Title
Montana Department of Transportation - a fine feathered friend

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MONTANA DEPARTMENT OF TRANSPORTATION - A FINE FEATHERED FRIEND

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Abstract

Funding Source: Federal Highway Administration (FHWA)
Total Budget: $1000 - $5000 per project
Project Period: Ongoing Since 1995

In Montana, across the nation, and around the world, highway construction activities often come into direct conflict with migratory and other nesting bird species, frequently resulting in habitat loss, the interruption of breeding and rearing activities, or even mortality. The Montana Department of Transportation (MDT) has considered this issue under the permitting and regulatory guidance of state and federal authorities, and laws such as the Endangered Species Act and Migratory Bird Treaty Act. MDT has decidedly taken a proactive approach to avoid or minimize construction related impacts to actively breeding and nesting avian fauna in a conscientious attempt to conserve these feathered species. This paper discusses four case studies in which efforts were made during the design of highway projects to avoid or minimize potential negative effects on avian species by construction activities. Nest relocations, roosting deterrents, temporal and/or spatial restrictions on construction activities, and best management practices have successfully been used in various highway projects in attempts to reconcile human modifications with the natural environment and the avian species that thrive there.

An active osprey (*Pandion haliaetus*) nest atop a through truss bridge located on the Clark Fork River near Alberton in Mineral County of northwestern Montana would have been directly disturbed by proposed bridge rehabilitation activities including, but not limited to, painting of the overhead truss members. Osprey "pair-bond" and often return, as adults to breed, to the area in which they were first hatched and fledged as youngsters. Once they construct a nest as a breeding pair, they often return to this same nest site and usually build upon the existing nest structure in successive years. With the concurrence of several state and federal biologists, Mark Traxler, formerly the MDT Missoula District Biologist and currently with Land & Water Consulting, relocated this particular nest in late fall, to an artificial nesting platform erected atop a telephone pole approximately 300 meters downstream from the bridge. The existing native nesting material consisting mainly of sticks, bark, and other detritus, was salvaged and replaced upon the artificial nesting platform. An owl decoy was placed on the bridge truss in order to deter the osprey from returning to the bridge structure to renest the following spring. Upon their return, the nesting pair eagerly took up residency on the new platform and appeared virtually uninterrupted by the rehabilitation activities taking place on the nearby bridge. To date, this nest has been active and has successfully fledged one or more young each season since its relocation in 1997.

Temporary measures to deter cliff swallows (*Hirundo pyrrhonota*) from nesting on a three-span concrete bridge structure have recently been undertaken on the Yellowstone River near Livingston in Park County located in southwest Montana. The scope of this project consisted of bridge rehabilitation including joint work, minor repairs to superstructure, superficial cleaning, and epoxy and concrete sealant applications. Colonies of cliff swallows were observed nesting throughout the entire span of the structure on the outer surface of the bridge beneath the deck along the corbels. After exhaustive contemplation of innovative deterrents such as mesh netting, ribbons, noisemakers and predatory decoys, a product called Bird-X (http://www.bird-x.com/products/bproof.html) nesting/roosting deterrent (poly-butane) was finally chosen for its ease of application, cost-effectiveness, and potential for removal. This spring, prior to the return of the migratory swallows, MDT personnel scraped off the empty nests and applied this petroleum-based non-toxic caulk. The

gel feels sticky and somewhat greasy to the birds feet, thereby deterring them from colonizing the area. For this application, the product was applied with a pneumatic caulk-gun in the areas from which the nests were scraped off. Bird-X removal solvent was also utilized so that the bird-proofing substance could be removed in the areas of rehabilitation activities, and ultimately removed from the structure altogether at the end of the construction work. This application proved successful, as the swallows did not attempt to rebuild their nest structures in the areas of application. A few swallows did manage to build nests where the product was not readily applied, but these nests were not in direct conflict with the rehabilitation activities and their nesting appeared uninterrupted throughout construction. After the task was completed, the caulk was completely removed using the solvent, scraping and power washing. The swallows that return here next season will be able to once again colonize the structure. This application accomplished the task of allowing construction activities to go on as scheduled without directly affecting the birds nesting activities during their breeding season. In the future, we look forward to trying the liquid form of Bird-X deterrent for a more even and consistent application and potentially easier removal.

A bridge over the Flathead River near Kalispell in Flathead County located in north-central Montana was scheduled for demolition by explosives in early spring of 1995. Discussion between the United States Fish and Wildlife Service (USFWS) and MDT over a bald eagle (*Haliaeetus leucocephalus*) nest located approximately one mile from the structure generated a few restrictions on demolition activity and ended in a monitoring agreement. The initial debate centered on the issues of distance from the demolition and whether the noise of the blast would be so disturbing to the adult birds that they would abandon the nest or leave the nest long enough to "freeze" the eggs. Mark Traxler, formerly the MDT Missoula District Biologist, researched the situation and conducted the monitoring of the nest site during and after the demolition. Factors he considered to determine the potential impacts to the birds resulting from the proposed blasting activities were: 1) distance from the disturbance, 2) the topography of the surrounding landscape, 3) buffering from the disturbance by riparian vegetation, 4) duration and severity of the disturbance, and 5) the timing of the disturbance. At approximately one mile, it was determined that the nest was probably far enough away from the structure that relocation would be more disturbing than the blast itself, especially with a nest full of eggs. The landscape is basically flat between the nest and the bridge; the river has a healthy riparian community; the duration of three blasts would last only a matter of seconds, and the severity of the disturbance would decrease as the distance from the structure increased. The USFWS recommended that the blasting only occur on clear (no clouds) days, that the blasting occur between the hours of 1100 and 1600, and that MDT monitor the noise/seismic levels at the nest site. Noise was initially suspected to be the most likely disturbance to the birds. In combination with cloud cover issues and a low ambient temperature, monitoring the situation and the birds' reaction to the blast was critical for the threatened species and for future application in similar situations. In fact, to everyone's surprise, the light-flash of the explosion raised the bird off the nest prior to the "bang" which reached the nest site about seven seconds later. The adult bird circled the nest only once and returned in less than 30 seconds to incubate the eggs. The eaglets successfully fledged the nest that year, and nesting has occurred each year since.

In the summer of 1995, during a wildlife survey for the proposed White Sulphur Springs - South project located in Meagher County in central Montana, Kirk Eakin, formerly MDT Butte District Biologist and currently with URS/BRW Incorporated, identified an active ferruginous hawk (*Buteo regalis*) nest located approximately 400 feet from the highway and less than 150 feet from the proposed gravel pit and staging area to be used for the construction project. The ferruginous hawk is considered a state species of special concern in Montana and has demonstrated heightened sensitivity to human disturbances. In cooperation with the USFWS and Montana Fish, Wildlife, and Parks (MFWP), temporal and/or spatial timing restrictions on construction activity were avoided through the relocation of the nest site. In the spring of 1996, two alternative nest sites were chosen about one mile away from the highway, but still in the nesting territory of the breeding pair. The original nest material, consisting primarily of sagebrush sticks, was salvaged and used to construct nests on the two artificial nest platforms in an attempt to attract the breeding pair. Mr. Eakin was responsible for monitoring the nesting success of the pair for three seasons following the nest relocation. In 1996, the pair did return to occupy the nesting territory, but no nesting was observed. In the summer of 1997, Mr. Eakin observed the pair incubating eggs in one of the nesting platforms, and two nestlings successfully fledged from the nest during the year of highway construction. Mr. Eakin has continued private monitoring endeavors in the years following his employment with MDT, beginning in 1998 and continuing to date. Between 1998 and 2001, 15 nestlings from this same nest structure have been banded with USFWS leg bands. A ferruginous hawk, banded from this nest site in 1999, was recovered in Lubbock, Texas in January of 2000. Mr. Eakin plans to publish his

monitoring results at a later date. While this mitigation allowed proposed construction activities to commence without costly temporal or spatial restrictions, it ultimately provided adequate nesting alternatives for the hawks.

When nest relocation or colonization deterrents are not practicable, or the species is too sensitive to human disturbances to risk direct interference, timing and/or spatial restrictions that limit construction activities within a designated radius from the nest site are often recommended. Above-ground utility lines existing within MDT right-of-way and within 300 feet of a waterway are "raptor-proofed" in a variety of ways to prevent raptor perching and nesting activities. Known as MDT Right-of-Way Procedure Memorandum 208, this procedure requires the non-intrusive relocation of an existing nest and the subsequent installation of phalanges, metal rods, or another physical barrier to future perching, nesting, or roosting. These efforts have recently been made standard MDT policy in compliance with applicable federal and state regulations pertaining to endangered species and migratory birds and have already had a positive effect on Montana's raptor population and served to foster cooperative efforts between MDT, USFWS, MFWP, and other resource agencies.

In recent years, the Montana Department of Transportation has taken great strides in the implementation of a proactive approach to the conservation of avian species, and other wildlife species that may otherwise be directly affected by highway construction projects. We will continue to experiment with different approaches to avoid and/or minimize negative effects on migratory birds, as well as other wildlife species that share our roadsides. Monitoring and evaluating the effectiveness of these efforts, and embracing the challenges of reconciling human development with the natural environment is part of the ongoing commitment that MDT has to serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality and sensitivity to the environment.

Biographical Sketch: Deborah Wambach is a Butte district biologist at the Montana Department of Transportation. She has undergraduate degrees in conservation biology and wildlife management/ecology from the University of Wisconsin at Madison. She has been with MDT over four years.