

Crucial Areas - Connectivity Assessment

Montana Fish, Wildlife and Parks

Connectivity Working Group

Montana Fish, Wildlife, and Parks (FWP) created a Connectivity Working Group (CWG) in December 2008 with experts from state agencies, federal agencies, and several non-governmental agencies and universities. The CWG was tasked with assisting FWP in developing a list of focal species that could serve as a connectivity conservation umbrella by encompassing the needs of all vertebrate species in the state.

The selection approach involved assembling a list of vertebrates based on state and global conservation status, socioeconomic value, and risk related to loss of habitat connectivity. Species initially considered were: 80 birds, 61 mammals, 12 reptiles, 8 amphibians, and 43 fish. Expert opinion was used to identify ecological processes, watersheds and types of movement related to connectivity for each species followed by ranking each species for its vulnerability to threats. Each species was then assigned to an ecological system and a set of covering exercises was used to develop a list of species that represents all ecological processes and threats within a system or watershed. The list was then reviewed and refined based on additional expert input.

A finalized list of focal species was developed with the understanding that it will be adjusted as new data and information become available (Table 1). Species may be removed as mapping efforts reveal overlapping needs and species may be added as climatic or landscape conditions change. In December 2009, 30 additional bird species were added for consideration.

Connectivity Project Charter and FWP Technical Advisory Committee

FWP received several grants to develop a statewide connectivity layer using the work of the CWG. A Project Charter has been drafted and a Technical Advisory Committee has been formed. Work is scheduled to be completed in early 2011. All resulting layers from the Connectivity Project will be incorporated into the Crucial Areas Assessment and Planning System.

Aquatic: Due to their unique connectivity needs, aquatic species were evaluated separately and assigned to watersheds rather than ecological systems. The aquatic connectivity layer depicts stream corridors for fish species that require connected habitats to complete all or a portion of their life history. The layer was produced using a structural (stream order) and functional (distribution of focal-species) approach to determine priorities for eight aquatic ecoregions in Montana. Species selected for each ecoregion were: Sauger (Lower Missouri & Lower Yellowstone), Burbot (Middle Missouri & Middle Yellowstone), Yellowstone Cutthroat Trout (Upper Yellowstone), Bull Trout (Hudson Bay & Columbia), and Arctic Grayling (Upper Missouri).

Terrestrial Focal Species Selected for Connectivity Mapping

Mammals	Amphibians	Birds
Wolverine	Western Toad	Sage Grouse
Canada Lynx	Great Plains Toad	Trumpeter Swan
Fisher		Bald Eagle
Bobcat	Reptiles	Sharp-tailed Grouse (plains)
Swift Fox	Prairie Rattlesnake	Least Tern
Elk	Plains Gartersnake	Forster's Tern
Moose	Terrestrial Gartersnake	Black Tern
Pronghorn		Dusky Flycatcher
Mule Deer	Aquatics	Red-naped Sapsucker
Gray Wolf	Arctic Grayling	Le Conte's Sparrow
Mountain Lion	Bull Trout	Piping Plover
Grizzly Bear	Burbot	Broad-tailed Hummingbird
Black Bear	Sauger	Long-billed Curlew
Hoary Marmot	Yellowstone cutthroat trout	Sprague's Pipit
Pika		Lark Bunting
Pygmy Rabbit	Semi-Aquatics	McCown's Longspur
White-tailed Prairie Dog	Northern Leopard Frog (West)	Flammulated Owl
Black-tailed Prairie Dog	Northern River Otter	Golden Eagle
Townsend's Big-eared Bat	Beaver	Baird's Sparrow
Hoary Bat	Idaho Giant Salamander	
Pallid Bat	Spiny Soft-shelled Turtle	
Fringed Myotis	Columbia Spotted Frog	
Spotted Bat		