

US 89 Etna North

Environmental Assessment



WYOMING'S WILDLIFE

Wildlife and Fisheries Technical Memorandum

The US 89 Etna North Project is a roadway improvement project being undertaken by the Wyoming Department of Transportation (WYDOT) between Etna and the Town of Alpine in Lincoln County, Wyoming. An Environmental Assessment (EA) is being prepared cooperatively by the Federal Highway Administration (FHWA) and WYDOT to determine if the project would result in significant impacts to the environment.

This technical memorandum discusses the regulatory setting, methodology and approach, describes the study affected environment, impacts, and mitigations of the build alternatives on wildlife within the identified Project Area.

Existing Conditions

Elk crucial winter range extends along the north end of the Project Area near the Greys River elk feedground (see **Figure 1**). Moose crucial winter range exists approximately one mile north of the Project Area (along the Snake River at the mouth of the canyon), but not in the Project Area. The Wyoming Game and Fish Department (WGFD) has identified the area between Etna and Alpine along US 89 as an important seasonal migration corridor for a segment of the Wyoming Range mule deer herd, Afton elk herd, and Sublette moose herd. No wildlife fencing or escape ramps currently exist along US 89 within the Project Area to facilitate wildlife crossings.

The Greys River feedground located within the Greys River Wildlife Habitat Management Area (along the east side of US 89 south of Alpine) serves to maintain the elk population in the Alpine area through a supplemental feeding operation. Elk migrate from the west and east to the feedground during the winter.

The Greys River Wildlife Habitat Management Area also includes a Big Game Crucial Range for elk. Crucial ranges were developed by WGFD to help understand habitat use patterns and increase the ability to maintain and enhance populations and important habitats (WISDOM 2014).

The 2005 *Lincoln County Comprehensive Plan* identifies the entire Project Area as rangeland for mule deer for spring, summer, and fall. The northernmost mile of the Project Area is identified as rangeland for moose during spring, summer, and fall (Lincoln County 2005).

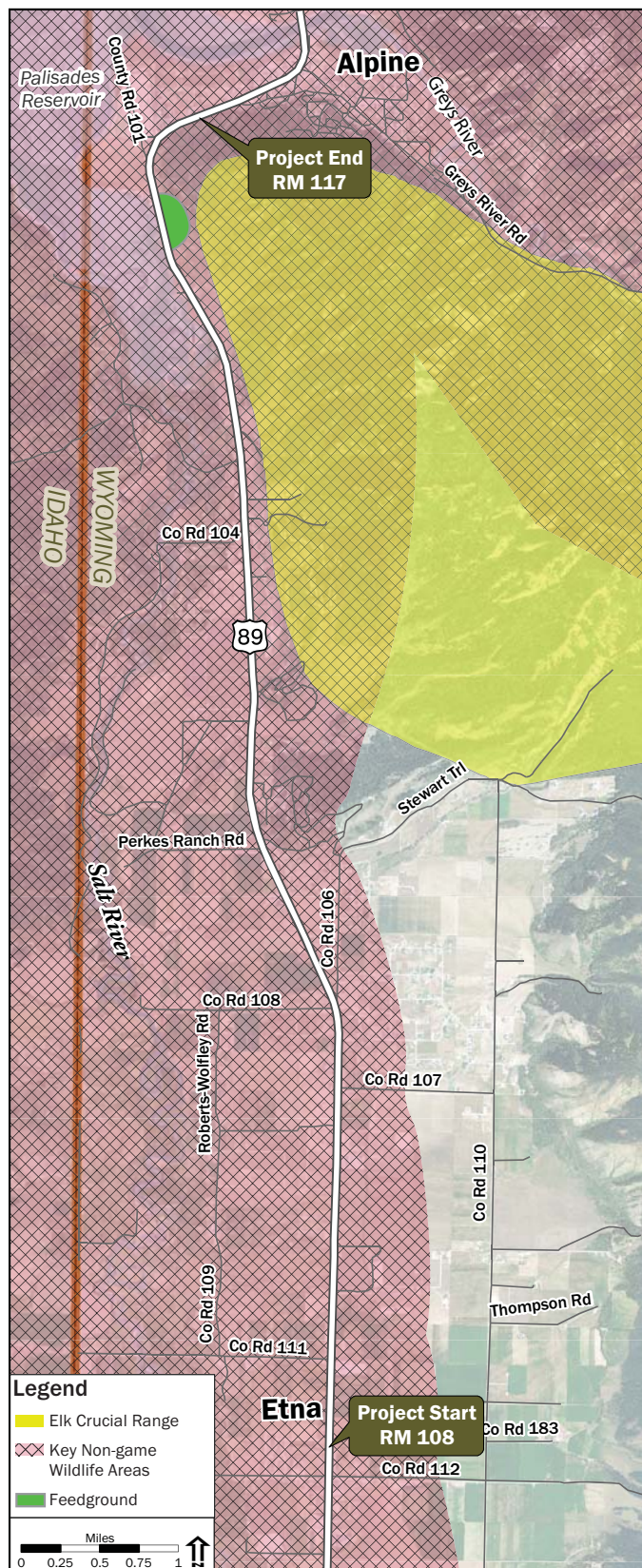
WYDOT data from 2004 through 2013 indicates an average of six animal-vehicle collisions were reported each year between RM 114 and 117. The majority of these collisions - 70 percent - were with deer. Approximately 17 percent were with elk. One collision was with a moose and one with other wildlife. The remaining 10 percent were with domestic animals and livestock (cows). Animal-vehicle collisions in the Project Area experienced a generally decreasing trend from 2008-2012. However, the number of these types of collisions more than doubled in 2013 compared to 2012.

The Project Area is located within the Salt River Key Non-game Wildlife Area as designated by WGFD. Such areas were created to focus on management and monitoring efforts for Species of Greatest Conservation Need (SGCN), and were developed based on faunal diversity and density, uniqueness of habitat, intactness of habitat, and their importance to maintaining native SGCN fauna in Wyoming. Wildlife values are to be maintained in these areas. The Salt River Key Non-game Wildlife Area includes 22 bird and 18 mammal

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Figure 1 Wildlife Areas



species. A large portion of the area is classified as the highest ranking for species diversity (WISDOM 2014).

The Project Area is also within a WGFD Aquatic Conservation Area. The Wyoming Stream Mitigation Procedure (WSMP) promulgated by the US Army Corp of Engineers (USACE), ensures that aquatic conservation areas are weighted relatively high when the USACE mitigates adverse effects under its Clean Water Act Section 404 permit authority (WGFD 2013, USACE 2013).

There is a variety of fish species in the Salt River and Palisades Reservoir, both of which are located west and adjacent to the Project Area.

The Salt River is considered a Class II trout stream by the WGFD. Class II streams, also called "red", are considered "very good trout waters – fisheries of statewide importance" (Wyoming Water Development Commission 2003). Fish species in this segment of the Salt River include the following:

- brook trout (*Salvelinus fontinalis*)
- rainbow trout (*Oncorhynchus mykiss*)
- brown trout (*Salmo trutta*)
- Snake River cutthroat (*Oncorhynchus clarkii behnkei*)
- mountain whitefish (*Prosopium williamsoni*)
- Utah sucker (*Catostomus ardens*)
- bluehead sucker (*Catostomus discobolus*)
- speckled dace (*Rhinichthys osculus*)
- longnose dace (*Rhinichthys cataractae*)
- Paiute sculpin (*Cottus beldingi*)
- mottled sculpin (*Cottus bairdi*)

Fish species of the Palisades Reservoir include cutthroat trout, both wild and stocked, brown trout, kokanee salmon (*Oncorhynchus nerka*) and lake trout (*Salvelinus namaycush*).

There are several small streams or creeks within the Project Area. However, these waterbodies do not have the hydrology to support fish, according to WGFD and the Wyoming Department of Environmental Quality (Wyoming DEQ) classifications.

The southern portion of the Project Area falls in predicted breeding range for sage grouse; however, there are no grouse leks within two miles and no documented occurrences of sage grouse in the Project Area. The Project Area is not a Sage Grouse Core Area, as designated in Executive Order 2011-5, and is not a Sage Grouse Connectivity Area.

Osprey are known to reside in Star Valley near US 89, and nests have been established adjacent to the highway. Osprey using these nests have acclimated to the existing traffic noise and other human activities.

The Migratory Bird Treaty Act (MBTA) is a federal statute (16 USC Section 703 et. seq.) under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) with the original intent to curtail international trade in birds and bird parts. The MBTA provides protection to 861 species based on the most recent revised list (USFWS - 50 CFR Part 10).

The USFWS published the Birds of Conservation Concern list in 2002 (USFWS 2002). The Birds of Conservation Concern list was formed to identify species that may be in need of conservation measures to prevent or remove the need for future Endangered Species Act listings. The Birds of Conservation Concern list considers all bird taxa, including species not protected under the MBTA.

There are 40 species of migratory birds on the list of Migratory Nongame Birds of Conservation Concern for the USFWS Region 6, which includes Wyoming. Of these, 30 species occur in or migrate through Wyoming, and 13 potentially occur in the Project Area based on habitat and known distribution (see **Table 1**).

Impacts

No Build Alternative: Under the No Build Alternative, the number of vehicle/animal collisions would increase as traffic volumes increase. No additional measures, such as wildlife fencing, would be provided to control wildlife crossings, thereby increasing the potential for collisions. Vehicle-bird collisions would also increase as traffic volumes increase.

5-Lane Alternative: The 5-Lane Alternative would result in the acquisition (reduction) of approximately 6.7 acres¹ of the Greys River feedground property as a result of the required expansion of right-of-way and avoidance of the Palisades Reservoir, thereby reducing the amount of habitat at the feedground.

The number of vehicle/animal collisions would increase as traffic volumes increase, as described for the No Build Alternative. In addition, the 5-Lane Alternative would include a wider pavement footprint for wildlife to cross, potentially impeding the annual elk migration from the Palisades Reservoir bed, west of US 89, to the Greys River feedground. Studies have shown that most wildlife-vehicle collisions (89.7 percent) occur on rural two-lane roads and highways. In comparison, 52 percent of *all* crashes occur on two-lane roads. However, this does not necessarily mean that upgrading two-lane roads to more lanes would reduce such collisions long-term. One study found that upgrading a highway from two to four lanes initially resulted in a 500 percent increase in collisions with deer. Over time, this number steadily decreased, potentially due to wildlife being initially unfamiliar with the new character of the roadway and eventually adapting to it (FHWA 2008).

Traffic volume has a large effect on successful wildlife crossings, especially for slow moving species. However, the impact of traffic density on wildlife-vehicle collisions is complex. Lower traffic volumes do not necessarily equate with fewer collisions. Wildlife-vehicle collisions actually decrease when traffic volume increases to a high enough level that the volume is, in effect, a barrier (i.e., animals do not attempt to cross) (FHWA 2008).

¹ Actual acreages would be determined during final design.

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Numerous reports have attempted to correlate increased speed to increased wildlife-vehicle collisions. However, FHWA notes that such correlations can be misleading. As an example, FHWA notes that wildlife-vehicle collisions occur less frequently on low speed roadways, which could lead to a conclusion that lowering the posted speed limit would decrease the number of such collisions. However, the high number of collisions on 55 mph roadways (nearly 60 percent) is believed to more likely be a result of higher populations of wildlife on rural two-lane roadways with this design speed, rather than the design speed itself (FHWA 2008).

As described above, research indicates that several factors influence how additional lanes could affect the frequency of wildlife collisions. It is not possible to accurately predict if the wider highway, traffic density, or speed limit would result in more or fewer impacts. Therefore, mitigation measures have been identified for the build alternatives to minimize wildlife-vehicle collisions to the extent practicable. Public education, the provision of a safety clear zone, implementation of wildlife fencing, and an elk jump help motorists avoid collisions with animals (see Mitigation Section, below).

Table 1 Birds of Conservation Concern Potentially Occurring in the Project Area

Species	Typical Habitat	Wyoming Occurrence/ Distribution
Common Loon (<i>Gavia immer</i>)	Lakes and reservoirs above 6,000 feet elevation	Uncommon summer resident in the northwest; potential migrant statewide
American Bittern (<i>Botaurus lentiginosus</i>)	Marshes	Uncommon summer resident or migrant statewide
White-faced Ibis (<i>Plegadis chihî</i>)	Marshes, wet meadows, lake shores, irrigated meadows	Uncommon summer resident and migrant, primarily in the southwest
Trumpeter Swan (<i>Cygnus buccinators</i>)	Lakes, rivers, large marshes with open water	Common resident in the northwest
Northern Harrier (<i>Circus syaneus</i>)	Grassland, shrubland, marshes	Common summer resident and migrant, statewide
Northern Goshawk (<i>Accipiter gentilis</i>)	Conifer and aspen forest	Common resident and migrant, statewide
Ferruginous Hawk (<i>Buteo regalis</i>)	Shrubland, grassland, foothills, rocky outcrops	Common resident and migrant, statewide
Long-billed Curlew (<i>Numenius americanus</i>)	Wet-moist grasslands, irrigated meadows, agricultural fields with nearby aquatic areas	Uncommon summer resident and migrant, statewide
Black Tern (<i>Chlidonias niger</i>)	Marshes, aquatic areas	Common summer resident and migrant, statewide
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Cottonwood riparian, ponderosa pine savannah	Uncommon summer resident and migrant, statewide
Veery (<i>Catharus fuscescens</i>)	Aspen, cottonwood riparian, open coniferous forest below 9,000 feet elevation	Uncommon summer resident and migrant, statewide
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	Shrubland, pine-juniper, woodland chaparral	Common summer resident and migrant, statewide
Brewer's Sparrow (<i>Spizella breweri</i>)	Shrublands, sagebrush	Common summer resident and migrant, statewide

Source: USFWS 2002.

Construction and operation of the 5-Lane Alternative are not expected to impact aquatic resources within the Project Area because the streams that would be crossed do not support fish. Construction activities could increase the potential for erosion of disturbed soils adjacent to Palisades Reservoir and, in turn, sedimentation within the reservoir itself. However, implementation of standard BMPs would minimize or eliminate this potential effect.

Highway projects generally have minimal impacts on migratory birds. While vehicle-bird collisions can be common, this direct impact on migratory birds is difficult to quantify. Typically, habitat loss impacts associated with highway widening are not considered substantial enough to cause population declines of migratory birds. However, vehicle-bird collisions would increase as traffic increases. In addition, the wider highway would increase the number of vehicle-bird collisions.

In addition, the habitat loss associated with the 5-Lane Alternative would be confined to areas adjacent to the existing roadway that are not considered prime nesting habitat or stopover habitat for migratory birds. The most likely impacts to migratory birds would be from construction during the breeding or migration seasons, causing disturbance or displacement-related impacts on migratory birds nesting or migrating near construction areas.

The 5-Lane Alternative could impact osprey nesting by increasing the level of disturbance to which nesting osprey are subjected. WYDOT would evaluate the nests more closely to determine appropriate mitigation measures.

4-Lane Alternative: Similar to the 5-Lane Alternative, the 4-Lane Alternative would include a wider pavement footprint for wildlife to cross compared to existing conditions, potentially impeding the annual elk migration from the Palisades Reservoir bed to the Greys River feedground. As with the 5-Lane Alternative, it is not possible to accurately predict if the wider highway, traffic density, or speed limit would result in more or fewer impacts. Therefore, the same mitigation

measures described for the 5-Lane Alternative would also be implemented to minimize impacts to the extent practicable.

The 4-Lane Alternative would result in the acquisition (reduction) of approximately 4.0 acres of the Greys River feedground property. Remaining impacts to wildlife and fisheries are expected to be similar to the 5-Lane Alternative.

Mitigation

WYDOT and WGFD worked together to identify design modifications that would avoid or minimize impacts to big game movement and to the Greys River feedground. As a result of the collaborative negotiations between WYDOT and WGFD, the following measures will be incorporated into the build alternatives:

- Public education through various outreach methods, which may include general messages in the media, videos, brochures, posters, and bumper stickers.
- Safety clear zone (described in Chapter 2).
- Wildlife fencing on both sides of US 89 at the Greys River feedground area. Wildlife fences in North America typically consist of 6.5- to 8-foot-high wire mesh fence material. Page wire or cyclone fence material is most common. Wooden or metal fence posts are typically used, the latter when fencing over rock substrates.
- An “elk jump,” which is a raised ramp that allows animals to escape fenced highway corridors, at the Greys River feedground. Ramps are typically built on relatively level terrain with a wall erected up to 6 feet, behind which fill is used to create a sloping ramp on the corridor side of the fence. An opening in the fence



Elk Jump and Wildlife Fence

Source: CDOT

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allows animals to jump out and down off the ramp, yet prevents them from jumping up and breaching the corridor. Perpendicular wing fences help facilitate animals slowing down and seeing the opening in the fence through which they can escape the fenced corridor.

A nest survey will be conducted prior to construction to determine osprey nest activity. Nests will be relocated outside the nesting season unless a nest has been confirmed to be inactive during the nesting season. WYDOT will continue to evaluate the possible need for buffer zones and timing restrictions for the osprey nests. These mitigation measures will be implemented during construction, if necessary.