Indian Education Division
Montana Office of Public Instruction
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Montana Fish, Wildlife & Parks

Indian Education for All Units related to Montana State Parks
Brush Lake State Park
January 2010 (revised)

Title
A Cultural and Land-Use Study of the Prairie Ecosystem in Northeastern Montana

Content Area
Science; Social Studies; Speaking and Listening

Grade Level
9^{th}-12^{th}

Duration
Four 50-minute class periods and 4 homework assignments

Overview and Objectives
Brush Lake State Park is located in the prairie of northeastern Montana. This area is the historical territory of several tribes, including the Assiniboine (Nakoda/Nakona) and Sioux (Dakota) bands whose descendents now live at the Fort Peck Reservation in Montana, as well as at Fort Belknap and reservations in North and South Dakota. Additional related bands of these tribes live in south-central Canada. The history of this area reveals the impacts of white settlement on the indigenous peoples, their ways of life, and the natural environment. American colonialism in the West changed many aspects of tribal life while simultaneously altering the physical landscape of tribes' ancestral home. Today, some tribal members of the area are now working to re-establish some of the native plants, animal species and land-use practices to this region in an effort to restore the integrity and diversity of the prairie ecosystem.

This lesson provides students with a brief overview of the history of northeastern Montana, its tribes, and the settlers. Students will evaluate the cumulative impacts of white settlement on the environment and how changes to the prairie ecosystem resulted in changes to the tribes who depended on it. Building on this historical context, students will study some of the prairie restoration efforts currently going on in this region. Through this study, students will develop a more thorough understanding of the short- and long-term impacts of colonialism on the tribes and learn about the efforts of tribal members to maintain their cultures and natural environments over time. Students will also become aware of one way in which the worldviews of tribes, including indigenous sciences and views of the natural environment, have persisted over centuries and are today providing useful and valuable contributions to the understanding of ecosystems and human-environment interactions.

In order to develop students' speaking and listening skills while enhancing the hands-on aspect of this unit, the lesson will culminate in the creation of posters by students and their presentations (in small groups) to the class on specific prairie resource topics and restoration efforts by tribes of northeastern Montana.

Montana Education Standards and Benchmarks

Indian Education for All

Essential Understanding 1: **There is great diversity among the 12 tribal Nations of Montana in their languages, cultures, histories and governments. Each Nation has a distinct and unique cultural heritage that contributes to modern Montana.**

Essential Understanding 3: **The ideologies of Native traditional beliefs and spirituality persists into modern day as tribal cultures, traditions and languages are still practiced by many American Indian people and are incorporated into how tribes govern and manage their affairs. Additionally, each tribe has its own oral history beginning with their origins that are as valid as written histories. These histories pre-date the "discovery" of North America.** ***Background: Tribal languages, cultures, and traditions are alive and well throughout Indian Country. Indigenous languages are still spoken, sacred songs are still sung, and rituals are still performed… These histories and traditions may be private, to be used and understood only by members of that particular tribe. Educators should be aware of this issue when asking students about their histories, ceremonies and stories. Educators should also be consistent with policies surrounding "religious/spiritual activities" and ensure that Native traditions and spirituality are treated with the same respect as other religious traditions and spirituality.***

Essential Understanding 5: **Federal [Indian-related] policies, put into place throughout American history, have affected Indian people and still shape who they are today.**

Essential Understanding 6: **History is a story and most often related through the subjective experience of the teller. Histories are being rediscovered and revised. History told from an Indian perspective conflicts with what most of mainstream history tells us.**

Montana Content Standards

Social Studies Content Standard 1: Students access, synthesize, and evaluate information to communicate and apply social studies knowledge to real world situations. *Rationale: Every discipline has a process by which knowledge is gained or inquiry made. In the social studies, the information inquiry process is applied to locate and evaluate a variety of primary and secondary sources of information [which is then used] to draw conclusions in order to make decisions, solve problems and negotiate conflicts. Finally, as individuals who participate in self-governance, the decision-making process needs to be understood and practiced by students as they prepare to take on civic responsibilities.*
Benchmark 1.2. Students will apply criteria to evaluate information (e.g., origin, authority, accuracy, bias, and distortion of information and ideas).
Benchmark 1.3. Students will synthesize and apply information to formulate and support reasonable personal convictions within groups and participate in negotiations to arrive at solutions to differences.

Social Studies Content Standard 2: Students analyze how people create and change structures of power, authority and governance to understand the operation of government and to demonstrate civic responsibility. *Rationale: The vitality and continuation of a democratic republic depends upon the education and participation of informed citizens.*
Benchmark 2.4. Students will relate the concept of tribal sovereignty to the unique powers of tribal governments as they interact with local, state and federal governments.
Benchmark 2.6. Students will analyze and evaluate conditions, actions and motivations that contribute to conflict and cooperation within and among groups and nations.

Benchmark 2.7. Students will analyze laws and policies governing technology and evaluate the ethical issues and the impacts of technology on society.

Social Studies Content Standard 3: Students apply geographic knowledge and skills (e.g., location, place, human/environment interactions, movement and regions). *Rationale: Students gain geographical perspectives on Montana and the world by studying the Earth and how people interact with places. Knowledge of geography helps students address cultural, economic, social and civic implications of living in various environments.*
Benchmark 3.3. Students will assess the major impacts of human modifications on/to the environment.
Benchmark 3.4. Students will analyze how human settlement patterns create cooperation and conflict which influence the division and control of the Earth (e.g., treaties, economics, exploration, borders, religion, exploitation, water rights, etc.)
Benchmark 3.5. Students will select and apply appropriate geographic resources to analyze the interaction of physical and human systems and their impact[s] on environmental and societal changes.
Benchmark 3.7. Students will describe and compare how people create places that reflect culture, human needs, government policy, and current values and ideas.

Social Studies Content Standard 4: Students demonstrate an understanding of the effects of time, continuity, and change on historical and future perspectives and relationships. *Rationale: Students need to understand their historical roots and how events shape the past, present and future of the world. In developing these insights, students must know what life was like in the past and how things change and develop over time. Students gain historical understanding through inquiry of history by researching and interpreting historical events affecting personal, local, tribal, Montana, United States, and world history.*
Benchmark 4.1. Students will select and analyze various documents and primary and secondary sources that have influenced the legal, political and constitutional heritage of Montana and the United States.
Benchmark 4.2. Students will interpret how selected cultures, historical events, periods and patterns of change influence each other.
Benchmark 4.3. Students will apply ideas, theories, and methods of inquiry to analyze historical and contemporary developments, and to formulate and defend reasoned decisions on public policy issues.
Benchmark 4.5. Students will analyze both the historical impact of technology on human values and behaviors and how technology shapes problem solving now and in the future.
Benchmark 4.6. Students will investigate, interpret and analyze the impact(s) of multiple historical and contemporary viewpoints concerning events within and across cultures…and political systems.
Benchmark 4.7. Students will analyze and illustrate the major issues concerning [the] history, culture, tribal sovereignty and current status of the American Indian tribes and bands in Montana and the United States.

Social Studies Content Standard 5: Students make informed decisions based on an understanding of the economic principles of production, distribution, exchange and consumption. *Rationale: In a global economy marked by rapid technological and political change, students must learn how to be effective producers, consumers, and economic citizens.*
Benchmark 5.6. Students will explain and evaluate the effects of new technology, global economic interdependence and competition on the development of national policies and on the lives of the individuals and families in Montana, the United States, and the world.

Science Content Standard 5: Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies. *Rationale: Our world and human activity is shaped in many ways by the advances in science. Science and technology are parallel in that science drives technological advances and these advances drive future scientific endeavors. Many different cultures*

contribute to science and technology. These advances affect different societies in different ways. It is vital that students understand the interrelationships [between] science, technology and human activity.
Benchmark 5.4. Students will analyze benefits, limitations, costs, consequences and ethics involved in using scientific and technological innovations (e.g., environmental issues).
Benchmark 5.5. Students will explain how the knowledge of science and technology applies to contemporary Montana American Indian communities (e.g., natural resource development, management and conservation).

Speaking and Listening Standard 2: Students distinguish among and use appropriate types of speaking and listening for a variety of purposes. *Rationale: Students must choose appropriate methods of communicating effectively with different types of audiences… Delivery choice must also fit the presentation.*
Benchmark 3.3. Students will speak and listen effectively for a broad range of purposes.

Speaking and Listening Standard 4: Students identify, analyze, and evaluate the impacts of effective speaking and evaluative learning. *Rationale: After speaking or listening, students need to evaluate the completed communication process…*
Benchmark 4.1. Students will analyze the characteristics and evaluate the impact(s) of informative, persuasive and/or artistic presentations of self, peers, public figures and the media.

Materials and Resources Needed

Computers with Internet access to the websites listed below.

Books, articles and other printed resources:

- ***Land of Nakoda—The Story of the Assiniboine Indians: from the Tales of the Old Ones Told to First Boy*** by James Larpenteur Long, with drawings by Fire Bear ([William Standing] under direction of the Writers' Program of the Works Projects Administration. Helena, Montana: Riverbend Publishers, in Cooperation with the Montana Historical Society Press, 2004. (Students will need pages 73-138)

- ***Medicinal Wild Plants of the Prairie, An Ethnobotanical Guide,*** by Kelly Kindscher, University of Kansas Press, 1992. ISBN 0-7006-0527-4 (You will only need one copy of this book. It is available at the University of Montana –Missoula and Montana State University –Bozeman and other libraries in the state.)

- ***Montana Native Plants and Early Peoples,*** by Jeff Hart, Montana Historical Society Press. Two editions of this book are available and either will do. Request in advance through Interlibrary Loan if it is not at your school or public library.

- ***Montana Stories of the Land,*** by Krys Holmes, Montana Historical Society Press, 2008. Chapter 13, pages 250-266. This will provide an overview of homesteading in Montana. Available online at http://svcalt.mt.gov/education/textbook/Chapter13/Chapter13.asp

Websites:
- **Tribal History of Fort Peck and Tribes at Fort Peck:**

✓ http://www.usd.edu/iais/siouxnation/FtPeck/tribhist/html

✓ http://www.fortpecktribes.org/HISTORY.htm

- **Prairie Ecosystems and Grassland habitats:**

✓ Ecosystem definition and types: http://en.wikipedia.org/wiki/Ecosystem

✓ Prairie restoration definition: http://en.wikipedia.org/wiki/Prairie_restoration

✓ Manning Lake Wetland Tribal Wildlife Refuge: printable brochure from http://www.deq.state.mt.us/wqinfo/Wetlands/NewsLetters/Vol2No2/ManningLake.pdf If you have difficulty obtaining this, contact Jeanne Spaur at 406-768-2329 at Manning Lake

✓ Montana Native Plants: http://montana.plant-life.org/

✓ American Prairie Foundation**:** http://www.americanprairie.org

✓ Indigenous Medicinal Plants—see two ethnobotany books listed above.

- **Swift Fox resources:**

✓ Swift Fox Restoration, http://www.americanprairie.org/projectprogress/science-and-wildlife/swift-fox-reintroductio

✓ "Speeding the Swift Fox's Return" by Catharine Moser, *National Wildlife,* Oct/Nov 2008, v46, n6, http://www.nwf.org/NationalWildlife/article.cfm?issueID=124&articleID=1641

✓ "Keeper of the Wildlife" by Cathy Moser, High Country News, April 28, 2008, online at http://www.hcn.org/issues/369/17667

✓ MT FWP field guide entry, Swift Fox: http://fieldguide.mt.gov/detail_AMAJA03030.aspx

- **Black-footed Ferret resources:**

✓ MT FWP article on Black-footed Ferret: http://fwp.mt.gov/mtoutdoors/HTML/articles/2007/ferrets.htm

✓ MT FWP field guide entry for Black-Footed Ferret: http://fieldguide.mt.gov/detail_AMAJF02040.aspx

✓ "Ferret Restoration on Fort Belknap Reservation," by Tim Vosburgh Endangered Species Bulletin, May, 2000. http://www.fws.gov/ENDANGERED/bulletin/2000/05-06/18-19.pdf

✓ Ferret and Prairie Dog Restoration, from the American Prairie Foundation website, at http://www.americanprairie.org/prairieDogandFerret.html

- **Prairie Dog resources:**

✓ Montana FWP field guide entry on Black-tailed Prairie Dog: http://fieldguide.mt.gov/detail_AMAFB06010.aspx

✓ Please also see the article "Managing Bison to Restore Biodiversity" listed below with the bison restoration articles from *Great Plains Research.*

- **Bison resources**:

✓ Montana FWP field guide entry on bison: http://fieldguide.mt.gov/detail_AMALE01010.aspx

✓ "Managing Bison to Restore Biodiversity," by Joe C. Truett, Michael Phillips, Kyran Kunkel, and Russell Miller, in *Great Plains Research*, Vol. 11, No. 1, Spring 2000, p. 123 [*2001 Leslie Hewes Award*] From the Center for Great Plains Studies. Available online at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1542&context=greatplainsresearch

✓ "Bi'Shee: For American Indians, the Return of the Buffalo Brings Healing to Both Body and Spirit" by Richard Peterson (Assiniboine-Sioux) in *American Indian*, summer 2001. Online at: http://westgatehouse.com/art179.html

✓ Very short online video of bison from Fort Belknap onto the American Prairie Reserve in April, 2009, go to: http://www.americanprairie.org/learn/sights/sights_release.html#video

Activities and Procedures

Teacher Preparation: It is recommended that the teacher preview all of the online materials and become familiar with the contents. Be sure to order books through Interlibrary Loan well in advance of when you will need them.

Arrange for use of computer lab for class periods 1 and 2 unless you are printing all of the listed web-based materials for your students. Some of the small group research topics (medicinal plants) use print materials (the ethnobotany books listed above) instead of online materials. Teacher might want to photocopy specified entries from these books for the members of that small group.

Teacher will need to find out if there are any students who do not have computer with internet access available for doing homework. If so, either make arrangements for those students to use computers at school after school or provide them in advance with printed copies of research topic materials (see Class Period 2) and the list of corresponding materials on the Poster Guidelines.

Student Preparation: Read Attachment A (Historical Overview) and "Oasis on the Prairie"—a brief description of Brush Lake State Park (Attachment B)

Class Period 1: Contrasting Different Cultural Land-Use Practices and Values

For this period, you will need a computer lab if students are reading these materials online; otherwise, the materials can be printed beforehand and distributed to students at the beginning of class. Introduce the topic of land-use differences based on differences in cultures, histories and worldviews, adding: "*When homesteaders arrived in northeastern Montana, they found a challenging environment where survival was the goal. The Assiniboine, Dakota (Sioux) and other Indian people had been meeting these same challenges for thousands of years and had evolved complex economic, agricultural and cultural methods of coping."*

1. Assign the readings on tribal land-use practices and cultural perceptions regarding the environment. Students should take notes regarding life-ways of these tribes, land-use practices, and cultural perspectives on the environment and human-nature relationships.

- Fort Peck Reservation history at http://www.fortpecktribes.org/HISTORY.htm (Alternative: http://www.ihs.gov/FACILITIESSERVICES/AREAOFFICES/BILLINGS/FORTPECK/fpsu-history.asp

- Assiniboine and Sioux food gathering and preparation: http://www.sicc.sk.ca/archive/heritage/ethnography/dnl/food/hohefood.html

- *Land of Nakoda,* read Part III: Lodges, Food and Games and Part IV: Hunting. (Pages 73-138. Although these are a lot of pages, they are all short and can be read quickly.)

2. Assign the reading on white settlers' land-use practices and cultural perceptions regarding the environment and human-environment relationship. Students should also take notes on the land-use practices, cultural characteristics and relationship between homesteaders and the land/nature.

- ***Montana Stories of the Land,*** by Krys Holmes, Montana Historical Society Press, 2008. Chapter 13, pages 250-266. This will provide an overview of homesteading in Montana. Available online at http://svcalt.mt.gov/education/textbook/Chapter13/Chapter13.asp

Homework 1: For homework, students should write a short paper comparing and contrasting the land-use practices and related activities and values of Indians and settlers in northeastern Montana (about 1-2 paragraphs per item listed below). In general, the paper should respond to the following question: *How were the following activities and values similar or different for the two groups at the beginning of the 20th century?* Students might want to consider all or some of the following topics in their responses:
Diet and nutritional
Food procurement/subsistence
Animals and relationship to animals
Housing
Land use practices
Tools and implements used in land-use activities
Cultural and spiritual worldviews, especially regarding human-nature relationship
Each group's history of interaction with that particular environment

Class Period 2: Northeastern Montana's Prairies

For this period, you will need: Computers and Internet Access (see websites above or on Attachment C), Attachment C: Poster and Presentation Guidelines for students, and the two books on medicinal plants.

1. Teacher's lecture – Introduce your class to the project on prairie ecosystems and restoration efforts. Be sure to define "ecosystem" for your class. If you need a good definition, see the Wikipedia entry at http://en.wikipedia.org/wiki/Ecosystem (5-10 minutes)

2. Provide students with Poster Guidelines (Attachment C). Have students form small groups of their choosing (one per topic). Assign 1 research topic per group and introduce the poster-making activity. Remind them that the posters will be used for their presentations. They will be beginning the research in class, and finishing it as homework tonight. Every student needs to read the materials corresponding to that group's topic. *If any of your students do not have Internet available at home or readily available, please provide that student with a printed version of the materials so that he or she may complete the assignment.* (Duration of period)

Poster and Presentation Topics: (Research resources are listed on Poster Guidelines)

A. Prairie ecosystems, plants, and habitat restoration efforts in northeastern Montana
B. Bison restoration efforts
C. Swift Fox restoration on Fort Peck
D. Black footed ferret and prairie dog restoration

Homework 2: Students finish their research and prepare any time-consuming materials (e.g., illustrations, text, diagrams, etc.) needed for creating their posters in class tomorrow.

Class Period 3: Creation of Prairie Ecosystem Restoration Posters

For this period, you will need poster board (1 per topic and a few extras in case mistakes are made), markers, tape, glue, student's materials, etc… for poster-making.

1. Provide students with the poster-board and general poster-making materials.

2. Using hand drawings, printed pictures, and text, each group of students will create posters on their topic. (See Poster Guidelines) Posters will be used for presentations in next class period. Students should complete their posters in class, if possible, so that one student is not responsible for taking the poster home and completing it. Every student should contribute to the poster-making activity and this participation should be verified by the other students in the group.

Class Period 4: Student Presentations of Posters.

1. Distribute the Presentation Assessment Rubrics, one per topic to every student and the teacher. (Each person will need a total of four presentation assessment rubrics. There are two per page.)

2. Groups should present in the order of the list of topics. Each group should present for 5-7 minutes. Allow 1-2 minutes after each presentation for filling out the assessment forms.

3. Collect the assessment forms.

Homework 4: Students should write a 1 page (single spaced) response paper detailing what they have learned in this lesson about the impacts of cultural land-use differences, cultural environmental value differences, and present-day efforts of (and motivation for) prairie restoration in Montana. These papers should not be an all-encompassing reiteration of the lesson, but instead should demonstrate what the student has learned from this lesson and should provide students an opportunity to reflect on the inter-related effects of science, culture, land-use values and environmental change over time.

Assessment

Meaningful and substantive contributions to class discussions and small group activities; Posters; Presentations; Presentation Assessments; Written work (short-answer and response papers).

Additional Related Lesson Plans

Please see the Madison Buffalo Jump State Park *Indian Education for All* lesson plan for a lesson on the historical and contemporary significance of bison to tribes.

Attachments

Attachment A—Historical Overview
Attachment B—Article on Brush Lake ("Oasis on the Prairie")
Attachment C—Poster and Presentation Guidelines
Attachment D—Presentation Assessment Rubric

Attachment A—Historical Overview

Brush Lake is located about 15 miles east of Reserve, a town on Muddy Creek in the northeastern corner of the Fort Peck Reservation, in Sheridan County, northeastern Montana. Local histories of Brush Lake State Park and Sheridan county suggest that white homesteaders did not occupy the land around the lake until 1914, when they squatted (occupied illegally) on lands in this region which had been at the time allotted to members of the nearby Chippewa tribe. The lake became a swimming hole and picnic area for area settlers.

A local history of Sheridan County focuses solely on the white settlement of the county by white, American farmers and businessmen, and includes descriptions of the use of Brush Lake by local whites. Magnus Asshiem's *Sheridan's Daybreak: A Story of Sheridan County and Its Pioneers* (1970) comprises more than 1,000 pages, yet it makes no mention of the ancient, historic, or contemporary use of the land and lake by American Indians or by the Assiniboine, specifically. A more recent article, Andrew McKean's "Oasis on the Prairie," in *Montana Outdoors*, similarly offers a one-sided portrayal of white settlement and use of the area. (You will be reading this article in this class.)

An archaeological survey of the parkland, however, reports almost constant use of the area for more than 10,000 years by the regions' tribes. Specifically, the survey reports that these lands were occupied and used by the Assiniboine tribe before the Lewis and Clark expedition *ca.*1805.

Due to extensive evidence of their prehistoric as well as historic occupation of these lands, the entire area of present-day northeastern Montana was deemed the territory of the Assiniboine in the Fort Laramie Treaty (1851). The present boundaries of the Fort Peck Indian Reservation were drawn in 1886, opening up the territory outside the boundaries, including Brush Lake, for white settlement. Portions of this area, which was once the original Valley County in Montana, were allotted to Chippewa tribal members who had not received their due allotments on that reservation in North Dakota. In 1910, proposed legislation in Congress would have created a 1.1 million acre reservation here for homeless/landless Chippewa, Cree and Métis people in Montana, but at the last minute pressure from railroad owner L.W. Hill of the Great Northern and from the illegally homesteading whites in the area prevented its final passage.

By 1883, the buffalo had disappeared from their northern range and the life style of the Assiniboine and Sioux Tribes changed dramatically. It was also during this same period that the Assiniboine Tribe lost without "just compensation" the territory outlined by the original 1851 Fort Laramie Treaty. Through a series of actions and without the consent of the Assiniboine, Congress in responding to pressure from white ranchers and settlers opened the original reservation for settlement (Indian Health Service, Fort Peck Service Unit, History).

Today, the Assiniboine, along with Dakota (Sioux), now live on Fort Peck and Fort Belknap Indian Reservations. In 1915, after 30 years of landlessness and impoverishment, the Rocky Boy's Chippewa band and members of Cree bands succeeded in acquiring a reservation (Rocky Boy's Reservation) in central Montana, although many of the Chippewa, Cree and Métis families were excluded from enrollment at this reservation, which is only a fraction of the size of the proposed (historical) Valley County reservation.

The differences between the value systems, science and land-use practices of the indigenous inhabitants and the white settlers was so great that in just a few decades' time the prairies around Brush Lake (and throughout northeastern Montana) were radically transformed. While the region's indigenous inhabitants had developed (over generations of experience and observation) habits and methods of human survival consistent with the survival of the prairie's many resources, the immigrant settlers did not share this knowledge of the land. To make way for the settlers, the United States supported the near-extermination of the bison, thereby reducing tribes to poverty and dependence and making lands available for settlement. Settlers, too, contributed to the

destruction of much of the area's wildlife (especially "varmints" like foxes, ferrets, prairie dogs, and some birds of prey) and replaced the bison with cattle. The establishment of fields of hay, wheat and other crops planted by the settlers dramatically changed the distribution and diversity of plants in the area, thereby altering the prairie's ability to support an abundant diversity of life.

Today, after a century of homesteading, farming and ranching, the prairie lands of northeastern Montana retain few of the plant and animal species they so abundantly supported just over a century ago. In the last few years, however, tribal members and scientists have been working together to restore the prairie ecosystem, one plant or animal specie at a time. This lesson will introduce you to some of their efforts and explain why (and how), after more than one hundred years of land-use conflicts and alterations, actions are now being taken to restore the prairie ecosystem near Brush Lake and elsewhere in northeastern Montana.

Attachment B—Article on Brush Lake

Oasis on the Prairie

Cool and clear water, sandy beaches, picnic facilities, and More—the new Brush Lake State Park may be the greatest thing to hit northeastern Montana since the invention of air conditioning. **By Andrew McKean. Photos by Matt Long**

This story is featured in *Montana Outdoors* September–October 2005

From the air, Brush Lake looks like a piece of turquoise tossed on a sand dune. The intense blue of the lake is entirely out of place in the caramel-colored monotony of wheat stubble that marches to all horizons in this northeastern corner of Montana.

From the ground, 280-acre Brush Lake is no less striking. In an area of the state where the glaciated landscape is pocked with shallow, alkaline prairie potholes, Brush is a deep, clear lake with white, sandy beaches surrounded by grass fields and linear stands of spring wheat.

Recently Brush Lake became Montana's 50th state park (and the only one in the state's northeastern region), providing public access to what Elliott Jensen of nearby Dagmar calls "Montana's best swimming hole east of the mountains."

Jensen likely knows this swimming hole better than anyone. His family once owned the entire lake and last year sold the northern two-thirds to Montana Fish, Wildlife & Parks to develop as a state park. The Jensen's have long worked to sell the property to a public agency with the hope the site would be preserved for public use.

Two bits a suite

Jensen's first paying job was renting towels and bathing suits to swimmers in the 1930s who flocked to Brush Lake on summer afternoons. They came from prairie homesteads and clapboard communities across northeastern Montana during a time when spare change and recreation were luxuries few families could afford. Still, Jensen can recall collecting "two bits" for a swimming suit and use of a tiny changing room in a bathhouse on the shore of the lake, which is located in a fold of the prairie about 4 miles east of Dagmar and just 2 miles from the North Dakota state line.

"On summer weekends, there would be hundreds of people out here swimming and boating and having picnics," says Jensen. "Brush Lake was where people from different communities gathered. There were no good roads back then, just prairie trails, but you'd have people driving 75 miles—three hours each way—from as far away as Scobey just to swim and get together."

The initial attractions of Brush Lake, says Jensen, were its natural assets. More than 60 feet deep and fed by cold springs, the lake stays cool and clear all summer. Unlike the nearby pothole lakes, it doesn't choke with algae or stink of sulphur (locally called "soda") and stagnant water. Because it's located in a depression of the prairie, Brush Lake is partially sheltered from the winds that strafe the surrounding hilltops and ridges. Ringing the shore, the chokecherry and buffalo berry bushes that gave the lake its name provide shade and wild fruit. In the early 1900s prairie homesteaders, many of them first-generation Scandinavian immigrants, found in Brush Lake a gathering place that reminded them of the neighborhood lakes left behind in northern Europe. They got together for open-air revivals, picnics, baseball games, bake sales and fiery political debates (at the time, far northeastern Montana was strongly influenced by the socialist prairie populism movement).

It didn't take long for the lake to become a hotspot for nighttime entertainment, too. A huge dance hall was thrown up on the south shore of the lake in 1920. Bootleggers from nearby farmhouses lubricated the social scene with homemade beer and gin smuggled across the Canadian border, just 25 miles to the north.

As many homesteaders went broke and the remaining farms consolidated, the population of northeastern Montana declined, on average about 10 percent for every decade after 1920. Brush Lake's refreshingly cool swimming water continued to draw some visitors. But use of the lake and its facilities (lakeside cabins, a small restaurant, and a group-use pavilion) was limited mainly to summer Bible camps run by a local church, 4-H clubs, and Boy Scout troops. After the church sold the property, public use declined further.

Several groups tried to buy the lake for public use, but none of them were willing to assume the liability risks, says Doug Smith, a Brush Lake booster who grew up nearby on his family's farm.

"Brush Lake is a unique gem," says Smith, a local county planner. "It's been a community gathering place for a century, and many of us felt it should be placed in the public domain. But we didn't have a tool to do that until Fish, Wildlife & Parks came onto the scene."

Finally, a park

For years Woody Baxter, FWP's state parks manager for northeastern Montana, was in charge of a region with no state parks but plenty of natural, recreational, and cultural assets. In 2001, he convened a volunteer search committee to identify areas suitable as state parks in the northeastern region. Smith was one of a dozen members of the committee, and he helped boost Brush Lake from one of 25 properties under consideration to the group's top pick.

The lake's prospects were further enhanced by a legislative resolution in 2003, sponsored by another local resident, Montana Senator Linda Nelson. Her resolution mandated Brush Lake as FWP's first state park in the northeastern region.

Why all the passion and support for a remote prairie lake nearly in North Dakota? "There just aren't many 60-foot-deep, spring-fed lakes in eastern Montana," says Smith, who has long studied the unique geological treasure. "From a hydraulic perspective, Brush Lake is more like Yellowstone National Park's Morning Glory Pool than anything. Its source is a huge spring that emanates from an underground aquifer. There is no inlet or outlet, so water leaves the lake either through evaporation or by [seeping] into adjacent White Lake. The evaporation concentrates minerals in the lake, so it's high in the sorts of mineral salts—manganese, calcium carbonate, and sodium sulfate—often found in healing hot springs."

The minerals make Brush Lake inhospitable to fish, which suffocate from calcium deposits on their gills. "Often, on lakes this size, we see conflicts between anglers and other water recreationists, but that won't be a problem here because of the lack of a fishery," says Baxter.

"I think the park will become a destination for divers," he adds. "Unlike most waters in eastern Montana, Brush Lake stays clear throughout the summer."

Divers may even discover clues to the area's geologic history on the lake bottom. Thousands of years ago, the area surrounding Brush Lake was the ancestral valley of the Missouri River. The great river flowed north into Hudson Bay before a series of glaciers scoured the prairie and pushed the Missouri south to its current route. Roughly 13,000 years ago, one of the last glaciers receded and left behind, imbedded on the plain, a chunk of ice the size of a shopping mall. As the ice melted, it formed a bowl that became Brush Lake. In time, a spruce forest grew around the lake. The trees eventually fell into the water, drifted to the bottom, and were covered by thousands of years of wind-blown pollen and dust. Smith says researchers studying core samples have detected spruce trees dating back thousands of years at the base of the lake's silt bottom.

Public amenity

While scientists study Brush Lake's fascinating past, citizen advocates such as Smith work to preserve its future. "There is almost no public land in this corner of Montana," he says. "If you don't have public land, it's hard to develop public amenities. And without amenities, it's hard to reverse our depopulation trend. I'm not saying Brush Lake State Park is the cure for economic development in this part of the state, but it's a good start."

He may be right. According to Larry Swanson, a University of Montana economist, western Montana's recent population explosion and resulting economic growth are partly due to that region's abundant public lands and waters. Many people in eastern Montana are now looking at their plentiful natural resources and thinking about how public lands and waters might attract newcomers or convince existing residents to stay. Brush Lake may become one of many amenities—including grand vistas, wildlife recreation, and safe surroundings—that keep people from leaving the economically depressed northeastern region.

"Though we definitely hope to attract visitors from all over, we expect the park will be mainly used by folks from around northeastern Montana and western North Dakota who have relatively few nearby public parks," says Baxter. "I think it will be attractive for afternoon swimming and weekend camp-outs, and for people with boats who don't want to drive to Fort Peck Lake. In the fall, I expect to see bird hunters from throughout the state camping there."

Currently, FWP owns only the northern portion of Brush Lake. The southern part is owned by a private trust. Baxter says FWP hopes to eventually have the opportunity to acquire the rest of the lake. "If we don't have a willing seller at the south end, we still plan to build tent and RV camping facilities, day-use and picnic areas, boat ramps, and boat docks within the property we own," says Baxter. "What I'm anticipating most is construction of a group-use shelter, which I see being used for family reunions, wedding receptions, and meetings of church groups and civic organizations."

Baxter also hopes to eventually add rental cottages, a bathhouse, and a shower facility. Currently, FWP is upgrading the existing road, putting in picnic tables and gravel parking area, and installing a toilet, a boat ramp, and a boat dock.

FWP's plans for the park extend far beyond the shoreline. The department aims to restore the highlands above the lake's north and west shores to native prairie. A proposed interpretive trail would detail the area's geology, human history, and unique natural history, including the diverse prairie birds and plants.

The diverse local people, however, are what most interest Elliott Jensen. He hopes the state park can again make the site a community gathering place. "Dagmar will celebrate its centennial in 2006. I can't think of a better birthday present than an old-fashioned community party," says Jensen. "In the past, Brush Lake was the place for people to get together. I hope it will once again be such a place."

Andrew McKean is the FWP regional information and education officer in Glasgow. Photographer Matt Long lives in Livingston.

Attachment C - Poster and Presentation Guidelines

Poster Topics and Related Resources:

A. Prairie ecosystems, plants and habitat restoration:

✓ General Introduction to prairie restoration: http://en.wikipedia.org/wiki/Prairie_restoration

✓ Manning Lake Wetland Tribal Wildlife Refuge: printable brochure from http://www.deq.state.mt.us/wqinfo/Wetlands/NewsLetters/Vol2No2/ManningLake.pdf

✓ Indigenous uses of Plants of the Prairie - choose six food or medicinal plants from *Medicinal Plants of the Prairie* that are found in northeastern Montana. You will also want to look up more information on these plants in *Montana Native Plants and Early Peoples.* (Some suggested plants are: chokecherry, service berry [also called juneberry], purple coneflower/Echinacea, beebalm, prairie coneflower, American licorice, cottonwood, buffalo berry.)

✓ For plant information and photographs, go to http://montana.plant-life.org/ and click on "Native Plants" at the left. This will display a list of plant names. You can click on the ones you choose and read descriptions and see photos of them.

✓ For more information about prairie ecosystems in northeastern Montana, see American Prairie Foundation**:** http://www.americanprairie.org

B. Bison restoration efforts

✓ Montana FWP field guide entry on bison: http://fieldguide.mt.gov/detail_AMALE01010.aspx

✓ "Managing Bison to Restore Biodiversity," by Joe C. Truett, Michael Phillips, Kyran Kunkel, and Russell Miller, in *Great Plains Research*, Vol. 11, No. 1, Spring 2000, p. 123 [*2001 Leslie Hewes Award*] From the Center for Great Plains Studies. Available online at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1542&context=greatplainsresearch

✓ "Bi'Shee: For American Indians, the Return of the Buffalo Brings Healing to Both Body and Spirit" by Richard Peterson (Assiniboine-Sioux) in *American Indian*, summer 2001. Online at: http://westgatehouse.com/art179.html

✓ Very short online video of bison from Fort Belknap onto the American Prairie Reserve in April, 2009, go to: http://www.americanprairie.org/learn/sights/sights_release.html#video

C. Swift Fox restoration on Fort Peck

✓ Swift Fox Restoration, http://www.americanprairie.org/projectprogress/science-and-wildlife/swift-fox-reintroductio

✓ "Speeding the Swift Fox's Return" by Catharine Moser, *National Wildlife,* Oct/Nov 2008, v46, n6, http://www.nwf.org/NationalWildlife/article.cfm?issueID=124&articleID=1641

✓ "Keeper of the Wildlife" by Cathy Moser, High Country News, April 28, 2008, online at http://www.hcn.org/issues/369/17667

✓ MT FWP field guide entry, Swift Fox: http://fieldguide.mt.gov/detail_AMAJA03030.aspx

D. Black-Footed Ferret and Black-Tailed Prairie Dog

✓ MT FWP article on Black-footed Ferret: http://fwp.mt.gov/wildthings/tande/ferret.html

- ✓ MT FWP field guide entry for Black-Footed Ferret: http://fieldguide.mt.gov/detail_AMAJF02040.aspx
- ✓ "Ferret Restoration on Fort Belknap Reservation," by Tim Vosburgh Endangered Species Bulletin, May, 2000. http://www.fws.gov/ENDANGERED/bulletin/2000/05-06/18-19.pdf
- ✓ Ferret and Prairie Dog Restoration, from the American Prairie Foundation website, at http://www.americanprairie.org/prairieDogandFerret.html
- ✓ Montana FWP field guide entry on Black-tailed Prairie Dog: http://fieldguide.mt.gov/detail_AMAFB06010.aspx

General Guidelines

Poster Components: Illustrations (photos, drawings, diagrams, maps, charts, etc.); Title; Text describing findings (can be as a list of points, brief descriptions, etc.); Citation of resources used (can be printed on the back of your poster); Names of students in the group; and short list of Where to find additional information on your topic.

Instructions

Prior to the creation of your poster, each student should have read the materials listed above and printed any illustrations needed for the project. As a group, discuss what you have learned, briefly, about your topic. Look at the materials each student has brought to contribute to the poster. Plan the layout of your poster and designate which students will be responsible for producing which aspects of the poster. For instance, while one student is creating the Title for your poster, another student might be attaching any illustrations and others might be assembling a list of talking points that cover the topic. Remember that you will be using these posters for your presentations, and that you may be asked to present any portion of the material, so make sure that every student in your group understands and contributes to each aspect of the poster's production. If you find additional useful information that is scientifically sound and specifically related to your topic while doing your research, be sure to include it in your citations and use any pertinent information. Be careful in your posters and presentations not to plagiarize another's work, and cite all quoted material (including images) you incorporate into your poster or presentation.

Presentations

Each group will have 6-7 minutes for the presentation. Every student in the group should present some aspect of the topic. Your presentation should cover the basics of your subject—Title/Topic, main points (who/what/where/when/how/why, etc.), interesting facts, and where to find more information on this topic. You will need to be succinct in your delivery, so it will help if you agree amongst your groups as to which student will speak on which aspect of the topic and you practice the night before saying what you want to say. Obviously, some aspects of the topic will take more time than others, so plan accordingly. Make sure you keep your presentation between 6 and 7 minutes so that every group has adequate time to present.

Presentation Assessments

Listen well to your classmates' presentations. Following each presentation, fill out an assessment form for that group as a whole. These assessments will count towards students' grades for this lesson.

Attachment D—Presentation Assessment Rubric

Peer and Teacher Oral Presentation Assessment Rubric

Your Name: _____ Presenter's Name: _____

Oral Presentation Rubric	Possible Points	Peer Assessment	Teacher Assessment
Provided depth in coverage of topic	10		
Presentation was well planned and coherent	10		
PPT frames were well formatted	10		
Provided personal beliefs in a thoughtful manner	10		
Provided bibliographic information	10		
Adhered to federal copyright laws in citing sources of information	10		
Total Possible Points	**60**		

Rate each category according to the following scale: 9-10 = excellent, 7-8 = very good, 5-6 = good, 3-4 = satisfactory, 1-2 = poor, and 0 = unsatisfactory.

Peer and Teacher Oral Presentation Assessment Rubric

Your Name: _____ Presenter's Name: _____

Oral Presentation Rubric	Possible Points	Peer Assessment	Teacher Assessment
Provided depth in coverage of topic	10		
Presentation was well planned and coherent	10		
PPT frames were well formatted	10		
Presenter provided personal beliefs in a thoughtful manner	10		
Adhered to federal copyright laws in citing sources of information	10		
Provided bibliographic information	10		
Total Possible Points	**60**		

Rate each category according to the following scale: 9-10 = excellent, 7-8 = very good, 5-6 = good, 3-4 = satisfactory, 1-2 = poor, and 0 = unsatisfactory.