



## United States Department of the Interior

**U.S. GEOLOGICAL SURVEY  
National Wildlife Health Center  
6006 Schroeder Road  
Madison, Wisconsin 53711-6223**

IN REPLY REFER TO:

May 4, 2007

Ed Bangs  
Western Gray Wolf Recovery Coordinator  
U.S. Fish and Wildlife Service  
Ecological Services  
Montana Field Office  
585 Shepard Way  
Helena, Montana 59601

Dear Mr. Bangs:

Thank you for the opportunity to review the U.S. Fish and Wildlife Service's proposal to designate the northern Rocky Mountain population of the gray wolf as a distinct population segment and remove it from the list of Endangered and Threatened Species. I have reviewed the proposal and pertinent supporting documents and will confine my comments below to the area of my professional expertise in wildlife disease, pathology, and causes of death.

The proposal provides a thorough and accurate review of disease and mortality factors and an accurate assessment of risks from these factors. Pertinent literature is included or cited as the basis for review articles that were used in the analysis. The conclusions regarding disease risks are sound, reasonable, and valid, based on evidence from the scientific literature as well as experience in the northern Rocky Mountain (NRM) and other wolf populations.

Fatal diseases of potential significance to the NRM wolf population (canine distemper, canine parvovirus, sarcoptic mange) existed in the western Great Lakes (WGL) distinct population segment of gray wolves during that population's growth. There is evidence that exposure to those diseases also has occurred in the NRM wolves during their population growth. Therefore experience indicates that these diseases alone will not threaten the population overall. Rabies is no greater threat in the NRM range than in the WGL and, although it may affect a pack, would not be expected to spread throughout the NRM population. Some of the infections or parasites discussed in the proposal have been associated with little or no apparent illness in wolves (Lyme disease, *Trichodectes canis*, brucellosis). Note that some diseases are less likely to occur in the NRM region than in the ranges of other gray wolf populations (Lyme disease, blastomycosis, canine heartworm, bovine tuberculosis).

Serologic evidence of a high frequency of exposure to canine distemper virus and canine parvovirus in the NRM wolf population (as cited in the proposal and in the USFWS Rocky

Mountain Wolf Recovery 2006 Interagency Annual Report) is a positive sign for wolf recovery. Wolves with antibody titers to those diseases apparently have survived the infection and those antibodies have the same effect as vaccination; that is, they protect against subsequent infection of the positive wolves, and also protect a positive female's pups in the first few weeks of life. A high frequency of positive antibody titers in a population suggests that the virus was circulating in the recent past. An epizootiologic cycle would be expected with these contagious viruses, in which disease occurrence (followed by high prevalence of positive antibody titers) would wax and wane in the population, and outbreaks would occur periodically (usually after the prevalence of those protective antibodies had declined in the population resulting in many individuals being unprotected). In fact, this pattern appears to be occurring based on the evidence of poor pup recruitment in two years (1999, 2005) when disease was suspected in portions of the NRM wolf population. Similar outbreaks can be expected in the future. It will be important to manage other mortality factors (particularly human-related) so that the population retains the capacity to recover from these temporary set-backs.

New diseases may emerge and their effects on the NRM gray wolf population are uncertain. In the recent past, mosquito-borne West Nile virus (WNV) became widespread in the U.S. WNV cases in humans peaked in Wyoming and Montana in 2003 and in Idaho in 2006. However the risk to wolves appears to be low. Illness in pet dogs generally did not accompany WNV spread through the U.S. in recent years, and no infections or deaths were recorded in WGL gray wolves since WNV incursion there in 2001. Two captive wolf pups were reported to have died from WNV fever (Lichtensteiger et al. 2003; Lanthier et al. 2004), so young wolves may be at greater risk. Chronic wasting disease of cervids (CWD) is a transmissible spongiform encephalopathy caused by infectious proteins (prions), similar to the disease scrapie in domestic sheep and bovine spongiform encephalopathy (BSE). CWD has been spreading slowly in deer and elk populations in Colorado and southern Wyoming, as well as a few other U.S. locations, and may extend into NRM gray wolf range in the future. There is no evidence that CWD or other prions can directly affect canids, therefore negative impacts on gray wolves are not expected. However, this disease is under active investigation and much remains unknown.

It will be critical that post-delisting monitoring programs are designed to detect new, emerging diseases or mortality factors, as well as detrimental trends in known mortality factors. Key tools for early detection are necropsy programs to determine causes of deaths of dead wolves, and health monitoring of live wolves. Such programs currently being carried out by Montana and Idaho (Mark Drew, Idaho Fish and Game Department, personal communication; USFWS 2007) should be continued, particularly in conjunction with radiotelemetric population monitoring. In Wisconsin, proportionate causes of death substantially differed between radio-marked (with mortality sensors) and opportunistically-collected gray wolf carcasses (Thomas, USGS-National Wildlife Health Center, unpublished data). Because many diseases have greater impact on young animals, disease investigations focused around pup recruitment may be most revealing.

I commend the Service on a well-documented proposal and concur with the assessment that disease and mortality risks are not likely to threaten the population if human mortality is managed by the responsible agencies to maintain recovery goals. Thank you again for the opportunity to comment.

Sincerely,

/s/ Nancy J. Thomas

Nancy J. Thomas, DVM, MS, DACVP  
Endangered Species Specialist

Literature cited:

- Lanthier, I., M. Hébert, D. Tremblay, J. Hare, A.D. Dallaire, C. Girard. 2004. Natural West Nile Virus Infection in a Captive Juvenile Arctic Wolf (*Canis lupus*). *Journal of Veterinary Diagnostic Investigation* 16:326-329.
- Lichtensteiger, C.A., K. Heinz-Taheny, T.S. Osborne, R.J. Novak, B.A. Lewis, M.L. Firth. 2003. West Nile Virus encephalitis and Myocarditis in Wolf and Dog. *Emerging Infectious Diseases* [serial online: [www.cdc.gov/ncidod/EID/vol9no10/02-0617.htm](http://www.cdc.gov/ncidod/EID/vol9no10/02-0617.htm)] 9(10), October 2003.
- Thomas, N.J., G.S. McLaughlin, A.P. Wydeven, R.A. Cole, V. Shearn-Bochsler. 2006. Causes of Mortality in the Wisconsin Gray Wolf Population 1979-2003. Presented at the Annual Meeting of the Wildlife Disease Association, August 6-10, 2006, Storrs, CT.
- U.S. Fish and Wildlife Service. 2007. Montana Gray Wolf Conservation and Management 2006 Annual Report, In Rocky Mountain Wolf Recovery 2006 Interagency Annual Report [Online at <http://westerngraywolf.fws.gov>], pp. 14-22.