A Planning Guide for Protecting Montana's Wetlands and Riparian Areas

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Acronyms

ADID = Advanced Identification Process
CIP = Capital Improvements Program
Corps = Army Corps of Engineers
CRJC =Connecticut River Joint Commission
DEQ = Montana Department of Environmental Quality
DNRC = Montana Department of Natural Resources and Conservation
EPA = Environmental Protection Agency
FEMA = Federal Emergency Management Agency
FWP = Montana Fish, Wildlife and Parks
Heritage = Montana Natural Heritage Program
LWQD = Local Water Quality Districts
MCA = Montana Code Annotated
MPDES = Montana Pollutant Discharge Elimination System
MWCC = Montana Watershed Coordination Council
NPDES = National Pollutant Discharge Elimination System
NRCS = Natural Resources Conservation Service
NRIS = Natural Resource Information System
NWI = National Wetland Inventory
PUD = Planned Unit Development
SAMP = Special Area Management Plan
SMZ = Streamside Management Zone Law
TDR = Transfer of Development Rights
USFWS = U.S. Fish and Wildlife Service
USGS = U.S. Geological Survey
WPCSRF = Water Pollution Control State Revolving Fund
WRP = Wetland Reserve Program

Preface

Montana's vast landscape and water resources are critical to the economy, public welfare, and the quality of life of the state's local communities. Each year, development and land use change modifies these resources. Wetlands and riparian areas, where water and land come together, are particularly sensitive to changes. As more and more people choose to build homes, recreate, or otherwise utilize the land next to Montana's streams, rivers, lakes, and ponds, and as property values increase, the pressures to develop these areas are increasing—often to the detriment of the very qualities that attracted buyers in the first place.

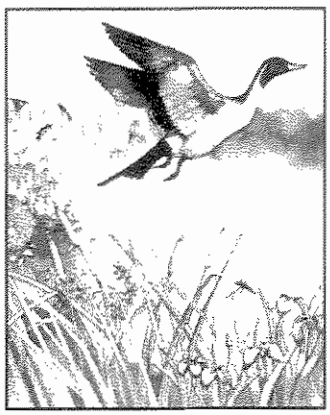
Wetlands and riparian areas are some of the most productive and valuable of Montana's natural areas, providing a wide variety of environmental and human benefits. The benefits of these two resources for local communities include:

- Improving water quality by filtering sediments and toxins out of water;
- Recharging wells and ground water supplies;
- Providing flood control;
- Enriching open space;
- Increasing real property values and marketability because of aesthetic attributes;
- Enhancing fish and wildlife habitat; and
- Improving recreational opportunities.

Many of the impacts to wetlands and riparian areas can be avoided by land use planning decisions made at the local level. This handbook is designed to assist local government officials, planning boards and planning staff, landowners, developers, community members, and other Montanans in identifying and using land use planning tools, both to advance local interests and to contribute to the protection of wetland and riparian resources. The handbook describes:

- *Chapter 1:* Why local governments should protect wetlands and riparian areas;
- *Chapter 2:* Montana's wetland and riparian resources;
- *Chapter 3*: How to build a local protection program;
- *Chapter 4*: How to develop on-the-ground conservation measures;
- *Chapter 5*: How Montana's land use planning tools can be used in protection efforts; and
- *Chapter 6*: Other tools and resources that may help local governments in their conservation work.

Wetlands include marshes, ponds, potholes, sloughs, and other areas covered with shallow water during all or part of the year. Riparian areas are the green zones of native vegetation next to rivers, streams, and drainages. Because of their similarities, both wetlands and riparian areas are covered in this guide.



Chapter 1

Why Should Local Governments Protect Wetlands and Riparian Areas?

Protecting public health and the environment are two of the most important responsibilities of local governments. As city and county officials across the state grapple with these issues, they are increasingly recognizing the important benefits that wetlands and riparian areas contribute to the overall protection of public health and the environment. This chapter describes the benefits of wetland and riparian resources to local communities, as well as the most common reasons why local governments are increasingly playing an active role in guiding development away from these important natural resource areas.

The Benefits of Wetlands and Riparian Areas to Local Communities

The following discussion outlines a number of the functions and benefits that healthy wetlands and riparian areas perform for local communities:

Pollution Control of Surface Water

Approximately 54% of Montana's population uses public drinking water systems that rely on clean surface water. One of the most valuable functions of wetlands and riparian areas is their ability to maintain and improve water quality. As suspended particles move through these areas, they are held by the vegetation and soil. Toxic substances, including heavy metals, toxic chemicals and pathogens, can be filtered out or broken down by plants, keeping these pollutants from entering nearby lakes and streams. Captured nutrients, including phosphorous and nitrates, are used by plants or are slowly returned to the water, thus stabilizing nutrient loads. Consequently, the filtering capacity of healthy wetlands or riparian areas can maintain—or even improve—water quality. Importantly, for vegetation to work efficiently as a sediment trap and pollution filter, studies show that 80% of the buffer area should be vegetated (Channing Kimball, 1993). The following are examples of Montana communities that depend upon clean surface water for their drinking water: the cities of Bozeman, Butte, Glasgow, Great Falls, Havre, Helena, Kalispell, Libby, Red Lodge, Ronan, Stevensville, Thompson Falls, White Sulphur Springs, Whitefish, and most of the communities along the Yellowstone River (Billings, Forsyth, Glendive, Laurel, Lockwood, and Miles City) (J. Meek, Montana Department of Environmental Quality (DEQ), written communication, 2002).

Ground Water Protection

In Montana, approximately 46% of the population that uses public drinking water systems depends on clean ground water for their drinking water. The two main ways surface water enters the ground are 1) precipitation falling on the land and penetrating the soil, and 2) water in streams, rivers, lakes, and wetlands seeping into the adjoining ground (Cohen, 1997). Naturally vegetated riparian areas and wetlands enhance the recharging of wells and aquifers by holding water long enough to allow it to percolate into the underlying soil. In areas dependent upon wells and springs for drinking water, the protection of

wetlands is particularly important. The following are examples of Montana communities that depend upon clean ground water for their drinking water: most of the people in the Bitterroot and Mission Valleys, and the cities of Missoula, Bigfork, Dillon, Livingston, and Twin Bridges (J. Meek, DEQ, written communication, 2002).

Public Health

All Montanans depend upon clean water that comes from ground water or surface water, through individual wells or public water supplies. Because everyone needs clean water, human health can be directly associated with wetlands and riparian areas. These areas break down and hold nutrients, chemical pesticides, salts, sediments, and organic wastes. They also act like a giant sponge and filter to reduce the amount of pollutants that enter lakes, streams, ground water, and—ultimately—drinking water, in runoff originating from sources such as city streets, lawns, construction sites, and agricultural fields.

Flood Control

Montana has over 175,000 miles of streams and rivers (DEQ, 2001); all are subject to periodic flooding. An undeveloped, vegetated floodplain can reduce the force, height, and volume of floodwaters by allowing them to spread out horizontally and relatively harmlessly across the floodplain. Water that floods vegetated floodplains is soaked up by floodplain wetlands and streamside vegetation (riparian areas), and then reenters the main channel slowly (Cohen, 1997). This action can lower flood peaks, slow water velocities, recharge local aquifers, and provide temporary water storage. These flood control functions can help to avert the damages caused by flooding to downstream urban and suburban areas, agricultural lands, and irrigation structures.

Building in a floodplain, channelizing streams through bank stabilization, and removing riparian vegetation, decreases or eliminates the flood control capabilities of riparian areas and consequently can cause a threat to life and property. In 1997, floods in Montana caused over $7.6 million in damage to public agencies, including school districts, cities, counties, and irrigation districts in 23 counties. The Federal Emergency Management Agency (FEMA) picked up 75% of the cost of this flooding—but local entities, including local governments, had to foot 25% of the bill (J. Anderson, Montana Disaster and Emergency Services, Montana Department of Military Affairs, written communication, 2002). Floods also impact private property. In 1992, Missoula County approved a 92-lot subdivision west of Missoula along lower Grant Creek. The subdivision was located *outside* the 100-year floodplain boundary on FEMA Flood Insurance Rate Maps. In 1997, during runoff calculated to be less than a 10-year flood, water submerged some of the lots, yards, basements, and the community sewage treatment system of this subdivision. As a result of this flood, homeowners filed a lawsuit against the property developer, the developer's engineer, local real estate agents, *and* Missoula County. A negotiated settlement paid $2.3 million to the homeowners (*see Missoula County, page 5-20*).

Erosion Control

Stream banks naturally erode and the material is deposited elsewhere, which in turn builds banks and their associated floodplain, because because streams and rivers are dynamic systems. Erosion, however, can be accelerated above natural rates because of human-caused activities, such as removal of riparian vegetation or upstream manipulation of stream channels (e.g. Ellis, 2002). Additionally, bank stabilization mechanisms designed to stop erosion in one location can increase erosion and cause other problems downstream. Streamside vegetation buffers the land against unnatural erosion rates by absorbing and dissipating wave energy, slowing stream flows, and capturing sediments that are suspended in the water. These plants, along with their complex root systems, also hold soils in place, filter the sediment from upland erosion, and, as a result, reduce unnatural stream bank erosion.

Economic and Community Values

Clean water goes hand-in-hand with a strong economy (National Association of Counties, 2001). Farmers, ranchers, and commercial activities need

water to produce crops, livestock, and manufactured goods. Healthy ecosystems attract tourists and recreation dollars. Maintaining clean water is almost always less expensive than cleaning polluted water. Wetlands and riparian areas can play a critical role in controlling water pollutants, providing flood protection, and maintaining or improving water quality. They also add economic value to communities as important components of parks, open space, trail systems, and wildlife habitat, contributing significantly to the quality of life for area residents. Additionally, private property values can benefit from the protection of these areas: ponds, streams, and lakes can increase the value and marketability of nearby parcels of land. And as property values increase, this in turn may translate into increased local tax revenue to support local government services.

It is difficult—and sometimes impossible—to calculate the monetary value provided to communities by protection of wetlands and riparian areas. However, some trends have been reported. For example, following a greenbelt acquisition in Boulder, Colorado, a 32% higher market value was noted for adjacent properties (Rubey Frost and Sternberg, 1992). Closer to home, a 1983 study done in Madison County concluded that "development along the Madison River will adversely affect the important economic and recreational opportunities that so many people depend on...(*see Madison County, page 5-3*)." And finally, wetlands and riparian areas protected as open space can reduce costs for local governments: a study completed in Gallatin County concluded that for every dollar generated by residential land in the county, it cost $0.25 to provide services to open space and agricultural land, while it cost $1.45 to provide the same services to residential land (Haggerty, 1996).

Agricultural Benefits

In Montana, approximately 90 million gallons of ground water are used every day for irrigation, and 16 million gallons are used to supply water for livestock (Solley et. al., 1993). In the arid west, the availability of water directly affects the value of land—especially for those whose livelihoods depend on agricultural production. Benefits of wetlands and riparian areas to agriculture can include: maintaining late summer stream flows which are critical for irrigating crops, watering stock, and recharging aquifers; maintaining a higher water table which increases subsurface irrigation and production of forage; filtering sediments, which protects water quality, prolonging the life of irrigation pumps, reducing the siltation of irrigation ditches, filtering out chemicals applied to the land such as nitrogen, phosphorous, and pesticides, and providing shrubs and trees that shelter livestock.

Recreational Benefits

The bounty of fish and wildlife species supported by wetlands and riparian areas provides a benefit in the form of outdoor recreation opportunities: hunting, fishing, birdwatching, hiking, and hands-on environmental education. In 1995, over 1,084,000 people participated in wildlife-associated recreation in Montana, spending more than $678 million. Of the total participants surveyed, 336,000 fished, 194,000 hunted, and 554,000 participated in wildlife-watching activities (U.S. Fish & Wildlife Service, 1998). Resident and nonresident anglers, hunters, and wildlife watchers are included in these statistics. Recreationists spend significant amounts of money on equipment and travel-related expenses, including food and lodging. The majority of their activities depended upon the existence of healthy, productive wetlands and riparian habitats. And research shows that recreational income is growing each year.

Wildlife Habitat

Perhaps the best-known reason for protection of wetlands and riparian areas is their importance as critical wildlife habitat. From deer, waterfowl, bulrushes, trout, and painted turtles, to beaver, cattails, bog orchids, frogs, and great blue heron, these areas provide a major part of the habitat required to support a staggering number of creatures. In fact, wetlands and riparian areas provide the most productive wildlife habitat in the state. Their multi-layered plant canopy offers a variety of nesting, resting, and foraging areas for wildlife. In Montana, these habitats provide:

- Important seasonal or year-round habitat for

such animals as deer, mink, beaver, muskrat, otter, elk, moose, and bear.

- Breeding and nesting areas for at least 134 (55%) of Montana's 245 species of breeding birds (Montana Audubon, unpublished data, 2002).
- Much-needed food and resting areas for migrating birds; this is especially true for temporary wetlands that only have water in the spring.
- Essential breeding, foraging, and overwintering habitat for Montana's 12 native amphibians, 3 turtles, and at least 5 of Montana's 10 snakes (Maxell, 2000).

Fisheries

Freshwater fish depend upon healthy riparian areas and wetlands throughout their existence. Shallow areas adjacent to streams provide spawning and feeding areas. Vegetation along streams removes, processes, and releases organic and inorganic material into streams, providing food for fish. Riparian vegetation also provides underwater hiding places from predators in roots, submerged logs, and other debris. By shading sections of the river channel, trees and shrubs such as cottonwoods, birch, alder, and willow help control and moderate water temperature, keeping streams cooler in the summer and warmer in the winter. Vegetative matter provides a large proportion of forage for invertebrates that, in turn, feed birds, fish, and other wildlife. In Montana, all 85 species of fish depend on healthy streams, including 51 species of native fish and 32 non-native; 26 of these fish species are considered game fish, important to fishing and the economy (Holton and Johnson, 2003). Without a healthy riparian system acting as a filter, high levels of eroded sediment from the land can kill aquatic insects and suffocate fish eggs.

Threatened and Endangered Species Habitat

Streams, lakes, and wetlands provide important habitat for many of the state's rare species. Currently 17 of Montana's 20 threatened, endangered, and candidate species of plants and animals depend upon wetlands and riparian areas for some part of their life cycle (R. Hazelwood, USFWS, oral communication, 2002). As an example, water howellia (*Howellia aquatilis*), a threatened plant species, occurs largely in the glacial potholes and old river oxbows of the Swan Valley. The Ute's ladies'-tresses (*Spiranthes diluvialis*), another threatened plant, is found in wet meadows in southwestern Montana valleys. The threatened bald eagle depends on river forests to provide critical nesting and wintering habitat. And the threatened bull trout depends upon western Montana rivers and mountain streams to spawn.

Why Local Government Protection Programs Make Sense

Protection of streams and wetlands historically was seen as a responsibility of federal or state government. With numerous state and federal laws already on the books, many local elected officials and citizens may wonder why wetlands and riparian areas need more protection. Several of the most important reasons for developing local conservation programs are outlined below:

Addressing Local Concerns

Some tools are best used at the local level. City, town, and county elected officials are uniquely positioned to understand community values, needs, and priorities, such as:

- Strengthening riparian and wetland protection in urban areas as a cost-effective mechanism to achieve water quality goals in stormwater runoff and flood protection.
- Increasing protection for wildlife corridors, greenways, stream corridors, and floodplains.
- Regulating certain types of activities of local concern that are not regulated by other entities such as the removal of native vegetation in setback areas along streams, the mowing of vegetation in riparian buffer strips, building roads down to a lakeshore, or the use of motorized recreational vehicles in sensitive areas.

Monitoring Cumulative Effects

Although current state and federal regulatory programs provide some level of protection for wetlands and riparian areas, these regulations often fall short because they focus on a narrow site-by-site approach to protection. Project-by-project decisions do not take into account the cumulative impacts of multiple development projects that impact water quality, flood control, local priorities, wildlife habitat, and other identified community values. It is therefore almost impossible to protect a river corridor or wetland complex without local government conservation programs.

Filling Regulatory Gaps

Not all wetlands and riparian areas receive protection from current state or federal laws. For instance, the central piece of federal legislation that regulates activities affecting wetlands is Section 404 of the Clean Water Act. It requires approval from the Army Corps of Engineers before placing dredged or fill material into waters of the U.S., including wetlands. The types of impacts not regulated under 404 permits include draining or flooding wetlands, activities impacting most riparian areas including vegetation removal, and placing fill material in certain isolated wetlands. In addition, the 404 program focuses on the *filling* of wetlands; establishing protective buffer strips to keep wetlands from being degraded by development activities is not typically covered under this program. Another regulatory program, Montana's 310 law administered by local Conservation Districts, only applies to projects that alter or affect the bed or banks of a natural stream or river—offering little protection to riparian vegetation and its associated wetlands.

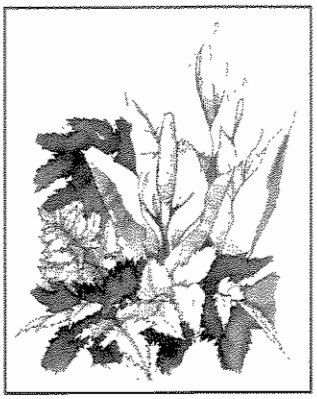
In spite of the shortcomings of current regulatory programs, they play an important role in local conservation efforts. Therefore, it is important for local government officials and staff to understand the basics about these programs. For more information about the current regulatory programs that apply to Montana's wetlands and riparian areas, see Appendix IV.

Applying Land Use Tools to Resource Protection

Local governments have diverse protection capabilities through regulatory mechanisms such as subdivision regulations or zoning. These mechanisms are flexible, and it is possible to build conditions into these tools to address local concerns and priorities. For example, riparian setbacks in a subdivision regulation can be adjusted to suit site-specific conditions such as steep slopes, the presence of wetlands, the removal of native vegetation, and similar considerations. Municipalities and counties also have the opportunity to integrate resource protection with other land use planning goals during comprehensive planning efforts.

Providing Educational Opportunities

Local governments have direct contact with landowners through subdivision, floodplain, or building permit processes. These contacts provide important opportunities for informal landowner education about the benefits, values, opportunities, and challenges associated with owning and managing wetlands and riparian areas.



Chapter 2

Montana's Wetlands and Riparian Areas: Understanding the Resource

In order to establish an effective conservation program, it is important to understand the resource. This chapter explains what wetlands and riparian areas are, and discusses the various types found in Montana. These resources share two common elements: land and water. Their importance far exceeds their relatively small area—although no systematic on-the-ground inventory has been conducted throughout the state, estimates of their total area range from less than 2% (1,860,000 acres) (Montana Department of Health and Environmental Sciences, 1992) to 4% (3,700,000 acres) of Montana's land base (Redmond et al. 1998).

Montana has a variety of wetland and riparian types. The descriptions found in this chapter are adapted primarily from three sources: *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et.al, 1979), *An Ecological Characterization of Rocky Mountain Montane and Subalpine Wetlands* (Windell et. al., 1986) and *Classification and Management of Montana's Riparian and Wetland Sites* (Hansen et. al., 1995).

What are Wetlands?

The term wetland is a catch-all that includes marshes, swamps, bogs, fens, and lowlands covered with shallow and sometimes intermittent water (water present for several weeks or months per year) or ephemeral water (water present only in response to precipitation events). The term also includes wet meadows, potholes, sloughs, some riparian zones, and river overflow areas. In addition, shallow lakes and ponds, usually with emergent vegetation, are included in the definition. Although permanent waters deeper than 6-1/2 feet are not technically considered wetlands, the term does include the shallow edges of these deeper water bodies.

Three attributes are generally present in wetlands:

- Water at or near the land surface all or part of the year;
- Soils that are poorly drained and develop certain soil characteristics (e.g., blue-green or gray color, or rotten egg smell) due to the presence of water and absence of oxygen; and
- Water- adapted (or tolerant) plants such as rushes, sedges, cattails, or willows.

Box I. A Definition of Wetlands

The following definition can be incorporated into local regulations to protect wetlands:

Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturation soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (Federal Register, 1982)

Montana's Wetland Types

There are three general types of wetlands in Montana, grouped according to where they are found on the landscape and how they are created:

Depressional Wetlands

Low spots on the landscape can become depressional wetlands. These include:

Prairie and Montane Potholes. Most potholes are less than two feet deep and occur in open prairie grasslands or agricultural fields. They vary in their amount of open water, and in size, ranging from less than one acre to more than 20 acres. Herbaceous vegetation (cattails, bulrushes, and sedges) typically grows in bands around the margins. Although many of these wetlands are dry much of the year, they are typically wet in the spring; as a result, they are very productive for wildlife, especially for breeding ducks and shorebirds. During dry years, vegetation may fill in these wetlands. Montana's potholes are concentrated north of the Missouri River (Glacier to Sheridan County), in the Blackfoot and Mission Valleys, and along the Rocky Mountain Front.

Marshes. A seasonally or permanently flooded wetland, marshes often develop in shallow ponds, depressions, and river margins. They are usually dominated by herbaceous vegetation, including sedges, cattails, bulrushes, and grasses.

Sloughs and Oxbows. Once part of a stream channel, sloughs and oxbows were cut off from the stream's active channel through stream migration and sediment accumulation,. They function as standing water wetlands. Trees, shrubs, and/or herbaceous vegetation grow in and around oxbows and sloughs.

Ponds and Lakeside Wetlands. These wetlands are influenced by open water systems. Ponds are bodies of water surrounded by wetland vegetation. Because of their small size and shallower depth, wave action is minimal, allowing emergent vegetation to establish. Somewhat similar wetlands also occur in or adjacent to lakes and reservoirs.

Slope Wetlands

Ground water seeping to the surface can create slope wetlands. These include:

Peatlands (fens). These wetlands are unique because they accumulate peat, or partially decomposed plant material. The dominant vegetation associated with fens includes sedges and/or mosses, or less commonly shrubs (especially willow and birch). Pine Butte Swamp, located near Choteau, is perhaps Montana's most famous fen. The Swan Valley also contains a high concentration of these wetlands.

Wet meadows. Typically occurring in seasonally flooded basins and flats, wet meadows have soils that are usually dry for part of the growing season. Sedges, grasses, and forbs typically dominate these wetlands.

Seeps and springs. Scattered throughout Montana, seeps and springs are found in a variety of terrains, including mountains, hillsides, floodplains, and prairies. In general, seeps have less flow than a spring. The abrupt boundary between uplands and wetland vegetation often makes these areas readily recognizable.

Human-built/Artificial Wetlands

Wetlands can also be created by human-related activities. Many of these activities are associated with flood irrigation, and other agricultural practices. Examples of artificial wetlands include seeps along irrigation canals, constructed ponds, and wetlands created as part of wastewater treatment processes.

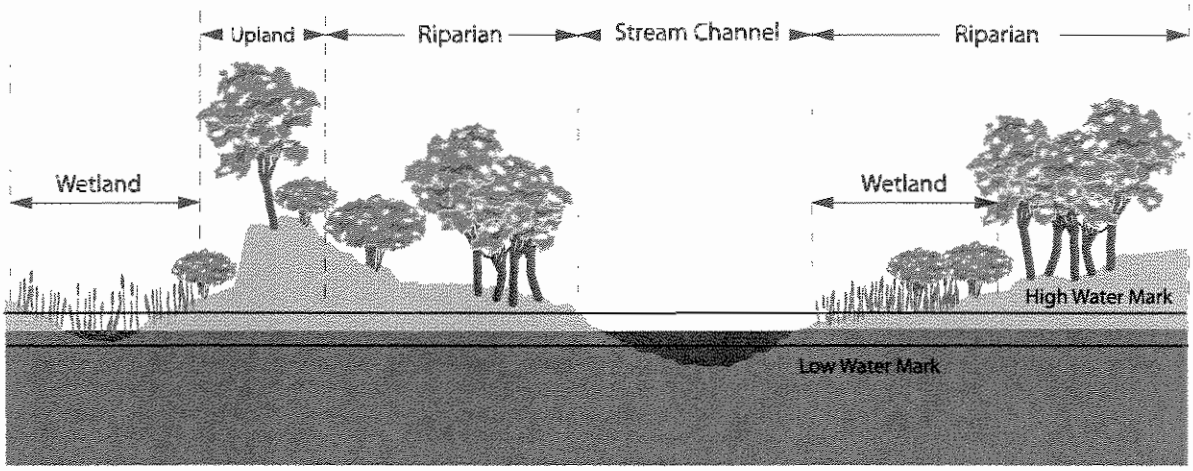


Figure 1. *The relationship of riparian areas to wetlands.*

What are Riparian Areas?

Riparian areas are plant communities next to rivers, streams, and drainage ways, commonly associated with a valley. They also have one or both of the following characteristics:

- Distinctively different vegetative species than adjacent areas; and/or
- Species similar to adjacent areas but exhibiting more vigorous or robust growth forms (USFWS, 1997).

The width of the valley often determines the extent of the riparian area; some are narrow strips, while others can be quite broad. Water flows associated with riparian areas can be perennial (all seasons of the year), intermittent (for several weeks or months per year), or ephemeral (only in response to precipitation events).

Box II. A Definition of Riparian Areas

The following definition can be incorporated into local regulations to protect riparian areas:

Riparian areas are plant communities contiguous to perennial, intermittent, and ephemeral rivers, streams, or drainage ways. They have one or both of the following characteristics: 1) distinctively different vegetative species than adjacent areas; and/or 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. (Adapted from USFWS, 1997)

Montana's Riparian Types

Montana's riparian areas are divided into three broad categories. They are found adjacent to perennial, intermittent or ephemeral rivers, streams, or drainages. The vegetation associated with these areas can include trees (e.g., conifers, cottonwood, and aspen), shrubs (e.g., dogwood, alder, birch, and willows), and herbaceous plants (e.g., sedges, rushes, grasses, and forbs). In Montana's lower elevation riparian areas, where development pressure is the greatest, vegetation is adapted to growing in a dynamic system of flooding and meandering rivers and streams. This system, in combination with the moist, often wet soils and high water table, creates a place for water-loving plants.

Streamside Forests

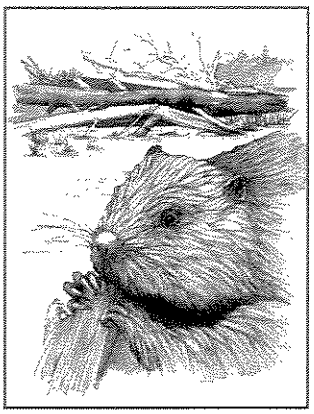
Riparian forests are the gallery forests and woodlands of generally lower elevation floodplains. The dominant trees are typically cottonwoods, with black cottonwood most common in western Montana, and plains and narrowleaf cottonwoods common in the east. Aspen can also be a prevalent species, especially on higher elevation tributaries. Cottonwood/aspen forests can be found in the floodplains of all of the state's major rivers and their tributaries. Coniferous trees can also dominate riparian forests, especially at higher elevations: in western Montana these typically include grand fir, subalpine fir, Engelman spruce, western red cedar, and western hemlock in moister sites; and Douglas fir, ponderosa pine, and Rocky Mountain juniper in drier areas. The latter three species are also the most common coniferous trees in eastern Montana. Although riparian forests are described by the trees in the forest canopy, an important component of these forests is their understory. A healthy riparian forest generally has an understory of trees and shrubs in different life stages.

Streamside Shrublands and Herbaceous Areas

Riparian areas dominated by shrubs or herbaceous vegetation, rather than trees, are common throughout the state. In western Montana, the dominant shrubs present are typically alder, willow, birch, or red-osier dogwood. Riparian shrubland in eastern Montana is drier, with hawthorn, serviceberry and chokecherry common. Riparian herbaceous vegetation includes cattails, sedges, bulrushes, grasses and forbs. This type of riparian area is especially common in eastern Montana.

Woody Draws

Woody draws are found throughout Montana, although they are more common east of the continental divide. These areas support woody vegetation, such as tall shrub (e.g. chokecherry) and tree species (e.g. conifers or green ash), in small intermittent and ephemeral drainages. The vegetation is a result of higher moisture availability than the surrounding area. The duration of surface water, however, is shorter than that of other streamside riparian areas (e.g. cottonwood and dogwood communities).



Chapter 3

Building a Local Government Program to Protect Wetlands and Riparian Areas

Many Montana communities have begun to develop programs to preserve stream and river corridors, floodplains, lakeshores, and wetlands—as greenbelts, parks, and open space. These locally developed programs reflect the imagination, talents, knowledge, and enthusiasm of interested citizens and local government officials. Because there is no step-by-step, one-size-fits-all process to build conservation programs, it is important to take the time to plan how locally developed regulatory and voluntary programs can be built over time.

Box III. Elements of a Local Program
Develop an Education Program
Establish Community Goals
Gather Supportive Evidence
Provide Incentives & Technical Assistance
Develop Regulations
Implement and Enforce Regulations
Address Budget Issues
Coordinate Permit Processes

The elements of a local government wetland and stream conservation program are described in this chapter. Because local elected officials have broad general government powers for planning and enacting programs and policies, wetlands and riparian areas can effectively be protected wherever they exist within the local jurisdiction. These broad government powers also enable local governments to consider cumulative effects on these natural resources.

Develop an Education Program

Community support is essential for local governments who are interested in adding conservation provisions to land use plans or regulations, passing an open space bond for park acquisition, or pursuing other conservation measures. Informed citizens can understand, evaluate, and comment on protection programs. Education and outreach can be accomplished using educational materials, traveling exhibits, forums, workshops, field trips, and public events. Both local governments and citizen groups can undertake any of these efforts. Important topics for education programs include community benefits of wetlands and riparian areas, their location and extent, identified threats, suggested conservation methods, and information regarding the relationship of conservation programs to broader water and land use goals identified by the community. Audiences for education programs include landowners who own wetlands and riparian areas, citizens, public works departments, community leaders, and interest groups.

Discussions between community leaders and citizens should be encouraged during early stages of land use planning. One effective way to accomplish this is to involve community members in a committee designed to specifically address protection of identified natural resources. Citizens working together can become knowledgeable about the challenges and opportunities available for local resource protection; develop community-based solutions for dealing with conservation issues; and carry their conservation proposals to the community as a whole.

Establish Community Goals

Land use plans and regulations should clearly state

that conservation of wetlands and riparian areas is in the public interest and is a community goal. In particular, specific language in a local growth policy plan will provide direction for subsequent land use regulations adopted by the community, such as zoning, development permit, and subdivision regulations (*see Growth Policy Plan, page 5-1*). Community adoption of a simple policy calling for no net loss of wetlands, support for riparian buffers, and/or a long-term net gain of restored or protected resource areas, can guide conservation programs. Goal statements can also be very specific, such as calling for protection of a particular watershed, or a valuable type of wildlife habitat. General goal statements used by a few Montana communities appear in Box IV. Additionally, suggested goals for growth policy plans appear in Appendix II.

Gather Supportive Evidence

Background research, studies, maps, and other supportive evidence should be gathered on the wetlands and riparian areas found in the community. Well executed community data gathering, studies, and planning efforts are important to the process of developing, enforcing, and defending regulations, programs, and policies. Basic inventory work can be started by gathering existing data from maps and aerial photos. Appendix III contains a list of sources for maps and other background information. If local governments can include funds to map sensitive areas in their budget, and include maps in their land use plans and regulations, they will increase certainty and predictability for landowners and developers.

Inventories can be designed to provide varying levels of information about area resources. Prior to starting inventory work, decisions must be made on the level of detail communities need and can realistically expect to collect. The most basic inventories contain information on the location, size, and type of resources (Rubey Frost and Stenberg, 1992). More extensive inventories can provide greater detail such as threats, landownership, hazards, and special values (Kusler and Opheim, 1996).

Identification of streams, lakes and rivers is relatively simple, and, consequently, the general location of riparian areas is fairly easy to determine. Wetland mapping is a greater challenge because the accuracy of maps and map scale can be problematic. If existing maps, aerial photographs, and other information are not adequate for a local government's needs, inventory work can be done in phases or as projects arise on a case-by-case basis. For example:

- The jurisdiction can be divided into different units and then inventory work can focus on each section as funding permits. Under this scenario, sections of the jurisdiction with the most pressing problems would receive the highest priority for inventory work.
- Some inventories focus solely on the largest and most obviously diverse areas (e.g. stream and river corridors, lakeshores, and/or large wetland complexes).
- Instead of mapping wetlands and riparian areas, some communities develop selection criteria—and then evaluate projects with field surveys conducted on a case-by-case basis. A discussion of selection criteria appears in Chapter 4.

Because inventory work can be expensive, local governments may be handicapped by limited budgets, inadequate maps or background information, and a lack of expertise among staff. One way to address these issues is to turn to outside assistance for expertise and technical support—universities, state and federal agencies, and other resource professionals. These same experts can be used to assist with the development of local conservation initiatives, and the review of individual development proposals.

Provide Incentives and Technical Assistance

Local governments should consider ways to provide incentives for protection of sensitive areas. For example, special assessments (sewer, water, and levies, for example) could be reduced for landowners who are either willing to protect natural resources or own property in tightly regulated areas. Monetary incentives could also be provided to landowners for donating fee or partial interest in a wetland or stream corridor to a park, open space, or similar use.

Box IV. Protection Goals for Wetlands and Riparian Areas

How do Montana communities justify protection for wetlands and riparian areas? The following goal statements were taken from local government polices and regulations in Montana used as case studies in this handbook.

General Protection Statements

1. Promote public health, safety and welfare.
2. Require development in harmony with the natural environment.
3. Avoid unnecessary environmental degradation.
4. Protect the natural environment, water quality and wildlife.
5. Preserve scenic resources.
6. Preserve environmentally sensitive areas (riverbanks, floodplains, critical watersheds, important wildlife habitat).
7. Balance the greatest public good with the least private injury.
8. Assure that land within the local vicinity retains its desirability, usefulness, and value to its owners and to the public in general.
9. Protect and enhance property values.
10. Protect important recreational values and related economic values of the county's rivers.
11. Assure that new development is designed to minimize the public costs of providing services.
12. Provide for adequate parks and recreation areas.

Protecting Streams, Rivers, Lakes, Wetlands and Functioning Floodplains

13. Promote floodplain stability.
14. Recognize the right and need of watercourses to periodically carry more than the normal flow of water.
15. Restrict or prohibit uses that are dangerous to health, safety, and welfare or property in times of flood, or cause increased flood heights or velocities.
16. Minimize relief efforts associated with flooding and generally undertaken at the expense of the general public.
17. Promote the wise use of floodplains.
18. Require that uses vulnerable to floods be provided with flood protection at the time of initial construction.
19. Maintain normal movement of surface waters.
20. Minimize expenditure of public money for flood control.
21. Keep development out of the floodplain and riparian areas.
22. Ensure that riparian resources remain available to support riparian systems and habitats.
23. Protect the banks of streams and lakes.
24. Protect the rivers and streams of the county.
25. Regulate development immediately adjacent to natural lakes to protect the shoreline or bank.
26. Maintain natural hydrological and ecological functions of wetlands, riparian areas, and other flood prone lands.

Protecting Rural Settings

27. Encourage new growth to be compatible with the county's agricultural and rural character.
28. Protect open space, grazing lands, and the agricultural lifestyle and economy.
29. Encourage new growth to occur near existing communities.
30. Discourage development in certain designated areas.
31. Preserve the local area's rural lifestyle and primarily agricultural land base.
32. Allow development that is compatible with existing growth patterns.
33. Maintain the open and rural residential character of the area.
34. Protect agricultural land uses.
35. Prevent overcrowding.
36. Maintain the integrity of the area.

Protecting Water Quality

37. Protect water quality.
38. Act as a sediment filter.
39. Protect ground water.
40. Protect watersheds.
41. Maintain water resources.
42. Ensure high water quality standards.

Protecting Fish and Wildlife Habitat

43. Preserve large, woody debris that can provide stream habitat and shade to regulate stream temperature.
44. Protect wildlife resources
45. Preserve fish and wildlife habitat

Incentives can go a long way toward generating support for conservation programs.

Providing technical assistance that can help identify boundaries of sensitive areas will help landowners understand how to comply with regulatory and voluntary protection measures, achieve their own land use objectives, and build community support for conservation programs. Additionally, discussions between planners and landowners during early stages of project design can often result in project modifications that minimize the adverse impacts on resources. If regulations have been adopted, assistance should also be provided to negotiating the regulatory permitting process.

Develop Regulations

Without a full range of regulatory and non-regulatory protection programs in place, it is impossible to stop the loss of wetlands and riparian areas and maintain the functions they provide (Rubey Frost and Stenberg, 1992). With community goals established, local governments can consider developing regulations to achieve conservation objectives. Regulations should articulate the attributes of wetlands or riparian areas to be protected, and specify the public purposes and community goals that will be met. The purpose clause of any regulation should clearly state the intent of the regulation. Chapter 4 gives an overview of the details that need to be addressed when developing regulations to protect wetlands and riparian areas. Additionally, Chapter 5 outlines how Montana's land use tools can specifically be used to protect these community resources.

To ensure long-term protection of natural resources, local governments may want to include in their regulations a requirement that development proposals contain a plan outlining how the wetland and riparian resources will be protected over time. Both the City of Missoula and Missoula County require these plans as part of each development proposal (*see City of Missoula and Missoula County, page 5-12*). Required elements of the plans include 1) maps showing the location of wetland and riparian vegetation, buffer areas, and drainage patterns; 2) a description of the vegetation and types of fish and wildlife habitat available; 3) an assessment of the susceptibility of soils to compaction; and 4) a maintenance and monitoring plan. These management plans may not be altered without permission from the governing body.

Common sense should guide adoption of regulations. All statutory and ordinance procedures with regard to adoption of regulations or ordinances, public hearings and notices, and other requirements need to be followed. Additionally, regulations should not deprive a landowner of all reasonable economic use of their property (*see Box V*).

Implement and Enforce Regulations

In the tug of war between unlimited freedom in the use of private property and the need to protect both private property and the public good from harm, local decision-makers are increasingly recognizing that it is in the public's economic, social, and environmental best interest to guide development away from rivers, streams, and wetlands. Allowing development too close to a waterway can lead to pollution of streams; serious flood damage, including to roads and buildings; and a growing threat to the rural character that is the signature of much of Montana.

Careful evaluation of permits and development plans is essential to implementing local programs. Chapter 4 contains an overview of the steps that should be taken in reviewing individual proposals. If local officials do not have the expertise to ensure that the proposed development will not impact rivers, streams and wetlands, they should seek assistance from state and federal agencies, universities, and other area professionals to aid in the evaluation of projects, develop conditions that minimize impacts, and recommend mitigation when impacts cannot be avoided.

Once a development is authorized, periodic inspections should be conducted. Consistent prosecution of violations to local rules, standards, and permits can help ensure that protection programs are being followed (Kusler and Opheim, 1996). Public education programs can facilitate local enforcement.

Additionally, volunteer public interest groups and individuals can assist with the reporting of violations.

Address Budget Issues

Most local governments are continually plagued by budget limits for planning. Local programs are faced with limited funds and personnel for mapping, site investigations, and enforcement actions. A number of funding sources are available for local planning efforts. For instance, the Montana Department of Commerce provides annual planning grants for funding the development of plans, regulations, and other related activities such as mapping wetlands and riparian areas. Additionally, Chapter 6 describes several government programs that can assist with different aspects of program development and implementation (e.g. *see DEQ Wetlands Program, page 6-10*). There are also a variety of approaches that may be taken to reduce program costs: 1) to help communities evaluate a proposed development, developers can be required to complete environmental assessment work or undertake other data gathering; 2) a fee can be charged to help defray costs of field inspections and the processing of permits; 3) local officials can decide to use existing maps rather than produce their own; and 4) volunteer groups can be used to monitor developments and report violations.

Coordinate Permit Processes

Thought should be given on how local governments interact with the regulatory programs outlined in Appendix IV. Many local governments condition their approval of a development based on the applicant receiving all necessary permits. However, there is often little follow-up to ensure that permits have been obtained. Instead of assuming that the applicant will receive all permits, it makes sense for local governments to require that final permits be received before a development permit is issued. This requirement ensures that all necessary government authorities have reviewed a project impacting a river, stream, or wetland before a development permit is issued. For example, local governments should not submit a final plat on a subdivision to the Clerk and Recorder's office until copies of all applicable permits are received.

Box V. Private Property Rights and Land Use Planning

Since the inception of land use planning, the courts have developed thresholds for determining whether a particular land use regulation is a legitimate exercise of the "police power" inherent in our government's authority to protect public health, safety, and welfare. The following standards have emerged from a history of court decisions to guide local governments in determining the validity of regulations.

- The regulation in question must have been adopted in accordance with the applicable enabling statute.
- The regulation must be reasonably related to, and must actually further, public health, safety, or general welfare.
- The regulation must not unreasonably discriminate between similarly situated land.
- The regulation must not be arbitrary or capricious either on its face or as applied to a particular property. It should go no further than is required to achieve its legitimate objective, and, in the case of zoning and development regulations, must conform to an adopted growth policy (*see Growth Policy Plans, page 5-1*).
- The regulation must not have the effect of excluding entire racial, minority, or economic groups from the jurisdiction.
- The regulation must not be considered to be an unconstitutional "taking" of property. The most commonly applied "takings" test is whether the regulation denies a landowner of *all* economically viable use of property without compensation.

In addition to the above guidelines, regulations should contain a process by which local governments consider the concerns of citizens affected by a regulation before final decisions are made. Appeal processes and variances found in regulations address due process rights for citizens.

Local governments may also want to explore adopting a joint permitting procedure with other regulatory agencies so that landowners have—to the extent possible—one-stop shopping. Such joint permitting procedures may involve several levels of government and types of programs such as the federal Section 404 Program, land use planning regulations, local floodplain rules, and Conservation District permits.

Please Note: Chapter 3 was based on the Environmental Law Institute's publication *Our National Wetland Heritage: A Protection Guide* (Kusler and Opheim, 1996) and *A Primer on Land Use Planning and Regulation for Local Government* produced by the Montana Department of Commerce Community Technical Assistance Program (Richard, 1994).

Box VI. How Citizens Can Jumpstart Planning and Implementation Processes

Local land use tools to protect wetland and riparian resources are adopted and enforced by elected officials. These officials respond to constituent and community desires. Active citizens interested in protecting sensitive resources should foster general support among local citizens, and encourage elected officials to enact conservation measures. Citizens can do this by 1) developing or utilizing education material on the benefits of wetlands and riparian resources; 2) writing letters to elected officials and the editor of local newspapers; 3) discussing issues with elected officials; and 4) attending regular council or commissioner meetings. In short, active citizens should make sure that elected officials know that these resources are important and should be protected. Specific places citizens can get involved include:

Influencing Growth Policies

Cities and counties are required to prepare growth policy plans (*see Growth Policy Plans, page 5-1*). The best time for concerned citizens to begin to influence the content of the plan, and to ensure that the plan incorporates strong goals and policy statements relating to protecting wetland and riparian areas, is during the process of preparing the plan. During this process, citizens should attend public meetings and hearings, and speak out about the need and benefit of protecting those lands. Suggested conservation language for growth policy plans appears in Appendix II.

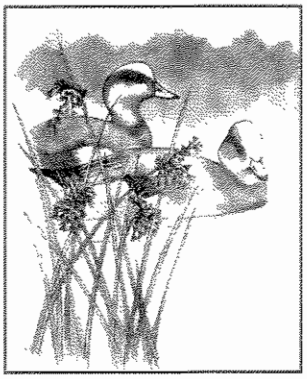
Reforming Subdivision Regulations

When cities and counties revise their local subdivision regulations, citizens should participate in meetings of the planning board and elected officials, and lobby for good standards and requirements to address impacts on wetlands and riparian areas. Suggested conservation language for subdivision regulations appears in Appendix II.

Monitoring Individual Subdivision Proposals

It is important for citizens to be involved when individual subdivisions are proposed. Within the subdivision process, the subdividing and platting of new development is the most important phase because that process establishes land use patterns, including the locations and design of lots, roads, and other improvements that affect land and water resources. Also, citizens should participate in preliminary plat approval of individual subdivisions. If protection standards have been adopted, citizens can work to ensure that they are applied to each subdivision proposal and acted upon by the planning board and elected officials.

As Landowners. In communities where local officials are not preparing or implementing conservation measures in land use tools, landowners can enter into conservation easements to protect wetland and riparian resources. In addition, citizens can work with local landowners who have wetland or riparian resources to encourage formation of a planning and zoning district (*see Planning and Zoning Districts, page 5-6*). These districts can be designed to develop regulations to protect sensitive resources.



Chapter 4

How to Develop On-the-ground Conservation Measures

The previous chapter outlined the basic elements of a local government conservation program. This chapter contains the details to consider in developing on-the-ground conservation measures. These conservation measurers can then be used in Chapters 5 and 6, which outline how Montana-specific land use tools can be used. Since vegetated buffers are widely regarded as being the most critical element of protection efforts, most of the discussion in this chapter centers on setting up effective buffers. Woven into that discussion are other elements that local decision-makers will need to consider for administration and development of a program.

Define the Resource to be Protected

Whether developing a regulatory program, creating a greenway development plan, or setting up a conservation easement, decision makers will need to determine which resources are included in protection efforts. These decisions will be based on community support, the benefits provided, and practical considerations such as the level of expertise, mapping, and site investigations required by different conservation options. This section gives an overview of the challenges and opportunities that exist as decision-makers choose which on-the-ground resources to protect.

Riparian Areas

Deciding which riparian areas should receive protection is dependent upon the desired benefits officials want to achieve. Protecting economic or aesthetic benefits may dictate establishing buffers along rivers and streams. If conservation of wildlife habitat is a goal, local biologists may indicate that certain stream corridors or watersheds are more important than others. For water quality protection, scientific research shows that riparian buffers should be established along all rivers and streams, including intermittent and ephemeral streams, to the maximum extent possible (Wenger, 1999). Because water quality protection is commonly used as the central reason why riparian buffer programs are enacted, local officials will be faced with the following three decisions as they choose which riparian resources they are willing to protect. Definitions for perennial, intermittent, and ephemeral streams appear in Box VIII.

Rivers and Perennial Streams

In order to protect water quality, it is important from a scientific perspective to preserve corridors of natural vegetation along both rivers and perennial streams. Protection of streams is particularly important because many of the degrading impacts of development are carried downstream and are amplified once they drain into main stem rivers. Consequently, the water quality and quantity in rivers is largely determined by what they receive from their many smaller tributaries. Due to their size, small streams are especially vulnerable to degradation by excessive sediment, nutrients, and other pollutants, simply because there is a smaller volume of water available to flush out and/or assimilate these pollutants (Cohen, 1997).

Ephemeral and Intermittent Streams

Scientific studies indicate that riparian buffers should be established along all intermittent and ephemeral streams (Wenger, 1999). These research findings make sense given that all streams drain downhill, and that intermittent and ephemeral streams feed directly into both perennial streams and larger river systems. However, if local officials decide not to protect all streams, research indicates that, as an alternative, riparian buffers can be established on all rivers and "all perennial streams as well as all intermittent streams of second order and higher" (Wenger, 1999). The City of Bozeman accepted this recommendation by establishing riparian setbacks along all watercourses "*in which water flows either continuously or intermittently and has a definite channel, bed, and bank.*" The City of Missoula extends protection to smaller intermittent and ephemeral streams through protection of woody draws (*see Box VIII*).

Bank Stabilization and Land Use Planning

Montana's low elevation streams and rivers need room to move. In addition to protecting riparian areas, uplands located next to streams and rivers also need protection. The long-term health of riparian areas requires maintaining natural stream processes. In Montana, this natural process includes allowing many rivers and streams room to meander. If given space, this meandering creates a pattern where outside bends of a river are dominated by cut banks (caused by natural erosion), and inside bends are dominated by sand or gravel bars (where sediment is deposited). Additionally, the bends in meandering streams naturally and slowly migrate. This process, in combination with the moist, often wet soils and high water table found next to streams, creates a river's floodplain, which is often defined by riparian vegetation. Plants associated with riparian areas are adapted to growing in this dynamic system.

As more bank stabilization structures are built—weirs, riprap, barbs, and other structures—both short term and long term consequences can develop. In the short term, these structures tend to physically stabilize one local stretch of riverbank or divert flows away from one bank to another. This can trigger increases in river flow velocities, exacerbate downstream bank erosion and lead to further instabilities downstream. Over the long term, bank stabilization can cause the channelization of rivers and streams as floodplains narrow or disappear, natural stream migration is prevented, and, ultimately, riparian vegetation does not regenerate (e.g. Ellis, 2002). For more information about the problems with bank stabilization, see the Missoula County case history on page 5-20.

Local governments are beginning to grapple with the issue of what to do when people want to build their homes near a meandering stream. Built too close to the stream, landowners will eventually request that bank stabilization structures be built to protect their home. It is important to note that allowing homes to be built on a high point overlooking a stream or river will often require landowners to stabilize the stream bank below to prevent their homes from eventually falling into the water. The best way to deal with this issue is to not allow homes to be built in the floodway or active area of the floodplain; and to establish setbacks on areas located above the floodplain, but within the zone where streams will likely meander.

Wetlands

The size, density, relative importance, and location of wetlands in an area can strongly affect a community's willingness to protect them. When local governments adopt wetland protection programs, it is recommended that their approach be kept simple. This section discusses ways that local governments can decide which wetlands to protect (Kusler and Opheim, 1996).

Because the filling of wetlands is regulated under Section 404 of the federal Clean Water Act, if local governments choose to protect wetlands, they will want to coordinate all wetland protection efforts with the Army Corps of Engineers (*see Appendix IV*). In fact, if wetlands are identified on a piece of property slated

for development, as part of a standard process to deal with wetlands, local governments should require the developer to submit a letter from the Corps indicating if the wetlands are regulated by the 404 program. If regulated wetlands occur on the property, local governments should then determine 1) if a delineation was completed as part of the permitting process; and 2) if the Corps approved, approved with conditions, or denied the 404 permit.

Mapped Wetlands

Many communities, where there are comparatively few wetlands and much developable land, have applied regulations only to larger wetlands. To accomplish this, a broad map of wetland areas is completed, and regulations are adopted that establish buffers around mapped wetlands. This approach has proven politically expedient and minimizes administrative problems, while preserving the more important wetlands. National Wetland Inventory (NWI), a project of the U.S. Fish & Wildlife Service, are the main source of wetland maps in Montana (*see Appendix III*). These maps are based on interpretation of aerial photographs and are projected onto USGS topographic maps. Because of their scale, some smaller wetlands may not be identified on these maps. Unfortunately, NWI maps have not been completed for most of the state. Therefore, it may be necessary to use alternative sources of information to develop base maps of local wetlands (*for alternative sources of information, see Appendix III*). Once maps are created or adopted, they can be attached to land use plans and regulations. However, to evaluate individual development proposals, field delineations of wetland boundaries are almost always necessary to refine map boundaries. Several ways to obtain wetland delineations are discussed below. Local governments interested in getting NWI maps completed for their jurisdiction should contact the DEQ Wetlands Program (*see DEQ Wetland Program, page 6-10*).

Delineated Wetlands

A second approach to wetlands protection does not require local governments to map wetlands. Under this approach, local governments rely on written guidelines, a definition of wetland resources, a delineation manual, and application of regulations on a case-by-case basis. Wetland delineations are simply the act of establishing the boundary between wetlands and uplands (or non-wetlands) using specific definitions. These definitions commonly comply with federal regulations, but not always. A "delineation" usually requires that a resource professional look at site-specific soils, plants, hydrology, and other factors to determine the actual boundary of a wetland. This approach is less expensive than mapping an entire jurisdiction and allows buffers to reflect site-specific conditions. However, it can create uncertainty and unpredictability for landowners. There are several ways to get a delineation completed for a wetland.

Rely on Federal Wetland Delineations. If a wetland is proposed to be filled from a subdivision or other development, then the developer will usually need a 404 permit from the Army Corps of Engineers (Corps) under the Clean Water Act (*see Appendix IV*). If a delineation is done as part of this process, once completed, local governments can use these delineations to determine wetland boundaries. Under this scenario, only those wetlands delineated, as a requirement of the 404 permit process, would receive protection under local regulations.

Request Developers to Delineate All Wetlands. A common method used by local governments is to require developers to delineate all wetland boundaries within the development area. This is particularly important in situations where a 404 permit may not be required (and therefore a delineation will not be completed). For example, a 404 permit may not be needed if a wetland is within the development area, but will not be filled. A local government may want to regulate impacts to these wetlands because they may be degraded by development activities and the 404 program would not establish protective buffers around them. Under this strategy, regulations would apply to all wetlands within a jurisdiction.

Develop Expertise to Determine Wetland Boundaries. A final way to get wetland boundaries established is to train local government staff or hire technical assistance to complete these delineations. In such cases, regulations can be developed that allow wetland boundaries to be determined, at least in a general way, by landowners and/or planning staff. As an example, both the city and county of Missoula have adopted standards that identify key plants associated with local wetlands. These standards were designed so that an individual with some skill, armed with a plant identification book, can usually perform the boundary identification. Planning staffs are also able to assist landowners with boundary determinations on a case-by-case basis (*see City of Missoula and Missoula County, page 5-12*).

Wetlands in Riparian Corridors

Another way to include some protection for wetlands in local regulations is to protect wetlands in riparian corridors through riparian buffers. Wetlands have long been recognized for their ability to trap water and sediment. Located in the floodplain, they also play an important role in flood control. In fact, riparian wetlands are significant enough that research supports their *automatic* inclusion in riparian buffer systems (Wenger, 1999). In this model, the width of riparian buffers should be extended by the width of all adjacent wetlands.

Functional Assessments of Wetlands

One final approach to wetland regulations is based on a functional assessment. Because all wetlands are not of equal value, some communities have decided to apply special criteria to determine which wetlands are more important to the community. A functional assessment is used to determine the level and importance of different wetland functions, such as a wetland's significance for wildlife habitat, flood prevention, and water quality improvement. This method is much more sophisticated than the above methods, and requires more time and expertise. One way that communities have handled this system is to establish a committee or board of resource specialists that is charged with evaluating wetlands in development projects on a case-by-case basis. This board is asked to complete a functional assessment of wetlands and make recommendations of condition that should be attached to development proposals. Recommendations may focus on buffer size, a list of activities that are allowed and/or prohibited, and similar measures.

Consider the Right Tool for the Job

Establishing a buffer around wetlands and riparian areas is the single most effective conservation mechanism available. Buffers are the natural, undeveloped, vegetated areas surrounding a stream or wetland. They serve as an important transition zone between wet areas and their adjacent upland. Establishing effective buffers is critical in all protection programs, including growth policies, subdivision regulations, zoning, development permit regulations, floodplain regulations, and septic system standards. This same tool is also used in conservation easements, covenants, deed restriction, and public park development plans. To begin, there are several general mechanisms used to establish a buffer around sensitive areas:

Setbacks

Setback requirements determine the allowable distance between a critical area, such as a wetland or stream, and a new development. Their size is based on a variety of factors. In Montana, local governments have generally used setbacks ranging from 50 feet on smaller streams, to 500 feet or more on rivers (*see Appendix I*). Setbacks for riparian areas are usually measured from the high water mark. Wetland setbacks are measured from the wetland's edge.

Building Envelopes

A building envelope is a geographic area delineated within a land parcel in which buildings or other structures may be located. The building envelope is

drawn to include the part of the lot suitable for building that avoids damage to or degradation of sensitive areas such as wetlands, riparian vegetation, flood-prone areas, and critical wildlife habitat. Building permits, zoning, subdivision regulations, and development permits are ideal for enforcing building envelopes. Building envelopes are also used in public interest covenants (*see Public Interest Covenants, page 5-13*) and conservation easements. If they are incorporated into subdivision regulations, building envelopes can be difficult to enforce unless there is a public interest covenant attached to the subdivision. Another way to enforce building envelopes is by cooperative agreements with the county sanitarian, since Montana law requires that the local sanitarian review all new septic systems.

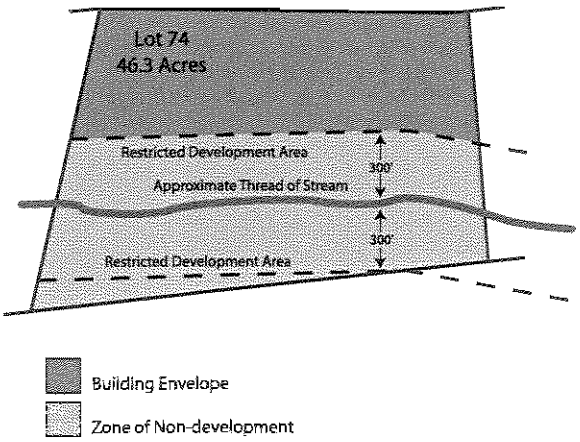


Figure 2. *The relationship of Building Envelopes to Zones of Non-development.*

Zones of Non-development

A direct means of protecting wetlands and riparian areas is to prohibit development, filling, or other alterations in specific locations—instead of a "building envelope" being drawn to establish the part of the lot suitable for building, an "envelope" is drawn around the resource area that needs protection. At least two general categories of non-development "zones" are found in Montana. These two types of zones can be used in traditional zoning regulations, development permit regulations, subdivision regulations, and conservation easements.

- "**No-build Zones**." No-build zones prohibit residential and commercial buildings. If specified, they can also include additions to an existing structure, decks, parking lots or other impervious surfaces, or similar improvements.

- "**No Improvement Zones**" or "**Zones of Non-development**." In addition to prohibiting any buildings, these zones can prohibit placement of any structures or fences (including stream bank alterations); motorized vehicle access (including roads and driveways); landscaping (including restrictions or prohibitions on tilling, mowing, fertilizing, filling or dumping) or planting of non-native species (including lawns); use of power equipment (unless part of an approved weed control program); and disturbance of native riparian vegetation. Prohibitions or seasonal restrictions on grazing can also be found in no improvement zones.

Cluster Development

Cluster development is an alternative to large-lot development. Rather than simply dividing land into large lots (e.g. 10-acre or 20-acre individual lots), under cluster development smaller lots are created (e.g. 1-acre lots), which allows the remainder of the tract to be protected as common open space. Clustering development allows smaller lots to be served by fewer linear feet of roads, water and sewer mains, and electric, telephone, and natural gas lines—saving dollars for residents, local governments, and utilities. The other major benefit is that open space can protect important resources such as wetlands and riparian areas. Because lot size and patterns are determined at the platting stage of development, cluster development is best used as a tool in subdivision regulations. In fact, the 2001 Montana Legislature added a provision to Montana's Subdivision and Platting Act that gives local governments incentives to encourage cluster development and the preservation of open space (*see 76-3-509, MCA: Local Option Cluster Development Regulations and Exemptions Authorized*).

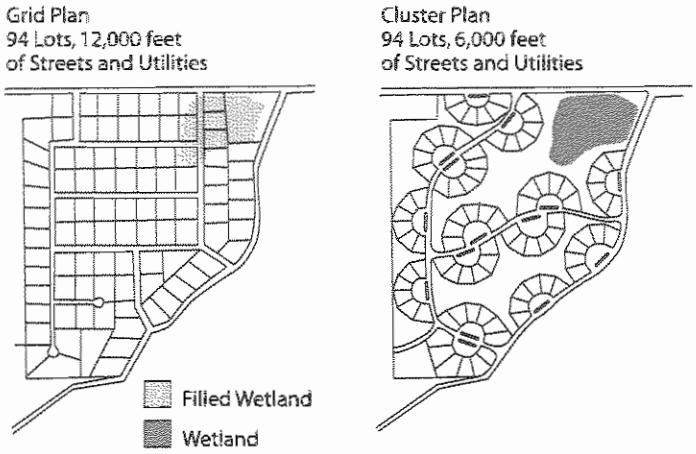


Figure 3. Illustration of Cluster Development used to protect a wetland.

Density Limitations

Although less effective, density limitations are a commonly used mechanism that can provide some level of protection for streams and wetlands by restricting the number of buildings allowed per acre. For example, the Milligan Canyon/ Boulder Valley Agricultural Zoning District allows only one non-agricultural building per 640 acres (*see Jefferson County, page 5-7*). Although streams or wetlands are not specifically protected when residential development is restricted to a specific lot size, protection is indirectly achieved because the lot size for new residences prevents houses from lining rivers, streams, or lakeshores. Density standards, however, should be crafted to avoid "spaghetti lots," where a series of long, narrow lots line a stream or lake. In these situations, the lots themselves meet density standards, but sensitive areas can be subject to a high density of houses. Appendix I contains a summary of the density standards used by a sampling of local governments in Montana.

Establish a Sequence for Reviewing Individual Development Proposals

After local governments have decided what resources they want to protect and the tools they will use to protect them, policies should be established for the review of individual development proposals. Consistent with policies adopted by federal programs, the following sequence of decisions is recommended when development of a wetland or riparian area is considered on a case-by-case basis:

- Avoid impacts by considering alternative locations;
- Minimize the impacts of a project on the resources; and
- Where impacts are unavoidable, mitigate.

Each step of this sequence is discussed below. Please note that because of the federal, state, and local regulation protect wetlands and riparian areas, avoiding, minimizing, or mitigating resource losses must be implemented in a manner consistent with applicable regulatory programs (*see Appendix IV*).

Avoidance

The best way to protect wetlands and riparian areas is to avoid projects that fill, grade, drain, or otherwise damage or destroy these resources or their adjacent uplands. If at all possible, development activities should be located on uplands. Setbacks, building envelopes, and no-build zones are effective mechanisms that can be used to "avoid" impacts to streams and wetlands.

Minimize the Area of Impact

If impacts to a wetland or riparian areas cannot be avoided, then they should be minimized. Reducing impacts can preserve at least portions of the important functions these resources provide (e.g. filtration of

sediments and pollutants). Researching alternative project layouts, designs, erosion controls, and pollution control features are just a few ways to minimize impacts. A housing project, for example, might consider design options that include a fewer number of units, clustering of units, shifting the building pattern to skirt around wetlands or riparian areas, or requiring hook-ups to public sewer systems.

Mitigate Damages

When a project must impact a wetland or riparian area, local governments may require mitigation to be conducted by developers to compensate for the impacts. It should be noted that the use of mitigation might be controversial with developers because of the work and money involved, and with conservation organizations because of the mixed success of individual mitigation projects.

Mitigation can take many forms. It includes the restoration of existing degraded areas, or in the case of wetlands, the construction of human-made wetlands. Generally "preservation" of an existing area is not accepted by government agencies as a mitigation effort. As a practical matter, wetland projects that restore areas are much more successful than projects that create a new wetland. Creation is difficult to do successfully because all of the components of the system need to be functioning: soils, hydrology, and a seed source for desired plants. In contrast, restoration projects usually have all these components available, but in a degraded state. Because the success of wetland creation is mixed, it makes sense that when wetland mitigation is desired, restoration, and enhancement projects take priority.

If a local government is interested in requiring mitigation, it should set up a system to deal with mitigation projects on a case-by-case basis, including developing, monitoring, and maintaining mitigation sites. Under such a program, mitigation regulations should be clearly stated in a community's planning documents. Mitigation ratios, defining the amount and type of wetlands or riparian areas needed to replace those lost, are dependent upon the size, condition, and type of the impacted resource. Mitigation ratios of at least a 2:1 ratio, or double the area of the original resource lost, are not uncommon. Additionally, each mitigation project should have a mitigation plan that includes the following items, at a minimum:

- An evaluation of existing wetland or riparian values on both the land to be altered and the mitigation site;
- Clearly defined (and preferably measurable) goals for the mitigation site;
- Management provisions for transitional habitat between upland and the wetland/riparian area;
- A buffer zone from nearby developed areas;
- A plan for protection of the site from public access damage;
- A specific monitoring plan with targets, timelines (for example, 80% vegetative cover with the first 5 years of planting), and a reporting requirement; and
- Contingency plans, should the mitigation plan fail to achieve measurable success.

A full discussion of mitigation programs is outside the scope of this publication. As background, wetland mitigation banks, where for-profit companies sell wetland mitigation credits to developers for a fee, are used in some states as systems for creating and monitoring mitigation projects. The Army Corps of Engineers under the 404 permit program must approve all wetland mitigation banks—and there are currently no approved banks in Montana. However, state and federal agencies in Montana are currently working on local guidance for a payment-in-lieu-fee program to provide another option for mitigation of wetland and stream impacts from 404 permit activities. This program may allow developers to pay a fee for each acre of resource impacted. The funds would be collected, and made available for larger mitigation projects. The Montana Wetlands Legacy will be the likely administrator of this in-lieu-fee program (*see Montana Wetlands Legacy, page 6-14*).

Determine the Appropriate Buffer Width

The size of buffer strips depends on what the buffer is expected to do. There isn't one generic buffer width that will keep the water clean, prevent flood damage, protect fish and wildlife, and satisfy demands on the land. The minimum acceptable width is one that provides acceptable levels of all needed benefits at an acceptable cost (Connecticut River Joint Commission (CRJC), 1998). The following items should be considered in determining the size of any buffer width:

- Define the Purpose of the Buffer
- Choose a Buffer Type
- Consider Site Specific Factors—how slopes, floodplains, vegetation, and similar conditions should be factored into decisions about the activities allowed in buffers and buffer size.

Define the Purpose of the Buffer

An important step in developing conservation buffers is to determine what benefits they are expected to provide. For instance, is the goal to protect water quality, address flood control, preserve wildlife habitat, or some combination of these? Choosing different priorities may shape a regulatory program—and why several communities have chosen the priorities that they have is discussed in this section.

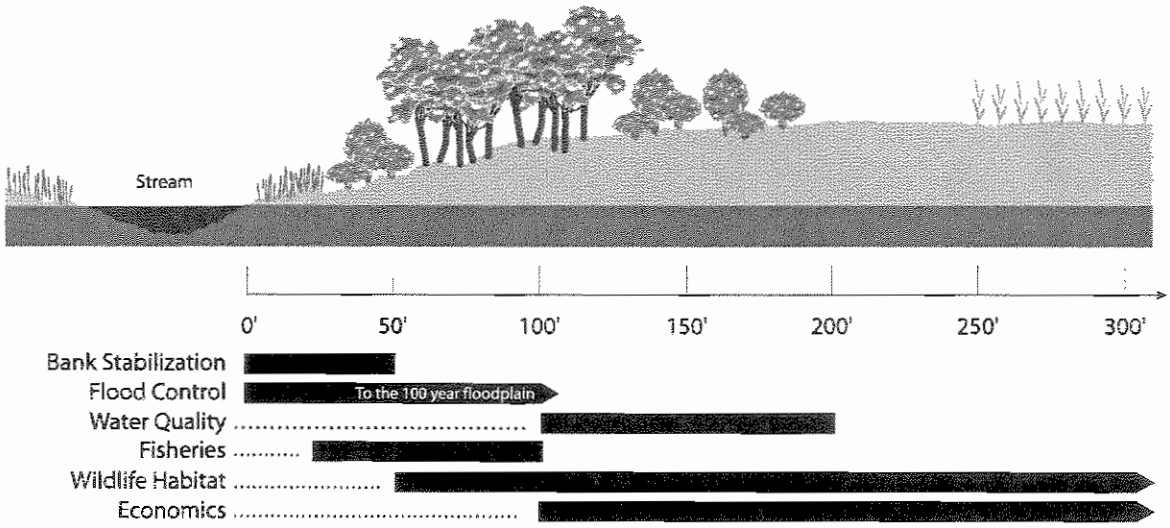


Figure 4. Buffer strip recommendations based on resource protection goals (CRJC, 1998).

Water Quality

A recent review of the scientific literature on riparian buffer strips concluded that for water quality protection, buffer strips should be a minimum of 100 feet wide under most circumstances, although buffers should be extended for steeper slopes (Wenger, 1999). This conclusion was based on several studies of different pollutants. As an example, to reduce nitrate concentrations 100-foot buffers were shown to provide good control, while 50-foot buffers were sufficient under many circumstances. Another review of the scientific literature identified the desired buffers for wetland protection (Castelle et. al., 1994). In this review, buffers less than 30 feet were determined to be inadequate under most conditions. Instead, buffers were recommended to be a minimum of 50 feet to 100 feet in width with the following caveat: buffers toward the lower end of this scale (50 feet) were deemed adequate for the "maintenance of the natural physical and chemical characteristics of aquatic resources;" and buffers at the upper end (100 feet) appeared to be "the minimum necessary for maintenance of the biological components of many wetlands and streams." Bozeman has adopted

setbacks in their subdivision regulations based on providing "bank stabilization, sediment, nutrient and pollution removal and flood control." Their setbacks are 100 feet from the East Gallatin River, 75 feet from Sourdough and Bozeman Creeks, and 50 feet from all other watercourses (*see City of Bozeman, Setbacks for New Buildings, page 5-5*).

Flood and Erosion Control

Public and private investments in property are at risk of damage or loss if stream dynamics are ignored. Using vegetated buffers to set back human developments and land uses from stream banks is cost effective protection against the hazards caused by flooding, lakeshore erosion, and moving streams (CRJC, 1998). Smaller streams may require only a narrow buffer of trees or shrubs, while larger streams and rivers may require a buffer that covers a substantial portion of its floodplain. In areas where streams are known to meander, setbacks should incorporate floodplains, as well as non-floodplain areas overlooking the stream or river: a common problem arises when homes are built overlooking a river, as stream channels naturally move these homes can become vulnerable to falling into the water (*see Bank Stabilization and Land Use Planning, page 4-2*).

Economic and Community Values

Several Montana communities have decided that the conservation of rivers and streams is important to maintaining the rural character of their community's landscape. Choteau County has a 3-mile setback from the Missouri River in places where development would be visible from the river (*see Choteau County, page 5-9*). Madison County determined that a 500-foot setback was needed in its subdivision regulations in order to protect the Madison River corridor (*see Madison County, page 5-11*). Both of these areas rely on rivers for the local economy and quality of life. Larger buffers are needed when visual resources are identified as a key resource that warrants protection—particularly in Montana's intermountain valleys and plains where the state earns its "Big Sky" namesake.

Fish and Wildlife Habitat

In streams where temperature and recruitment of woody debris is important for fisheries, the scientific literature indicates that riparian forests should be preserved or restored for a minimum of 35 to 100 feet along streams. For wildlife, buffers must provide enough room for animals to take shelter, find food, successfully raise young, and hide from predators. While narrow buffers offer habitat benefits to many species, most wildlife—especially birds and larger mammals—depend upon riparian areas that are a *minimum* of 300 feet wide (Wenger, 1999) (*see Box VII*). As desirable as they may be, 300 or 600-foot wide buffers are not practical on all streams in most areas. One recommendation to accommodate this issue involves including at least a few wide (300 – 1,000 foot) riparian sections and large blocks of upland habitat along narrower protected corridors. Protection of these wide riparian corridors for wildlife could be a part of an overall habitat protection plan for a county.

Box VII. Recommended Buffers for Wildlife

Research shows that the following buffer widths are needed to support different species of wildlife (adapted from CRJC, 1998; Bald Eagle information from Montana Bald Eagle Working Group, 1991):

Wildlife dependent on wetlands or watercourses	Desired Width
Bald Eagle	1,320 feet (1/4 mile)
Nesting heron, cavity nesting ducks	600 feet
Pileated Woodpecker	450 feet
Beaver, dabbling ducks, mink	300 feet
Bobcat, red fox, fisher, otter, muskrat	330 feet
Amphibians and reptiles	100-330 feet
Belted Kingfisher	100-200 feet
Songbirds (dependent upon species)	50-660 feet

Choosing a Buffer Type

There are three basic methods used to establish buffer size: using a fixed width buffer, a variable width buffer, or a blending of the two. The choice made about which method to use will depend upon time and financial resources available, levels of expertise required of staff, desired level of predictability in land use planning decisions, and other factors. This choice will also directly impact the width of buffers.

Fixed Width Buffers

In the fixed width system, a specific distance is chosen to protect the most desired functions, allowing local governments to literally use a tape measure to determine the size of buffer strips.

- **Riparian buffers** are most commonly established by measuring the setback from the ordinary high water mark of a watercourse. A definition of the ordinary high water mark appears in Box VIII. When no ordinary high water mark is discernible, setbacks are usually measured from the top of the stream bank.
- **Wetland buffers** are typically determined by measuring from the edge of a wetland's boundary. A discussion of determining wetland boundaries appears above (*see Delineated Wetlands, page 4-3*).

The advantages to fixed width buffers include that they do not require personnel with specialized knowledge of ecological principles, are more easily enforced, allow for greater regulatory predictability, and require smaller expenditures of both time and money to administer. The main disadvantage is that the buffer does not take into account site-specific conditions, and therefore may not adequately protect resources (Castelle et. al., 1994). Madison County uses a fixed width buffer system in its subdivision regulations for riparian setbacks (*see Madison County, page 5-11*).

Variable Width Buffers

Buffers can also be determined on a case-by-case basis. Based on site-specific conditions such as slope, vegetation, and intensity of land use, variable width buffers can be adjusted to adequately protect valuable resources. Since every stream, parcel of land, wetland, and land use is different, variable width buffers are better tailored to the land. While more science-based, a program depending upon variable width buffers requires more site evaluation and is more expensive and difficult to administer. It also requires a higher level of training for local government staff, while offering less predictability for landowners.

Missoula County has adopted a variable width buffer in their subdivision regulations for both wetlands and riparian areas (*see City of Missoula and Missoula County, page 5-12*). Under this system, the buffer size is determined from a list of plants typical of local wetlands and riparian areas, floodplain maps, and other factors. There are several challenges associated with this approach that need to be carefully considered:

- Vegetation may have been removed by human-caused activities; under these circumstances a lack of vegetation may not be a good indicator of buffer width.
- Riparian vegetation often does not exist on the bluffs overlooking a river. Under this circumstance, floodplains maps and a lack of vegetation are not good indicators of buffer width (*see Bank Stabilization and Land Use Planning, page 4-2*).
- Floodplains, even when they are delineated, may change in location as rivers and streams change their course.

The Blend – A Combination of Fixed Width and Variable Width Buffers

Many local governments have developed a successful program by blending fixed width and variable width buffers. Buffer size in this system begins with a standard width (e.g. 100 feet), and then expands or contracts based on specific criteria. In the case of riparian buffers, the common criteria used for expansion include the 100-year floodplain boundary, undevelopable steep slopes, and/or adjacent

wetlands. For example, the City of Bozeman requires a minimum buffer of 100 feet on the East Gallatin River. This setback must expand to include the delineated 100-year floodplain, adjacent wetlands, and steep slopes (*see City of Bozeman, page 5-5*). Similarly, a blended system for wetlands might establish a set buffer width, and then expand the size for steep slopes and impervious surfaces. The blended system allows buffers to reflect site-specific conditions, but minimizes the expense, time, and training required for administration of the program. It can also increase predictability in the land use planning process.

Box VIII. Useful Definitions for Riparian Buffers

The following are suggested definitions that can be incorporated into local regulations to establish riparian buffers:

Watercourse/Stream

Three definitions are given: the term *watercourse* includes intermittent streams; the term *stream* is restricted to perennial streams and rivers; and the term woody draw includes small intermittent and ephemeral streams (*see Riparian Areas, page 4-1*):

- ***Watercourse*** includes any stream, river, creek, drainage, waterway, gully, ravine, or wash in which water flows either continuously or intermittently and has a definite channel, bed and banks, and includes any area adjacent thereto subject to inundation by reason of overflow. The term watercourse shall not be construed to mean any facility created and used exclusively for the conveyance of irrigation water.

- ***Stream*** means any natural perennial-flowing stream or river, its bed, and its immediate banks except a stream or river that has been designated by (Conservation District) rule as not having significant aquatic and riparian attributes in need of protection or preservation under 75-7-102, MCA. (This definition is taken from the Natural Streambed and Land Preservation Act of 1975 that guides Conservation Districts regulations under the 310 law.)

- ***Woody draws*** are areas that support woody vegetation, such as tall shrub and tree species, in small intermittent and ephemeral drainages. The vegetation is a result of higher moisture availability than the surrounding area. The duration of surface water, however, is shorter than that of other streamside riparian areas (e.g. cottonwood and dogwood communities). (This definition is taken from subdivision regulations used by the City of Missoula and Missoula County (*see City of Missoula and Missoula County, page 5-12*).

Ordinary High Water Mark. The ordinary high water mark means the line that water impresses on land by covering it for sufficient periods to cause physical characteristics that distinguish the area below the line from the area above it. Characteristics of the area below the line include, when appropriate, but are not limited to deprivation of the soil of substantially all terrestrial vegetation and destruction of its agricultural vegetative value. A flood plain adjacent to surface waters is not considered to lie within the surface waters' high-water marks (23-2-301, MCA).

Consider Site Specific Factors

It is evident from this chapter that a range of variables influence the effectiveness of buffers. This section outlines the main site-specific factors that should be addressed in conservation programs that establish protective buffers.

Steep Slopes

From a water quality perspective, the most effective buffers are flat. Scientific research shows that the width of buffers should be increased when slopes are steeper to allow more opportunity for the buffer to capture pollutants. The greater the slope, the faster water flows over the surface. Many researchers have noted that very steep slopes cannot effectively remove contaminants, though there is debate over what constitutes a steep slope, with ranges suggested between 10% and 40%. One model recently proposed suggests that slopes over 25% should not count towards a buffer, and that the buffer should be increased in size by 2 feet per 1% increase in slope (Wenger, 1999). The City of Bozeman adopted a variation on this model (*see City of Bozeman, page 5-5*). Use of topographic maps and site visits will confirm the slopes contained within stream corridors.

Impervious surfaces

For vegetation to work efficiently, studies show that 80% of the buffer strip should be vegetated (Channing Kimball, 1993). Parking lots, compacted or paved roads and trails, and other impervious surfaces reduce the filtering capability of buffer areas, increase surface erosion, and lead to higher and faster storm flows in streams. In order to ensure that buffers are effective, local governments should consider limits on impervious surfaces. One model suggests that impervious surfaces should not count toward the buffer width. Using this recommendation, if a 30-foot wide road parallels a stream, the riparian buffer should be increased by 30 feet (Wegner, 1999).

Vegetation

The longer runoff is detained in the buffer before entering a stream or wetland, the better. Wetland and riparian vegetation increases the effectiveness of a buffer in several ways. Physically, roots trap sediments and their contaminants, hold banks in place, and prevent erosion. By providing a canopy, vegetation reduces the velocity of raindrops and lessens runoff and erosion. Trees, shrubs, and to a lesser extent grasses, provide habitat including cover for wildlife and fish, nesting sites, and food. Overhanging branches provide shade that reduces stream temperature. Litter (leaves and organic debris) from trees and shrubs provide food for aquatic organisms. Chemically and biologically, vegetation absorbs nutrients and pollutants such as chemical pesticides, salts, sediments, and organic wastes from entering our surface and ground water. Vegetation is factored into buffer strips through regulations that determine the types of activities allowed. Examples of common restrictions include:

- Minimizing removal of vegetation;
- Discouraging the cutting of existing trees and other vegetation on stream banks;
- Encouraging the planting of native vegetation over non-native plants (including lawns); and
- Prohibiting the use of pesticides and fertilizers.

Floodplains

Scientific studies show that protection of the entire floodplain of a stream or river provides significant contaminant removal and—naturally—minimizes damage from floods. For these reasons, it makes sense to extend the buffers to the edge of the floodplain whenever possible. Studies recommend that riparian buffers extend at least to the edge of the 100-year floodplain (Wenger, 1999).

Soils

Soils filter out sediment and pollutants. The speed by which materials percolate out depends upon the amount of organic material and the size of the spaces between the grains of soil. Soils are factored into buffer strips by regulating the types of activities allowed. In general, activities that compact soils or increase erosion (such as vegetation removal) should be avoided (Wenger, 1999).

Hydrology

Hydrology is the most important factor influencing the characteristics of a wetland or riparian area. Plants living in these areas are adapted to life in saturated soils, high water tables, or periods of flooding. The ground water level, time of year that the area is flooded, duration of a flood, range of water level fluctuations, and water flow rates, all play a vital role in the hydrology of these sites. Changes in any one of these factors may result in alterations of the resource. To secure long-term protection of wetlands, a water right may be needed. For riparian protection, streams should not be de-watered and periodic natural flooding should be allowed.

Land Uses

Buffer areas are more effective if their size can be tailored to the use of land adjacent to the buffer. When possible, local governments should suggest allowable uses, such as agriculture and forestry activities using best management practices; parks and recreation areas with minimal structural development; and non-motorized trails. Passive use of land for recreation and nature appreciation should be encouraged. The harvest of timber for firewood or commercial use, consistent with Montana's Streamside Management Zone law (*see Appendix IV*), may be allowed. Additionally, suggested prohibited uses should include: all uses that present a higher potential for pollution; campgrounds other than dispersed tenting sites (because of their tendency toward soil compaction and deforestation); motorized vehicles and mountain biking since these uses can contribute to vegetative loss and erosion; and construction of buildings or structures that do not depend on their proximity to water (CRJC, 1998).

An Example of a Buffer System

The following model of a buffer system was developed after an extensive literature review (Wenger, 1999). It was developed specifically to protect water quality in riparian areas. This model illustrates a practical yet effective system that can be used to build a program with buffers. It also illustrates how discussions from this chapter might evolve into on-the-ground protection for sensitive areas. Although this model was designed for riparian areas, many of the principals could easily be adapted to wetlands.

This model provides protection for water quality in stream corridors, including good control of sediment and other contaminants. The buffer applies to all perennial, intermittent, and ephemeral streams. The model begins with a base setback width of 100 feet, then adds or subtracts distance for the following elements:

- Adds 2 feet per 1% slope;
- Extends to edge of the 100-year floodplain; and
- Includes adjacent wetlands. The buffer width is extended by the width of the wetland, which guarantees that the entire wetland and an additional buffer are protected.
- Subtracts for existing impervious surfaces in the riparian zone. They do not count toward buffer width (i.e., the width is extended by the width of the impervious surface, just as for wetlands) .
- Subtracts for slopes over 25%. They do not count toward the width.

Box IX. A Bigger Buffer is Needed If:

- Land is sloped and runoff is directed toward the stream or wetland (the steeper the slope, the wider a buffer should be)
- Land use is intensive (crops, construction, development)
- Soils are erodible
- The land is floodplain
- The stream naturally meanders
- The land drains a large area
- Aesthetic or economic values need to be preserved
- Wildlife habitat needs to be protected
- More privacy is desired

(Adapted from CRJC, 1998)

Chapter 5

Using Local Land Use Planning Tools For Wetland and Riparian Protection

The previous chapters describe different aspects of conservation programs. This chapter describes the specific land use tools available to protect streams, rivers, riparian areas, and wetlands. The strengths and weaknesses of each tool are described so that decision makers will understand the level and effectiveness of resource protection provided by the tool. Case studies are highlighted with examples of how tools were used in Montana to achieve conservation goals. Contact information is provided with each case study so that readers can obtain additional information. Appendix I contains a summary of the case studies used in this chapter, and provides a description of the diverse ways these tools have been used in Montana. For information about how tools in this chapter have been enacted by local governments not featured in this publication, contact local planning offices. Additional protection tools and resources, not administered by a municipal or county government, appear in Chapter 6. The land use tools are organized in the following way:

Growth Policy Plans (Comprehensive Plans)

Growth policy plans have been known in the past as "comprehensive plans," "master plans," or "land use plans." The terms "growth policy plan," "growth plan," or "plan" are used here.

Purpose:
To clearly define the land use planning goals, policies, and plans of a community or county to guide growth and development. The growth policy plan is used as a guide and reference when elected officials are faced with development issues.

Who Enacts This Tool:
Growth policy plans are prepared by a local planning board, which recommends the proposed plan for adoption by the governing body. The plan can then be adopted, modified, or rejected by the local governing body. Governing bodies are also responsible for enforcing the plan.

Authority for Tool:
General authority comes from Montana's Growth Policy statutes (Title 76, Chapter 1, Part 6, Section 601, MCA).

How it Works:
A growth policy plan acts as a planning guide, outlining the vision for the community and its development preferences. These plans must address specific elements regarding how the entire area will grow and function, including community goals and objectives; a plan for infrastructure development and maintenance; and information describing local services, transportation, parks and recreation, natural resources, and housing. Because they are the first step towards land use management at the local level, local land use regulations (e.g., subdivision regulations or floodplain regulations) are more effective when growth policy plans contain specific policies or direction to the governing officials and citizens. Importantly, growth plans must be adopted before zoning or development regulations (in the absence of a landowner petition) can be adopted; and these regulations must conform to that plan.

Most growth policy plans contain general statements about protecting natural resources and wildlife habitat. This general language can assist in the protection of wetlands and riparian areas since these areas are considered critical and important wildlife habitat. However, specific protection language greatly assists efforts to provide on-the-ground protection to sensitive areas. Therefore, it is recommended that protection of wetlands and riparian areas be specifically identified as a community goal in the plan. This language will provide direction for other land use regulations adopted by the community. It also gives citizens an important role—to urge the planning board, its staff, and elected officials to make sure development follows the adopted policy.

The best opportunity to protect wetlands and riparian areas is when a growth policy plan is being drafted or updated. These plans must be reviewed at least every five years to determine if revisions are necessary. Some suggested language for a growth policy plan appears in Appendix II. In addition to specific protection language, it is also important to identify, as much as possible, where important wetlands and riparian areas occur in a community or county. If good mapping and data collection is done in the growth policy process, it should be easier to develop good land use regulations to evaluate development proposals for their effects on natural resources. Basic inventory work can be started by gathering existing data from maps, aerial photographs, and inventories (*see Appendix III*).

Strengths:
Growth policy plans help to clarify, give direction to, and integrate all levels of a local government in all land use planning decisions. Because all other planning done in the community or county uses the growth policy plan as a guide, a good plan can greatly increase the effectiveness of other planning tools and regulations, such as zoning and subdivision regulations. If wetlands and riparian areas receive recognition as important natural resources deserving protection in this document, governing officials are more easily able to justify conservation measures in land use regulations.

Weaknesses:
Growth policy plans are only guiding documents. Consequently, by themselves, growth policies cannot protect wetlands or riparian areas. A plan written in generalities is subject to interpretation, and may cause people to have differing views on implementation. Instead, a policy should contain specific language protecting wetlands and riparian areas, as well as information or maps about where critical areas are located. It should be noted that many Montana counties do not have growth policy plans, and of the counties with policies, many are inadequate or outdated.

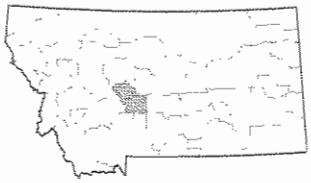
In these situations, citizens may be limited in their ability to protect critical areas from development. Finally, local elected officials can ignore growth policy plans in their land use planning decisions.

Montana Case Histories:

1. Madison County

One of the goals in the 1999 Madison County Comprehensive Plan is to "protect our river corridors" by keeping "development out of the floodplain and riparian areas." The origins of this language date back to a 1983 study done for the county, which delineated the Madison River Corridor and proposed several voluntary river management measures, in response to concern that "development along the Madison River will adversely affect the important economic and recreational opportunities that so many people depend on..." By setting the stage for protection of riparian areas through specific language in its comprehensive plan, Madison County was in a position to implement this goal, in part, by county subdivision regulations that establish construction setbacks from water bodies (*see Madison County 5-10*). The Comprehensive Plan encourages voluntary land conservation measures targeted at "watershed protection including river corridors and riparian areas." The Plan also recommends the formation of citizen task forces to work closely with riverfront landowners to consider river corridor zoning as a tool for managing development impacts. Two task forces (Big Hole and Ruby) are currently exploring a variety of river corridor protection measures. ***For more information***, contact Madison County Planner, P.O. Box 278, Virginia City, MT 59755; (406) 843-5250; e-mail: planner@3rivers.net; website: http://madison.mt.gov/departments/plan/planning.asp.

2. Meagher County



Development Policies in the 2000 *Overall Economic Development Plan and Growth Policy* adopted by Meagher County include:

- "Wells and septic tanks must be set back at least 100 feet from streams, lakes and identified 100-year floodways, and 300 feet from identified riparian areas."

- "For new developments, including subdivisions approved under Meagher County Subdivision Regulations: a) all non-agricultural structures must be set back 200 horizontal feet from the high water marks of streams; and b) non-agricultural structures must be set back 300 feet from delineated riparian areas and wetland areas."

These statements in the growth policy plan have allowed Meagher County to protect riparian and wetland areas through setbacks for wells, septic tanks, and non-agricultural structures in their subdivision regulations. ***For more information***, contact Meagher County Planning office, Box 309, White Sulphur Springs, MT 59645; General Phone Number: none.

County or Municipal Zoning

Purpose:

To promote the public health, safety, and values in a community by designating zones where certain types of developments can occur, and setting requirements that new development must meet.

Who Enacts This Tool:

City or town councils initiate and enforce municipal zoning within city limits. Additionally, municipalities are authorized to extend city zoning outside municipal boundaries. County commissioners adopt and enforce zoning regulations outside of municipalities.

Authority for Tool:

Cities and towns adopt zoning regulations under the Municipal Zoning Act (Title 76, Chapter 2, Part 3, MCA). Counties may adopt zoning through county-initiated regulations under the County Zoning Act (Title 76, Chapter 2, Part 2, MCA). Additionally, counties may also adopt zoning under regulations initiated by landowner petition (*see Planning and Zoning Districts, page 5-6*).

How it Works:

County and city governments may adopt regulations to separate land uses into districts within their jurisdictions. With county and municipal zoning, a growth policy plan must be adopted for the entire jurisdiction before any zoning regulations may be created. Likewise, adopted zoning regulations must comply with the growth policy plan. In municipalities, a zoning commission initiates drafting of a city or town zoning ordinances. In counties, the county planning board initiates county zoning. The zoning commission or county planning board recommends proposed zoning regulations to the elected governing body. After public hearings, the county commission or city council may adopt, modify, or reject the recommended regulations.

County or municipal zoning can protect wetlands and riparian areas through zoning by prohibiting development in identified areas; allowing only low-impact uses in identified areas; establishing setbacks for development adjacent to these areas; requiring that any development in or near one of these areas be designed to prevent or minimize impacts; and/or requiring that impacts to these areas be mitigated.

Strengths:

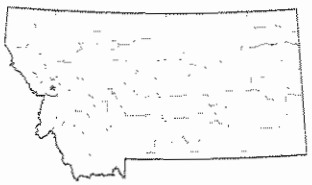
Because adopting zoning regulations require extensive public hearings, this tool can foster public education opportunities and citizen support for protecting wetlands and riparian areas. A community can clearly buttress the values and goals contained in their plan through zoning regulations. In this way, a growth policy plan that specifically emphasizes protection of open space, wetlands, streams, or rivers, paves the way for zoning regulations that will support these community values.

Weaknesses:

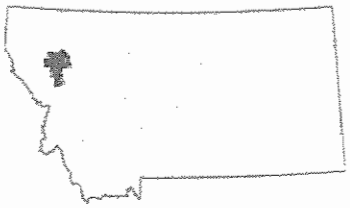
Zoning is not commonly used in Montana outside of incorporated areas. Where it is used, zoning rarely has been used to specifically protect wetlands or riparian areas. Additionally, if zoning regulations are poorly written or weakly enforced, their effectiveness can be undermined. A lack of public support for effective zoning regulations, especially in rural areas, is a political reality that may prevent local officials from adopting effective zoning regulations.

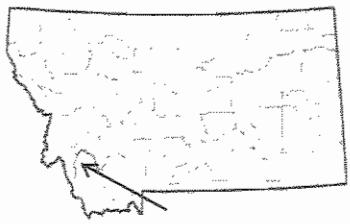
Montana Case History:

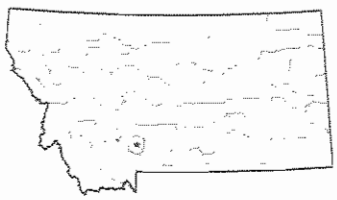
1. City of Missoula.



In 1995, Missoula adopted zoning regulations that contain ecologically-based riparian resource protection standards. These standards apply to streams, lakes, wetlands, woody draws, and other bodies of water and include "an adjacent buffer area." Buffer size is determined on a case-by-case basis, and is decided based on criteria on the impacts to wildlife habitat, water quality or quantity, fish, or other aquatic resources. Triggered by any activity that requires a building permit, the regulations prohibit buildings from being built that "impact areas of riparian resources." Road construction is also restricted. Proposed building sites that contain an area of riparian resource must develop a Riparian Management Plan detailing how the resource will be protected; the local governing body must approve this plan. Each management plan must describe how the landowner will protect the wildlife, vegetation, and other aspects of the riparian area. The goals of these regulations are to ensure that the riparian resource remains available to support riparian systems and habitats; protect water quality; act as a sediment filter; protect the banks of streams and lakes; preserve large, woody debris that can provide stream habitat and shade to regulate stream temperature; promote floodplain stability; protect ground water; and maintain the integrity of the area. The regulations identify key plants associated with local riparian resources. These standards were designed so that an individual with some skills, armed with a plant identification book, can usually perform the riparian boundary identification. Planning staff is also available to assist landowners with boundary determinations on a case-by-case basis. A procedure for variances is spelled out in detail. ***For more information***, contact Office of Planning and Grants, 435 Ryman, Missoula, MT 59802-4297, (406) 258-4657; website: http://www.co.missoula.mt.us/opgweb/.

2. **Lake County.** 
Density standards that help protect streams, rivers, and wetlands were adopted in zoning regulations in October 2005. The county has adopted 40-acre minimum lot sizes for one-half mile on either side of the Flathead and Jocko Rivers, and one-quarter mile on either side of Mission and Crow Creeks. The pothole area surrounding Ninepipe National Wildlife Refuge is also zoned in 40-acre minimum lot sizes. Although density standards do not specifically protect wetlands and riparian areas, protection occurs as a byproduct because of the lot size for new building—which prevents houses from lining rivers, streams, and/or wetlands. Lake County also has community zoning districts around 50% of Flathead Lake that have been in place for over 10 years; these regulations require a 50-foot setback from the "highwater elevation." Lake County is the first county to use density standards to protect both wetlands and streams. ***For more information***, contact the Lake County Planning Department, Lake County Courthouse, 106 4th Ave East Polson, MT 59860, 406-883-7235, email: planning@lakemt.gov; website: http://www.lakecounty-mt.org/planning/index.html.

3. Big Hole River. 
The Big Hole River is more than 150 miles long and travels through 4 counties: Beaverhead, Deer Lodge, Madison, and Silver Bow. As part of a 4 (+) year land use project developed by two watershed groups (*see Watershed Groups, Big Hole River below*), local governments were asked to adopt setback regulations for all new structures ("structure" is defined as a building with a roof). A setback of 150-feet minimum from the Big Hole River is generally required. The setback standard is applied on a site-specific basis, taking into account the results of a basin-wide mapping project that identified the corridor needed for natural channel migration and the approximate 100-year floodplain. Setbacks can be increased or decreased based on local circumstances such as floodplain and floodway functions, water quality, and natural streambank stability; variances are reviewed by an inter-county review board. In the spring of 2005, all 4 counties adopted the stream setback regulations: Deer Lodge and Silver Bow Counties adopted the regulations as part of zoning, and Beaverhead and Madison Counties adopted the setbacks as Conservation Development Standards through a building permit system. These 4 counties are the first local governments in Montana to cooperate through development regulations to protect a river. ***For more information***, contact the Beaverhead County Land Use and Planning Department, Beaverhead County Courthouse, 2 South Pacific Street CL #7, Dillon, MT 59725, (406) 683-3765; website: http://beaverheadcounty.org/html/land_use_and_planning_departme.html

4. City of Bozeman. 

A. Setbacks for New Buildings.
Regulations in Bozeman specify that any residential or commercial structures, additions to an existing structure, fences, decks, parking lots or other impervious surfaces, or similar improvements be set back a minimum of 100 feet from the East Gallatin River; 75 feet from Sourdough and Bozeman Creeks; and 50 feet from all other watercourses. The setbacks must be expanded to the edge of any delineated 100-year floodplains and must include any adjacent wetlands. A defined channel, bed and bank are required of streams covered under this regulation. In addition, the corridor must contain native vegetation or be planted using an approved setback vegetation plan. The current Bozeman setback regulations took effect on July 10, 2002; they include a smaller setback and additional flexibility for areas approved for development or subdivided prior to the effective date of the regulations.

B. Protecting Isolated Wetlands
In 2001, the U.S. Supreme Court ruled that certain isolated wetlands may not be protected under the

Clean Water Act (*Solid Waste Agency of Northern Cook County v. the U.S. Corps of Engineers* (531 U.S. 159 [2001]) (SWANCC)). Since that decision, some states and local governments have developed their own regulations as a means of "filling the gap" to protect isolated wetlands impacted by this decision. In Montana, the city of Bozeman is the only local government that has developed a program to specifically protect isolated wetlands. Bozeman's wetland regulations are part of their zoning and subdivision regulations contained in their Unified Development Ordinance. They apply to isolated wetlands more than 400 square feet in size (20 feet X 20 feet); smaller wetlands that provide habitat for rare plants or animals may also receive protection. For projects that may impact these isolated wetlands, a functional assessment of the wetland must be completed. A Wetlands Review Board (WRB) composed of local scientists then, on a case-by-case basis, is directed to recommend site-specific wetland protection measures. The WRB does not review impacts to wetlands for which the Army Corps of Engineers has issued permits. Impacts that can be regulated include placing material in the wetland (filling), removing existing vegetation, and altering the water level (through draining or flooding).

For more information, contact Department of Planning and Community Development, City of Bozeman, 20 East Olive Street, P.O. Box 1230, Bozeman, MT 59771-1230, (406) 5822260; both of these regulations also appear on their website: http://www.bozeman.net/planning/planning.aspx.

Planning and Zoning Districts

Purpose:

To create a planning and zoning district within a portion of a county through a landowner-initiated petition. This type of zoning can accomplish the same purposes as County or Municipal Zoning: to promote the public health, safety, and values in a community by designating zones where certain types of developments can occur and setting requirements that new development must meet.

Who Enacts This Tool:

Property owners may petition the county commissioners to form a planning and zoning district. Upon receiving the petition and holding a public hearing, the county commissioners have discretion to create a district and adopt land use regulations for that district.

Authority for Tool:

Counties may adopt zoning based on a landowner petition under the County Planning and Zoning Commission Act (Title 76, Chapter 2, Part 1, MCA).

How it Works:

Resident landowners initiate a petition to create this type of planning and zoning district. These districts must be at least 40 acres in size and must be in areas outside of an incorporated area. At least 60% of the landowners in the affected area must sign the petition to form a district and adopt land use regulations for that district. Unlike county-initiated and citywide zoning (*see County or Municipal Zoning, page 5-3*), landowner petition planning and zoning districts can be created in the absence of a growth policy plan. If enough signatures are collected through a landowner petition, the county commissioners are responsible for holding a public hearing to decide whether to create a planning and zoning district. A planning and zoning commission is appointed to prepare a development plan for the district. The county commission has discretion to adopt, modify, or reject the recommended regulations.

Planning and zoning districts can protect wetlands and riparian areas by prohibiting development in identified areas; allowing only low-impact uses in identified areas; establishing setbacks for development adjacent to these areas; requiring that any development in or near one of these areas be designed to prevent or minimize impacts; and/or requiring that impacts to these areas be mitigated. Additionally, if no specific protection appears in the regulation, streams and wetlands can still receive some level of protection when density limits restrict new houses to larger parcels, preventing new houses from lining rivers and streams in significant densities.

Strengths:

Because of the petition process, landowner commitment to planning and zoning districts is usually very high because the people most affected—the area residents—are the ones who typically craft the plans and regulations. Also, small area or district plans and regulations are often easier to adopt than countywide regulations because the regulations usually are customized to fit the needs and desires of the local residents. Many times, it is easier to identify the land use issues when dealing with a smaller geographical area and people more familiar with the area. Landowners with an interest in protecting wetlands and riparian areas can work to include strong protection language in adopted zoning regulations.

Weaknesses:

Problems can arise because of the smaller scope of planning and zoning districts and the fact that district regulations are drafted in isolation from the rest of the county. Some aspects of public planning that are interconnected with other parts of the county can be dealt with more efficiently on a larger scale. To date, wetland and riparian protection in these zoning districts has been a byproduct of density standards, rather than a result of specific regulations adopted within the districts.

Montana Case History:

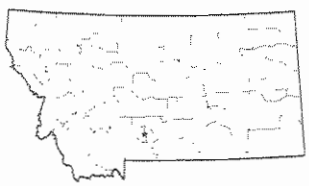
1. Jefferson County.

The Milligan Canyon/ Boulder Valley Agricultural Zoning District covers more than 91,000 acres. The purpose of the district is to preserve the local area's rural lifestyle and the primarily agricultural land base. In order to restrict new development, the district only allows one non-farm/ ranch dwelling per 640 acres. Although wetlands and riparian areas are not specifically protected in this district, protection occurs as a byproduct because of the lot size for new non-farm/ranch dwellings—which prevents houses from lining rivers and streams. The district was established in 1992 as a temporary emergency zoning district, and became permanent in 1995. ***For more information***, contact Jefferson County Planning Department, P.O. Box H, Boulder, MT 59632; (406) 225-4040; website: http://jeffco.mt.gov/county/planning.html.

2. Gallatin County.

The Bridger Canyon Zoning District is the first planning and zoning district in Montana. Established in 1971, the district covers 51,440 acres. The purpose of the district is to promote health, safety, and general welfare, which specifically includes preventing overcrowding, preserving fish and wildlife habitat, preserving scenic resources, ensuring high quality water quality standards, protecting agricultural land uses, and more. The majority of land in the district is divided into two categories: recreational business, and recreation and forestry. For the recreational business portion of the district, parcel sizes may not be less than 10 acres in size, a minimum of a 50-foot setback from streams is required of all facilities, and no residential development is allowed. In the recreation and forestry portion of the district, the minimum parcel size is 40 acres and the setback for facilities is 50 feet from any stream. The setbacks and acreage restrictions on lot size help protect the riparian areas along streams. This Zoning District also has a Planned Unit Development provision that uses Transfer of Development Rights (*see Transfer of Development Rights, page 5-9*). ***For more information***, contact Gallatin County Planning Office, 311 West Main Street, Bozeman, MT 59715; (406) 582-3130; website: http://www.gallatin.mt.gov/Public_Documents/gallatincomt_plandept/planning.

3. Park County.



The East Yellowstone Zoning District covers approximately 2,000 acres along almost 12 miles of the Yellowstone River. The purpose of the district is to maintain the open and rural residential character of the area; allow development that is compatible with existing growth patterns; protect and

enhance property values; and protect the natural environment, water quality, and wildlife. The district allows one single family dwelling per 30 acres; all new buildings must be set back a minimum of 100 feet from the river. The setbacks and acreage restrictions on lot size help protect riparian areas. ***For more information***, contact Park County Planning Office, 414 East Callender Street, Livingston, MT 59047; (406) 222-4144; website: http://www.parkcounty.org/Planner/planner.html.

Development Permit Regulations

Purpose:

To maintain a certain character or quality of development in an area for safe and compatible land uses. Development permit regulations can be used to regulate unsuitable areas for building.

Who Enacts This Tool:

Local governments are authorized to adopt development permit regulations: city or town councils within incorporated areas, county commissions outside of municipalities. Additionally, these regulations can be enacted in landowner-initiated petitioned planning and zoning districts.

Authority for Tool:

Cities and towns are authorized to adopt development permit regulations under the Municipal Zoning Act (Title 76, Chapter 2, Part 3, MCA). Counties are authorized to adopt development permit regulations through both a county-initiated process and a landowner-initiated petition process in the County Planning and Zoning Commission Act (Title 76, Chapter 2, Parts 1, MCA).

How it Works:

Also called performance standards, development standards, or permit systems, development permit regulations are land use regulations adopted as an alternative to traditional zoning. As with traditional zoning, these regulations must be drafted in accordance with an adopted growth policy plan. Instead of focusing on where certain types of development can occur, development permit regulations emphasize the character or quality of development. Especially well suited for rural and unincorporated areas, under these regulations, different requirements can be established for separate areas of a county. For example, a rapidly growing section of the county may have more strict regulations than other more rural areas in the same county.

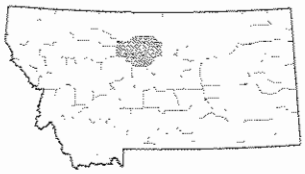
Development permit regulations can be used to protect wetland and riparian resources by prohibiting development in identified areas; allowing only low-impact uses in identified areas; establishing setbacks for development adjacent to these areas; requiring that any development in or near one of these areas be designed to prevent or minimize impacts; and/or requiring that impacts to these areas be mitigated. Several Montana communities have used development permits regulations to protect river corridors.

Strengths:

Because development permit regulations can apply to new development for an entire jurisdiction and embody the desires of the community, these regulations require updating less often than traditional zoning districts. Because of their flexibility in locating different uses, these regulations seem less restrictive—and thus less threatening—to some communities than traditional zoning. Even though development permit regulations usually focus on the quality of a new development and not its location, prohibiting development through thoughtful development standards can protect certain sensitive areas. Because these regulations apply to each new building, existing lots and tracts in an approved subdivision that do not have a building are reviewed under these regulations and subject to any setback requirements. Finally, the public hearing process used to develop these regulations is an excellent opportunity to educate citizens and decision-makers about the importance of protection programs.

Weaknesses:
Drafting policies and effective regulatory language requires an extremely well written and clear development permit system. Also, as with any regulatory tool, without diligent enforcement, development permit regulations can be rendered ineffective.

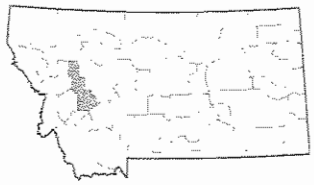
Montana Case Histories:



1. Chouteau County. One of Montana's first countywide development permit regulations was adopted by Choteau County in 1985. The regulations protect the rural and agricultural character of the county by encouraging residential and commercial development in or adjacent to existing communities, limiting non-agricultural density, and protecting the Missouri River corridor. Other streams and rivers within the county do not receive protection from these regulations. The regulations:

- Encourage only 2 nonagricultural residential dwellings within any 40 acres in rural areas.
- On the Missouri River, from Coal Banks Landing to the eastern Chouteau County line, new residential development must be 3 horizontal miles from the river when the development "would be visible along a line of sight from any point between the high water marks."
- On the Missouri River, from the Fort Benton City Planning Board jurisdiction boundary to Coal Banks Landing, new residential development must be set back 400 horizontal feet from the high water marks, and residential development must not exceed 1 dwelling unit per 8 acres.

For more information, contact Chouteau County Planner, 1308 Franklin Street, Fort Benton, MT 59442; General Phone Number: (406) 622-3631.



2. Powell County. Development permit regulations with setbacks to protect riparian areas and their associated wetlands have been adopted in Powell County. The protective buffers require a setback from the Blackfoot River, including the North Fork of the Blackfoot River. These setbacks specifically prohibit new residential, commercial, or industrial structures within 25 yards (75 feet) of the "river's edge or river's floodplain." In order to restrict new development in the northern 2/3 of the county where the Blackfoot River is located, only one non-farm/ranch dwelling is allowed per 160 acres. Although wetlands and riparian areas are not specifically protected through the 160-acre density standard, protection is a byproduct because of the lot size for new non-farm/ranch dwellings—which prevents houses from lining rivers and streams. In addition to setbacks and density standards, buffer strips of vegetation may be required. Landowners in the area initiated these regulations. ***For more information***, contact Powell County Planning Department, 409 Missouri, Deer Lodge, MT 59722; General Number: (406) 846-3680.

Transfer of Development Rights (TDR)

Purpose:
To direct new growth toward desirable and suitable locations by establishing a market-based system to allow compensation for landowners who do not, or are not allowed to, develop their property.

Who enacts it:
Counties, municipalities, and county planning and zoning districts.

Legal Authority:
Transfer of development rights may be enacted as part of zoning or development regulations under the County Zoning Act (76, Chapter 2, Part 2, MCA); the County Planning and Zoning Commission Act (Title 76, Chapter 2, Part 1, MCA); and the Municipal Zoning Act (Title 76, Chapter 2, Part 3, MCA).

How it Works:
Traditional land use controls designate some lands

for residential, commercial and industrial uses; while other lands, such as agricultural land or open space, are slated for rural, or non-development use. Landowners in areas planned for development reap the economic benefit of development, while landowners in areas planned and designated for non-development do not. Thus, in an economic sense, there are "winners" and "losers." TDRs overcome, or at least reduce, this disparity by allowing landowners to be compensated even though their property remains undeveloped. In adopting TDRs, a local government creates and assigns a "right" to build on properties located in areas designated as growth districts. Typically, one "development right" is allocated to each property in these growth areas, allowing landowners the right to build one residence on their property. If landowners want to construct more housing units, or undertake a development project, they must acquire additional "development rights" by purchasing those rights from owners of other properties, most likely properties in areas designated for non-development. Once the development rights on a property are sold, a deed restriction prohibiting future development is recorded with the County Clerk and Recorder. Three entities benefit from a TDR system: the developer obtains authority to proceed with development projects; landowners in "non-development" areas receive compensation without developing their properties; and the public benefits because community objectives and values are protected.

A TDR system can benefit the preservation of wetlands and riparian areas when those areas are identified as community assets and included in non-developed or open space areas.

Strengths:
TDRs help make land use regulations more acceptable among citizens because landowners with property located in areas with development restrictions can still be compensated even though their properties are not developed. A TDR coupled to more conventional zoning or development regulations, helps reduce the controversy usually generated by proposals for traditional land use controls. Developers benefit because they can assemble the rights to proceed with development projects. The public also benefit because TDRs help achieve community objectives, such as wetland and riparian protection.

Weaknesses:
Developing a TDR system can be complex. To make a TDR program viable, it must be designed with a ratio between development areas and non-development areas that ensures a market exists for buying and selling development rights. Also, development and non-development areas must be well planned and defined to ensure that community land use objectives are met.

Montana Case Study:
Several planning and zoning districts in Gallatin County have adopted variations of TDRs. However, to date, none of their 3 districts have used this tool to protect wetlands and riparian areas.

Subdivision Regulations

Purpose:
To regulate the subdivision of land into building lots, and to ensure proper provisions are made for roads, water, sewer, and other public facilities.

Who Enacts This Tool:
All cities, towns, and counties are required by state law to adopt and enforce local subdivision regulations. Typically, local planning boards and staffs administer the local subdivision program by developing recommendations for the governing body.

Authority for Tool:
The Montana Subdivision and Platting Act (Title 76, Chapter 3, MCA) provides the authority and the mandate that all local governments adopt and enforce subdivision regulations.

How it Works:
Montana law requires local governments to adopt and enforce regulations to regulate the process of subdividing or platting land into lots less than 160 acres in size. State law also requires that subdivision regu-

lations conform to local growth policy plans (*see Growth Policy Plan, page 5-1*). Subdivision regulations must take into consideration the effects of the proposed development on the natural environment, wildlife and wildlife habitat, agriculture and agricultural water user facilities, public health and safety, and local services. Additionally, in order to be approved, a subdivision must meet the design standards set by local regulations, and conform to other criteria specified in local subdivision regulations. Local governments then review each proposed subdivision to approve, approve with conditions, or disapprove the project. For major subdivisions (those containing six or more lots):

- Developers are required to prepare environmental assessments on the impact of proposed subdivisions.
- Developers must provide land or cash for parks (*see Parkland Dedication, page 5-16*).
- Local governments must hold public hearings and must make a written finding of facts as part of their approval or disapproval of each proposed subdivision.

For most minor subdivisions (five or fewer lots), the above three requirements do not apply.

Local governments can protect wetlands and riparian areas through subdivision regulations by requiring that developers: setback all buildings, structures, and septic systems from delineated areas; designate no-build zones or no improvement zones that protect identified areas; designate "building envelopes" where structures are allowed to be built; and/or design parks, required for major subdivisions, to protect wetlands or streams. Before local subdivision regulations can offer these protections, however, local governments should specify protection of these areas in their growth policy plans.

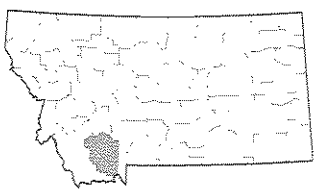
Strengths:

Because all local governments are required to adopt and enforce subdivision regulations, protecting river corridors and wetland and riparian areas is more politically acceptable through subdivision regulations than through other types of regulations. Also, subdividing land is the first step in the process of land development, and protecting wetland and riparian areas at this initial step is advantageous. Lands dedicated for parks in subdivisions can also be set aside to protect natural features such as stream corridors or wetlands (*see Parkland Dedication, page 5-16*).

Weaknesses:

The primary purpose of subdivision regulations is to manage development, not to protect wetlands and riparian areas. Consequently, reliance on subdivision regulations for protection of these sensitive areas is often inadequate. Another problem arises because subdivision regulations only apply to land being newly subdivided. Therefore, existing lots and tracts are not reviewed under subdivision regulations and consequently are not subject to any subdivision setback requirements. This inconsistency can create problems for local governments: it is difficult to tell one landowner that they have to build 500 feet from a river, when a neighbor, because of when their property was subdivided, is allowed to build 20 feet from the riverbank. Additionally, local governing bodies can grant variances (exceptions) to the requirements in subdivision regulations, such as allowing development to occur closer to a river than setbacks specify. Variances are granted more often when older subdivisions are located near the area that will be newly subdivided. Finally, Montana communities have been more successful with setbacks for riparian areas along major rivers, than for protection of wetlands or riparian areas along smaller streams.

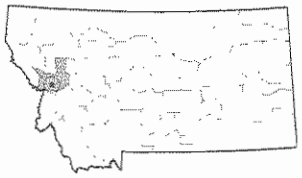
Montana Case Histories:



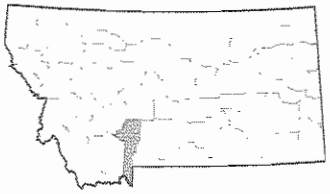
1. Madison County. Subdivision regulations in Madison County contain the following construction setbacks from water bodies: 1) on the Madison River, the minimum setback is 500 feet from the ordinary high water mark; 2) on the Big Hole, Jefferson, Ruby, Beaverhead, and South Boulder Rivers, the minimum setback is 150 feet; and 3) on other waterways in the county, the minimum setback is 100 feet. Under certain circum-

stances, the Madison River setback may be reduced, and the 150-foot setback may be increased. This setback requirement is authorized in the county's comprehensive plan (*see Madison County, page 5-3*). It is based on a 1983 study done for the county that indicated that "development along the Madison River will adversely affect the important economic and recreational opportunities that so many people depend on..." and that proposed several voluntary river management measures to alleviate this concern. In 1993, concluding that voluntary actions alone were not adequately protecting the resources of the Madison River Corridor, the Madison County Planning Board recommended that river construction setbacks be included in the county subdivision regulations. ***For information***, contact Madison County Planning Office, P.O. Box 278, Virginia City, MT 59755 (406) 843-5250; email address is: planner@3rivers.net: website: http://madison.mt.gov/departments/plan/planning.asp.

2. City of Missoula & Missoula County. Both Missoula and Missoula County subdivision regulations, adopted in 1995, contain ecologically-based riparian resource protection standards. These standards are almost identical to the zoning regulations adopted by the City of Missoula described on page 5-4.



3. Gallatin County. Subdivision regulations were adopted in March 2005 in Gallatin County that contains stream setbacks for "any residential or commercial structure." The setback is 300-feet on the East Gallatin, West Gallatin, Madison, Jefferson, and Missouri Rivers; and 150-feet on "all other watercourses." The definition of "watercourse" includes all streams, drainages, waterways, gullies, ravines, or washes where "water flows either continuously or intermittently and has a definite channel, bed and bank." Gallatin County's protection of all perennial, intermittent, or ephemeral watercourses is unique in subdivision regulations. As an alternative to the setback, subdividers can develop a "watercourse mitigation plan," which is designed to mitigate the impacts of the subdivision on affected watercourses. ***For information***, contact the Gallatin County Planning Department, Gallatin County Courthouse, 311 West Main, Room 208, Bozeman, MT 59715, (406) 582-3130; website: http://www.gallatin.mt.gov/Public_Documents/gallatincomt_plandept/planning



5. Lewis & Clark County. Setbacks for streams, rivers, and wetlands were adopted in subdivision regulations in January 2005. The setbacks classify water courses into four categories, with different setbacks and buffer areas for each water course type. Setbacks regulate the minimum distance that structures must be from the water course. In addition to commercial, residential, and industrial buildings, setbacks also apply to barns, feed lots, corrals, and communication towers. Buffers describe a portion of the setback that is supposed to be undisturbed ("buffers are areas where all natural vegetation, rocks, soil, and topography shall be maintained in their original state, or enhanced by the additional planting of native plants"). The setbacks and buffer for each water course category appears in Box X (*see page 5-13*).

All setbacks must extend to the edge of adjacent wetlands and the 100-year floodplain, if designated. Lewis and Clark County's subdivision regulations are the most comprehensive in the state, protecting wetlands and all watercourses (including irrigation ditches), with both a setback and a vegetative buffer. ***For information***, contact the Lewis and Clark County Community Development and Planning Department, City County Building, 316 North Park, Helena, MT 59623, (406) 447-8374; website: http://www.co.lewis-clark.mt.us/departments/community-development-planning.html.

Box X: Lewis & Clark County Building Setbacks and Vegetated Buffers			
Water Category	Description	Building Setback	Vegetated Buffer
Type I	Major rivers, specifically the Missouri River (excluding the reservoirs), Dearborn River, Sun River, and the Big Blackfoot River.	250 feet	100 feet
Type II	Major streams, generally defined as all main tributaries of Type I water courses. These streams are identified in an appendix of regulations.	200 feet	75 feet
Type III	Generally all tributaries of type II water courses (identified in an appendix of the regulations); all intermittent streams; Missouri River Reservoirs; Lake Helena; and the Helena Valley Regulating Reservoir.	100 feet	50 feet
Type IV	Drainage channels "capable of carrying or collecting stormwater and snowmelt runoff," and Helena Valley Irrigation District canals.	50 feet	30 feet

Public Interest Covenants

There are two types of covenants. **Public interest covenants**, described in this section, are required by, held, and/or enforced by local governments. Those held and enforced by landowners are called **private covenants** (*see Private Covenants, page 6-1*).

Purpose:

To impose conditions, restrictions, or mandated actions on property owners as a result of the subdivision approval process. A governing body is a party to public interest covenants, and the local government must typically approve changes to the covenants.

Who Enacts This Tool:

Public interest covenants are imposed on land by governing bodies as a condition of subdivision or permitting approval. Depending on how these covenants are written, they may either be enforced by landowners, developers, or by the government agency that imposed the covenants.

Authority for Tool:

Covenants are authorized under Servitudes, Easements and Covenants Running With the Land (Title 70, Chapter 17, MCA). Public interest covenants are also authorized in two statutes: 1) in the Montana Subdivision and Platting Act (Title 76, Chapter 3, Part 2, MCA); and 2) in the Sanitation in Subdivisions statutes (Title 76, Chapter 4, Part 1, MCA). The Sanitation in Subdivisions statute specifically authorizes local governments to use restrictive covenants to "protect state waters."

How it Works:

Covenants are conditions, restrictions or mandated actions that are imposed by a local government on property owners to protect public health and safety. When local governments impose conditions on a subdivision, they may include the governing body as a party to the covenants, and government approval before the covenants can be changed. Additionally, these covenants must run with the land, meaning they apply to all present and subsequent property owners unless the local government agrees to terminate them. In addition to individual lot owners and property owner associations, if specified, the local government also enforces these covenants. Local governments are usually a party to covenants only when there is a substantial public interest in retaining covenants. Examples of public interest covenants include maintaining perimeter fences; controlling weeds; maintaining roads or culverts; managing clear areas to reduce fire risk; and maintaining water supplies, storm water drainages, and sewage disposal systems.

Public interest covenants can protect wetlands and riparian areas by prohibiting construction in, or disturbance of, these areas. For example, a buffer could be required between wetlands and streams and:

- Lawns – to prohibit lawn chemicals from entering a stream;
- Parking lots – to prohibit hazardous material and other pollutants from entering water bodies;
- Buildings – to protect against flood hazards; and
- Storm water management facilities – to prevent various pollutants from entering water bodies.

Strengths:

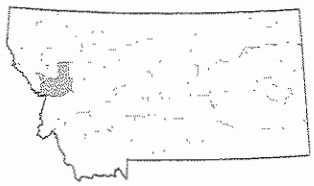
Public interest covenants can provide long-term protection of wetlands and riparian areas by placing restrictions preventing construction, filling, development, or other adverse activities within these areas. Public interest covenants that can be enforced by local governments have fewer of the enforcement problems outlined under the private covenant weaknesses section on page 6-2.

Weaknesses:

Local governments can have limited resources to enforce these covenants. Enforcement of covenants to protect a specific wetland or riparian area may or may not be possible because of limited resources by the city or county attorney. Additionally, enforcement of covenants only occurs if there is a known violation. Unless reported, it is difficult for local governments to track violations in individual subdivisions. If enforcement actions are taken, restoration of the wetland or riparian area will not necessarily be required. Historically, the law favored payment of damages for violation of covenants, not land restoration. Although covenant law has evolved to permit injunctive relief as well as damages for covenant violations, a bias in favor of monetary relief still exists in the courts and case law.

Montana Case Histories:

Missoula County.



Approved in 2001, Old Water Wheel Estates is a minor 4-lot subdivision on 9.8 acres located at the junction of the Bitterroot River and O'Brien Creek. Based on subdivision regulations, conditions were imposed that required the final plat, covenants, and Riparian Resource Management Plan to indicate a 25-foot buffer zone from the two watercourses. The covenants and Riparian Plan state that the following activities are prohibited in the Riparian Buffer zone: all structures, vehicle access, roads or driveways, fencing, grazing, stream bank alterations, disturbance of native plants, landscaping, lawns, tilling, mowing, fertilizing, filling or dumping, and power equipment (unless part of an approved weed control program). In addition to the buffer zone, conditions also require the final plat to designate a "no-build" zone, which prohibits placing any buildings within 50 feet of the high water mark of the stream or river. The Riparian Plan and covenants also prohibit placing fishponds within 50 feet of the river, and include specifications for planting native riparian vegetation. The County can enforce the provisions related to protection of the riparian area; it must also approve any changes to the covenants. An enforcement action occurred when one lot owner burned a section of the riparian buffer area.

Missoula County has used public interest covenants in several subdivisions to protect both wetlands and riparian areas. Building envelopes, no-build zones, and no improvement zones have all been used *(see Zones of Non-development, page 4-5)*. ***For more information***, contact Office of Planning and Grants, 435 Ryman, Missoula, MT 59802-4297; (406) 258-4657; website:http://www.co.missoula.mt.us/opgweb/.

Park Dedication Through General Local Government Authorities

Purpose:

To meet the community's need for playgrounds, ball fields, open space, wildlife habitat, and other park activities.

Who Enacts This Tool:

Local governments in coordination with the planning boards, park boards, or commissions.

Authority for Tool:

The general authority for establishing parks is found in Title 7, Chapter 16, MCA: county authority is in Parts 21 through 24; municipal government authority is in Parts 41 and 42, MCA.

How it Works:

Dedicated parkland can be used for a variety of activities and purposes. Wetlands are usually unsuitable for development, and setting these areas aside in their natural setting can benefit the future residents of the community. River or stream corridors are important community resources that can be protected as a park or open space. The biggest hurdles to saving wetlands and riparian areas through park and open space programs is limited funding. These limited dollars must pay for the acquisition and maintenance of ball fields, playgrounds, recreation facilities, and open space. However, thoughtful planning can protect important natural assets and meet other needs of communities.

One of the special considerations required when protecting wetlands and riparian areas is the need to manage human use of the area. Increased human use of an area can impact vegetation. Designing natural parks to direct human use away from the shore of a wetland or stream bank is difficult. At a minimum, these areas need appropriate buffers created to protect them from recreational use, lawns, and other activities associated with development. One way to protect riparian areas is to direct recreational activities to one side of the stream or river, while discouraging use on the other.

Strengths:

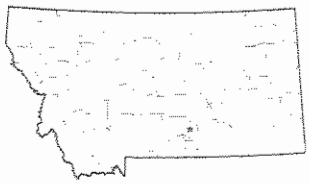
A number of municipalities and counties have successfully set aside wetlands and riparian areas as natural areas or open space.

Weaknesses:

Parks set aside as natural areas or open space must be managed to ensure that the resource is not damaged. As mentioned above, designing natural parks to direct human use away from the shore of a wetland, lake or stream bank is difficult. At a minimum, these areas need appropriate buffer strips created to protect them from recreational use, lawns, and other activities.

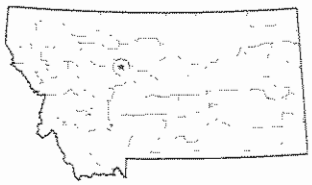
Montana Case History:

1. City of Billings.



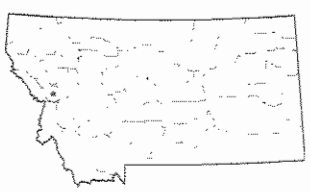
In 1994, a Yellowstone Greenway Master Plan was created for a 16-mile stretch along the Yellowstone River through Billings. The plan was commissioned by a private nonprofit organization, the Yellowstone River Parks Association, and adopted by the City of Billings and Yellowstone County. This plan has been the blueprint for development of a greenway system along the river. Anchored by Riverfront Park (about 450 acres) in the south and Two Moon Park (about 115 acres) on the north, the greenway currently protects approximately 800 acres within the city and/or county, including several natural parks. A trail system connects most of the park system, although portions of the greenway area are privately owned and do not have trails. ***For more information***, contact Parks, Recreation & Public Lands, City of Billings, 390 North 23rd Street, Billings, MT 59101; (406) 657-8373; website: http://www.prpl.info/parks/index.html.

2. City of Great Falls.



The River Edge Trail protects a corridor along both sides of the Missouri River. The trail is more than 8 miles long on the river's south side, and 1.7 miles on the north. Native riparian vegetation and associated wetlands are protected in several segments. ***For more information***, contact Parks and Recreation, City of Great Falls, P.O. Box 5021, Great Falls, MT 59403, (406) 771-1265; website: http://www.ci.great-falls.mt.us/people_offices/park_rec/index.htm.

3. City of Missoula.



In 1902 **Greenough Park** was donated to the city as a park "to which people of Missoula may during

the heated days of summer, the beautiful days of autumn and the balmy days of spring find a comfortable, romantic, and poetic retreat" (Devlin, 2002). The park, approximately 50 acres in size, protects both sides of Rattlesnake Creek and must be "forever maintained in its natural state." The vegetation includes mature cottonwoods, large Ponderosa Pine, and dense streamside vegetation. More than 120 species of birds have been identified in the park. Currently restoration work is underway to remove non-native trees and other vegetation, restore stream channels, and plant native vegetation. ***For more information***, contact Missoula Parks and Recreation, 100 Hickory Street, Missoula, MT 59801, (406) 721-7275, email: parksrec@ci.missoula.mt.us; website: <http://www.ci.missoula.mt.us/parksrec/>.

Parkland Dedication Through Subdivision Development

Purpose:

To meet the community's need for playgrounds, ball fields, open space, wildlife habitat, and other park activities for expected residents of new subdivisions.

Who Enacts This Tool:

Local government in coordination with the developer and the local planning or park board.

Authority for Tool:

This parkland dedication is associated with subdivision development; the authority is found in the Subdivision and Platting Act, specifically Title 76, Chapter 3, Part 6, Section 621, MCA.

How it Works:

All major subdivisions (defined as six or more lots) are required to set aside parkland, an equivalent amount of cash, or some combination of both. Before a major subdivision is approved, the developer and the local government must agree on the details of the set aside parkland: the amount of land, location, and use of the park. Dedicated parkland can be used as natural parks and/or developed as ball fields or playgrounds. Developers sometimes choose land to set aside as parkland, such as a wetland, that cannot be developed for residential or commercial uses. Although this strategy may work to protect some areas, communities often have situations where conflicts arise for limited parkland for playgrounds, recreation facilities, and open space. When those conflicts arise, local officials often try to direct proposed parkland to areas that offer the most visible public benefits. Thoughtful planning can usually protect important natural assets *and* provide needed park and playground areas. Cash-in-lieu of parks can be used for the purchase of conservation easements to protect open space, or buy wetlands or similar areas for hiking or nature study. Although many developers and local governments choose to use park fees for maintenance of existing parks, communities may opt to invest the money in open space.

Strengths:

Because wetlands and riparian areas can be unsuitable for development in the first place, setting them aside in their natural setting can benefit the future residents of a subdivision as well as the public in general. With thoughtful planning, dedicated parkland or cash-in-lieu of land can be used both to protect critical open space and provide needed parks and playgrounds.

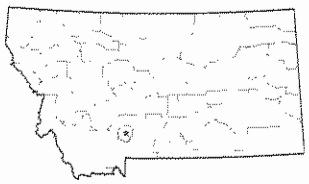
Weaknesses:

Parkland dedication to protect wetlands and riparian areas only works under specific circumstances. For example, there have been situations where a developer wants to dedicate wetlands as their parkland requirement, but a subdivision needs a playground or similar facility. The developer is then required to donate the drier parcel of land for the parkland donation that the local government wants, and the wetland remains part of the subdivision that may be developed—or degraded because of a lack of an adequate, protected buffer strip. Additionally, setting aside a wetland or riparian area as parkland does not ensure that it will remain protected. When a subdivision is created, the human use of the area increases. Designing natural parks to direct human use away from the shore of a wetland or stream bank is diffi-

cult. At a minimum, these areas need appropriate buffer strips for protection from recreational use, lawns, and other activities associated with a subdivision. Because cash-in-lieu of parkland must be calculated on the un-subdivided, unimproved value of the land, often the amount of cash donated is insufficient to purchase meaningful parkland or wetlands.

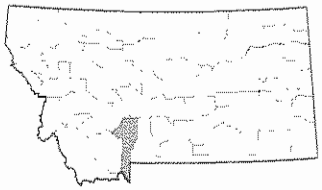
Montana Case Histories:

1. City of Bozeman.



The Sundance Springs Subdivision Planned Unit Development (PUD) was constructed in three phases, allowing development of 134 lots on approximately 215 acres. Thirty percent of the subdivision was reserved as common open space (almost 65 acres), open to all residents and the general public, but maintained by the subdivision's homeowners association. This common open space includes a 2-acre pond. As part of the third phase of this development, the city negotiated to purchase a linear park along Nash Spring Creek. This park is approximately 10 acres and varies in width from 50 to 100 feet. The subdivision design provides a minimum of 50 feet of open space, owned and controlled by the homeowners association, between residential lots and the dedicated linear park along Nash Spring Creek. In addition to this 50-foot setback, lot owners have a 20-foot setback for their yard (lawn). A riparian restoration project recreated the meanders in Nash Spring Creek, and improved fisheries and water quality protection capacity for the stream. ***For more information***, contact Bozeman Planning and Community Development, City of Bozeman, P.O. Box 1230, Bozeman, MT 59771, (406) 582-2260; website: http://www.bozeman.net/planning/planning.aspx.

2. Gallatin County.



Historically, Gallatin County has required that creeks and rivers within a proposed subdivision be incorporated into open space areas rather than remain part of lots. The Meadowbrook Estates Major Subdivision is a 57-lot development on approximately 16 acres, three miles west of Bozeman. It is located within the Bozeman Area Zoning District. This major subdivision needed an 11% park dedication, which was fulfilled with the establishment of "Minder Park" as a dedicated recreational park. Minder Park includes part of Minder Pond, which is a wetland over 1 acre in size. Aajker Creek, with its mature cottonwood and willow vegetation, runs along the property's northeastern border. In addition to the park dedication of Minder Park, a private covenant was placed on lots 20-23 in the development requiring that a minimum of 5 feet of the required 35-foot setback immediately adjacent to Aajker Creek be left in its "natural vegetative state." Most of the 35-foot setback along Aajker Creek is included in the park dedication for the subdivision. ***For more information***, contact Gallatin County Planning Office, 311 West Main Street, Bozeman, MT 59715; (406) 582-3130; website: http://www.gallatin.mt.gov/Public_Documents/gallatincomt_plandept/planning.

Open Space Bonds

Purpose:

To provide a funding source to purchase or lease parks, trails, and recreation areas; and conserve wildlife habitat, critical areas, and open space.

Who Enacts This Tool:

States, counties, or municipalities, upon approval by voters within the jurisdiction.

Authority for Tool:

Open space bonds are authorized under the Open-Space Land and Voluntary Conservation Easement Act (Title 76, Chapter 6, Part 1, MCA).

How it Works:

The state, municipalities, and counties may issue long-term bonds as a means of generating funds to pur-

chase land or acquire conservation easements for parks and open space. Voters must approve these bonds at an election. Upon approval, citizens are committed to repaying the bonds, typically over a 20-year period of time. In order to guide open space purchases, the governing entity usually develops a plan showing the comprehensive need for open space, parks, and recreation areas. The governing body typically appoints a council of citizens to oversee proposal development, hold public meetings, and make recommendations to governing officials on what properties should be obtained with open space funds. The governing body has the ultimate spending authority for this money. To date, Helena, the city and county of Missoula, and Gallatin County have all used open space bonds to purchase land or acquire conservation easements for parks and open space.

Strengths:

Open space bonds provide a ready source of funds to acquire lands for parks, important wildlife habitat, agricultural lands, vistas, and trails. Because voters must approve these bonds, there is general public support for the land acquisitions. The bond money can be used to purchase key open space that contains wetlands or riparian areas, which results in protection from development. All purchases are done made from a willing seller.

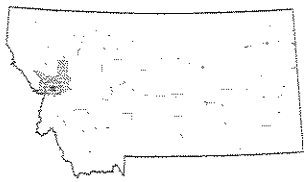
Weaknesses:

Citizens may be reluctant to increase their taxes, especially for open space that may not be perceived as essential to the community. However, with strong, affirmative public education programs, open space bonds can win approval. As with park dedication programs described above, local officials often put a higher priority on purchasing lands for recreational trails and ball fields, rather than natural parks. Finally, although a key open space may be desirable for purchase, if a property owner is not interested in selling the property, then the land cannot be acquired.

Montana Case History:

1. City of Missoula & Missoula County.

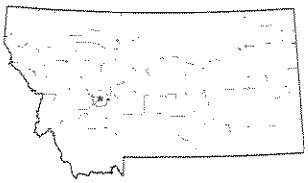
In 1991, the Missoula City Council and County Commissioners adopted an urban area open space plan, which identified park and open space needs and specified strategies for meeting those needs, including using open space bonds. In 1995,



voters passed a $5 million open space bond. The term of the general obligation bond is 20 years. The bonds are being repaid by a property tax levy that averages $20 per residence per year. Individual, agency, and corporate funding are supplementing the bond. Using these funds, Missoula purchased 80 acres along the Clark Fork River that supports a cottonwood riparian forest with vital wildlife habitat. This important riparian area will be managed for its natural values. ***For more information***, contact Missoula Parks and Recreation, 100 Hickory Street, Missoula, MT 59801, (406) 721-7275, email: parksrec@ci.missoula.mt.us; website: http://www.ci.missoula.mt.us/parksrec/.

2. City of Helena.

A key Helena-area wetland was purchased with open space bond money, and money from Montana



Audubon, Last Chance Audubon, the Mikal Kellner Foundation, and Prickly Pear Land Trust. The land is adjacent to the Lewis and Clark Fairgrounds. It contains an important piece of the remaining wetlands in the North Helena Valley, and its protection enlarges a wetland complex that is already in public ownership. The land is vital to birds, particularly migrants, as they pass through the Helena Valley. The property is owned and managed by the City of Helena as a natural area; Montana Audubon retains a conservation easement on the parcel. Voters approved Helena's $5 million Open Space Bond in 1996. The term of the general obligation bond is 20 years, which is paid by a property tax levy that averages $33 per residence per year. ***For more information***, contact Helena Parks and Recreation, City of Helena, 316 North Park Ave., Helena, MT 59623, (406) 447-8463; website: http://www.ci.helena.mt.us/index.php?id=276.

Floodplain Regulations

Purpose:
To regulate development within the 100-year floodplain of a stream or river in order to minimize the loss of life and property damage caused by flooding, and protect public health and safety. Enforced floodplain regulations also reduce public expenditures for emergency evacuation and flood damage restoration.

Who Enacts It:
The Montana Department of Natural Resources and Conservation (DNRC) designates 100-year floodplains. Municipalities and counties can adopt and enforce local floodplain regulations within their jurisdictions. Most local governments appoint a floodplain administrator to administer the floodplain regulations.

Authority for Tool:
The Montana Floodplain and Floodway Management Act (Title 76, Chapter 5, MCA) authorizes DNRC, municipalities, and counties to adopt and enforce local floodplain regulations. Compliance with the act is required if municipalities and counties wish to participate in the National Flood Insurance Program under the Federal Emergency Management Agency (FEMA).

How it Works:
Floodplain boundaries have been officially delineated along waterways in most developed areas of Montana. Local governments are required to adopt floodplain regulations relating to development within any area delineated as a 100-year floodplain. If a local government does not adopt and enforce its own local floodplain regulations, then DNRC takes over this function for the local government. In areas where 100-year floodplains have not been designated, local governments rely on "flood prone" areas, which are approximate maps of the floodplain based on the best available information (e.g. aerial photographs of flood events). It is important to note that streams without mapped floodplains still have floodplains that can flood. To understand how floodplain regulations work, it is necessary to understand three terms:

- ***100-year floodplains*** include the area adjoining a stream or river that has a one percent (1%) chance of flooding in any give year. It contains the floodway and the floodway fringe (the 100-year floodplain = the floodway + flood fringe).

- ***Floodways*** carry most of the flood water; technically floodways are the channel of a watercourse or drainage way, and those portions of the floodplain adjoining the channel, that are reasonably required to carry and discharge the floodwater of any watercourse or drainage way.

- ***Floodway fringe*** is the portion of the 100-year floodplain outside the floodway, including the flood storage and backwater areas subject to shallow water depths and low velocities.

Anyone who proposes projects near streams or rivers must check with the local floodplain administrator to determine if the project is allowed or if a permit is required. Activities generally allowed in the floodway include agriculture; industrial-commercial uses such as parking areas; recreation uses such as parks, boat ramps, and golf courses; and residential uses such as lawns and gardens. Activities generally allowed in a floodway fringe include activities allowed in a floodway, and buildings that are constructed on fill so that the lowest floor elevation (including the basement) is 2 feet above the floodplain elevation. No septic systems are allowed in the floodway fringe.

Riparian areas and their associated wetlands can receive protection through floodplain protection. Floodplain regulations can be made to apply to more than the 100-year floodplain as defined by FEMA. For example, the City Portland, Oregon regulates "Flood Areas." These Flood Areas constitute all land within the 100-year floodplain and all land that has physical or historical evidence of flooding in the last 100 years. This type of comprehensive floodplain designation can protect more wetlands and riparian habitat than the FEMA, or 100-year floodplain designation.

Strengths:

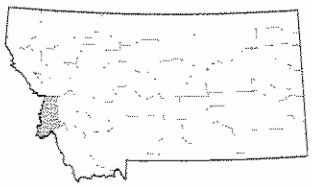
Local floodplain regulations can help maintain the ecological integrity of riparian habitat and wetlands located in the 100-year floodplain. Adequate floodplain regulations can protect communities from expensive lawsuits due to flooding (*see Missoula County below*).

Weaknesses:

Floodplain regulations rely on designation of 100-year floodplains. Flood maps often are not accurate. Wetlands or riparian areas located outside of designated 100-year floodplains will not receive protection through floodplain regulations. Although floodplain regulations prohibit development in the floodway, they allow development in the floodway fringe, which allows property owners to bring in fill material to raise the building site above the 100-year flood elevation. Fill negatively impacts riparian areas and their associated wetlands. Because local floodplain administrators often do not have adequate training, time or resources to fulfill their floodplain management work, it can make it difficult for them to inspect projects for compliance or undertake enforcement actions. There can also be local resistance to enforcement of floodplain regulations.

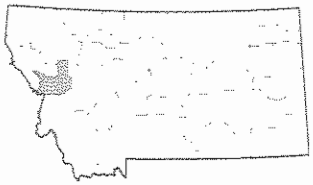
Montana Case Histories:

1. Ravalli County.



Floodplain regulations in Ravalli County prohibit new residential structures within the 100-year floodplain (most counties allow structures in the floodway fringe if adequate fill is placed to raise the building above the flood elevation). Additionally, the Ravalli County Commission requires that, before a floodplain permit can be issued, a copy of all other stream permits must be received (for example, 404 permit, 310 permit, etc.). This requirement ensures that all necessary government authorities review a project impacting a river or stream before a floodplain permit is issued and the project can proceed. ***For more information***, contact Ravalli County Planning Department, 215 South 4th St., Suite F, Hamilton MT 59840, (406) 375-6530; email: planning@ravalli county.mt.gov; website: http://www.co.ravalli.mt.us/planning/default.htm.

2. Missoula County.



Growth in Missoula County has affected watercourses and floodplains. In 1992, Missoula County approved a 92-lot subdivision west of Missoula along lower Grant Creek. The subdivision was located *outside* the 100-year floodplain boundary on FEMA Flood Insurance Rate Maps. In 1997, during runoff calculated to be less than a 10-year flood, water submerged some of the lots, yards, basements, and the sewage treatment system of this subdivision. As a result, 16 homeowners and the homeowners association filed a lawsuit against the property developer, the developer's engineer, local real estate agents, and Missoula County. A negotiated settlement paid $2.3 million to the homeowners. Forty-four additional homeowners have since filed suit against the same defendants. In 2001, DNRC commissioned a study that showed that 45 of the homes are in the regulatory floodway. Because Grant Creek's natural meanders had been eliminated, and the creek channelized, the intensity of flooding substantially increased in the subdivision area. It appears that the only feasible way to resolve this problem is to restore 5 miles of Grant Creek, including its riparian vegetation and floodplain—a project that will likely cost millions of dollars.

Regulations governing development within floodplains generally lack the necessary scientific data that shows the impacts of development on waterways. Because of a heightened awareness of flooding issues, and in an effort to direct growth to locations that will minimize property damage and water resource impacts, Missoula County conducted a baseline study, funded by the DEQ Wetland Program, showing the effects of bank stabilization structures on local watercourses (*see DEQ Wetlands Program, page 6-10*). Five watercourses were chosen for the study based on predicted future development pressures; 29 miles of bank in the 121 miles of streams and rivers examined, had bank stabilization structures. Bank stabili-

zation structures can lead to channelization of rivers and streams, which can increase the risk of flooding, property loss, and associated impacts. A description of methods and materials used to conduct the inventory is available as a template for conducting similar studies elsewhere.

The study's inventory and accompanying maps provided Missoula County with a solid base to regulate development in floodplains. As a result, the public and the County Commissioners overwhelmingly supported changes to local floodplain regulations. In addition to prohibiting large-scale clearing of native vegetation within 50 feet of a stream or river, the regulations include the following:

- Prohibit the creation of new levees. Maintenance of an existing levee is allowed in three situations: if the levee is publicly maintained; if relocating, elevating, or flood-proofing the structures protected by the levee is not feasible; or if a streamside levee is to be reconstructed away from the stream bank.

- Restrict the use of riprap and other rock armament, only allowing them in extreme situations to protect an existing residential, commercial, or industrial use, or public infrastructure that cannot be relocated. Builders are responsible for locating new structures a safe distance from the waterway and riprap is not permitted to protect a structure built after adoption of the amendments. "Softer" bank stabilization techniques, including logs and other woody debris instead of rock, may be allowed after review by floodplain administrators.

- Require new bridge construction to be designed to cause minimal change in stream velocities and not encroach into the channel, so as to minimize the impacts on the stream course such as water damming, increased stream velocities downstream, and deposition of sediment upstream. The regulations also ensure that road approaches do not block normal overflow channels, and that sediments will not be deposited upstream of the bridge.

For more information, contact Floodplain Administrator, Office of Planning and Grants, 435 Ryman, Missoula, MT 59802-4297, (406) 258-4657, website: http://www.co.missoula.mt.us/opgweb/Floodplain/Floodplain.htm.

Lakeshore Regulations

Purpose:

To regulate development immediately adjacent to natural lakes of at least 160 acres in size in order to protect the shoreline or bank. Lakeshore permits are required on these lakes for any construction or shoreline alteration on land within 20 feet of the mean annual high water mark. Local governments may also apply lakeshore regulations to lakes that are smaller than 160 acres.

Who Enacts It:

Local governments are required to adopt lakeshore regulations for any natural lake at least 160 acres in size in their jurisdiction.

Authority for Tool:

Lakeshore regulations are authorized under the Lakeshore Regulation Act (Title 75, Chapter 7, Part 2, MCA).

How it Works:

Municipalities and counties with shorelines along lakes of 160 acres or more, including on lakes that have been raised by constructed impoundments (e.g. Flathead Lake), must adopt lakeshore regulations. The regulations require a permit for any activity that will "alter or diminish the course, current or cross-sectional area of a lake or its lakeshore." Examples of these activities include construction of channels and ditches, dredging of lake bottoms, and filling and constructing breakwaters, pilings, wharves, docks, and boat ramps. Local governments must establish a permitting process for development projects. All proposed work is required to be approved, unless the local government shows that the project will impact water quality, habitat for fish and wildlife, natural scenic values, or navigation or other lawful recreation; or create a public nuisance.

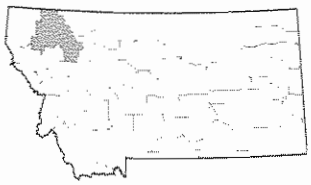
Strengths:

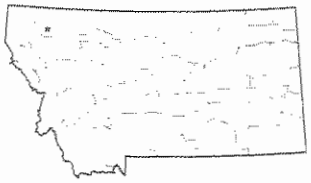
Lakeshore regulations are required where a local government contains shoreline on a lake of at least 160 acres. Local governments are required to regulate development within 20 feet of the high water and help protect riparian vegetation and associated wetlands along the lakeshore. Shoreline vegetation is considered important for maintaining water quality, minimizing erosion, and acting as a sediment filter.

Weaknesses:

Lakeshore regulations are adopted and enforced for a very small range of lakes, so they benefit only a very limited number of wetlands and riparian areas. Also, the regulations only apply to a 20-foot strip around the lake, which water quality experts have indicated is not adequate to significantly protect water quality and riparian areas (Environmental Quality Council, 1992).

Montana Case History:

1. Flathead County. 
Lakeshore regulations in Flathead County apply to all lakes with a water surface of at least 20 acres in size for 6 months of the year. They include criteria for issuing construction permits, a process for variances, design standards for projects, a prohibition on permanent or temporary dwelling units, and a 60-foot limit on docks. For streams and springs running through the Lakeshore Protection Zone, a 25-foot minimum setback is required for all structures. Private individual boat ramps within one lake mile of a public ramp are not allowed. ***For more information***, contact the Flathead County Planning and Zoning Office, Earl Bennett Building, 2nd Floor, 1035 1st Ave West, Kalispell, MT 59901; (406) 751-8200; website: http://www.co.flathead.mt.us/fcpz/index.html.

2. City of Whitefish. 
Regulations on Whitefish Lake are similar to those in Flathead County, but they do not permit private individual boat ramps to be built on the lake. This restriction reduces the amount of development along the lakeshore, consequently assisting in protection of riparian vegetation. ***For more information***, contact City of Whitefish, Planning and Building Department, 1005C Baker Avenue, Whitefish, MT 59937, (406) 863-2410; website: http://www.whitefish.govoffice.com/.

3. Missoula County. 
Regulations in Missoula County also apply to all lakes with a water surface area of at least 20 acres. The regulations are similar to those of Flathead County, with the following additional prohibitions: covering the Shoreline Protection Zone with impervious non-native material, including asphalt, parking areas, jetties, boat houses, roads or driveways that do not serve boat ramps, satellite dishes, overhead power lines, major clearing of vegetation, and more. For streams and springs, the setback for structures is a minimum of 25 feet. However, a minimum setback of 50 feet is required from streams and springs "determined to be important fishery resources." ***For more information***, contact Office of Planning and Grants, 435 Ryman, Missoula, MT 59802-4297, (406) 258-4657, website: http://www.co.missoula.mt.us/opgweb/.

Local Water Quality Districts (LWQD)

Purpose:

To establish districts in order to protect, preserve, and improve the quality of surface and groundwater within the district.

Who Enacts It:

County commissioners are authorized to create local water quality districts. With the concurrence of a municipal governing body, districts may include cities or towns. Once created, the districts are administered by a board of directors, which consists of at

least one county commissioner, a representative of any participating municipalities, the county health officer, and a representative of the local Conservation District.

Authority for Tool:
Local Water Quality Districts (LWQD) may be created and operated by county commissioners under Title 7, Chapter 13, Part 45, MCA.

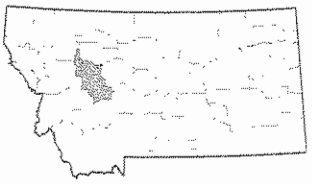
How It Works:
County commissioners initiate the creation of a LWQD. Cities or towns may be included in the district if approved by the municipal governing body. A board of directors administers the district—developing a budget, hiring staff, and receiving state or federal grants. LWQDs may establish water quality protection programs with any of a number of different goals. The district does not have the power to regulate—it is the county commission that is responsible for adoption of any local ordinances to protect water quality. However, water quality districts may enforce ordinances passed by the county commission. Currently there are LWQDs in Gallatin, Lewis & Clark, and Missoula Counties.

In Montana, each of the LWQDs has focused on different aspects of water quality. Work done by the districts on wetlands and riparian areas has focused on studies and mapping projects (*see case studies below*). Watershed planning and volunteer monitoring programs have also been developed.

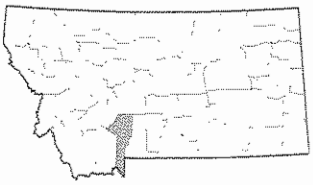
Strengths:
Local Water Quality Districts are designed to protect surface and ground water sources. Since wetlands and riparian areas are important surface waters, and they both contribute to improving water quality, these areas should benefit from district programs. The information gathered in research by the districts helps local governments make more informed decisions about protecting these resources. LWQDs serve as a clearinghouse and network facilitator for area watershed groups. Public outreach, including working with individual landowners, is an important function of districts.

Weaknesses:
LWQDs lack the authority to pass regulations to protect water quality, although they can administer and enforce regulations adopted by their County Commission. Because funding for districts comes from a property tax assessment, resources can be limited for projects, unless outside funds are found.

Montana Case Histories:



1. Lewis & Clark County. In 2001, the Lewis & Clark County Water Quality Protection District, Lewis & Clark County Planning Office, Montana Audubon, Last Chance Audubon, and two private consultants completed a wetland resource assessment of the Helena Valley. The project completed the following: a baseline wetland inventory; current and historical wetland maps; and an education program for the community on the importance of wetlands and the findings of the study. This partnership also completed a project to identify and prioritize wetlands in the study area that need protection. The DEQ Wetlands Program funded both projects (*see DEQ Wetlands Program, page 6-10*). ***For more information***, contact Water Quality Protection District, Lewis & Clark County, 316 North Park Room 412, Helena, MT 59623; (406) 457-8927; email: water@co.lewis-clark.mt.us; website: http://www.co.lewis-clark.mt.us/index.php?id=56.



2. Gallatin County. The Gallatin County Water Quality Protection District, also funded under the DEQ Wetlands Program, is working to establish a countywide GIS database containing historical and current wetlands information for use by government agencies, developers, landowners, and the general public. This project is also slated to identify, assess, and prioritize wetland areas within the Gallatin Valley and Bozeman Creek watershed that are threatened and/or in need of restoration, and increase public awareness of the im-

portance and current status of wetlands in the Gallatin Valley and Bozeman Creek watershed. ***For more information***, contact Gallatin County Local Water Quality District, 311 West Main Street, Room 104, Bozeman, MT 59715, (406) 582-3148; website: http://www.gallatin.mt.gov/Public_Documents/gallatincomt_wqdpages/lwqd.

Capital Improvement Programs

Purpose:
To allow local governments to plan, schedule, and fund the development of capital improvements, including roads, sewer and water lines, buildings, and utilities.

Who Enacts This Tool:
Both county and municipal governments may adopt capital improvement programs.

Authority for Tool:
Capital improvement programs are authorized in Title 7, Chapter 6, Part 6, MCA. They also are a required element of a growth policy (Title 76, Chapter 1, Part 6, Section 601(2)(e), MCA)

How it Works:
Municipalities and counties typically develop a 5-6 year Capital Improvement Program (CIP) for acquiring, installing, constructing, or upgrading public facilities or major equipment—such as sewer systems, streets, roads, bridges, parks and recreation facilities, storm sewers, or major drainage facilities—that often must be financed over a period of years rather than as a one-year budget item. The CIP usually describes the needs for expanding, extending, updating, or rehabilitating capital facilities. After projecting needs, the CIP sets priorities, estimates the costs of each of the needed capital projects, determines likely funding sources, and establishes a schedule for each project over the next 5-6 years.

CIPs can create strong incentives and disincentives for development around wetlands and riparian areas. Through a CIP, local governments generally coordinate their long-range plans for extending or expanding public utilities or services such as roads, sewers, and drinking water. The availability of these amenities often encourages or accelerates growth. When these services are not provided, development pressures frequently are reduced, limiting growth and—indirectly—preserving open space and wetlands. If a local government conducts a CIP that takes into consideration areas that have a high concentration of valuable wetlands or similar resources, it can then decide to restrict sewage and water services to a specified area, or decide not to pave a road—effectively limiting or slowing growth in sensitive areas.

Strengths: CIPs are useful plans that can save significant tax dollars or user charges by thoughtful scheduling and planning of needed public facilities. For that reason, and the fact that CIPs are not regulatory, local citizens typically favor the development of CIPs. Therefore, using a CIP to affect the timing and location of new, upgraded, or extended public facilities is a less controversial tool to encourage new growth to locate in suitable and desirable areas, and away from wetlands and streams.

Weaknesses:
Few counties in Montana have prepared and adopted CIPs. Most of the plans that have been prepared by municipalities and counties address the timing of constructing capital improvements, but rarely the location. Therefore, for a CIP to be effective in protecting natural assets such as open space, wetlands, and riparian areas, the local government must have strong policy statements regarding those assets in their growth policy plan, and purposefully implement those policies through planned construction and location of capital improvements.

Montana Case Histories:
Because CIPs have not been used in Montana to date for protecting wetlands and riparian areas, there are no case studies available in the state.

Chapter 6

Other Tools and Resources to Know About

The previous chapter identified the primary tools that are directly available to Montana county or municipal governments for the protection of wetlands and riparian areas. This chapter identifies additional tools and resources that can assist in carrying out protection efforts where the program is administered by an entity other than a city council, town council, or county commission. These tools are organized in the following way:

- **Private Covenants** (page 6-1) and **Deed Restrictions** (page 6-3) are placed on land by private landowners;
- **Conservation easements** are held in **perpetuity** (page 6-4) or for a limited amount of time (**term easements**) (page 6-6) by nonprofit organizations, or state or federal agencies (although local governments could retain conservation easements on a piece of land);
- The **Natural Streambed and Land Preservation Act (310 Permit Program)** (page 6-7) is administered by Conservation District Boards, which are independently elected for each county;
- **Watershed Groups** (page 6-8) are initiated by local landowners, government agencies, and other interested citizens.
- The **Montana Department of Environmental Quality (DEQ) Wetland Program** (page 6-10), **Water Pollution Control State Revolving Fund** (page 6-12), **Source Water Protection Program** (page 6-13), and **Montana Wetlands Legacy** (page 6-14) are all administered by the state of Montana; and
- The **Advanced Identification Process (ADID)** (page 6-14) and **Special Area Management Plan (SAMP)** (page 6-15) are administered by the Army Corps of Engineers. The Army Corps of Engineer 404 permit program, discussed in Appendix IV, which regulates the filling of wetlands, is not included in this chapter because it is a regulatory program and not a land use planning tool. The ADID and SAMP programs, which can impact the way a 404 program is implemented in a geographic area, are included because they are planning tools that can assist local governments in understanding and managing local wetland resources.

Each tool is described, with information about how the tool can specifically be used to protect wetlands and riparian areas. Strengths and weaknesses of using these tools to protect these areas are discussed in order to give decision makers a clear understanding of the limitations and possibilities offered by each tool for resource protection.

Private Covenants

There are two types of covenants. **Private covenants** are held and enforced by landowners. Those required by, held, and/or enforced by local governments, are **public interest covenants** (*see Public Interest Covenants, page 5-13*).

Purpose:
To impose conditions, restrictions, or mandated actions on property owners as a result of the subdivision approval process. A governing body is a party to public interest covenants, and the local government must typically approve changes to the covenants.

Who Enacts This Tool:
Landowners selling lots or tracts impose private covenants. Also, a group of landowners in a property owners association can establish and enforce covenants that place restrictions or conditions on the properties owned by those landowners.

Authority for Tool:
Covenants are authorized under Servitudes, Easements and Covenants Running With the Land (Title 70, Chapter 17, MCA). They are also referenced in the Montana Subdivision and Platting Act (Title 76, Chapter 3, Part 3, MCA).

How it Works:
Private covenants are conditions, restrictions or mandated actions that are imposed on property owners by a private party, usually the owner of a subdivision or other land development. The developer imposes restrictions on the lots to maintain the attractiveness of the development as a place to live, and thus maintains or increases the market value of the lots. Typical private covenants set restrictions on the type and minimum size of homes, keeping of horses and other livestock, and keeping pets enclosed or leashed (to avoid harassing wildlife). Covenants may also require certain actions of lot owners: for example, controlling weeds or limiting wildfire risk. The covenants usually detail a process for amendments and for enforcing the restrictions or conditions of the covenants. Any party to the covenants (the individual lot owners, property owner association, or developer) can enforce their conditions and requirements. Typically these same individuals or associations can modify or remove covenants by a majority vote. Covenants may be written to be effective in perpetuity or for some defined period of time. Typically covenants "run with the land," that is, they apply to all present and subsequent property owners.

Private covenants may provide long-term protection of wetlands and riparian areas by placing restrictions preventing construction, filling, development, or other adverse activities within lands identified as wetlands or riparian areas. If a developer is motivated to protect these resources, setbacks can be established that would enhance property values, protect public open space, or provide other amenities to the development.

Strengths:
Private covenants can provide long-term protection of wetlands and riparian areas by placing restrictions on the development of these sites. These covenants are relatively easy to establish. Property owner associations typically are responsible for enforcing the covenants within a subdivision. If a violation of a covenant occurs, officers of the association usually inform the property owner of the infraction so the problem can be corrected. In other words, violations are handled by neighbors talking to neighbors—an approach preferred by some landowners. If a covenant is violated, the beneficiary of the covenant is most often authorized to impose a lien on the offending owner's property, which will remain a burden on that landowner's property title until the covenant violation is corrected.

Weaknesses:
Because private covenants are usually initiated by the developer of a subdivision, wetland and riparian protection covenants would not be established unless the developer had a specific interest in protecting these resources. Any party to the covenants can legally enforce their conditions and requirements (the individual lot owners, property owners association, or developer). As a practical matter, however, confronting or suing a neighbor regarding a covenant violation is personal and uncomfortable, and it is expensive to file a lawsuit. A property owners association can more easily enforce covenants because the association has the financial support of the property owners, and can deal with the violation on a less personal basis. However, poorly-managed associations do not enforce covenants. Additionally, covenants are usually written so that they can be changed by a certain percentage of property owners. Therefore, long-term protection of wetlands and

riparian areas is not assured as future associations may remove protection measures without any input from 1) the public or 2) elected officials who approved the protection measure as a condition of the subdivision. If enforcement actions are taken, restoration of the wetland or riparian area will not necessarily be required. Historically, the law favors payment of damages for violation of covenants, not land restoration. Although covenant law has evolved to permit injunctive relief as well as damages for covenant violations, a bias in favor of monetary relief still exists in the courts and case law. Finally, developers may not feel the need to enforce covenants once lots are sold.

Montana Case History: We were unable to find examples of private covenants used to protect wetlands or riparian areas in Montana; therefore, no case study is presented.

Deed Restrictions

Purpose:

To place restrictions on a property buyer's use of the land. A deed restriction is an agreement between the seller and buyer of a property that certain uses or activities are restricted on the property.

Who Enacts This Tool:

Deed restrictions are two-party agreements between the seller and buyer regarding the use of property transferred by deed.

Authority for Tool:

The authority for deed restrictions comes from common law, not statute.

How it Works:

Deed restrictions, like covenants, place restrictions on a property buyer's use of the land. A deed restriction is an agreement between the seller and buyer of a property that certain uses or activities are restricted on the property. For example, a seller can restrict the height or location of buildings on land that he sells (to preserve his own view, for example). While covenants usually place conditions on a number of properties, such as those in a subdivision, deed restrictions are two-party agreements (between the seller and buyer) regarding the use of property transferred by the deed. Deed restrictions run with the land in perpetuity unless the original seller specifies a date or circumstances under which the restriction would lapse or be amended. When a violation of a deed restriction occurs and the property owner is unwilling to correct the problem, the seller (who wanted and imposed the restriction in the first place) must sue in civil court to enforce the terms of the deed restriction. Deed restrictions are usually written to be perpetual and unchanged. However, when both the buyer and seller agree, a deed restriction can be removed from a parcel.

Deed restrictions can use setbacks, no-build zones, no improvement zones, or building envelopes to ensure that building sites will not encroach into riparian corridors or wetlands.

Strengths:

As with covenants, a landowner can try to establish long-term protection of wetlands and riparian areas by placing deed restrictions preventing construction, filling, development or other adverse activities within lands identified as wetlands or riparian.

Weaknesses:

Perhaps the biggest drawback with using deed restrictions is their enforcement. Because they are two-party agreements, if the seller of the property does not want to enforce the deed restriction, it does not get enforced. As land transfers from one owner to another, it is unclear whether the deed restriction will be binding. Consequently, deed restrictions may not provide long-term protection for wetlands or riparian areas. Accordingly, property owners who want to restrict use of their property after title passes are usually better assured of long-term protection if they use covenants, servitudes or easements that are specifically authorized by Montana statutes. *(see Public Interest Covenants, page 5-13; and Private Covenants, page 6-1).*

Montana Case Histories:
We were unable to find examples of deed restrictions used to protect wetlands or riparian areas in Montana; therefore, no case study is presented.

Conservation Easements

Conservation easements are one of the most effective tools available to protect wetlands and riparian areas. They are also the most commonly accepted private land protection tool available. These easements are voluntary agreements where landowners retain ownership of the land, but agree to limit the types of activities that will be allowed in the future. Two main types of conservation easements are discussed below: **perpetual easements** and **term easements**. An example of easement language to protect wetlands and riparian areas appears in Appendix V. A list of private land trusts appears in Appendix VI.

Perpetual (Permanent) Conservation Easements

Purpose:
To permanently protect open space, agricultural lands, forested lands, wildlife habitat, streams, and other natural resources, including wetlands and riparian habitat. Protection is achieved by restricting the type and amount of development and/or activity on individual parcels of land.

Who Enacts This Tool:
An individual landowner negotiates the terms of the easement with a land trust, conservation organization, or a government agency, which holds the easement. Executing a conservation easement may be initiated by the landowner, an agency, conservation organization, or land trust.

Authority for Tool:
Permanent conservation easements are authorized in the Open-Space Land and Voluntary Conservation Easement Act (Title 76, Chapter 6, Part 2, MCA).

How it Works:
Permanent conservation easements are voluntary legal agreement that landowners enter into to restrict the type and amount of development that may occur on their property. Landowners retain ownership of their land, but agree to limit their future activities to protect resource values on the land. Each easement is different, tailored to the specific needs of the landowner, yet assuring that conservation objectives are met. Conservation easements may restrict or prohibit subdivision development; construction of new structures; mining or logging; or degradation of fish and wildlife habitat. Easements are donated or purchased by a qualified land trust, conservation organization, or public agency:

- **Donated Easements.** Under donated easements, the landowner agrees to forego certain development or use rights without receiving compensation. The economic benefit to landowners under donated easements is that they may be entitled to substantial reductions in estate and federal income taxes. To qualify for these tax advantages, easements must be granted in perpetuity. Donated easements are appropriate for landowners that have income and can benefit from a reduction in income taxes or landowners that need to reduce or avoid estate taxes. Typically, donated easements are made to private conservation or land trust organizations.

- **Purchased Easements.** Under purchased conservation easements, a landowner receives direct financial compensation for giving up certain development and use rights. When landowners receive full compensation for a conservation easement, they are not eligible for tax breaks. A tax break may be available for a purchased easement if the landowner receives only partial compensation for the easement. Purchased easements are appropriate for landowners, such as family farmers, where sheltering income is not needed, but supplemental income is helpful. Typically, government agencies purchase conservation easements. ***For more information*** about agency's that purchase conservation easements, see Montana Watercourse's *A Landowners' Guide to Montana Wetlands.*

This publication can be obtained from Montana Watercourse, P.O. Box 170575, Montana State University, Bozeman, MT 59717, (406) 994-6671; or electronically http://nris.state.mt.us/wis/wetlands/LandownerGWetlands.pdf.

Conservation easements can be used to protect wetlands and riparian areas by: prohibiting development near these areas through setbacks, building envelopes or zones of non-development (*see Zones of Non-development, page 4-5*); fencing buffer strips around an area; and/or prohibiting certain uses from occurring in the area (such as prohibiting grazing in a wetland).

Strengths:

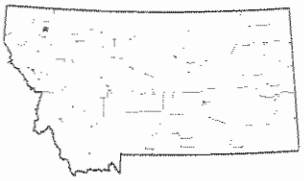
When conservation easements are made in perpetuity, the easement stays with the land, ensuring the resources and the land value will be retained indefinitely, even if land ownership changes. Because conservation easements are voluntary, they are well accepted by landowners and the general public. Increasingly, Montana property owners are willing to enter into easements to protect resource values. As a result, significant acreage is being protected through this conservation tool.

Purchased easements provide direct compensation to participating landowners, whereas future tax breaks constitute the compensation under a donated easement. The direct, up-front payment of a purchased easement is usually more attractive to those landowners who need cash to continue their agricultural operation. Landowners often are more willing to include management restrictions that would protect wetlands and riparian areas with purchased easements.

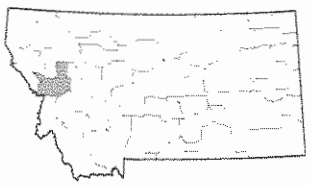
Weaknesses:

Wetlands and riparian areas are only protected in a conservation easement if a landowner is willing to protect these areas, and if specific protection provisions are contained in the easement. In donated easements, it can be more difficult to include the management restrictions necessary to protect a wetland or riparian area because the landowner is not being compensated for what is given up. Although these easements are gaining acceptance, they are still resisted by some private landowners.

Montana Case History:



1. Whitefish Area. A family just outside Whitefish has protected almost 200 contiguous acres of land, most of it wetlands, in three easements held by The Nature Conservancy. The first two easements, protecting a total of 136 acres, were donated in 1989; the last easement, protecting 55 acres, was donated in 1996. The property contains one rare wetland plant community, five rare plant species (all wetland species), and one rare species of bird (which nests in the wet meadow portion of the property). These easements prevent subdivision of the property; limit timber harvest; do not allow drainage of the wetlands; and, to protect water quality, limit farming on historically farmed areas to organic methods. An existing drainage ditch can be maintained so long as it doesn't negatively impact the rare species or communities. ***For more information***, contact The Nature Conservancy, 32 South Ewing, Helena, MT 59601; (406) 443-0303; website:http://www.nature.org/wherewework/northamerica/states/montana/.



2. Missoula County. A family living on the Swan River has protected 80 acres of land with an easement held by the Montana Land Reliance. The property contains a total of 26 acres of wetlands and riparian area, including approximately 1/3-mile of frontage along the Swan River. In addition to the riparian area, the property has 31 acres of upland forest and 20.5 acres of agricultural land and pasture. The easement prevents subdivision of the property. A 15-acre building envelope has been designated in the upland forest and agricultural areas where one new single family residence can be constructed, allowing a total of two single family residences on the property, plus associated garage, shop and tack shed structures.

The 26-acre riparian area has been delineated; there can be no structures, commercial timber harvest, agriculture, or ranching activities in this zone. ***For more information***, contact the Montana Land Reliance 324 Fuller Ave, P.O. Box 355, Helena, MT 59624-0355; Phone: (406) 443-7027; website: http://www.mtlandreliance.org/.

3. U. S. Fish and Wildlife Service (USFWS). The USFWS has a program to purchase easements. The Service's main program is their Wetland Easement Program which pays landowners for perpetual wetland easements that protect natural depressional wetlands, often called "prairie potholes," from being drained, filled, leveled, or burned. The program applies to designated counties located in the Blackfoot Valley, along the Rocky Mountain Front, and along Montana's Hi-Line (Glacier to Sheridan County). Riparian areas are not generally eligible for protection under this program. In addition, landowners can enroll upland areas adjacent to protected wetlands into the USFWS's Grassland Easement Program, which pays landowners to permanently keep their land in grass cover. Montana wetland and grassland easement projects can involve properties ranging from 80 acres to several thousand acres. The amount paid for an easement varies, but generally runs from 20% to 40% of the property's full fee title value. ***For more information***, contact Gary L. Sullivan, State Coordinator, U. S. Fish and Wildlife Service, 922 Bootlegger Trail, Great Falls, MT 59404; (406) 727-7400.

Temporary (Term) Conservation Easements

Purpose:
To temporarily restrict the type and amount of development on individual parcels of land, or management strategies for the land.

Who enacts it:
Term easements are usually only available through contractual agreements with a state or federal agency. Individual landowners negotiate an agreement on the terms of the easement with the appropriate government agency.

Authority for Tool:
Term conservation easements are authorized in the Open-Space Land and Voluntary Conservation Easement Act (Title 76, Chapter 6, Part 2, MCA).

How it works:
Term easements are appropriate for landowners, who are not certain that they want to enter into a permanent conservation easement. They are virtually always purchased for a fee. Landowners retain ownership of their land, but agree to limit certain types of development and activities for a designated time period. Under Montana law, 15 years is the shortest amount of time a term easement is permitted. Each easement is different, tailored to the specific needs of the landowner, while assuring that conservation objectives are met. Because the easement does not protect the land in perpetuity, landowners are not eligible for tax breaks. Term easements use the same methods of protecting wetlands and riparian areas as perpetual easements (*see Perpetual (Permanent) Conservation Easements, page 6-4*).

Strengths:
Landowners receive direct payments in cases where term easements are purchased. Areas protected under a term easement are protected for a specified period of time. Because these easements are purchased, it is easier to include the management restrictions necessary to protect a wetland or riparian area because the landowner is being compensated for what will be given up. If a landowner feels comfortable with a term easement, they may opt for an easement with permanent protection of the land when the term is through.

Weaknesses:
Term easements protect resource values for only a defined period of time, rather than perpetually. This can create problems for estate planning. If, for example, the landowner should die during the easement term, relatives would inherit a piece of property that is in the middle of an easement term, and would receive no reduced tax value. Because

the land is not protected in perpetuity, landowners are not eligible for income or estate tax breaks. Finally, landowners may not get much money for term easements, which are very similar to leases. Although term easements are gaining acceptance from landowners and agricultural organizations, some individuals still resist easements.

Montana Case History:

Teton County. The Natural Resources Conservation Service (NRCS) holds a 30-year term easement through its Wetland Reserve Program (WRP) on 4,798 acres near Choteau. This easement protects a wet meadow and stream complex, both dominated by sedges, grasses, and forbs. As stated in the easement language, NRCS retains the right to protect the area for wildlife habitat, which means that no haying or agriculture production can occur in the wetland or stream area except as determined through a compatible use process and then approved by the NRCS State Conservationist. The landowner receives 75% of the appraised agricultural value of the land for an easement payment. This Teton County agreement also contained a significant restoration project, where a portion of the stream was restored and four ponds were built. WRP restoration projects are cost-shared at a rate of 75% from NRCS and 25% from the landowner. ***For more information***, contact a local NRCS office or Wetland Reserve Program, NRCS, Federal Building, Room 443, 10 East Babcock Street, Bozeman, MT 59715; (406) 522-4000; website: http://www.mt.nrcs.usda.gov/programs/.

— Natural Streambed and Land Preservation Act (310 Permit Program) —

Purpose:

To minimize soil erosion and sedimentation, maintain water quality and stream channel integrity, protect and preserve streams and rivers in their natural state, and prevent property damage to adjacent landowners.

Who Enacts It:

The board of supervisors of the local Conservation District administers the 310 permit program within the district boundaries. A person proposing work in or near a stream must apply for and receive a 310 permit before proceeding with the project.

Authority for Tool:

The Montana Natural Streambed and Land Preservation Act (Title 75, Chapter 7, Part 1, MCA) requires a 310 permit from the local conservation district for projects in or near streams. Each conservation district adopts its own rules guiding the 310 permit process.

How it Works:

A person planning any activity that will alter or affect the bed or banks of a natural stream or river must apply for a 310 permit from the local Conservation District. After the application is accepted, an on-site inspection is conducted. Inspectors make recommendations to the Conservation District board of supervisors, who must approve, modify, or deny the application within 60 days. Applications are evaluated to determine if the proposed project will reasonably accomplish the purpose of the project, and its effects on soil erosion and sedimentation, stream channel alteration, stream flows, water quality, and fish and aquatic habitat. Additionally, the Conservation District determines whether the project could be modified in a way that reduces the disturbance to the stream and its environment. Permit conditions may limit the time and duration of construction to minimize impacts to the stream or associated aquatic life. Conservation districts must adopt rules to guide them in their deliberations at the local level. Most districts have adopted the model rules provided by the State of Montana.

Wetlands and riparian areas are only protected if they exist on the banks of streams and rivers. However, Conservation Districts have the ability to adopt additional protections that would provide greater protection to riparian areas. Examples of protection measures currently being considered by Montana

Conservation Districts include: banning blanket riprap on streams less than 50 feet wide; prohibiting the clearing of riparian vegetation within the ordinary high water mark of a river or stream; prohibiting the use of waste concrete, tires and other unconventional materials in all projects; requiring new bridges to at least span the bank-full width of the stream so that bank stabilization is not needed to protect either end of the bridge; prohibiting new levees and requiring that replacement of historic levees only be allowed after analysis of the potential of setback levees; limiting the amount of rock allowed in bank stabilization projects; and requiring that all projects have a riparian vegetation component which is not considered successful unless the vegetation survives for two years after the project is completed.

Strengths:

Projects that alter natural streams directly impact aquatic and riparian vegetation. The 310 permit program is specifically designed to minimize the adverse impacts of projects on stream beds, stream banks, and their associated vegetation. Therefore, the 310 program provides direct protection for riparian vegetation located on stream banks.

Weaknesses:

The 310 permit does not govern projects outside the stream channel and stream bank, and therefore provides protection for only a narrow corridor of riparian vegetation and wetlands.

Montana Case Histories:

Bitterroot Conservation District.

In 2003, the Bitterroot Conservation District (CD) in Ravalli County became the first CD in Montana to develop regulations on bank stabilization structures. Before riprap or other hard bank stabilization methods can be used, the applicant is required to show that organic materials (e.g., root wads, riparian vegetation, biodegradable geotextile fabrics, etc.) is inadequate because an organic material alternative is 1) less durable, 2) likely to fail because of local water flows, 3) economically not feasible, or 4) likely to have the "same or greater impact on channel stability, flooding, erosion, and/or aquatic habitat." Additionally, new bridges must at least span the bank-full width of the stream to help maintain natural channel stability so that less bank stabilization will be needed; and riparian vegetation used in a project is not considered successful unless the vegetation survives for one year after the project is completed. These requirements have been inserted into model regulations circulated statewide to all Conservation Districts. As a result, several additional CDs have adopted them. ***For information***, contact the Bitterroot Conservation District, 1709 North First Street Hamilton, MT 59840, (406) 363-5010, email: bcd@bitterroot.net.

Watershed Groups

Purpose:

To provide a forum for public discussion and action on natural resource issues affecting a watershed. Each individual watershed group determines its own purpose, projects, and direction.

Who Enacts This Tool:

Watershed groups are local, voluntary partnerships that usually form because of a driving issue of concern to members of the watershed. The groups have a broad base of participation, generally representing all people with an interest in the watershed (stakeholders), including private landowners, all levels of government (local, state and federal), local elected officials, environmental and conservation organizations, and other interested individuals, corporations, or organizations.

Authority for Tool:

There is no statutory authority for most watershed groups, although some participating government agencies have authorities pertaining to natural resource protection of a watershed. A few watershed groups have formed their own nonprofit organization.

How it Works:

Montana currently has over 60 watershed groups. Each group is an independent manifestation of local

people and their interest, energy, activism, and character. These groups generally organize to work on natural resource issues within a watershed, where groups commonly focus on a diverse set of identified issues: water quality or quantity, weeds, land use development, fisheries, and the local economy. They can directly participate in decision-making, problem solving, resource assessment projects, and projects designed to address watershed concerns.

The Montana Watershed Coordination Council (MWCC) is the state network that can assist with the development of new watershed groups, as well as with support for existing groups. The Council also acts as a clearinghouse for information and resources for watershed groups. ***For more information*** about the MWCC, see their website at http://water.montana.edu/watersheds/default.htm. ***For more information*** about individual watershed groups, contact Montana Watercourse, 201 Culbertson, Montana State University, Bozeman, MT 59717; (406) 994-6671.

Watershed groups can assist with the protection of wetlands and riparian areas by conducting restoration projects, facilitating the use of conservation easements, providing public education workshops about the importance of conserving these areas, and more.

Strengths:

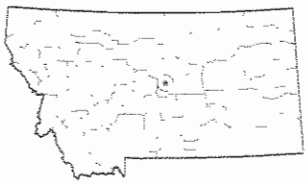
Watershed Groups are cooperative and collaborative in nature. They build relationships between people in a watershed. Because these groups are voluntary, they depend upon developing a good working relationships between participants. Once this relationship is established, diverse organizations, individuals, and agencies can work together to solve local natural resource issues. Partnerships can lead to important conservation projects and/or resolution of natural resource issues in a watershed.

Weaknesses:

The process used by Watershed Groups often moves slowly because it depends upon people developing relationships and then working on a common goal or project. The hope is that time spent in the beginning forming relationships and defining goals will be recouped by steady program implementation later. If group dynamics don't work amongst participants, the group may not accomplish their established goals or projects. Some Watershed Groups do not do on-the-ground projects, which can frustrate participants who want to see progress made on an identified problem.

Montana Case Histories:

1. Blackfoot River Valley. The Blackfoot Challenge is focused on conservation of the natural resources and rural lifestyle of the 132-mile Blackfoot River Valley. The group is composed of private landowners; federal, state, and local government officials; conservation organizations; and corporate landowners. The main tools used by the Challenge to accomplish work include private-public forums, collaborative partnerships, and information and education outreach. Their accomplishments include placing perpetual conservation easements on 75,000 acres of private land; acquiring 3,700 acres of land; restoring 73 miles of streams and riparian vegetation, and 2,100 acres of wetlands; removing over 300 miles of fish passage barriers; and implementing grazing systems on more than 35,000 acres. The Challenge is an incorporated nonprofit organization, with part-time staff. ***For more information***, contact Blackfoot Challenge, P.O. Box 103, Ovando, MT 59854, (406) 793-3900, email: info@blackfootchallenge.org; website: http://www.blackfootchallenge.org/am/publish/.



2. Lewistown Area. The Big Spring Creek Watershed Partnership, located in and around Lewistown, is focused on nonpoint source water pollution. There are approximately 440 miles of stream in the watershed. Membership in the group consists of private landowners; federal, state, and local government officials; and conservation organizations. Their accomplishments include protecting 80 acres rich in wetlands as a public,

natural park; restoring a severely channelized creek, including establishing a conservation easement on 65 acres surrounding this stream section; improving riparian vegetation on land owned by 21 landowners, including installing 15 miles of riparian and cross fencing; developing 34 off-stream water sources for livestock; and restoring eroding banks on about 7,000 feet of stream with 29 landowners. The NRCS District Conservationist provides coordination to the group. ***For more information***, contact NRCS, 211 McKinley Street, Suite 3, Lewistown, MT 59457, (406) 538-7401.

3. Big Hole River. Two watershed groups, the Big Hole Watershed Committee (website: www.bhwc.org) and the Big Hole River Foundation (website: www.bhrf.org), initiated a cooperative project to coordinate land use planning on the Big Hole River. As part of that project, setback regulations were developed for the Big Hole River. These regulations were adopted by all four counties that the Big Hole River travels through. The regulations are described under *County or Municipal Zoning: Big Hole River* on page 5-5.

- Montana Department of Environmental Quality (DEQ) Wetlands Program -

Purpose:

To promote cooperative wetland resource management in Montana through administration of a wetlands grant program; coordinating the state's efforts to get National Wetland Inventory (NWI) maps completed for the state; and staffing the Montana Wetlands Council, which was established to coordinate efforts in the state to protect, conserve, and enhance Montana's wetland resources.

Who Enacts This Tool:

This program is administered out of the Planning, Prevention and Assistance Division of DEQ.

Authority for Tool:

The DEQ Wetlands Program takes its direction from the Montana Wetlands Council. Current program priorities were established in the draft *Montana Wetland Conservation Strategy* (Montana Wetlands Council, 1997) and the *Situation Assessment and Recommendations* (Mueller, 1998).

How It Works:

The DEQ Wetlands Program offers a variety of programs to assist with the protection, conservation, and enhancement of Montana's wetland resources. Riparian resources are generally included in all wetland protection efforts of the program. Of particular interest to local governments are two programs: the wetlands grant program, and the program to complete National Wetland Inventory maps for the state of Montana.

I. Wetlands Grant Program. The DEQ Wetlands Program has administered a grant program annually since 1991. The program is funded through the Environmental Protection Agency (EPA); DEQ administers the grants for the state. Eligible projects for local governments include: wetland inventories and assessments; and education and outreach programs that address local wetland issues and/or provide wetland related watershed protection, conservation, and development planning. Priority is given to projects that involve cooperative restoration, voluntary efforts, incentive programs, joint public/private partnerships, and consensus-based watershed and wetland planning. All projects must clearly demonstrate a direct link to improving the local government's ability to protect its wetland resources. Local government entities that can apply for the grants include, but are not limited to city, county, and regional government agencies; flood control districts; water management districts; and planning commissions. The grant program is competitive, involving 6 states and 27 Indian Reservations. Montana DEQ typically receives $250,000 to $350,000 annually, funding 6 to 9 projects. Once grants are awarded, the DEQ Wetlands Program administers project contracts. Sample grants are available, upon request.

II. National Wetland Inventory (NWI) Maps. An important part of wetland and riparian protection is identifying where these areas are located. The NWI maps, a project of the U.S. Fish and Wildlife Service, provides baseline wetland maps. These maps

are interpretations of aerial photographs, overlain on a U.S. Geological Survey topographic map. NWI maps have been completed for only a portion of Montana. As these maps are finished for the state, they will become available on the website of the Natural Resource Information System (NRIS, Montana State Library, P.O. Box 201800, 1515 East Sixth Ave., Helena, MT 59620; (406) 444-3009; website: http://nris.mt.gov/. Several local governments have been able to complete NWI maps for a portion of their county through the Wetlands Grant Program above. More information regarding NWI maps appears Appendix III.

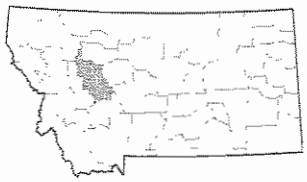
Strengths:

The DEQ Wetlands Program offers a variety of tools that can assist local governments in their efforts to protect wetlands. The grants program is a viable source of funds for work on wetlands, floodplains, and similar resources. Completing NWI maps for Montana will substantially increase knowledge of the location of the state's wetlands.

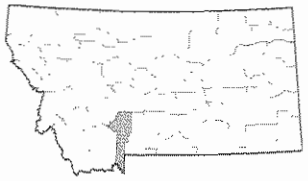
Weaknesses:

The grants program is available for local governments, although it is becoming increasingly competitive. The limitations of NWI maps are discussed in Appendix III.

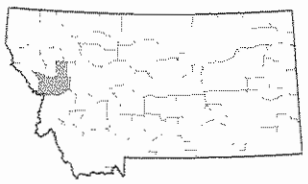
Montana Case Histories:



1. Lewis & Clark County. The Lewis & Clark County Water Quality Protection District and others received a DEQ wetlands grant to complete a wetland resource assessment of the Helena Valley in 2001 (*see Lewis and Clark County, page 5-23*). As part of the project, four quadrangles of the National Wetland Inventory maps were completed for the Helena Valley. The grant received was $60,533; a $20,178 match was provided. ***For more information***, contact Water Quality Protection District, Lewis & Clark County Building, 316 North Park Room 412, Helena, MT 59623; (406) 457-8927; email: water@co.lewis-clark.mt.us.



2. Gallatin County. The Gallatin County Water Quality Protection District received a DEQ wetlands grant in 2001 similar to the work described above for Lewis & Clark County. As part of this grant, National Wetland Inventory maps will be completed for a portion of the Gallatin Valley. The Gallatin County grant was for $53,989; a $24,921 match will be provided. ***For more information***, contact Gallatin County Local Water Quality District, 311 West Main Street, Room 104, Bozeman, MT 59715, (406) 582-3148; website: http://www.gallatin.mt.gov/Public_Documents/gallatincomt_wqdpages/lwqd.



3. Missoula County. The Office of Planning and Grants Floodplain Program for Missoula County received a DEQ wetlands grant to complete a multi-pronged approach to protect wetlands in the county (*see Missoula County, page 5-20*). National Wetland Inventory maps are being completed for selected portions of Missoula County. The grant received was $42,087; a $36,700 match will be provided. ***For more information***, contact Floodplain Administrator, Office of Planning and Grants, 435 Ryman, Missoula, MT 59802-4297, (406) 258-4657, website: http://www.co.missoula.mt.us/opgweb/.

For more information about the DEQ Wetlands Program, contact Wetlands Coordinator, Dept. of Environmental Quality, P.O. Box 200901, Helena, MT 59620, (406) 444-6652; website: http://deq.mt.gov/wqinfo/Wetlands/Index.asp.

Water Pollution Control State Revolving Fund (WPCSRF)

Purpose:
To provide affordable long-term financing to municipalities and local districts for projects that maintain, restore, or enhance water quality. A broad range of water quality projects are eligible for financing, such as wastewater treatment facilities, and non-point source projects that include stream bank restoration, and wetlands preservation and restoration projects.

Who Enacts This Tool:
The WPCSRF program is cooperatively administered by the Montana Department of Environmental Quality (DEQ) and the Department of Natural Resources and Conservation (DNRC). Applications for WPCSRF loans may be submitted to either DEQ or DNRC.

Authority for Tool:
General authority comes from Title 75, Chapter 5, Part 11, Section 1101, MCA, which authorizes DEQ and DNRC to provide loans to local governments, nonprofit organizations, and others for water quality projects.

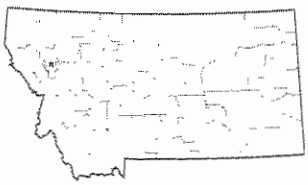
How it Works:
The WPCSRF program offers long-term loans to cities, towns, water and sewer districts, conservation districts, irrigation districts, special improvement districts, rural improvement districts, nonprofit organizations, and other agencies to help finance water quality projects. The loans currently carry an interest rate of 4%, and the term of the loan may be up to 20 years. Because of the great need to improve wastewater facilities, approximately 90% of Montana's applications are for wastewater projects.

WPCSRF loans can benefit wetlands and riparian areas in several ways. Constructing artificial wetlands can be part of a wastewater treatment system, adding to Montana's wetland resources. Restoration and preservation of wetlands and streams are eligible activities for loans. In other states WPCSRF loans have been used for: land acquisition, conservation easements in high priority areas to protect a water supply area; floodplain restoration projects, and riparian restoration activities such as planting vegetation for bank stabilization.

Strengths:
Montana's local governments have a great need to improve public water and wastewater facilities, and will move forward on these projects. As a result, wetlands and riparian areas in the vicinity of water and wastewater treatment facilities could benefit from reduced pollution. Wastewater treatment plants that contain a wetland component provide for advanced treatment and enhance local wetland resources, including providing wetland habitat for wildlife. There are opportunities in the future for local governments and others to secure WPCSRF loans for the purchase of properties or conservation easements that will protect wetlands and riparian areas, or for loans to provide money for the restoration of these resources.

Weaknesses:
Because of limited resources available to local governments in Montana, borrowing money for the protection of wetlands and riparian areas may not be a priority. To date, there are no examples in the state of the use of WPCSRF loans for protection of these areas through purchase of property or conservation easements, or the restoration of stream bank or wetland resources.

Montana Case Study:



City of Ronan. Wetlands have been used in Ronan's wastewater treatment system since 1996. The two-cell constructed wetlands are approximately two feet deep and cover a total of 7.5 acres. The wetlands function as the tertiary treatment system, reducing ammonia, nitrates, phosphorous, and total suspended solids concentrations in the treated water. Constructed wetlands can be an effective way for a community to meet non-degradation requirements. The system works more effectively in the spring and summer;

treatment in the fall and winter occurs but at a reduced rate. Currently, the only other wastewater treatment facility utilizing wetlands is in **Corvallis**; their system came on-line in the fall of 2001. Design guidelines for constructed wetlands in wastewater treatment facilities are available. ***For more information***, contact Montana Water Pollution Control State Revolving Fund Loan Program, Montana Department of Environmental Quality, P.O. Box 200901, Helena, MT 59620; (406) 444-5321; website: http://www.deq.state.mt.us/wqinfo/srf/WPCSRF/Index.asp.

Source Water Protection Program

Purpose:

To provide communities with an assessment of public water systems to determine the system's susceptibility to contamination.

Who Enacts This Tool:

The Montana Source Water Protection Program is administered by Montana DEQ. The program sets priorities among public water systems for completing source water assessments, and reviews and certifies locally developed source water protection plans.

Authority for Tool:

General authority comes from the Montana Source Water Protection Program (Title 75, Chapter 6, Part 1, MCA), enacted to meet mandates under the federal Safe Drinking Water Act.

How It Works:

The Source Water Protection Program completes assessments of public water systems to determine the system's vulnerability to contamination. There are approximately 2,000 public water systems in Montana, defined as water supplies that provide drinking water to 25 or more people. Each assessment must: 1) identify and describe the water source; 2) assess the water source's susceptibility to contaminants and the origin of those contaminants; and 3) develop information to make the public aware of the potential for contamination. Based on this assessment, a public water system or community can develop a plan to protect the water source.

The planning process of the Source Water Protection Program can benefit wetlands and riparian areas when communities learn where drinking water supplies are vulnerable to contamination—and the relationship of wetlands and riparian areas to public water system supplies becomes apparent. As more communities complete their Source Water Protection Plans and adopt ordinances to protect their drinking water, more opportunities will arise for protection of surface water by requiring setbacks from activities that may pollute drinking water sources.

Strengths:

Source Water Protection Plans can become an important educational tool for communities on how local water supplies are vulnerable to contaminants. Because of the natural filtering capacity of wetlands and riparian areas, their protection may eventually be built into programs designed by local communities to protect their drinking water.

Weaknesses:

Source Water Protection Plans in and of themselves will not result in protection of drinking waters—and wetlands and riparian areas; it is their implementation through locally adopted ordinances to protect public water sources that will protect wetlands and riparian areas. With over 2,000 public water systems in the state and only approximately 10 Source Water Protection Plans completed, it will take many years before the plans are completed and implemented.

Montana Case History/Contact Information:

Because so few Source Water Protection plans have been completed in Montana, there are no case studies available in the state that show how these programs will be implemented to benefit wetlands and riparian areas. ***For more information*** contact Source Water Protection Program, Montana Department of Environmental Quality, P.O. Box 200901, Helena, MT 59620; (406) 444-4806; website: http://deq.state.mt.us/wqinfo/swp/.

Montana Wetlands Legacy

Purpose:
To protect, restore, and enhance Montana's wetlands, riparian areas, and associated uplands through a fully integrated, voluntary partnership.

Who Enacts This Tool:
The Montana Wetlands Legacy partnership, which includes agencies, conservation organizations, and interested individuals, is involved in on-the-ground wetlands and riparian conservation activities in Montana.

Authority for Tool:
There is no statutory authority for the Montana Wetlands Legacy, although partner agencies have individual authorities and mitigation responsibilities for wetland protection. The Montana Wetlands Council (*see DEQ Wetlands Program, page 6-10*) identified the need to establish the Montana Wetlands Legacy to fulfill its goal for non-regulatory "on-the-ground, incentive based partnerships protecting priority wetlands in the state."

How It Works:
Partners in the Montana Wetlands Legacy work to protect wetlands, riparian areas, and associated uplands through cooperative projects, incentives and voluntary means. Assistance is provided for individual projects through donations of staff time, technological and financial resources, and knowledge and understanding. An important function of the Legacy is to bring people together with diverse backgrounds, training, and experience to share information and expertise. The Legacy is committed to helping its Montana partners and interested landowners locate funding, including new funding sources for wetland and riparian projects, and assists partners in applying for grants.

State and federal agencies in Montana are currently working on a payment-in-lieu-fee program to provide an option for mitigation of wetland and stream impacts resulting from activities under 404 of the Clean Water Act, administered by the Army Corps of Engineers (*see Appendix IV*). This program may allow developers to pay a fee for each acre of resource impacted. The funds would be collected, and made available for larger mitigation projects. The Montana Wetlands Legacy will be the likely administrator of this in-lieu-fee program.

Strengths:
The Legacy represents a point of contact for anyone involved or interested in protecting Montana's wetlands and riparian areas. As a result, it can bring people and resources together to work on specific projects. This service can provide access to existing and new resources.

Weaknesses:
The Legacy works to pull together resources for high priority wetlands, which are wetlands and riparian areas of local and/or statewide concern. Because of limited resources, the Legacy may not have the resources to work toward protection or restoration of lower priority wetlands at this time.

Montana Case Histories/Contact Information:
As of November 1, 2001, Legacy partners had protected over 73,000 acres of wetlands, riparian areas, and associated uplands on their way to accomplishing their 5-year 250,000-acre goal. Examples of projects completed to date, which include conservation easements, wetland restorations, and fee title acquisitions, can be found on the Legacy website. ***For more information*** contact Montana Wetlands Legacy, 1400 South 19th, Bozeman, MT 59718; (406) 994-7889; website: www.wetlandslegacy.org.

Advanced Identification Process (ADID)

Purpose:
A planning process where cooperating government agencies map and identify wetlands and other waters that are generally suitable or unsuitable for filling under Section 404 of the Clean Water Act.

Who Enacts This Tool:
Local governments can initiate the ADID program in order to facilitate local planning efforts. This program is implemented by the Environmental Protection Agency (EPA) and Army Corps of Engineers (Corps), and after consultation with the involved state or tribal government.

Authority for Tool:
Guidelines for the federal Clean Water Act (40 C.F.R. §230.90) authorize this program.

How It Works:
The ADID program gathers information about wetland resources in a defined area, maps those resources, and collects information about the function and significance of identified resources. This program provides local communities with information the location, quality, and vulnerability of their wetland resources. The ADID program directly relates to the Army Corps of Engineer's (Corps) 404 permit. An overview of this program appears in Appendix IV. Under the 404 program, it is unlawful to discharge dredged or fill materials into waters of the United States without first receiving authorization (known as a "404 permit") from the Corps. The ADID process is intended to add predictability to the wetlands permitting process, as well as better account for the impacts of losses from multiple projects within a specific geographic area. An ADID study generally classifies wetlands as suitable or unsuitable for filling, development, or other activities involving the "discharge of dredged or fill material."

Local governments can initiate ADID projects to facilitate local planning efforts. Project areas have ranged in size from less than 100 acres to greater than 4,000 square miles. Such studies can be designed to aid local zoning and planning efforts in preservation of wetland resources. An ADID project in Pennsylvania inventoried the wetlands in a 500-acre area under increased threat from urbanization. The resulting maps enabled all parties to determine which wetlands were generally suitable for filling, and provided the community with technical information on the area's wetland values and functions.

Strengths:
The ADID program could be an important informational and educational tool for local governments involved in planning or zoning. It has also proven to be a successful way to generate support for wetlands protection in a community. The program can be used to develop a Special Area Management Plan (*see below*). It is designed to improve predictability for the public and streamline the process when dealing with the Corps's 404 program that regulates the filling of wetlands.

Weaknesses:
Because the ADID program is advisory and informational only, it does not lead to direct protection of wetland resources. Nationwide, the ADID program has only been used on a limited basis.

Montana Case Histories/Contact Information:
Because no ADID program has been conducted in Montana, there are no case studies available. ***For more information*** contact the Army Corps of Engineers, Helena Regulatory Office, 10 West 15th Street, Suite 2200, Helena, MT 59626, (406) 441-1374; website: https://www.nwo.usace.army.mil/html/od-rmt/mthome.htm.

Special Area Management Plan (SAMP)

Purpose:
To provide an interagency collaborative process for ensuring natural resource protection and reasonable economic development within sensitive areas.

Who Enacts This Tool:
A local or state agency can initiate the formation of a SAMP. Local sponsorship is required before the SAMP process proceeds.

Authority for Tool:
The federal Coastal Zone Management Act provides the authority for SAMPs. The Army Corps of Engineers (Corps) adopted SAMPs under a 1986 Regulatory Guidance letter.

How It Works:

The focus of a SAMP is on the Corps' 404 permit process that regulates the filling of wetlands, therefore the Corps determines if a SAMP is necessary and feasible. The goal of a SAMP is to provide a streamlined process for individuals to receive permits under the 404 permit process, which regulates the filling of wetlands, while allowing evaluation of individual and cumulative impacts of projects. A brief description of the Corps 404 permit program appears in Appendix IV. Two products may be obtained from a SAMP: 1) appropriate state, local, and Corps permit approvals for defined activities; and 2) a local, state, or federal restriction on undesirable activities. The SAMP process is most beneficial in areas that are environmentally sensitive and under strong developmental pressure. Full public involvement should be an integral part of the SAMP planning and development process.

Because the SAMP process is designed to ultimately direct the Corps' management of the 404 permit program, it directly affects protection of wetlands, and some riparian areas. SAMPs may address such issues as flood control and storm water management, wetlands protection and enhancement, wetland mitigation banks, parks and recreation, environmental enforcement, and more. They can also contained specific policies to guide remediation, enhancement, and protection of the area's natural resources, while simultaneously allowing development in less sensitive areas.

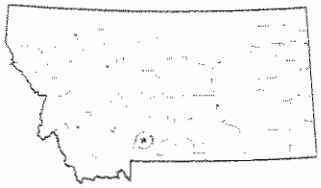
Strengths:

A SAMP, and the process of its drafting, greatly increases the coordination among regulatory agencies, affected development, and public interests. With a SAMP in place, the permitting process for projects is simplified and more efficient. At the same time, wetlands and some riparian areas are carefully analyzed and given proper protection. The SAMP itself should be comprehensive and in-depth.

Weaknesses:

Developing SAMPs that are comprehensive take much time and patient work by the involved parties. Many riparian areas are not considered "waters of the United States" and consequently are not considered in the SAMP process.

Montana Case History:



Upper Yellowstone River. Although no SAMP has been completed in Montana, one is currently underway in Park County. Floods on the Yellowstone River in 1996 and 1997 modified the floodplains and resulted in property losses for many private landowners along the river. As a result, many landowners requested permits for bank stabilization projects (*see Bank Stabilization and Land Use Planning, page 4-2*). The number of bank stabilization projects, with little or no regard for the cumulative effects, convinced many individuals of the need for a more comprehensive planning effort for the area. In 1997, the Upper Yellowstone Task Force was created to address the flood issue. In cooperation with the Task Force, the Corps initiated the development of a SAMP for the upper Yellowstone River, from Gardiner to Springdale. Parties to the SAMP include the Corps, DNRC, Park County, the City of Livingston, local businesses, property owners along the river, conservation group representatives, and the general public. Montana's congressional delegation persuaded the Corps to provide $320,000 to begin to develop the SAMP. Specific language in the appropriation stated that the SAMP include an assessment of the long-term effects of bank stabilization, and potentially conclude the process with a general permit (a general permit is a type of permit issued under the Corps' 404 permit program). The SAMP is scheduled for completion in 2005. ***For more information***, contact the Army Corps of Engineers, Helena Regulatory Office, 10 West 15th Street, Suite 2200, Helena, MT 59626, (406) 441-1374; website: https://www.nwo.usace.army.mil/html/od-rmt/mthome.htm.

Appendices

Appendix I. Conservation Standards Used to Protect Montana's Wetlands and Riparian Areas

The examples appearing below summarize information from case studies found in Chapter 5.

Location and Date Enacted	Type of Regulation	Size of Setback or Other Standard	Area Protected	Notes	Page
Meagher County (2000)	Growth Policy/ Comprehensive Plan	300-foot setbacks: from delineated wetlands and riparian areas (for non-agricultural structures). 200-foot setbacks: from all streams (for non-agricultural structures). 100-foot setbacks: from streams, lakes and identified 100-year floodways (for wells and septic systems).	All streams, lakes, and delineated wetlands.	Because these setbacks occur in the growth policy they are not regulatory. The 300-foot and 200-foot setbacks apply to "new developments, including subdivisions approved under Meagher County Subdivision Regulations." The well and septic tank setbacks apply as follows: at least 100 feet from streams, lakes and identified 100-year floodways; and 300 feet from identified riparian areas.	5-3
City of Missoula (September 1999)	County or Municipal Zoning	Ecologically based setbacks determined on a case-by-case basis from vegetation (for all construction activities).	All streams, lakes, wetlands and other bodies of water.	• Ecologically based riparian resource protection standards triggered by any activity that requires a building permit. The regulations prohibit buildings from being built that "impact areas of riparian resources." Buffer size is determined on a case-by-case basis, and is decided based on vegetation and the impacts to wildlife and fish habitat, water quality or quantity, or other aquatic resources. • A management plan describing how the riparian resources will be protected must be approved by the governing body.	5-4
Lake County: (2005)	County or Municipal Zoning	Lake County Density Map and Regulations: 40 acre minimum lot size along Flathead River, Mission Creek, Crow Creek, Jocko River, etc. One dwelling per 40 acres restriction applies 1/2 mile on either side of designated rivers and ¼ mile on streams. Some protection around the Ninepipe National Wildlife Refuge. Setback of 50 feet of the high water elevation of a lake or perennial stream.	riparian corridors, stream banks, 100-year floodplain, lakes, wetlands and areas of riparian vegetation.	The regulation applies to areas with development hazards that shall not be considered as developable land: riparian corridors, stream banks, wetlands and areas of riparian vegetation. It also applies to lakes, marshes, sloughs and areas within a designated 100 year flood plain; as well as land within 50 feet of the adopted high water elevation of a lake or perennial stream.	5-5

Big Hole River. (2004)	County or Municipal Zoning	Examine all new buildings proposed for 500 feet of Big Hole River; Setback is minimum of 150 feet	Setback applies to Big Hole River only (no tributaries)	The Big Hole River is more than 150 miles long and travels through 4 counties. Deer Lodge and Silver Bow Counties adopted the regulations as part of zoning, and Beaverhead and Madison Counties adopted the setbacks as Conservation Development Standards through a building permit system.	5-5
City of Bozeman (2002)	County or Municipal Zoning - Unified Development Ordinance	Previously Platted Development: 100 feet from East Gallatin River; 35 feet from all other watercourses. New Platted Development: 100 feet on East Gallatin River; 75 feet from Sourdough, Bozeman, and Bridger Creeks; 50 feet from all other watercourses.	All watercourses.	Setbacks extend to the edge of the 100-year floodplain and include adjacent wetlands. Slopes greater than 25% need to be subtracted.	5-5
City of Bozeman (2005)	County or Municipal Zoning - Unified Development Ordinance	Setback is established on a case-by-case basis for isolated wetlands by a Wetlands Review Board.	Setback applies to isolated wetlands.	The city of Bozeman is the only local government in Montana that has developed a program to specifically protect isolated wetlands. The program applies to all wetlands identified on Bozeman Area Wetland Maps. It does not apply to wetlands less than 400 square feet in size; existing agricultural activities, and other activities (long list).	5-5
Gallatin County: Bridger Canyon Zoning Regulations (1971)	Rural Zoning District	50-foot setbacks: from all streams (for buildings and structures). Density Standards Include (minimum lot size): • 10-acre density standard (recreational business district) • 40-acre density standard (recreation and forestry district)	Setback applies to all streams. Wetlands and riparian areas are protected as a byproduct of the density standard.	The majority of land is divided into two districts: 1) in the recreational business portion of the district, parcel sizes may not be less than 10 acres in size, a minimum of a 50-foot setback from streams is required of all facilities, and no residential development is allowed; and 2) in the recreation and forestry portion of the district, the minimum parcel size is 40 acres and the setback for facilities is 50 feet from any stream.	5-7

Jefferson County: Milligan Canyon/ Boulder Valley Agricultural Zoning Regulations (Revised October 2000)	Rural Zoning District	640-acre density standard (for non-farm/ranch dwellings)	Wetlands and riparian areas are protected as a byproduct of the density standard.	The zoning district was originally set up in 1992 under a temporary emergency zoning ordinance. In 1995 it was adopted as a permanent district. Subsequent revisions have occurred.	5-7
Park County: East Yellowstone Zoning District (November 1997)	Rural Zoning District	100-foot setbacks: from the Yellowstone River (for buildings or structures) 30-acre density standard (for single family dwellings)	Setback applies to the Yellowstone River.	NOTE: Wetlands and riparian areas are protected as a byproduct of the density standard.	5-7
Choteau County (Revised March 1997)	Development Permit Regulations	For new residential development from Coal Banks Landing Recreational Area to the eastern Chouteau County line: • 3 horizontal mile setback from the Missouri River; and • 160-acre density standard. For new residential development in Fort Benton City Planning Board jurisdiction boundary to Coal Banks Landing: • 400-foot setbacks from the Missouri River, and • 8-acre density standard.	Setbacks apply to the Missouri River. Wetlands and riparian areas are protected as a byproduct of the density standards.	• The setback regulations were initially adopted in 1985. • The 3 horizontal mile setback applies on the Missouri River, from Coal Banks Landing Recreational Area to the eastern Chouteau County line, for new residential development when the development "would be visible along a line of sight from any point between the high water marks."	5-9

Powell County (Revised November 2000)	Development Permit Regulations	75-foot setbacks: from the Blackfoot River, including North Fork of the Blackfoot River (for new residential, commercial or industrial structures). No residential, commercial or industrial structures within 100-year floodplain for Blackfoot, Clark Fork and Little Balckfoot Rivers. 160-acre density standard for new lots (non-farm/ranch dwellings) in northern 3/4 of connty.	Setback applies to Blackfoot River. Wetlands and riparian areas are protected as a byproduct of the density standard.	Subdivisions in northern 3/4 of the county containing lots smaller than 160 acres must be part of a Planned Unit Development and have an average density of not less than 160 acres.	5-9
Madison County (Adopted November 1993; Revised October 1995 and November 2000)	Subdivision Regulations	500-foot setbacks: from the Madison River (for new subdivisions). 150-foot setbacks: from the Big Hole, Jefferson, Ruby, Beaverhead, and South Boulder Rivers (for new subdivisions). 100-foot setbacks: from all other streams (for new subdivisions).	Initially just Madison, Big Hole, and Jefferson Rivers. Now all streams and rivers.	Under certain circumstances, the Madison River setback may be reduced and the 150-foot setback may be increased.	5-11
City of Missoula (Amended July 1999) and Missoula County (Amended December 2000)	Subdivision Regulations	Ecologically based setbacks determined on a case-by-case basis from vegetation (for all construction activities related to subdivisions).	All streams, lakes, wetlands and other bodies of water.	• Ecologically based riparian resource protection standards triggered by any activity that requires a building permit. The regulations prohibit buildings from being built that "impact areas of riparian resources." Buffer size is determined on a case-by-case basis, and is decided based on vegetation and the impacts to wildlife habitat, water quality or quantity, fish, or other aquatic resources. • A management plan describing how the riparian resources will be protected must be approved by the governing body.	5-12

Gallatin County (2005)	Subdivision Regulations	300 feet along East and West Gallatin, Madison, Jefferson, and Missouri Rivers 150-foot setbacks from all other watercourses	All watercourses.	• Setbacks apply to any residential or commercial structures, parking or other similar improvements. They include delineated 100-year floodplains and adjacent wetlands. A natural vegetation component is required (various widths). • Setbacks in areas platted prior to the effective date of the regulation are a minimum of 100 feet on the East Gallatin and 35 feet on all other streams.	5-12
Lewis and Clark County (2005)	Subdivision Regulations	4 categories of setbacks with vegetated buffers: Type I (main rivers): 250 feet; 100 foot vegetation buffer. Type II (large streams): 200 feet; 75 foot vegetation buffer. Type III (reservoirs, small streams, wetlands): 100 feet; 50 foot vegetative buffer. Type IV (irrigation ditches): 50 feet; 30 foot vegetative buffer.	Rivers, streams, wetland, and other watercourses	A vegetation requirement is described with each setback; these areas are supposed to "remain undisturbed" with "all natural vegetation, rocks, soil, topography" or enhancement by "additional planting of native plants." Includes edge of adjacent wetlands and 100-year floodplains. Docks, walkways, lawns, etc. are allowed on 25% of the linear footage along the waterway; buffer requirement are for 75% of linear footage along affected water bodies.	5-12
Ravalli County (March 1999)	Floodplain Regulations	No residences within 100-year floodplain	Bitterroot River, including the East Fork and the West Fork (to Painted Rock Dam).	Most counties do not prohibit new residences in the 100-year floodplain. However, buildings built in floodplains must be constructed on fill so that the lowest floor elevation (including the basement) is 2 feet above the floodplain elevation. Additionally, no septic systems are allowed in floodplains.	5-20

Missoula County (1999)	Floodplain Regulations	Regulates bank stabilization structures. 50-foot prohibition on large-scale clearing of native vegetation on all streams.	Designated river and stream sections.	• Creation of new levees is prohibited. • Maintenance of an existing levee is allowed in three situations: if the levee is publicly maintained; if relocating, elevating, or flood-proofing the structures protected by the levee is not feasible; or if a streamside levee is to be reconstructed away from the stream bank. • Riprap is only permitted to protect an existing residence, commercial or industrial use, or public infrastructure that cannot be relocated. • Builders are responsible for locating new structures a safe distance from the waterway. • Riprap is not permitted to protect a structure built after adoption of the floodplain regulations. • "Softer" bank stabilization techniques, including logs and other woody debris instead of rock, may be allowed after review of administrators. • New bridge construction must be designed to cause minimal change to the stream. • Road approaches must not block normal overflow channels.	5-20
Flathead County	Lakeshore Regulations	Regulates construction activity within 20 feet of lakeshore.	Lakes	Regulations include criteria for issuing construction permits, design standards for projects, and a 50-foot limit on docks. For streams and springs running through the Lakeshore Protection Zone, a 25-foot minimum setback is required for all structures.	5-22
City of Whitefish	Lakeshore Regulations	Regulates construction activity within 20 feet of lakeshore.	Lakes	Similar specifications as Flathead County, however, Whitefish does not permit individual boat ramps to be built on Whitefish Lake. This restriction reduces the amount of development along the lakeshore and, consequently assists in protection of riparian vegetation on the shore.	5-22
Missoula County	Lakeshore Regulations	Regulates construction activity within 20 feet of lakeshore.	Lakes	Similar specifications as Flathead County, however, Missoula County prohibits impervious material (asphalt), parking areas, jetties, roads, overhead power lines, and more from its Lakeshore Protection Zone. Additionally a minimum setback of 50 feet is required to important fishery streams and springs.	5-22

Appendix II: Suggested Language for Local Policies & Regulations

Wetlands or riparian area protection provisions can be incorporated into local growth policy plans, subdivision regulations, and zoning or development permit regulations. It is essential that the growth policy plan establish that wetland and riparian values are important to the community. Local government protection of these areas must begin with a statement that wetland and riparian areas are important to the community; and with clear goals, objectives, and policies advocating for resource protection. Any local government regulations protecting wetland or riparian areas must conform to the adopted growth policy plan. If land use regulations restrict development in wetland or riparian areas, the growth policy plan must clearly state the community's interest in protecting those areas. The following is suggested language that can be incorporated into growth policy plans, subdivision regulations and zoning and development permit regulations to protect wetlands and riparian values.

Growth Policy Plans

Protection language in the growth policy plan for wetlands and riparian areas establishes a local community commitment to these areas and is legally vital to setting the stage for implementing measures to ensure that protection. To accomplish this, a local growth policy plan should 1) state the value and benefits of these areas to the community; 2) express clear goals, objectives and policies regarding wetland and riparian protection; 3) identify the locations of those areas; and 4) describe the intent and measures that the community will use to implement that protection. As further background information, the growth policy plan should estimate the number of acres of important wetlands and riparian areas in the county, and the wildlife species and other values supported by those areas. The following language is suggested:

Statement of Values and Benefits:

Wetlands and riparian areas are important assets and resources to the county. The biological diversity supported by these areas provide critical and productive wildlife habitat, especially for waterfowl, shorebirds, songbirds, and water-related animals. These areas are vital to freshwater fish for spawning, feeding, or protection against predators. They also play a critical role in flood protection, and act as water filters, controlling water pollution and maintaining water quality of surface and ground waters. Wetland and riparian vegetation is very valuable for shoreline stabilization. In addition to the natural and ecological values of these areas, they provide important opportunities for outdoor recreation. And finally, poor soils, high ground water, flooding, and other physical features make wetlands and riparian areas unsuitable, or poorly suited, for development.

Goal:

To preserve important wetlands and riparian areas within the county.

Objective:

To discourage or prevent development that is incompatible with preservation of important wetlands and riparian areas.

Policies:

- Development will be prohibited in riparian areas and delineated wetlands, or will be designed to avoid or minimize loss of these areas.
- Subdivisions will only be allowed in wetland or riparian areas where the design of lots and improvements will avoid the loss of wetland or riparian values.

Implementation of the Policy:

The growth policy plan should describe the actions that the local government will take in order to accomplish the stated goals and policies. Suggested actions include:

- Incorporate into the county subdivision regulations provisions that 1) require construction of structures, excavation or any other disturbance of the natural vegetation and soils be prohibited within 300 feet

of wetlands or riparian areas identified in the growth policy plan; 2) establish building envelopes on each lot that will not interfere with or affect identified wetlands or riparian areas; and 3) encourage the location and design of required parkland to include identified wetlands and riparian areas as natural undisturbed open space.

- Incorporate setbacks in zoning and development permit regulations that prohibit development, construction, excavation or any disturbance of wetlands and riparian areas identified in the growth policy plan.
- Adopt floodplain regulations that comply with the growth policy plan.
- Work with agencies or land trust organizations to obtain conservation easements that protect wetlands and riparian areas.

Maps and Text Describing the Wetlands and Riparian Areas and Values:

The following basic background information on wetlands and riparian areas in the community should be gathered and set out in the growth policy plan.

- Identify locations of flood prone areas and important wetland areas;
- Determine the number of acres of important wetlands and riparian areas;
- Identify wildlife species supported by wetlands and riparian areas; and
- Identify other values represented by wetlands and riparian areas.

Sources of maps and information appear Appendix III.

Zoning or Development Permit Regulations

Zoning and development permit regulations can establish setbacks and building envelopes, and can simply restrict development in wetland or riparian areas. The following are suggested provisions that can be incorporated into local zoning or development permit regulations to protect these areas:

- No structures, septic systems or drainfields may be located within 300 feet of any riparian area or flowing stream. All native vegetation within this setback must be left undisturbed. The setbacks shall be shown on a final plan, which must be submitted as part of the permit application.
- The subdivider shall submit a plan for approval by the governing body that identifies "building envelopes"—areas where buildings and structures may be constructed or located that do not affect wetlands and riparian areas identified by the growth policy plan.

Subdivision Regulations

Subdivision regulations can establish setbacks, building envelopes, or use parkland to protect wetlands and riparian areas. The following are suggested provisions that can be incorporated into local subdivision regulations to protect these areas:

- No structures, septic systems or drainfields may be located within 300 feet of any riparian area or flowing stream. All native vegetation within this setback must be left undisturbed. The setbacks shall be shown on the final plat, or on documents accompanying the final plats.
- The subdivider shall submit a plan for approval by the governing body that identifies "building envelopes"—areas where buildings and structures may be constructed or located so as to protect wetlands and riparian areas identified by the growth policy plan.
- The governing body may require that part or all of required parkland be located and designed to incorporate wetlands or riparian areas, to be protected and maintained as undisturbed open space.

Appendix III. Identifying Local Wetlands & Riparian Resources: Sources for Maps & Other Information

An important tool for local governments that wish to protect wetlands and riparian areas is the development of a base map that identifies the location of these areas. Developing these maps can be expensive. The maps listed below can either be used by themselves, or they can be used to construct a base map. Base maps may eventually need to be supplemented with other types of information such as the number of wetlands of a particular type, the location of important riparian areas, and the identified values, uniqueness, ownership, existing uses, and threats from proposed development.

The sources identified in this appendix are available in Montana, although sometimes a specific source does not contain information for a particular area of the state. The general location of riparian areas is fairly easy to locate because of their association with streams or rivers that are readily identified on topographic maps. Information about the location of wetlands is more challenging to obtain.

In using the sources identified below, it is important to note that maps provide only a portion of the information needed to identify the location of wetlands and riparian areas. On-site investigation may be needed to define boundaries. For this reason, when developing conservation measures, it is helpful if communities use both maps and written criteria (for example, a list of common plants associated with protected areas) that can be applied on-the-ground during field investigations. It is also important to note that the boundaries of wetlands and riparian areas shift over time because of new channels cut by a stream or river, changes in drainage patterns, and other factors.

Topographic Maps

(Source: U.S. Geologic Survey ~ USGS)

USGS topographic maps show the location of streams, rivers, water bodies, and the approximate location of some larger wetlands. Enlarged, these maps can be used to develop a base map where the general location of wetlands and riparian areas is identified. The location of streams and rivers is the easiest way to identify the location of riparian areas. These maps are not as accurate in locating wetlands. The maps are 7.5 minutes of latitude by 7.5 minutes of longitude, with a scale of 1" = 2,000 feet (1:24,000).

National Wetland Inventory Maps

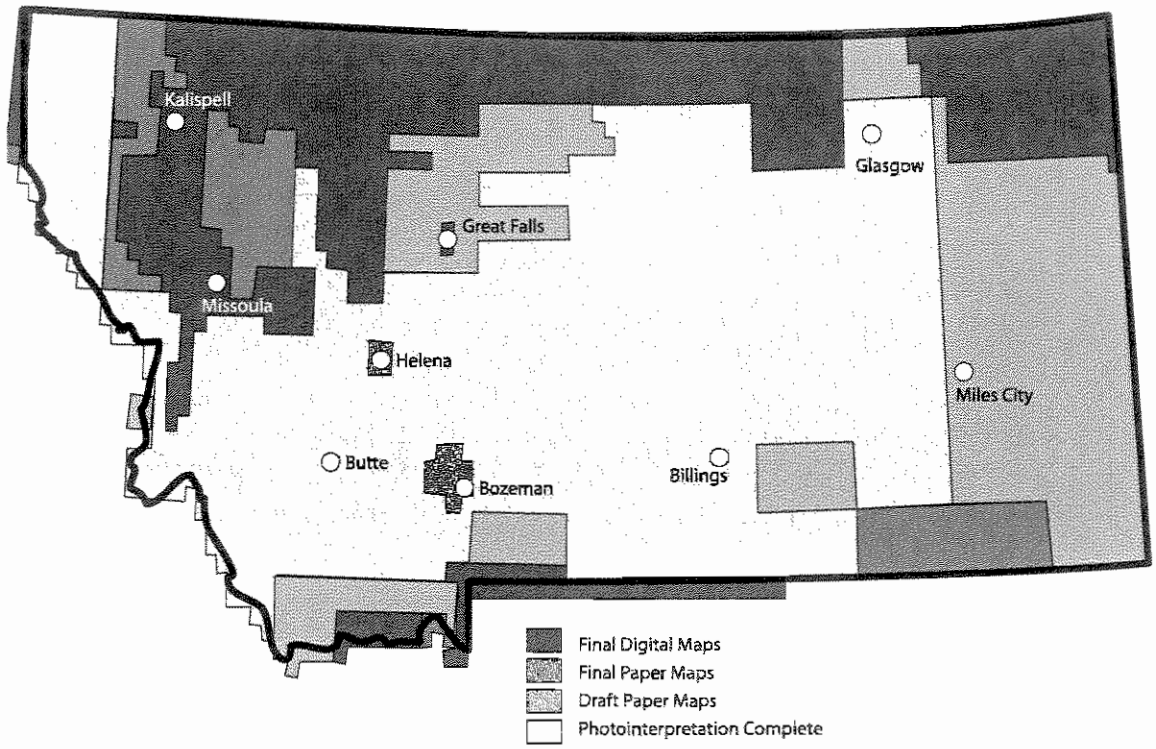
(Source: U.S. Fish & Wildlife Service ~ USFWS)

Although mapping is not complete for much of Montana, portions of the state have National Wetlands Inventory (NWI) maps, a project of the USFWS. These maps are based on interpretation of aerial photographs and are projected onto USGS topographic maps.

When using NWI maps, it is important to understand their limitations. Because of their scale, only major wetlands are shown, giving a broad-scale picture of

Figure 5. Portion of standard NWI Map showing wetland classifications near Helena.

Figure 6. Status of NWI maps in Montana. Fall, 2002



existing wetlands. Smaller, yet still ecologically vital wetlands are sometimes not identified on these maps. Consequently, if a wetland area is identified on a NWI map, the area is probably a wetland. However, the absence of a wetland designation on a particular map does not necessarily mean that the area is not a wetland. Other limitations to NWI maps include: field investigations are rarely done to verify the existence of wetlands; aerial photography done in a dry year will not identify ephemeral wetlands; forested wetlands can be missed because they are not visible on aerial photographs; and the maps do not identify the location of most riparian areas. Users of the maps need to be knowledgeable of wetland types. A manual is available that explains the numerous symbols appearing on the maps. NWI maps are helpful when compiling a wetland base map for a community. The scale on these maps is 1" = 2,000 feet (1:24,000). As NWI maps are completed in Montana, they will become available on the website of the Natural Resource Information Center at the State Library (http://nris.mt.gov/)(1515 East Sixth Ave., Helena, MT 59620-1800; (406) 444-5354), as well as other locations.

Soil Survey Maps

(Source: Natural Resources Conservation Service ~ NRCS)

These maps show soil types that occur on the land. Because hydric soils are an important indicator for wetlands, the maps can be used as a starting point for baseline wetland maps. The NRCS definition of a hydric soil is "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." State lists of hydric soils are available from two sources: electronically from the USDA-NRCS Hydric Soils Homepage (http://soils.usda.gov/use/hydric/) or as hardcopy from the NRCS Montana State Conservationist (Natural Resources Conservation Service, 10 East Babcock, Room 443, Bozeman, MT 59715; (406) 587-6868). The NRCS also maintains,

for each conservation district in the United States, lists of map units that contain, or may contain, hydric soils. These detailed lists are also available by contacting the NRCS Montana State Conservationist. Currently the NRCS is in the process of digitizing their soil maps to make them more available to landowners, local governments, and others. Some NRCS field offices have infra-red photography and historical aerial photographs. These photographs are invaluable for observing land use changes, particularly the loss of wetlands.

Limitations to NRCS soil maps include the fact that they contain information about hydric soils, but not information about the presence or absence of wetlands. For a variety of reasons, wetlands may not be located everywhere where hydric soils are located. Additionally, soil map units listed on state or local hydric soil lists may contain a hydric soil as a minor component. This minor component may be small or non-existent at any one location on the ground. Consequently, it is very important to understand the details of each soil series and soil map unit—which may require professional interpretation. Users of these maps need to be knowledgeable of soil data and their information. The scale of these maps is 1:24,000; 1" = approximately 2.2 mile.

Floodplain Maps

(Source: Federal Emergency Management Agency - FEMA)

FEMA, which makes federally-backed flood insurance available to residents and communities, has developed floodplain maps along waterways in more developed areas of Montana. Floodplain and floodway boundaries have been officially delineated on these maps. In areas where 100-year floodplains have not been designated, local governments can use maps of "flood prone" areas, which approximate the floodplain based on the best available information. It is important to understand the limitations of floodplain maps. First, streams without mapped floodplains still have floodplains and can flood. Second, these maps do not really identify the location of wetlands or riparian areas—only the location of where flooding occurs. However, this information can be used to determine the general location of riparian areas and their associated wetlands. Finally, it should be noted that these maps are not always accurate (*see Missoula County, page 5-20*). The maps are expensive to create and, consequently, they are rarely revised. Because rivers are dynamic systems, flooding can change the channel structure and location of the floodplain. Check with local planning officials, local floodplain managers, or the Floodplain Management Section at the Montana Dept. of Natural Resources and Conservation (P.O. Box 201601, Helena, MT 59620-1601, (406) 444-6610) to determine whether a 100-year floodplain has been designated for a stream of interest. The scale of these maps is approximately 1" = 2,000 feet or 1"= 1,000 feet; the scale is 1:24,000.

404 Wetlands Permit Information

Section 404 of the Clean Water Act is administered by the Army Corps of Engineers (Corps). Because this program is the primary permit process that regulates activities impacting wetlands areas, information about the permits issued in a specific location can be helpful in identifying threats to wetland resources at the local level. Consequently, the Montana Natural Resource Information System has established a website making this information available: http://nris.state.mt.us/mapper/Corp404/corpannounce.html. The website allows users to access quantitative information about project descriptions; type of activity; size of the project area, in linear feet or acres; location, including maps of project locations; and the date a permit was issued. Permit information can be obtained through queries to the permit database using a number of categories, including:

- **Year of issue** (since 1990);
- **Permit type** (The Corps issues a variety of permit types): nationwide, general, and individual permits; letters of permission; and modifications to previously-issued permits);
- **Wetland type:** Lacustrine (associated with a lake), Riverine (associated with a river), Palustrine (most other wetlands), and Other Waters;
- **Location by:** County; Township, Section, and Range; Stream name; and U.S.G.S. Hydrographic Unit.

Users can view a list of the permits that have been

issued, as well as summary information about selected permits (the total number of acres filled, the total number of permits for a specific year, etc.). In addition, maps showing permit locations can be created for each query made.

Rare and Threatened Species Habitat Information

There are at least two sources of information in Montana about the location of rare or threatened species or natural communities. Because many of Montana's rarest animals and plants depend on wetlands or riparian areas, these sources can provide valuable information to a community.

U.S. Fish and Wildlife Service (USFWS). The USFWS administers the federal Endangered Species Act (ESA). The ESA provides legal protection for certain rare plants and animals. The USFWS can provide up-to-date information about critical habitat for Montana's rarest species. For more information contact the USFWS, 585 Shepard Way, Helena, Montana 59601; (406) 449-5225; website: http://www.fws.gov/Endangered/wildlife.html.

Montana Natural Heritage (Heritage) Program. The Heritage Program, located at the Montana State Library, collects information on the location and condition of the state's rare and threatened species, and natural communities. The program has information on high quality wetland and riparian areas for portions of the state. Additionally, Heritage has developed a system for internet use to search for wetland indicator species (http://nris.state.mt.us/wis/SearchWetlands.html). All Heritage information is housed in a computerized database and mapping system. To obtain site-specific information, you must fill out a data request form, which is available on the internet or through the mail. Fees sometimes apply for data searches done by Heritage staff. For more information, contact the Montana Natural Heritage Program, Montana State Library, P.O. Box 201800, 1515 East Sixth Ave., Helena, MT 59620; (406) 444-3009; website: http://nhp.nris.state.mt.us/.

Other Sources of Information

Natural Resource Information System (NRIS). In addition to 404 permit information discussed above, NRIS has developed the Water Information System, which collects and provides access to data on surface water, ground water, water quality, riparian areas, water rights, and more. For more information, contact NRIS, Montana State Library, P.O. Box 201800, 1515 East Sixth Ave., Helena, MT 59620; (406) 444-3009; http://nris.state.mt.us/.

DEQ Wetlands Program. In addition administration of a wetlands grant program and coordinating the state's efforts to complete National Wetland Inventory (NWI) maps for the state (*see DEQ Wetlands Program, page 6-10*), the DEQ Wetlands Program serves as a clearinghouse for wetlands information, including maintaining a wetlands clearinghouse website: http://deq.mt.gov/wqinfo/Wetlands/Index.asp. For information about the DEQ Wetlands Program, contact Lynda Saul, Wetlands Coordinator, Dept. of Environmental Quality, 1520 East 6th Ave., Helena, MT 59620, (406) 444-6652.

Publications useful for local governments on Montana's wetlands and riparian areas, include:

- ***Field Guide to Montana's Wetland Vascular Plants*** (Lesica and Husby, 2001);
- ***A Landowners Guide to Montana's Wetlands*** (Montana Watercourse, 2001); and
- ***Classification and Management of Montana's Riparian and Wetland Sites*** (Hansen et. al., 1995).

The first two publications are available through the DEQ Wetlands Program, 1520 East 6th Ave., Helena, MT 59620, (406) 444-6652 (http://deq.mt.gov/wqinfo/Wetlands/Index.asp). The *Classification* manual is available at University bookstores; and through the School of Forestry, The University of Montana, Missoula, MT 59812, (406) 243-2050.

As a final source of information, **local or project-specific maps or studies** may be available. Check with local planners, Water Qnality District staff, Watershed Groups, and similar sources to determine if any studies have been conducted locally that may have identified wetlands or riparian areas. As an example of the kinds

of local studies that may be available, the Army Corps of Engineers required a wetlands biologist to complete a map and inventory of wetlands occurring in a portion of the Gallatin Valley targeted for development.

APPENDIX IV: Regulatory Programs

Local governments have numerous reasons to consider implementing conservation measures for wetlands and riparian areas (*see Why Local Governments Should Protection Programs Make Sense, page 1-4*). However, before taking on this task, it is helpful to have a basic understanding of federal, state, tribal, and local programs that regulate activity in these areas—programs outside the traditional land use planning framework. Although these regulatory programs provide some level of protection for streams and wetlands, elected officials often decide that local regulations and policies are needed to achieve community conservation goals and priorities.

The following descriptions briefly summarize the major regulatory laws and programs impacting wetlands and riparian areas. This overview parallels *A Guide to Stream Permitting in Montana* (Montana Association of Conservation Districts, 2000). For complete information about specific programs, contact the agency in charge listed in Box XI on page A-17. A diagram appears on page A-16 that lists the permits that may be required for projects located in wetlands or streams.

Please note that the wetland permitting system can be difficult for applicants to negotiate. To assist permit applicants, several agencies have developed a cooperative application. Cooperating agencies are identified in Box XI (*). This joint application form is available at offices of any cooperating agency, or it can be downloaded at www.dnrc.state.mt.us/permit.html. Local governments should also request a copy of this application, as the information it contains can assist with planning decisions by describing impacts of a project on natural resources and highlighting opportunities for mitigation.

Federal Programs

All federal programs, including projects that contain federal funding, are subject to two important Presidential Executive Orders:

Executive Order 11990: Protection of Wetlands (1977)

This order is an overall wetland policy for all federal agencies managing federal land, sponsoring federal projects, or providing funding assistance to state and local projects. It requires federal agencies to avoid, if possible, adverse impacts to wetlands and to preserve and enhance the natural and beneficial values of wetlands. This order affects protection for wetlands in state and local projects using federal funding. A complete copy of the Executive Order can be found at www.wetlands.com/fed/exo11990.htm.

Executive Order 11988: Floodplain Management (1977)

This order requires each federal agency to take action to reduce the risk of flood loss; to minimize the impact of floods to human safety, health and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Because many wetlands and riparian areas are associated with floodplains, this order has the potential for providing them with some protection. A complete copy of this Executive Order can be found at www-lib.fnal.gov/library/worksmart/eo11988.html.

Section 404 of the Clean Water Act.

The primary federal law that regulates projects that impact wetlands and riparian areas is Section 404 of the Clean Water Act. Section 404 regulates the "discharge of dredged or fill material" into "waters of the United States." "Waters of the United States" include all streams to their headwaters with an average annual water flow of a minimum of 5 cubic feet per second, lakes over 10 acres, some isolated wetlands, and wetlands adjacent to waters of the United States. The "discharge of dredged or fill material" involves the physical placement of soil, sand, gravel, dredged material or other such material into waters of the United States. Under the Act, it is unlawful to discharge dredged or fill materials into waters of the United States without first receiving authorization (known as a "404 Permit") from the

U.S. Army Corps of Engineers (Corps). 404 permits are central to the conservation of streams and wetlands. Information about how to access 404 Permit information for a specific location appears on Appendix III.

Other Federal Regulatory Programs

Section 10 Rivers and Harbors Act applies to activities in, on, or over federally listed navigable waters of the United States. A list of these designated waters appears in Box XI. The **National Pollutant Discharge Elimination System (NPDES) Permit** regulates activities that may cause water pollution on Tribal Reservations in the state.

State Programs

There are 10 state-level permits that regulate activities in streams and wetlands. The **Montana Stream Protection Act (SPA 124 Permit)** only regulates government projects; it is designed to protect the natural or existing state of streams, and minimize soil erosion and sedimentation. Under the **Montana Land-Use License or Easement on Navigable Waters**, the state of Montana regulates activities that may impact the property it owns under navigable streams. This act is designed to protect the beneficial uses of these state lands, protect associated riparian areas, and preserve the navigable status of these streams. Four state-level permits primarily regulate activities that may cause water pollution and reduce water quality: the **Storm Water Discharge General Permit; Short-term Water Quality Standard for Turbidity (318 Authorization); Montana Pollutant Discharge Elimination System (MPDES);** and the **General Mining Laws/Small Miner's Placer and Dredge Operations**. The **Montana Water Use Act (Water Rights and Change Authorizations)** regulates water rights and other water quantity issues. The **Streamside Management Zone Law (SMZ)** regulates logging and other forest-harvest activities adjacent to streams that may cause erosion and other water quality and quantity problems. The **Montana Dam Safety Act** specifically regulates dams that may have safety hazards associated with them. And finally, the **Fish Stocking Permit for Private Fish Ponds** was developed to regulate the introduction of fish that may pose a threat to Montana's fisheries.

Local Programs

Seven regulatory programs are administered at the local level. Three of these are administered by county or municipal governments: the **Montana Floodplain and Floodway Management Act** (*see Floodplain Regulations, page 5-19*) regulates activities in the 100-year floodplain; **County Septic System Regulations** protect surface and ground water through regulation of sewage disposal systems; and the **Lakeshore Protection Act** (*see Lakeshore Protection Act, page 5-21*) is designed to minimize erosion on lakes 160-acres or larger. Conservation Districts administer two local permits. First, the **Montana Natural Streambed and Land Preservation Act** (310 Permit) (*see Natural Streambed and Land Preservation Act, page 6-7*) is designed to protect streams in their natural or existing state, and minimize soil erosion and sedimentation. The 310 Permit is for non-government projects and is the equivalent of the SPA 124 Permit discussed above. Second, Conservation Districts also administer water reservations within their jurisdiction under the **Montana Water Use Act** (Water Reservations).

Tribal Programs

Two tribal programs on the Flathead Reservation apply. The **Shoreline Protection and Aquatic Land Conservation Ordinance** regulates all projects that may impact streams, rivers, lakes, and wetlands. And the **Confederated Salish and Kootenai Tribes' Water Quality Program** regulates activities that may cause pollution of any waters on the Reservation.

Permits Needed for Projects Impacting Wetlands and Riparian Areas

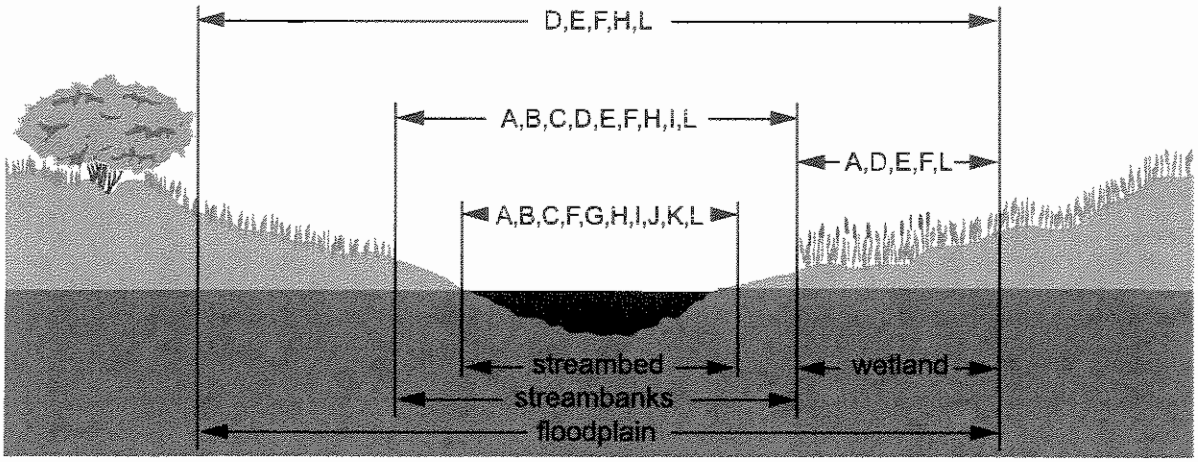


Figure 7. *This illustration indicates which regulatory permits may be required for projects impacting wetlands and riparian areas in the state of Montana. The letters in the illustration refer to the permits listed in Box X. The diagram is used with permission (MT Association of Conservation Districts, 2000).*

Box X. Regulatory Programs for Streams and Wetlands in Montana

Diagram Letter	Name of Program	Program Description	Contact Information
A	Federal Clean Water Act (404 Permit)*	For projects that will result in the discharge or placement of fill material (including dredged material) into waters of the United States. "Waters of the United States" include lakes, rivers, streams, wetlands, and other aquatic sites.	U.S. Army Corps of Engineers 10 West 15th Street, Suite 2200 Helena, MT 59626 (406) 441-1375
B	Federal Rivers and Harbors Act (Section 10 Permit)*	For projects in, on, or over any federally listed navigable water. Designated navigable waters in Montana include the Missouri River from Three Forks downstream to the Montana-North Dakota border; the Yellowstone River from Emigrant downstream to its confluence with the Missouri River; and the Kootenai River from the Canadian border to Jennings, Montana.	U.S. Army Corps of Engineers 10 West 15th Street, Suite 2200 Helena, MT 59626 (406) 441-1375
C	Montana Stream Protection Act (SPA 124 Permit)*	For federal, state, and local government projects proposed in or near a stream that may affect the bed or banks of the stream.	Fisheries Division MT Dept. of Fish, Wildlife & Parks 1420 East Sixth Ave. P.O. Box 200701 Helena, MT 59620-0701 (406) 444-2449
D	Storm Water Discharge General Permit	For construction, industrial, or mining activity that will discharge storm water—and its associated sediments, chemicals, petroleum products, etc.—into state waters.	Water Protection Bureau Permitting and Compliance Division MT Dept of Environmental Quality 1520 East Sixth Ave. P.O. Box 200901 Helena, MT 59620-0901 (406) 444-3080
E	Streamside Management Zone Law (SMZ)	For accessing, harvesting, or regenerating trees within at least 50 feet of streams.	Forestry Division MT Dept. of Natural Resources & Conservation 2705 Spurgin Road Missoula, MT 59804-3199 (406) 542-4300

Diagram Letter	Name of Program	Program Description	Contact Information
F	Short-term Water Quality Standard for Turbidity (318 Authorization)*	For initiating a short-term activity (such as construction) that may cause unavoidable short-term violations of state surface water quality standards.	Water Protection Bureau Permitting and Compliance Division MT Dept of Environmental Quality 1520 East Sixth Ave. P.O. Box 200901 Helena, MT 59620-0901 (406) 444-3080
G	Montana Land-use License or Easement on Navigable Waters*	For projects that may impact land below the low water mark on navigable waters. Contact DNRC for information about its list of 37 navigable streams sections; this list is different than the Army Corps of Engineers' list above.	Special Use Management Bureau MT Dept. of Natural Resources & Conservation P.O. Box 201601 Helena, MT 59620-1601 (406) 444-2074
H	Montana Floodplain and Floodway Management Act*	For new construction within a designated 100-year floodplain.	Local Floodplain Administrator
I	Montana Natural Streambed and Land Preservation Act (310 Permit)*	For any person or entity (non-governmental) proposing work in or near a stream that may affect the bed or banks of the stream.	Local Conservation District
J	Montana Water Use Act (Water Rights Permit and Change Authorization)	For new or additional water rights, or to change an existing water right in the state.	Water Rights Bureau, MT Dept. of Natural Resources & ConservationP.O. Box 201601Helena, MT 59620-1601(406) 444-6610
K	Montana Water Use Act (Water Reservations)	For water for a new or existing development within the boundaries of a conservation district.	Local Conservation District

Diagram Letter	Name of Program	Program Description	Contact Information
L	Montana Pollutant Discharge Elimination System (MPDES Permit)	For activities that may discharge anything into surface or ground water—including activities related to construction, dewatering, suction dredges, and placer mining.	Water Protection Bureau Permitting and Compliance Division Dept. of Environmental Quality 1520 East Sixth Ave. P.O. Box 200901 Helena, MT 59620-0901 (406) 444-3080
L	County Septic System Regulations	For construction, alterations, extensions, or operation of sewage treatment and disposal systems.	County Sanitation
L	Lakeshore Protection Act	For work in or near a lake within a county's jurisdiction.	County Planning Office
L	Fish Stocking Permit for Private Fish Ponds	For stocking fish in human-made lakes, ponds, or private fishponds. Applicants must verify that stocking fish will not pose an unacceptable risk to game fish or species of special concern in adjacent waters.	Fisheries Division Montana Dept. of Fish, Wildlife & Parks 1420 East Sixth Ave. P.O. Box 200701 Helena, MT 59620-0701 (406) 444-2449
L	General Mining Laws/Small Miner's Placer and Dredge Operations	For placer, dredge, hardrock, coal, sand, or gravel mining.	Water Protection Bureau Permitting and Compliance Division Dept. of Environmental Quality 1520 East Sixth Ave. P.O. Box 200901 Helena, MT 59620-0901 (406) 444-3080
L	Montana Dam Safety Act	For construction, repair, or removal of any dam that impounds 50 acre-feet or more at the normal operation pool.	Dam Safety Program MT DNRC P.O. Box 201601 Helena, MT 59620-1601 (406) 444-0860

Diagram Letter	Name of Program	Program Description	Contact Information
L	National Pollutant Discharge Elimination System (NPDES) Permit	For activities that may discharge pollutants into waters of the United States—including activities related to construction, storm water, dewatering, suction dredges, and placer mining—on all Tribal Reservations in Montana.	NPDES Program Environmental Protection Agency 10 West 15th Street, Suite 3200 Helena, MT 59626 (406) 457-5000
L	Shoreline Protection and Aquatic Land Conservation Ordinance	For work in, over, or near any stream, river, lake, or wetland on the Flathead Reservation.	Shoreline Protection Confederated Salish & Kootenai Tribe 103 Main Street Polson, MT 59860 (406) 883-2888
L	Confederated Salish and Kootenai Tribe's Water Quality Program	For activities in a location where they are likely to cause pollution of any waters on the Flathead Reservation.	Tribal Water Quality Program Confederated Salish & Kootenai Tribe 103 Main Street Polson, MT 59860 (406) 883-2888
*A single application form can be used when applying for permits marked with an asterisk (*). The form is available at offices of any cooperating agency, or can be downloaded at www.dnrc.state.mt.us/permit.html.			

APPENDIX V: Suggested Language for Conservation Easements

A conservation easement can contain many provisions to secure, monitor and enforce the terms of the easement. The following provisions are suggested "core" or substantive language within a conservation easement as specific restrictions on a land owner to protect wetlands and riparian areas. Additional legal or administrative provisions are included in a conservation easement, depending on whether the easement is a donated or purchased easement and whether the agreement is a permanent or term easement. Also, it is important to realize that each agency and land trust organization requires specific provisions and language in their individual conservation easements. The conservation easement language found in this Appendix is modeled after easements used by the U.S. Fish & Wildlife Service.

Suggested Language:

WITNESSETH:

WHEREAS, the lands described below contain wetlands, riparian areas and habitat suitable for wildlife.

NOW THEREFORE, the lands to which the terms of this agreement apply are described and located in _____, State of Montana, to wit:

(Legal Description of Property)

The Grantors (owners of the property) agree that they will cooperate in the maintenance and protection of all wetlands, riparian, and wildlife habitat areas delineated on the attached map, and that they will comply with the restrictions and requirements hereby imposed on the use of said Grantors' lands unless express prior written consent is provided by the Grantee. This commitment shall run with the land and shall be binding on the Grantors, their successors, assigns, lessees, all subsequent owners, and parties having right, title, or interest in the property. These restrictions include:

1. Draining, causing or permitting the draining by any means, direct or indirect, of any surface waters in or appurtenant to these wetland areas delineated on map. This includes lakes, ponds, marshes, sloughs, swales, swamps, potholes, and other wholly or partially water-covered areas, now existing or subject to recurrence through natural or man-made causes; provided, always, that the lands covered by this conveyance shall include any enlargements of said wetland areas from normal or abnormal increased water.

2. Altering the topography or other natural features by digging, excavating, plowing, disking, cutting, filling , removing or otherwise destroying the vegetative cover, including no agricultural crop production upon said lands delineated on map, unless prior approval in writing is granted by the Grantee.

3. Subdividing or de facto subdividing, and/or developing the area for residential, commercial, industrial or any other purposes;

4. Erecting, building or placing any structure, including any temporary living quarters, on said land, except for the renovation or replacement of existing buildings with buildings of the same purpose and/or utility, in substantially the same location.

5. Exploring for or developing and extracting any minerals, coal, oil or gas, sand, gravel, soil, peat or rock) by any surface extraction method.

6. Establishing or maintaining any commercial feedlot, defined for purposes of this easement as a facility used for the purposes of receiving, confining and feeding livestock for hire.

7. Dumping or disposing of any material that is toxic to wildlife or considered to contaminate soil, ground water, streams, lakes, or wetlands.

Appendix VI: Montana Private Land Trusts That Handle Conservation Easements

Bitter Root Land Trust
120 So 5th Street Suite 203
Hamilton, MT 59840
(406) 375-0956

Blackfeet Land Trust
P.O. Box 730
Browning, MT 59417
(406) 338-2992

Five Valleys Land Trust
P.O. Box 8953
Missoula, MT 59807
(406) 549-0755

Flathead Land Trust
P.O. Box 1913
Kalispell, MT 59903
(406) 752-8293

Gallatin Valley Land Trust
P.O. Box 7021
Bozeman, MT 59771
(406)587-8404

Mid-Yellowstone Land Trust
503 5th Ave. NW
Park City, MT 59063
(406) 633-2213

Montana Land Reliance
P.O. Box 355
Helena, MT 59624
(406) 443-7027

Prickly Pear Land Trust
P.O. Box 892
Helena, MT 59601
(406) 442-0490

Save Open Space
pmb 411 1001 East Broadway, Suite 2
Missoula, MT 59802
(406) 549-6083

The Nature Conservancy
32 South Ewing
Helena, MT 59601
(406) 443-0303

Montana Wetlands Trust
517 Waukesha
Helena, MT 59601
(406) 442-3199

The Rocky Mountain Elk Foundation
2291 W. Broadway
P.O. Box 8249
Missoula, MT 59807
1-800-225-5355
1-406-523-4500

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- Fact Sheet 1: Functions of Riparian Areas for Flood Control, 6 pages
- Fact Sheet 6: Functions of Riparian Areas for Ground water Protection, 7 pages

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About the Montana Watercourse

The Montana Watercourse is a statewide adult and youth water education program created in 1989 at Montana State University, Bozeman. Its goals are to promote awareness, create new knowledge, and build informed participation in Montana's water management processes in order to foster lifelong stewardship. Watercourse programs include:

- An Adult and Community Awareness Program, providing citizens with information, training, and educational forums on critical water resource topics.
- Project WET Montana, a Water Education for Teachers program, providing schoolteachers and other educators with innovative teaching materials and activities to advance children's understanding of Montana's water resources.

For more information about the Montana Watercourse, call (406) 994-6671; send mail to 201 Culbertson Hall, MSU, Bozeman, MT 59717; or visit us on the web at www.mtwatercourse.org.

A Cooperative Project of:

THE MONTANA WATERCOURSE

Montana Audubon

Montana Department of ENVIRONMENTAL QUALITY

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