

Earthteaching News, Spring 1996

Earthteaching News

from the University of Wisconsin-Madison Arboretum

Earth Partnership Program

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Welcome

Welcome to Earthteaching News, a newsletter of the University of Wisconsin Madison Arboretum's Earth Partnership Program. Some of you have received our newsletter in the past and some of you are new to us. We have been sending out our newsletter quarterly to all of our trained teachers but are getting an increasing number of requests for the newsletter from others interested in the educational strengths of prairie restoration. We will send out a fall and spring newsletter to all of you; Earth Partnership teachers and schools will continue to receive a smaller winter and summer edition also.

Much of our newsletter is dedicated to circulating new ideas about how you can use your prairie restoration in the classroom. We will also have some news from our program and from other teachers. If you have something you want included, let us know. We want to make this newsletter as useful as possible for teachers while getting the word out to new readers.

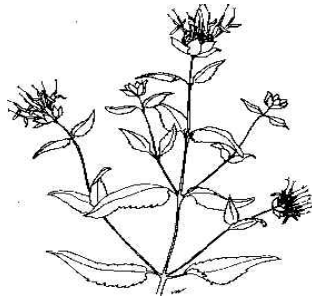
We hope news from our program will be of interest to you. If not, please let us know and we will gladly drop your name from our mailing list. If you know of others who might be

interested in receiving this, let us know and they will be added. We can be reached at (608) 262-9925 or by email at rgreenle@facstaff.wisc.edu.

The Earth Partnership Program

Many schools in Wisconsin are creating small restored prairies on their school sites. Beginning to restore a biological community promotes a respect for our land, an understanding of our impact on natural areas and an opportunity for hopeful and positive action. It can involve students in an exciting, hands-on, action-oriented project. Their involvement is grounded in basic science and is enhanced through emotional, creative and aesthetic experiences. Students ask questions; their outdoor laboratory helps them find answers. Restored communities can be used to infuse environmental education into all grade levels in subjects ranging from science and math to art and music.

The Earth Partnership Program, based at the University of Wisconsin-Madison Arboretum forges links between students, their schools, their communities and their environments through restoration of native plant and animal habitats on school grounds. We provide workshops, inservices, visits and consultations and have developed written materials providing technical guidance as well as curricular ideas.



Program Objectives

Engage students to learn about the local environment through all subject areas and encourage them to develop the attitudes, knowledge and skills necessary to become active citizens.

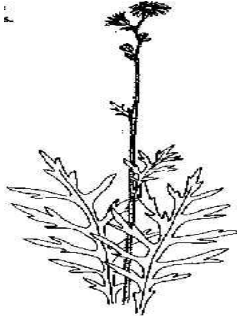
Develop students' abilities to relate to the natural world in many ways while developing a sense of place in the world.

Lead people in learning how to act as stewards of native plant and animal communities.

Develop, demonstrate and use new experiential techniques for the teaching of core subjects that are grounded in the context of ecological restoration.

Train teacher leaders to insure continuity for the project in each community.

Can We Be of Service...



At Your Site?

If you are an Earth Partnership alum and feel that you could benefit from a visit by our staff to your prairie site (or potential site), let us know. We can help assess site, develop site plans, consult on seed mixes, advise on management strategies or what ever you feel your site could use. We can come to your school, you can come to the Arboretum, we can talk on the phone, we can provide inservices. If any of this sounds useful to you, let us know and we'll see what we can do.

In the Classroom?

While many of you are focusing your energies on getting your restoration going, don't overlook the need to find ways to use this restoration in your teaching and in teaching throughout your school. Do you need any help in getting this going? If you are an Earth Partnership alum, here are some of the things that we, at the Arboretum, can offer:

- * meet with a curriculum committee and make a presentation or work/brainstorm together
- * come to your school and present part of a teacher inservice
- * meet with a small number of teachers who want to use the prairie in their classroom and jointly develop some ideas
- * work with you to develop a specific activity or series of activities to meet a specific need
- * bring your kids to the Arboretum for part of a day and teach them here using the Arboretum' resources

Prairie Photo-Op

We need more photos of kids doing prairie work at their schools. If you are planning to take your students out to work and learn on their restoration site, give us a ring at 262-9925. We would love to come out and capture the action on film.

Build-A-Bison

Dark forms darken the horizon, and dust rises high on the air. The earth begins to shake. A dull faraway sound settles into a rhythm. As the dust cloud looms closer and closer, the rhythmic rumble gets louder and louder. Soon the noise can't be separated from the trembling of the earth. A black wave of tremendous, shaggy animals with thundering hooves explodes across the treeless plains.

from American Bison by Ruth

Berman

Mention "prairie" to most school kids (and adults as well) and images of stately lupines and graceful big bluestem are unlikely to jump into their minds. More likely they imagine a thundering herd of buffalo stampeding across the flat prairie land amidst an enormous cloud of dust. Since buffalo, or more correctly, bison, are both exciting and well known, they make a good starting point for introducing the prairie to your students.

A host of science, math, language arts, social studies, art and music activities can be developed around some aspect of the bison. Consider the biology of the bison, its role in the prairie ecosystem, bison legends and myths, historical accounts of the demise of the North American bison, pioneer journal accounts of encounters with bison, the relationship between native Americans and bison, bison in classical art and "buffalo" songs... the activities are limited only by our imaginations (and available time!). Below is an elementary activity that introduces bison to the children and begins to give them a sense of the impact of bison on the prairie.

Background

Bison were indisputably the largest animal to inhabit the prairie. A full-grown male bison can easily tip the scales at 2,000 pounds and stand 6 feet at the shoulder. Their eyes are set into an enormous head at a 4 foot span and the 2 foot horns sit atop that head at a 2 1/2 foot span. An adult bison will consume about 50 pounds of food per day.

Perhaps more impressive than the size of a single individual is the numbers of bison that used to roam the plains. Herds of bison would graze shoulder to shoulder carpeting the land for miles. Think about the biggest parking lot full of cars that you have ever seen. How many cars would you estimate were in that lot? 200? 500? 1000? Now, in your head imagine 1,000 or 10,000 bison roaming across the prairie. It's hard to know how many bison were on the prairie before European settlers came to North America but the estimates range from 50-200 million. To get a sense of how many 50-200 million is, consider this: there are about 150 million cars in the United States currently. Imagine if every time you saw a car, it was a bison instead!

In order to give your students a better sense of the bison and their tremendous presence on the prairies, have the students build a bison.

Materials Needed

20-30 students

1 bison map per student (next page)

Two sets of bison parts

Making the Bison Parts

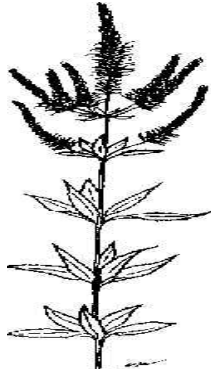
The bison parts can be made from large pieces of butcher block paper or cardboard. A call to a local appliance store can usually produce a large refrigerator or appliance box. Assign a bison part to a pair of students. They will need to make two copies of that part. Write the letter "A" and the name of the part on the *front* of one piece and the letter "B" and the name of the part on the *back* of the second. Alternatively the teacher can make the pieces ahead of time, labeling them "A" and "B" as described above. The dimensions for each piece are given on the facing page.

Building the Bison

Divide the students into two teams, those with parts labeled "A" and those with parts labeled "B". Each team will assemble one side of the bison. Have the two teams facing each other as they build so that the students can easily see the other team's bison. All pieces should be held such that the letter and part name faces the student and the plain side faces outwards. One at a time, the teacher will call out the names of the bison parts and the students begin to build their bison. When the two sides are finished, rotate them such that the students are inside the bison and the two halves face outward. They are standing in a full size bison model! With 20-30 students each weighing an average of 75 lb., you have also created a bison that is approximately the true weight of one of these grand beasts.

Wrap-Up

Have the students consider the full size of the bison they created. Now imagine having two in the room. Now imagine four standing shoulder to shoulder. In your mind's eye fill up an entire parking lot, a city block or an entire small town with these magnificent animals.



Need a Good Prairie Book?

There are lots of great reads out there that can supplement your lessons on the prairie. Books about prairie ecology, Native Americans, prairie natural history as well as children's field guides and coloring books are all available. In this issue we highlight a few good books which deal with frontier and pioneer life. Accounts of prairie life from the settlers' viewpoint are often rich, compelling and can really make prairie history come alive.

Brink, Carol Ryrie. Caddie Woodlawn. Macmillan, 1973.

Stories of the author's grandmother's pioneer childhood in Wisconsin in the 1860's.

Conrad, Pam. Prairie Songs. Harper and Row, 1985.

Explores the Nebraska prairie settler's life that lent love and devotion to some while handing others only loneliness.

Conrad, Pam. Prairie Visions: The Life and Times of Solomon Butcher. Harper Collins, 1991.

Solomon Butcher travelled in turn-of-the-century Nebraska, recording the lives of the pioneers by setting their tales down on paper and their images in photographs.

Harvey, Brett. My Prairie Year: Based on the Diary of Eleanore Plaisted. Holiday, 1986.

Captures the vivid reminiscences of the author's grandmother, who moved to the Dakota Territory in 1889.

Holling, Holling C. Tree in the Trail. Houghton Mifflin, 1941.

A cottonwood tree's history on the Santa Fe Trail from 1610 to 1834. Illustrations make each time period come alive.

Lawlor, Laurie. [Addie Across the Prairie](#). Whitman, 1986.

Stories based on research by the author at the South Dakota farm of her great-grandparents. This book is about Addie's first months as a Dakota pioneer.

MacLachlan, Patricia. [Sarah, Plain and Tall](#). Harper, 1986.

Winner of the 1986 Newberry Medal. Curriculum guide available.

Wilder, Laura Ingalls. [Little House on the Prairie](#). HarperCollins, 1953.

Stories of the author's childhood; born in 1867 in Wisconsin, she travelled through Kansas, Minnesota and the Dakota Territory in the 1870's and 80's.

Wilder, Laura Ingalls. [Winter Days in the Big Woods](#), [Dance at Grandpas](#), [Going to Town](#), [Deer in the Wood](#), and [Summertime in the Big Woods](#). HarperCollins, 1994. Text adapted from [Little House in the Big Woods](#).

Picture books adapted from the Wilder classic bring Laura and her frontier family to our youngest readers.

Further Bison Information

Berman, Ruth, *American Bison*

Caduto, M. and J. Bruchac, *Keepers of the Animals*

Campbell, Maria, *People of the Buffalo* Costello, David, *The Prairie World*



MacDonald, Fiona, *Plains Indians*

Madison, John, *Tallgrass Prairie*

National Geographic, November, 1994, *Back Home on the Range*

Schlissel, Lillian, *Women's Diaries of the Westward Journey*

Shedd, Warner, *The Kid's Wildlife Book*

Stratton, Joanna L., *Pioneer Women*

Nature Phenology Journal

Spring peepers awaken from their long winter's sleep to sing their melodic chorus in early April. Leaf and floral buds burst open in a rainbow of colors in May. In June, luscious, red strawberries ripen on their vines. Centuries ago, nature set this seasonal clock of natural events. The dates of these happenings may change from year to year, but the sequence seldom differs. To mark these events and express appreciation, some Native American tribes designated a special identity and story to each of the thirteen moons in a year. The Cree identified April as the Frog Moon, May is called the Budding Moon to the Huron and June is the Strawberry Moon to the Seneca. Authors, Joseph Bruchac and Jonathan London wrote a book based on these Native American stories and observations of nature titled "Thirteen Moons on a Turtle's Back". Recently, Miguela Fry and Cheryl Haberman of the UW Madison Arboretum put together a hands-on phenology journal for students, teachers and families based on the thirteen moons and seasons of the year. This nature phenology journal is comprised of several activities for personal and group observation of nature and natural events. It will be available soon, and the pages will be reproducible for classroom use.

The scientific term for observing the sequence of natural events is phenology. Webster's definition of phenology is "the study of natural phenomena that recur periodically; such as migration, blossoming, etc. and their relation to climate and changes in the seasons". Scientists and amateurs have created journals for years to keep track of the changes in seasons. Studying phenology in the classroom opens many doors of opportunity to teach environmental education in an informal fashion. Students begin to observe their world more carefully when they record the first snowfall of the year, when they notice migrating geese, when the lakes begin to freeze, when the weather begins to warm and the red-winged blackbirds return or when the first bumble bee is noted. From year to year these records are compared, patterns begin to emerge, and more questions asked. Students will understand concepts of ecology and the interrelationships among plants, animals, humans and climate while developing their observational skills.

Phenology studies provide a connecting thread or theme throughout the school year. Each month may begin with the question, "What do you expect will happen, naturally, during this month?" Write these predictions down then keep track of what actually happens. At the end of the month students will learn of many new events based on their observations and will be ready to predict and observe for the next month.

It is not necessary to travel to distant natural areas to study phenological changes. A schoolyard, restored prairie, local park or empty lot all provide information for the student. Take your students out to walk the same route different times through the year. Have them consider questions such as; "What is the weather like? What sounds do you hear? What do you smell? Feel? What is different about this walk compared to the others?" Naturalist,

John Burroughs wrote, "If you want an adventure, take the same walk that you took yesterday, and do so again tomorrow."

Drawing or painting a tree throughout the year is another way to learn and observe. Have a student choose a special tree to artistically recreate at different times of the day and year. Students also record specific information about its height and size, leaf shape, relationship to other organisms, etc.

Creating a phenology journal provides students with a personalized book of their experiences in nature study. Perhaps it will mark the beginning of a lifelong pursuit of nature appreciation.

Prairie Phenology

Prairie restorations are ripe for phenology activities. The dynamic nature of a prairie engages students in their exploration for new blooms. During peak growing season, one new species comes into bloom everyday! Phenology is also a good method to record the changes that take place from year to year in a newly restored prairie.

The Popping Moon

(January)

The new year cold makes the trees shiver with snaps, cracks and groans.

Baby Bear Moon

(February)

In the snowy winter, hibernating bears give birth to cubs. We can imagine them dreaming February away with warm thoughts of Spring.

Maple Sugar Moon

(March)

In March, sugary sap rises from the roots of the maple tree. Drip, drop, splashes the golden liquid into our bucket as the sap oozes from the cut in its bark.

Frog Moon

(April)

"Winter has ended! Winter has ended!" croak the spring frogs.

Budding Moon

(May)

Listen carefully as the robins and redwing blackbirds joyfully sing of buds bursting forth, painting the landscape in rainbow colors.

Strawberry Moon

(June)

Sweet, juicy, red strawberries ripen in the sun to tempt both children, mice and men.

Acorn Moon

(July)

When the sun shines bright and we seek shade under the mighty oak, we look up to see the oak's promise of the future in its small acorns.

Wild Rice Moon

(August)

Silently paddle your birch bark canoe into the backwaters to gather the plummy, golden heads of wild rice.

Moose Calling Moon

(September)

The moose call the leaves to don their golden splendor.

Moon of Falling Leaves

(October)

The wind spins and weaves maple, oak, ash and cherry into a royal carpet inviting children to explore.

Moon When Deer Drop Their Horns

(November)

The silence of the November wood is broken with a crack as the buck's antlers clash. When the battles are done, the weapons have been left behind for you to find.

Moon When Wolves Run Together

(December)

The cold wind echoes with the howl of the wolves as they reform their family packs for the long winter.

Big Moon

(December/January)

The big winter moon glistens on the quiet white blanket of snow with the promise of spring nestled cozy underneath.

Earth Partnership Schools

Below is a list of the schools we are working with; we encourage you to contact schools in your area to see how you might collaborate or at least find out more about what they are doing.

Abundant Life Christian, Madison, 1994-95

Amy Belle School, Colgate, 1995-96

Brodhead Elementary, Brodhead, 1992

Butler Middle School, Waukesha, 1994-95

Cambridge Elementary, Cambridge, 1993

Central Middle School, Hartford, 1995-96

Cherokee Heights Middle, Madison, 1995-96

Country View Elementary, Verona, 1992-1993

Crestwood Elementary, Madison, 1992

Dickinson Elementary, DePere, 1995

Fox Prairie Elementary, Stoughton, 1995-96

Frank Allis Elementary, Madison, 1992-93

Gompers Elementary, Madison, 1992-93

Hartland-Arrowhead High School, Hartland, 1991

Hawthorne Elementary, Madison, 1992-93

Huegel Elementary, Madison, 1992-93

Ixonia High School, Ixonia, 1992

Jefferson Middle School, Madison, 1994-95

Kennedy Elementary, Madison, 1994-95

Kenosha Middle School, 1992

Lapham Elementary, Madison, 1991; 1993

Lincoln Elementary, Madison, 1993

Marshall Middle School, Janesville, 1992-93

Middleton High School, Middleton, 1994-95

Netherwood Knoll Elementary, Oregon, 1994-95

New Berlin School District, New Berlin, 1995

Nicolet High School, 1991

Oregon Middle School, Oregon, 1995-96

Platteville High School, Platteville, 1992

Prairie View Elementary, Oregon, 1992

Riverside University High School, Milwaukee, 1991

Sauk Prairie, Sauk Prairie, 1992

Sennette Middle School, 1992

Sherman Middle School, Madison, 1992



St. Stephens, Stevens Point, 1995-96

Stoner Prairie Elementary, Oregon, 1992-93

Verona Area High School, Verona, 1992-93

Washington Elementary, Stevens Point, 1995-96

Watertown High School, Watertown, 1994-95

Waukesha North High School, Waukesha, 1994-95

Waukesha West High School, Waukesha, 1994-95

Wingra School, Madison, 1994-95

WI Academy of Adaptive Learning, Madison, 1991

Wisconsin Rapids School District, Wis. Rapids, 1995