



The Teller

**CONSERVATION EDUCATION AND
INTERPRETATION MASTER PLAN**

JULY, 2011

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Submitted to:

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A bitterroot flower growing on The Teller property.
June 2010

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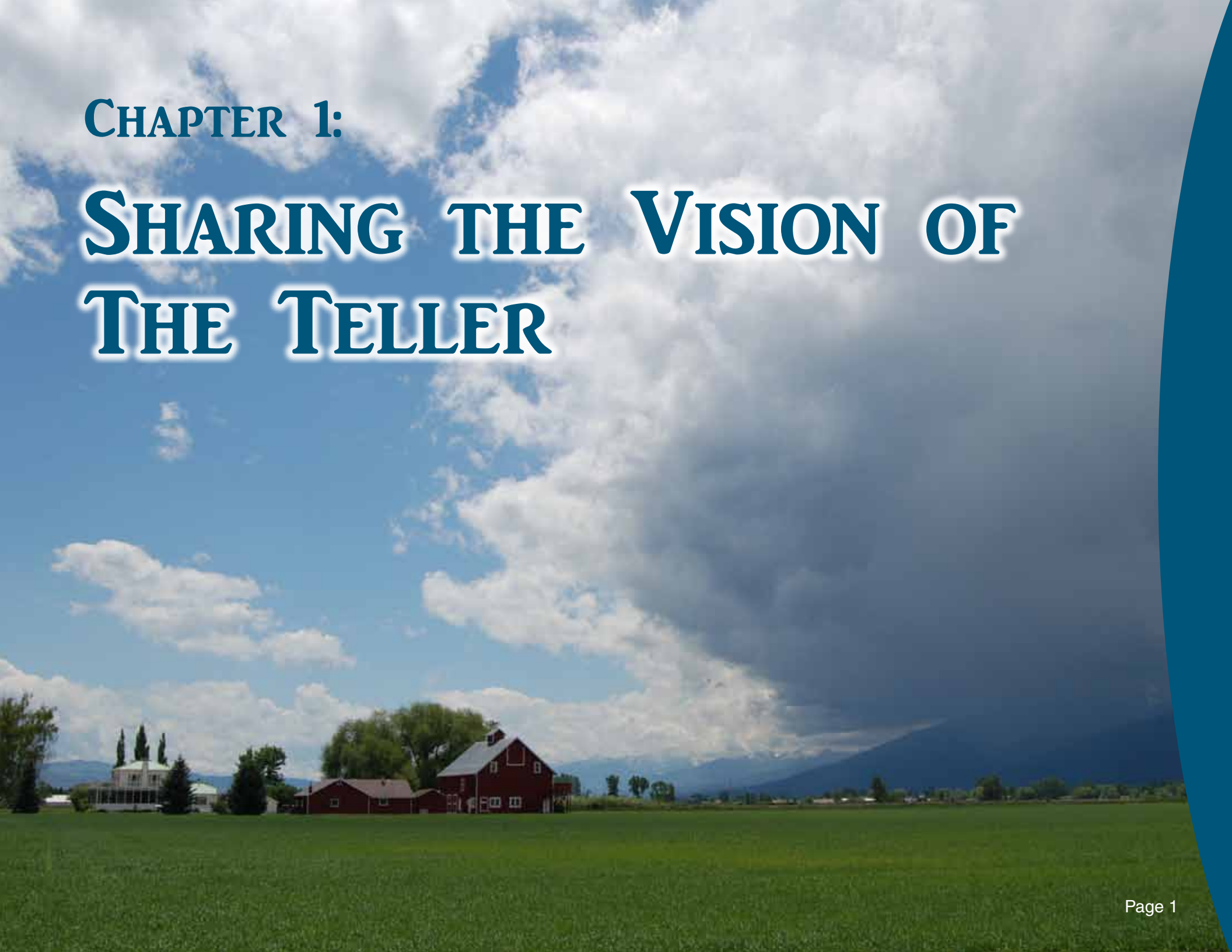
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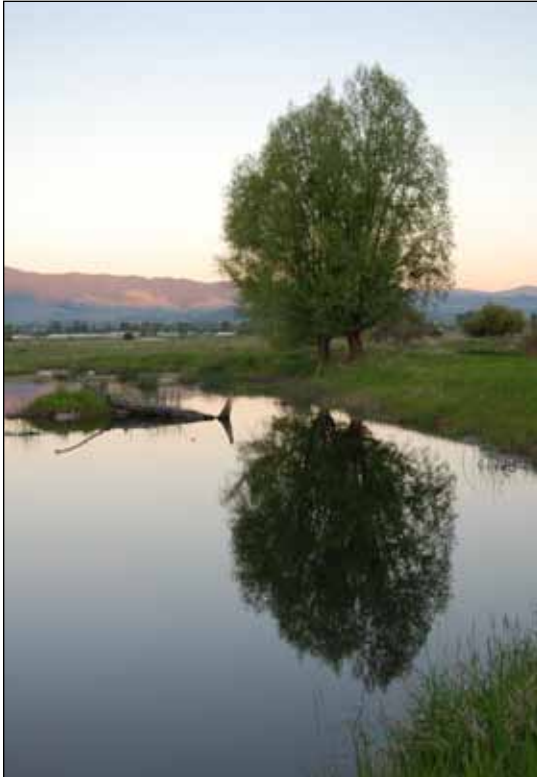


Elementary students journal on Tawney Rock at The Teller.

CHAPTER 1:

SHARING THE VISION OF THE TELLER





A tree reflected in Thomas Pond. June 2010

SHARING THE VISION OF THE TELLER

The Teller serves a unique niche in the Bitterroot Valley of Montana, demonstrating grassroots conservation practices and sharing this vision with valley residents

Otto Teller was a successful farmer in California by trade, but spent much of his free time fly fishing and waterfowl hunting in the Bitterroot Valley. In response to the increasing development he saw, he began purchasing and consolidating farmland and river bottom properties in the 1980s. Otto and his wife Anne created a non-profit organization in 1988 called The Teller Wildlife Refuge, Inc.

Today, The Teller protects and actively manages 1,200 acres of land along the Bitterroot River. It is the only private wildlife refuge in the state.

PLANNING FOR A CONSERVATION EDUCATION AND INTERPRETATION PROGRAM

To plan for its future, The Teller is setting the stage for a meaningful public outreach and education effort that will support its conservation mission and Board-approved strategic planning goals.

In fall of 2009, Dan Walker, Executive Director of The Teller, contacted Schmeckle Reserve Interpreters to discuss the possibilities of developing a Conservation Education master plan. Schmeckle Reserve is a natural area on the University of Wisconsin-Stevens Point campus. Schmeckle staff and faculty provide interpretive consulting services for nature centers, parks, and other sites throughout the country.

Schmeckle Reserve team members, Ron Zimmerman and Jim Buchholz, made a site visit to The Teller in December 2009. This trip included meeting with Teller staff, reviewing several sites proposed for a new education facility, and visiting other interpretive sites in the region.

On February 19, 2010, a Professional Services Agreement was signed between Schmeckle Reserve Interpreters and The Teller Wildlife Refuge to develop a Master Conservation Education and Interpretive Plan.

In November of 2010, the Board of Trustees elected to postpone the conceptual design and development of an interpretive center for The Teller. The Scope of Work for this project was modified to include just the foundational plans and recommendations for a conservation education program.

The purpose of this plan is to guide the future development of Conservation Education Program activities, including public outreach, facilities, and media at The Teller.

THE TELLER MISSION

A mission statement concisely defines an entity's reason for existence. It embodies its philosophies, goals, ambitions, and mores. Any entity that attempts to operate without a mission statement runs the risk of wandering through the world without having the ability to verify that it is on its intended course. Mission statements may change over time as an organization's goals evolve. The Teller's mission statement and goals provide a foundation for developing educational strategies that will help keep the organization on the correct path.

The following mission statement was discussed and ratified at The Teller's annual meeting on June 9, 2011.

The Teller Mission Statement is:

To inspire, educate, and demonstrate conservation in action.

In support of this mission, The Teller is committed to:

- ▶ Serving as a model of land stewardship through habitat enhancement efforts.

- ▶ Offering diverse conservation education programs.
- ▶ Providing quality recreational experiences for private guests and public visitors.
- ▶ Promoting voluntary conservation actions on other private lands.

As stewards of 1,200 acres of land in the Bitterroot Valley:

- ▶ We believe that The Teller must model responsible land stewardship.
- ▶ We value The Teller's resident fish, wildlife and native plant species.
- ▶ We recognize and draw inspiration from Otto Teller's values and beliefs that include:
 - Opportunities for quality hunting and fishing experiences
 - Maintenance and enhancement of historical buildings
 - Utilization of organic farming practices and restoration of native plant communities where possible and financially affordable
 - Expansion of permanent protection of local land through private voluntary actions
- ▶ We believe that education about the natural world and about the management of land and habitats is a powerful tool to promote and foster

conservation in the larger community. We provide that education through our example, through instruction and through personal experiences.

- ▶ We believe that ethical and responsible recreation, including hunting and fishing and other activities associated with Teller resources, contributes to The Teller's conservation and educational purposes.
- ▶ We believe that access management is an important tool in conserving Teller's resources and experiences.



The wind vane on top of the Slack barn. June 2010



Elementary students look for aquatic critters on a field trip to The Teller. June 2011



High school students assist in "electrofishing" on Gird Creek to analyze fish populations. April 2011

- ▶ We believe that The Teller has a unique public purpose to foster mutual understanding of the needs and interest of private landowners balanced with the needs and interests of the public.
- ▶ We believe in creating strong and reciprocal relationships with the local community.
- ▶ We accept the leadership accountability and fiduciary responsibility for The Teller; we believe that if we plan for, value, and actively promote our mission, financial support will grow.

CONSERVATION EDUCATION VISION:

The Teller's 1,200 acre conservation property will be used in a way that inspires a deeper connection to the land, the water, and the wildlife so that others may follow in the footsteps of Otto Teller.

We will partner with other conservation and service organizations to implement educational opportunities, youth hunter mentoring, and private lands programs that benefit fish and wildlife habitat and teach conservation, as well as offer opportunities for school students and teachers.

The Teller will:

- ▶ Teach individuals to participate in a lifetime of conservation by engaging

in hands on activities that connect them to the land and wildlife

- ▶ Use an entrepreneurial approach, modeling new conservation education programs and fun outdoor activities for young and old alike as a cornerstone of our mission
- ▶ Properly manage The Teller to insure that students and visitors do not compromise the fish and wildlife resource that we have been charged with conserving

VISIONING MEETING:

On June 16, 2010, Schmeackle Reserve Interpreters facilitated a visioning meeting to gather input from stakeholders of The Teller about the direction of planning for the new interpretive/education facility and conservation education program. This included clarifying The Teller's mission and priorities, identifying important target audiences, gathering significant stories, and determining appropriate activities and developments for the facility. Seven Board of Trustees Members and three staff members participated in the meeting.

The visioning session helps us to understand some of the important "unwritten" goals that will influence the development of a conservation education program.

One of the questions asked at the visioning meeting was, “In your opinion, what are the main priorities that The Teller should focus on to achieve its mission?” Each response was then ranked based on importance for the Conservation Education and Interpretation Program. The results were:

- ▶ The Conservation Education Program must be economically sustainable (14 votes).
- ▶ The program must inspire visitors and citizens and create a “sense of place in the Valley” (10 votes).
- ▶ It must protect and promote the conservation values of the easement (10 votes)
- ▶ It should serve as a model for land stewardship (9 votes)
- ▶ It should help The Teller to reach a broader audience (9 votes)

FOLLOW-UP INTERVIEWS:

Individual interviews with staff and Board Members reinforced the basic values and concerns that were expressed in the visioning meeting. Economic sustainability is clearly a paramount concern to everyone on the staff and Board. The conservation education program is viewed as one avenue that can assist in supporting the organization, attract additional external supporters, and eventually offset operating expenses.

In-depth discussions with individual Board members and other stakeholders demonstrated that there are variations of opinion concerning which audiences The Teller should concentrate on serving. More significantly, there is a continuum of thought regarding what level of public access and what categories of group use are desirable for the refuge.

It has been several years since there has been a full-time educator position at The Teller. Some residents and educators that were interviewed reminisced that The Teller once led efforts to increase outdoor education in the Bitterroot Valley. They believed that these programs helped to gain support from local citizens. It became apparent that many would like to see a stronger connection between The Teller and its neighboring communities.

It was stated, at the visioning session and agreed upon by a majority, that a broader audience was needed. The Teller Staff and Board of Trustees must determine the degree of program access that is desirable at the refuge. Parameters for activities or numbers of visitors that are not allowable must be clearly defined.

Because most wildlife refuges and nature reserves are publicly owned, they have set levels of public access and use that are acceptable within their stated mission. As a private landowner, The Teller is unique and must carefully consider how to manage access to the site.



Participants gather for a Proper Functioning Condition (PFC) riparian workshop at The Teller. August 2007



Kids try their hand at duck calls at the Ducks Unlimited Greenwing Event. September 2009

Public access and support is generally viewed by nonprofit conservation organizations as an essential component of positive community relations. The amount of access is a dynamic process that evolves over time. It may be desirable at this time in The Teller's history to develop a system of use zones, buffers, and schedules that permit greater access to larger numbers of visitors. Some uses are incompatible with others,

while some activities may stress fragile resources if done at inappropriate times but there are usually innovative solutions to many of these potential conflicts.

Few people will support The Teller mission unless they have some positive experience on the site. A well planned education and visitor program will help provide these important experiences.

PROPOSED EDUCATIONAL MISSION STATEMENT FOR THE TELLER:

Based on the visioning session and interview responses, we offer the following educational mission statement:

The Teller will engage a diverse audience in a sustainable program of hands-on conservation education, which connects them with the land, wildlife, and resources while instilling in them a sense of place in the Bitterroot Valley. The program will promote core conservation values and land stewardship.

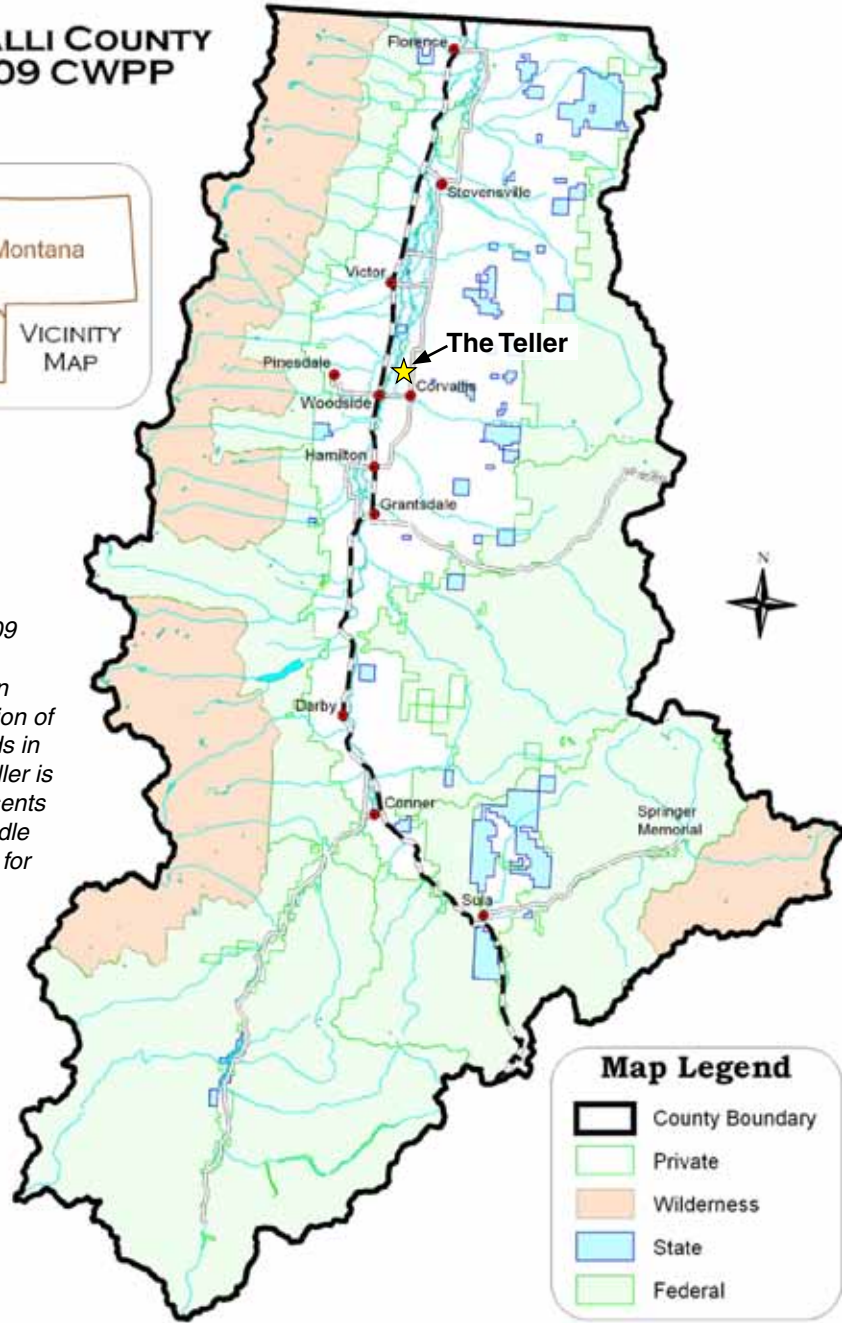


CHAPTER 2:

PRIMARY AUDIENCES



**RAVALLI COUNTY
2009 CWPP**



This map from the 2009 Bitterroot Community Wildlife Protection Plan illustrates the distribution of private and public lands in Ravalli County. The Teller is unique in that it represents private land in the middle of the valley managed for conservation.

PRIMARY AUDIENCES

The Teller must serve a variety of publics if it is to be economically sustainable into the future: however it is necessary to establish priorities in order to best serve the Mission and to efficiently utilize the finite resources and staff at The Teller.

DEMOGRAPHICS FOR RAVALLI COUNTY:

The Teller is centrally located in Ravalli County. The 2010 estimated population for the county is 40,431 people. Nearly 9,000 people are under the age of 18 years. Almost as many are past the age of 65 years. Ravalli County has a higher percentage of older citizens than the rest of Montana which may be the result of many out of state people immigrating to build retirement homes in the Valley. Nearly one in every five persons has a disability which probably corresponds to the aging population. Ravalli County has very little racial diversity even for Montana. Its population is over 97% white. The poverty level of Ravalli County of 13.9% is roughly the same as the Montana average as is the median household income.

Corvallis, the nearest town, is adjacent to The Teller. It has a 2011 population of 859 people. The median household income is well beneath the state average as are the number of people who attained a

college degree. Over 40% of the people in Corvallis are below the poverty line. The percentage of children in the population (nearly 30%) is higher than the Montana average or of Ravalli County at 26%. In a majority of families, both parents work.

OUTDOOR RECREATION FOR MONTANA RESIDENTS:

The purpose of the Montana 2008-2012 Statewide Comprehensive Outdoor Recreation Plan (SCORP) is to outline the state's five-year plan for outdoor recreation management, conservation, and development. It contains vital information concerning outdoor recreation trends and needs for both Montana residents and visitors.

- ▶ Nearly one-in-five Montanans will be age 65+ in all but seven counties by 2025. **Hamilton already has a large percentage of mature adults (over 30%).** As the population ages, there is likely to be less demand for strenuous outdoor recreation activities, and more demand for activities like walking, golf, fishing and motorized recreation.
- ▶ Fifty years ago, Montana had one of the highest per capita income rates in the nation, and in the 2000 census

it has one of the lowest at \$17,151, which is 58% below the national average. However, according to University of Montana research, Montanans take more leisure trips than the U.S. average. Some residents appear to be willing to accept lower wages as a trade-off for quality of life. In Montana, they have more opportunities for outdoor recreation.

- ▶ The implications of the demographic data about Montanans are that outdoor recreation managers need to focus not only on facilities and programs for youth (29% of the population) and young adults (34% of the population), but increasingly for mature adults (38% of the population and growing).
- ▶ **Because of Montana's struggling economy and low income population, affordability of outdoor recreation is a key issue,** as is the limited ability of businesses and citizens to pay higher taxes for it. This is one area where tourism benefits Montana: nonresidents help pay for outdoor recreation facilities and programs. Montana's recreation facility managers need to provide more opportunities for visitors to spend money to support enhanced facilities and services.



A diversity of visitors walk the popular trail at the Lee Metcalf National Wildlife Refuge. June 2010



Visitors view wayside exhibit panels at the National Bison Range. June 2010



Visitation to Glacier and Yellowstone National Parks increased in 2010, a promising trend in the future. Courtesy of <http://gaper.adevsite.com/>



Outfitter guiding for float trips, fishing, hunting, and other activities generates a large economic impact in Montana. Courtesy of westernfliesandguides.com

MONTANA NONRESIDENT TOURISM TRENDS:

According to the University of Montana's Institute for Tourism & Recreation Research (ITRR, 2010), summer visitors to Montana are attracted to the two national parks, mountains, forests, open space, and uncrowded areas. The top five activities for nonresident vacationers are:

- ✦ Scenic Driving
- ✦ Wildlife Watching
- ✦ Nature Photography
- ✦ Day Hiking
- ✦ Camping

Most of these visitors are from the 11 western states and over 90% drive into the Montana.

A visitor category that has particular significance to the Bitterroot is the use of outfitter guiding for float trips, fishing, hunting, horse trips, etc. A 2007 ITRR survey (called Montana's Outfitting Industry) found that 318,600 people took guided trips in Montana and that 90% were out-of-state visitors. This generated a combined economic impact of nearly \$168 million in that year.

Vacationers to Montana were recently surveyed by the same regarding what attributes they found important about the state (ITRR, 2010). The following are listed in order of priority:

- ✦ Clean waterways
- ✦ Clean air

- ✦ Wildlife viewing opportunities
- ✦ Scenic vistas
- ✦ Open space
- ✦ An opportunity to view the night sky
- ✦ Access to public lands and waterways

Nonresident travel in Montana was up 4% in 2010 from 2009, a percent higher than the national average for leisure travel during the same period (ITRR, 2010). Other promising signs include:

- ▶ Montana airline travel increased 2% in 2010, while the U.S. average was flat
- ▶ Visitation to Glacier and Yellowstone National Parks was up by 8.5%, while all other National Parks in the U.S. were down 1%
- ▶ The number of hotel rooms sold in Montana in 2010 increased 5.6%

According to the 2011 Montana Tourism Forecast (ITRR), Montana Tourism will increase in 2011 in the following ways:

- ✦ Nonresident visitors will be up by 2%
- ✦ Lodging will increase by 1.5%
- ✦ Airline travel will be up by 1%
- ✦ National Park visitation will increase by over 3%

HUNTING AND FISHING LICENSES:

Hunting and fishing continue to be popular activities in the Bitterroot. According to annual license sale figures in 2010 for Ravalli County (Montana Fish, Wildlife & Parks):

License Type	# Sold	Resident	Non-resident
Conservation	5,160	1,763	3,397
Conservation & Fishing	6,535	5,787	748
Sportsman with Bear	370	370	0
Sportsman without Bear	813	813	0
Youth Sportsman with Bear	162	162	0
Season Fishing	145	124	21
Ten-day Fishing	723	0	723
Two-day Fishing	3,495	93	3,402
Warm Water Fish Stamp	69	66	3
General Deer	3,152	3,152	0
Bow and Arrow	1,610	1,525	85
Deer B	2,088	2,013	75
General Elk	2,724	2,724	0
Elk B	25	25	0
Antelope B	59	57	2
Antelope B - Archery only	18	18	0
Black Bear-Spring & Fall	223	223	0
Black Bear-Fall	82	79	3
Mountain Lion	57	55	2
Upland Bird	685	662	23
Migratory Bird	619	581	38
Turkey - Fall	395	391	4
Turkey - Spring	820	810	10
Miscellaneous	167	130	37
TOTAL LICENSES 2010	30,196	21,623	8,573

VISIONING MEETING:

At the June 16, 2010 visioning meeting, participants were asked, “Who are the target audiences and potential audiences of The Teller?” The responses were then ranked based on which audiences would best be served by the conservation education program. The top ranked audiences were:

- ✦ Youth, local (11 votes)
- ✦ First-time hunters and fly fishers (11 votes)
- ✦ Benefactors (even to website) (9 votes)
- ✦ Tourists/visitors to the valley (8 votes)
- ✦ Local and seasonal residents entertaining guests (8 votes)
- ✦ Conservation higher education students (7 votes)
- ✦ Teachers (6 votes)
- ✦ Local land owners (6 votes)

TARGET AUDIENCES AND CHARACTERISTICS:

Based on the visioning meeting, follow-up interviews, and research of other valley interpretive sites, the following is a list of audiences that would best be targeted by The Teller’s conservation education program. They are offered here as categories to assist the staff and Board of Trustees to determine future programming efforts and facility development.



Hunting and fishing continue to be popular activities in the Bitterroot Valley. Greenwing Event, August 2010



Elementary school field trip at The Teller. April 2010



High school students set up stream monitoring equipment in Gird Creek. October 2008

1. YOUTH: STUDENTS & ORGANIZED GROUPS

A. School Class Field Trips and Programming (Teller staff and teacher led activities that focus on the Mission and themes identified as significant at this site)

Schools provide a potentially large user group. The Teller has a strong educational component within its mission statement. There is a multiplier effect within the small community since every child that visits The Teller has parents and other family members who become implicit supporters of the place.

The Corvallis Schools are located very close to Teller property making field trips affordable from both time and cost perspectives. This is especially significant when one realizes that the Hamilton School District is among the most economically challenged in Montana. School programming requires that The Teller provide guidance to classes through direct instruction or by investing in training workshops that prepare teachers to use the site in appropriate ways. Ideally, a combination of training and instruction is desirable. The Corvallis School Superintendent is very interested in developing closer ties with The Teller and thinks that accredited teacher training workshops at The Teller would be attended by dozens of their teachers who would value learning how to best utilize the Refuge for instruction.

Hamilton Schools are another potential audience and select biology classes from places like Stevensville are well within a field trip radius to use The Teller.

Enrollment numbers for Ravalli County schools provide a glimpse of the potential impact that The Teller can have on youth of the Bitterroot.

2010 Fall Enrollment: Ravalli County

School (distance from The Teller)	K-6	7-8	9-12	TOTAL
Corvallis (1 mile)	626	223	456	1,305
Hamilton (7 miles)	818	259	532	1,609
Victor (10 miles)	206	54	121	381
Stevensville (14 miles)	463	157	367	987
Lone Rock (19 miles)	214	67		281
Darby (23 miles)	205	53	111	369
Florence (25 miles)	432	144	261	837
TOTAL	2,964	957	1,848	5,769

B. Afterschool Programs (fly fishing, hunter training, archery, "Friends of Teller Club")

Family income is well below the Montana average which means that, in many cases, both parents work and afterschool programs take on

significantly more importance than in affluent districts. This creates yet another opportunity for The Teller to fill a needed niche to work with the school district to develop mutually beneficial programs.

C. Summer Youth and Family Programs

Increasingly, families are searching for activities to do during the summer that are both recreational and educational in nature. Year-round and part-time valley residents receive many family visitors during the summer, who are also looking for activities. Special educational programs at The Teller themed to specific Bitterroot Valley topics have the potential of attracting diverse family groups.

D. Youth Organizations: Scouts, 4-H, Ducks Unlimited, Trout Unlimited

The Teller currently partners with local and national conservation groups to offer hunting and fishing training to youth, such as the Ducks Unlimited Greenwing program and the Montana Trout Unlimited Bitterroot Buggers. Establishing positive educational programs like these for other regional youth organizations can lead to annual group use and future support.

2. BENEFACTORS

People and business interests are motivated to support efforts that

reflect their values, especially if they are appropriately recognized for their support. Increased public awareness and connectedness to the community should be a stimulus for increased giving. For example, some low income school districts have been very successful securing business-sponsored bussing to nature centers.

Recommendations: Increase the potential base of financial supporters by broadening the perceived benefits to the greater community by better serving groups such as youth, schools, conservation organizations, and by developing partnerships with other social institutions like local museums, and the Chamber of Commerce. Develop a school or youth program that is supported by area businesses. Provide special programs for benefactors that teach conservation skills they can use in their everyday lives: duck calling, shooting bow and arrows, tying flies, planting native vegetation, etc.

3. LOCAL RESIDENTS

A. Local Volunteers

People are motivated to volunteer for a variety of very well documented reasons that range from something as simple as a need to belong, to self improvement, to an altruistic desire to give back to society. Although the community is, on average,



Families are searching for activities to do during the summer. The Teller's partnership with the Montana Trout Unlimited Bitterroot Buggers program is popular with local families. May 2009



The annual TNT Benefit Celebration is a well attended popular fundraising event for The Teller. June 2010



Walking is the number one recreational activity that Montanans participate in. May 2008



Wildlife watching is one of the fastest growing outdoor recreation activities in the country. Birding on The Teller Trail, August 2010

economically poor, there are many volunteers and volunteer opportunities locally.

A cadre of volunteers or docents could help expand school programming and allow a full-time education staff person to accomplish a greater diversity of program planning and other educational needs. Since there are numerous volunteer programs in the community, Teller could benefit from investigating partnerships in recruiting, training, and rewarding volunteers. Special attention needs to be given to volunteer background checks when they are working with children.

Recommendations: Add educational volunteer positions to the existing volunteer program. Consider recruiting retired teachers. Investigate partnership training and rewards with other volunteer based facilities in the area.

B. Recreational Trail Users

Walking is the number one recreational activity that Montanans participate in, and this continues to grow by leaps and bounds. According to the Behavioral Risk Factor Surveillance System (BRFSS) survey, in 2002, 21% of Montana residents used “walking” as a form of recreation. In 2006, that percentage jumped to 30%. This is likely due to an increasing awareness of the health benefits associated with walking, as well

as the low expense in both money and time to participate.

In addition, wildlife watching is one of the fastest growing outdoor recreational activities in the country. In Montana itself, around-the-home wildlife watching has increased 30% since 1996, while hunting and fishing numbers did not significantly change. (2006 USFWS study). Montana also has the highest percentage of birdwatching participation in the U.S.: 44% of Montana residents watch birds compared to an average 22% in the nation (Birding in the United States: A Demographic and Economic Analysis: 2001 USFWS study)

Recommendations: Develop a quality interpretive trail along the Bitterroot River that accentuates a positive and friendly message to community users and educates them about what The Teller does for wildlife. Consider developing a well-defined trail network on The Teller property that provides access to successful habitat restoration areas. Providing these recreational and learning opportunities for Valley residents can lead to increased commitment and support of the organization.

C. Public Programs

Develop a series of site-specific programs that invite the public to see and experience The Teller. Keep the community interested in The

Teller. Guest speakers, special topics, and programs that feature current happenings at The Teller are popular, create goodwill in the community, and have the potential to generate benefactors and passive supporters.

Past events held at The Teller, like *Perspectives on the West* which invited well-known authors, historians, and writers to present on a variety of topics, were quite popular with the public. A new public program series, such as *Perspectives on Conservation*, could offer unique insight into the values, management, and controversies of working in natural resources.

D. Landowners

Backyard wildlife enthusiasts are an important, and growing, segment of the Montana population. Montana has the highest percentage of bird watchers in the U.S. at 44%. Around the home wildlife watching has increased 30% since 1996. Many mature adults are participating in these activities and Ravalli County has a large population of retirees. The lack of rainfall in the Bitterroot Valley supports xeric communities of plant life that require special landscaping knowledge and skills to plant and maintain. Demonstration gardens and workshops that help people learn these skills could be attractive to local homeowners.

Farmers and ranchers: The Teller's managed wildlife habitat is a living laboratory for teaching about techniques that attract wildlife and that demonstrate methods for controlling invasive plants in fields and pastures. There are Montana agricultural agency partners able to assist in special workshops. Ravalli County has its own weed district with an education specialist to assist. The Teller receives funding and volunteers from the weed district to assist in controlling invasive species.

The Teller also serves as a case study in the benefits of using **conservation easements** to protect private property from development. Education programs in association with the Bitter Root Land Trust could provide landowners with more information about placing portions of their property into conservation easements, and encourage the development of wildlife corridors throughout the Bitterroot Valley.

4. TOURISTS AND VISITORS TO THE VALLEY

Summer travelers in the Bitterroot Valley are a significant segment of potential visitors and supporters. The intersection of State Highways 93/293 has high traffic counts of around 12,000 cars per day. While a majority of this traffic is local, summer and weekend peaks are



The Teller can serve as a living laboratory for farming and ranching practices that attract wildlife and preserve the pastoral landscape. August 2007



The Teller is very accessible to tourists and travelers on State Highway 93. October 2010



The Teller Trail is the only portion of the property open for casual visitation. The development of a “front door” to The Teller could increase the number of drop-in visitors. August 2010



Wildlife watching, especially birdwatching, are popular forms of outdoor recreation. Programs at The Teller, such as bird banding, could target this audience. Courtesy of <http://eco-smartparent.blogspot.com/>

significant. There are ramifications for future tourist involvement because of the easy access from State Highway 93.

A. Passive Recreationists and Drop-In Visitors

Although The Teller is listed in several tourism guides, it is not open for casual visitation except for The Teller Trail along the Bitterroot River. Since the current Teller office is very difficult to find, drop-in visitors are virtually nonexistent. Passive recreational activities such as walking and wildlife watching are increasing dramatically in the state, and visitors are searching for these types of opportunities.

Recommendations: Develop a friendly “front door” to The Teller that is easy for visitors to find and will encourage drop-in travelers. The Slack Barn would be an ideal gateway to the site and would serve to control access. Consider developing a well-defined walking trail network that showcases habitat restoration projects near the Slack Barn. A well planned, unified signage system is important for leading visitors from the main road to The Teller gateway. A well designed interpretive trail from the public access parking lot on Woodside Road along the Bitterroot River presents an opportunity to share The Teller story with travelers who are looking for a short walk in a natural area.

B. Wildlife Watchers

Birdwatching and wildlife watching are growing and have potentially large economic impacts. Although The Teller is featured in several birding guides, only The Teller trail along the Bitterroot River is currently available for wildlife observation. According to recent studies:

- ▶ Birdwatching is the fastest growing form of outdoor recreation in the U.S., with a 236% increase in participation from 1982 to 2001 (National Survey on Recreation and the Environment, 2000-2001).
- ▶ In 2006, more than 71 million Americans participated in wildlife watching, which translates to 31% of all Americans. This is compared to 12.5 million who hunt and 22.9 million who fish (National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 2006 USFWS study).
- ▶ In Montana, 343,000 non-residents and 412,000 residents participated in wildlife watching in 2006 (2006 USFWS study).
- ▶ Nationwide, wildlife watching participation has increased by 13% since 1996. Fishing declined 15% during this same time period, while hunting declined 10%.
- ▶ Wildlife watchers spent \$44.7 billion in 2006.

- ▶ Wildlife watchers spent \$376 million in Montana in 2006. This compares to hunters who spent \$311 million and anglers who spent \$226 million (2006 USFWS study).
- ▶ In Montana, wildlife viewing is the number one reason that people visit the state (Institute for Tourism & Recreation Research, 2001).

Recommendations: The Teller has the potential of becoming a “must see” site in the Bitterroot Valley for wildlife enthusiasts. Consider expanding public access for wildlife watching on The Teller property by establishing a well-defined trail network. Develop educational programs and on-site media that specifically address the needs and desires of this expanding user group. This use will need to be carefully managed to avoid conflicts with hunting activities on the property.

C. Hunters and Anglers

The Teller has a tradition of hosting hunters and anglers. Hunting and fishing are significant outdoor activities in the Bitterroot Valley. According to recent studies:

- ▶ In a 2002 Behavioral Risk Factor Surveillance System (BRFSS) survey conducted by Montana State Parks and the Montana Department of Health & Human Services (DPHHS), fishing and hunting were ranked as

the #4 and #5 (respectively) primary outdoor recreation activities that Montana residents participated in during the past year. About 6.8% participated in fishing and 6.7% participated in hunting. The other top ranked activities were: #1—Walking (19.4%), #2— Other Activity (17.4%), #3—None (9.6%).

- ▶ According to *The Sportsman’s Voice* by Mark Duda, Martin Jones, and Andrea Criscione (2010), despite declining participation numbers, national support for hunting and fishing remain strong. In a 2006 survey, the authors found that 78% of American adults approved of hunting, a 5% increase from 1995. Disapproval declined from 22% to 16% in the same time span.
- ▶ While hunting and fishing has decreased dramatically in many parts of the country, the numbers of hunters and anglers in Montana did not significantly decrease between 1996 and 2006. Hunters actually increased from 194,000 to 197,000, while anglers decreased slightly from 336,000 to 291,000 (not different from zero at the 10% level of significance). (National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, USFWS 2006)
- ▶ Of the 197,000 hunters in Montana in 2006, 52,000 were nonresidents and 145,000 were residents (15.3% of



Birdwatching is the fastest growing form of outdoor recreation in the U.S. Birding along The Teller Trail, August 2010

The Teller should continue to offer hunting and fishing educational programs that involve youth and families in these traditions.



Bitterroot Buggers, May 2009



Greenwing Event, August 2007



The farm homesteads are pleasant lodging facilities for multi-day workshops, such as the Proper Functioning Condition (PFC) of riparian areas workshop. August 2007



A wedding party at The Teller. Courtesy of <http://www.bestmontanawedding.com>

population). Of the 291,000 anglers in Montana, 119,000 were nonresidents and 172,000 were residents (18.2% of population). (USFWS 2006)

- ▶ Hunting and fishing is big business in Montana. In 2006, anglers spent a total of \$226 million in the state, while hunters spent \$311 million. (USFWS 2006)

Recommendations: Consider a concentrated marketing effort to attract more overnight hunting and fishing parties to The Teller site. Continue to offer special educational programs that focus on hunting and fishing traditions and training.

Avoiding Conflicts Between Uses: Many of the potential conflicts between hunters and passive recreationists using the same property can be avoided with careful planning. The majority of people support hunting as a management tool and will respect this activity occurring on the property. Multi-use trails will need to be closed for passive recreation during major hunting seasons. A good signage plan will alert visitors to the rules and educate them about the importance of hunting. Some areas of the property, such as The Teller Trail along the Bitterroot River, could be closed to hunting and provide year-round passive recreation. Some areas of the property may need to be closed to all activity during breeding or nesting seasons.

D. Wedding/meeting/conference groups/lodging guests

The private but communal nature of the farm homesteads is attractive to family groups that attend weddings, reunions, or other family centered celebrations. The sense of family history still in evidence in each home reinforces the spirit of the client's event. This audience is independent of the Conservation Education Programming that takes place and is a good complementary user group.

Recommendations: The Teller has a unique opportunity to offer education for guests staying at the Chaffin or Slack Houses, who might not otherwise regularly participate in conservation education programs. Guests should be encouraged to explore features of The Teller site by providing high quality maps in association with a colorful interpretive brochure or booklet. Wildlife identification guides, binoculars, and other tools can also encourage discovery.

5. TEACHERS/ UNIVERSITY STUDENTS

A. Teacher Training Workshops

The limited school district budget can be restrictive to training opportunities for area teachers. This situation presents another opportunity for area museums

and resource sites like The Teller to provide cost effective avenues that also create new trained users to the Reserve. The Corvallis Schools are eager to work with The Teller to develop workshops that integrate outdoor activities with classroom curriculum.

Recommendations: Work with area school districts to develop in-service training workshops for teachers to help them feel comfortable and enthusiastic about bringing groups to the site. Consider developing an in-service curriculum that partners with other educational resources in the Valley such as the local natural history museums, state extension offices, etc.

B. Researchers, high school science classes, university students and faculty, citizen science programs

The fact that The Teller had a professional wildlife manager who was actively engaged in research is probably the greatest motivation for others to get involved in wildlife and ecology research projects. The Teller is too distant from the University of Montana at Missoula to routinely attract faculty and student researchers. Student interns are a possibility for program assistance in summer. However, there are no undergraduate majors in environmental education or interpretation that require an internship. There are opportunities to involve local high school biology /

chemistry classes in research projects, which have the added advantage of teacher commitment on a long-term basis.

6. OUTDOOR WORKSHOP GROUPS

Our research in Montana clearly shows that there are many lodges and camps in the state and region available for outdoor groups to use. Many of these facilities are struggling to survive. The costs of operating lodging and food services are highly competitive. Large commercial enterprises and publicly subsidized camps reduce the costs at low levels that are hard for small private operations like The Teller to match.

The Teller does not have the critical capacity to make overnight workshops economically profitable for most groups. We interviewed coordinators of organizations that conduct dozens of outdoor workshops each year to determine the suitability of The Teller as a possible workshop site. Montana's Becoming an Outdoor Woman is a typical workshop group which strongly demonstrated that costs to workshop participants were a deciding factor in the selection of workshop sites. The Director of this Helena based statewide organization was familiar with The Teller and its lodging fees and told us that it was a prohibitive item for pricing the program to participants.



Teacher training workshops for area school districts will help to increase educational use of The Teller. Courtesy of <http://portal.ncdenr.org/>



Habitat and wildlife research projects on The Teller should continue to involve high school or university students. November 2008



Rasmussen Conservation Center. October 2010



Lubrecht Experimental Forest. October 2010



The Montana Outdoor Discovery Center under construction. October 2010

ANALYSIS OF REGIONAL EDUCATIONAL AND INTERPRETIVE SITES AND ATTRACTIONS

Economic sustainability of The Teller will require diversification and adaptability. Montana has many examples of outdoor facilities that are challenging to sustain. We visited many facilities to identify potential models that we could learn from.

The following attractions and facilities are indicative of the tourist potential in Montana generally and the more local examples give insight into visitation potential, seasonal fluctuations, and economic conditions in the Valley. They also give us some idea of possible partnerships should The Teller decide to pursue them.

The **Rasmussen Conservation Center** in eastern Montana is an education facility on the Theodore Roosevelt Ranch owned by the Boone and Crocket Club. When we visited this site and interviewed Dr. Lisa Flowers, the Education Director, she informed us that they were experiencing financial challenges and closed down the facility for the winter of 2010-11. She indicated that the remoteness of the site, the cost to users, and the number of potential users was restrictive. Their center was built in 2001 but was designed with dormitory rooms that are not conducive for use by adults.

The **University Of Montana's Forest and Conservation Experiment Station** is located in the Lubrecht Experimental Forest east of Missoula. We interviewed Dr. James Burchfield, Dean of the College of Forestry and Conservation. He told us that they have difficulty attracting groups in the shoulder seasons when they are not conducting summer courses for their students. He believes that there are a great number of competing facilities and, again, their dormitories are outdated in design and are not sought after by adult groups. Dr. Burchfield is a specialist in conservation tourism so it is noteworthy that he thinks that there is a tremendous amount of private sector competition for lodging groups that are engaged in outdoor activities.

The **Montana Outdoor Discovery Center**, currently under construction in Helena, is a partnership effort promoted and organized by Montana Fish, Wildlife & Parks. It is primarily funded with public grants. It does not have a lodging component. One of its goals is to create a communications network for environmental education programs statewide under the auspices of the Montana Environmental Education Association. It will contain a large public exhibit hall with ecological exhibits that feature Montana habitats. Their Special Projects Officer, Christian Smith, is very interested in having The Teller involved as a participating member in the network.

The **Montana Natural History Center** maintains a facility with wildlife exhibits in Missoula. They provide summer camp natural history programs for children, host school class visits at their facility, and run a program that sponsors classroom visits from professional naturalists. The distance that they travel to provide programs stops just south of Missoula so Corvallis and Hamilton are outside of their programming area.

The **Lee Metcalf National Wildlife Refuge**, just 20 miles downstream from The Teller, is very popular with the public. The refuge is 2,800 acres and composed of riverine, wetland, woodland, grassland, and emergent vegetation habitats. About 120,000 people visit annually. They maintain a small nature/visitor center in their headquarters building, offer dozens of natural history programs and special events, and maintain a close relationship with the local Audubon Society Chapter. Their public trail is well used by a cross section of visitors for bird watching and passive, social recreation. Bob Hanley, Recreational Specialist, runs a seemingly busy schedule of outdoor activities. He expressed interest in partnering with The Teller on programs or discussing cooperative efforts to avoid duplication of program efforts.

The **Ravalli County Museum** in Hamilton faces similar economic

challenges as The Teller. We interviewed the Executive Director, Tamar Stanley and staff member, Christine Komar. They informed us that the museum currently hosts 6,000 visitors annually with approximately half that number being out of state visitors. There is a nominal entry fee of \$3/adult. They have three full time employees and around twenty volunteers. The museum is currently upgrading many of their major exhibits and attempting to develop partnerships with other area resource facilities such as the Lee Metcalf Wildlife Refuge. Funding the museum is a major concern. Sponsors, benefactors, and gifts, even from the Board of Museum Trustees are limited. They are very receptive to collaborative efforts with The Teller. They are currently investigating teacher in-service training possibilities with Hamilton Schools and are initiating a program to help fund field trip transportation.

The **Daly Mansion** in Hamilton is another tourist attraction in the area. The University of Montana operates this historic home of 19th Century American industrialist Marcus Daly. It is a prominent tourist attraction in the Hamilton area. It holds a number of special events and maintains a group of volunteer docents. It was entrusted to the University partially as a means of maintaining a rather costly historic structure. Funding appears to be an



*Lee Metcalf National Wildlife Refuge.
December 2009*



*Ravalli County
Museum.
December 2009*



Daly Mansion. June 2010



Elk Country Visitor Center, Rocky Mountain Elk Foundation. December 2009



Travelers' Rest State Park. December 2009



Pronghorn antelope at the National Bison Range. June 2010

ongoing concern. There is potential to partner with this group as well as the Ravalli County Museum. They had 10,000 paying visitors in 2010, with 2,000 of that number at one special event.

The **Rocky Mountain Elk Foundation** in Missoula maintains a large Elk Country Visitor Center only a few blocks off the Interstate. It is open year round and has free admission. The exhibits are of a professional quality, costing in excess of one million dollars, and the exhibit hall has a capacity to hold busloads of visitors. According to the reception desk supervisor, Christina McBane, the peak season of visitation occurs between June and September when numbers are 5,000 to 6,000 per month. Winter month averages are often less than 2,000 per month. She felt that most people (80%) learned about the Center word of mouth, from others. There are billboards near Missoula on Interstate 90 and radio ads also invite visitation. On a slow winter day visitation is usually below 50 people and on a summer day it might average 200 visitors per day.

St. Mary's Mission in Stevensville is a well advertised local historic attraction that interprets the early European settlement of the Bitterroot Valley. It is open for half the year from April 15th to October 15th. Admission is charged for conducted tours. They rely on a "Friends" organization for staffing.

Travelers' Rest State Park and Museum at Lolo charges admission for entry. They average just over 20,000 visits annually. They are open all year but March through October accounts for 85% of their visitors. They created a new position and hired an educator in 2011. The Travelers' Rest Preservation & Heritage Association education program emphasizes a place-based approach to teaching and learning about Lewis and Clark history, Salish culture, and the natural history that has shaped human experience.

The **National Bison Range** managed by the U.S. Fish and Wildlife Service is a regional interpretive attraction located 40 minutes north of Missoula. The visitor center features professionally designed exhibits that are beginning to show age. A primary activity here is to travel the wildlife drive and see bison and other wildlife. They experienced over 120,000 visitors in 2010. Admission to the drive is \$4/car or \$20/bus. They conduct one or two Teacher Training Workshops/year that are accredited by the Office of Public Instruction.

Big Hole National Battlefield, located southeast of Hamilton, is another regional attraction with a visitor center renovation occurring in 2010-11. This National Park Service Battlefield usually receives around 50,000 visitors each year.

SUMMARY OF SITE VISITS AND RECOMMENDATIONS

Site visits to other regional facilities and programs provide an opportunity to effectively plan based on other organization's experiences.

- ▶ Based on visits to the Rasmussen Conservation Center and the UM Forest and Conservation Experiment Station, adding low-cost lodging facilities to The Teller is not recommended. Lodging tends to be a competitive and potentially marginal niche to expand into. Attracting adult groups would require more modern and comfortable facilities, which is unlikely to be cost effective for the organization.
- ▶ There is an incredible opportunity to partner with other agencies and organizations in the Bitterroot Valley to offer education. Marketing programs together is a cost effective way of reaching a broad audience of residents, teachers, and visitors. Representatives from nearby facilities and sites, such as the Lee Metcalf National Wildlife Refuge and the Ravalli County Museum, were very interested in collaborating with The Teller. The Montana Outdoor Discovery Center is interested in having The Teller join a statewide network for environmental education.

- ▶ Based on other area attractions, annual visitation numbers vary widely: 6,000 at the Ravalli County Museum, 10,000 at the Daly Mansion, and 120,000 at the Lee Metcalf National Wildlife Refuge. If The Teller creates a more public gateway and opens some areas for wildlife observation and recreational use, it will likely be very popular with residents and travelers. Depending on the degree of public accessibility, The Teller could attract roughly 20,000 to 30,000 visitors annually.
- ▶ Many of the Bitterroot regional attractions charge admission fees. For example, Ravalli County Museum charges \$3/adult. The Daly Mansion charges \$9/adult, \$8/senior, and \$6/child. St. Mary's Mission charges \$7/adult, \$6/senior, and \$5/child for a guided tour. Based on this precedent, it would be appropriate for The Teller to charge visitors a daily fee for using the trail system (perhaps \$3-4/adult). One of the benefits of membership would be to use the trails for free. This would encourage users, especially local residents, to join The Teller organization. Increased membership would help build support for the organization.



The University Of Montana's Forest and Conservation Experiment Station has difficulty filling their lodging with outside groups. Adding lodging facilities is not recommended for The Teller. June 2011



Visitation numbers to The Teller will vary depending on the degree of public accessibility. It has the potential of becoming a very popular destination in the Bitterroot Valley. Daly Elementary class visit, May 2008.

CHAPTER 3: RESOURCES





Otto and Anne Teller.



Bitterroot Buggers fishing at The Teller. May, 2009

RESOURCES

Resources are at the core of an interpretive experience. **Tangible resources**, those things that can be seen or touched, are important for connecting visitors physically to a unique site. **Intangible resources**, such as concepts, values, and events, facilitate emotional and meaningful experiences for visitors. Effective interpretation occurs when tangible resources are connected with intangible meanings.

The Teller provides access to many unique resources and stories that serve as connections to the natural and cultural history of the site and region.

1. THE LEGACY OF OTTO TELLER

The invaluable, protected land of The Teller Refuge is a direct tangible connection to the vision and foresight of Otto Teller (1908-1988). He showed that a small, passionate group of people could make a difference in protecting the resources of the Bitterroot Valley.

- ▶ Otto came from a farming background. In 1957, he and his wife Anne purchased farmland in Glen Ellen, California that they named Oak Hill Farm. Otto refused to use chemical fertilizers, herbicides, or pesticides, instead practicing organic and sustainable farming.

- ▶ Otto was an avid fly fisherman and waterfowl hunter, calling the Bitterroot Valley his summer home for over 50 years. In response to the increasing fragmentation of habitat in the valley, he began to purchase farmland and river bottom properties to protect them from future development.
- ▶ With the assistance of attorney Phil Tawney, 1,200 acres of property were consolidated and placed into conservation easements, assuring that the land will remain undeveloped.
- ▶ Otto and Anne developed a non-profit organization in 1988, The Teller Wildlife Refuge, Inc., to manage and support the lands they acquired.

2. THE LEGACY OF HUNTING AND FISHING

The Bitterroot Valley is known throughout the country for its incredible trout fishing and hunting opportunities. Following in the tradition of Otto Teller, an avid fly fisherman and waterfowl hunter, The Teller today supports these traditional outdoor activities by managing the water and land for wildlife, keeping its lands open for limited hunting and fishing, and encouraging participation by youth and learners of all ages.

- ▶ The Teller is part of the Montana Fish, Wildlife & Parks (FWP) Block Management Program, which partners with landowners to provide limited free hunting access on private lands. Participation is voluntary. In 2010, 1,275 landowners enrolled about 8.8 million acres of land. White-tailed deer, waterfowl, and pheasant are hunted on The Teller.
- ▶ The Bitterroot River is one of the premier trout fishing streams in Western Montana. The primary fish found in the river are rainbow trout. Brown trout and cutthroat trout are found in the upper portion of the river, especially upstream from Hamilton.
- ▶ The Teller partners with local and national conservation groups to offer hunting and fishing training to youth. The annual **Ducks Unlimited Greenwing** event, a partnership with the Bitterroot Valley Ducks Unlimited Chapter, teaches dog handling, gun awareness, decoy carving, duck/goose calling, and waterfowl identification. Partnering with Montana Trout Unlimited, the **Bitterroot Buggers** program teaches fly tying, casting, and basic fishing skills. The Teller also provides opportunities for youth in Ravalli and Missoula counties to hunt waterfowl and upland birds on opening weekends.

- ▶ Several waterfowl blinds on the property, camouflaged with cattail leaves, are tangible connections to hunting traditions and the landscape.

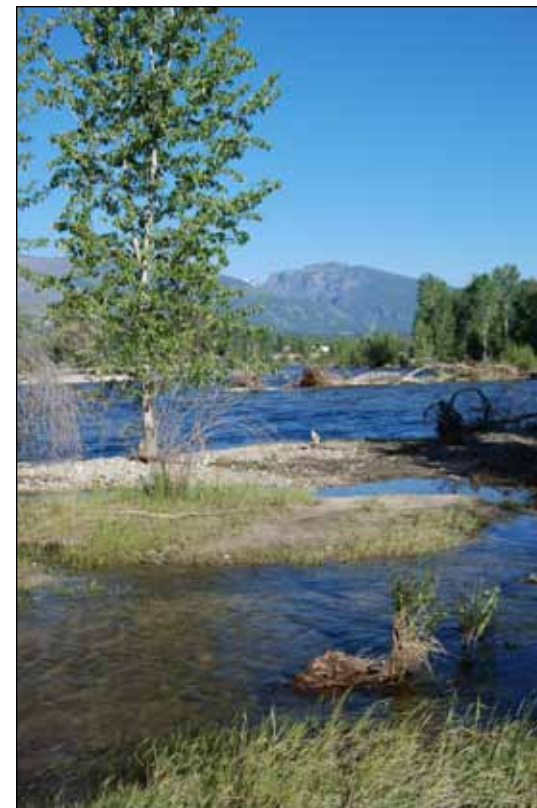
3. BITTERROOT RIVER

A tributary of the Clark Fork River, the Bitterroot runs for about 75 miles south to north through the Bitterroot Valley. It is ideal for fishing, float trips, and wildlife watching. There is a mythology to the River and great name recognition. The Teller protects approximately 1.5 miles of riverfront in its main property and about 0.5 mile in its north property.

- ▶ **The Teller Trail:** The Teller maintains a 1-mile public loop trail along the east shore of the Bitterroot River, starting at the Woodside Bridge Fishing Access Site. This is the only area of The Teller property specifically open to the public for free.

4. EXAMPLES OF ACTIVE HABITAT RESTORATION

One of the primary missions of The Teller is to restore and manage habitat for increased wildlife diversity. The site includes a variety of successful, tangible projects that can serve as demonstration sites for the Bitterroot Valley as a whole. These include:



Bitterroot River from The Teller trail, accessible from the Woodside Bridge Fishing Access Site. June 2010



Restored Gird Creek. June 2010



Restored Thomas Pond. June 2010

- ▶ **Wetland restoration:** Nearly 60 acres of wetlands were enhanced in the past two years. This involved burning and excavating areas dominated by cattails and sedges, planting native shrubs and grasses for cover, and managing water levels with canal systems to provide a mosaic of open water and emergent vegetation
- ▶ **Gird Creek restoration:** In 2008, The Teller restored just over a mile of fisheries habitat on Gird Creek. This involved diverting the water, realigning and narrowing the stream channel, constructing finger bars, depositing spawning gravels, burying woody debris into the banks of pools, and vegetation plantings. Today, this stretch of creek transitions from riffles to pools several times, and provides ideal habitat for trout spawning, growth, and survival.
- ▶ **Thomas Pond restoration:** In 2007, The Teller restored an existing pond by excavating a half of it deeper, and establishing a shallow marsh on the other half. Two nesting islands were constructed and the shoreline was naturalized. Native wetland vegetation was also planted. Today, the pond is stocked with trout and is used for beginning fishing programs.
- ▶ **Deer Enclosures:** Overbrowsing by abundant white-tailed deer can severely impede the establishment of young tree and shrub species. Several areas on the property enclosed with high fences serve as testing grounds for the regeneration of vegetation in absence of deer. In 2007, a 4.5-acre riparian site on the north end of the main property was enclosed with a solar-powered electric fence material. Nearly 500 native trees and shrubs were planted inside the enclosure. Regeneration of cottonwoods and alders is occurring. In 2009, a non-electric fence enclosure was constructed just south of Thomas Pond to encourage regeneration of aspen.
- ▶ **Invasive Plant Management:** Following its Integrated Weed Management Plan (2005), The Teller has aggressively removed and treated invasive plant species from large portions of its property. This involves a variety of integrated practices such as biocontrol, grazing, cultivating, mowing, revegetation, herbicide application, fire, hand pulling, and cultural control.
- ▶ **Wood Duck Nesting Boxes:** In 2008, 12 wood duck boxes and 6 nesting tubes were installed on The Teller by volunteers and students from Corvallis Middle School. The boxes and tubes provide a protected space for wood ducks to nest.

5. EXAMPLES OF WILDLIFE-FRIENDLY FARMING PRACTICES

The Teller practices sustainable farming techniques that reduce impact on the land and benefit wildlife.

- ▶ Crop fields, classic barns, irrigation rigs, and fences are tangible connections to the farming legacy of the Bitterroot Valley.
- ▶ In 2010, over 125 acres of fields in The Teller were planted with corn, millet, canola, alfalfa, and barley.
- ▶ Pheasant brood strips, bare soil strips that are periodically flooded to attract insects for chicks, have been added to the fields.
- ▶ A portion of the barley crop is also left standing each year serving as wildlife food plots for deer, turkeys, pheasants, song birds, and waterfowl.

6. OPTIMAL WILDLIFE VIEWING OPPORTUNITIES

The Teller harbors an incredible abundance of wildlife due to innovative management practices that enhance habitat on its land and its location as part of natural migration routes (following the valley and the river, and moving between mountains and valley).

- ▶ The Teller is part of the National Audubon Society's Bitterroot River Important Bird Area (IBA). The IBA

is a 30,000 acre area that encompasses the 500-year floodplain around a stretch of the Bitterroot River from Woodside Crossing to just south of Lolo. The riparian habitat is dominated by black cottonwoods and willows. Riparian areas and wetlands occupy less than 4% of Montana's land surface, yet they support 80% of the bird species found in the state. More than 240 bird species have been recorded within the IBA, with at least 115 species breeding. Species of concern include Lewis's Woodpeckers and Red-naped Sapsuckers (both of continental concern), Bald Eagles, Northern Harriers, Wilson's Phalaropes, Short-eared Owls, Pileated Woodpeckers, Willow Flycatchers, and Red-eyed Vireos.

iba.audubon.org/iba/viewSiteProfile.do?siteId=2821&navSite=state

- ▶ The Teller is one of the sites featured on the Montana Birding & Nature Trail, which is coordinated by the Montana Natural History Center in Missoula. The mission is to develop a statewide birding and nature trail system that provides sustainable economic benefits to local communities and promotes conservation and stewardship of biological diversity.

www.montanabirdingtrail.org



Fields on The Teller property are planted with crops that support wildlife populations. June 2010



A Short-eared Owl, a species of concern, hunts over The Teller fields. June 2010

- ▶ Birdwatching and wildlife watching are growing and have potentially large economic impacts.



Slack House. December 2009



Chaffin House. December 2009

7. LEGACY OF THE REGION

The presence of **farming** is still evident on The Teller, which maintains the historic Slack and Chaffin farmsteads and the surrounding landscape of agricultural fields. These buildings and settings reflect the region's cultural history.

- ▶ **Slack House:** Built in 1864, the Slack House is the oldest homestead on The Teller. Originally from Philadelphia, Jack Slack left at the age of 16 in search of gold out west. Jack crossed paths with the Chaffins in the summer of 1864, and he convinced them to winter in the Bitterroot near the free flowing Willow Creek. In fall, John Slack and the Chaffins settled in two log cabins on neighboring farmland. The Slack House was originally a 12'x20' two-bedroom log cabin. A 26'x32' addition was added in 1879. Jack died in 1883, but his wife, Polly (Elijah Chaffin's younger sister), lived in the house until 1909. Otto Teller bought the house in 1988 and updated the building. Today, the house can be reserved for a unique lodging experience.
- ▶ **Chaffin House:** In 1864, Elijah and Margaret Chaffin, along with several family members and other families,

headed west from their native Tennessee bound for Oregon. With convincing from Jack Slack, they overwintered in the Bitterroot Valley. Here, Margaret and Elijah had the first Caucasian boy recorded in the Valley. In February of 1865, Jack Slack and Polly Chaffin (Elijah's younger sister) were married in the first legally recorded marriage ceremony in the valley. In 1865, the Chaffins again set out for their original destination of Oregon, but returned the next year to settle in the Bitterroot Valley. A 16'x34' log home was built in 1866. The home was expanded in the 1870s with nine children living under its roof. Margaret died in 1877 giving birth to their 11th child, and Elijah died in 1884. Otto Teller bought the house in 1986. Today, this house can also be reserved for lodging.

Willow Creek now flows through a ditch located on The Teller property. It was once a free-flowing stream that Lewis and Clark likely lunched along on their journey to the Pacific Ocean (Lewis & Clark In the Bitterroot by Burk, 1998). Their journal entries provide an invaluable glimpse of what the landscape and vegetation of the Bitterroot Valley were like prior to European settlement.

- ▶ According to the September 8, 1805 entry from the "Original Journal of Private Joseph Whitehouse:"

cloudy and verry chilley and cold. we Set out eairly and proceeded on down this large creek or Small River. passed over Smooth dry plains. no timber only along the River, which is large pitch pine the bottoms wide. we crossed Several creeks. Saw Snow on the Mountains to our left. high barron hills to our right. about 11 oClock we halted to dine at a branch [likely Willow Creek] our hunters all joined us...we travveled 20 odd miles this day and Camped at the Creek and Smooth bottom where was fine feed for our horses...crossed Several branches in course of the day.

- ▶ According to William Clark's September 8, 1805 journal entry:

a Cloudy morning Set out early and proceeded on through an open vallie for 23 miles passed 4 Creeks on the right Some runs on the left, The bottoms as also the hills Stoney bad land. Some pine on the Creeks and mountains, an[d] partial on the hills to the right hand Side .. proceeded on down the Vallie which is pore Stoney land and encamped on the right Side of the river a hard rain all the evening we are all Cold and wet. on this part of the river on the head of Clarks River I observe great quantities of a peculiar Sort of Prickly peare grow in Clusters ovel & about the Size of a Pignons egge with Strong Thorns which is So birded as to draw the Pear from the Cluster after penetrateing our feet. Drewyer killed a Deer. I killed a prarie fowl...

8. EXISTING SLACK BARN ASSEMBLY AREA AND CLASSROOM

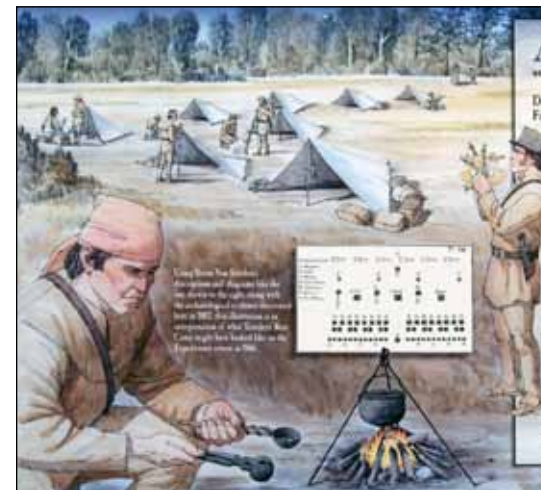
The Slack barn is harmonious with the ranch and rural setting of The Teller, helping to immerse visitors in the historic landscape. It is an important gathering place for celebrations and festivals, including the important TNT fundraiser. The barn provides several functional and adaptive spaces: a 2,000 square foot heated finished space on the main level with lights, counter tops, and a sink, a 2,500 square foot unfinished space on the main level with concrete floor, and a 5,000 square foot unfinished space on the upper level with rustic timbers, wood floor, and bandstand. A walkout deck on the upper floor provides a panoramic view of The Teller site and the Bitterroot Mountains. This could serve as an excellent introductory facility and gateway for visitors to The Teller.

9. CLASSIC RANCH SETTING IN A MOUNTAIN VALLEY ATTRACTS GROUPS AND PEOPLE

The incredible scenery of The Teller provides a sense of place rooted in the American West. The wildlife, fields, woodlands, wetlands, river, streams, historic buildings, and stunning backdrop of mountains immerse visitors in the nostalgic landscape. People are seeking these classic settings, which are quickly disappearing as land is



The Slack Barn serves as an important gathering place and adds to the classic ranch setting. June 2010



Artist's rendition of the Lewis and Clark encampment at Traveler's Rest. December 2009



Bitterroot flower blooming on The Teller property. June 2010



The Menager Parcel of The Teller is located along Woodside Cutoff Road. June 2010

subdivided and developed. The Teller ensures that the landscape here will be preserved for future generations.

- ▶ **Gathering place for people:** Provides great private get-a-way locations for weddings, family reunions, conference meetings, and other events that are best conducted in intimate settings.
- ▶ **Lodging on-site and in Hamilton:** Overnight facilities allow multi-day events with greater potential for revenue generation. Motel lodging is essential for cost effective group sizes in programming.

10. BITTERROOT FLOWERS GROW ON THE TELLER PROPERTY

Bitterroot, *Lewisia rediviva*, is the state flower of Montana and the namesake of the river, valley, and mountain range. Bitterroot is a low growing plant with large deep pink to nearly white flowers and narrow succulent leaves. Local tribes, such as the Shoshone and Flathead Indians, would dig up the roots for food, which had to be cooked to eliminate the bitter taste. The Bitterroot was first collected by Meriwether Lewis, who noted it in his journal at Traveler’s Rest in 1806. The scientific name honors Lewis. Bitterroot flowers now bloom naturally in a native planting area of The Teller, symbolizing successful restoration of habitat.

11. LOCATION ON THE WOODSIDE CUTOFF ROAD

The Menager Parcel of The Teller is ideally located along Woodside Cutoff Road, which is heavily traveled by both valley residents and tourists. This area could serve as an ideal public gateway to The Teller, providing access to programming space, trails, and interpretation. A safe paved path along Woodside Cutoff connects to Corvallis for easy foot or bicycle travel.

12. CLOSE PROXIMITY TO SCHOOLS

The Corvallis schools are within walking distance of many areas on The Teller, providing a great number of inexpensive educational options. There are several teachers at various grade levels who are interested in outdoor programming. There are a number of nationwide afterschool programs that would lend themselves well to The Teller site.

13. OTHER CONCENTRATIONS OF OUTDOOR AND NATURE-RELATED ATTRACTIONS TO DRAW TOURISTS AND WILDLIFE ENTHUSIASTS

The Bitterroot Valley is known for its spectacular hiking and wildlife watching opportunities. Within a short drive of The Teller is the Lee Metcalf National Wildlife Refuge, several hiking trails in the Bitterroot National Forest (closest

include Bear Creek Trail, Mill Creek Trail, Blodgett Canyon Overlook Trail, Kootenai Creek Trail, and St. Mary's Peak Trail), several fishing access areas (Woodside, Tucker Crossing, Victor Crossing, Blodgett Park), Lake Como, and Skalkaho Pass. The Teller is a natural destination for travelers interested in outdoor activities and wildlife viewing.

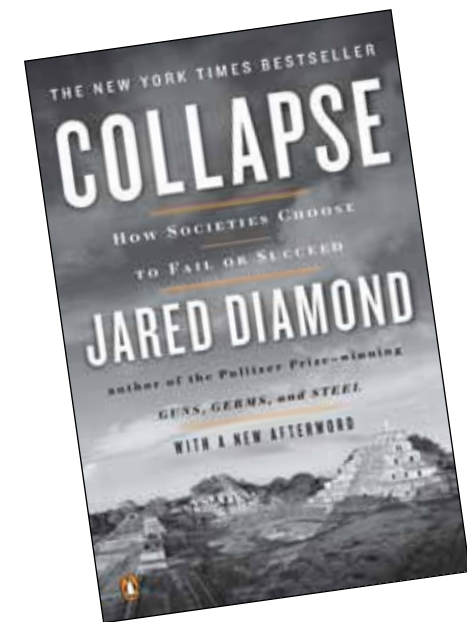
14. THE TELLER IS FEATURED AS A POSITIVE LOCAL LAND PRESERVATION ORGANIZATION IN POPULAR MEDIA

In his book entitled *Collapse: How Societies Choose to Fail or Succeed* (2005), award-winning author Jared Diamond explores broad-ranging environmental problems that can cause societies to collapse. Interestingly, he begins his book by investigating issues in Montana and specifically in the Bitterroot Valley, which he states is a "microcosm of the environmental problems plaguing the rest of the United States." Diamond had vacationed on Teller property for many years and describes The Teller as a unique organization in the valley dedicated to preserving the environmental qualities of the land. Diamond sees The Teller as an example grassroots organization, supported by and benefiting residents in the Bitterroot.

...my summer home for the last seven years has been a rented house situated on the Bitterroot River...and belonging to a private entity called The Teller Wildlife Refuge. Otto Teller was a rich Californian who liked to come to Montana to fish for trout. One day, he was infuriated to encounter large construction machinery dumping dirt into one of his favorite fishing holes on the Gallatin River... In 1984 Otto began buying up prime riverside land along the Bitterroot River and incorporated it into a private wildlife refuge, which he nevertheless let local people continue to visit in order to hunt and fish. He ultimately donated conservation easements on his land to a non-profit organization called the Montana Land Reliance, in order to ensure that the land would be managed in perpetuity so as to preserve its environmental qualities. Had Otto Teller...not bought that 1,600 acres of land, it would have been subdivided for small house lots. (Page 62)



The Teller is in proximity to other outdoor attractions, like the Blodgett Canyon Overlook Trail. June 2010



The Teller is featured prominently in Jared Diamond's book *Collapse* as a positive, grassroots conservation organization. June 2010

An individual who wants to benefit directly from his or her actions can consider investing time and effort in improving one's own local environment. The example most familiar to me from firsthand experience at my family's summer vacation site in Montana's Bitterroot Valley is The Teller Wildlife Refuge, a small private non-profit organization devoted to habitat preservation and restoration along the Bitterroot River. While the organization's founder, Otto Teller, was rich, his friends who sensitized him to environmental issues were not rich, nor are most of the people who

volunteer to help The Teller Refuge today. As a benefit to themselves (actually, to anyone living in or visiting the Bitterroot Valley), they continue to enjoy gorgeous scenery and good fishing, which would otherwise by now have been eliminated for land development. Such examples can be multiplied indefinitely: almost every local area has its own neighborhood group, landowners' association, or other such organizations.

(Collapse: How Societies Choose to Fail or Succeed, Page 559)

A storm over the Bitterroot Mountains from The Teller property. June 2010



CHAPTER 4:

THEMES & MESSAGES





A fawn on The Teller property, June 2010

THEMES & MESSAGES

Themes are the important ideas that organize the messages to be communicated through the educational and interpretive program at The Teller. They create a framework for planning and help place resources and events into meaningful contexts for visitors. Once these significant concepts are identified, decisions can be made about what site resources and media are most appropriate to tell these stories. Compelling interpretive themes link a tangible resource to the interests of visitors.

A theme statement, the main idea of an interpretive opportunity, should contain universal concepts. A **universal concept** is an intangible meaning that has significance to almost everyone, but may not mean the same thing to any two people. They are the ideas, values, challenges, relationships, needs, and emotions that speak to the human condition.

Interpretation and education is most effective when programs, media, and experiences allow visitors to grasp the meanings expressed in themes and apply them to their own lives. Visitors may not parrot the themes we write—but if they are provoked, inspired, or can relate to something within themselves, we have been successful.

- ▶ A **primary theme** expresses the main idea and unifying concepts that tie together the stories of The Teller. To provide a cohesive visitor experience, all programs and media should relate to this holistic theme.
- ▶ **Sub-themes** split the primary theme into several more specific and workable ideas. These broad storylines guide visitors to discover deeper meanings and relationships with the resources of the site.
- ▶ **Messages** break down the broad sub-themes into specific, discrete stories that can be told with interpretive media and educational programming.

A FRAMEWORK FOR EDUCATION & INTERPRETATION

The following themes and messages would be interwoven into various educational programs and interpretive media at The Teller. A sub-theme shouldn't necessarily be thought of as a specific program topic, but rather as a broad idea that can be supported in multiple ways. For example, the first sub-theme might be supported by a program on stream restoration, an interpretive panel on the Thomas Pond excavation, and a web page describing appropriate wildlife farming techniques.

PRIMARY THEME:

The Teller demonstrates stewardship of natural and cultural resources in the Bitterroot Valley by restoring and managing habitat diversity for the benefit of fish and wildlife, maintaining farm fields and heritage homesteads, and promoting traditional outdoor activities.

SUB-THEMES:

SUB-THEME 1:

The protection and management of undeveloped and agricultural land in the Bitterroot Valley is essential for enhancing wildlife and habitat diversity, while preserving the natural landscape that has attracted people here for generations.

Messages:

- ▶ Wetlands on The Teller are enhanced to provide a mosaic of open water and emergent vegetation. This includes burning and excavating areas dominated by cattails and sedges, planting native shrubs and grasses for cover, and managing water levels with canal systems
- ▶ Stream restoration enhances aquatic and riparian habitat for fish and other wildlife, while improving the ecological functions of the stream.
- ▶ In 2008, The Teller restored just over a mile of fisheries habitat on Gird Creek. This involved diverting the water, realigning and narrowing the stream channel, constructing finger bars, depositing spawning gravels, burying woody debris into the banks of pools, and vegetation plantings. Today, this stretch of creek transitions from riffles to pools several times, and provides ideal habitat for trout spawning, growth, and survival.
- ▶ In 2007, The Teller restored an existing pond by excavating a half of it deeper and establishing a shallow marsh on the other half. Two nesting islands were constructed and the shoreline was naturalized. Native wetland vegetation was also planted. Today, the pond is stocked with trout and is used for beginning fishing programs.
- ▶ Overbrowsing by abundant white-tailed deer can severely impede the establishment of young tree and shrub species. Several areas on The Teller property are enclosed with high fences that serve as testing grounds for the regeneration of vegetation in absence of deer.



Over a mile of Gird Creek was restored by The Teller in 2008, enhancing fish habitat. June 2010



An enhanced wetland on The Teller provides open water and emergent vegetation. June 2010



This 4.5-acre riparian deer enclosure allows native trees and shrubs to regenerate without deer feeding pressure. December 2009



The Teller practices wildlife-friendly farming practices on it property. October 2010

Sub-theme 1 includes results from the Visioning Meeting conducted June 16, 2010: "What are the important and unique stories that should be told at The Teller?"

- ◆ *Restoration activities on The Teller (9 votes)*
- ◆ *Wildlife friendly farming (7 votes)*
- ◆ *Invasive exotic species control (3 votes)*

- ▶ In 2007, a 4.5-acre riparian site on the north end of the main property was enclosed with a solar-powered electric fence material. Nearly 500 native trees and shrubs were planted inside the enclosure. Regeneration of cottonwoods and alders is occurring.
- ▶ In 2009, a non-electric fence enclosure was constructed just south of Thomas Pond to encourage regeneration of aspen.
- ▶ Invasive exotic plants (weeds) crowd out native vegetation in the Bitterroot Valley that is essential for habitat diversity.
- ▶ Following its Integrated Weed Management Plan (2005), The Teller has aggressively removed and treated invasive plant species from large portions of its property. This involves a variety of integrated practices such as biocontrol, grazing, cultivating, mowing, revegetation, herbicide application, fire, hand pulling, and cultural control.
- ▶ Wood ducks normally nest in tree cavities near wetlands that provide adequate protection and space. Wood duck boxes and tubes provide additional alternative for successful nesting.
- ▶ In 2008, 12 wood duck boxes and 6 nesting tubes were installed on The Teller by volunteers and students from Corvallis Middle School.
- ▶ In the tradition of Otto Teller, The Teller practices sustainable farming techniques that reduce impact on the land and benefit wildlife.
- ▶ In 2010, over 125 acres of fields in The Teller were planted with corn, millet, canola, alfalfa, and barley. A variety of crops are selected to encourage wildlife.
- ▶ Pheasant brood strips are bare soil strips that are periodically flooded to attract insects for chicks. These are often constructed next to fields.
- ▶ A portion of the barley crop is also left standing each year serving as wildlife food plots for deer, turkeys, pheasants, song birds, and waterfowl.

SUB-THEME 2:

Through conserving undeveloped land for wildlife in the Bitterroot Valley, Otto Teller showed that a small, passionate group of people could make a difference in protecting our natural and cultural heritage.

Messages:

- ▶ Otto Teller had farming in his blood; born on a farm and vineyard near Cleveland, Ohio in 1908, he returned to his agricultural roots after serving in World War II in 1947.

- ▶ Otto refused to embrace the practice of using chemicals on farm fields that swept the agriculture industry after World War II. He was one of the early proponents of organic and sustainable farming practices. According to Teller, “I didn’t need all those chemical fertilizers and herbicides and pesticides.”
- ▶ In 1957, Teller purchased land in Sonoma County, California, which he called Oak Hill Farm. Over the years, the land was restored and today produces over 200 crops. The Farm is now owned by his wife, Anne Teller.
- ▶ Otto was an avid fly fisherman and waterfowl hunter, calling the Bitterroot Valley his summer home for over 50 years.
- ▶ A true conservationist by the 1970s, Otto played a key role in the evolution of Trout Unlimited, served on the board of Ducks Unlimited, and contributed to conservation efforts throughout the country, such as solar energy and wind power.
- ▶ Combining his passion for conservation and farming, Otto became interested in farmland preservation and began using conservation easements as a tool to protect land in perpetuity.
- ▶ A **conservation easement** is a voluntary agreement that allows a landowner to limit the type

or amount of development on their property while retaining private ownership of the land. The agreement can be made between the landowner and a government agency (municipality, county, state, federal) or a private, nonprofit organization called a land trust.

- ▶ In response to the increasing population and fragmentation of habitat in the valley, Otto began purchasing farmland and river bottom properties in the early 1980s to protect them from future development.
- ▶ Phil Tawney, a fourth generation Montanan, lifetime sportsman, and conservation leader, was both Otto’s attorney and friend. He worked extensively with Otto to consolidate and place his 1,200 acres of land into conservation easements.
- ▶ Otto and Anne incorporated a non-profit organization in 1988, The Teller Wildlife Refuge, Inc., to manage and support the lands they acquired.
- ▶ Otto passed away on December 1, 1998, but his wife, Anne, is still a member of the Board of Trustees and owns Oak Hill Farm in California.



Otto and Anne Teller, 1989



Phil Tawney

Sub-theme 2 includes results from the Visioning Meeting conducted June 16, 2010: “What are the important and unique stories that should be told at The Teller?”

- ◆ *Otto Teller’s story (contribution to conservation) (10 votes)*
- ◆ *History of conservation easements (Phil Tawney) (3 votes)*
- ◆ *Anne Teller’s story (2 votes)*



Bitterroot growing on the National Bison Range. June 2010



Lewisia rediviva by Walter Hood Fitch, from Curtis's Botanical Magazine, 1863

SUB-THEME 3:

The Teller represents the early Bitterroot Valley, a natural and cultural corridor defined by the Bitterroot River and the mountain ranges that flank its sides.

Messages:

- ▶ The Bitterroot Valley, River, and Mountains are named for the **bitterroot wildflower**, the state flower of Montana that grows well in this region. (www.saintmarysmission.org/Bitterroot.html)
 - Bitterroot is a low growing plant with large deep pink to nearly white flowers, narrow succulent leaves, and a fleshy taproot. They can live for over a year without water and prefer gravelly, dry soil.
 - Bitterroot was an important food source for regional tribes, such as the Salish and Shoshone people. They called it *spetlum*, which means bitter. Women dug, cleaned, and boiled the roots of the plant, which had to be cooked to eliminate the bitter taste. This was then pounded into a flat patty and mixed with deer fat, meat, or berries. The tribe's spring migrations were timed to coincide with the blooming of the bitterroot flower.
- The Shoshone and Salish people tell a traditional story about the origin of the bitterroot:

One day an elderly woman couldn't find food for her family and started crying. The sun sent a red bird to comfort her. The bird told her that every place her bitter tears fell, a root—nourished by her love—would grow. The root would be colored by the woman's white hair. The taste would be flavored by her bitter tears. The flower would be tinted by the bird's red feathers...and she would always have food for her tribe. (www.bitterrootheaven.com/trivia.html)
- The bitterroot was first officially collected by Meriwether Lewis, who noted it in his journal at Traveler's Rest in 1806. The scientific name, *Lewisia rediviva*, honors Lewis and the plant's incredible hardiness ("return from the dead"). When the bitterroot Lewis collected was planted after several years without soil or water, the flower began growing again.
- ▶ The **Bitterroot Valley** is nestled between the **Sapphire Mountains** to the east and the **Bitterroot Mountains** to the west.
 - The Bitterroot Valley extends over 100 miles south of Missoula to the Continental Divide at the Idaho border.

- The contrasting appearance between the Bitterroot Mountains, which are steep with rocky canyons, and the Sapphire Mountains, which are rounder and lower, reveal different geologic origins.
- The Bitterroot Mountains are composed of granite, while the Sapphire Mountains are composed of mostly sedimentary rock.
- Between 90 and 70 million years ago, on the west side of the present-day Bitterroot Valley, an enormous bubble of molten granite (called the Idaho Batholith) pushed up against the rock above and created a bulge in the earth crust. Between 75 and 70 million years ago, large slices of that bulge broke and moved eastward, possibly gliding on top of the magma like grease. Over the course of about a million years, one slice (called the Sapphire Block) moved about 50 miles to the east. This became the Sapphire Mountains in the east, while the remaining exposed granite rock in the west formed the Bitterroot Mountains. (*Roadside Geology of Montana*, David Alt and Donald W. Hyndman, 1986)
- The ragged peaks and U-shaped canyons of the Bitterroot Mountains were formed by glaciers in a series of ice ages, starting about 2.5 million years ago with the most recent period being about 15,000 years ago. The Sapphire Mountains were not glaciated.
- The highest summit in the Bitterroot Mountains is Trapper Peak at 10,157 feet.
- During the last Ice Age, a finger from a glacial ice sheet dammed the Clark Fork River just as it entered Idaho. Water began filling up behind the 2,500-foot high ice dam and filled the Bitterroot Valley to a depth of 2,000 feet. Called **Glacial Lake Missoula**, the lake was the size of Lake Erie and Lake Ontario combined. The highest known shorelines are found at 4,200 feet. When the ice dam failed, catastrophic floodwaters raced across eastern Washington stripping away topsoil and picking apart bedrock in what today are called “scablands.” In the Bitterroot Valley, the massive lake left deposits of fine soil that today support rich agricultural fields. (www.glaciallakemissoula.org/)



The Bitterroot Mountains on the west side of the valley are steep with rocky canyons. October 2010



The Sapphire Mountains on the east side of the valley are rounder and lower. October 2010



The Bitterroot River from The Teller trail. June 2010



Fly fishing on the Bitterroot River.

- ▶ The **Bitterroot River**, a tributary of the Clark Fork, runs through the Bitterroot Valley for about 75 miles from south (confluence of its West and East forks near Conner) to north (confluence with Clark Fork River near Missoula).
 - The Bitterroot River has been called by many names. The Salish Indians called the river *spe'tlemen*, which means “place of the bitterroot.” Meriwether Lewis named it the “Clark’s River” in 1805 in honor of William Clark. Explorer Warren A. Farris was the first to call it “Bitter Root” in the 1830s, but Father DeSmet renamed it St. Mary’s River in 1841. In 1898, the U.S. Forest Service mapmakers finally gave it the current one-word spelling of “Bitterroot.” (*Lewis & Clark in the Bitterroot*, 1998).
 - The Teller protects approximately 1.5 miles of the Bitterroot River’s east shoreline in its main property and about 0.5 mile in its north property.
 - The Bitterroot River is one of the premier trout fishing streams in Western Montana. The primary fish found in the river are rainbow trout. Brown trout and cutthroat trout are found in the upper portion of the river, especially upstream from Hamilton.
 - The Bitterroot River is popular for fly fishing, float trips, and wildlife watching.
 - The Bitterroot River is the lifeblood of the Bitterroot Valley, that supports communities, commerce, and vitality.
 - There are more tributaries entering the main stream per river mile than any other major river in Montana.
 - Established in the late 1800s, the irrigation system based on the Bitterroot River is made up of several irrigation districts and is one of the largest and most complex in Montana.
 - The braided Bitterroot River constantly changes its course, depositing sediments that chokes one channel and forcing it to create another.
- ▶ The dominant **climatic feature** of the Bitterroot Valley is the lack of moisture, averaging only about 12 to 15 inches of rain annually. (*Montana’s Bitterroot Valley* by Russ Lawrence, 1999).
 - The Bitterroot Mountains act as a wall, uplifting the moist air from the Pacific Ocean and leaving the Bitterroot Valley dry in its “rain shadow.” The mountain crests on both sides of the valley may

receive hundreds of inches of rain.

- Snowfall is much the same as the rain and varies by elevation. The annual snowfall near Hamilton averages about 40 inches, with no more than a few inches on the ground at any time. Snowfall in the Bitterroot and Sapphire Mountains are from two to ten feet.
- With such low amounts of rainfall, the mountain snowpack is essential for feeding irrigation ditches and the Bitterroot River. Residents watch the snowpack figures closely. Too little snowpack can lead to drought later in the summer. Too much snowpack can cause flooding in spring and early summer.
- The valley has relatively mild winters, with the Continental Divide protecting it from many of the arctic fronts.
- ▶ The **historic vegetation** of much of the valley around present-day Corvallis was arid-loving plant species such as sagebrush, prickly pear, and bitterroot. Cottonwood trees grew along the creeks and river. According to William Clark's 1805 description:

The bottoms as also the hills Stoney bad land. Some pine on the Creeks and

mountains, an[d] partial on the hills to the right hand Side... on this part of the river on the head of Clarks River I observe great quantities of a peculiar Sort of Prickly peare grow in Clusters ovel & about the Size of a Pigiions egge with Strong Thorns which is So birded as to draw the Pear from the Cluster after penetrateing our feet.

- Common trees of the Bitterroot Valley today include Ponderosa Pine (the state tree of Montana) at the lower, dryer elevations, Western Larch, Douglas-fir on moister sites above the valley floor, and Cottonwood along streams.
- ▶ The rich diversity of habitats in the Bitterroot Valley and its surrounding mountains supports a large variety of wildlife species.
 - A mosaic of wetlands, river bottoms, upland benches of mixed forest and grassland habitats in the valley, canyons (cool, moist north-facing sides and warm, drier south-facing sides), and pine forests at the bases of the mountain ranges provide homes and food sources for wildlife.
 - Large game animals found in this region include whitetail deer, mule deer, black bear, elk, moose, mountain goats, and bighorn sheep.



A brief rain storm sweeps into the Bitterroot Valley, which receives only about 12 to 15 inches annually. June 2010



Snowpack on the mountains is essential for replenishing irrigation ditches and the Bitterroot River. December 2009



Rocky Mountain elk are a success story in the Bitterroot. Courtesy of U.S. Fish and Wildlife Service



The increasing number of gray wolves in the Bitterroot is a controversial topic in the region. Courtesy of U.S. Fish and Wildlife Service

- **Rocky Mountain Elk** are a success story in the Bitterroot. By the early 1900s, elk had been hunted to scarcity in much of Montana. Sportsmen in Hamilton (members of a local gun club that became the Ravalli County Fish & Wildlife Association) raised funding in 1912 to transplant a herd of about 100 animals from Yellowstone. With decades of careful management, the elk population grew to about 8,100 in 2005.
- By the late 1920s, **gray wolves** had been hunted to extinction in the state of Montana, although occasional lone wolves were reported in different areas. By the 1990s, natural colonization had expanded into Glacier National Park and the Missoula area. In 1995 and 1996, 31 wolves from British Columbia and 10 wolves from Montana were released in Yellowstone National Park by the U.S. Fish and Wildlife Service. This transplant has been highly successful with numbers increasing at rates of 10% to 34% annually. In 2009, the total number reached at least 1,700 wolves (524 in Montana alone).
- An emotional debate about the increasing number of wolves and their effect on elk populations are a hot topic in the Bitterroot Valley. A study conducted by Montana Fish, Wildlife & Parks in 2009 found only limited evidence that wolves may have played a role in the declining Bitterroot elk population (more is attributed to increased antlerless harvests). However, the environment and conditions suggested that wolves may affect elk numbers at some point. There was a substantial increase in the number of wolves in the Bitterroot Valley area over the past 3 years. Currently, bills are being proposed in the Montana Legislature to decrease protection for wolves. (fwp.mt.gov/wildthings/management/wolf/game.html)
- **Grizzly Bears** were once common residents of the Bitterroot Mountains. In the early 1900s, trappers killed anywhere from 24 to 40 bears in the Bitterroots every year. By the early 1930s, however, grizzly bears had been completely hunted from the Bitterroots. The last verified death was in 1932, and the last tracks were seen in 1946. In 2000, the U.S. Fish and Wildlife Service planned to reintroduce 25 grizzly bears in the Bitterroot Mountains of east central Idaho and western Montana, but the proposal was withdrawn due to opposition. In

2002, a grizzly bear was sighted in the Burnt Fork area east of Stevensville, the first confirmed sighting of a grizzly bear in the Bitterroot Valley in close to 80 years. In addition, a grizzly was accidentally killed by a hunter in the Selway-Bitterroot Wilderness in 2007, which may indicate a natural population beginning to establish itself.

- ▶ The Teller is part of the Audubon Society's **Bitterroot River Important Bird Area (IBA)**. The IBA is a 30,000 acre area that encompasses the 500-year floodplain around a stretch of the Bitterroot River from Woodside Crossing to just south of Lolo. The riparian habitat is dominated by black cottonwoods and willows.
 - Riparian areas and wetlands occupy less than 4% of Montana's land surface, yet they support 80% of the bird species found in the state.
 - More than 240 bird species have been recorded within the IBA, with at least 115 species breeding. Species of concern include Lewis's Woodpeckers and Red-naped Sapsuckers (both of continental concern), Bald Eagles, Northern Harriers, Wilson's Phalaropes, Short-eared Owls, Pileated Woodpeckers, Willow Flycatchers, and Red-eyed Vireos.

▶ **Fire** has historically played an important ecological role in the Bitterroot Valley and its surrounding mountains.

- Before organized fire suppression evolved in the early 1900s, wildfires swept through the region on a regular basis: an average interval of 6 to 10 years according to one study on the Bitterroot National Forest. The relatively short interval indicates that the fire intensity was likely low, since fuel would have little time to accumulate. In addition, the fires likely covered large areas at a slow pace. ("The Historical Role of Fire on the Bitterroot National Forest" by Stephen F. Arno, 1976)
- Ponderosa pines develop thick, platy bark that can withstand a moderately intense fire. Douglas-fir is more susceptible to burning. Historically, the frequent wildfires at lower elevations maintained mature ponderosa pines as the dominant species. Today, without the frequent burning, Douglas-fir is taking over many forest areas.
- Since the suppression of wildfires, natural fuels in the Bitterroot Valley have accumulated to hazardous levels, creating the potential for major wildfires and destruction. Historically open



The rich riparian areas and wetlands of The Teller are important habitats for a diversity of birds. The bald eagle (above) is listed as a species of concern. December 2009



American Avocets feed in a restored wetland at The Teller. June 2010

mature ponderosa stands have transitioned to dense stands of ponderosa pine/Douglas-fir trees, increasing the fire potential.

- The highest potential for major wildfire outbreaks occurs along the boundary between National Forest and private lands in the valley.
- Reducing hazardous fuels is an effective and proactive way to reduce the potential impacts from a wildfire. In large forested areas, this may include commercial thinning of larger trees to open the spacing between crowns and pre-commercial thinning to remove ladder fuels (dead limbs, small tree clumps, down material). For homes, this

includes establishing a fuel-free area around buildings, landscaping with plants that are fire-resistant, planting in islands to break up the continuity of fuels, removing dead plants and debris from around the home, removing vines, shrubs, and undergrowth to prevent fire ladders, and thinning trees to keep canopies from touching. (bitterrootfireguide.com/fuel-reduction and www.firewise.org/resources/homeowner.htm)

Sub-theme 3 includes results from the Visioning Meeting conducted June 16, 2010: "What are the important and unique stories that should be told at The Teller?"

- ◆ Bitterroot River (7 votes)
- ◆ Geologic history (6 votes)
- ◆ Natural history and ecology of the Bitterroot Valley (3 votes)
- ◆ History of wildlife in the valley (elk, wolves, etc.) (3 votes)
- ◆ Fire Ecology (1 vote)

SUB-THEME 4:

Traditional outdoor activities, such as hunting, fly fishing, and wildlife watching, are woven into the fabric of Montana’s culture, garnering a greater respect for the land and linking people to each other.

Messages:

- ▶ Fishing and hunting are forms of recreation that span gender, age, and socio-economic barriers.
- ▶ Successful hunting and fishing requires that people learn skills, techniques, and knowledge.
- ▶ Ethics are fundamental to being a sportsperson. Programs like “catch and release” are examples of the evolution of sporting ethics.
- ▶ Hunting and fishing are valuable tools in maintaining a healthy ecosystem and must be demonstrated to an increasingly urban and indoor population.
- ▶ Hunting and fishing are more than putting food on the table; they are activities that connect people to past generations, family, friends, and the land.
- ▶ A philosophy of hunting and fishing must include the role of people as part of the food chain and as predators.

A wildfire sweeps through Bitterroot National Forest. Image courtesy of John McColgan, USDA Forest Service.

- ▶ Hunters and anglers have traditionally been the primary supporters of wildlife habitat conservation through self imposed taxes on hunting and fishing equipment and supplies (Duck Stamp Programs, Pitman-Robertson Act, Dingel-Johnson Act).
- ▶ The Teller is part of the Montana Fish, Wildlife & Parks (FWP) Block Management Program, which partners with landowners to provide limited free hunting access on private lands. Participation is voluntary. In 2010, 1,275 landowners enrolled about 8.8 million acres of land. White-tailed deer, waterfowl, and pheasant are hunted on The Teller.
- ▶ The Teller partners with local and national conservation groups to offer hunting and fishing training to youth. The annual **Ducks Unlimited Greenwing event**, a partnership with the Bitterroot Valley Ducks Unlimited Chapter, teaches dog handling, gun awareness, decoy carving, duck/goose calling, and waterfowl identification. Partnering with Montana Trout Unlimited, the **Bitterroot Buggers** program teaches fly tying, casting, and basic fishing skills. The Teller also provides opportunities for youth in Ravalli and Missoula counties to hunt waterfowl and upland birds on opening weekends.

- ▶ Bird watching is the fastest growing outdoor recreational activity in the United States. It appeals to a full range of people of all ages, gender, and physical abilities. It increased over 200% since 1982 and continues to increase in economic importance. (Natl. Survey on Recreation and the Environment, 2000-2001)
- ▶ The abundance and visibility of birds at The Teller makes them a useful tool for teaching awareness of environmental issues and values.

Sub-theme 4 includes results from the Visioning Meeting conducted June 16, 2010: "What are the important and unique stories that should be told at The Teller?"

- ◆ Fly fishing and bird hunting (5 votes)

September 2009



Greenwing events (right), sponsored by Ducks Unlimited, introduce youth and families to the excitement of hunting. The Bitterroot Buggers program (below), sponsored by Montana Trout Unlimited, teaches youth fishing skills.



May 2009



Flathead Indian Family, from Records of the Bureau of Indian Affairs.



Artist's rendition of the first meeting between the Bitterroot Salish and the Lewis and Clark expedition at Ross' Hole. June 2010

SUB-THEME 5:

Native tribes, explorers, and settlers in this region depended on the limited resources of the Bitterroot Valley for survival and created strong communities of people who worked and lived together.

Messages:

- ▶ The first inhabitants of the Bitterroot Valley who adopted a common, seasonal lifestyle were part of the **Plateau Culture**, which began around 4,000 years ago. The people harvested roots and greens in spring, collected berries in summer, and hunted in the fall before returning to winter camps.
 - The **Bitterroot Salish** people were originally called “Flatheads” by Lewis and Clark. However, the Indians never practiced head flattening; the name may have come from their sign language which was two flat hands placed against the temples.
 - The Bitterroot Salish were one of the few tribes who were adept at living both in the mountains and on the plains. They were differentiated from other Salish groups by the absence of salmon in their diet.
 - Spiritually connected to all living beings, the Bitterroot Salish

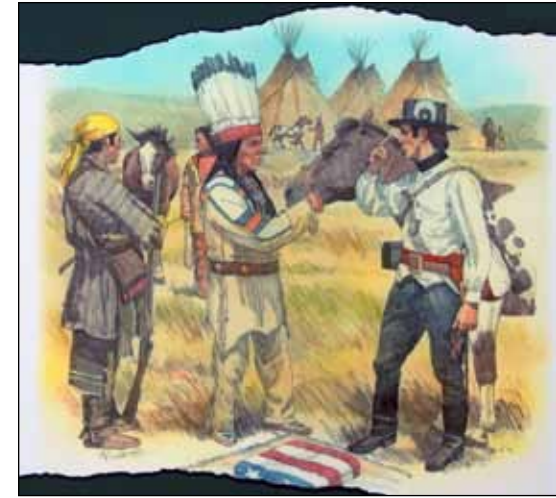
shared oral stories that defined their cultural traditions.

- The Bitterroot Valley had been lived in for thousands of years by people with rich culture and communities before it was “discovered” by Lewis and Clark.
- ▶ **Lewis and Clark** with their Corps of Discovery passed through the Bitterroot Valley on their journey to the Pacific Ocean from September 6-9, 1805. After splitting the party, Clark returned through the valley from July 3-6, 1806. Their journal entries provide an invaluable glimpse of what the landscape and vegetation were like prior to European settlement. (*Lewis & Clark in the Bitterroot*, 1998)
 - On the evening of September 4th, 1805, the Lewis and Clark expedition entered the Bitterroot Valley after a grueling push over the mountains in Idaho with little food and freezing temperatures. Here they were welcomed by a large band of Salish Indians, the Oot-la-shoots, who were camping in a wide grassy valley now known as Ross’ Hole. Nearly 400 native people were there to gather chokecherries and pasture their horses before moving to the plains for the fall buffalo hunt. The expedition obtained roots, berries, animal furs, and horses for their journey.

- The members of the Corps of Discovery, who were used to 9 to 10 pounds of meat per day, were hungry for most of their trip through the Bitterroot Valley. Game populations were likely lower due to natural predators and Indian hunting.
- Much of the valley they encountered was poor soil for farming or walking. According to Clark, “Bottoms as also the hills Stoney bad land.” They also encountered prickly pears, which penetrated their moccasins.
- On Sunday, September 8th, 1805, the Lewis and Clark Expedition stopped in the vicinity of present-day Corvallis to eat lunch and let the horses graze. This was likely on the banks of Willow Creek, which now flows through The Teller property. (*Lewis & Clark In the Bitterroot*, 1998).
- On September 9, 1805, the Lewis and Clark Expedition camped on Lolo Creek at the north end of the valley, which they named “Travellers Rest.” They stayed for two days acquiring food and preparing equipment before crossing the mountains to the west via Lolo Pass.
- On their way back home, the Lewis and Clark Expedition

again camped at Traveler’s Rest on July 1-3, 1806. Here, Captain Lewis collected and preserved several plant specimens, one of which was the “bitterroot,” which was named *Lewisia rediviva* in his honor. Here, they also split the party. Lewis would take 9 men to travel north to the great falls of the Missouri. Clark would guide 22 men, Sacajawea, and her child south through the Bitterroot Valley.

- The return trip through the Bitterroot Valley was slowed by rushing creeks swollen with snow-melt. They followed the west side of the river, unable to cross it.
- On the evening of July 3rd, 1806, Clark’s party camped on Blodgett Creek near present-day Hamilton.
- On July 5th, 1806, the party arrived back to Ross’ Hole and camped two miles up Camp Creek. There they found the well worn path created by the Salish on their journey to the buffalo hunting grounds. They followed this up and over the Continental Divide on July 6th, 1806.
- ▶ St. Mary’s Mission, built 1841 near present-day Stevensville, was the first permanent settlement in the state of Montana.



Artist's rendition illustrating the gifts that were exchanged between the Salish people and the Lewis and Clark expedition in 1805.



Willow Creek, which now runs in a ditch through the Menager parcel of The Teller, was once a free flowing stream. The Lewis and Clark expedition likely stopped here for lunch on September 8th, 1805.



St. Mary's Mission, built in 1841, was the first permanent settlement in Montana. June 2010



Artist's rendition of the Nez Perce encampment at Big Hole in 1877.

- Several Iroquois Indians employed by trappers remained and married Bitterroot Salish women. The Iroquois introduced Christianity to the Salish and Nez Perce. Between 1831 and 1839, they sent four delegations to St. Louis to request a Black Robe to live among them. They were finally successful when in 1939 they happened upon Father Pierre-Jean DeSmet in Iowa.
 - On September 24, 1841, Father DeSmet arrived in the Bitterroot Valley with supplies in three carts and a wagon (first wheeled vehicles in the valley). Here they established a small church called St. Mary's Mission on the east bank of the Bitterroot River, immediately west of present-day Stevensville.
 - The Jesuits built a flour mill and sawmill, planted an orchard and various crops, and developed a simple irrigation system, all firsts for Montana.
 - **Father Antony Ravalli** arrived in 1845, recruited by Father DeSmet from Italy. He was Montana's first physician, surgeon, and pharmacist. He was also an architect, artist, and sculptor. After a temporary closure of the Mission, Ravalli returned in 1866 and built a new mission church, blacksmith shop, and pharmacy. The County is named after him.
- ▶ The Bitterroot Valley served as a temporarily peaceful passage for **Nez Perce** fleeing the U.S. government's order to move to a smaller reservation in 1877.
- The conflict began when white ranchers realized that traditional Nez Perce land had ideal open range for cattle and gold was discovered. A reservation was developed in 1863, and the U.S. Government pressured the Nez Perce to move.
 - Some Nez Perce continued to live on their traditional lands. In May of 1877, the U.S. Government ordered all Nez Perce to move to the reservation in 30 days.
 - About 800 Nez Perce Indians, mostly non-warriors, refused the order. After several small battles in Idaho, the group began a long and difficult journey of about 1,400 miles to reach safety in Canada.
 - The Nez Perce entered the Bitterroot Valley peaceably at the end of July 1877, and the Salish gave them permission to pass through their lands and pasture their horses. Although many white settlers barricaded themselves behind impromptu

“forts,” the Nez Perce found willing merchants in the valley to trade for supplies.

- The Nez Perce arrived at Big Hole on August 7, where they set up camp. U.S. troops led by General Howard and joined by local militia men attacked the sleeping Nez Perce on August 9, killing 89 people including women, children, and elders. The Indian warriors fought back, driving the soldiers out of their camp and pinning them down on a mountainside with sniper fire. The remaining Indians were able to escape.
- The fleeing Nez Perce eventually were overtaken just 40 miles from the Canada border where, after a five-day conflict, their journey finally came to an end.
- ▶ The **Slack and Chaffin families** were early settlers in the Bitterroot Valley. Their historic farmsteads are tangible connections to the past.
 - Originally from Philadelphia, **Jack Slack** left at the age of 16 in search of gold out west.
 - Jack Slack crossed paths with the Chaffins in the summer of 1864, and he convinced them to winter in the Bitterroot near the free flowing Willow Creek. In fall, John Slack and the Chaffins

settled in two log cabins on neighboring farmland.

- In February of 1865, Jack Slack and Polly Chaffin (Elijah’s younger sister) were married in the first legally recorded marriage ceremony in the valley.
- The 1864 Slack House was originally a 12’x20’ two-bedroom log cabin. A 26’x32’ addition was added in 1879.
- Jack died in 1883, but his wife, Polly (Elijah Chaffin’s younger sister), lived in the house until 1909.
- In 1864, **Elijah and Margaret Chaffin**, along with several family members and other families, headed west from their native Tennessee bound for Oregon. With convincing from Jack Slack, they overwintered in the Bitterroot Valley.
- Margaret and Elijah had the first Caucasian boy recorded in the Valley in 1864.
- In 1865, the Chaffins again set out for their original destination of Oregon, but returned the next year to settle in the Bitterroot Valley. A 16’x34’ log home was built in 1866. The home was expanded in the 1870s with nine children living under its roof.



The Slack family sitting on the porch of their house, built in 1864.



The Chaffin homestead, built in 1866 and expanded in the 1870s.



The Memories Cafe in Corvallis. December 2009

Sub-theme 5 includes results from the Visioning Meeting conducted June 16, 2010: "What are the important and unique stories that should be told at The Teller?"

- ◆ Lewis and Clark (5 votes)
- ◆ Early farm families (Slack's, Chaffin's, etc.) (4 votes)
- ◆ Native American use of the valley (Chief Joseph, etc.) (3 votes)
- ◆ Farming history in the valley (2 votes)
- ◆ Apple industry (0 votes)

Margaret died in 1877 giving birth to their 11th child, and Elijah died in 1884.

- ▶ The small farming community of **Corvallis** grew out of the Chaffin's settlement on Willow Creek, which was originally called Chaffinsville.
 - In 1869, the community was renamed "Corvallis," which in French means "the heart of the valley."
 - A post office opened in 1870, and the town was officially platted in 1879.
 - Like many communities in the Bitterroot Valley, Corvallis has both thrived and waned over the years, tied to the success of agriculture.
- ▶ In the early 1900s, slick advertisers representing irrigation companies promoted the valley as having fertile lands and an ideal climate for growing fruit trees. From 1907 to 1911, the Bitterroot Valley experienced an "**Apple Boom**," when farmers lured by the advertising flocked to the valley and planted acres of trees. Within a few years, however, the irrigation company ran into financial problems, and could not provide enough water to keep the trees alive. Many orchard farmers left their lands.

SUB-THEME 6:

As the population in the Bitterroot Valley continues to increase, competition for limited natural resources has led to major controversies over land and water rights.

Messages:

- ▶ Between 1990 and 2000, Ravalli County was the fastest growing county in Montana, increasing its population by 44.12% (Montana Statewide Comprehensive Outdoor Recreation Plan: 2008 to 2012).
- ▶ Many people choose to live in the Bitterroot Valley because of its attractiveness. Its economy is today largely based on amenities such as the nearby mountains, plentiful forests, high quality streams and lakes, abundant fish and wildlife, well-managed ranch and farm landscapes, and other features. Uncontrolled development can threaten these amenities. ("Growth and Change in the Bitterroot Valley and Implications for Area Agriculture and Ag Lands" by Dr. Larry Swanson, 2006).
- ▶ The Bitterroot Valley has a high level of habitat fragmentation due to its rapidly increasing human population subdividing land and building homes. This leads to the introduction

of exotic invasive species, reduction of food and shelter for wildlife populations, and loss of travel routes and winter range for larger animals.

- Protected areas within the valley, such as The Teller and the Lee Metcalf Wildlife Refuge, serve as contiguous habitat “islands” for wildlife in the patchwork of developed valley land.
 - Private landowners can protect and restore wildlife habitat on their own property; even a small backyard can make a difference. Conservation easements are an excellent tool for legally ensuring that open space remains undeveloped.
 - The protection and restoration of linked habitat corridors in the Valley benefits wildlife that migrate or have large home ranges.
- ▶ Established in the late 1800s, the **irrigation system** based on the Bitterroot River is made up of several irrigation districts and is one of the largest and most complex in Montana.
(www.bitterrootirrigationdistrict.net/ditch-history)
- Water is the key to successful agriculture in the Bitterroot Valley. Due to the limited rainfall, irrigation has always been a necessity for valley farmers.

- The Bitter Root Irrigation District (BRID), formed in 1920, services 16,665 acres along a 72 mile stretch from Lake Como to Florence. The main canal has an initial capacity of 350 cubic feet per second. As of 2011, the District services approximately 1,350 water users.
- Marcus Daly, a wealthy copper baron, arrived in the Bitterroot Valley in 1887. Daly dramatically expanded irrigation by enlarging existing canals and building a new canal from the Bitterroot River to Hamilton.
- Plagued by financial difficulties, the Lake Como dam and 80-mile Dinsmore Canal were constructed from 1900 to 1910. The canal would transport the ample water from the Lake Como reservoir (fed by large snow packs) to agricultural areas in the valley. The early canal was built over slopes, creeks, ravines, gulches, and rocky cliffs. Leakage and seepage through the wooden flumes and siphons lost approximately 25% of the water, but the water that made it to the valley greatly increased agricultural development.
- When the Bitter Root Irrigation District (BRID) was formed in 1920, it began reconstruction



Excavating irrigation ditches near Corvallis.



The Teller manipulates water flow on its property using a series of gates and control structures. June 2010



Lake Como reservoir

of the irrigation system. This included adding concrete and installing steel pipes on the canal to reduce leakage, and constructing a modern spillway at Como Dam.

- ▶ Water, primarily from snowmelt, is essential for field and orchard irrigation, trout fishing, float trips, and wildlife populations in the Bitterroot Valley. Many different groups compete over how the limited amount of water should be used.
- ▶ Conflict over public and private access and use of resources is a historic and continuing issue in the Bitterroot Valley.
 - According to a USDA Renewable Resources Planning Act (2000),

the proportion of privately owned forest land open to the public declined from 29% in 1979 to 15% in 1996. A reduction in the amount of open private land increases pressure on public lands.

- Access to public lands is decreasing with more private development along National Forest boundaries.
- The Mitchell Slough debate is a vivid example of the conflict. The slough splits from the Bitterroot River at Corvallis and rejoins it near Stevensville. Anglers call it a side channel that should be open to the public through Montana’s stream access law. Landowners

with property along the channel, however, claim that it is a private irrigation ditch which is not open to the public. While anglers defend their right to access public waterways, landowners defend their rights to protect private property.

Sub-theme 6 includes results from the Visioning Meeting conducted June 16, 2010: “What are the important and unique stories that should be told at The Teller?”

- ◆ *Balancing public use on private lands (4 votes)*
- ◆ *Land Use Conflicts (4 votes)*
- ◆ *Water rights/irrigation/fisheries (2 votes)*

Panorama of the Bitterroot Mountains from the Slack Barn deck. June 2010



CHAPTER 5:

RECOMMENDATIONS

FOR THE CONSERVATION EDUCATION PROGRAM





A trained natural resources educator is essential to the success of a community and school program at The Teller. Field trip to The Teller, April 2010

RECOMMENDATIONS FOR THE TELLER CONSERVATION EDUCATION PROGRAM

Education is at the heart of The Teller's mission: to inspire, educate, and demonstrate conservation in action. Given the unanimous concern by the Board of Trustees for economic sustainability, we have attempted to identify the most cost efficient ways that a conservation education program can benefit The Teller.

In general, education efforts rarely generate substantial direct revenue for an organization. User fees can help to offset costs, but they need to remain low in order to attract audiences of broad socioeconomic backgrounds. However, successful education programs do generate community and stakeholder support, which have major long-term benefits (economic and otherwise) that can sustain an organization into the future. The development of a strong conservation education program at The Teller should be viewed as a long-term investment in the future of the organization.

After considerable research, which included an initial visioning session with the Board of Trustees, we interviewed staff, stakeholders, community residents, educators, government officials, and

made extensive visits to other Montana facilities and agency offices. As a result, we offer these recommendations.

1. Hire a qualified full-time Education Director at The Teller to coordinate the conservation education program.

At the heart of any successful education program is a person who is strongly devoted to the mission of the organization, feels a deep connection to the site, and is dedicated to sharing their knowledge and experience with diverse audiences. An effective educator is an integral member of the community who understands the needs of residents, teachers, and youth. He or she will develop creative programs and media that meet the needs of the audience while helping to fulfill the mission of the organization.

The Teller should hire a position that is solely dedicated to the conservation education program. Splitting time with other major duties will greatly reduce efficiency.

The following are suggested duties for the Education Director position:

- ▶ Create and foster partnerships with area schools and teachers to determine ways that The Teller can integrate into existing classes and programs.
 - ▶ Design user-friendly outdoor curriculum for regional schools that meet the state’s educational standards. Clearly indicate which standards are being met at different grade levels.
 - ▶ Implement teacher training workshops that demonstrate how instructors can utilize The Teller and its curriculum for their classes.
 - ▶ Develop and lead efforts for coordinating an active partnership of educational organizations and agencies in the Bitterroot Valley. This may include a team approach to planning and marketing programs, developing “education packages,” and sharing resources.
 - ▶ Develop public outreach programs and site field trips that support the themes of The Teller Conservation Education Master Plan.
 - ▶ Explore methods for increasing the diversity of audiences that The Teller reaches through its education program.
 - ▶ Coordinate an educational volunteer program that includes training for teaching classes, leading field trip activities, and preparing program materials.
 - ▶ Design and fabricate thematic interpretive media, such as signs, brochures, newsletters, and exhibits, that provide opportunities for visitors to connect with the stories of The Teller.
 - ▶ Write grants and develop other fundraising strategies to support and expand the education program of The Teller.
 - ▶ Develop marketing and promotional strategies to increase participation in programs, enhance people’s perception and understanding of The Teller, and garner financial and volunteer support.
 - ▶ Serve as an active member of statewide outdoor education initiatives such as the Montana Environmental Education Association network.
- Suggested qualifications for the Education Director position include:
- ▶ An undergraduate degree in natural resources, science, biology, environmental/outdoor education, or a related field
 - ▶ At least two years of experience working as a natural resources educator or as a teacher with a science/outdoor focus
- ▶ Creative and outgoing personality with the ability to develop partnerships
 - ▶ Experience with formal education and curriculum writing is highly desirable
 - ▶ Experience developing interpretive media is highly desirable
 - ▶ A commitment to working long and sometimes irregular hours, including weekends, evenings, and holidays.

Due to the variable hours, it is recommended that the Education Director be a full-time, salaried position instead of an hourly job. An annual salary range of \$35,000 to \$50,000 (depending on experience) with benefits would be an attractive package to a qualified individual.

Educational programs and events are tangible services that benefit not just The Teller, but also the entire community of people who call the Bitterroot home. An effective Education Director is key to achieving these benefits.



Corvallis school children should be a target audience for The Teller education program. Field trip to The Teller, November 2010



The Corvallis School Administration is very interested in exploring ways to work with The Teller to develop teacher training. Field trip to The Teller, April 2010

2. Develop a conservation education philosophy that involves local communities and optimizes audience diversity.

Local schools should be considered a primary audience for The Teller.

Working with local schools, like Corvallis, will result in maximum payback for the effort that The Teller invests. There is an almost unlimited multiplier effect within the local community. Each student is a member of a network of family and friends that are in contact with still larger circles of people. When a program has a positive impact on a child of any age, many people are affected by it. We interviewed a number of community residents who cited past educational activities at The Teller as being very positive memories.

- ▶ The local school districts are enthusiastic about partnering with The Teller. The fact that they are already part of an existing education infrastructure saves The Teller time and effort to organize a program. The schools are already poised to handle much of the administrative preparation required for successful field trips including logistics of transportation, liability, and pre- and post-teaching activities.
- ▶ Transportation to most field trip sites is prohibitively expensive, according

to local school administrators and agency environmental educators. However, there are 1,300 Corvallis school children that are within walking distance of The Teller: the Slack Barn is 0.6 mile from the middle school/high school and 1 mile from the primary school. This offers a tremendous opportunity for a synergistic and cost-effective conservation education program.

- ▶ Corvallis School Administration is very interested in exploring ways to work with The Teller to develop teacher training which would facilitate appropriate use of the site for conservation education. The magnifying effect of teaching the teachers has ramifications far beyond The Teller site. Training teachers empowers them to use the place more independently and effectively and to incorporate the field experiences into additional lessons in their classroom activities.
- ▶ Partnership opportunities and potential funding for school conservation field trips are available in the Bitterroot Valley. For example, Ravalli County Museum is initiating a field trip bussing program with Hamilton Schools whereby sponsors will subsidize transportation costs to allow area schools to attend programming at the museum. The Museum is essentially “buying” a bus

that will be maintained as part of the school fleet that is dedicated for field trips. Places like Lee Metcalf National Wildlife Refuge, the Bitterroot National Forest, and The Teller could be partners in this type of system. All of these entities are also potential partners in developing teacher training programs and in sharing educational and research equipment.

Use interpretive themes and messages specific to The Teller site (included in this plan) to develop a broad based holistic educational program.

- ▶ Site-specific themes reinforce The Teller’s mission, while appealing to Bitterroot Valley residents and visitors.
- ▶ These themes should serve as the framework for curriculum development and for all media designed at The Teller. They are the core stories that help visitors and program participants to understand the most significant ideas that The Teller stands for. Without these themes to guide programming, activities can lose direction and become meaningless outdoor exercises that are unrelated to The Teller’s mission and goals.

Hunting and fishing education programs include important skill sets and philosophies, but are limited to a niche audience that likely will not be sustainable in the long-term.

- ▶ Government agencies and national organizations such as Montana Fish, Wildlife & Parks already play a significant role in hunting and fishing education and have developed a number of statewide initiatives. The Teller can participate in these existing programs but there are few new or unique niches available here.
- ▶ One unique opportunity is offered by the proximity of the Corvallis schools that already have an active after-school program in operation. Developing a conservation club that focuses on wildlife management projects, research, and hunting and fishing skills would have long lasting impacts on participating students and teachers, while generating sponsorship opportunities from sportsman’s clubs and businesses such as hunting and fishing outfitters. This type of program would facilitate site-specific activities and hands-on learning that build strong bonds between participants and The Teller. Middle school and high school students would be the ideal age group for this program.



An afterschool Conservation Club at The Teller could have a lasting impact on Corvallis youth. Images from Greenwing Event, August 2008



The Teller should lead efforts to develop an active partnership with other educational organizations in the area.



The Bitterroot National Forest Office in Hamilton has a series of natural history trunks available to groups without a charge. This is an excellent resource that could be shared with other outdoor education groups in the Valley. Courtesy of www.nps.gov/upde/forteachers/travellingtrunks.htm

3. Lead efforts to establish a Conservation Education Coordinating Committee for the Bitterroot Valley

Many different agencies and organizations within the Bitterroot Valley offer natural and cultural resource education. These groups are eager to partner with others in order to enhance their programming and reach a wider audience. A Conservation Education Coordinating Committee would be a consortium of outdoor educators that has no policy making powers, but rather helps each member organization to share resources. The Teller is in a unique position to lead the development of such a partnership.

The committee should be comprised of The Teller Education Director, key area teachers, and representatives from other educational agencies such as the Lee Metcalf Wildlife Refuge, Ravalli County Museum, Bitterroot National Forest, and University of Montana. Refer to the Audience section of the plan to see a listing of other area attractions that are potential partners in educational programming.

Benefits of this Coordinating Committee include:

- ▶ Cooperatively developing “education packages” for Valley-wide school trips and teacher training workshops.

- ▶ Sharing program resources and experiences. For example, the Bitterroot National Forest Education Office in Hamilton has developed a series of natural history “trunks”. Each trunk focuses on specific natural resource subjects and issues like fire management, wolves, elk, etc. These trunks contain interesting tangible objects like skulls, hides, and other artifacts as well as lesson plans. They are available without charge to interested classes and other groups.
- ▶ Providing supplemental program staff to assist each other with special events or unusually large seasonal field trip groups.
- ▶ Marketing educational opportunities in the Valley as a whole instead of piecemeal. A single entity may not have the ability to attract a class or visitor group on its own, but having several offerings available in close proximity to each other may make a trip more cost effective and worthwhile.
- ▶ Assisting The Teller and other educational entities in the Valley in defining and fine tuning their niches to ensure that educational efforts aren’t being duplicated.

4. Develop strategic “Use Zones” on The Teller property to encourage educational access while protecting sensitive resources and reducing potential user conflicts.

Over the past few years, public access to The Teller property has been limited to participants in specific education programs, hunters with appropriate permits, and trail users along the Bitterroot River. There seems to be a negative perception of allowing other people on the property: that they would cause destructive impacts and problems for management. We feel that The Teller could benefit by changing its perception to a more positive view: that every visitor is a potential supporter.

With the addition of an expanded conservation education program, The Teller should consider increasing access to the site for program participants, community members, and visitors. Those that have direct experiences on the site—seeing the restored streams, ponds, and wetlands, observing the multitude of wildlife, feeling the solitude and peace—are more likely to support the organization.

Carefully planning different “use zones” on The Teller property will assist management in developing appropriate strategies to provide positive educational experiences for visitors while protecting sensitive resources.

► **Teller Trail Zone**

This public and educational zone encompasses an existing trail loop adjacent to the Bitterroot River. The trail was created in conjunction with Montana Fish, Wildlife & Parks for hiking, bird watching, and fishing.

This area provides exceptional opportunities for educating a diversity of visitors about The Teller’s unique place in the Bitterroot Valley and its mission. Interpretive wayside exhibits would be an ideal method to relay this information. See “Create an interpretive trail along the Bitterroot River” recommendation for more details.

► **Menager Zone**

The Menager property has several positive characteristics that lend itself to public and educational access. This was the site originally considered for a new educational facility. At present, we feel that development of this area should be a lower priority than the Teller Trail or the Slack Gateway Zone, but may be a viable project in the future. Characteristics include:

- Easy access from Highway 93 via the Woodside Cut-off Road, the main traffic corridor to Corvallis. This can attract drop-in visitors and provides an obvious public face for the Teller.



The Teller Trail adjacent to the Bitterroot River is already open to casual visitors and education groups. April 2010



The flowing water of Willow Creek adds a dynamic feature to the Menager property. June 2010

- A paved recreational trail along Woodside connects the site directly to Corvallis and the schools.
- Diverse natural site resources, including an 80-acre wetland complex, Menager Pond, Willow Creek, and some trees along the creek. Water is a natural draw for visitors.
- Managing public access to sensitive wildlife areas. The Menager Parcel has physical characteristics that mirror many of the natural features of the entire property, but can limit the public to a localized site. A boardwalk system, along with viewing platforms, can provide an outdoor experience on this site without disturbing the rest of the Teller property.

► **Slack Gateway Zone**

The Slack Barn and surrounding area would be an ideal existing site to serve as the main “gateway” entrance to The Teller for visitors and educators. Landscaping around the back of the barn could introduce some land management techniques, enhance the area for wildlife diversity, and serve as a pleasing space for visitors and special events. See “Create a gateway experience at the Slack farmstead” recommendation for more details.

► **Core Education Zone**

This educational zone in the heart of The Teller property provides access to many features that make The Teller unique. In a relative small space, students can experience: Restored ponds (like Thomas Pond, used in the past for fishing programs), restored wetlands, wildlife-friendly farming practices, a large deer enclosure, a restored stream (Gird Creek), riparian woodland, and a native vegetation garden (including Bitterroot flowers).

Many of these features are already used for educational purposes, so it makes sense to continue this use in the future. There is an opportunity with teacher training and volunteer educators to increase the educational use. As it is in the core of the property, this zone should receive less traffic than the more public areas like the Teller Trail and Slack Gateway zones.

At present, increasing scheduled educational use would be the main priority for this area. Future management may consider opening this area to more public use, with careful consideration for limiting access outside the zone (with the use of well planned natural barriers, trail systems, and signage). See “Create a gateway experience at the Slack farmstead” for more details.

► **Conservation Zones**

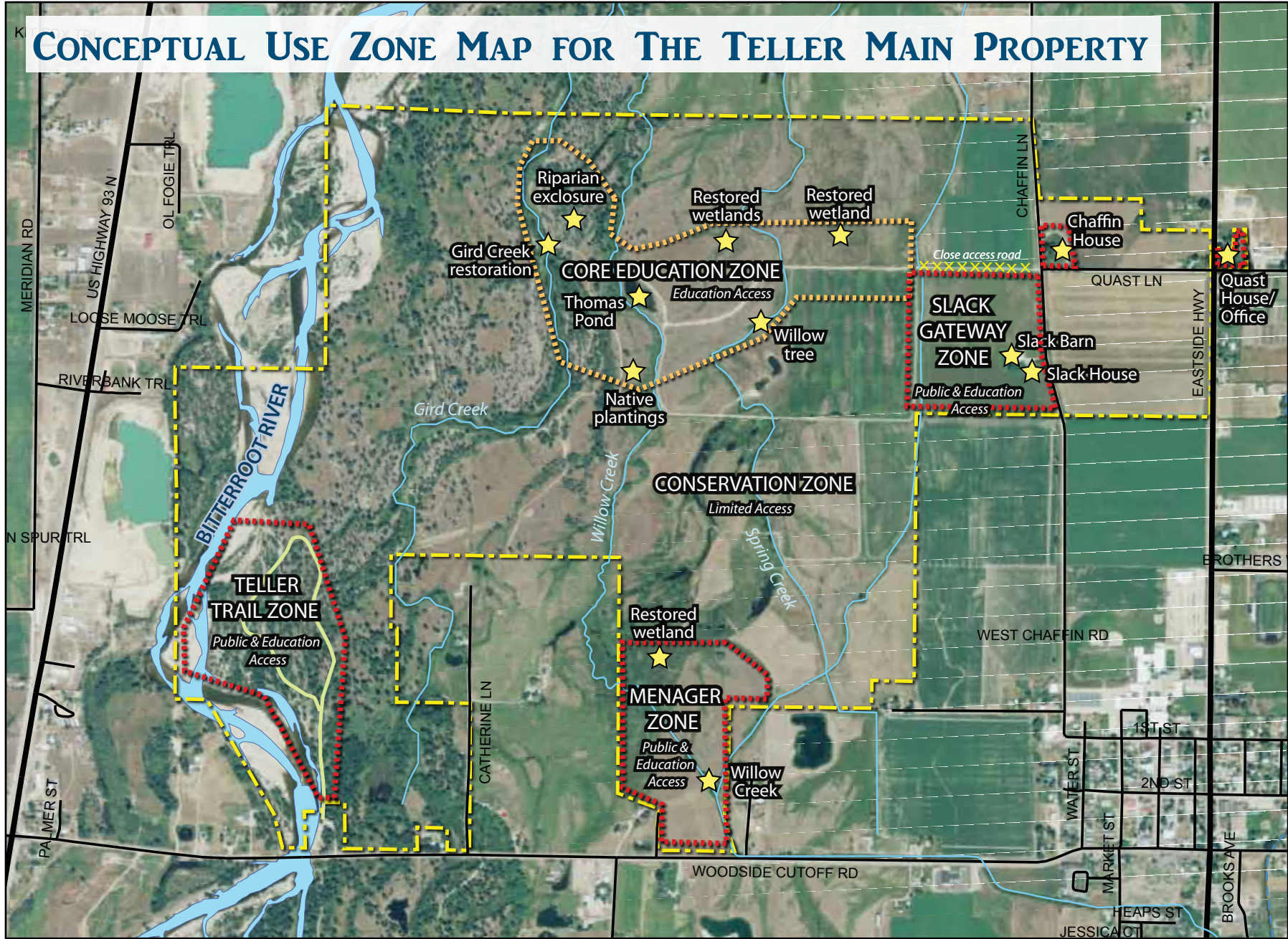
Conservation Zones make up the majority of the main Teller property. These are areas that are normally off limits to public and educational use. Special educational programs led by The Teller staff would, of course, still be able to access these areas.

The Conservation Zones serve several purposes:

- They are places where wildlife can feed, rest, and reproduce without the disturbance of people.
- They are areas where major land restoration projects and wildlife-friendly farming practices can safely occur.
- During hunting seasons, these zones serve as prime hunting grounds away from the concentration of higher use public areas.

Clear signage should be installed where the conservation zones meet the public/education zones. Instead of “No trespassing” types of signs, consider messages that explain. For example, “Conservation Area: Please do not disturb. This area was set aside to protect and restore wildlife habitat. With your help, we can protect wildlife for future generations.

CONCEPTUAL USE ZONE MAP FOR THE TELLER MAIN PROPERTY





Direction signs from Corvallis and the major roads will lead people to The Teller. The brown background and white lettering meet drivers' expectations for a natural or cultural resources site.

Conceptual design for a unified arrival sign that would identify different sites and facilities on The Teller property. These would have more character and be more stylistic than the direction signs.



5. Develop a wayfinding and signage plan for The Teller

An effective wayfinding plan is essential to the success of a strong education and visitor program at The Teller. Wayfinding is the process people use to find their way through unfamiliar places by using visible, audible, and tactile clues. Clear signage is one of the most important aspects of a wayfinding plan.

Currently, wayfinding at The Teller is difficult for out-of-town visitors without stopping for directions or mapping online. A small white sign at the Quast House along the Eastside Highway identifies "The Teller," but is easily

overlooked by most drivers. Drop-in visitors are rare.

► Making "The Teller" name more meaningful for visitors

For people that don't have previous knowledge, seeing "The Teller" on a sign doesn't mean very much. The name "The Teller Wildlife Refuge" provides more meaning, but "Wildlife Refuge" was removed in the past to avoid confusion with the nearby Lee Metcalf National Wildlife Refuge, which was public and therefore had different rules. We feel that a qualifier is still needed to provide meaning. A name such as "**The Teller Conservation Area**" would indicate what the site is, while still setting it apart from other parks, forests, and wildlife refuges.

► Direction signs

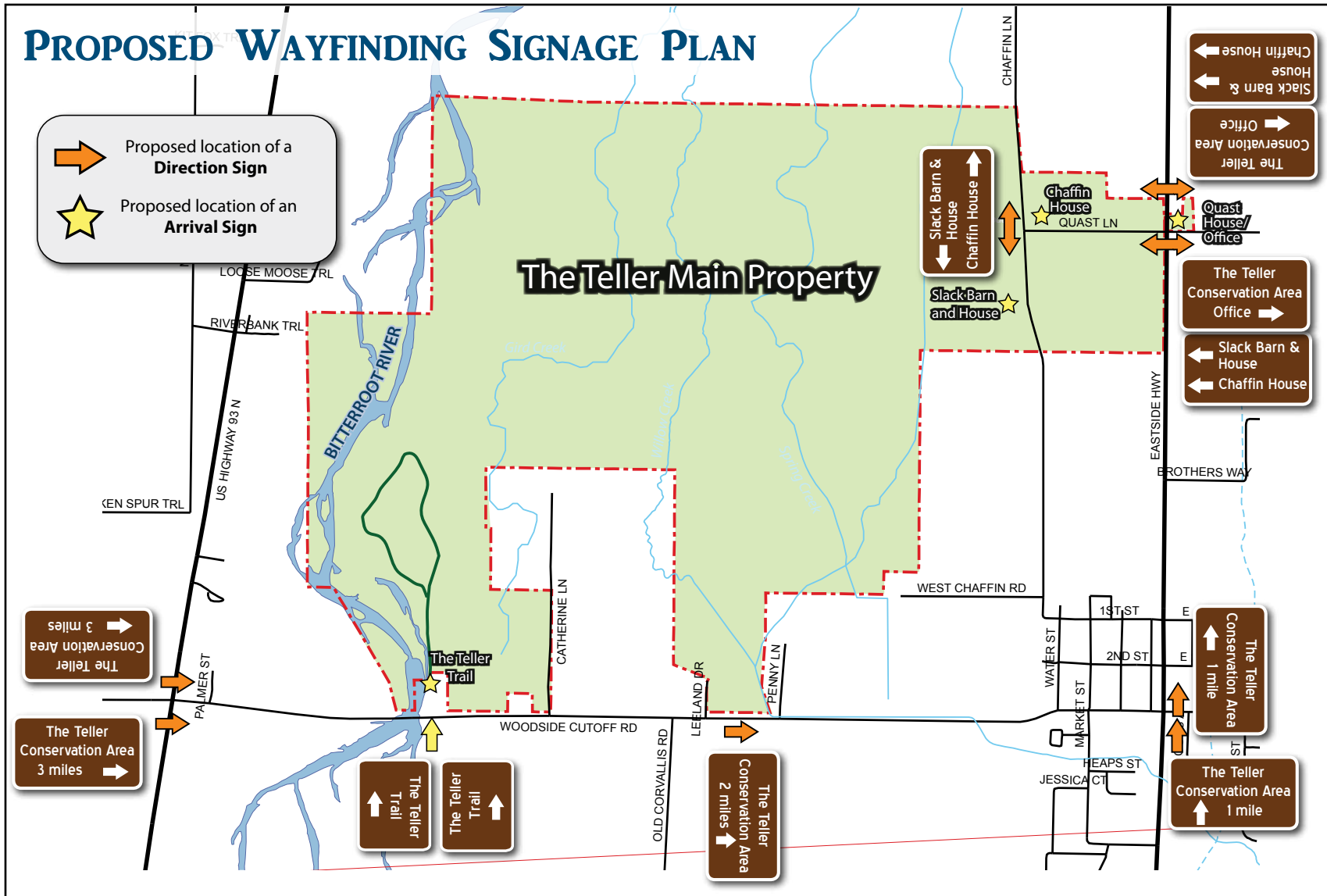
We recommend the installation of unified direction signs to The Teller from Corvallis, U.S. Highway 93, the Woodside Cutoff Road, and the Eastside Highway. A brown sign with white lettering typically indicates a natural or cultural site, so this would fit well with visitor expectations. The signs should also indicate mileage.

► **Arrival (site identity) signs**

Each site on The Teller property, such as the Quast House/Office, the Slack House/Barn, the Teller Trail, and the Chaffin House, should be identified

with a large, unified entrance sign. These can be designed stylistically to introduce The Teller’s unique sense of place and identity. For example, painted wildlife, the use of wood

and stone, and a friendly font style help to support a positive view of the organization and its mission.





A group of birdwatchers on The Teller trail. August 2010



Wayside exhibits help connect visitors intellectually and emotionally to a site, like this one at Traveler's Rest State Park. December 2009

6. Create an interpretive trail along the Bitterroot River to share The Teller's story.

In partnership with the Montana Fish, Wildlife & Parks (FWP), The Teller opened a mile-long loop trail on its property adjacent to the Bitterroot River in 2008. The trail provides year-round public access for hiking, wildlife watching, and fishing. The trail is accessible from the Woodside Bridge Fishing Access Site (off of Woodside Cutoff Road). It was funded by the FWP's Private Land Fishing Access Program.

This trail is the only portion of The Teller property currently accessible to the public. It hosts a diversity of audiences, from local residents to Bitterroot Valley visitors, from area anglers to out-of-state birdwatchers. This makes it an ideal site for sharing the main messages of The Teller.

Currently, signage is limited along the trail. A brief sign at the entrance states the mission of The Teller, provides a map of the trail, and lists the rules. Most signs that people encounter are private property/no trespassing signs. If this is the only experience a visitor has at The Teller (as it would be for many), the signage doesn't convey a very positive image of the organization.

A thematic interpretive trail would help visitors understand what makes The Teller unique (that it is a private organization) and why certain areas are closed off for visitation (wildlife refuge). Wayside exhibits (outdoor interpretive panels) are an ideal way to interpret the site. This media has several advantages, which include being:

- ▶ User-friendly (visitors choose which signs to read and the amount of information)
- ▶ Always on the job (24 hours a day, 7 days a week)
- ▶ Economical (a wise initial investment provides many years of communication)

Wayside exhibit interpretation is most effective when the visitor can **experience a feature of the site directly**. Unfortunately, many land management techniques used by The Teller (wetland restoration, stream restoration, wildlife-friendly farming) are not visible from this portion of the property. However, this is an superb area to highlight some of the natural history themes that are identified in the master plan, such as the Bitterroot River and the Audubon Society's Important Bird Area.

A potential theme for the interpretive trail is: "The Teller protects and enhances riparian areas, a dynamic habitat on the edge that supports a great diversity of wildlife."

CONCEPTUAL DESIGN FOR AN INTERPRETIVE TRAIL PANEL

IT'S FOR THE BIRDS

The Teller

Pause and listen for a chorus of birds.
Riparian areas are rich edges where water meets land. They occupy less than 4% of Montana's land surface, yet support 80% of its bird species! The Teller is a key anchor of the Bitterroot River Important Bird Area. It is recognized by the National Audubon Society as being vital for birdlife and biodiversity.

BIRDS OF CONSERVATION CONCERN
Several birds found here are "species of conservation concern," which means they have declining numbers and are at risk of becoming extinct. Protecting riparian areas protects the habitat essential to these birds' survival.

BITTERROOT RIVER IBA MAP

The Bitterroot River IBA is a 30,000 acre area that encompasses the 500-year floodplain around the Bitterroot River from here north to Lolo.

Map Legend:
IMPORTANT BIRD AREAS
 - Bitterroot River IBA
LAND OWNERSHIP
 - National Forest & Timberland
 - National Park, Wildlife, and Parks
 - National State Lands
 - Private Land
 - US Fish and Wildlife Service
 - US Forest Service
 - US Forest Service
COMMUNITIES
 - Bitterroot National Forest


Scale: 0 1 2 4 6 8 10 Miles
 North American Datum 1983
 State Plane Coordinate System
 Scale 1:240,000
 Montana Audubon
 Ann M. Piersall 2008



Lewis's Woodpecker
(42 pairs in 2006)



Willow Flycatcher
(32 pairs in 2006)



Red-naped Sapsucker
(47 pairs in 2006)



Bald Eagle
(9 pairs in 2006)

Interpretive wayside exhibits on The Teller property should incorporate unified design elements that create a "family" of signs. Replicating font style, size, color, logos, and graphic styles (like the cut-out birds above) help to link the different stories into a cohesive whole. The messages should be interpreted visually with minimal amounts of text. A hierarchy of text sizes allows visitors to choose the depth of information based on their interest level.

High Pressure Laminate Companies

Fossil Graphics, Inc.
 Deer Park, New York
 800-244-9809
 www.FOSSLInc.com

iZone
 Temple, Texas
 888-464-9663
 www.izoneimaging.com

Support Base Companies

Best Exhibits
 Baraboo, Wisconsin
 800-356-4882
 www.best-exfab.com

Hopewell Manufacturing Inc.
 Hagerstown, Maryland
 301-582-2343
 www.hopewellmfg.com



Wayside exhibit with high-pressure laminate panel and cantilevered aluminum supports.

Below are suggestions for wayside exhibit topics along The Teller Trail.

- ▶ The Teller is a private non-profit organization created to protect and manage land for the benefit of fish and wildlife (Sub-theme 1). The Teller protects two miles of the river’s shoreline (Sub-theme 3).
- ▶ This riparian area along the Bitterroot River is a dynamic ecosystem that is always changing as the waterway floods and cuts new channels (Sub-theme 3).
- ▶ The Teller is part of the Audubon Society’s Bitterroot River Important Bird Area (IBA), a 30,000 acre riparian habitat dominated by black cottonwoods and willows. More than 240 bird species have been recorded within the IBA (Sub-theme 3).
- ▶ Riparian areas and wetlands occupy less than 4% of Montana’s land surface, yet support 80% of the bird species in the state (Sub-theme 3).
- ▶ Fishing is an important tradition on the Bitterroot River that connects people to past generations, family, friends, and the land (Sub-theme 4).
- ▶ Expedient development in riparian areas can lead to bank erosion, introduction of pollution, and loss of critical habitat for fish and wildlife species (Sub-theme 6).

Recommendations for designing and fabricating the wayside exhibits include:

- ▶ Develop a system of unified design standards to enhance recognition and provide a holistic experience for visitors. This can include standard colors, typefaces, font sizes, and other graphic elements (like logos and header/footer bars).
- ▶ Fabricate panels out of a material that allows for full-color reproduction and is resistant to UV-fading and vandalism. High-pressure laminate is a cost effective process that fuses layers of plastic into a strong solid core.
- ▶ Panels should be installed in a durable frame support system that is resistant to the elements and vandalism. Cantilevered aluminum supports are a trusted means of securing panels.
- ▶ Under normal conditions, high-pressure laminate panels should last at least 10 years without fading or delaminating. They are resistant to most types of vandalism. Nicks or small scratches can be concealed with car wax and graffiti can be removed with an organic solvent.

7. Create a gateway experience at the Slack Barn to enhance educational programs and introduce The Teller site.

Over the last few years, public access to The Teller has been more limited to participants in specific educational programs, hunters with appropriate permits, and trail users along the Bitterroot River. Some people we interviewed expressed concerns that the general public is not allowed to visit The Teller and that visitors might even be seen as a negative force that causes problems for management. We believe that The Teller could benefit by changing its perception to a positive view that every visitor is a potential supporter.

The Teller currently lacks a “front door”. Few people in Corvallis are aware of the location of the Teller Office in the Quast House, but many can identify the Slack farm because it stands out as a prominent and classic homestead easily seen across open farm fields. If The Teller is to connect to the community, it must present a gateway to the property where visitors can get their questions answered and feel welcome when they visit and receive an orientation to the site.

In addition, if the conservation education program grows, sheltered space is needed for classes to gather in inclement weather or for more traditional classroom activities.

The Slack Barn presents an excellent opportunity to develop a “gateway” facility for The Teller. The main entry to the property can be reasonably rerouted past the barn which becomes a natural site for visitors to check-in, be greeted, and to receive orientation. The barn becomes the hub of visitor services and The Teller takes on a human presence with a staff member meeting visitors at the “front door” of its property.

Some positive aspects of using this area for a gateway facility include:

- ▶ The farmstead identifiable and easy to find for residents and visitors
- ▶ It is part of the historic farming landscape of the Bitterroot Valley
- ▶ It is within walking distance of the Corvallis schools: 0.6 mile from the middle school/high school and 1 mile from the primary school.
- ▶ It is organic and invitingly “homey” for groups going outdoors
- ▶ It is located relatively near flowing water, restored ponds, and restored wetlands
- ▶ There is adequate parking space in the farmyard for school buses and most workshop groups
- ▶ By closing the current access road off of Chaffin Lane and rerouting a road through the Slack Barn, this area would serve to control access into the heart of the main Teller property



The Slack Barn is an icon in the landscape. It would serve as an ideal “gateway” to The Teller property for education groups and visitors. June 2011



The Slack farmstead has adequate parking for school buses and most events. School field trip at the Slack Barn, November 2010



The finished space in the Slack Barn can serve education groups and visitors. The wood pillars somewhat reduce the flexibility. June 2011



The finished space includes a sink and concrete floor, which provides opportunities to use as a wet lab. June 2011



Windows in the Slack Barn frame spectacular views of the Bitterroot Mountains. June 2011

Enhancing educational and visitor use of the Slack Barn

The Slack Barn features a 2,000 square foot finished space on its main level on the north side. The space includes adequate electricity, a restroom, sink, concrete floor, closet, windows, and access to a small office. The barn also has 2,500 square feet of unfinished space on the south side of the main level, and 5,000 square feet of unfinished space in the hay loft.

The benefits of utilizing the finished space as a classroom and orientation area include:

- ▶ It is a flexible space that can serve a variety of purposes. The concrete floor is easy to clean. The sink provides opportunities to use the space as a wet lab.
- ▶ Windows and an observation deck provide panoramic views of the Bitterroot Valley and The Teller's main property.
- ▶ It is heated and insulated for inclement weather and winter use. The windows open for ventilation.
- ▶ It is large enough to host most classes and workshops.
- ▶ It has a high ceiling for the addition of a digital projector and other audio/visual equipment.
- ▶ The adjacent unfinished space and

hay loft invite breakout areas and permits future facility expansion

Some challenges of using this space include:

- ▶ Wood pillars in the middle of the room reduce the flexibility of the space.
- ▶ The hay mound has an inviting earthy ambience but presents accessibility barriers to many people.
- ▶ The barn is surrounded by relatively "sterile" agricultural fields in regard to biological studies and exploration. More diverse restoration projects will require a hike.
- ▶ Groups will have to be carefully scheduled if the Slack house continues to be rented for weddings and other private functions where the barn is needed. There is sufficient distance and vegetation to buffer groups using both the house and the barn.

The barn's multi-purpose room is already in good condition to host classes, groups, and visitors without any immediate renovation. To enhance the space in the future, the following renovations can be considered:

- ▶ Upgrade the educational technology opportunities. Adding wired or wireless Internet access would open the room to digital tools. A high

quality audio/visual system would be useful for projecting PowerPoint presentations, Internet sites, and videos.

- ▶ Purchase light tables on wheels that are easy to move. Flexibility and storage is key to an effective educational space.
- ▶ Develop adjacent storage areas for educational supplies. Although space is limited, a portion of the adjacent unfinished space might be utilized as a permanent storage area. Most educational facilities wish they had more storage space.
- ▶ If more room is needed in the future, consider winterizing and finishing the 2,500 square feet of space on the south side of the barn. This would effectively create two multi-purpose rooms that would provide maximum flexibility.

Developing an outdoor classroom and landscaping around the Slack Barn

One limitation of the Slack Barn area for educational use is its distance from dynamic restoration activities and habitats on the main Teller property. An outdoor classroom space could be created around the building to bring some of these features closer to the gateway facility. Landscaping and restoration projects would not only serve educational activities, but would also be

an aesthetic backdrop for weddings and special events.

Recommendations for developing this outdoor classroom include:

- ▶ The site immediately west behind the barn could be landscaped with a grove of native trees, perhaps aspen, cottonwood, and/or ponderosa pine. A small deer enclosure would showcase the regeneration of trees.
- ▶ A pond and series of shallower wetlands could be excavated and planted with native wetland vegetation. An arching bridge over the pond could serve as an ideal photo spot. Wayside exhibits could describe the importance of wetland restoration.
- ▶ A small earth and stone amphitheater could be constructed to provide a natural setting for programs and weddings. It would use the natural setting of the pond and surrounding grove of trees.
- ▶ Native wildflower gardens would attract butterflies and birds, while demonstrating what people can do to attract wildlife to their own backyards.
- ▶ A birdwatching station with moving water and different types of feeders could be a popular site for increasing audiences of wildlife watchers.



The unfinished space in the barn adjacent to the multi-purpose room could be winterized if more space is needed in the future. June 2011



The backyard of the barn is a blank slate for creating a diverse outdoor classroom of trees, ponds, wetlands, and an amphitheater, like the stone one built in Schmeekle Reserve (above).



The irrigation ditch near the Slack Barn could be restored to a free flowing stream and an education site for classes. June 2011



"Brood strips" of cultivated crops support pheasants, sandhill cranes, and other upland bird species. October 2010



A series of restored wetlands a short walk from the Slack Barn attract a diversity of shorebirds and waterfowl. October 2010

Developing an interpretive trail loop from the Slack Barn

A universally accessible interpretive trail loop into the Core Education Zone of The Teller would introduce first-time visitors, people renting the facilities, and classes to the mission of The Teller in a direct experiential way. Those people who have direct positive experiences on The Teller site will be more likely to support the organization in the future.

Many of the main restoration features of The Teller are located within a relatively short walk of the Slack Barn.

A "gated" trailhead behind the Slack Barn would permit entry to an expanded trail system that leads to restored wetlands, Thomas Pond, and the renovated Gird Creek and could be open on a scheduled basis for public access and programming.

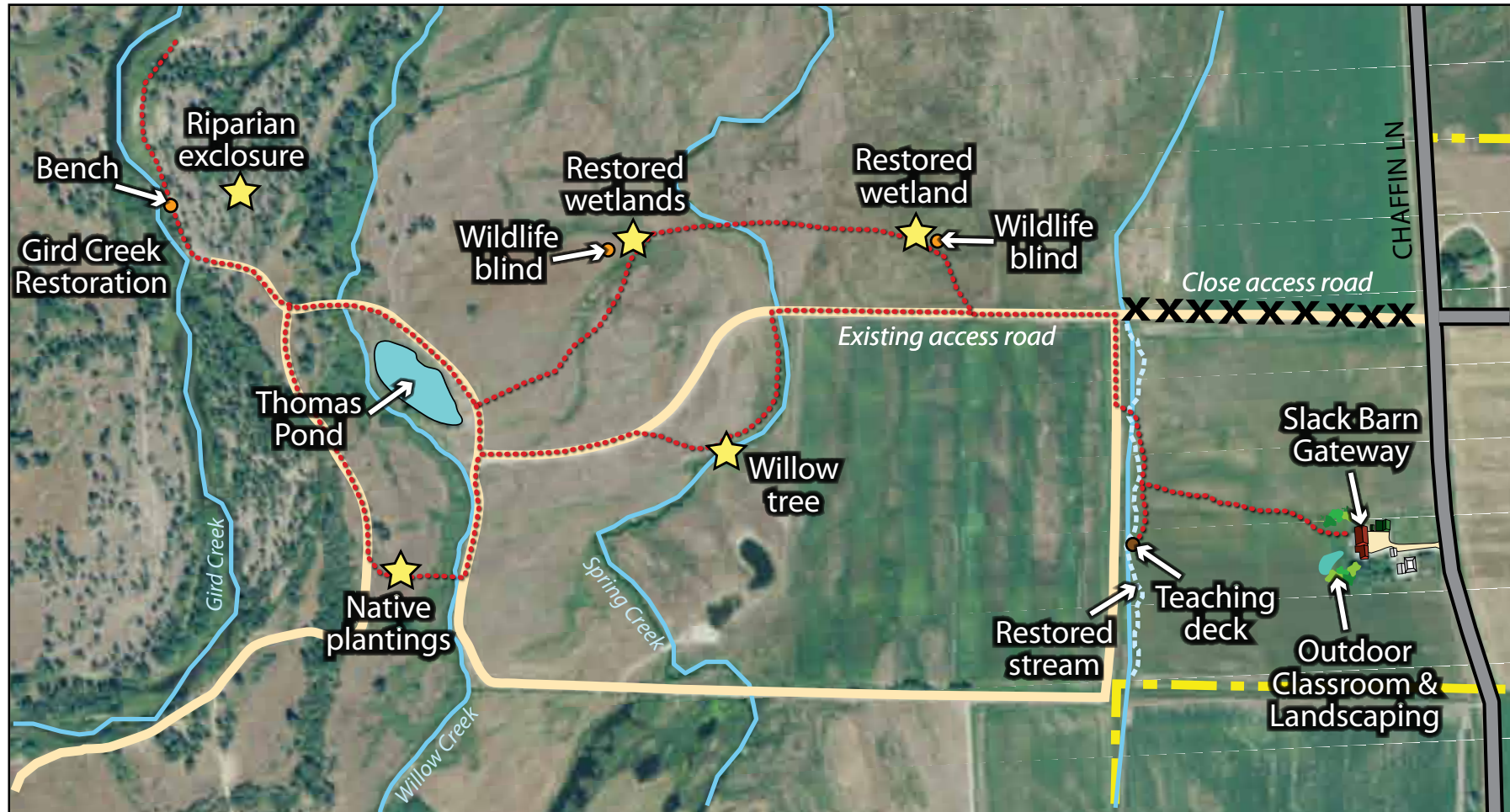
The **Gird Creek Trail** showcases the restored wildlife habitats of The Teller and gives visitors insight into the human history and the way people valued this land through time. It is intended to be an experiential walk that allows people to discover and appreciate the site through their senses.

- ▶ The name of Gird Creek Trail promises a destination. This fast flowing stream is an excellent

example of a successfully restored riparian habitat and a beautiful spot to rest and enjoy the abundant wildlife on its banks. It is a living demonstration of good land management (Sub-theme 1).

- ▶ The interpretive trail begins at the **Slack Barn** where the family history is told on an interpretive panel. Historic photos bring the farm into a human context and give meaning to the fields and irrigation ditches which were so essential to the early settlers (Sub-theme 5).
- ▶ The **irrigation ditch** just west of the barn has potential for restoration as a naturally flowing stream. It is only about 250 yards from the barn, and would serve as an excellent teaching site for classes. A deck built over the restored stream could provide access for aquatic studies and serve as a gathering area. The stream presents an opportunity to introduce the all-important topic of water rights in the Bitterroot Valley (Sub-theme 6).
- ▶ Planted "**brood strips**" of cultivated crops are usually noisy with pheasant calls, sandhill cranes, and other wildlife in season. They serve as a nice transition from farm fields and irrigation ditches to restored wetlands, creeks, and riparian forests beyond. A panel here can interpret wildlife enhancing practices in agriculture (Sub-theme 1).

CONCEPTUAL SLACK BARN GATEWAY AND GIRD CREEK TRAIL SYSTEM



► Several **restored wetlands** of varying sizes are located about 0.4 mile and 0.6 mile from the barn. These are hot spots for shorebird and waterfowl feeding. Blinds would increase the opportunity to observe wildlife. A

panel can interpret the importance of wetlands and the process of restoration (Sub-theme 1).

► At 0.75 mile, visitors reach **Thomas Pond**, a large pond that was restored

in 2007. A panel here would interpret the restoration process with a cross-section of the pond, showing the difference in depths between the two sides, the nesting islands, and a view of wildlife underwater (Sub-theme 1).



Thomas Pond highlights a successful pond restoration project. June 2010



The restored Gird Creek is the dynamic destination of the interpretive trail. June 2010



Arid-loving vegetation, including Bitterroots, beg for a closer look in the native plants area. June 2010

- ▶ At 1 mile from the barn, visitors will see a portion of the large 4.5-acre **riparian enclosure** installed in 2007. A panel will illustrate the success of the structure with before and after photographs (Sub-theme 1).
- ▶ Just past the 1 mile point, visitors will reach the namesake of the trail, **Gird Creek**. Restored in 2008, Gird Creek is a prime example of how conservation projects can enhance wildlife habitat. A panel will tell the story of this successful project. A bench encourages visitors to relax and enjoy the gurgling stream and watch for abundant wildlife (Sub-theme 1).
- ▶ Continuing on the trail to about 1.3 miles, visitors will walk through a **native plants area** to experience what vegetation was like in the Bitterroot Valley before settlement. Bitterroot flowers, prickly pear, sagebrush, and other arid-loving plants dominate the ground cover. A panel will interpret the low rainfall of the valley and the challenge this presents for successful restoration (Sub-theme 3).
- ▶ Returning back to the Slack Barn area, a large **willow tree** on Spring Creek at 1.6 miles is another natural stop on this trail that invites walkers to rest in the shade of the day or to sit in the evening and wait for deer and other crepuscular creatures like short eared owls to venture into the

fields. An interpretive panel here will summarize the restoration work of The Teller and encourage visitors to consider ways of enhancing wildlife habitat in their own backyards (Sub-themes 1 and 6).

- ▶ Visitors return to the **Slack Barn** area via the same trail that follows the restored irrigation ditch. The total round-trip trail distance is about 2.2 miles.



A spreading willow tree on Spring Creek promises relief from the hot sun and a dynamic flowing stream. June 2011

OPTIONS FOR THE TELLER CONSERVATION EDUCATION PROGRAM

Education and interpretation master plans are, by design, dynamic documents that should change as different opportunities and challenges arise. The following are several options that The Teller can select from in implementing its conservation education program based on *current conditions*. As conditions change, these options will also change, and so are listed here as just general concepts for moving forward.

Option 1: No change to staffing, no additional programming, no change to the site

The default option is to continue moving forward with a similar strategy as the past few years. Educational groups are welcome to use The Teller if they contact the staff, but there would be no additional marketing of programs and no teacher training. Partnership education programs, like the Greenwing Event and Bitterroot Buggers, would continue on the property.

Benefits: Would not require additional funding.

Challenges: The conservation education program would not grow or diversify. If conservation education is the primary mission of the organization, then this

option does not help The Teller to achieve its goals.

Relative costs: No additional costs.

Option 2: Hire a full-time education director position

If The Teller chooses to enhance its conservation education mission, then it is strongly recommended that a full-time conservation education director be hired. This position would be responsible for developing the education program forward, while seeking additional funding sources for program support.

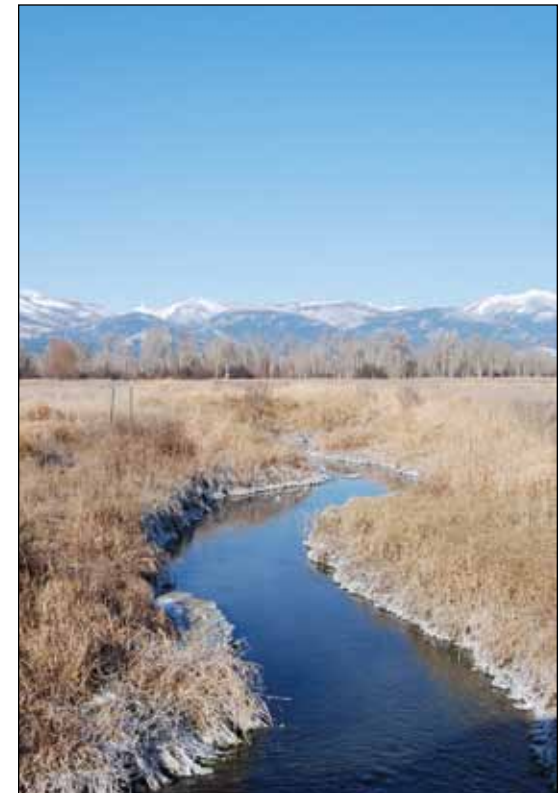
Benefits: A full-time position would be devoted to enhancing conservation education at The Teller. This would include developing school and public programs, creating partnerships, writing grants, designing media, training teachers, coordinating volunteers, and promoting programs.

Challenges: Funding for salary and benefits would have to be secured annually. Finding a qualified individual capable of successfully achieving all of the listed job duties could be challenging.

Relative costs: \$35,000-\$50,000 annually plus benefits



*The sun sets over the Bitterroot Mountains.
June 2010*



*Spring Creek on the main Teller property.
December 2009*



*The moon above the Bitterroot Mountains.
June 2010*



*A Great Horned Owl hunts from a power pole near
the Chaffin House. June 2010*

Option 3: Develop an interpretive trail along the Bitterroot River

The Teller Trail is already open to casual visitors and education groups, making it an ideal place for the installation of wayside exhibits that connect people to the stories of the site.

Benefits: Well-written and designed interpretive panels are powerful forms of media that can reach a diverse audience. By incorporating The Teller themes and messages, they can create a positive identity for the organization and encourage future support. Wayside exhibits are always on the job and user-friendly.

Challenges: Initial cost for wayside exhibits can seem high, but depending on the material, they are guaranteed to last 10 years or more. Vandalism could be an issue. A well qualified interpreter/designer should develop signs so they are visually attractive, have a message hierarchy, and are concisely written.

Relative costs: Approximately \$3,000-\$4,000/wayside exhibit for research, design, and fabrication by a professional firm. For 8 wayside exhibits, about \$24,000-\$32,000. This cost could be significantly reduced if a full-time education director with interpretive writing and design experience is hired. Fabrication costs (without research and design) would be about \$1,000-\$1,500/

wayside exhibit, or \$8,000-\$12,000 for 8 wayside exhibits.

Option 4: Develop a wayfinding signage plan for The Teller

Wayfinding signs will help guide visitors from the major highways and Corvallis to The Teller. This would include the standard brown “recreational” highway direction signs, and more stylistic arrival signs for major sites on the property (Quast House/office, Slack Barn/House, Chaffin House, and The Teller Trail).

Benefits: More casual visitors and residents will be able to find The Teller, which provides additional opportunities to share the organization’s message and gain support.

Challenges: Additional visitors will require clear orientation to the site and access will need to be controlled. Features or facilities on the site will need to be accessible to make the stop worthwhile.

Relative costs: Approximately \$18,000-\$20,000

Option 5: Develop a gateway experience at the Slack Barn.

The Slack Barn could serve as an effective “front door” to The Teller for education groups and visitors. This could include opening the multi-purpose room for

introductory exhibits, renovating the adjacent unfinished space to serve as a second room, creating an outdoor classroom space behind the barn, and developing a loop trail that interprets restoration features in the Core Education Zone.

Benefits: A “front door” concept will enhance the identity of The Teller for visitors and residents. It serves as a working hub for staff, visitors, and classes that is proximal to the main property.

Challenges: Scheduling may be a challenge with weddings and other groups that rent the Slack House. This requires that The Teller invests in landscaping, habitat restoration, and interpretive wayside exhibits.

Relative costs: Costs for developing the gateway experience will vary considerably depending on the degree of development.

- ▶ At the most basic level, the barn and classroom could be opened and simple signage placed on site identifying it as The Teller educational facility. This could range from \$300 to \$2,000 for signage.
- ▶ Developing an outdoor classroom in the backyard of the barn would be an excellent addition to the site. This could include planting trees and native gardens, restoring ponds and wetlands, and constructing an amphitheater. Costs will depend on the amount of donated labor from volunteers and students, grants acquired, etc. Costs might range from

\$40,000 to \$60,000.

- ▶ An irrigation ditch within a short distance of the barn could be restored to a free flowing stream and used for educational activities. A deck could be built to serve as a teaching station. Costs might range from \$15,000 to \$25,000.
- ▶ The installation of an accessible interpretive trail on the main property would provide a direct experience for students and visitors. This would include a trailhead kiosk, entry gate, 10 wayside exhibits, two wildlife blinds, a short boardwalk near wetlands, and a gravel trail. Costs might range from \$50,000 to \$70,000.
- ▶ Relative cost for making all suggested improvements: \$105,300-\$157,000

Snow-covered Bitterroot Mountains rise above the iconic Slack Barn and House on The Teller. December 2009





Plan developed and submitted by:
Schmeckle Reserve Interpreters
University of Wisconsin-Stevens Point
July 28, 2011