thinking critically,
teamwork,
organizing



Another way to use seeds in prairie restoration at the Prairie Wetlands Learning Center is to sow them in the greenhouse, allow them to germinate and grow, and then plant them outside. First, Prairie Wetlands Learning Center volunteers use a natural flour paste to glue the tiny seeds to tissue paper. These seed tapes make handling the seeds by students for planting much easier. Prairie Wetlands Learning Center staff and students usually sow these seeds in late winter into small 6-pack pots. The seedlings are transplanted from the 6-packs to small pots in mid-spring, and then planted outside in late spring. Depending upon when students visit in winter and the timing of greenhouse operations, they may be able to plant seeds and/or observe and record data about seedlings in the greenhouse in addition to planting in the prairie.

Fergus Falls Wetland Management District staff employs several other methods to help restore the prairie without the assistance of students. Prescribed fire and mowing create openings in the prairie, reduce the layer of dead and decaying plants, open the canopy, and reduce weeds and trees. Introducing biological control agents like the weevil *Cyphocleonus achates* decreases populations of spotted knapweed, a noxious weed. Mechanical cutting and removal of tree fence lines opens up small grassland areas into larger blocks required by some birds for nesting. It also reduces predator habitat and increases nesting success for grassland birds.

Native seedings are managed intensely for about five years after sowing in the field. Mowing in the first and second years to control weeds and stimulate growth helps the seeding become better established. Spraying is only done to control difficult patches of weeds. Fire is typically used in the third and fifth years after seeding to help stimulate the production of seed. Once a seeding is established it is difficult for weeds to invade these dense native grass stands with their robust root systems.

Why restore the prairie? Many species of wildlife require grassland habitats, and in the Fergus Falls Wetland Management District, nearly 99% of the native tallgrass prairie has been lost to the plow and development. Grasslands provide shelter for birds, mammals, reptiles, and insects. Species like greater prairie chickens, marbled godwits, short-eared owls, bobolinks and other songbirds require large tracts of grasslands to make their homes. All species of ground nesting birds like waterfowl, pheasants, and songbirds need grasslands to build and conceal their nests. The prairie is a critical habitat to species that call only the prairie home or that need the prairie in order to complete part of their life cycle.

Likewise, some plant species can only live in the prairie. More than 500 species of native wildflowers are found on the prairies of northwest Minnesota. More than 150 species of grasses live in the prairie with about 10 species dominating grassland cover. Other categories of



Background, *continued*



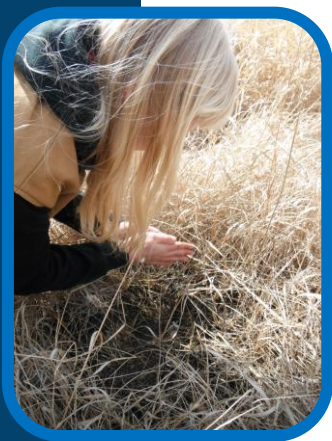
prairie plants include shrubs, vines, mosses, algae, ferns and horsetails, and even trees. However, prairie plants mainly include grasses and flowers (forbs). The native grass species in the northern tallgrass prairie vary in size from side-oats grama that is about one foot tall to prairie cordgrass and big bluestem which can reach seven feet tall. These plants develop root systems that are sometimes twice as long, as the plants are tall. Because of this dense root system, these plants form sod that has a tremendous capacity to absorb run-off and rainwater. They can take up chemicals and nutrients that are carried into the grassland by run-off thus filtering the water that flows through a tract of grassland.

These plants and animals in the prairie interact with each other to help form a complex ecosystem. A diverse seed mixture is important because the wildflowers provide food for many species of insects. Grassland birds feed on the insects found in these prairies. A grassland tract with diverse species composition can support more wildlife that is dependent on that food source. Plant species diversity also provides variability in the grassland structure. Some wildlife species need dense grasses overhead and passageways near the ground; others like shorter, open areas in a grassland. Plant diversity provides better cover, nesting habitat and food for a larger variety of wildlife species.



Although it was once the most widespread ecosystem in North America, the tallgrass prairie today is in danger of extinction. In Minnesota, for example, less than 0.1% of native prairie remains. One way to help the prairie is to increase the biological diversity of the restored prairie at the Prairie Wetlands Learning Center. Seeds harvested by students in fall from richly producing sites are planted in late winter/early spring in less diverse areas. By participating in this field investigation, students are also helping to re-establish part of our natural, national, and agricultural heritage.

Restoring the prairie is not only an opportunity to discover more facts about North America's grasslands, our home biome. It is also a chance to wonder about the miracle of growth that starts with a tiny seed in the dry, windy, hot-and-cold prairie and culminates in a sea of grass up to seven feet high, speckled with brilliantly colored blossoms. It is a chance to celebrate beauty and participate in beauty-making as we strive to restore this almost lost landscape.



Teacher Preparation

We highly recommend conducting one or more of the suggested extensions before your visit in order to integrate this field investigation into the classroom study of prairie, grasslands, biomes, plants, seeds, life cycles, or other topics.



Teacher Preparation, *continued*

To maximize outdoor classroom time at the Prairie Wetlands Learning Center,

- Teachers may conduct steps 2 through 4 in the section “Field Investigation Procedure” at school. Upon arrival at the Prairie Wetlands Learning Center, teachers may provide Prairie Wetlands Learning Center staff with a written list of what students know and wonder for quick review before heading out into the prairie.
- Please organize your students into small groups at school, each small group led by an adult chaperone, everyone wearing nametags.
- Please help save paper. Bring your students’ science notebooks or journals to record their field data and discoveries in. If science notebooks are not available, please inform the Prairie Wetlands Learning Center staff that you will need paper and clipboards when booking your date

Prairie Wetlands Learning Center Staff Prep

- Coordinate with the visitor services manager regarding the availability of seeds for sowing in the field. Determine the best location(s) considering current conditions.
- Coordinate with the greenhouse manager to determine if help is needed with a seeding project in the greenhouse. If so, the greenhouse manager needs to ensure that pots and soil are available and organized.
- Coordinate with the greenhouse manager to determine if observing seedlings in the greenhouse is possible. If so, the greenhouse manager needs to set out six-pack pots, rulers, and magnifiers for students to use.
- Depending upon the arrangements, determine how much time students can spend in each location.

Field Investigation Procedure

Introduce the Topic

1. In a classroom, welcome students, teachers, and chaperones to the Prairie Wetlands Learning Center.
2. Arrange students into small groups with their chaperones (see section “Teacher Preparation,” above), and inform chaperones of their role in following through on instructions for students.
3. To begin the investigation, start a KWHL chart. (Classes using loose-leaf paper can fold their papers into quarters to help set-up the chart.)
4. Ask students what they know about

prairie restoration. What is it? How and why is it done? When? Who does it? Record their responses on the white board and suggest they do likewise in their journals. (This is the K of the KWHL model. What do we know?)

4. Tell students that today they will get to help restore the prairie. What questions do they have about that? What would they like to find out about prairie restoration while we are there? Again, responses should be recorded on the white board and in journals. (This is the W of the KWHL model – what do we wonder?)



Procedure, *continued*

6. Inform students whether they will be sowing or planting seeds in the field, greenhouse, or both; and/or if they will be making observations of seedlings in the greenhouse. Set up one or more field journal pages depending upon the arrangements and questions they generated

7. Review rules for the trail before heading out and bring the bag(s) of seeds if sowing in the field.

Explore Outside

8. Follow this procedure for sowing in the field

a) Invite students to smell their seeds, use hand lenses to examine one of their seeds, and share observations. Doing so increases students' awareness of what a single seed looks like as well as increases their sense of wonder about prairie restoration. In addition, this activity enables students to better differentiate between seeds and other flower parts, including seed heads, which may contain hundreds of seeds.

b) If sowing into gopher mounds or patches of bare soil, show students the mounds and ask them who made them? Tell them a little bit about plains pocket gophers and their habits. Then, walk around and not on the mounds while bending down and slowly sprinkling seeds very close to the mound soil. They should break up any large seed heads before dropping them.

c) If sowing into a large area of melting snow or a burned area, arrange students in one line, side by side. Demonstrate how they will smell and closely observe their seeds, then walk in parallel lines across the snow. Bend as you walk, sprinkling seeds very close to the snow, and break up any large seed heads. Show them where to stop and turn back around. Then walk back to the original line on top of the seeds. Explain why we sow in winter and in snow and why we walk on the seeds. This method is very different from how students typically plant garden seeds at home.

d) If time allows, go to another area close by and encourage students to search for seeds on the soil surface. These seeds have been planted by the wind or animals or simply gravity. Are any sprouting? Can they find any tiny seedlings? What is the soil like? Invite them to smell and feel the soil by rubbing a small amount between their thumb and forefinger, creating a soil ribbon. What textures can they detect? They may take a tiny dab and rub it on their journal page.

Exploring in the Greenhouse

9. Follow this procedure if students are *sowing* in the greenhouse:

a) Before entering the greenhouse, students should create a drawing in their journals of their six cells and number their drawings.

b) In the greenhouse, ask each student to stand near a six-pack pot. They should check to make sure that their drawing is numbered to match how the six-pack pot is labeled, correcting their drawing as needed.

c) Provide each student with a few loose seeds, preferably of the same species being planted in the seed tapes. Invite them to use hand lenses to examine one of their seeds and share observations. They should then make an enlarged sketch illustrating the details revealed by the hand lens. How do they think those adaptations help the seed disperse and survive in the prairie?

d) Direct students to place each of their six seed tapes in the cells, seed side up, and sketch the seed tapes in their journal drawings. Depending upon the questions they generated earlier, students may need at this time to measure each seed and label the journal sketches accordingly.

e) Lastly, they should cover each seed tape gently with about four millimeters of soil or until the seed tape is completely covered so they no longer see it. They must not tap or press the soil down. They may carefully brush off Prairie Wetlands Learning Center U.S. Fish and Wildlife Service 6 excess soil, though.



Procedure, *continued*

- f) If time allows, students may carefully and thoroughly water their seeds with a water can or bottle, but not the hose.
10. Follow this procedure if students are *observing* in the greenhouse:
- Before entering the greenhouse, students should create a drawing in their journals of their six cells and number their drawings.
 - In the greenhouse, ask each student to stand near a six-pack pot. They should check to make sure that their drawing is numbered to match how the six-pack pot is labeled, correcting their drawing as needed.
 - Students should observe their plants write down what they think is the most interesting thing about plant or plants they are viewing. Then they may record their observations in their journal using colored pencils and rulers. A few possibilities might include sketching the six-pack cells and the plants growing in them, measuring the tallest plant, or sketching one seedling with and without use of the magnifier.

Weather Alternatives

Field investigations take place rain or shine. Everyone should dress appropriately for the weather. In the event of unsafe weather (extreme cold or lightning), everyone must come indoors. Prairie Wetlands Learning Center staff makes every effort to make your travel worthwhile despite the weather and prepare indoor, age-appropriate plans. Prairie Wetlands Learning Center staff welcomes teacher input into these plans. Some possible alternatives might include:

- Go outside near the building for a very short amount of time to sow seeds. Soil eroded, exposed, or compacted by human activities can typically be found near paved trails and roads.
- If students are eating lunch at the Prairie Wetlands Learning Center, ask them to keep some of the seeds from their food – apples, oranges, kiwi, strawberries, bread, etc. What do they look like? Which parts of their lunch grew from seeds? Do these plants grow in Minnesota?
- Tour the exhibit area and watch prairie wetlands videos with the objective of finding out more about how people restore prairie. The fire fighter display, fire exhibit, and video productions are all appropriate destinations.
- Read *A Seed is Sleepy*. Brainstorm ideas together on what a seedling is, or what a plant is. Then write a poem together as a class, in partners, or individually using the same concept in the book.

Reflect Together

- Return to the classroom. Share discoveries and use collected data to answer the questions which formed the investigation. In reflection, ask them what was the most important thing we did today? Why was it important? What can people do to help put prairies back on the land? Lastly: what do we now know about prairie restoration? Ask them to write a complete sentence to share their favorite discovery about it and select a few to read aloud. What new questions do they have about prairie restoration?
- Thank everyone for their help in making the prairie healthier and the chaperones for their leadership. Invite them to come back again to visit and bring a friend or relative – show that person where their seeds are planted.

Vocabulary

prairie, restore, seedling, greenhouse, seeding or sowing, grass, forb, germinate



Weather Alternatives, continued

- Read *How a Plant Grows* by Bobbie Kalman. Show examples of seeds such as milkweed pods, pinecones, maple seeds, wild licorice, bur-reed. Students may examine and sketch these seeds.

Teacher-Led Extensions and Assessment Ideas

Try these activities at school to extend your visit!

School Connections

- Go outside at school and search for seeds. What do they look, smell, and feel like? What adaptations do they have? What kinds of plants do they come from? How do they travel? Cockle burs attach to people and other mammals; winged samaras of maple trees and fluffy airborne cottonwood seeds blow in the wind; cattail seeds float on the water; buckthorn seeds are eaten and excreted by rabbits and songbirds. Save the seeds you find in the school yard or local park and tape them into a seed journal.
- Read *A Tallgrass Prairie Alphabet* by Claudia McGehee. Make a similar class book based on your visit to the Prairie Wetlands Learning Center and the species planted, using the names of as many plants as possible.
- Make a giant prairie seed out of paper Mache with the various parts labeled.
- Study plant parts such as roots, stems, leaves, seeds, flowers. Study the parts of a seed and the parts of a flower. Use coloring sheets, 3-D plastic models, puzzles, or real plants from a florist or that you grow.
- Use art materials to make the life cycle of a plant (such as seed, stems/leaves, and flowers). Or collect weed plants from your school yard and use them to make life cycle diagrams.
- How does a seed come to be? Study the process of pollination, the parts of plant involved in creating seeds, and pollinators who assist. Important prairie pollinators include bees, flies, ants, butterflies, moths, and beetles.
- Provide ways that students can share their prairie restoration experience with other students at school through poetry, drama, storytelling, artwork, etc.
- Research the ways Dakota, Ojibwe, and pioneers used prairie plants for food, medicine, dye, rope, and other purposes. Do we still use them today? How do people use purple coneflower (*Echinacea*) in herbal medicine now?

Home and Community Connections

- Look for opportunities at school or in your community to restore native habitat or use native plants in a rain garden.
- Using written material in your students' science notebooks, share their discoveries through your parent newsletter, school newsletter, school district newsletter, or web site.



For the Prairie Wetlands Learning Center Educator

Prairie Wetlands Learning Center Theme – the Prairie Pothole Region

Primary Environmental Education Message – The prairie pothole region is valuable and in need of restoration and protection.

Sub-message – People: the U.S. Fish and Wildlife Service works with others to preserve, manage, and restore wetlands in the Prairie Pothole Region.

Prairie Wetlands Learning Center Environmental Education Objectives – Understand and participate in restoration, enhancement, protection, and management methods of prairie and wetlands. (Habitat and People)

2019 Minnesota Academic Standards in Science

This lesson helps support the following state standards

Strand 3 Developing possible explanations of phenomena or designing solutions to engineering problems

Substrand 3.1 Developing and using models

Standard 3.1.1 Students will be able to develop, revise, and use models to represent the students' understanding of phenomena or systems as they develop questions, predictions and/or explanations, and communicate ideas to others.

Benchmark 3L.3.1.1.2 Develop multiple models to describe how organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. *Emphasis is on the pattern of changes organisms go through during their life. Examples of models may include diagrams, drawings, physical models, or computer programs.* 3-LS1-1

Substrand 3.2 Constructing explanations and designing solutions

Standard 3.2.1 Students will be able to apply scientific principles and empirical evidence (primary or secondary) to explain the causes of phenomena or identify weaknesses in explanations developed by the students or others.

Benchmark 3L.3.2.1.1 Construct an explanation from various resources for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. *Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.* 3-LS4-2

Strand 4 Communicating reasons, arguments and ideas to others

Substrand 4.2 Obtaining, evaluating and communicating information

Standard 4.2.1 Students will be able to read and interpret multiple sources to obtain information, evaluate the merit and validity of claims and design solutions, and communicate information, ideas, and evidence in a variety of formats.

Benchmark 3L.4.2.1.1 Obtain information from various types of media to support an argument that plants and animals have internal and external



Science Standards, *continued*

structures that function to support survival, growth, behavior, and reproduction. *Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin. Examples of media may include electronic sources.* 4-LS1-1

2010 Minnesota Academic Standards in Language Arts

This lesson helps support the following state standards.

Strand READING

Substrand Informational Text K-5

Standard Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Benchmark 3.2.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Standard Read and comprehend complex literary and informational texts independently and proficiently.

Benchmark 3.2.10.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.

Strand READING FOUNDATIONAL SKILLS K-5

Substrand Reading Foundational Skills K-5

Standard No anchor standards for foundational skills

Benchmark 3.3.0.4 Read with sufficient accuracy and fluency to support comprehension.

Strand WRITING

Substrand Writing K-5

Standard Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Benchmark 3.6.4.4 With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.

Standard Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

Benchmark 3.6.7.7 Conduct short research projects that build knowledge about a topic.

Standard Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.



Language Arts Standards, *continued*

Benchmark 3.6.10.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Strand SPEAKING, VIEWING, LISTENING, AND MEDIA LITERACY

Substrand Speaking, Viewing, Listening, and Media Literacy K-5

Standard Prepare for and participate effectively in a range of conversations and collaborations with diverse partner, building on other's ideas and expressing their own clearly and persuasively.

Benchmark 3.8.1.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.

a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).

c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

d. Explain their own ideas and understanding in light of the discussion.

e. Cooperate and compromise as appropriate for productive group discussion.

f. Follow multi-step oral directions.

Standard Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Benchmark 3.8.2.2 Determine the main ideas and supporting details of a text read aloud, or information presented in diverse media and formats, including visually, quantitatively, and orally.

Standard Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Benchmark 3.8.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

Standard Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Benchmark 3.8.6.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Strand LANGUAGE

Substrand Language K-5

Standard Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Benchmark 3.10.3.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

a. Choose words and phrases for effect.



Language Arts Standards, *continued*

b. Recognize and observe differences between the conventions of spoken and written standard English

Standard Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

Benchmark 3.10.5.5 Demonstrate understanding of word relationships and nuances in word meanings to develop word consciousness.

b. Identify real-life connections between words and their use (e.g., describe people who are friendly or helpful).

c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).

Standard Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to the comprehension or expression.

Benchmark 3.10.6.6 Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships

References and Resources

Books and Web Sites for Children

- *A Seed is Sleepy* by Dianna Hutts Aston and Sylvia Long
- *A Tallgrass Prairie Alphabet* by Claudia McGehee
- *A Walk in the Prairie* by Rebecca L. Johnson
- *How a Plant Grows* by Bobbie Kalman
- *How a Seed Grows* by Helene J. Jordan
- *Plant Secrets* by Emily Goodman
- *Biology of Plants* Missouri Botanical Gardens website

Books and Web Sites for Teachers

- *Gardening with Prairie Plants: How to Create Beautiful Native Landscapes* by Sally Wasowski
- *Minnesota's Natural Heritage, an Ecological Perspective* by John R. Tester
- *Prairie, A Natural History* by Candace Savage
- *Prairie Seedling and Seeding Evaluation Guide* by Bonestoo Rosene Anderlik and Associates Engineers and Architects
- *Restoring the Tallgrass Prairie: An Illustrated Manual for Iowa and the Upper Midwest* by Shirley Shirley
- *Tallgrass Prairie* by John Madson
- *Tallgrass Prairie Wildflowers, a Field Guide* by Doug Ladd
- *The Prairie Garden, 70 Native Plants You Can Grow in Town or Country* by J. Rober Smith with Beatrice S. Smith



References, *continued*

- *The Tallgrass Restoration Handbook: For Prairies, Savannas, and Woodlands* edited by Cornelia F. Mutel and Stephen Packard
- *Wildflowers of the Tallgrass Prairie, the Upper Midwest* by Sylvan T. Runkel and Dean M. Roosa
- *A Digital Aid Featuring Seeds, Seedlings, and Fruits* by Eastern Illinois University website
- Biology of Plants, How Plants Grow website
- *Earth Partnership for Schools K-12 Curriculum Guide* by University of Wisconsin-Madison Arboretum website
- *Native Plant List* by Prairie Resource Center website
- *Project Bluestem, a Curriculum on Prairies and Savannas* by Neal Smith National Wildlife Refuge website
- School Forests in Minnesota website

Credits

This field investigation was developed and written by Prairie Wetlands Learning Center Staff, U.S. Fish and Wildlife Service. Thanks to the following teachers for reviewing this lesson plan: Stacy Busta, Breckenridge Elementary; Lori Carstens, Fergus Falls Public Schools; Vicki Hanneman, Cleveland Elementary, Fergus Falls; and Jan Thiele, Wahpeton Central Elementary. Photos provided by Prairie Science Class teachers and Molly Stoddard/USFWS.

