

At this time, this lack of information prevents us from determining whether wolverines in the contiguous United States constitute a "distinct population segment" (DPS), which would make them eligible to be listed under the Act. Our Distinct Vertebrate Population Policy published in 1996 (61 FR 4722) specifies that we are to use two elements to assess whether a population segment under consideration for listing may be recognized as a DPS—(1) The population segment's discreteness from the remainder of the taxon to which it belongs; and (2) the significance of the population segment to the taxon to which it belongs. A taxon is the taxonomic group of animals to which the population belongs—in this case the subspecies *G. g. luscus*.

Under section 4(a) of the Act, we may list a species, subspecies, or DPS of vertebrate on the basis of any of five factors—(A) Destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; and (E) other man-made or natural factors affecting its continued existence. The petition asserts that wolverines are subject to threats primarily under Factors A, B, and D. The Service used information provided by the petitioners and available in its files to address these factors as follows.

Under Factor A, the petition asserts wolverines have been impacted by the loss of roadless areas due to logging practices. However, Banci (1994) stated that "the impacts of logging and associated activities on wolverines and wolverine habitat can only be surmised." Wolverines are generally associated with remote areas and require large expanses of land as refugia from human activities, especially during denning. Hornocker and Hash (1981) mentioned that wilderness or remote areas, with limited human activity, appear to be necessary for viable wolverine populations; however, they found no difference in wolverine densities between the wilderness and non-wilderness areas of the study, nor were there differences in their movement, habitat use, or behavior. The non-wilderness portion of the study area was mainly used by humans for logging and recreation (Hornocker and Hash 1981). Copeland (1996) also found wolverines in areas that were currently being logged.

The petitioners cite human disturbance of denning habitat, particularly snowmobile activity, as a threat to wolverines. New research indicates wolverines are sensitive to

disturbance when they are denning. In two instances female wolverines moved their kits and abandoned their dens upon encountering researchers; the kits survived the move (Copeland 1996; Magoun and Copeland 1998). Copeland (1996) concluded that protection of natal denning habitat is important to the persistence of wolverine in Idaho. The petitioners provide general information that snowmobile activity is increasing and could expand into regions where wolverines occur, but there is a lack of information to determine the degree to which snowmobile activity may be increasing within wolverine denning habitat or what impact it may be having on wolverine populations.

The petitioners cite landscape fragmentation due to transportation corridors and associated developments as a threat to wolverines. The Service agrees that development is increasing throughout the contiguous United States; however, the level to which landscape fragmentation may be affecting wolverines and their ability to meet their habitat requirements is unknown because little is known about wolverine range and movement. Genetic differentiation among wolverine populations in Idaho, Montana, and Wyoming has been documented, suggesting some level of isolation among these populations possibly as a result of human-caused habitat fragmentation (Cegelski 2002). However, given the lack of understanding of wolverine habitat regarding factors affecting dispersal, all knowledge of possible causes of the genetic differences among these populations is speculative at this time.

Based on the foregoing discussion, we find that the petition does not present substantial information to indicate that habitat impacts threaten the continued existence of the wolverine in the contiguous United States.

Under Factor B, the petitioners cite trapping as a threat to wolverines in the contiguous United States. Over much of the wolverine distribution, trapping has been a primary factor in wolverine mortality (Banci 1994). Trapping is believed to have played a role in an apparent historic decline of wolverine in North America in the late 19th and early 20th centuries (Hash 1987). Today, within the contiguous United States, the only State where wolverine trapping is legal is Montana. Although this trapping season may be detrimental to local wolverine populations, it is not known whether trapping in Montana alone threatens the continued existence of the wolverine population in the contiguous United States. The petitioners also suggest incidental trapping and

poisoning of wolverines as a threat, but provide no supporting information for this assertion.

Under Factor C, the petitioners mention predation by other large predators (e.g., wolves) as a source of wolverine mortality. However, this is a natural event and is not considered a threat to the persistence of wolverines in the contiguous United States. There is no information on diseases that may impact wolverine populations.

Under Factor D, the petition cites a lack of Federal protection as a threat to wolverines because a major part of the wolverine's range falls upon lands managed by the U.S. Forest Service (USFS). The USFS has designated wolverines as a "sensitive species" in Regions 1, 2, 4, and 6, and "proposed sensitive" in Region 5. The Bureau of Land Management has determined wolverine to be "sensitive." Conservation efforts are planned for various Federal lands and the upcoming USFS report will help improve the scant information currently available.

It is not possible at this time to determine whether management actions threaten the continued existence of wolverines in the contiguous United States. The USFS is leading a cooperative effort with other Federal agencies, States, and Tribes to conduct research and studies for the development of a scientifically-based strategy for conserving wolverines (USFS, in litt. 2002). Initial work is focused on summarizing historic observation data in an effort to delineate historic and current range and habitat relationships. Ongoing research and surveys will examine wolverine ecology, population demographics, distribution, and habitat use with an emphasis on broad-scale movements and population connectivity.

Finally, under Factor E, the petitioners generally cite the wolverine's low reproductive rate, sensitivity during denning, and need for large areas of unfragmented range and habitat as factors making the wolverine vulnerable to extinction. These natural life history characteristics distinguish the wolverine from other medium-sized carnivores. However, reports and surveys of wolverine from Idaho, Montana, Wyoming, and Washington suggest some stability. It is important to collect more information on wolverine occurrence, distribution, and habitat requirements in addition to developing management measures to conserve the species.

In summary, we find that there is insufficient information in the petition or in our files on wolverine habitat requirements or range to determine