Chapter 3. Affected Environment

This Chapter describes the biological, social, economic, and cultural resources that would most likely be affected by establishing the Centennial Valley Conservation Easement Program.

Biological Environment

The project area is centered on the Centennial Valley, located 20 miles from Yellowstone's western boundary in Montana's southwestern corner. The oblong Valley stretches east to west for about 40 miles and north to south for 8 miles between sharply rising 10,000 foot peaks of the Centennial Mountains to the south and the rolling foothills of the Gravelly Range to the north. The Valley floor is a network of grasslands, wetlands, and riparian habitats. The average elevation is 6,600 feet above sea level, and the watershed encompasses 385,000 acres (Locke, 1990).

The Valley area exhibits excellent species diversity, from waterfowl to great gray owls, grizzly bears, moose, Franklin's gulls, long-billed curlews, Arctic grayling, peregrine falcons, westslope cutthroat trout, and ferruginous hawks (see Appendix C for scientific names). Two hundred sixty-one birds species, or approximately 70 percent of those found in Montana, inhabit the Valley. At least 150 species of birds breed in the Valley.

Habitat

The combination of numerous wetlands, riparian areas, sandhills, and grass/sagebrush uplands creates the diversity for which this area is considered so valuable. The wetlands and riparian areas support an entire suite of plants and animals, while the grassland/sagebrush and sandhills support yet another suite of plants and animals and, in many cases, the biodiversity of this area relies on a combination of resources from wetlands and uplands.

Uplands

The proposed project area lies in an intermountain grassland/sagebrush habitat type with interspersed wetlands. Mean minimum and maximum temperatures are wide ranging (minus 9 degrees to 76 degrees Fahrenheit), and mean precipitation is 20 inches per year. The vegetation correlates with topographic variations in microclimate, with Big sagebrush and Idaho fescue predominating the Valley floor. North-oriented mountain slopes commonly support shrubs, aspen, and coniferous forests.

The Valley soils give rise to a diverse array of plant communities, including some of considerable scientific importance. Location records from the *Montana Natural Heritage Program* (1996) indicate 41 species of special concern, including 5 that may be globally rare and 7 that are known in Montana only from the Valley (Povilitis and Mahr, 1998). Vegetation in the Valley sandhills represents one of Montana's most intact native plant associations and includes at least five state-rare species: Sand wildrye, Platte cinquefoil, Mealy primrose, Wolf's willow, and Letterman's needlegrass. No plant species within the Valley are currently on the Federal threatened or endangered list.

Wetlands
Approximately 10 percent of the project area is covered by wetlands, primarily palustrine emergent (Cowardin *et al*. 1979). The Valley wetland complex (Figure 6) is the largest in the Greater Yellowstone Ecosystem (GYE). The length of time water persists in these wetlands varies and this variation results in different types of vegetation. Ephemeral, temporary, and seasonal wetlands that have water for several weeks support vegetation comprised of wetland low prairie, wet meadow, and shallow marsh zones. Vegetation common to these zones include bluegrass, sedges, tufted hairgrass, and Rocky mountain iris. Other temporary and seasonal wetland plants include rushes and reed canary grass. Semipermanent or permanent wetlands have water present through most or all of the year. These wetlands may have any of the vegetation zones already mentioned, as well as deep marsh zones with pondweed and milfoil, shallow marsh zones with bulrush and cattails, and open water areas with no vegetation. Riparian areas found along perennial streams in the Valley support willows, aspen, *Ribes*, and sedges.

Wildlife

The Centennial Valley supports a wide variety of animal life. Assemblages of amphibians and reptiles, mammals, birds, and fish can all be found in the project area.

Amphibians and Reptiles
A 1996 survey of the Valley documented nine species of amphibians and reptiles; long-nosed salamander, spotted frog, western chorus frog, western toad, painted turtle, gopher snake, western terrestrial garter snake, common garter snake, and western rattlesnake (MNHP 1997).

Mammals
Uplands provide habitat for many small mammals including shrews, mice, voles, and ground squirrels in the Valley. These mammals, in turn, provide critical food sources and nesting habitat for prairie raptors, such as ferruginous hawks, northern harrier, and short-eared owls. Coyotes, red foxes, badgers, striped skunks, and long-tailed weasels are examples of carnivores that are widespread throughout the area. Big game animals such as mule deer, elk, and pronghorn also utilize the upland habitat. Wetlands provide cover and/or food for several of terrestrial or semiaquatic mammals including muskrat, beaver, river otter, and mink. The riparian and forested areas of the Valley also support a significant moose population.

Three federally listed mammals are recorded in the project area. Sightings of gray wolf occur periodically, and a pack of Yellowstone wolves visited the Valley in 1998. The gray wolf is a federally listed endangered species. Grizzly bear, a federally listed threatened species, regularly visits the mountains surrounding the Valley. Canada lynx, a threatened species, also inhabit the mountains surrounding the Valley. The Valley represents a potentially important corridor between GYE and Salmon/Selway Ecosystem for these animals. Other mammals of special concern found within the Valley include: pygmy rabbit, Townsend’s big-eared bat, spotted bat, fisher, fringed myotis, wolverine, Preble’s and Merriam’s shrew.

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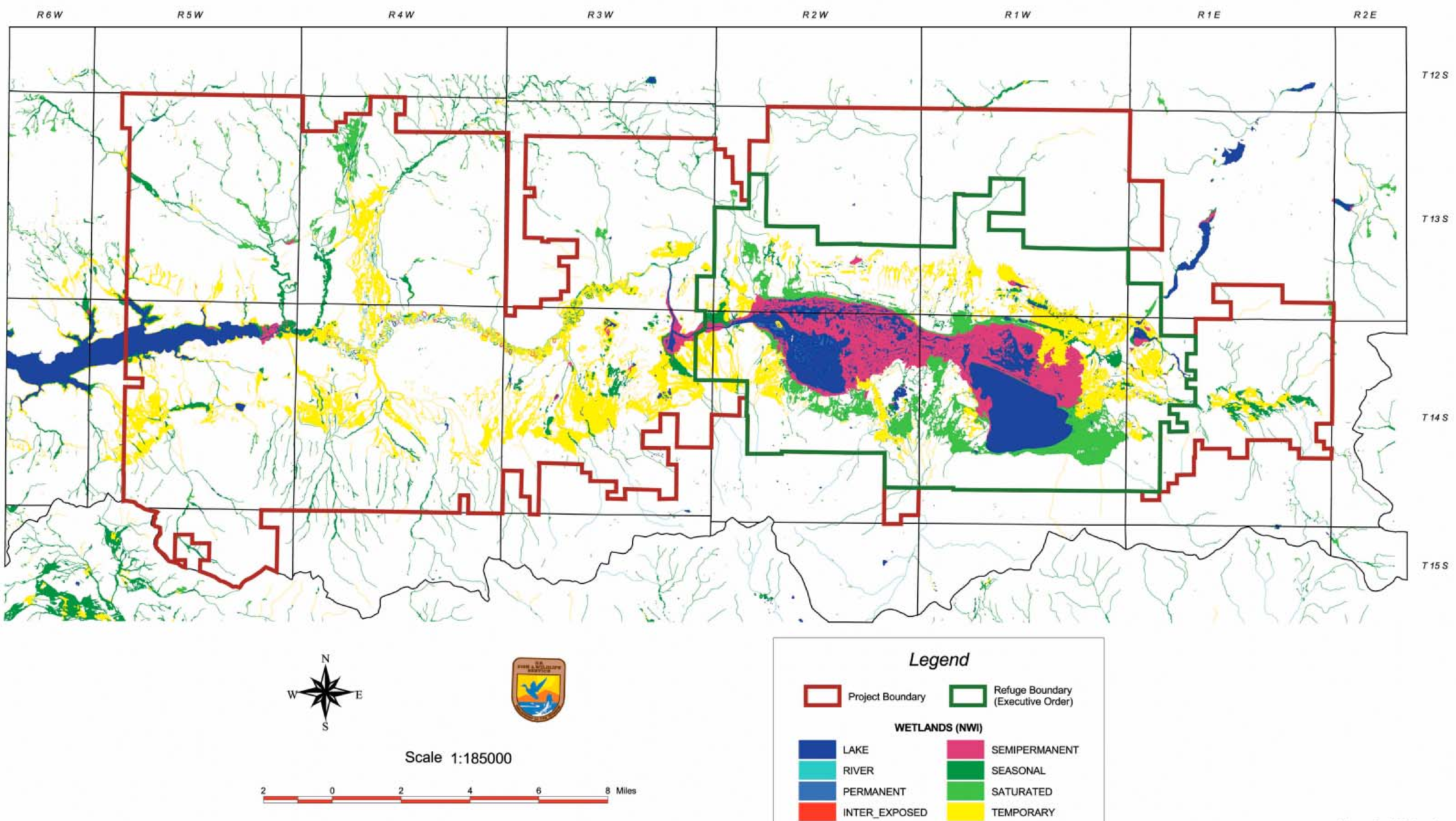

Figure 6 - Wetlands

Birds

The project area has recorded 261 species of birds or approximately 70 percent of those found in Montana. At least 150 bird species breed within the project area. The Valley has been the base for regional trumpeter swan recovery efforts. The Valley hosts the densest breeding populations of peregrine falcons, ferruginous hawks, and trumpeter swans in Montana. The Valley also contains two bald eagle nests and hosts many more during migration.

Approximately 20 species of waterfowl regularly use the project area for nesting, and more than 30 species use the area during migration. Mallard, gadwall, northern pintail, lesser scaup, and northern shoveler are the most common nesting ducks. Trumpeter swans use wetland habitat throughout the Valley. The Valley also hosts regionally significant populations of raptors, nesting and migrating shorebirds, neotropical migrant birds and sandhill cranes. Historically, the Valley provided habitat for significant numbers of sage grouse, a species in decline across much of its range. Other species of special concern within the Valley include: Boreal owl, black tern, Franklin’s gull, black-crowned night-heron, white-faced ibis, and Forster’s tern.

Fishes

The Centennial Valley contains one of the only native lacustrine Arctic grayling populations in the lower 48 states. This population spends most of the year in Upper Red Rock Lake and each spring spawns upstream in Red Rock Creek. Also of significance are several genetically pure populations of westslope cutthroat trout found within the project area. Other native fish within the project area include: burbot, white sucker, longnose sucker, and mottled sculpin. Nonnative fish that have been introduced to the Valley in the past include rainbow trout, brook trout, brown trout, and Yellowstone cutthroat trout (Brown 1971).

Social and Economic Considerations

Lakeview is the only community within the project area and consists of approximately 10 people, and another two communities (Monida and Lima) of approximately 100 people border the project area. Dillon, the county seat of Beaverhead County, lies 60 miles to the north of the project area and has a population of about 4,000. Much of the rural population is involved in hay and livestock production. Private lands are also used for hunting a wide variety of game species, with elk hunting season bringing the most people to the Valley. A seasonal influx of eco-tourists occurs in the summer that birdwatch, bicycle, horseback ride, camp, canoe, and fish throughout the Valley.

Agricultural Resources

The Centennial Valley is notable for its historical and social context. First settled by cattlemen in America’s 1876 centennial year, the Centennial remains one of the few western Montana valleys where large ranches still dominate the landscape.

The majority of land-use within the project area is summer cattle grazing. Ranchers start to bring cattle to the Valley in April and move them out of the Valley by December. Most ranches are owned by individuals or families whose principal occupation is ranching. Small areas are irrigated throughout the Valley to increase grass production of pastureland. Little or no hay is currently produced in the Valley. Historically more haying occurred in the Valley; these former hayfields are now pastureland dominated by introduced grasses.

Landownership

Within the project area, approximately 25 percent of the land is privately-owned and 75 percent is public land.