Riparian and Wetland (3,724,224 acres or 3.94% of Montana)

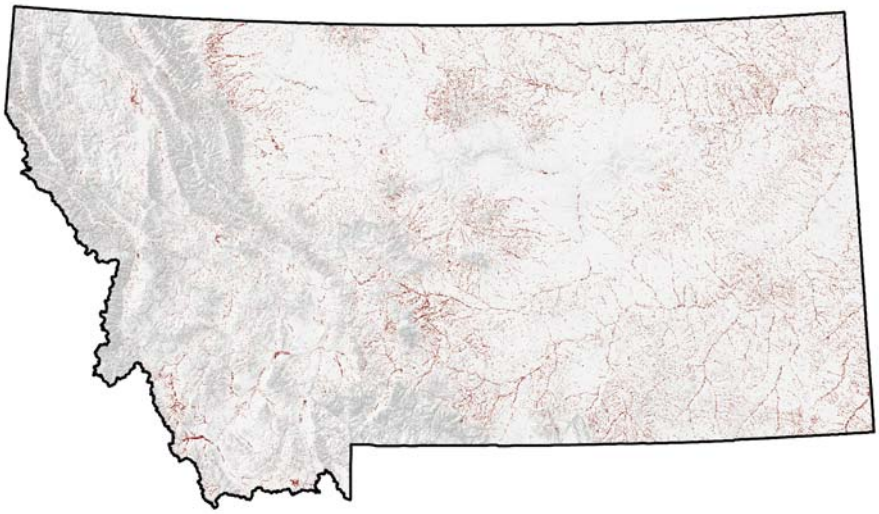

Figure 39. Distribution of Riparian and Wetland Community Types

Montana's riparian and wetland communities vary widely depending on the area of the state and elevation where they are located, but generally they represent the green zones along rivers, streams, lakes, and reservoirs and include potholes, wet meadows, marshes, and fens. This community type also includes the cottonwood forests that occur throughout Montana. Cottonwood stands develop in river and stream corridors on alluvial bars created by dynamic flows of spring runoff and mature into forests that eventually alter the direction of water flow. These stands, including Great Plains or black cottonwoods, help stabilize banks, keep waters cool in summer, and help their associated plants support diverse wildlife species. As a result of the adjacent water and diverse vegetation, these communities support the greatest concentration of plants and animals in Montana and serve as a unique transition zone between the aquatic and the terrestrial environments.

Riparian and wetland communities often occur as narrow linear bands or small depressions that are not recognized at the scale of the GAP mapping used in this analysis. More accurate and inclusive knowledge of riparian/wetland locations and types will be available if National Wetlands Inventory mapping or a similar product is completed for Montana. These types of efforts should be supported in order to improve future revisions of this Strategy.

Conifer Riparian

Conifer riparian occurs in riparian areas in western and south-central Montana. These are riparian areas dominated by conifer forest, with total tree cover from 20 to 100 percent. Associated shrub species include alder *(Alnus* spp.), red-osier dogwood (*cornus stolonifera*), bunchberry *(Cornus canadensis)*, willows *(Salix*

spp.), thimbleberry *(Rubus parviflorum)*, and twin flower *(Linnaea borealis)*. Associated grass and forb species include queens cup beadlily *(Clintonia uniflora)*.

Essential Associated Plant Community

Douglas-fir *(Pseudotsuga menziesii)*
Engelmann Spruce *(Picea engelmannii)*
Grand Fir *(Abies grandis)*
Red-osier Dogwood (*Cornus stolonifera*)
Subalpine Fir *(Abies lasiocarpa)*
Western Hemlock *(Tsuga heterophylla)*
Western Red Cedar *(Thuja plicata)*

Broadleaf Riparian

Broadleaf riparian occurs in riparian areas across Montana. These are riparian areas dominated by broadleaf (cottonwood) forest, with total tree cover from 20 to 100 percent. Associated shrub species include alder *(Alnus* spp.), bunchberry *(Cornus canadensis)*, serviceberry *(Amelanchier alnifolia)*, thimbleberry *(Rubus parviflorum)*, common chokecherry (*Prunus virginiana*), and willow *(Salix* spp.). Associated grass and forb species include queens cup beadlily *(Clintonia uniflora)* and carex *(Carex* spp.).

Essential Associated Plant Community

Aspen *(Populus tremuloides)*
Birch *(Betula* spp.)
Black Cottonwood *(Populus trichocarpa)*
Bur Oak *(Quercus macrocarpa)*
Green Ash *(Fraxinus pennsylvanica)*
Plains Cottonwood *(Populus deltoides)*

Broadleaf and Conifer Riparian

Broadleaf and conifer riparian occurs in riparian areas in western and south-central Montana. These are riparian areas dominated by mixed broadleaf (cottonwood) and conifer forest, with total tree cover from 20 to 100 percent. Associated shrub species include alder *(Alnus* spp.), bunchberry *(Cornus canadensis)*, serviceberry *(Amelanchier alnifolia)*, thimbleberry *(Rubus parviflorum)* and willow *(Salix* spp.). Associated grass and forb species include queens cup beadlily *(Clintonia uniflora)* and carex *(Carex* spp.).

Essential Associated Plant Community

Aspen *(Populus tremuloides)*
Birch *(Betula* spp.)
Black Cottonwood *(Populus trichocarpa)*
Grand Fir *(Abies grandis)*
Douglas-fir *(Pseudotsuga menziesii)*
Engelmann Spruce *(Picea engelmannii)*
Subalpine Fir *(Abies lasiocarpa)*
Western Larch *(Larix occidentalis)*
Western Hemlock *(Tsuga heterophylla)*
Western Red Cedar *(Thuja plicata)*

Graminoid and Forb Riparian

Graminoid and forb riparian occurs in riparian areas across the state. These are riparian areas dominated by herbaceous species, with total herbaceous cover from 30 to 100 percent. Riparian areas with tree and shrub cover comprise less than 15 percent. Standing water may be present in the riparian area (cattail marshes).

Essential Associated Plant Community

Baltic Rush *(Juncus balticus)*
Bluejoint Reedgrass *(Calamagrostis canadensis)*
Bog Sedge *(Carex rostrata)*
Cinquefoil *(Potentilla* spp.)
Cattails *(Typha* spp.)
Lake Sedge *(Carex lacustris)*
Maritime Sedge *(Carex incurviformis)*
Northern Reedgrass *(Calamagrostis inexpensa)*
Rushes *(Juncus* spp.)
Saxifrage *(Saxifraga* spp.)
Sedges *(Carex* spp.)
Tufted Hairgrass *(Deschampsia cespitosa)*

Shrub Riparian

Shrub riparian occurs in riparian areas across the state. These are riparian areas dominated by shrubs, with total shrub cover from 20 to 100 percent. Tree cover is less than 15 percent, and shrubs dominate over the herbaceous species. Standing water may be present in the riparian area (willow marshes).

Essential Associated Plant Community

Alder *(Alnus* spp.)

Black Hawthorn *(Crataegus douglasii)*
Bog Birch *(Betula glandulosa)*
Choke Cherry *(Prunus virginiana)*
Currant *(Ribes* spp.)
Red-osier Dogwood *(Corus stolonifera)*
Rose *(Rosa* spp.)
Shrubby Cinquefoil *(Potentilla fruticosa)*
Silver Sage *(Artemisia cana)*
Snowberry *(Symphorcarpos* spp.)
Thimbleberry *(Rubus parviflorum)*
Twin-berry *(Lonicera involucrata)*
Utah Honeysuckle *(Lonicera* spp.)
Water Birch *(Betula occidentalis)*
Willows *(Salix* spp.)

Mixed Riparian

Mixed riparian occurs in riparian areas across the state. These are riparian areas dominated by a mix of shrub and herbaceous species, with codominance of shrub and grass species present. Tree cover is less than 15 percent.

Essential Associated Plant Community

Grass species (*see Graminoid and Forb Riparian species)*
Shrub species (*see Shrub Riparian species)*

Associated Species of Greatest Conservation Need (Tier I Species)

There are a total of 265 terrestrial vertebrate species that are found within the riparian and wetland community type, with 196 of these species being essentially associated (essentially associated species are shown in bold). All associations can be found in Table 42. While the riparian and wetland community type comprises only 3.94 percent of Montana, it is critical to conservation. Seventeen of the 19 (89 percent) species of greatest conservation need found in the riparian and wetland community type are essentially associated.

Amphibians: Coeur d' Alene Salamander, Western Toad, and **Northern Leopard Frog**

Reptiles: Snapping Turtle, Spiny Softshell, and Western Hog-nosed Snake

Birds: Common Loon, Trumpeter Swan, Harlequin Duck, Bald Eagle, Yellow Rail, Piping Plover, Interior Least Tern, Black Tern, Sedge Wren, and **Nelson's Sharp-tailed Sparrow**

Mammals: Townsend's Big-eared Bat, **Northern Bog Lemming,** and **Meadow Jumping Mouse**

Conservation Concerns & Strategies

Conservation Concerns	Conservation Strategies
All Riparian and Wetland	
Draining and conversion of wetlands to agricultural cropland and subdivisions	Work with other groups to identify riparian areas wetlands that are critically important to wildlife diversity and work toward protection and enhancement
	Work with local governments and organizations to address loss of riparian and wetland areas associated with residential development through riparian setbacks
	Develop statewide best management principals for Montana's riparian and wetland areas
Loss of riparian habitat due to streamside residential development	Support strategic conservation easements by conservation organizations and public agencies
	Develop statewide best management principals for Montana's riparian and wetland areas
Adjacent uplands effected by range and forest management practices	Support government and private conservation activities that encourage and support sustainable land management practices
	Develop statewide best management principals for Montana's riparian and wetland areas
Invasive or exotic plant species	Support efforts to eradicate exotic or invasive plant species
Lack of a GIS coverage of wetlands across Montana	Partner with other agencies to develop an up-to-date comprehensive wetland and riparian GIS coverage
	Support efforts to complete the National Wetlands Inventory mapping for Montana
Degradation of habitat by land management practices or recreation use	Increase current efforts to improve river recreation management and monitoring

	Work with other agencies to promote land management and recreational uses along riparian areas that are conducive to natural streambank stability
Contaminated runoff from agriculture in wetland and riparian areas	Work on education campaign to broaden the understanding of how activities adjacent to wetland/riparian areas are connected to their health
Road construction that disrupts hydrologic patterns	Work with department of transportation to minimize and mitigate impacts of new and existing road development including streambank stabilization
Dams, channelization, and riprap for flood and erosion control disrupting natural stream dynamics, affecting successional patterns	Work with appropriate authorities to restore or mimic natural hydrograph and dynamic nature of riparian and wetland areas
	Work with landowners or reservoir operators to provide water levels compatible with natural regimes
Draining and conversion of wetlands to agricultural cropland and subdivisions	Work with other groups to identify wetlands that are critically important to wildlife diversity and work toward protection and enhancement
	Support efforts to complete National Wetlands Inventory mapping for Montana
	Work with local governments and organizations to address loss of riparian and wetland areas associated with residential development through setbacks and other means
Cottonwood Stands	
Flood control and channelization through riprap and dams. Culverts, dams, irrigation diversions, and other instream barriers that fully or partially alter natural flood regimes (eliminates cottonwood regeneration)	Work with appropriate authorities to restore or mimic historic hydrograph to promote productive cottonwood stands in river corridors
Unsustainable harvest of older cottonwoods for lumber or pulp	Maintain and recruit old-growth trees for snags used by cavity-nesting species

References

A Landowner's Guide to Montana Wetlands. Montana Watercourse.

Casey, D. 2000. Partners in Flight Bird Conservation Plan Montana Version 1.0. Montana Partners in Flight. Kalispell, MT.

Elis, Janet H., and Jim Richard. A planning guide for protecting Montana's wetlands and riparian areas. Montana Watercourse, Montana Department of Environmental Quality, and Montana Audubon Society.

Hansen, A., J. Rotella, L. Klass, and D. Gyskiewicz. 2003. Riparian Habitat Dynamics and Wildlife Along the Upper Yellowstone River. Technical Report #1. Landscape Biodiversity Lab, Montana State University, Bozeman, MT. In cooperation with the Governor's Upper Yellowstone River Task Force.

Kootenai Tribe of Idaho and Montana Fish, Wildlife & Parks. 2004. Public Review Draft Kootenai Subbasin Plan. Executive Summary. Report prepared for the Northwest Power and Conservation Council. Portland, OR.

Ostlie, W. R, R. E. Schneider, J. M. Aldrich, T. M. Faust, R. L. B. McKim, and S. J. Chaplin. 1997. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA. 326 pp + XII.

Statewide Habitat Plan. 1994. Implementation of Fish, Wildlife & Parks Commission. Habitat Montana Policy.