Appendix A1: Corridor Resources Supplement

The following appendix includes discussion of the water, vegetation, wildlife, and fisheries resources present in each region of the Corridor. Inventories to catalog the following information were not conducted for this Plan update, but rather were taken from the 1996 Plan. The information is believed to remain accurate since the time it was originally published.

Hebgen-Madison Region

Hebgen Dam is located a few miles northwest of West Yellowstone, Montana and is approximately 17 miles in length. Tributary inputs to Hebgen Reservoir include the Madison River, Watkins Creek, South Fork Madison River, Duck Creek, and several smaller streams. The upper reaches of the Madison River drain Yellowstone National Park and become laden with nutrients and other dissolved solids associated with the park's complex hydrothermal geology.

The Madison River bisects the upper Madison River Valley and flows from south to north. Water released from Hebgen Dam flows 68.8 river miles downstream to Madison Dam, behind which Ennis Reservoir is positioned along 2.5 river miles. Tributaries to the Madison River downstream from Hebgen Dam drain the west slopes of the Madison Range, the east slopes of the Gravelly Range, and the southern portion of the Tobacco Root Range. Water released from Madison Dam flows 40.2 miles downstream to the Missouri River headwaters at Three Forks, Montana. Tributary inputs in the Madison River above Madison Dam and into Ennis Reservoir include Meadow Creek, Jourdain Creek, Jack Creek, and several smaller streams.

The Hebgen area has abundant vegetation and a variety of plant species. Soils in the area are particularly rich in nutrients. Common plant species include sedge, willow, big sagebrush/Idaho fescue, and Douglas fir/snowberry. Lodgepole pine is the major overstory plant and elk sedge dominates the understory.

Three general community types characterize terrestrial and semiaquatic vegetation around the Madison area: meadow, river island, and marsh. Meadow vegetation includes bluegrass, dandelion, thistle, cinque foil, sedges, and rushes. Most island habitats include an overstory of black cottonwood and water birch and an understory of red-osier dogwood, wood's rose, western snowberry, goldenrod, cow parsnips, nettle, raspberry, reed grass, and willow. Marsh vegetation consists mainly of cattail.

Big game species in the area include mule deer, whitetail deer, elk, antelope, moose, bighorn sheep, mountain goat, bison, grizzly bear (a listed threatened species), and black bear.

There is a fairly uniform distribution of mule deer and elk throughout the Corridor, but moose habitat is primarily found in the Hebgen Region with higher populations around Ennis & Hebgen Reservoirs. Big horn sheep and mountain goat habitat appears to be isolated to the Quake Lake area. Grizzly bear have been sited on lands surrounding Hebgen Reservoir.

A wide variety of waterfowl and raptor species, including migrating and nesting bald eagles, trumpeter swans, tundra swans, and osprey, use Hebgen Reservoir. Centrally located in the Hebgen area are recovering populations of peregrine falcon.

The number of ducks using Ennis Reservoir on a seasonal basis is highly variable. Use of Ennis Reservoir by resident Canada geese has been relatively consistent. Sandhill cranes and American

white pelicans also use the reservoir. The reservoir also has become an important nesting and feeding area for migrating trumpeter swans as they make their way from the wintering grounds in central Oregon to western Wyoming. Several species of raptors inhabit the Madison area on a permanent or seasonal basis. There are active bald eagle nests, great blue heron rookeries, and peregrine falcon sightings.

Furbearers observed in the Madison area are limited primarily to beaver. Mink and bobcat have been sighted in the area. River otters populate the river upstream and downstream from Madison Dam. Numerous raccoons inhabit the Madison River upstream of the reservoir.

Principal game fish species in Hebgen Reservoir and the Madison River between Hebgen Dam and Quake Lake include brown trout, rainbow trout, cutthroat trout and mountain whitefish. Resident fishes in Ennis Reservoir include Arctic grayling, rainbow trout, brown trout, mountain whitefish, white sucker, longnose sucker, Utah chub, longnose dance, and lesser numbers of brook trout. The Madison River between Hebgen Dam and Three Forks is classified as a Class 1 fishery, the highest value fishery resource.

Hauser-Holter Region

Hauser Reservoir is located approximately 14 miles northeast of Helena, Montana and is situated along approximately 14 river miles. The Bureau of Reclamation's Canyon Ferry Dam, located approximately 14 miles upstream, regulates inflows to Hauser Reservoir. Lake Helena forms the southwest arm of Hauser Reservoir but is isolated by a small causeway. Major tributaries entering Hauser Reservoir include Spokane Creek, Prickly Pear Creek, Trout Creek and Soup Creek. Downstream from Hauser Dam the Missouri River flows through a 4-mile canyon before emptying into Holter Reservoir.

Holter Reservoir is located approximately 28 river miles downstream from Hauser Dam. Holter Dam is located approximately 43 miles northeast of Helena, Montana and three miles southeast of the unincorporated town of Wolf Creek, Montana. Major tributaries to the reservoir include Cottonwood, Willow, and Beaver Creeks. Water released from Holter Dam into the Missouri River flows approximately 90 miles through canyons and high elevation prairie grasslands before reaching Black Eagle Reservoir.

Ponderosa pine-grassland vegetation is the dominant land cover along the banks of the Missouri River near Hauser Dam. Stands of red-osier dogwood and willow exist throughout the Hauser area, as do ponderosa pine, Douglas fir, bluebunch wheatgrass, Idaho fescue, rough fescue, chokecherry, gooseberry, and prairie junegrass.

Big game species in the vicinity of Hauser Dam include mule deer, whitetail deer, elk, bighorn sheep, pronghorn antelope, mountain goat, black bear, and mountain lion. Larger populations of mule deer and elk occur on the east side of the river while bighorn sheep and mountain goats primarily reside around Holter Reservoir.

FWP administers the Beartooth Wildlife Management Area adjacent to 12 miles of the east shore of Holter Reservoir. The area covers 32,318 acres and is closed to motorized vehicles during the winter and early spring months.

Waterfowl species found in the Hauser area include the common loon, eared grebe, tundra swan, Canada goose, mallard, teal, swan, northern pintail, northern shoveler, canvasback, goldeneye,

common merganser, American widgeon, bufflehead, and American coot. The waterfowl species that use Hauser Reservoir year-round are common merganser, goldeneye, mallard, Canada goose, and bufflehead. Large numbers of geese use the reservoir during the spring and fall migration periods. Waterfowl use of the river downstream from Hauser Dam to Holter Reservoir appears limited to diving duck species and Canada goose.

FWP administers 157 acres in the Hauser area as the Lake Helena Wildlife Management Area, the purposes of which are to enhance waterfowl habitat and provide waterfowl hunter access to Lake Helena. At different times of the year, Lake Helena supports a wide variety of waterfowl species including dabbling and diving ducks, Canada and snow geese, tundra and trumpeter swans, American coots, and many other water birds.

The Hauser area offers a wide range of diverse habitats, which support abundant raptor populations. Raptor species observed in the area include the bald eagle, peregrine falcon, golden eagle, osprey, prairie falcon, gyrfalcon, northern harrier, rough-legged hawk, Swainson's hawk, red-tailed hawk, American kestrel, northern goshawk, turkey vulture, merlin, ferruginous hawk, great horned owl, Cooper's hawk, sharp-shinned hawk, and burrowing owl.

Furbearers and predator species occurring in the Hauser and Holter areas include the beaver (primary furbearer in the area), martin, short-tailed weasel, long-tailed weasel, least weasel, mink, wolverine, striped skunk, river otter, coyote, Canada lynx, bobcat, muskrat, and mountain lion.

Ten game fish species reside in Hauser and Holter Reservoirs. Rainbow trout and kokanee are most abundant. Suckers and yellow perch are the most abundant non-game species.

Great Falls Region

The Missouri River flows 93 river miles from Holter Dam to Black Eagle Dam, located adjacent to the city of Great Falls, Montana at river mile 2,118. Three major tributaries, the Dearborn River, Smith River, and Sun River enter the Missouri River between Holter Dam and Great Falls. The Sun River empties into Black Eagle Reservoir 3.8 river miles upstream from Black Eagle Dam.

Rainbow Dam is located approximately 6 miles northeast of the city of Great Falls at river mile 2,115. Giant Springs is the major tributary to Rainbow Reservoir. Cochrane Dam and Ryan Dam are located northeast of the city of Great Falls at river mile 2,111 and 2,110, respectively, and Morony Dam is located at river mile 2,105. There are no major tributaries flowing into Cochrane or Ryan Reservoir, and Box Elder Creek is the only tributary between Ryan and Morony dams.

The Missouri River extends from Morony Dam to Fort Benton for approximately 32 miles. Belt Creek and Highwood Creek are tributaries to the Missouri River upstream of Fort Benton:

The general vegetation type of the area near the Great Falls dams is the Teton-Judith Basin Grassland. This habitat is characterized by gently sloping to rolling grasslands containing large amounts of sandberg bluegrass and prairie junegrass and lesser amounts of bluebunch wheatgrass, needleleaf sedge, and threadleaf sedge. Vegetation along this section of the Missouri River is dominated by douglas fir, juniper, needle-and-thread grass/blue grama, skunkbrush sumac, and snowberry.

Terrestrial habitats near the Cochrane, Ryan, and Morony developments support big game, raptors, and waterfowl. Mule deer and antelope are the principal big game species found in the area. The area around the Great Falls reservoirs is typically mule deer winter range (sagebrush-grassland vegetation types). Mule deer are largely restricted to rough, river break areas and use Missouri River islands for fawning. Along with other riparian areas, these islands appear to provide important deer habitat during late spring and early summer. Antelope are found primarily on upland rangeland areas.Whitetail deer are more common downstream from the Great Falls development near Highwood Creek than around the development in particular.

Ring-necked pheasant and gray partridge are present in grainfields and draws adjacent to the Missouri River. Sharp-tailed grouse and sage grouse can be seen in and around the area.

Canada goose, common merganser, common goldeneye, and mallard are common to the Missouri River System which they utilize during migration and nesting seasons. The section between Morony Dam and Fort Benton represents a major seasonal waterfowl concentration area. River freeze-up appears to determine winter use by waterfowl. Mallards, northern pintail, American widgeon, lesser scaup, gadwall, blue-winged teal, cinnamon teal, northern shoveler, ruddy duck, and redheads have been observed on pond and pothole habitats along the Missouri River. These species utilize upland water sites primarily for spring migration, nesting and brood rearing.

The Missouri River below Morony Dam is a high-quality wintering area for bald eagles when open water is available. Migratory bald eagles may use the habitat along the Missouri River in spring and fall. Golden eagles are year-long residents of the Missouri River below Morony Dam, and peregrine falcons have also been observed in the area.

Red-tailed hawks, American kestrels, merlins, and great horned owls nest in the Great Falls area. Numerous cliffs along the Missouri River and along the small tributaries that enter the reservoirs provide suitable nesting sites. American white pelicans and great blue herons are found along the Missouri River throughout the Great Falls Region.

Beaver and muskrat populations likely occur in the riparian zone along the Missouri River downstream from Morony Dam. Mink and river otter may be present in the Ryan Dam area. Bobcat occur along the Missouri River Breaks.

The Cascade County Soil Conservation District leases the 100-acre Crooked Falls Managed Natural Area located west of Cochrane Dam from PPL Montana. This area is managed for the study, observation, and enjoyment of all who may be interested in plants, soil, geology, wildlife, nature, and general history.

Twenty species of fish are found in the river reach from Holter Dam to Great Falls. The most common are rainbow trout, brown trout, mountain whitefish, longnose dace, longnose sucker, white sucker, mottled sculpin, burbot, walleye, and carp.

The reach from Holter Dam to Cascade is rated as a “blue ribbon trout stream” or a Class I Sport Fishery. The 26-mile Missouri River stretch from Cascade to the confluence with the Smith River is a Class II sport fishery. Below the Smith River confluence the Missouri becomes a wide, low gradient channel for 29 miles, which classifies it as a Class III or Class IV sport fishery.