

To: Regional Director, Region 6, Denver, CO.
From: Mike Jimenez, Wolf Management and Science Coordinator for the NRM
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Subject: Wolf Monitoring in the NRM
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Introduction: The Northern Rocky Mountain (NRM) Distinct Population Segment (DPS) gray wolf population was removed from federal protection in all states except Wyoming in May 2011 and, subsequently legal public harvest was instituted during the fall of 2011 in Montana and Idaho. Montana implemented a general hunting season from September 3 through December 31, 2011 with a statewide quota of 220 wolves. The season was extended to February 15, 2012 because the overall quota had not been met. General seasons for hunting and trapping were adopted in Idaho, with no statewide harvest objective. Similar regulations have been proposed for next year's harvest. These regulations concern animal rights groups, and several have called into question the defensibility of the states' monitoring techniques. This memorandum discusses current monitoring techniques employed by Montana and Idaho, and outlines recommended changes in light of reduced funding.

Background: On May 5, 2011 the Service published a final rule that implemented Section 1713 of Public Law 112-10, reinstating our April 2, 2009 delisting rule which identified the NRM population of gray wolf as a DPS and, with the exception of Wyoming, removed gray wolves in the DPS from the List of Endangered and Threatened Wildlife (76 FR 25590). At least 5 years (May 5, 2011 – May 5, 2016) of post-delisting monitoring is required under the ESA for any species delisted due to recovery. This timeframe started on May 5, 2011 and will continue through May 5, 2016.

The Post-Delisting Monitoring section of the 2009 delisting rule (pp.15184-15186) serves as our post-delisting monitoring plan. In short, this section explains our partners intend to continue the monitoring process that has been in place since 1979. Specifically, the rule says "The status of the NRM wolf population will be estimated by estimating the numbers of packs, breeding pairs, and total numbers of wolves in mid-winter by State and by recovery area throughout the post-delisting monitoring period (Service et al. 2009, Table 4, Figure 1). By evaluating the techniques used and the results of those wolf monitoring efforts, the Service can decide whether further action, including relisting is warranted."

The Post-Delisting Monitoring section lays out three scenarios that could lead the Service to initiate a status review, including: (1) if the wolf population falls below the minimum NRM wolf population recovery level of 10 breeding pairs of wolves and 100 wolves in either Montana or Idaho at the end of the year; (2) if the wolf population segment in Montana or Idaho falls below 15 breeding pairs or 150 wolves at the end of the year in any one of those States for 3

consecutive years; or (3) if a change in State law or management objectives would significantly increase the threat to the wolf population.

Current Monitoring Methods – Montana: Montana wolf packs are monitored year round. Common wolf monitoring techniques include direct observational counts, howling and track surveys, use of trail cameras, and public wolf reports. Montana Fish Wildlife and Parks (MFWP) seeks to document pack size and breeding pair status of known packs, to verify wolf activity in new areas that can result in new packs forming, to document dispersal to the extent possible and assess connectivity, to determine pack territories, and to identify potentially affected private landowners.

MFWP conducts ground tracking and aerial telemetry 1-2 times per month to locate collared animals, determine localized use throughout the year, and to document the number of wolves traveling together. Den sites and rendezvous sites are visited to document reproduction. Additional information is collected, such as identification of private lands used by wolves, identification of public land grazing allotments where conflicts could occur, and common travel patterns. Monthly or semimonthly telemetry flights throughout summer and fall keep track of wolf numbers and status. At the end of the year, MFWP compiles information gathered through field surveys, telemetry, and public reporting to estimate the number of wolves in each pack, lone dispersing animals, and successful breeding pairs (an adult male and a female wolf that have produced at least 2 pups that survived until December 31). Montana is committed to managing for at least 15 breeding pairs and 150 wolves as an absolute minimum wolf population to maintain the delisted status of wolves.

The total number of packs is determined by counting the number of packs with 2 or more individual animals that existed on the Montana landscape on December 31. If a pack was removed because of livestock conflicts or otherwise did not exist at the end of the calendar year (e.g. disease, natural/illegal mortality or dispersal), it is not included in the year-end total or displayed on the Montana wolf pack distribution map for that calendar year.

The statewide minimum wolf population is estimated by adding up the number of observed wolves in verified packs + known lone animals as of December 31 each year. This is a minimum count, not a population estimate, and has been reported as such since wolves first began re-colonizing northwest Montana in the mid-1980s. Suspected wolf packs are those that could not be verified with confidence. They are not included in the final minimum estimated count. Suspected packs may or may not persist.

MFWP wolf monitoring data, while not a precise accounting of the number of wolves in Montana, are used to make decisions to address wolf-livestock conflicts, to set wolf hunting and trapping regulations, and to set harvest quotas. These minimum data are also adequate to demonstrate maintenance of a recovered population, such that relisting is not warranted.

MFWP employs 6 full time wolf biologists. Radio collaring continues to be a top priority and focus of Montana's wolf monitoring efforts. At the end of 2010, Montana monitored approximately 39 wolves in 30 packs. At the end of 2011, Montana monitored approximately 53 collared wolves in 43 packs. During the entirety of 2011 there were a total of 74 collared wolves in 58 packs that were monitored at some point during the year. The Service is confident that wolves in Montana far exceeded recovery goals at end of 2011, and monitoring methods adequately documented this.

Current Monitoring Methodology – Idaho: IDFG and the Nez Perce Tribe (NPT) follow the monitoring technique established by the Service and outlined in the 2009 delisting rule (pp. 15185). The technique, as paraphrased, is to use wolf observation reports from agencies and the public to locate areas of suspected wolf activity and verify wolf presence. Field crews may decide to capture and radio-collar wolves. Radio-collared wolves are then relocated from the air one or more times per month dependent on a host of factors including funding, personnel, aircraft availability, weather, and other priorities. “At the end of the year, we compile agency-confirmed wolf observations to estimate the number and location of adult wolves and pups that were likely alive on December 31 of that year.” IDFG and the NPT estimate wolf numbers, distribution, and breeding success by radio collaring selected packs from representative areas across the state, as has been done in the Northern Rocky Mountains. Packs are captured through foothold trapping in summer or helicopter darting in winter, and monitored one or more times per month via aerial telemetry. In addition, in recent years Idaho places 20 or more GPS collars on wolves each year; these collars record locations and mortality status several times per day. Pack size and movements are monitored throughout the summer and fall via telemetry. Potential dens and rendezvous sites are identified through telemetry flights (2+ locations in the same area) during summer months (May – September) or ground telemetry and ground searches. Once identified, biologists investigate on the ground to confirm reproduction and count pups. In winter (December – January), IDFG and the NPT increase flight frequencies to twice monthly to obtain pack counts and document breeding pairs. If four or more wolves are counted and reproduction was confirmed in summer, the pack is confirmed as a successful breeding pair unless additional information suggests otherwise (typically documented mortality that reduced known surviving pups to <2). To estimate state-wide minimum population numbers, the minimum number of wolves detected in documented packs with complete counts is added to an estimate of wolves in documented packs without complete counts, plus the number of wolves documented in wolf groups that do not qualify as a pack, and adjusted for lone wolves.

Mathematically this technique is represented as:

Minimum Wolf Population Estimate = [# Wolves counted in documented packs with complete count (109) + (# Documented packs lacking complete count (85) * median pack size (6.5)) + (# Wolves in other documented wolf groups of size ≥ 2 (2))] * (lone wolf factor* (12.5%))

*Lone wolf factor derived from 9 studies in North America, reported in Mech and Boitani 2003.

The IDFG employs 2 full time wolf biologists. The NPT has one full time wolf biologist and 2 seasonal wolf biologists. In 2011, 33 wolves were radio collared (11 trapped, 22 helicopter darted). At the end of 2011, 45 radio collared wolves and 30 radio collared packs were monitored. Twenty-nine radio collared Idaho wolves (27 active, 2 inactive collars) died during 2011 (3 illegal, 6 harvest, 4 control, 3 natural, 3 other human, and 10 unknown). An additional 14 collars were lost in the harvest from Jan 1 – April 15, 2012. At least one of the collars was known to be non-functioning at the time of mortality. The Service is confident that wolves in Idaho far exceeded recovery goals at end of 2011, and monitoring methods adequately documented this.

Future Challenges: In May 2011, the Service recommended a glide path to reduce wolf funding over the 5-year post-delisting period. FY 2012 funding for wolf management in Montana and Idaho was reduced by 25%, and similar reductions are anticipated for future years. Furthermore, maintaining high numbers of radio collared wolves on the landscape is becoming more difficult due to additional harvest mortality. Service reporting requirements exist throughout the 5-year period and given the high levels of public scrutiny we are now experiencing, it is extremely important to ensure wolf monitoring techniques in Montana and Idaho are defensible.

Our 2009 delisting rule addressed future funding. In this rule we said: “ If wolf management by a State or Federal agency was inadequately funded to carry out the basic commitments of an approved State plan, then the promised management threats by the State and the required monitoring of wolf populations might not be addressed. That scenario could trigger a status review for possible relisting under the Act.”

Future Monitoring: The Service requires States to verify a minimum of 15 successful breeding pairs and 150 wolves at end of year. We are working with States to ensure that accurate counts are obtained given financial and logistical challenges. Recommended solutions include:

- Targeted field effort to allow more intensive monitoring of fewer packs. Focus collaring and monitoring efforts on packs that have a low probability of mortality and a high probability of reproducing. More intensive monitoring of packs will ensure accurate end of year counts.
- Employ less expensive monitoring techniques. Researchers at the University of Montana and the University of Idaho developed several promising monitoring techniques (genetic analyses, patch occupancy modeling) that are less expensive than traditional radio-collar methods. Scat surveys conducted at rendezvous sites can confirm reproduction and identify minimum pack counts (through genotyping of individuals). Patch Occupancy models use hunter surveys and other data to predict minimum numbers of packs and potentially, minimum numbers of wolves at a state-wide scale. States can use these techniques concurrently with radio collars to validate methods, and then switch

over to these new techniques completely when federal funding is further reduced. However, cost analysis and feasibility of these newer techniques are on-going. How to fully implement patch occupancy models or genetic analyses while still conducting the current and accepted valid technique with a reducing budget will be a decision for the States and Tribes.

In the 2009 delisting rule, we said: “By evaluating the techniques used and the results of those wolf monitoring efforts, the Service can decide whether further action, including relisting is warranted. In addition, the States and Tribes are investigating other, perhaps more accurate and less expensive ways to help estimate and describe wolf pack distribution and abundance.”

These new peer reviewed methods are accurate and cost effective, and can be employed to meet Post-Delisting monitoring requirements. The Service fully supports MFWP and IDFG employing them to help estimate wolf status in future years.