CRITICAL LANDS STATUS REPORT UPDATE

DRAFT

The North Flathead Valley & The Flathead River Corridor

Flathead Basin, Montana

Flathead Lakers

April 25, 2004

Acknowledgements

The Flathead Lakers thank everyone who contributed to the Critical Lands Project with their time, suggestions and resources and for making this a successful collaborative process.

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The Flathead Lakers are solely responsible for any errors or omissions in this report.

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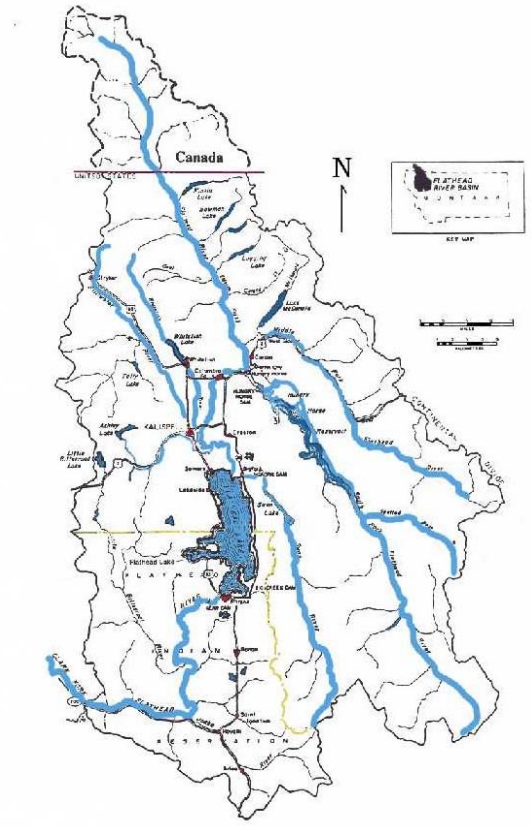
The following signs throughout the text indicate that a project is:

completed or near completion

in progress

in the planning stage

Executive Summary



This report is an update of the *Critical Lands Status Report* produced in June 2002 evaluating the status of lands critical to maintaining and improving water quality in the Flathead Basin. The report is a product of the Critical Lands Project, a collaborative effort led by the Flathead Lakers and involving representatives from federal, state, tribal and local agencies and organizations (Appendix A).

Critical Lands Project goals are:

1) to identify, protect and restore lands critical to the quality of Flathead Lake and its tributaries,
2) to build trust, communication and cooperation among various agencies and organizations committed to protecting critical lands, and
3) to inform the public about the importance of conserving and restoring lands critical to the quality of Flathead Lake to gain grassroots support.

Critical lands are areas, such as wetlands, floodplains and riparian areas, that help keep our streams, rivers and lakes clean and that also sustain important wildlife habitat, recreation, and scenery, all contributing to the special quality of life for which the Flathead is known.

The Critical Lands Project participants previously decided to focus initial conservation efforts in the Flathead River valley above Flathead Lake, and identified and evaluated eight general areas along the Flathead River from Columbia Falls to Flathead Lake. Priority areas for conservation identified included:

1. The Flathead River Islands
2. Foys Bend; Fennon Slough
3. Weaver Slough
4. Upper Braided Area, Flathead River; Egan Slough; McWenneger Slough
5. Church Slough
6. Columbia Falls/ Columbia Falls Aluminum Company Land
7. Flathead River/Brosten Pond stretch

Recent studies on birds and aquatic integrity support conservation and will improve conservation planning in this area. These studies highlight the significance of the Flathead Basin for bird conservation, in particular the Flathead, Mission and Swan valleys and the Stillwater River corridor. A study on the aquatic integrity of rivers suggests that the North, Middle and South Forks of the Flathead River and the Swan River are biological strongholds and important areas for protection.

Some of the major threats to critical areas in the Flathead Valley identified in the past include rapid growth and development and associated impacts, nonpoint source pollution, removal of riparian vegetation, water level fluctuations and wave action leading to bank collapse, floodplain alterations, exotic species introductions, and loss of large tract agriculture to development.

This report reviews the current status of previously identified critical lands, discusses new threats, challenges and needs, describes the new studies and programs that help identify critical areas, summarizes project accomplishments to protect or restore critical lands, and provides recommendations for future goals and strategies. The recommendations are derived from the project's collaborative efforts over the last two years and propose strategies and actions that fall under four major categories: Project Coordination and Conservation Planning, Critical Lands Conservation and Restoration, Critical Lands and Water Quality Protection Policies and Communication and Outreach.

Introduction

THE CRITICAL LANDS PROJECT

The Critical Lands Project is a collaborative effort to identify, protect and restore lands that help maintain and improve water quality in Flathead Lake. The goals of the Critical Lands Project are to:

1) identify, protect and restore lands and waters critical to the quality of Flathead Lake and its tributaries,
2) build trust, communication and cooperation among various agencies and organizations committed to protecting critical lands, and
3) inform the public about the importance of conserving and restoring critical lands to gain grassroots support.

Participants in the project include resource managers from local, state, federal and tribal governments, scientists, representatives of land conservation organizations and interested individuals (Appendix A).

Since the project's inception in November, 1999, project participants have developed and agreed on criteria for defining critical lands, identified initial priority areas, and developed strategies for cooperation and action, and implemented projects.

In June 2002, the project produced the *Critical Lands Status Report* that systematically compiled data from scientific studies and assessments by land and water resource professionals to identify and describe critical areas in the Flathead Valley. The report was developed with input from more than thirteen public and private agencies and organizations that have specialized, local knowledge about these resources.

This *Critical Lands Status Report Update* provides a critical lands status update, summarizes project accomplishments to protect or restore critical lands identified by the previous Critical Lands Status Report, including lands conservation, stream restoration, education and outreach, and land use planning efforts. The report also describes new studies and programs that help identify or protect critical areas throughout the Flathead Watershed, and new threats, challenges and opportunities for protecting and restoring critical lands.

What are "Critical Lands"?

Critical lands are areas that help keep our streams, rivers and lakes clean[1] and that also sustain important wildlife habitat,[2] recreation, and scenery, all contributing to the special quality of life for which the Flathead is known.

These areas include wetlands, flood plains and riparian areas along streams and rivers. When left in a natural state, they provide a buffer that filters out sediments, nutrients and other pollutants from runoff before it reaches a water body. These areas are often threatened by development because of their desirable scenic qualities.

What are the main criteria used to identify Critical Lands?

Early in the Critical Lands Project, participating groups developed criteria for identifying and prioritizing Critical Lands. These criteria include:

- protects water quality in Flathead Lake and/or streams and rivers in the Flathead Watershed,
- provides significant fish and wildlife habitat as well as cultural, recreational and/or aesthetic opportunities and amenities important to the quality of life,
- provides connection to other protected critical lands,
- focuses on areas at risk for development that jeopardizes the above qualities,
- enjoys landowner and community support.

For additional information about criteria and the evaluation form used to identify and rank critical lands see the *Critical Lands Status Report* (June 2002). The report is available on the Flathead Lakers' website (www.flatheadlakers.org: under Stewardship Program/Critical Lands Project).

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[1] **Areas significant for water quality**: Areas which provide important hydrological functions, such as the uptake and assimilation of nutrients and other pollutants.

[2] **Ecologically significant areas**: Areas that provide important ecological services, such as functional habitat for rare, threatened, endangered or sensitive species; important breeding or birthing areas, including those areas required to reproduce or propagate a species (include mating, birth, nesting, spawning); migration corridors, or other areas of special concern.

CRITICAL LANDS IDENTIFIED

During the 2001 Critical Lands Workshop, project participants decided to focus initial conservation and restoration efforts in the North Flathead Valley, north of Flathead Lake, specifically on wetlands, riparian corridors and floodplain areas. The North Flathead Valley extends from Whitefish and Columbia Falls to the north shore of Flathead Lake (Figure1, page 3).

Research by the Flathead Lake Biological Station indicates that the lands in the North Flathead Valley contribute the highest nutrient loads to Flathead Lake (Stanford et al., 1997). The North Flathead Valley is also the most densely populated in the basin, and is one of the fastest growing areas in Montana (Census 2000).

The evaluation of specific areas focused mainly on lands along the Flathead River corridor and associated floodplain areas. This main focus along the Flathead River was based on two factors. First, the Flathead River delivers the greatest nutrient loads to Flathead Lake (Stanford et al., 1997). Second, this river has the most intact riparian corridors, wetlands and sloughs, important areas both for maintaining water quality and wildlife habitat.

Areas previously listed as critical by project participants during the 1999 Critical Lands Workshop include:

- wetlands valley-wide,
- the Flathead River corridor north of Flathead Lake,
- undeveloped lake shoreline,
- North Flathead Valley agricultural lands,
- the North Fork drainage,
- Dayton, Ashley, Stoner and Ronan creeks,
- Flathead Lake south and north shores,
- other major tributaries and drainages to Flathead Lake: Stillwater, Whitefish, Swan rivers and the three forks of the Flathead River.

The 2002 *Critical Lands Status Report* identified and ranked the following priority areas for conservation in the Flathead Valley (see Figure 1, page 3):

1. Flathead River Islands
2. Foys Bend; Fennon Slough
3. Weaver Slough
4. Upper Braided Area, Flathead River; Egan Slough; McWenneger Slough
5. Church Slough
6. Columbia Falls/ Columbia Falls Aluminum Company Land
7. Flathead River/Brosten Pond stretch

For specific information about these areas see the 2002 *Critical Lands Status Report*.

Other areas listed as critical include specific lands such as PacifiCorps lands associated with Bigfork Dam along the Swan River, Somers area, Big Arm, property next to the Owen Sowerwine Natural Area, Brenneman's Slough, and Wild Horse Island.

Additional specific areas mentioned as critical during the Critical Lands Workshop in 2001 included the floodplains in the Kalispell area, the Nyack area of the South Fork, North Fork and Middle Fork of the Flathead River, the Swan River, the Jocko River, Post, Crow, Mission and Ducharme creeks.

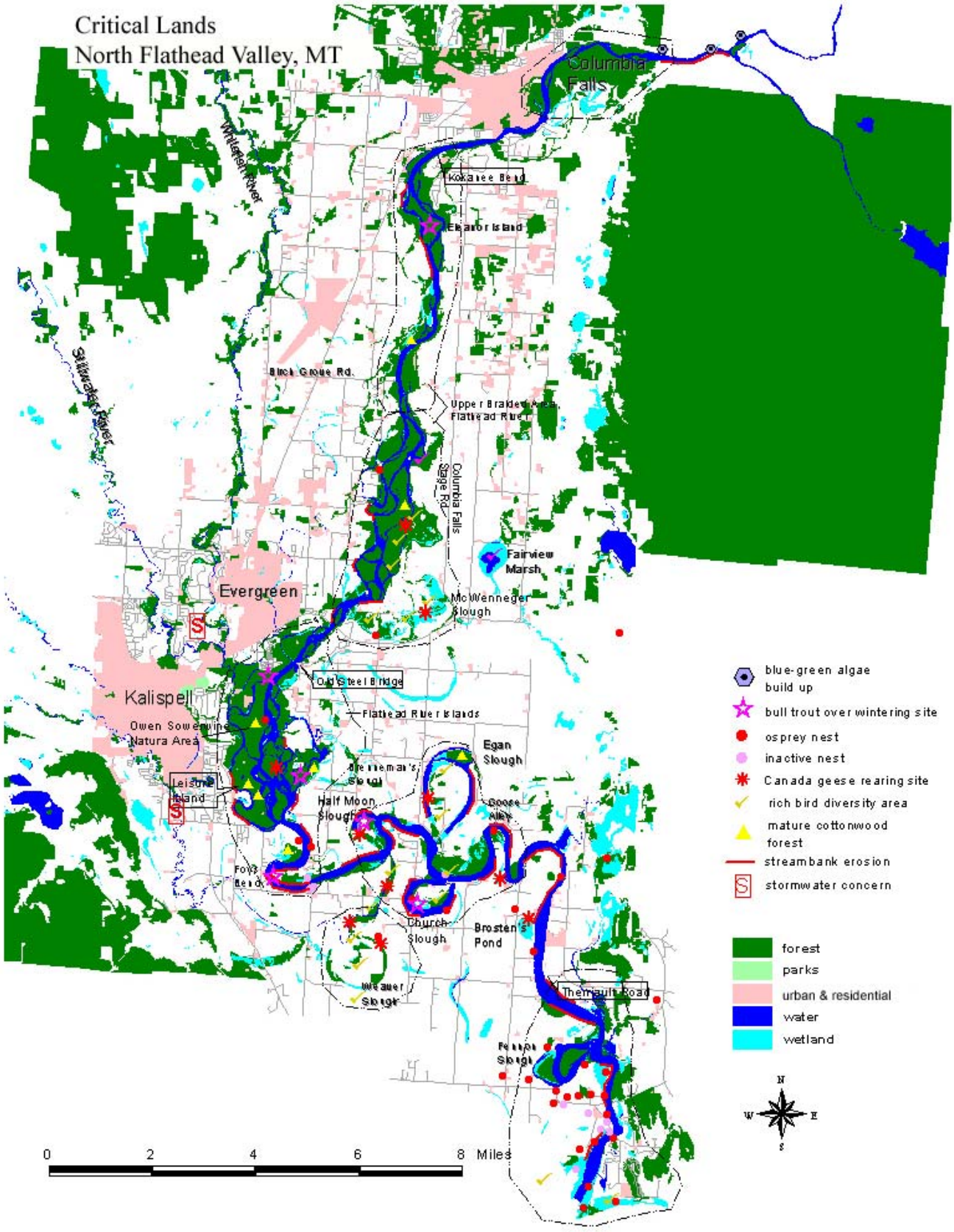
Some of the major threats to critical areas in the Flathead Valley identified in the past include:

- rapid growth and development and associated impacts
- non-point source pollution
- removal of riparian vegetation
- water level fluctuations and wave action leading to bank collapse
- floodplain alterations
- exotic species introductions
- loss of large tract agriculture to development

Despite the initial focus by the Critical Lands Project on the North Flathead Valley, protection of headwaters and wildland areas is also vital for the overall health of the watershed. Many agencies and organizations focus their conservation efforts in those areas.

The ecosystem services provided by undisturbed forest areas are critical to maintaining water quality and wildlife habitat in the Flathead Basin. Approximately 73 percent of the basin is forested (DEQ, 2001). Thirty-five percent of those lands are in wilderness or other protected status (e.g. Glacier National Park). The Flathead National Forest administers the largest amount of public lands in the basin, approximately 60 percent of forested lands in the North, Middle and South Forks of the Flathead, and the Swan and Stillwater drainages.

Recharge areas found in Glacier National Park, the Bob Marshall Wilderness and other undisturbed forested lands are largely responsible for the relatively clean water in the rivers and lakes of the basin.


Critical Lands
North Flathead Valley, MT
Columbia Falls
Whitefish River
Kokanee Bend
Eleanor Island
Stillwater River
Birch Grove Rd.
Upper Braided Area, Flathead River
Columbia Falls Stage Rd.
Fairview Marsh
McWenneger Slough
Evergreen
Old Steel Bridge
Kalispell
Flathead River Islands
Owen Sowerwine Natura Area
Egan Slough
Leisure Island
Half Moon Slough
Goose Alley
Church Slough
Brosten's Pond
Themault Road
blue-green algae build up
bull trout over wintering site
osprey nest
inactive nest
Canada geese rearing site
rich bird diversity area
mature cottonwood forest
streambank erosion
stormwater concern
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parks
urban & residential
water
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8 Miles

Critical Lands Status Update

The Critical Lands Project previously identified and evaluated eight general areas, or ecological units, along the Flathead River from Columbia Falls to Flathead Lake, including mainly riparian forests and wetlands along the river.

As described in the 2002 *Critical Lands Status Report*, riparian areas, wetlands, and flood plain areas are among the most ecologically and economically valuable lands. These areas are important for filtration and deposition of nutrients and sediments, slowing water flow and providing soil stability, as well as for their high plant and animal diversity. They provide some of the best remaining wildlife habitat along the Flathead River (G. Bissell, 2001, pers. comm.) and are also important for native fish migration and over wintering (B. Marotz, 2001, pers. comm.).

Recent studies on priority areas for conservation and river restoration greatly enhance conservation planning in this area. This report update summarizes some of these studies and additional information, as well as projects and programs that can help implement conservation goals.

The bird studies highlight the significance of the Flathead Basin for bird conservation, and in particular, wetlands, riparian areas and some forest types in the Flathead, Mission and Swan valleys and the Stillwater River corridor.

A study modeling the integrity of rivers and watersheds suggests that the North, Middle and South Forks of the Flathead River and the Swan River are biological strongholds and important areas for protection. This conclusion is also reached by habitat mapping conducted by The Nature Conservancy. The Stillwater and Flathead rivers' integrity declines as it flows through the Flathead Valley pointing to possible restoration needs.

Flathead County is one of the fastest growing counties in Montana. In 2000, Flathead County had an estimated population of 74,471, including 14,223 in Kalispell, 5,032 in Whitefish, 3,645 in Columbia Falls, and 6,215 in Evergreen (U.S. Census Bureau, Census 2000), and the remaining 45,356 in rural areas. Population growth in Flathead County is expected to reach an estimated population of 80,740 by 2004.

Growth management outside city limits is one of the most compelling issues facing Flathead County. According to the U.S. Census Bureau, 47.4 percent (about 35,000) of the population in Flathead County lives in urban centers and 52.6 percent in rural areas.[3] Most interesting, however, is that only 3.7 percent of the people living in rural areas include households concerned with growing crops or raising livestock and 96.3 percent are non-farm residences (U.S. Census Bureau Summary File 3, 2000).

Residential growth is causing farmland and timberland to be subdivided and taken out of production. According to the Census of Agriculture, more than 60,000 acres of farmland in Flathead County were taken out of production between 1992 and 1997 (Census of Agriculture, 1997), a 22 percent decrease in productive farmland.

Farmland subdivision and development is not expected to slow down any time soon with land prices rising rapidly, farming revenues remaining low in comparison to the value of the land for subdivision, the farming population age increasing,[4] and demand for land and new homes accompanying the influx of people into the county.

Scenic areas, including lands along rivers and streams, are apt to go first when farmers subdivide a portion of their land, said Susan How, the former Executive Director of the Flathead Land Trust. The lands are often the least productive for farming, but also have the highest development values.

Subdivision proposals approved in 2003 near Church and Weaver Sloughs, two areas ranked high by the Critical Lands Project for protection, as well as near U.S. Fish & Wildlife Service Waterfowl Production Areas, reflect a demand for residential development in open scenic areas in the proximity of cities.

Farmers facing economic pressures as they reach retirement age are selling all or part of their

[3] "Urban - All population and territory within the boundaries of Urbanized Areas and the urban portion of places outside of Urbanized Areas that have a decennial census population of 2,500 or more."

[4] Average farmer in Flathead County is 55.3 years old.

land for development. Some farmers are selling all their land, which is often subdivided for residential development. Others are selecting development options that allow them to keep farming part of their land.

A few farmers, as described in the Weaver and McWenneger Sloughs projects in this report, were able to sell an easement to a local land trust at a bargain sale, thus retaining the ability to farm the land and maintaining prime agricultural soils in production, keeping their farm in the family, and protecting important wetlands and surrounding uplands for migratory waterfowl and other natural values.

There is a need to explore additional mechanisms and incentives available to landowners to protect critical lands.

Weaver Slough

Weaver Slough is located north of Somers, southeast of Kalispell, and south of the Flathead River along Ashley Creek. Four major landowners own most of the lands around Weaver Slough.

Weaver Slough, photo by C. von der Pahlen, 2003

The slough was identified as a high priority area for conservation because of its high wetland and wildlife values. It supports important nesting habitat for birds, including several species of concern (bald eagle, osprey, tundra swan and brown creeper) and migratory waterfowl.

Ashley Creek has been found to contribute high nutrient loads to the Flathead River (Stanford et al. 1997). Protection of wetlands and floodplain filtering functions that protect water quality should be encouraged at Weaver Slough and other wetlands along Ashley Creek.

Conservation efforts: The likelihood of development in this area was estimated to be very high in 2002. The Flathead Land Trust purchased conservation easements on 450 acres of wetlands and farm land at Weaver Slough from four landowners, using a combination of funding for protection of farmland, native fisheries and waterfowl habitat. The easements placed a voluntary restriction on further development on the slough. The lands remain privately owned and landowner permission is required to access the properties.

Another four to five hundred acres of prime farmland and wetlands around Weaver Slough will be protected as transactions are completed.

Needs and Opportunities: While protection of Weaver Slough is near completion, needs and opportunities remain in the project area, including:

- There is an opportunity to work with landowners to expand protection of the riparian corridor along Ashley Creek, near Weaver Slough, to protect both wildlife habitat and water quality. There are six main landowners along Ashley Creek between Weaver Slough and the Flathead River. Available protection tools include conservation easements, conservation programs, and technical support provided by the Natural Resources Conservation Service.

McWenneger Slough

This wetland is located northeast of Kalispell and east of Evergreen, on the east side of the Flathead River north of Highway 35.

It was identified as a high priority for conservation mainly because of its high wetland and wildlife habitat values, including rich bird diversity and being part of the waterfowl migration corridor. It also has relatively good connectivity with the Flathead River riparian corridor and other protected areas.

Conservation efforts: The Flathead Land Trust purchased a conservation easement on more than 400 acres of wetland habitat on McWenneger Slough which placed a voluntary restriction on development on the slough. The land remains privately owned and landowner permission is required to access the property.

Approximately 200 acres of surrounding upland areas were sold for residential development. This land, previously in agricultural production, was initially included in the conservation plans, but a lengthy three-year

time-frame for securing the funds for the easement led the landowner to sell upland sections for residential development.

The most ecologically significant wetland habitat is protected in perpetuity through the conservation easement.

The Flathead River Islands

One of the highest priority areas identified by the Critical Lands Project in the 2002 *Critical Lands Status Report* is the Flathead River corridor and associated floodplain in the area of braided river channels, sloughs and islands.

The Owen Sowerwine Natural Area (OSNA) is located in this highly braided area of the Flathead River, and includes some of the best examples of riparian shrub and forest communities in the Flathead Valley "because of its size, overall condition, and continued occurrence of natural processes such as flooding" (Greenlee, 1999).

The area is popular for hunting, fishing, bird watching and boating. It also has one of the highest concentrations of mature cottonwood forests and bull and cutthroat trout wintering sites on the Flathead River.

Highly braided area of the Flathead River located southeast of Kalispell. USFS, 1997.

Conservation efforts: The Owen Sowerwine Natural Area was designated one of Montana's Important Bird Areas (IBA) by the Montana IBA committee, because of the excellent assemblage of riparian bird species present there. The Flathead Audubon Society and Montana Audubon lease this property from the Montana Department of Natural Resources and Conservation (DNRC) and manage it for bird protection and education (see Figure 2).

Critical Lands Project partners are supporting an effort by Montana Audubon and Flathead Audubon to secure a conservation easement on the Owen Sowerwine Natural Area.

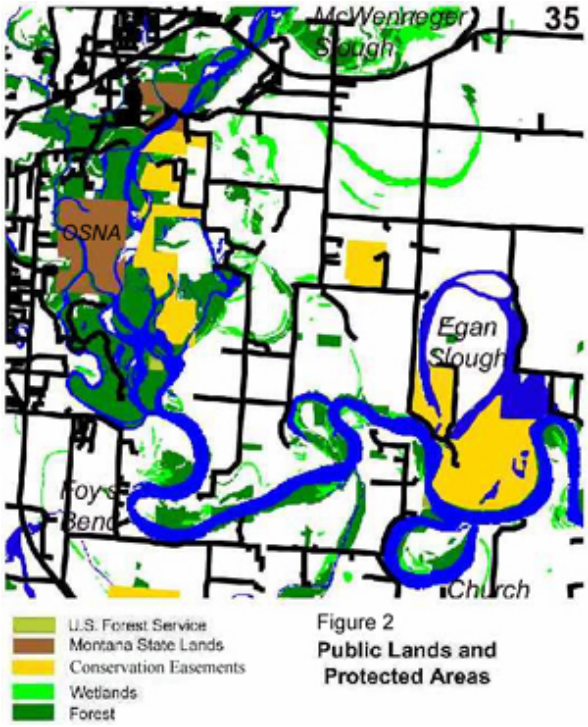


Figure 2
Public Lands and Protected Areas

However, uncertainty over management changes for state trust lands could affect the ability to lease or place conservation easements on state trust lands, including this area.

The Montana Department of Natural Resource and Conservation is redefining the rules for selling, leasing, or placing an easement on state trust lands to increase the returns to the state trusts. Current draft rules threaten the ability of Audubon to lease or place a conservation easement on this property.

Needs and opportunities for the OSNA: New DNRC rules are in the process of being developed. The rules adopted will determine what protection strategies will be feasible for this property.

- Support Audubon and partners' efforts to protect the OSNA.
- Comment on DRNC proposed rules to ensure that they allow for adequate protection of state lands through conservation easements in perpetuity.
- Seek funding to purchase a conservation easement on this property if the new DNRC rules permit it.

- Build partnerships to support the OSNA project.
- Inventory noxious weeds.
- Conduct education & outreach to gain support for protection of riparian areas and conservation easements among owners of lands surrounding the OSNA.

Needs for the rest of the Flathead River Islands area:

- Protect unprotected areas on the west side of the river (between Old Steel Bridge and OSNA, and FWP's protected areas), which are at risk of development.
- Improve grazing and fencing along the riverbank and wetlands, in particular at Brenneman's Slough.
- Discourage development on intact riparian vegetation, wetlands, islands and sloughs.

Egan Slough

Egan Slough is located north of Flathead Lake next to the Flathead River east of Monford Road.

Egan Slough was identified as a priority for conservation because of its significant wetland values, supporting a high density of cavity-nesting birds, breeding habitat for migratory waterfowl, four rare plant species and good examples of deep and shallow marsh and aquatic plant communities.

The slough is in the proximity of several other sloughs and wetlands along the Flathead River, including Church Slough, Half-Moon Slough, Brenneman's Slough, Weaver Slough and a wetlands complex along the Flathead River. This conglomerate of sloughs and wetlands greatly benefits wildlife species. While most of these wetlands have riparian vegetation associated with them, connectivity among them is relatively poor due to fragmentation caused by farming and grazing (*Critical Lands Status Report*, 2002).

Conservation efforts: In December 2002, the County Commissioners approved a zoning district proposed by landowners around Egan Slough. The zoning district limits land subdivision to parcels no smaller than 80 acres on a total of 1150 acres to help maintain the area's farming character. The zoning district protects productive farmland, riparian areas open space and scenic values.

Needs and Opportunities: Needs and opportunities, including those previously identified which are still applicable, include:

- Improve grazing management: fence off shoreline and riparian vegetation.
- Manage exotic plants.
- Restore cottonwood and ponderosa pine forest on island inside slough.
- Restore riparian corridor on the east and west banks of the slough.
- Determine farming impacts on water quality and management alternatives.
- Protect and restore (grazing management) the aspen/snowberry forest.
- Work with Egan Slough Zoning District landowners to adopt best management farming practices that help protect water quality and wildlife values of the area.
- Protect wetland and rare aspen/snowberry forest on the north end of the slough.
- Restore waterfowl habitat.
- Provide workshops and training to landowners on land use management options, conservation easement opportunities, and conservation programs available through NRCS and the Flathead Conservation District.

Foys Bend area

Foys Bend is located south of Kalispell and the Flathead River Islands on the Flathead River. There are three major landowners on both sides of the river and several small landowners in two concentrated areas to the east and south.

Foys Bend and surrounding wetlands to the north and east were identified as a high priority area for protection because of wetland, fisheries and wildlife values. The area comprises approximately 150 acres of wetlands and black cottonwood forests, which provide important sediment filtration and erosion control functions, and support a wide range of songbird species, osprey and bald eagle nests, and waterfowl.

The underwater structure provided by fallen logs from the cottonwood forest in Foys Bend provides excellent winter habitat for bull and westslope cutthroat trout.

River frontage is in high demand for development. Several housing developments along the river to the south of Foys Bend occurred in the last five to ten years in an area experiencing severe bank erosion. Several landowners placed rip rap along the banks of the river to prevent further bank erosion.

Foys Bend area, photo by Gael Bissell, 2001

Land subdivision is expected to increase in this area because of the proximity to Kalispell (approximately four to five miles from downtown).

Conservation efforts: The Flathead Land Trust negotiated a bargain sale, a purchased and a donated conservation easement with a landowner in the Foys Bend area to protect approximately 230 acres, including wetlands and surrounding farm land.

The landowner to the south has expressed interest in the past in placing a conservation easement on his land with the Montana Land Reliance.

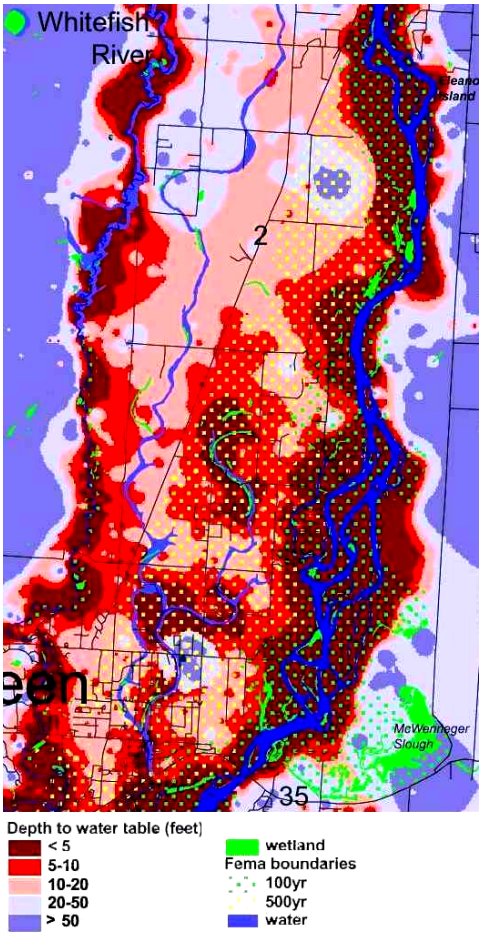
Needs and opportunities:

- Encourage surrounding landowners to protect critical wetlands and riparian forests through available protection tools, including conservation easements.
- Educate watercraft operators about erosion caused by wave action created by motorboats and jet skiers in the river and establish no-wake regulations to reduce wave action.
- Promote bank stabilization methods that do not impact important bull and cutthroat trout overwintering sites or bald eagle nesting and migratory waterfowl habitat.
- Increase public access to the river.

The Shallow Alluvial Aquifer

The shallow alluvial aquifer associated with the Flathead River and its floodplain has been identified by the Critical Lands Project as a priority area for protection, based on research and information provided by the University of Montana's Flathead Lake Biological Station.

Figure 3. Depth to Water Table on the shallow alluvial aquifer



The aquifer is located roughly between the Flathead River and the Whitefish River between Columbia Falls and Kalispell. Figure 3 shows depth to groundwater for most of the aquifer. This map is a section of the Depth to Water Table map produced for the Critical Lands Project by the Biological Station using Montana Bureau of Mines and Geology well log data.

The geology and hydrology of this area were shaped by receding glaciers. As the glaciers receded, the melt water became a river many times larger than the Flathead River of today. The river produced a highly sorted gravel matrix. Research by the Biological Station has shown that the alluvial gravels associated with the

river's floodplain in this area are penetrated by groundwater that originates in the Flathead River and returns to the river with high flow rates through the gravel. Pollutants released in this area (such as inadequately treated sewage, oil and gas, heavy metals, tire residue, fertilizers and pesticides) can percolate into the aquifer and can be transported to the river at a relatively rapid rate.

Since there is a direct connection between the aquifer and the Flathead River, and therefore Flathead Lake, polluting the aquifer could result in degradation of the river and lake. Biological Station Director Dr. Jack Stanford has said that "Any activity that substantially or incrementally changes the natural integrity of flood plains and their aquifers will have a direct and pervasive impact on surface water quality." The aquifer also provides domestic water wells for residents of the area.

The cumulative impacts of development in this area have yet to be carefully evaluated, although housing and commercial development projects have been proposed in the area in recent years and many of them have been approved and built.

Gravel mining is also a potential threat to the aquifer. Stanford has said that "large-scale gravel mining (which removes the gravel matrix of the aquifer creating lakes) and pollution from any source...can completely disrupt the aquifer-river ecosystem."

Eliminating the aquatic life in the underground aquifer, as has happened in the unincorporated Evergreen area, and exposing the aquifer to potential surface contamination through the ponds or lakes created by gravel mining, can reduce or destroy the natural cleansing process the aquifer and its biota provide.

Conservation efforts: A meeting to discuss sand and gravel operations, Glacier Park International Airport safety (bird collisions), water quality, and long-term planning as they pertain to development of currently permitted as well as future expansions and development of aggregate operations in the northern Flathead Valley was convened by the Montana Department of Environmental Quality on March 4, 2003. The group, which included representatives of the DEQ, U.S. Fish & Wildlife Service, the Flathead Lake Biological Station, the Flathead Lakers and others, agreed to gather and analyze information regarding impacts of gravel mining in the area over an 18-month period.

The Montana Bureau of Mines and Geology and the Flathead Lake Biological Station recently completed a research study on the shallow aquifer for the Flathead Basin Commission. Some of the wells monitored were previously monitored by the Biological Station in a 1984 study. Results show that nutrient concentrations in the groundwater have not changed significantly since the earlier study. The Biological Station reported that nutrient loading could not be addressed, as a hydrological flux model was not included as part of the study. The report recommends that a long-term monitoring program be established using key, representative monitoring sites, and that aquifer discharge be measured so that potential impacts of nutrient loading can be assessed.

Needs and opportunities:

- Establish a long-term monitoring program
- Measure/model aquifer discharge to determine nutrient loading.
- Summarize available information about the aquifer, the significance of potential threats to its quality, and potential impacts to the Flathead River and Flathead Lake.
- Evaluate the cumulative impacts of development.
- Identify opportunities to protect the aquifer, including options for new or improved land use policies and regulations.

Other critical lands identified

Several other wetlands and riparian areas along the Flathead River that were identified as priority areas for protection in the 2002 *Critical Lands Status Report* have not experienced major changes. These include Fennon and Church sloughs, the Upper Braided Area of the Flathead River, the stretch of the Flathead River to the north and south of Brosten Pond and the Columbia Falls Aluminum Company Lands.

Land use change from large farms to residential development is the major change occurring in the proximity of those areas, in particular in the lower Flathead Valley.

Church and Fennon Sloughs

Several land subdivision and residential

development proposals occurred in the proximity of Church and Fennon sloughs in 2003 and 2004, which could impact wildlife habitat due to increased fragmentation of the landscape.

Fennon and Church sloughs ranked as high priorities for protection because of their wetland and wildlife values. These sloughs are used by a wide variety of migratory waterfowl and songbirds, and are important nesting and brood-rearing areas for Canada geese and herons, which rely on the sloughs and the Flathead Lake north shore for nesting and feeding.

Fennon Slough, in particular, has one of the highest densities of osprey and bald eagle nests on the mainstem of the Flathead River. Church Slough is known to provide winter habitat for bull trout.

These remaining patches of riparian vegetation and wetlands along the Flathead River, including Brosten Pond, provide important habitat for river otter and other wildlife as they travel along the river, and are important 'islands' of vegetation and habitat in an increasingly populated and developed landscape.

The sloughs are located near prime agricultural soils and they are highly scenic and popular canoeing and bird watching areas.

Conservation efforts: There are two conservation easements on wetlands associated with Fennon Slough. There are several lands in the proximity of Church Slough that have conservation easements, including Weaver Slough to the south and the wetlands associated with the Flathead River to the north.

Needs and opportunities: There is no apparent immediate threat to the sloughs. However, subdivision and development proposals, as well as land prices, are expected to continue increasing in this part of the valley.

Needs, including those previously identified which are still applicable, include:

- Protect remaining wetland and riparian forests, prime agricultural soils, and nesting sites for bald eagles and ospreys. In particular:
    - Work with the landowners to the southeast of Fennon Slough where there are numerous wetlands and osprey and bald eagle nests.
    - Work with landowners to the west of Church Slough and along Ashley Creek, and in the lands inside the slough, to protect the connectivity of bird habitat between the sloughs and along rivers and streams.
- Stabilize banks.

Upper Braided Area of the Flathead River

Continued growth and development along the Highway 2 corridor north of Evergreen could increase development pressures along the Flathead River corridor, increasing the urgency to protect remaining wetland and riparian forests along the river and in the floodplain, and to inform landowners about the ecological significance of these lands for protecting clean water and wildlife.

The Upper Braided Area of the Flathead River refers to the braided section of the river north of the Flathead River Islands, north of the Highway 35 bridge and south of Columbia Falls.

While this area is not as complex as the Flathead River Islands, it includes several islands, small wetlands, and gravel and sandbars which provide valuable wildlife and fish habitat.

The river corridor provides important year-round and/or breeding habitat for species of concern, including several upland game birds and pheasants, as well as river otter, beaver and osprey. Bull and cutthroat trout use the river system for migration and the Department of Fish, Wildlife and Parks (FWP) recorded a bull trout wintering site near Eleanor Island (Muhlfeld et al. 2000).

USFS lands on the Flathead River north of Hwy. 35 by G. Bissell, 2001

Cottonwood trees are indicators of healthy riparian areas and floodplains (Stanford, 2001) and they have been observed to regenerate in this area. Further to the south along the Flathead

River, regeneration of cottonwood trees has been arrested by artificial flooding. Kerr Dam operation has caused the inundation of gravel bars and sandbars where young cottonwoods would normally seed.

The shallow alluvial aquifer extends to the west, from the Flathead River to the Whitefish River. Groundwater exchange between the aquifer and the Flathead River is significant on this stretch of the river and water movement in the aquifer is fast (Noble and Stanford, 1986). Thus, nutrients and pollution entering the shallow alluvial aquifer could contribute to the pollution of the river and the lake. Nutrient filtering functions provided by wetlands and the floodplain on the shallow alluvial aquifer may be critical for protecting water quality in the river and the lake.

Conservation efforts: The Upper Braided Area is well-forested and generally undisturbed. The U.S. Forest Service, DNRC and FWP manage several islands and land parcels. Protection of functional wetlands, riparian corridors and floodplain areas along this stretch of the Flathead River, as well as on the shallow alluvial aquifer, is important to filter out nutrients and other pollutants from runoff before they reach the river.

Needs and opportunities: As with Fennon Slough, the Upper Braided Area had low threat scores in the critical lands evaluations. However, commercial and residential development north of Evergreen is occurring quickly. Needs, including those previously identified which are still applicable, include:

- Discourage destruction of intact riparian vegetation and development on wetlands and islands.
- Extend protection of the riparian vegetation and shallow groundwater areas to the west of the Flathead River, on the shallow alluvial aquifer.
- Inventory noxious weeds and weed management.
- Evaluate the cumulative impacts of development on the riparian corridor and on the shallow aquifer.

Flathead River corridor in the Columbia Falls area

The city of Columbia Falls is experiencing unprecedented residential development within the city boundaries, with a five-fold increase in the number of lots approved since 2002.

The Daily InterLake, a local newspaper, reported that the city used to approve 10.3 new lots per year on average. In 2003, 53 new lots were approved and an additional 251 lots received preliminary approval. In January 2004, the planning board in Columbia Falls approved the last large vacant residentially zoned lot left inside city limits (Bill Spence, The Daily InterLake, 01/25/2004).

The area identified as a priority for conservation extends from the Highway 2 bridge and the FWP Teakettle Fishing Access Site to the South Fork of the Flathead River, and includes State Trust Lands, Columbia Falls Aluminum Company (CFAC) lands, and private lands.

Flathead River near Columbia Falls ***by G. Bissell, 2001***

These lands ranked high for protection because they include several hundred acres of cottonwood riparian forests and wetlands associated with the Flathead River and its floodplain. Current wildlife values are not as high as historically, but the river and associated riparian vegetation are still used by bull and westslope cutthroat trout for migration and wintering, and by bald eagles and elk.

Fishing, boating, open space and scenic views are important assets for the local community. These values might increase even further as the city and surrounding areas become increasingly developed and populated.

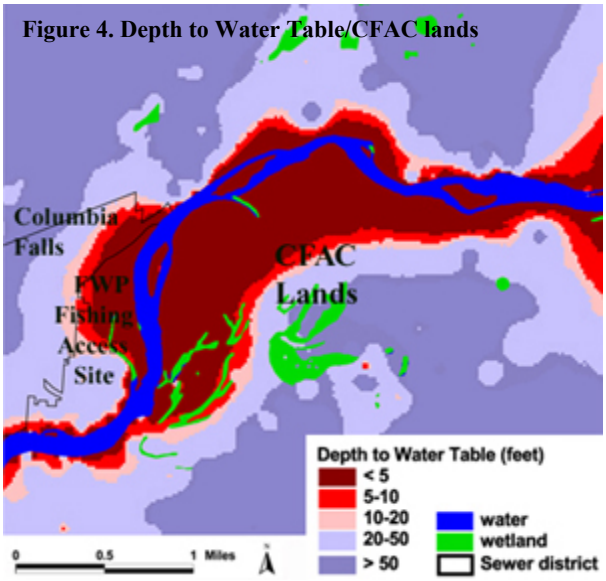
Shallow groundwater areas (less than five feet deep), shown on the 'Depth to Water Table' (see Figure 4) map, follow the general contour of existing riparian forest (south of the river) on CFAC lands and wetlands (west of the river) at FWP's Fishing Access Site.

Needs and opportunities:

- Approach Columbia Falls Aluminum

Company and other landowners to determine their plans for their lands and their interest in protecting them through a conservation easement.

Figure 4. Depth to Water Table/CFAC lands



- Assess whether existing regulations permit development of this area, which includes floodplain and wetlands, for residential or commercial use.
- Assess community needs and uses as they relate to these lands.

Ashley Creek drainage

The Ashley Creek drainage encompasses 327 square miles (approximately 210,000 acres) and includes several lakes and marshy wetlands.

Water Quality Concerns: Ashley Creek was listed as an impaired water body by Montana Department of Environmental Quality (MT DEQ 303d List)[5] in 1996 and 2000. The Ashley Creek drainage was also found to deliver the greatest nutrient loads per unit area to Flathead Lake, with the exception of nitrate/nitrite inputs.

Research indicated that the most developed areas, especially urban and agricultural land, contribute the greatest nutrient loads per acre to the lake (Stanford et al., 2001 in DEQ, 2001). In the Ashley Creek watershed, the lower drainage, which is undergoing the greatest development pressures, contributes the most nutrients downstream (DEQ, 2001).

[5] Section 303(d) of the federal Clean Water Act requires states to identify state waters where water quality is impaired or threatened and submit a list to the U.S. Environmental Protection Agency (EPA) every two years.

A recent watershed assessment indicated that the main factor leading to the degradation of stream, riparian and wetland health in the Ashley Creek watershed is the extensive removal of vegetation along the riparian corridors (Watershed Consulting, 2002).

Grazing and timber activities and related land uses were the main sources of pollution identified by the watershed assessment. Grazing impacts include livestock defecation, trampling of banks and channel bottom, soil compaction and vegetation removal. Related land use practices include irrigation, haying, channel straightening, ditching and dredging to reduce flooding.

The watershed assessment summarized stream conditions based on riparian cover and channel conditions. Stream reaches ranked as "very poor," defined by a severe lack in vegetation, evidence of channelization and wetland ditching and no large woody debris recruited, were assessed to provide restoration recommendations. Those reaches include:

- Kessler Flats on Mount Creek
- Brown's Meadow on Mount Creek
- Lower Mount Creek
- Truman Creek Meadows
- Smith Valley on Ashley Creek
- Ashley Creek below Ashley Lake.

Wildlife Concerns: Several species of special concern found in the drainage include westslope cutthroat trout, northern leopard frog, bald eagle and common loon.

Two important populations of westslope cutthroat trout exist in two major tributaries to Ashley Creek, in the headwaters of Truman Creek (100 percent genetically pure population) and Mount Creek (99 percent cutthroat-rainbow trout cross). A natural and a man-made barrier protect these native fish populations from further interbreeding with other non-native trout species.

The rare northern leopard frog, once common throughout Montana, is found in the Ashley Creek drainage in Foy Lake, Lower Foy Lake and the Fire Station pond (Lichtenberg, 2002).

Five common loon pairs nest in the Ashley Creek drainage in Ashley, Monroe and Lone lakes (Bissell, 2003). Loons also forage on other lakes, including Smith and Foy Lake. Threats to common loons include loss of nesting habitat on lake shorelines, disturbance of nests by fishermen, pets and boaters, and a decline in

water quality (Court, 2003).

Several wetland and riparian areas in this drainage provide significant habitat for several regionally significant birds, including Black Terns, red-necked grebes and wood ducks among others (Court, 2003). In particular, Smith Lake, Weaver Slough and older cottonwood forests along Ashley Creek, as it drains into the Flathead River, provide important nesting and foraging habitat.

Conservation efforts: The Flathead Basin Commission, a non-regulatory agency formed by the Montana Legislature in 1983 to monitor and protect water quality in the Flathead Basin, contracted with Watershed Consulting (now known as River Design Group), a private consulting firm, to conduct the watershed assessment for the upper Ashley Creek drainage.

A local watershed group, the Ashley Creek Watershed Group, was formed for the upper drainage and facilitated landowner contacts.

To address a lack of water available to fish and wildlife due to large quantities withdrawn for irrigation, FWP purchase water rights for in-stream use for fish and wildlife. The agency also monitors the common loon population and protects existing nesting and rearing areas.

There are three Waterfowl Production Areas (WPA) in the Ashley Creek drainage, which are managed by the U.S. Fish & Wildlife Service,

including Smith Lake, Batavia and Blasdel Waterfowl Production Areas. Residential development along the riparian corridor and associated wetlands between Smith Lake and Batavia WPA threatens these significant wildlife areas (Bissell, 2003).

Needs and opportunities:

- Reestablish the riparian vegetation to stabilize stream banks, reduce sedimentation and nutrient inputs and lower water temperatures (Watershed Consulting, 2002).
- Encourage protection of existing riparian areas .
- Reestablish the Ashley Creek Watershed Group to include landowners from the lower drainage.
- Research population trends of the northern leopard frog, potential threats and conservation needs.
- Incorporate wildlife habitat enhancement in stream restoration projects to address significant wildlife values in this drainage.
- Protect and manage wetlands between Smith Lake and Batavia Waterfowl Production Areas.

New Conservation Planning & Projects

RESEARCH STUDIES AND CONSERVATION PLANNING

Bird Diversity Areas: Research by Kingsford Jones and Andy Hansen, scientists at Montana State University in Bozeman, sponsored by the Yellowstone to Yukon Coalition, reported the following findings regarding key areas of bird[6] and sensitive bird species[7] diversity (Jones and Hansen, 2003):

- Some of the highest bird richness and abundance in Montana and in the U.S. portion of the Yellowstone to Yukon ecosystem are found in the Flathead Basin (see Figure 5. *PIF Bird Species Richness* map, page 15). Bird richness (native birds only) increases moving northwest from the Yellowstone Ecosystem to the Flathead Watershed, with the Yaak having the highest richness overall in western Montana, closely followed by the Flathead Basin.
- Bird richness primarily occurs in low valley bottom areas with a significant forest component (grassland areas were not included in the analysis due to a lack of data collection in those areas) and along the major rivers of northwest Montana. Hot spots of bird diversity occur in the North, Middle and South Fork Flathead River corridors, as well as the Stillwater and Swan rivers corridors, Swift Creek.
- Land productivity and habitat structural diversity are the strongest predictors of bird richness, both of which are very high in the Flathead Basin.
- Rich bird diversity areas in the Flathead Basin are found both on private and public lands.

The study concludes that bird hot spot areas occur on private valley lands that are undergoing rapid development and suggests that these areas be a conservation priority for the Y2Y program. Y2Y Science Coordinator Marcy Mahr further recommends 1) identifying remaining undeveloped, highly productive areas, and 2) assessing the vulnerability and irreplaceability of these areas for resident and migrant birds seeking summer breeding or stopover habitat.

Priority Bird Habitat Conservation Areas: The Intermountain West Joint Venture (IWJV), is a public/private partnership formed in 1994 dedicated to the conservation of bird habitat in selected portions of the 11 western states stretching from Canada to Mexico. The Montana Steering Committee for IWJV prepared a *Coordinated Implementation Plan for Bird Conservation in Western Montana* to identify, protect, restore and enhance wetlands and other important habitats for waterfowl and other migratory birds, as well as native resident birds in the western U.S.

The Montana Steering Committee for IWJV is formed by agencies and conservation groups participating in the Montana Bird Conservation Partnership.[8] This group will develop specific goals and measurable objectives for bird conservation in Montana.

Priority habitat conservation areas in the Flathead Watershed include the Flathead, Swan and Stillwater River corridors and the Mission Valley. Priority habitats for bird conservation in these areas include wetland, riparian, cedar, pine and burned forests and sage habitats (see Table 1).

Table 1. Draft Bird Habitat Conservation Areas (BHCAs) for Northwestern Montana

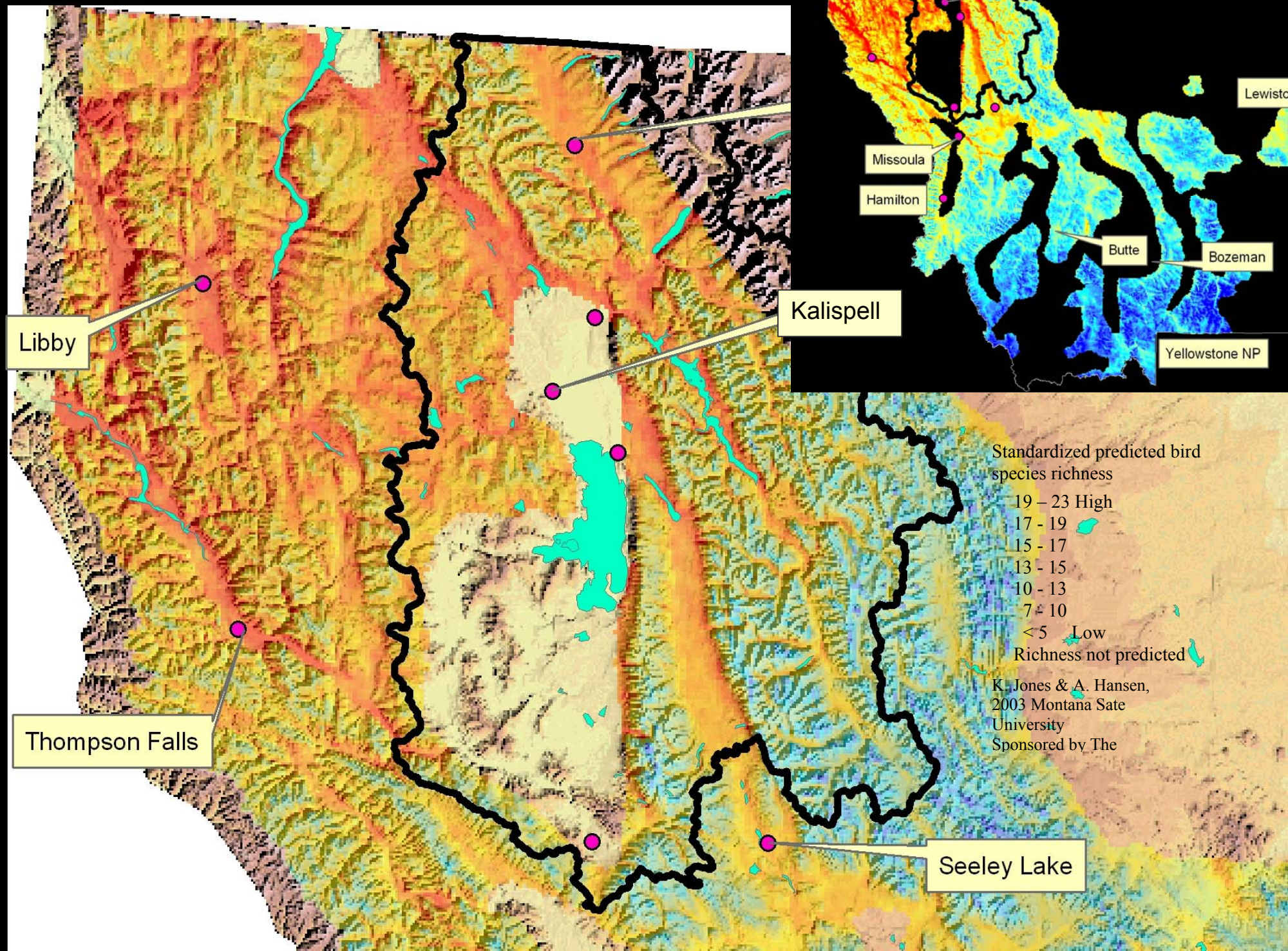
BHCA	Priority Habitats
Swan Valley	wetland, riparian, cedar
Mission Valley	wetland, riparian, pine, burned, sage
Stillwater River	wetland, riparian, spruce
Flathead Valley	wetland, riparian

[6] Bird data used include the US Forest Service Northern Regional Landbird Monitoring Project and from the North American Breeding Bird Survey, which is coordinated by the U.S. Geological Service and Canadian Wildlife Service.

[7] Sensitive bird species used include priority land bird species level I-III compiled by Montana Partners in Flight. Non-native species were removed from the analysis.

[8] The Montana Steering Committee for IWJV includes representatives from the American Bird Conservancy, Montana FWP, U.S. Fish & Wildlife Service, Bureau of Land Management, U.S. Forest Service, Ducks Unlimited, University of Montana, Montana Audubon, Plum Creek Timber Company, Confederated Salish and Kootenai Tribes, Montana Natural Heritage Program and The Montana Nature Conservancy.

Figure 5. Bird Species Richness in the Flathead Basin & Northwest Montana
(bird species from Montana Partners in Flight levels I-III priority list)



The IWJV draft plan (Montana Steering Committee Intermountain West Joint Venture, 2003) identifies priority bird species associated with priority habitats.

This information greatly enhances the ability of conservation planning in this region to target specific priority habitat and bird populations.

Aquatic and River Integrity Assessments in the Flathead Basin: Chris Frissell, Senior Staff Scientist with the Pacific Rivers Council and Lauren Oechsli, GIS Specialist with American Wildlands, mapped priority conservation areas for freshwater ecosystems in the western states to help guide conservation area design.

The Aquatic Integrity Area (AIA) model relies on road densities, native versus non-native fish abundance, stocking of rivers with fish and Natural Heritage plant and animal occurrences. The River Integrity Area (RIA) model relies on river connectivity (distance to dams), native species abundance, floodplain condition and headwaters integrity (based on AIA scores) (see Figure 6. *River Integrity Areas* map, page 17). These models suggest that:

- The North, Middle and South Forks of the Flathead River, together with the Swan River, are biological strongholds of regional and national significance.
- The Swan River corridor does not rank as high in the aquatic and river integrity model as Frissell believed it should due to gaps in the data.
- The Flathead Basin enjoys a relatively high degree of protection for many, but not all, of its most valuable watersheds and river segments.

Frissell emphasizes the need for higher resolution analysis to produce significant regional results to guide local conservation.

Flathead Subbasin Plan: The Confederated Salish and Kootenai Tribes (CS&K Tribes) and FWP are completing a Subbasin Plan for the Flathead Watershed funded by the Northwest Power and Conservation Council (NPCC).[9] The plan will help direct Bonneville Power Administration (BPA) funding of projects that protect, mitigate, and enhance fish and wildlife that have been adversely impacted by the development and operation of the Columbia River hydropower system.

The Flathead Subbasin Plan will include three sections: 1) an Assessment compiling and synthesizing existing technical information on the biological and physical characteristics of the Flathead Watershed, 2) an Inventory of ongoing fish and wildlife projects in the subbasin, and 3) a Management Plan. The Management Plan will describe the NPCC desired direction for fish and wildlife mitigation activities.

The plan will be submitted to the Northwest Power and Conservation Council for approval on May 16, 2004. Once approved, it will be formally adopted into the NPCC's Columbia Basin Fish and Wildlife Program.

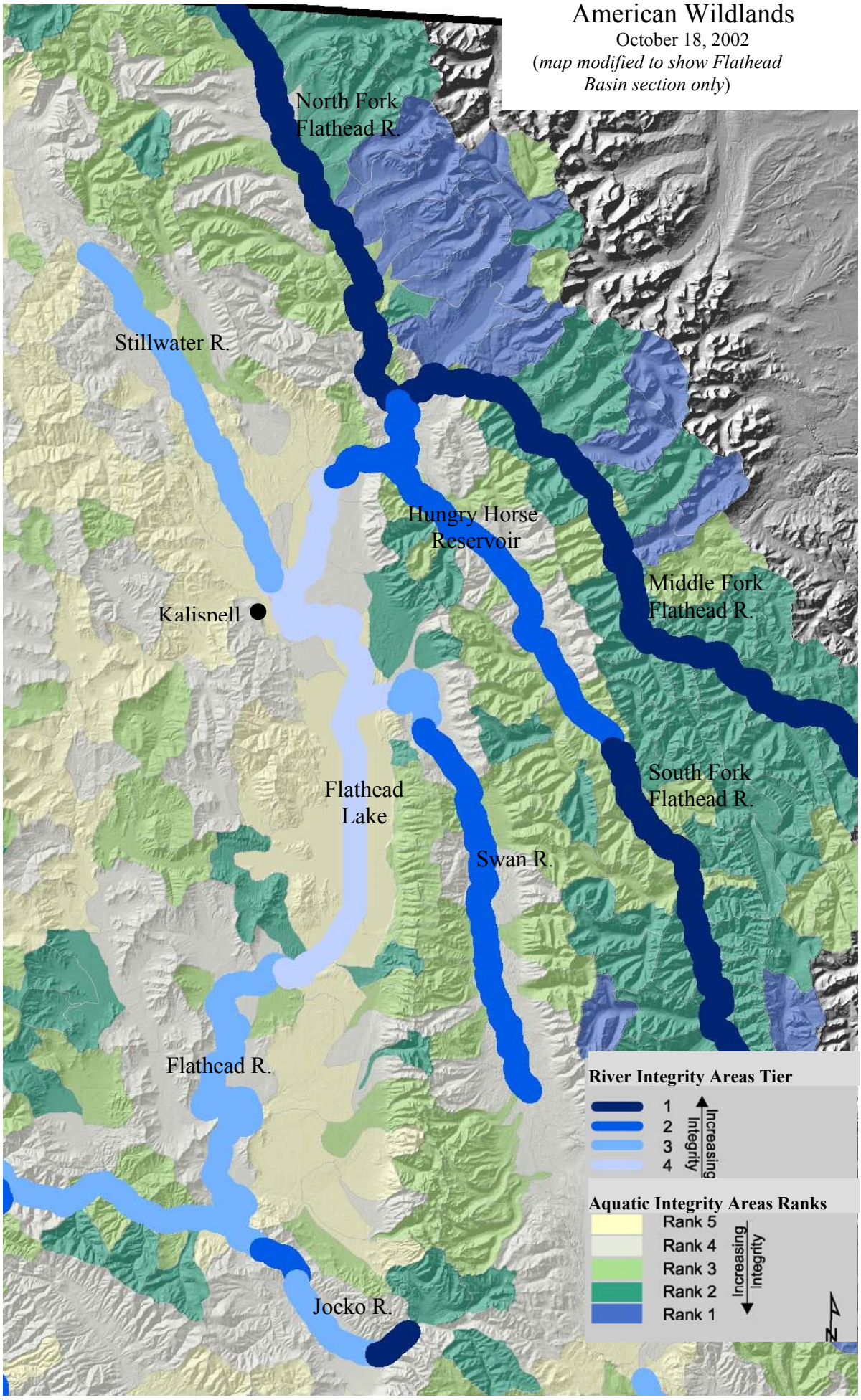
Stillwater Watershed Assessment: The Flathead Basin Commission contracted with River Design Group to conduct a watershed assessment for the Stillwater Watershed.

Initial results of this research suggest that:

- Residential areas contribute more nutrients than agricultural areas.
- The Whitefish River and the Farm to Market Reach contribute substantial nitrogen loading to the Stillwater River.
- Primary sources of phosphorus include bank erosion in the upper watershed, Logan Creek, the Farm to Market-Twin Bridges Reach and the Whitefish River. The lower agricultural reaches and upper developed reach function as sinks for phosphorus.
- Primary sources of total suspended solids (TSS) include the Farm to Market Reach, including Logan Creek, the agricultural reach and the Whitefish River. A sink for TSS is found between Church Street and Whitefish Stage Road.
- Water temperatures exceeded temperatures recommended for bull trout in the river.
- Surface water diversions affect discharge in middle and lower watersheds.

[9] The NPCC was created by Congress in 1980 to give Idaho, Montana, Oregon and Washington a voice in how the region plans for its energy needs, while at the same time mitigating the effects of the hydropower system on fish and wildlife in the Columbia River Basin.

Figure 6. River Integrity Areas
American Wildlands
October 18, 2002
(*map modified to show Flathead Basin section only*)



Further field work being conducted this year will provide information about habitat, sources of impairment, background (natural) nutrient and TSS levels in the watershed, and recommend potential voluntary treatments and restoration needs.

Ecoregional Conservation Planning:

The Nature Conservancy adopted Ecoregional Conservation Planning in 2000 to identify priority areas for conservation that ensure protection of a diversity of natural plants, animals and landscapes. Biological hot spots represent a full complement of ecosystems, natural communities and species characteristic of an ecoregion.

The Flathead Basin is included in the "Canadian Rockies" Ecoregion as defined by The Nature Conservancy. A conservation plan for the North Fork of the Flathead River is completed. Conservation plans for the Middle and South Forks and the Swan River area are underway and will guide the land trust's conservation strategies and actions.

The Swan Valley Conservation Plan:

The Swan Ecosystem Center has been working with a large stakeholders group to develop a conservation plan for the Swan Valley, a watershed-scale strategy to protect the timber economy, wildlife habitat and access to recreation.

The Swan Valley Conservation Plan includes:

- Strategic purchase of available private valley-bottom forest lands on parcels that face high probability of sale and subdivision. Land purchase is done through the Swan Valley Community Forest Program to conserve working forests, wetlands, wildlife habitat, recreation, and the economic and cultural resources of the greater Swan Valley community, while keeping the land in private ownership, therefore helping maintain the tax base for the community. This program is a key tool for retaining and restoring valley-bottom forest lands.
- Purchase of conservation easements with Forest Legacy Program dollars to protect Plum Creek's upland core timberland from subdivision and conversion to non-timber uses, while protecting the future timber economy and public access.
- Purchase of Plum Creek land by the U.S. Forest Service with Land and Water Conservation and Habitat Conservation Funding to protect critical wildlife habitat and public access in the Swan Valley.
- A conservation easements program on private land to help private landowners realize conservation goals, while keeping land in private ownership.

The Swan Ecosystem Center is also managing a grant from the DEQ to conduct a watershed assessment and determine Total Maximum Daily Loads for the Swan River Basin. The grant includes funding for water quality monitoring and public education.

CONSERVATION PROGRAMS

Montana In Lieu Fee Aquatic Resource Mitigation Program: The purpose of the In Lieu Fee Aquatic Resource Mitigation Program (ILF) is to establish an additional voluntary mechanism to compensate for aquatic resource impacts and losses resulting from regulated activities in Montana and to provide greater flexibility for project mitigation to permittees.

Projects developed by the Montana Wetlands Legacy (the ILF Administrator), an incentive based partnership dedicated to conserving Montana's wetlands, riparian areas and associated uplands, will be used to mitigate for U.S. Army Corps of Engineers (Corps) Nationwide Permits, Regional General Permits, Letters of Permission, and Individual Permits (collectively "permits") as set forth in the Code of Federal Regulations (33 CFR Parts 320-331), and for other actions affecting aquatic resources governed by federal or state regulations, including Montana's Section 401 water quality certifications.

Typically, the ILF option will be utilized primarily for projects authorized by general permit. A Legacy Trust Fund will be set up within Montana Department of Fish, Wildlife and Parks to receive and disburse funds for wetland and stream mitigation projects. Permittees and other contributors to the Legacy Trust will be provided this option only after avoidance and minimization of project related and other impacts has been accomplished to the maximum extent practicable as required by Corps Regulations, EPA 404(b)(1) guidelines, the 2002 Mitigation Regulatory Guidance Letter (RGL 02-02), and the 1990 Corps/EPA Mitigation Memorandum of Agreement, or following formal resolution of

enforcement and legal actions at the state or federal level.

The Legacy Trust can be used when there is no practicable opportunity for on-site compensation, or when use of the ILF Agreement is environmentally preferable to on-site compensation.

Natural Resources Conservation Service Programs: The 2002 Farm Bill has reauthorized Natural Resources Conservation Service's conservation programs and initiated several new ones. These programs provide voluntary incentives for landowners to improve or maintain the quality of natural resources on their property, and include:

The *Conservation Security Program* (CSP) is a new program that provides payments to producers who historically have practiced good stewardship on their agricultural lands as well as provides incentives for those who want to do more to improve soil, water, and related resources on tribal and private lands.

The *Grassland Reserve Program*, also known as the Conservation of Private Grazing Land Program, is a new program to help landowners address natural resource concerns on private grazing lands.

The *Farmlands Protection Program* (FPP) provides matching funds to protect productive farm and ranch land through the purchase of conservation easements.

The *Conservation Reserve Program* (CRP) provides annual rental payments and cost-share assistance for 10 to 15 years to implement high priority conservation practices on croplands and in areas were riparian vegetation could be restored.

The *Wetlands Reserve Program* (WRP) provides technical and financial assistance to restore and protect wetlands and address wildlife habitat, soil, water and other related natural resource concerns on private lands in exchange for retiring marginal land from agriculture.

The *Environmental Quality Incentives Program* (EQIP) provides technical and financial assistance to install or implement structural and management conservation practices on agricultural lands to improve or maintain the health of natural resources in the area. Practices can include management of nutrients, manure, pests, irrigation water and wildlife habitat.

The *Wildlife Habitat Incentives Program* (WHIP) creates high quality wildlife habitats (upland, wetland, riparian and aquatic habitat areas) that support wildlife populations of national, state, tribal and local significance.

The *National Natural Resources Conservation Foundation* (NNRCF), a private, nonprofit corporation, conducts research and educational activities to promote voluntary conservation on private land.

The *Resource Conservation and Development Program* (RC&D) encourages civic leaders in designated RC&D areas to plan and carry out projects for resource conservation and community development. Projects focus on "quality of life" improvements that lead to sustainable communities, prudent land use and conservation of natural resources.

Flathead Conservation District Outreach: The Flathead Conservation District is enhancing its outreach and education programs, as well as continuing to manage existing programs and projects such as the 310 Permit Application process, East Spring Creek Rehabilitation Project and the Haskill Watershed Group.

An outreach coordinator will be hired in the near future to coordinate outreach and communication activities. The Flathead Conservation District is planning to strengthen education about river systems for adults and students in elementary schools and high schools (Watershed Trunk, Rolling Rivers Trailer, Family Forestry Expo), encourage stream bank restoration (FCD Cost Share Program, demonstration projects), and assist landowners, county professionals and realtors with planning to encourage appropriate land use practices along rivers and streams (field visits, Small Landowner Workshops, Land Use/ Management Workshops).

A new *Joint Application Process* was developed in the last year to facilitate permit applications for work conducted on streams, floodplains and other water bodies. This new application streamlines multiple local, state, and federal permit requirements into one (including the 310 Permit, the SPA 124 Permit, the Floodplain permit, the Section 404 Permit/Section 10, the 318 Authorization, and the Navigable Rivers Land Use License or Easement).

Critical Lands Protection & Restoration Accomplishments

The Flathead Lakers initiated the Critical Lands Project to address concerns about the potential impacts caused by acute growth and development to lands and waters critical to maintaining the quality of Flathead Lake.

Resource professionals from tribal, state, federal, and county resource management agencies, research scientists, and conservationists worked together to develop criteria for defining critical lands, to identify initial priority areas, and to develop and implement strategies for critical lands protection and restoration.

LAND CONSERVATION

Project goal: to protect high priority lands that will help maintain or improve water quality, such as wetlands, riparian areas, and flood plains.

Conservation easements

One means for protecting critical lands is through the purchase and donation of conservation easements, whereby a landowner voluntarily restricts development on his or her property in perpetuity. A conservation easement can be placed with a nonprofit land trust organization in charge of holding the easement and ensuring that various parties abide by the agreed upon contract. Various natural resource management agencies, including the U.S. Natural Resources Conservation Service and Montana Department of Fish, Wildlife and Parks, also hold easements, some of which are temporary and others are in perpetuity.

A conservation easement contract can be relatively flexible to the landowner needs and desires for the future use and management of that property. Organizations and agencies that hold conservation easements negotiate the contract depending on their interests and goals, including provisions to protect prime agricultural soils, important wildlife corridors, scenery and recreational opportunities, and water quality.

Weaver-McWenneger Sloughs Project:

The Flathead Land Trust and its partners pursued an ambitious project to protect approximately 1,900 acres of prime farm land and ecologically significant wetlands and sloughs at Weaver and McWenneger Sloughs and at Foys Bend along the Flathead River near Kalispell.

The Flathead Land Trust began work on this effort in 1999. The project's goal was to purchase development rights to place five properties under the permanent protection of conservation easements, and facilitate fee acquisition of one property by the U.S. Fish & Wildlife Service. This project gave landowners the opportunity to be compensated for development values they forego. With the exception of the fee acquisition of one property, the lands remain in private ownership and in continued agricultural production. Donated development rights were also part of the project.

McWenneger Slough, photo by Gael Bissell

The Critical Lands Project added its support to the Weaver and McWenneger Sloughs Project after it identified these lands as high priorities for protection.

These large sloughs, wetlands and riparian areas help maintain clean water, provide fish and wildlife habitat, support recreation, and contribute to maintaining the agricultural heritage and economy in the Flathead Valley (for a more detailed description of this area see the *Critical Lands Status Report, June 2002*).

Partnerships and funding

At least 28 organizations, agencies and farm families participated in making this project a success (see Table 2. List of partner agencies and organizations).

The project broadened its scope to partner with agencies and organizations working to protect pothole wetlands in the Mission Valley. These wetlands around the Ninepipe Waterfowl Production Area and Ninepipe National Wildlife Refuge provide significant nesting and breeding habitat for waterfowl.

Project partners provided support and leadership to accomplish multiple tasks including: contacting landowners, conducting easement transactions, providing technical information about wildlife and water quality values, grant writing and coordination at the state and national level, providing in-kind match for grants, including match as a donated conservation easements, and communicating with government representatives and key agencies to secure North American Wetlands Act funding at the national level and maintain funding commitments by the Bonneville Power Administration

Collaboration

Collaboration brought diverse expertise to this complex project, such as information about local bird habitat and populations, knowledge about land transactions, landowner knowledge, and understanding complex grant and political processes.

Working together promoted the protection of areas with multiple values, such as farmland, wildlife habitat, water quality, and recreation benefits.

Partnering with many groups brought important local matching projects and funding needed to secure nationally competitive grants. Diverse partnerships were an important factor in competing for North American Wetlands Conservation Act (NAWCA) funding.

This project gives landowners the opportunity to be compensated for development values. However, conservation of critical areas and important farm land at this scale happened only because of the willingness and conservation ethic of the landowners.

Challenges and Key Lessons Learned

Roger Semler, Executive Director for the Flathead Land Trust, reflected on the Weaver and McWenneger Sloughs Project during the fourth Critical Lands Workshop, raising key issues about what we have learned to help address conservation challenges and future goals.

1) Timeframe: There is a need to expedite the process to avoid stretching landowners' patience. This project took three and a half years to complete, longer than original expectations, jeopardizing the commitment of landowners and matching funding sources.

2) Matching funding sources: There is a need to identify and secure matching funds for projects, including:

- encourage the U.S. Fish & Wildlife Service NAWCA grant program to honor BPA funds as match,
- identify match for the Farmland Protection Funds early in the process,
- identify new private foundation resources,
- develop local funding sources such as the proposed Land and Water Bond,
- clearly understand the rules of engagement from funding sources (what can be used as match, how it can be used, timeline, process, etc.),
- develop funding sources for administrative oversight.

3) Full disclosure by and to all partners: There is a need to:

- disclose all applicable funds from partner organizations,
- clearly agree on the value of acreage early in the process,
- avoid specific promises about timing,
- be clear and forthcoming with procedures.

Semler concluded that there is a need to make the process smoother to ensure the experience is positive for landowners.

Several housing development proposals (Skyview Estates I & II and Ficken Farms I & II) emerged around the project area in 2003 and 2004, which may diminish the wildlife conservation value of the area, including U.S. Fish & Wildlife Service protected areas (Blasdel and Flathead Lake Waterfowl Protection Areas).

A participating landowner sold his land to a developer before funding to the project was finalized. The property sold is east of the core area of the project. Project partners were not able to secure funding or a conservation buyer quickly enough to prevent this, except for facilitating the purchase of 60 acres of the most critical waterfowl habitat on the property.

Several project partners are troubled by the ability of dense residential developments to be located in the proximity of protected wildlife areas and large farmland properties under conservation easements.

When the final transactions are completed, the project will protect approximately 1,500 acres of wetlands, riparian areas and farmland in Weaver and McWenneger Sloughs and Foys Bend using the voluntary means of purchased and donated development rights. In the Mission Valley, purchase of 270 acres adjacent to the Ninepipe Wildlife Management Area will add to the existing protected 3,500 acres of some of the most productive waterfowl and upland game bird habitat in the Flathead River drainage.

The Critical Lands Project views this land conservation project a first step in a long-range strategy to protect priority riparian areas and wetlands that are important for keeping Flathead Lake and its tributaries clean and healthy.

Table 2. List of partner agencies and organizations for the Weaver Slough/Glaciated Valleys of Northwest Montana Project

Agencies & organizations	Contacts and activities accomplished
Flathead Land Trust	Roger Semler, Exec. Director; Ken Siderius, President, Susan How, previous Exec. Director: initiated this project, forged key partnerships, liaison to landowners, submitted grant proposals, coordinated funding sources and matches, negotiated easement contracts.
Department of Fish, Wildlife & Parks	Gael Bissell, Habitat Conservationist; Alan Wood, Wildlife Mitigation Coordinator; Brian Marotz, Fisheries Biologist; Dan Vincent, Region 1 Regional Supervisor: provided significant technical and financial support to the project, including providing technical information, grant writing, funding and coordination.
American Bird Conservancy	Dan Casey, Program Director: provided bird conservation data and grant writing support critical for the NAWCA grant.
Flathead and Montana Audubon	Linda Winnie, Board Members and Janet Ellis, Program Director: provided in-kind match for the NAWCA grant.
Confederated Salish & Kootenai Tribes	Tribal Council; Lynn Ducharme, Watershed Coordinator; Dale Becker, Wildlife Biologist: helped define native fish credits as required by Bonneville Power Administration funding; provided a letter of support for the NAWCA grant.
Montana Wetlands Legacy	Tom Hinz, Coordinator: helped coordinate the NAWCA grant application. This agency helps coordinate state-wide efforts to secure federal funding for wetlands protection in Montana.
Natural Resources Conservation Service	Mary McDonald (state) and Angel Rosario (local), Resource Conservationists: helped prepare conservation easements to ensure best management practices on farm lands.
Flathead Conservation District	Larry van Rinsum, District Conservationist: leading a restoration and education effort on the banks of the Stillwater River. The project provides match for the NAWCA grant.
Montana Land Reliance	Amy Royer, Flathead Glacier Director: helped landowners place conservation easements on their lands and subsequently coordinated using those donated easements as match toward the NAWCA grant.
U.S. Fish & Wildlife Service	Bill West, Assistant Manager: leading the effort to protect waterfowl habitat in the Ninepipe area of the Mission Valley. Rox Rogers, Private Lands Biologist: helped with NAWCA grant writing and application logistics.
Flathead Lakers	Board Members and staff: helped contact public officials and funders to secure funding for the project, assisted with grant writing and outreach to build support for the project.
MT Noxious Weeds Trust Fund	Dave Burch: provided match for the NAWCA grant through work to control noxious weeds in the Mission Valley.
Mission Valley Pheasants Forever	Greg Shafter, President; Sid Rundell, Board Member: secured protection of the Ringneck Ranch and coordinated project efforts in the Mission Valley.
Northwest Power and Conservation Council	Kerry Berg, Policy Analyst; Ed Barlett and John Hines, Montana Council Members: helped secure BPA funds for this project.

Montana Public Officials	
Congressional Representatives	Senator Max Baucus; Rebecca Manna, Senior Staff Advisor: helped revive BPA funding for the project. Senator Conrad Burns; Todd Capser, Staff Advisor: helped secure funding for the NAWCA Program in the Senate when continued, adequate funding for it was threatened.
Montana State Government	Governor Judy Martz; Todd O'Hair, Natural Resources Advisor: supported BPA funding for the project.
Funding Agencies	
Bonneville Power Administration	Mark Reller, Montana Representative; Joe DeHerrera, Philip Key, Rebecca Hallgarth: coordinated fish and wildlife mitigation funding for the project.
USDA/Natural Resources Conservation Service	Dennis Dellwo, WRP, FRPP, and GRP Program Specialist: helped secure the Farmland Protection Program funds for this project.
U.S. Fish & Wildlife Service Small and Large North American Wetlands Act Grant	Rox Rogers, Private Lands Biologist (Creston, MT), Carol Lively, Prairie Pothole Joint Venture Coordinator (Denver, CO): assisted with Large NAWCA grant application.
Landowners	
Landowners around Weaver Slough	Ray and Darlene Sanders; Rusby and Liz Seabaugh; Steve and Sue Cummings; Larry and Bernice O'Connell: placed an easement on their properties at Weaver Slough through purchase and bargain sale of conservation easements.
Landowners in project areas	Mr. and Mrs. John Heine and Dave Heine; Eric and Rebecca Smith: donated easements at Weaver and McWenneger Sloughs.
Landowner at McWenneger Slough	anonymous: purchase and bargain sale of conservation easements.

Owen Sowerwine Natural Area Project: Critical Lands Project partners decided to support this effort by Montana Audubon and Flathead Audubon to secure a conservation easement on 442 acres of critical riparian habitat along the Flathead River near Kalispell.

One of the most sensitive areas identified by the Critical Lands Project is the Flathead River corridor and associated floodplain in the area of braided river channels, sloughs and islands where the Owen Sowerwine Natural Area (OSNA) is located. This and adjacent riparian areas include some of the best examples of riparian shrub and forest communities in the Flathead Valley. The area is popular for hunting, fishing, bird watching and boating.

The goal of this project is to secure a conservation easement on the OSNA by securing funding for the project and by helping to develop a process by which the DNRC can place a conservation easement on its lands.

STREAM RESTORATION

Critical Lands Project partners initiated two restoration projects to help improve water quality, wildlife habitat and demonstrate techniques for restoring and revegetating stream and river banks. Project partners identified potential project sites, developed criteria to rank projects, contacted landowners to evaluate their interest and willingness to participate, visited and evaluated potential restoration project sites and identified two sites for initial work.

The Flathead Lakers secured a grant of technical assistance for restoration design from the National Parks Service Rivers, Trails & Conservation Program (RTCA). The Flathead Conservation District created a fund to cost-share stream restoration projects.

The goal of stream restoration projects is to restore high priority stream and river banks, and develop an outreach program to demonstrate stream bank restoration and revegetation techniques and promote planting and maintaining buffer strips along stream and river banks and lake shores.

Mill Creek Restoration Project: The first restoration demonstration project was initiated in the spring of 2003 at the M&M Llama Farm on Mill Creek, a tributary of the Flathead River near Creston. The planned restoration work was completed in May, 2004. This project used bioengineering techniques "Vertical bundles" and "Brush Mattress" to stabilize eroding banks using mainly willow cuttings and bundles. The Mill Creek restoration project was a collaboration

between M&M Llamas (the land owner), the Flathead Conservation District, RTCA, the Confederated Salish and Kootenai Tribes and the Flathead Lakers. RTCA provided the stream restoration design and coordinated project implementation. The Flathead Conservation District was instrumental in contacting the landowners, providing funding for materials and helping plan and implement the project.

Stillwater River Restoration Project: Shirley Harrison, a science teacher at the Vocational Agricultural (VoAg) Center with the District 5 High School called attention to the erosion problem the school and adjacent Flathead County lands are experiencing on the banks of the Stillwater River southeast of Kalispell.

The Flathead Conservation District is leading a collaborative effort to restore the river banks while teaching students about stream restoration and river dynamics concepts.

The project will include relocation of a pig barn away from the river, bank stabilization and floodplain restoration on approximately 800 feet along the Stillwater River, and restoration of riparian vegetation by planting a combination of grasses, shrubs and trees, emphasizing native plant species.

Science teachers at the school are integrating the project into their science curriculum to help students learn about rivers, land use management options and restoration techniques. The project was initiated with an initial assessment by science students of the problems and potential solutions for bank erosion on the Stillwater River abutting the school and for livestock grazing on school and adjacent county lands. Students presented their findings to the Flathead Conservation District.

Numerous private and nonprofit groups and government agencies are providing in-kind assistance for this project. Land and Water Consulting, Inc. is donating the restoration design, Natural Resources Conservation Service is providing assistance with a livestock management plan and evaluating the relocation of the pig barn. Bonneville Power Administration and the Confederated Salish and Kootenai Tribes are providing financial and technical assistance for the project and RTCA is providing restoration design assistance and oversight. Montana Department of Fish, Wildlife and Parks, Flathead Audubon Society, American Bird Conservancy and the Flathead Lakers are providing in-kind assistance for the project.

EDUCATION & OUTREACH

Another goal of the Critical Lands Project is to build public support for the conservation of critical lands, in particular riparian corridors, wetlands and floodplains. Steps taken to inform the public about critical areas include:

The Flathead River Map: The Flathead Lakers and the Flathead Basin Commission joined efforts to produce a map of the Flathead River and surrounding area for use as an educational tool.

The Flathead River Map includes information about the importance of the river and ways to protect it, including information about recreation, riparian forests, wetlands, and shallow groundwater areas. The map also provides information about the connections between the river and adjacent lands, including the wetlands, floodplains, riparian corridors, the shallow alluvial aquifer, and Flathead Lake, and their importance for protecting clean water in the river and Flathead Lake.

The map is distributed through various government agencies, conservation organizations, Chambers of Commerce, outdoor recreation centers and sporting goods stores, and bookstores.

Sensitivity Analysis GIS Maps Distribution: Maps of the Flathead Valley north of Flathead Lake were produced to illustrate land use change from 1990 to 1997, shallow groundwater areas, riparian and wetland areas, open space and development pressures.

The Flathead Lakers have provided map copies or combinations of various map layers to organizations, agencies and individuals upon request. Requests were often initiated by residents

in relation to a development proposal in their neighborhood.

The most requested map is the Depth to Groundwater Table map (see Figure 7, page 26), followed by the Flathead Valley map which identify wildlife values along the Flathead River.

Two new maps, the 'Shallow groundwater areas & structural densities' and the 'Shallow groundwater areas & road densities' maps, highlight structural (buildings) and road densities on shallow groundwater areas (see Figures 8 & 9, page 27).

High structural and road density areas may contribute runoff pollution from roads and residences. This can be of special concern in areas where the groundwater is shallow (shown in red in the maps). Low structural and road density areas on shallow groundwater may call for special preventive measures to prevent pollution from entering the groundwater.

The Flathead Valley GIS maps were produced for the Critical Lands Project by the University of Montana's Flathead Lake Biological Station in 2001, except for the latest two maps which were produced by the Flathead Lakers in 2003 using existing GIS layers.

Critical Lands Project Web Page: The Flathead Lakers added several new sections to their existing web site to include information about the Critical Lands Project and critical lands and related natural resources (www.flatheadlakers.org).

New sections include:

- Critical Lands Project
- Critical Lands & Natural Resources
- Wetlands
- Riparian Areas
- Flathead Lake and the Flathead Watershed

The Flathead Lakers will continue to expand their web site to include additional information about critical areas, improve links to project partners that provide services to the community and provide web site users with opportunities to take action.

Public Presentations: Presentations are given several times a year to interested groups to build public support for the conservation of critical lands, inform the public and key decision makers about critical areas, and promote specific land conservation projects.

In 2002 and 2003, presentations were given at the Montana Wetlands Legacy Program Conference, the Kalispell Chamber of Commerce's Natural Resource Committee Field Tour and Leadership Flathead Seminar, and to the Montana Wetlands Council, the U.S. Fish & Wildlife Service, the Polson Rotary Club, the Flathead Lakers' Annual Meeting, a University of Montana Environmental Policy Class, and the Flathead Basin Commission.

Critical Lands Tours: Critical Lands Project partners provided tours of critical areas for decision-makers, including a tour of wetland and riparian areas in the Flathead Valley where conservation projects are underway and require public support, and a tour of floodplain areas to illustrate potential loopholes or problems in existing floodplain regulations.

Critical Lands Project partners also organized visits to potential stream restoration sites for participating agencies and organizations to help select restoration projects.

COLLABORATION

One of the goals of the Critical Lands Project is to build trust, communication, and strong and sustainable partnerships among natural resource agencies and organizations in the Flathead River Basin in order to collaboratively protect and restore priority lands critical to improving water quality in Flathead Lake. The Flathead Lakers conducted the following activities to achieve this goal:

Critical Lands Workshops: The Flathead Lakers have held four Critical Lands Workshops since the project was first launched in November, 1999. Workshops have been attended by representatives from resource management agencies, land conservation organizations, and scientists.

Participants developed and agreed on criteria for defining critical lands, identified critical areas, developed strategies for cooperation and action and shared information about research, programs and projects at these workshops.

E-mail Network: The Flathead Lakers established and managed an E-Mail Network for all project participants to provide them with information about project progress and to offer them opportunities to share information with each other and participate in project implementation.

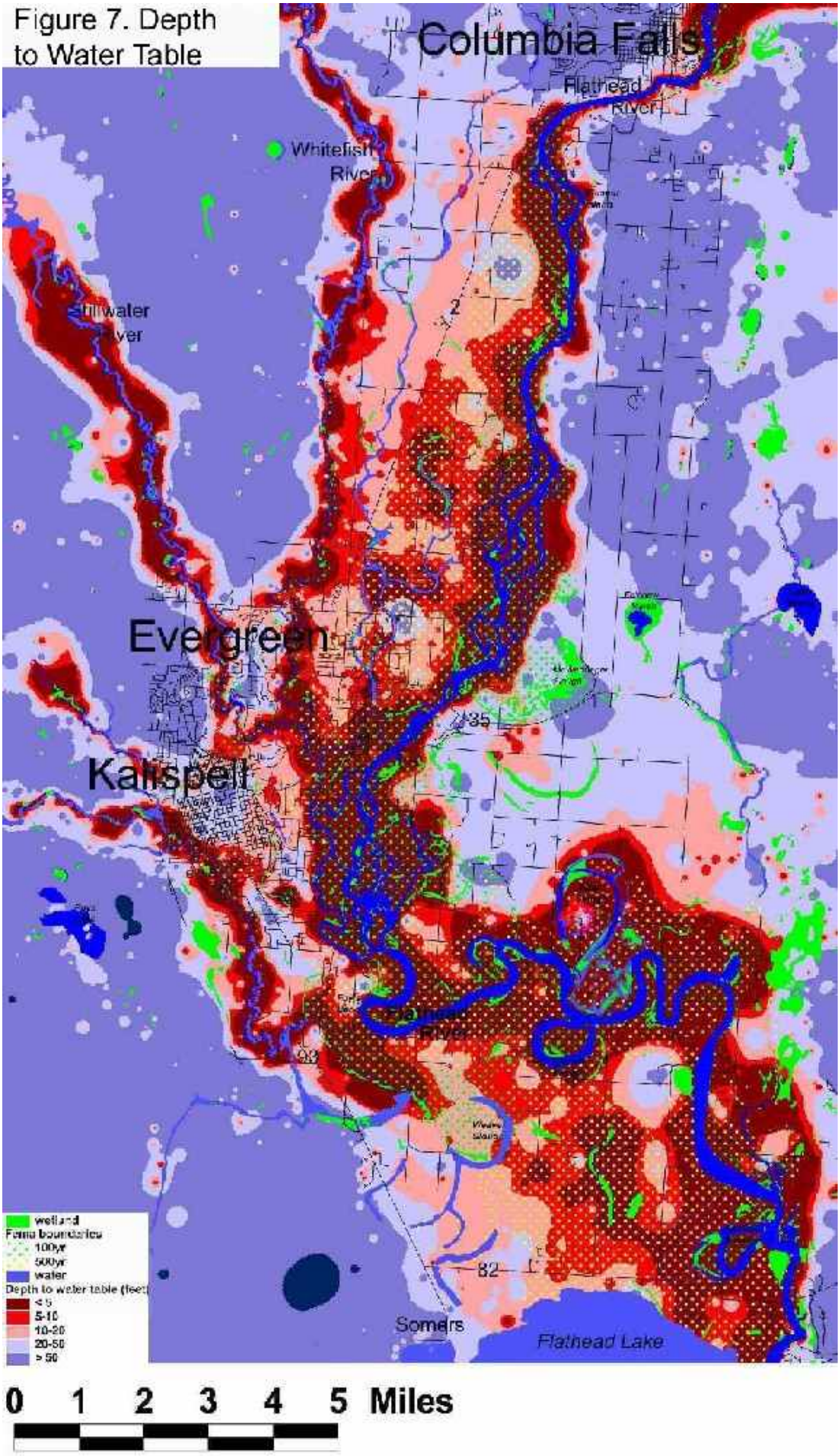


Figure 7. Depth to Water Table
Columbia Falls
Flathead River
Whitefish River
Evergreen
Kalispell
Somers
Flathead Lake
wetland
Fema boundaries
100yr
500yr
water
Depth to water table (feet)
< 5
5-10
10-20
20-50
> 50
0 1 2 3 4 5 Miles

Figure 8

Shallow Groundwater Areas & Road Density (1997)

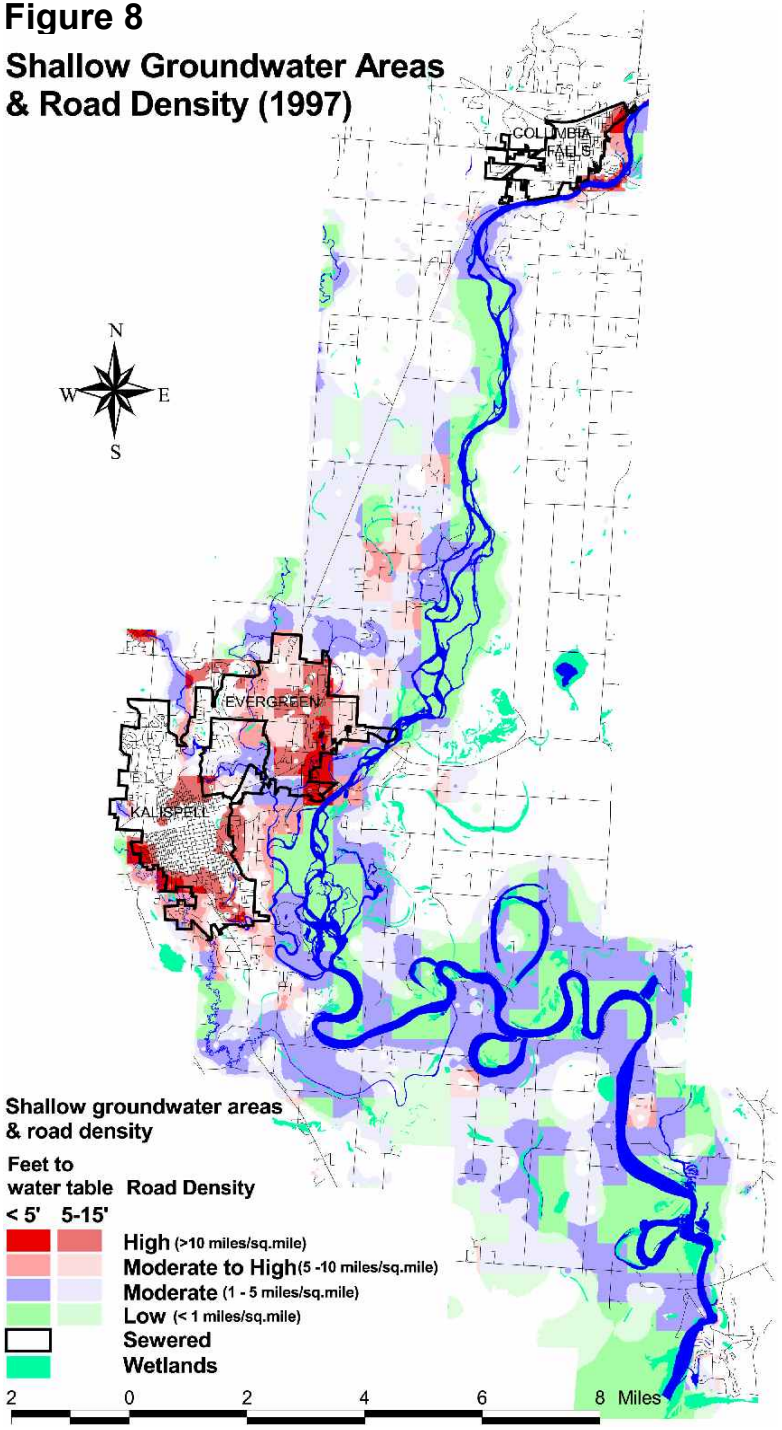
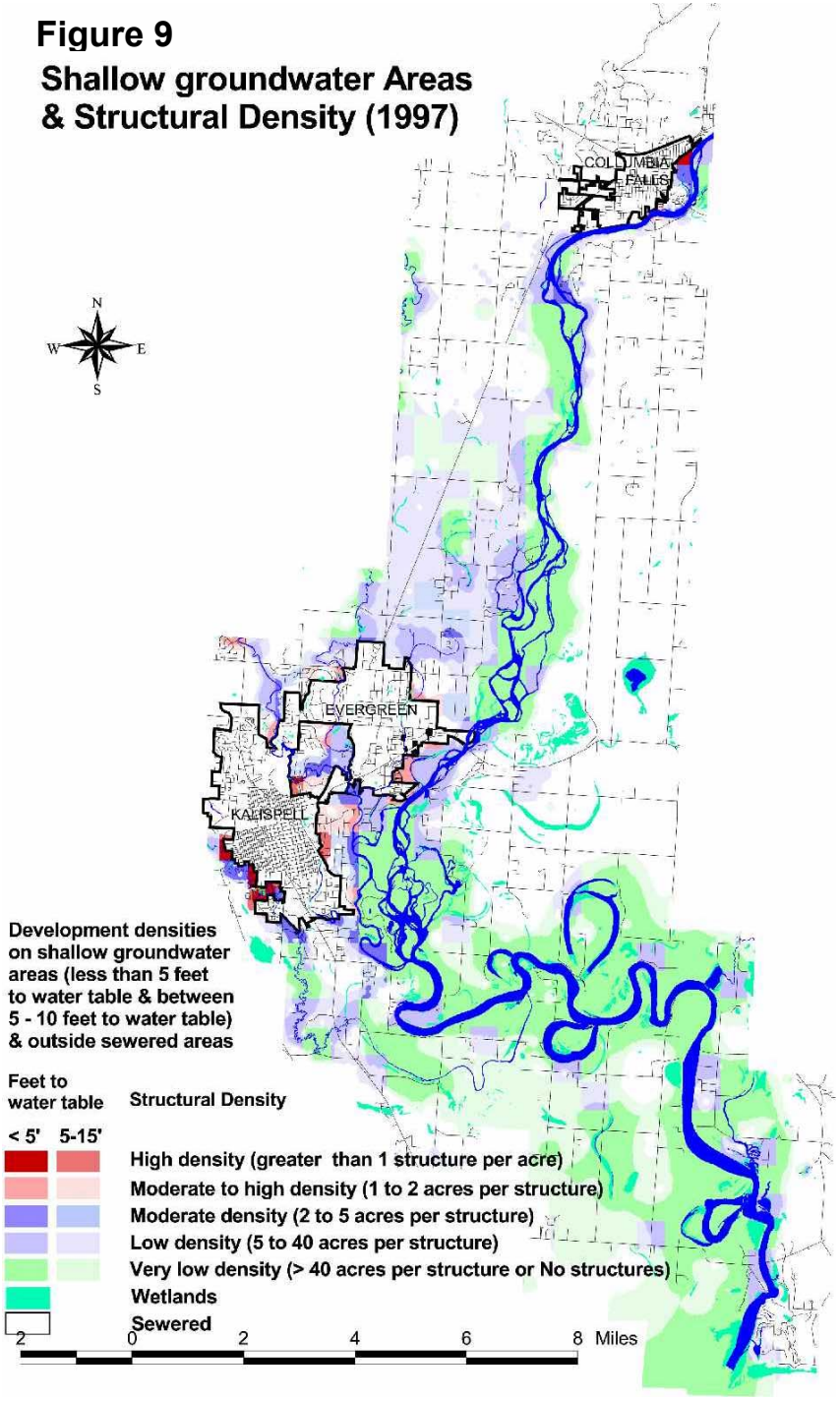


Figure 9

Shallow groundwater Areas & Structural Density (1997)



Draft Action Plan: A core group of key Critical Lands Project participants met several times between workshops to identify goals and objectives, work on strategies and actions, implement projects, initiate new projects, share information about ongoing and new conservation initiatives, and share technical resources.

Key core group participants included representatives of the Flathead Land Trust, the Montana Department of Fish, Wildlife and Parks, the Flathead Conservation District, American Bird Conservancy, Audubon, Trout Unlimited, the Confederated Salish and Kootenai Tribes and the Flathead Lakers. Other project participants provided planning and implementation support, including the University of Montana Flathead Lake Biological Station, and the Flathead County Health Department. Other groups involved in watershed efforts and local initiatives, including the Flathead Basin Commission, the Birch Creek Trail Group, the Haskill Basin Watershed Group, Land & Water Consulting, Inc., and Water Consulting, Inc., were involved in assessment of potential restoration projects.

Project participants identified five major categories of critical lands protection strategies and projects at the third Critical Lands Workshop in 2002:

- promote adoption of policies to protect water quality;
- develop, implement and promote specific land protection projects;
- develop education programs and promote incentives to protect critical lands;
- coordinate communication and planning efforts to protect critical areas;
- ensure Montana receives a fair share of hydropower mitigation funding.

The main goals outlined by core group participants include:

Goal 1: Identify opportunities for conservation and restoration projects that meet critical lands criteria. Specific strategies and actions were identified for two conservation projects, the *Glaciated Valleys of Northwest Montana Project* and the *Owen Sowerwine Natural Area Project,* in order to secure funding and conservation partners for these projects, and for two stream restoration projects, the *Stillwater River* and the *Mill Creek* projects.

Goal 2: Strengthen collaboration and identify responsibilities for project implementation. Specific strategies and actions identified include defining the core working group and the participation of organizations' boards, identifying new conservation projects, coordinating and sharing technical resources among participating groups, and evaluating and celebrating efforts.

Goal 3: Conduct education and outreach to gain support for conservation projects. Specific strategies and actions identified include conducting outreach to landowners in priority areas to gain support for conservation easements, crafting and delivering conservation messages about the importance of critical lands, developing support for the land and water bond, and increasing understanding of surface and groundwater interactions in the shallow alluvial aquifer.

Goal 4: Coordinate with large landscape projects. The core group decided that it was important to coordinate with other landscape and watershed groups and projects as opportunities arise (see section below 'Project coordination and support' for more information) to improve communication and cooperation and avoid duplication of efforts.

Goal 5: Address Growth Policies. Project partners identified opportunities to comment on land use and policy issues that could potentially impact water quality, including developing recommendations for water quality protection for growth policies in Flathead County, Lake County and the city of Kalispell (formerly called master plans).

Project coordination and support: Critical Lands Project partners coordinate with other projects, including:

- Supporting the Flathead Basin Commission's *Voluntary Nutrient Reduction Strategy Implementation Plan,* which seeks to identify sources and reduce nonpoint pollution;
- Participating in the Flathead Landscape Analysis Group, a group formed by three collaborating academic institutions, interested conservation groups and public agencies, to develop a model that will help land use planners, resource managers, stakeholders and policy makers better understand landscape changes over time and the ecological and economic impacts of those changes.

- Supporting the Flathead Basin Commission's watershed efforts, including Ashley Creek Watershed Group's workshop, *Watershed Connections: Ashley Creek and You,* which provided watershed information to interested citizens, connected watershed users with services and information available to improve water quality in Ashley Creek, and recruited new supporters for the watershed group.
- Participating in development and review of the Northwest Power and Conservation Council's *Flathead Subbasin Plan*, which will guide how Bonneville Power Administration's fisheries and wildlife mitigation funds are spent;
- Assisting the Montana Watercourse, a nonprofit organization housed at Montana State University, in planning two *Land Use Planning Workshops* in Flathead and Lake counties to share information about land use tools available to local governments for protecting riparian areas and wetlands.

LAND USE PLANNING & POLICIES

At the last two Critical Lands Workshops (2002 and 2004), participants emphasized the need to develop and implement policies for protecting water quality and change the political climate to increase support for conservation planning and projects in Flathead County.

However, most participants do not feel they can undertake action to develop and support policy recommendations due to time constraints, the political climate and/or organizational mandates and constraints.

The Flathead Lakers and Critical Lands Project partners took the following actions to improve various land use planning and development proposals that could potentially affect water quality and threaten identified critical lands.

Address Growth Policies: Project partners provided independent written comments and testimony on the *Lake County Draft Growth Policy* and the *Kalispell Draft Growth Policy* (formerly Master Plans) including suggestions for protecting water quality.

Several recommendations were included in the policy adopted by the Lake County Commission in August 2003 and the Kalispell City Council in February 2003. The Flathead County Growth Policy is currently being developed by the Flathead County Planning Board and Staff.

Glacier Mall Proposal: Various organizations, including the Flathead Lakers, provided independent comments, background information and testimony on a proposal to amend the Flathead County Master Plan to allow a "mega-mall" and associated development in an area designated for agriculture and low density residential development which overlies the shallow alluvial aquifer connected to the Flathead River. Public concern about the mall's potential impacts on water quality prompted the developer to change its location.

Gravel Mining on the Shallow Aquifer: In response to comments (including comments by the Flathead Lakers) on a permit application for a new gravel mine on the shallow alluvial aquifer, the state agreed to undertake a study of the cumulative impacts of gravel mining in the area. The Flathead Lakers, the Flathead Lake Biological Station, U.S. Fish & Wildlife Service, private mining companies and others, participated in the scoping meeting for the study led by the Department of Environmental Quality Industrial and Energy Minerals Bureau in Kalispell.

The goal of this process is to develop guidelines for where and how gravel mining can occur. A year later this process has stalled and no proposal has been put forth by the state. The Flathead Lakers subsequently sent a letter encouraging the state to complete this evaluation.

Egan Slough Zoning District: The Flathead Lakers provided information and maps from the *Critical Lands Status Report* (2002) to landowners, at their request, about Egan Slough and adjacent lands. We also wrote a letter to the Flathead County Commissioners commenting on proposed zoning district regulation changes which would weaken protection for water quality and agriculture. Changes to the Zoning District regulations were denied, except for one which would allow a youth camp to be established.

Subdivision Proposals: Project partners independently commented on several subdivision proposals that could potentially impact water quality and wildlife values of protected or high priority areas. Subdivision proposals addressed included:

- The Glacier Meadows Subdivision proposal and the Highlander Flats Subdivision proposal proposed intensive housing development on the shallow alluvial aquifer. These proposals were both denied. A subsequent proposal, Helena Flats Acres, reduced the density of the Highlander Flats proposal, and was approved.
- Two Ficken Farms Subdivision Proposals would greatly increase housing densities east of the Weaver Slough Project area. The proposals could diminish wildlife values in the project area and allow for development in productive farm land. These proposals were denied based on proposed densities. A proposal was resubmitted several months later with reduced housing densities. This proposal was approved.

Critical Lands Recommendations

The following recommended strategic goals and actions for the Critical Lands Project integrate information from the 2004 Critical Lands Workshop discussion topics and recommendations, the 2004 Workshop Questionnaire results (Appendix B) and the 2002 Workshop recommendations (Appendix C).

1) Critical Lands Project Coordination and Conservation Planning

Goal: Develop a comprehensive Critical Lands Conservation plan, including conservation project design and funding plan.

- Seek funding to support conservation plan development.
- Identify research needs (including requirements for sustaining river/floodplain/riparian function).
- Use available watershed assessment and research data to refine priorities for conservation and restoration, including:
  - The Nature Conservancy habitat mapping
  - The NPCC Flathead Subbasin Plan
  - Yellowstone-to-Yukon avian studies
  - American Bird Conservancy and/or Partners in Flight regional priorities
  - Pacific Rivers Council watershed and rivers integrity mapping
  - Bureau of Mines and Geology and the Flathead Lake Biological Station groundwater research
  - Ashley Creek watershed assessment
  - Stillwater River watershed assessment.
- Identify partnership opportunities, build partnerships and seek consensus on critical lands and water quality protection priorities.
- Develop and implement projects to achieve conservation plan objectives.
- Develop a critical lands protection funding plan:
  - research comprehensive funding mechanisms
  - build partnerships to reach consensus on projects and priorities for collaboration and funding, including a comprehensive Congressional funding package
  - support adequate funding for federal, state and county conservation grant programs (including forming a delegation to represent Flathead Basin interests in Washington D.C. when needed)
  - develop grant writing teams to assist with projects
  - assess NAWCA and BPA grant opportunities
  - research foundations and other potential funding sources
  - support the proposed Flathead County Land and Water Bond.

2) Critical Lands Conservation and Restoration

Goal: Expand on success of "Weaver & McWenneger Sloughs Project" to protect additional critical lands.

- Plan and implement next land conservation projects, including:
  1) Flathead River Corridor Project
     - Owen Sowerwine Natural Area
     - Weaver Slough expansion
     - Ashley Creek corridor lands
  2) Stillwater River Corridor Project
  3) Other critical lands conservation project opportunities:
     - Nyack Floodplain Project
     - Haskill Basin/Whitefish area state lands conservation.
- Identify funding opportunities (see above).
- Identify partnering opportunities, including:
  - Confederated Salish and Kootenai Tribes
  - Swan Ecosystem Center
  - Yellowstone to Yukon Coalition
  - The Montana Nature Conservancy
  - The Flathead Basin Commission and The Montana Department of Environmental Quality TMDL efforts.
- Incorporate restoration and land use management components into land conservation projects where appropriate.
- Incorporate multiple values and benefits into projects (fish habitat, bird habitat, farm land, water quality, recreation, etc.).

Goal: Expand on success of initial stream and river restoration projects to restore more priority critical lands.

- Complete restoration projects initiated.
- Identify and implement new stream, river or wetland restoration projects.
- Develop outreach program using existing projects to demonstrate restoration techniques to landowners and to inform them about the importance and benefits of riparian areas.

3) Critical Lands and Water Quality Protection Policies

Goal: Identify opportunities to protect critical lands by improving existing policies and proposing new policies, including:

- Flathead County Growth Policy
- Subdivision and other land use planning regulations and rules
- Sewage treatment/septic and onsite systems regulations
- State land policies, regulations and rules
- Floodplain regulations
- Proposal for riparian setback legislation (led by Smart Growth Coalition)
- Wetlands policies
- Groundwater policies
- Transportation policies.

4) Communication and Outreach

Goal: Improve communication and outreach to develop support for the protection of critical lands.

- Identify opportunities and priorities and develop a communication and outreach plan.
- Identify opportunities to change the political climate (including opportunities to support efforts to increase awareness of the importance of natural amenities for economic prosperity and the importance of protecting critical lands for recreation).
- Promote NRCS and Flathead Conservation District programs on priority critical lands.
- Consider developing education packages, such as landowner workshops, to promote incentives for protecting and restoring critical lands.
- Consider supporting development of education and interpretive centers (including Sekokini Springs, Salish Point and Audubon/OSNA education centers).

Critical Lands Project: Looking Forward

The suggested strategic goals and actions are derived from the project's collaborative efforts over the last two years. The Critical Lands Project's ability to further refine and implement proposed strategies and actions is based on the ability of various project partners to collaborate to adopt and implement them.

The Flathead Lakers will continue to provide coordination for the Critical Lands Project to seek positive approaches to address threats to water quality, improve stewardship of critical lands, and strengthen partnerships to expand conservation and restoration action.

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Appendix A. Critical Lands Project Participants List

American Bird Conservancy*

Flathead Audubon Society*

Montana Audubon*

Citizens for a Better Flathead*

Confederated Salish & Kootenai Tribes*

Flathead Basin Commission

Conservation District, Flathead County *

Conservation District, Lake County

Flathead City County Health Department*

Flathead Lakers*

Flathead Land Trust*

Land & Water Consulting, Inc.

Lake County Land Services

Montana Dept. of Fish, Wildlife & Parks*

Montana Land Reliance

Montana Nature Conservancy

The Montana Watercourse

National Park Service Rivers, Trails & Conservation Assistance

Natural Resources Conservation Service*

Trout Unlimited, Flathead Valley Chapter of*

U.S. Fish & Wildlife Service

University of Montana's Flathead Lake Biological Station*

Robinson Vocational Agricultural (VoAg) High School

Landowners

* Organizations that participate in the Critical Lands core group to plan and implement project

Appendix B. 2004 Critical Lands Project Questionnaire Summary

March 25, 2004 (*revised April 10*)

In preparation for the fourth Critical Lands Workshop the Flathead Lakers asked project partners questions to help assess where the priorities, needs, and assets of various agencies and organizations in the Flathead Basin may overlap and/or complement each other's activities and in order to look for opportunities for collaboration. Answers were summarized to help evaluate and orient the Critical Lands Project in the future.

Questionnaire responses: 8 replies from government agencies and 5 from non-profit conservation organizations.

In parenthesis are number of people that listed that issue. The asterisk (*) following the parenthesis indicates number of people who indicated that as an additional possible priority but not as likely to be implemented.

Major project priorities:

1. Stream and wetland protection, enhancement and restoration (5)(1)*
2. Develop funding sources, including passing Open Space Bond and finding other sources (2)(1)*
3. Change in political environment (1)
4. Education and Outreach (2)
5. Protection of bird, fish and wildlife habitat (2)(2)*
6. Public access and recreation impacts in public lands (1)(1)*
7. Watershed Coordination (2)
8. Growth planning (2)

Major geographical areas:

1. Flathead Valley and river, riparian, wetland, farmland (restoration and enhancement) (4)
2. Swan Valley Conservation (3)
3. Conservation planning and protection of Middle, North and South Fork lands of the Flathead River (1)(3)*
4. Owen Sowerwine Natural Area (2)
5. Pleasant Valley Wetland Projects (1)
6. Ashley Creek Watershed restoration projects (1)
7. Canadian Flathead (1)
8. Stillwater and Whitefish Rivers and Stoner Creek (1)

Criteria Used:

People have similar priorities but use different internal criteria to get to these

Major positive factors that work in project's favor:

1. Landowner willingness to participate in conservation projects, and fish and wildlife protection and restoration (8)
2. Collaboration (2)
3. Increased willingness to take action by the public as population growth continues (1)

Greatest obstacles to completing projects:

1. The political climate, including approving development near protected areas (6)
2. Funding, including lobbying and local match (8)

3. Attack on conservation easements (2)
4. Limited organizational capacity and staff (4)
5. Lack of more organized cooperative efforts and support (3)
6. Change in landowners priorities and therefore not completing projects on their property (1)

Complementary activities that would support projects:

1. Funding and lobbying for funding, including
    a. Public support for agency programs (3)
    b. Open Space Bond (2)
    c. Additional funding issues (1)
2. Political support for conservation (3)
3. Stronger conservation planning and regulations by government and more conservation friendly government officials (2)
4. Outreach and public education, including recognition of successful projects and rational for the long term preservation of agricultural resources in the Flathead Valley (2)
5. Stronger collaboration among agencies, organizations and the community (1)

Where agencies and organizations get assistance:

1. Most seek assistance with already established partners regionally (5)
2. New assistance is needed to improve funding (2)
3. Need partners willing to travel to Washington to lobby for more NAWCA funds (1)
4. More tribal involvement desired for wetland conservation through NAWCA grants (1)

How the Critical Lands Project can help most:

1. Identify new critical lands for conservation (3)
2. Promote citizen support, awareness and involvement for government programs, including NRCS Programs, FWP programs and mitigation efforts, and public meetings (3)
3. Expand focus area beyond the Flathead Valley/Flathead River mainstem to recognize other critical lands in the North Fork, Middle Fork or Whitefish Lake areas and in Lake County (2) or limit to the Flathead Valley and clarify the Critical Lands Project's goal
4. Continue stream restoration projects (2) and outreach efforts for stream bank protection (1)
5. Help with funding, grant writing and lobbying to fund programs (2)
6. Assist with protection of the Owen Sowerwine Natural Area (2)
7. Education and outreach regarding septic system's role in degrading water quality (1)

New opportunities to collaborate:

1. Identify potential priority sites, promote collaboration and coordinate restoration and land protection projects (3)
2. Promote program to the public (involvement in Subbasin Plan; NRCS' CRP programs) (2)
3. Collaboration needed to pass Open Space Bond in Flathead County (1)
4. Collaboration needed to coordinate funding for easement acquisition (define local match available from conservation organizations, and understand rules and policies for matching funds) (1)
5. Collaborate on mobilizing public comment and concern on significant water quality issues: alert others to issues and integrate Critical Lands Maps in other groups' out reach work (1)

Questionnaire Detailed Summary:

Major priorities:

1. **Stream and Wetland protection, enhancement and restoration**
   - Protect the Owen Sowerwine Natural Area on the Flathead River (3)
   - Administer 310 stream permit applications and inclusion in GIS ARV View network
   - Maintain and restore wetland habitats
   - Protect through easements and land conservation strategies
   - Administer and promote NRCS' Conservation Reserve Program
   - Administer and promote NRCS' Wetland Reserve Program
   - Mitigate for fisheries losses attributable to the construction and operation of Hungry Horse and Libby Dams using a mix of habitat restoration, fish passage improvements and artificial propagation techniques
   - Implement Flathead Conservation District's cost share small landowner grant program

2. **Develop funding sources**
   - Establish an Open Space Bond in Flathead County to develop local match
   - Complete Phases II and III of the NAWCA grant process to provide funding for wetland and riparian conservation projects in the Flathead Watershed (1)
   - Seek funding for stream restoration on the mainstem of the Flathead River (big costly projects)

3. **Change in political environment**
   - Concern over development around conservation projects and protected areas (3)
   - Fend off anti-conservation easement State legislation (1)

4. **Education and Outreach**
   - Outreach to increase awareness about bird and wildlife habitat
   - Conduct small landowner workshops/ realtor and local government training
   - Additional demonstration sites for "soft" bank stabilization techniques

5. **Protection of bird and wildlife habitat (3)**
   - Review public management plans, bird surveys
   - Use of NRCS' EQIP Program to improve irrigation on cropland to balance agricultural needs for irrigation water and land with wildlife concerns
   - Protect and Restore fish species (ESA-listed and of special concern in MT)

6. **Public access and recreation issues (4)**
   - Provide access while minimizing impacts on Flathead River
   - Nurture grassroots involvement in state lands management to maintain conservation values, recreational use, and sustainable forestry. Advocate creative alternatives to current policy directions in state lands.
   - Maintain public access to public lands

7. **Headwaters protection in the Haskill Basin (1)**
   Work with FH Stoltze Land and Lumber lands in North Valley and West Valley foothills to continue stewardship forestry practices, prevent subdivisions and residential development, protect important grizzly and other wildlife habitat, and protect key headwater areas important to water quality and native trout, such as Haskill Creek

8. **Conservation planning and protection of lands in the Middle (3), North Fork (4) and South**

Fork (1) of the Flathead River (one comment specified the need to address pressures to develop coal and coal bed methane in the North Fork Flathead River headwaters)

9. **Growth planning and transportation (2)**
   - Promote adoption of a sound county growth policy and a fair, respectful, legally compliant public process for land use decisions
   - Promote consideration in transportation policy of wildlife habitat needs
   - Require transportation plans to be consistent with local land use plans and economic development strategies that direct growth to the state's seven major urban centers.
   - Increase public support and city county cooperation for planning that recognizes of the important link between a healthy environment and strong economy.

Major positive factors that work in project's favor:

1. **Landowners willingness and interest to: (9)**
   - work with partnerships
   - purchase conservation easements
   - cost share projects / apply to NRCS programs voluntarily
   - preserve bird and wildlife habitat and water quality
   - restore fish and their habitat
   - support land conservation

2. **Collaboration (1)**

3. **Increased willingness to take action by the public**. Population growth is getting the public's attention **(1)**

Greatest obstacles to completing projects listed:

1. **Political environment (6)**
   - Political climate, lack of effective community leadership and community polarization (4)
   - Willingness to allow development near conservation projects and public recreational lands, wetlands and surface waters (2)
   - Anti-conservation easement legislation (1)

2. **Funding (5)**
   - Lack of Open Space Bond (2)
   - Need to lobby for funding at national level (NAWCA grants; NRCS programs; ESA and mitigation programs (3)
   - Lack of matching and readily available funds (1)
   - Funding for grant writing and management (1)
   - Pressure on farmers to sell and subdivide land (1)

Critical Lands Project Questionnaire Questions:

1. Please list and rank your three highest priority conservation-related projects for the next three years.
2. Please list any additional priorities that are possible, but not as likely, and the limiting factors for each.
3. What criteria did your organization use to set these priorities?
4. What factors work in your favor to help you meet those priorities?
5. What are the greatest obstacles you face to completing those projects?
6. Will you be working in partnership with other organizations and/or individuals to complete these projects, and, if so, who are your partners?
7. Are there broader and complementary activities that would support your work, i.e. outreach, political action, in-kind services, changes in legislation, improved funding?
8. Where would you be most likely to seek such assistance?
9. Specifically, how do you think the Critical Lands Project could best support your work?
10. Do you see other opportunities to work collaboratively with Critical Lands Project participants to further your conservation goals, and how can such collaborations be best accomplished?

Appendix C. 2002 Critical Lands Workshop: Suggested conservation strategies and projects. What practical and innovative strategies, interventions, projects, or actions should we undertake in the next 1 - 5 years to protect and restore critical lands in the North Flathead Valley?

PROMOTE ADOPTION OF POLICIES TO PROTECT WATER QUALITY {15} [10] [CFBF[11], FL][12]	DEVELOP, IMPLEMENT & PROMOTE SPECIFIC LAND PROTECTION AND DEMONSTRATION PROJECTS {13} [T.U., FLT, FWP, FBC, FL]	DEVELOP EDUCATIONAL PROGRAMS AND PROMOTE INCENTIVES TO PROTECT CRITICAL LANDS {6} [FBC, FL]	COORDINATE COMMUNICATION AND PLANNING EFFORTS TO PROTECT CRITICAL LANDS {1}	ENSURE MONTANA RECEIVES A FAIR SHARE OF HYDROPOWER MITIGATION FUNDING {3}
Encourage riparian & shoreline buffer	Complete Weaver Slough Project (purchase of conservation easements)	Develop residential development BMPs	Consolidate existing programs (Clearinghouse)	Implement VARQ flood control at Hungry Horse Dam
Add design standards to subdivision regulations to require application of best available septic systems' technology	Use existing land protection projects as a model for future, larger efforts & develop a strategy anticipating this	Educate & publicize consequences of contamination of shallow aquifers	Use e-mail network to alert group to opportunities to influence policy	Hungry Horse revegetation (BoR)
Septic systems education: maintenance, function, and technology advances	Land & water conservation: Identify projects for easement/acquisition	Voluntary approach to implement conservation practices	Improve enforcement of existing regulations	Hungry Horse mitigation
Ordinance requiring inspection of septic systems Require pumping & performance standards	Promote agricultural & open space zoning on regions of shallow aquifer (Open Space Bond & Ag Heritage Program)	BMPs for road construction & maintenance	Develop monitoring strategy to assess who is doing what, prevent program overlap	Develop BPA Flathead Sub-basin Plan [FWP, BPA/CSKT, FBC]
Support other watershed groups for TMDL development	Demonstration Projects: Riparian revegetation Stream rehabilitation [FBC]	Promote policy incentives to protect critical areas		System Dam operation
Education on storm water management and identify special conditions impacting effectiveness	Aquatic Nuisance Species Program	Educate public to gain support for protecting Critical Lands		
Ensure funding for Ag. Heritage Program to leverage funds for open space and farmland protection	Sekokini Springs: education & demonstration project [FWP, FL]	Education of elected & appointed officials & key decision makers		
Coordinate activities with existing watershed groups	Implement Mountain Lakes Rehabilitation	Public education (based on science & Critical Lands Status Report) to shift attitudes & leadership		
Pursue adoption of riparian corridor protection regulations requiring greater set backs similar to Missoula				
Grass root support for water quality district				
Tie future projects into TMDL $ sources				
Document compliance and enforcement of water quality regulations				
Promote City-County agreement to require sewer hookup or dry sewering of developments near towns				
Research wellhead protection				
Evaluate future water quantity demand and sustainable use limits				

[10] Numbers in parenthesis indicate number of people supporting a strategy.

[11] Abbreviations: CFBF= Citizens for a Better Flathead; FL= Flathead Lakers; T.U.= Trout Unlimited; FLT= Flathead Land Trust; FWP= Dept. of Fish, Wildlife & Parks; FBC= Flathead Basin Commission; CSKT= Confederated Salish and Kootenai Tribes; TMDL= Total Maximum Daily Load; BPA= Bonneville Power Administration.

[12] Names in brackets indicate agencies and organizations willing to work on specific strategies/projects or willing to develop an action plan to prioritize and implement strategies in this category.