



State Wildlife Action Plan E-Newsletter

Study Gains More Information about Midget Faded Rattlesnakes

Zack Walker, Wyoming Game and Fish Department
Stephen Spears, Orianne Society



Midget faded rattlesnake
Photo by: Josh Parker

The midget faded rattlesnake (*Crotalus oreganus concolor*) is as its name implies. It is a smaller rattlesnake, often growing only to 20 to 24 inches in length. The coloration is a pale gray to straw color with faded blotches along the body. In Wyoming, this species is distributed near Flaming Gorge and prefers rocky arid basins. The midget faded rattlesnake is currently ranked as a tier 1 (NSS1) Wyoming Species of Greatest Conservation Need. Over the last few decades, the range of the midget faded rattlesnake has seen increased development and human disturbance. Therefore, in an attempt to conserve this species in

the state, the Wyoming Game and Fish Department (Department), along with the Orianne Society (www.oriannesociety.org), have used State Wildlife Grant funds to initiate a project to research midget faded rattlesnakes.

The goal of their Wyoming research was to model midget faded rattlesnake denning habitat, foraging habitat, and landscape genetics. While in the field, biologists sampled snakes at known den locations. For each snake captured, biologists recorded the snake's sex, length, number of rattles, pattern of blotches (for unique ID), possible prey items, and whether the snake was gravid (pregnant). Researchers also drew blood from each snake for genetic analysis and implanted a passive integrated transponder tag for identification if the snake was recaptured.

Once this data was collected, modeling began to look at how midget faded rattlesnakes interact with the landscape. Biologists modeled and carefully selected variables that best described how this species selected denning habitat. Midget faded rattlesnake denning habitat in Wyoming

Inside this issue:

Midget Faded Rattlesnake	1
Landbird Monitoring in Wyoming	2
Wolverine Proposed for ESA Listing	4
Questions or Comments?	5

Midget Faded Rattlesnake (continued)

is primarily linked to two factors; the distance to rocky outcrops and the annual temperature range. Midget faded rattlesnakes were found to den in rocky outcrops that remained a little warmer than the surrounding landscape. After examining denning habitat, biologists began to model how midget faded rattlesnakes might forage on the landscape. Again, two factors were found linked to where rattlesnakes moved to find food; intermediate distance from rocky outcrops (i.e. dens) and average summer temperature. Midget faded rattlesnakes could typically be found feeding in areas that were warmer over the growing season and would support more prey. Finally, biologists focused on the population genetics of this snake. It was discovered that the overall genetic diversity of midget faded rattlesnakes in Wyoming was low. Genetic diversity was greatly influenced by the distance between populations. Roads were the most important barrier to gene flow in Wyoming's population. Snakes are often highly visible on roads and are easy prey for natural predators and humans.

Overall, the study found that populations of midget faded rattlesnakes in Wyoming appear stable, but are vulnerable to increased development. The Department will use the information generated from this project to provide recommendations to protect this

species as possible development occurs in areas around Flaming Gorge. It is important to keep midget faded rattlesnakes in Wyoming; as they play an key role in our ecosystem and venomous reptiles are increasingly being shown to be important for development of innovative medicines for diseases such as diabetes and cancer.



Midget faded rattlesnake
Photo by: Josh Parker

Landbird Monitoring in Wyoming

Andrea Orabona, Wyoming Game and Fish Department

Nick Van Lanen, Rocky Mountain Bird Observatory

Wyoming Partners in Flight participants have been involved in landbird monitoring throughout the state since 2002. Using funding or technical assistance from the Wyoming Game and Fish Department, Bureau of Land Management, U.S. Forest Service, National Park Service, Wyoming Natural Diversity Database, and Audubon Rockies, the Rocky Mountain Bird Observatory (RMBO) has developed a state-of-the-art landbird monitoring program for Wyoming.

The initial effort, Monitoring Wyoming's Birds (MWB), obtained population and distribution data for breeding landbird species. Under this design, RMBO used partner assistance to conduct surveys from 2002-2008 in grassland, shrub-steppe, riparian, mixed conifer, aspen, and juniper woodland habitats. The project employed GIS (geographic information system) land-cover data to find areas of habitat on public lands large enough to allow random selection

Bird Monitoring (continued)

of 3.5 km line transect survey routes for counting birds.

In 2009, partners implemented a modified monitoring design developed by RMBO called Integrated Monitoring in Bird Conservation Regions (IMBCR). The IMBCR design is more versatile and is well-suited to studying bird populations in a constantly changing landscape. The randomly selected, grid-based survey units are 1 km² and consist of 16 count points spaced 250 m apart. Observers first record basic vegetation data at each point, and then record all birds detected by sight or sound for six minutes.

There are many benefits of the IMBCR design including:

- Eliminating problems that occur when habitats change over time or if a habitat patch is not large enough to contain all points along a line transect, and removing observer bias associated with habitat identification;
- Increasing precision and enabling comparison of density and occupancy estimates for individual species within geographic regions;
- Providing the ability to compare bird trends to habitat trends, allowing comparison of local trends to broader scale trends, and decreasing the time needed to detect trends;
- Reducing monitoring costs because more partners are involved; and
- Enabling the monitoring of birds on both public and private lands, which allows partners to make inferences about bird populations across an entire state or geographic area, rather than on public lands alone.

Although 2012 data are still being analyzed, 107 Wyoming landowners aided monitoring efforts in 2011 by granting access to observers to conduct bird surveys. Observers completed 2,252 count points on 187 of 192 grids (97%). A total of 165 species were detected, including 28 Species of Greatest Conservation Need (SGCN). Analysts completed density estimates for 116 avian species, including 12 SGCN, and occupancy estimates for 123 avian species, including 10 SGCN. To access IMBCR results and reports, visit <<http://rmbo.org/v3/avian/Home.aspx>>.



Western kingbird

Photo by: Pete Arnold

US Fish and Wildlife Service Proposes to List Wolverine as Threatened in the Low 48.

Glenn Pauley, Wyoming Game and Fish Department

On February 4, 2013, the U.S. Fish and Wildlife Service (USFWS) posted in the Federal Register a proposal to list the distinct population segment of the North American wolverine occurring in the contiguous United States, as a threatened species under the Endangered Species Act (ESA).

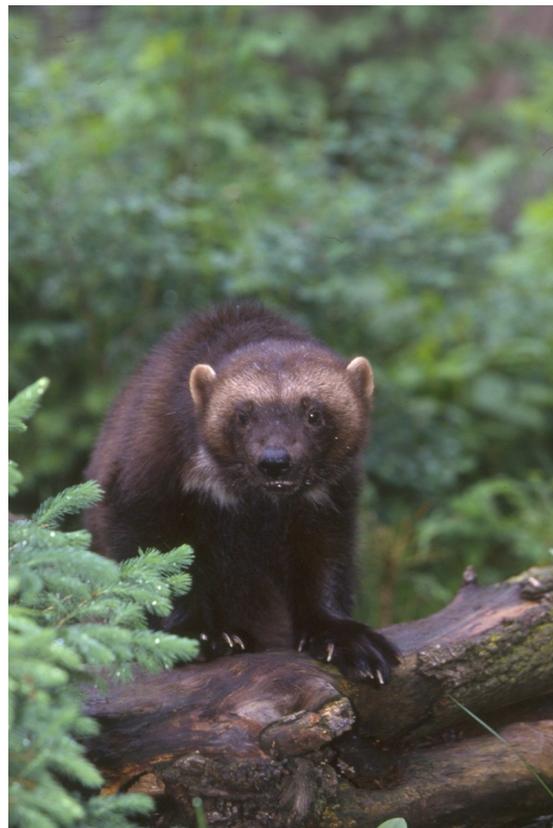
Under a special rule, the USFWS suggests limiting ESA protections only to those necessary to address threats to the species. For the wolverine, human activities in wolverine habitat such as snowmobiling, backcountry skiing, and land management activities like timber harvest and infrastructure development, which do not constitute threats to the species, would not be prohibited or regulated. Intentional killing of wolverines; however, would be prohibited. Wolverine are already a protected animal in Wyoming and killing or capturing or attempting to kill or capture a wolverine is illegal.

At the same time, the USFWS proposed to establish a nonessential experimental population (NEP) area for wolverines in the Southern Rocky Mountains of Colorado, northern New Mexico, and southern Wyoming under section 10(j) of the ESA. This would allow incidental taking of wolverines within the defined NEP area. This action is not intended to precede the USFWS introducing wolverines into the area, but rather, provide regulatory assurances necessary to facilitate a state-led reintroduction effort, should the state of Colorado determine to reintroduce the wolverine.

Wolverines are the largest terrestrial member of the weasel family. They are naturally rare and exist at extremely low population densities. They primarily scavenge carrion, but also prey upon small animals and birds, and eat fruits, berries, and insects. They are also known to attack larger animals, such as caribou, if the prey is

weakened or injured.

In North America, wolverines occur within a wide variety of alpine, boreal, and arctic habitats, including boreal forests, tundra, and western mountains throughout Alaska and Canada. The southern portion of the species' range extends into the contiguous United States, including high-elevation alpine portions of Washington, Idaho, Montana, Wyoming, California, and Colorado. The distribution of wolverines is closely linked to the distribution of persistent late spring (April and May) snowpack. Females dig dens in deep snow to birth and raise young until they are old enough to venture out of the den. In addition, wolverines appear to take



Wolverine

Photo by: Jeff Vanuga

advantage of cold, low productivity habitats by using food caching to survive food-scarce winters that other carnivores cannot.

Wolverines are regularly observed in north-western Wyoming. Observations occasionally occur in other parts of the state; however, these sightings are believed to be dispersing individuals and do not represent self-sustaining populations.

The USFWS is accepting comments on the two proposals until May 6, 2013.

More information about wolverines and the proposed listing under the ESA can be found on the USFWS' website: <http://www.fws.gov/mountain-prairie/species/mammals/wolverine/>.



**WYOMING GAME & FISH
DEPARTMENT**

5400 Bishop Blvd
Cheyenne, WY 82006

Conserving Wildlife—Serving People

We're on the web:

<http://wgfd.wyo.gov/web2011/wildlife-1000407.aspx>

Questions or Comments?

Questions or comments about the State Wildlife Action Plan or this newsletter can be forwarded to:

Glenn Pauley
Planning Coordinator
Wyoming Game and Fish Department
5400 Bishop Boulevard
Cheyenne, WY 82006
Phone: (307) 777-4637
Email: glenn.pauley@wyo.gov

To be added to the mailing list, send an e-mail to joinswapenews@ewyoming.gov from the email account at which you would like to receive the newsletter. You may unsubscribe by sending an e-mail to leave-swapenews@ewyoming.gov. To subscribe or unsubscribe, leave the subject line and body of the email blank.