

distribution, population demographics, and habitat requirements is underway that should provide better information with which to understand the wolverine (Inman *et al.* 2002; J. Squires, Rocky Mountain Research Station, pers. comm. 2003; U.S. Forest Service, in litt. 2002).

The wolverine has a holarctic distribution. The currently accepted taxonomy classifies wolverines worldwide as a single species, *Gulo gulo*. Old and New World wolverines are divided into separate subspecies. Wolverines in the contiguous United States are a part of the New World subspecies, *G. g. luscus* (Kurten and Rausch 1959; Pasitschniak-Arts and Lariviere 1995). We follow this currently accepted taxonomic treatment, although in the past we recognized other taxonomic classifications for wolverine (September 18, 1985; 50 FR 37958).

The wolverine is the largest terrestrial member of the family *Mustelidae*, with adult males weighing 12 to 18 kilograms (kg) (26 to 40 pounds (lb)) and adult females weighing 8 to 12 kg (17 to 26 lb) (Banci 1994). It resembles a small bear with a bushy tail. It has a round, broad head; short, rounded ears; and small eyes. There are five toes on each foot, with curved and semiretractile claws used for digging and climbing (Banci 1994).

Wolverines are opportunistic feeders, consuming a variety of foods depending on availability. They primarily scavenge carrion, but also prey on small animals and birds and eat fruits, berries, and insects (Hornocker and Hash 1981; Wilson 1982; Hash 1987; Banci 1994). Wolverines have an excellent sense of smell, enabling them to find food beneath deep snow (Hornocker and Hash 1981).

Breeding generally occurs from late spring to early fall. Females undergo delayed implantation until the following winter to spring, when active gestation lasts from 30 to 40 days (Rausch and Pearson 1972). Litters are born between February and April, containing one to five kits, with two to three kits being the most common number (Hash 1987). Reproductive dens in Idaho were located in snow-covered boulder talus in subalpine cirque basins (Copeland 1996; Magoun and Copeland 1998).

Wolverines have large spatial requirements; the availability and distribution of food is likely the primary factor in determining wolverine movements and home range (Hornocker and Hash 1981; Banci 1994). Wolverines can travel long distances over rough terrain and deep snow, with adult males generally covering greater distances

than females (Hornocker and Hash 1981; Banci 1994). Home ranges of wolverines are generally extremely large, but vary greatly depending on availability of food, gender, age, and differences in habitat. Home ranges of adult wolverines range from less than 100 square kilometers (km²) to over 900 km² (38.5 square miles (mi²) to 348 mi²) (Banci 1994). Copeland (1996) found that annual home ranges of resident adult females in central Idaho averaged 384 km² (148 mi²), while the annual home ranges of resident adult males averaged 1,522 km² (588 mi²).

In North America, wolverines occur within a wide variety of habitats, primarily boreal forests, tundra, and western mountains throughout Alaska and Canada, with the southern portion of the wolverine range extending into the contiguous United States (Wilson 1982; Hash 1987; Banci 1994; Pasitschniak-Arts and Lariviere 1995). The specific range of the wolverine in the contiguous United States is not well understood, preventing us from accurately delineating the historic or current range using the information available to us at this time. The petitioners state that wolverine were trapped to near or complete extinction throughout its former range in the western states in the early 20th century. However, information from state and Federal wildlife experts suggest the species has reoccupied its western range in recent years.

The current range in the contiguous United States is believed to include Idaho, Montana, Oregon, Washington, Wyoming, and possibly California (Banci 1994). Wolverines have recently been documented in Idaho (Copeland 1996), Montana (Inman *et al.* 2002; B. Giddings, Montana Department of Fish, Wildlife and Parks, pers. comm. 2003; J. Squires, pers. comm. 2003), Washington (Washington Department of Fish and Wildlife, in litt. 1998) and Wyoming (Inman *et al.* 2002). However, we do not know the extent of the historic range. Wolverines reportedly occurred in a number of other States historically, including Colorado, Maine, Michigan, Minnesota, New Hampshire, New York, North Dakota, Utah, and Wisconsin, suggesting a much wider range historically (Wilson 1982; Hash 1987; Pasitschniak-Arts and Lariviere 1995). The petitioners generally stated that wolverines have been extirpated from States in the Great Lakes, High Plains, and Northeast. But, as we found in 1995, the petition provides no information to confirm the reliability of these historic reports. Furthermore, without a better understanding of the habitat requirements of the wolverine,

we cannot ascertain whether habitats in many States were capable of supporting wolverines historically, which would help us determine their historic range.

The wolverine naturally occurs in low densities (Hornocker and Hash 1981; Hash 1987; Banci 1994). Petitioners state that (1) wolverine range and numbers have decreased dramatically since Pre-Columbian times due to human activities and developments, and (2) wolverines currently number fewer than 1,000 animals across the lower 48 states.

However, Hornaker and Hash (1981) asserted stable populations on their study area in Montana, with high dispersal patterns maintaining the stability, rebounding from near extinction in Montana from 1920–1940 (Newby and Wright 1955).

Recent surveys in the west indicate that wolverines appear to be distributed in the montane regions of Idaho, Montana, Washington and Wyoming (Copeland 1996; Washington Department of Wildlife 1998; Inman *et al.* 2002; Giddings pers. comm. 2003; Squires pers. comm. 2003). So, despite scant population and abundance information, there are reports and surveys to suggest that wolverine may not be likely to become threatened in the foreseeable future in the lower 48 states. Wolverines are difficult and expensive to study and are rarely observed, so a lack of sightings does not necessarily mean that wolverines are not present (Banci 1994). There have been few, if any, surveys of wolverines in the contiguous United States that were designed to estimate population size at even a local scale. As a result, it is scientifically unsound to make an estimate of wolverine population size using currently available information, particularly for the entire contiguous United States.

Despite the limitations of available wolverine data, the petitioners provided their own estimation of the size of the wolverine population for the contiguous United States. They arrived at their estimate apparently by creating their own measure of local wolverine densities and extrapolating across what they determined to be the current range of wolverine. Given the lack of data on wolverine population densities even at a local level, using such preliminary information to estimate population size is inappropriate.

Based on what we know about wolverines (*i.e.*, they are found in low densities and have large home ranges), we expect wolverine population sizes to appear low when compared to other species with different population dynamics.