

In Oregon, the fisher apparently has been extirpated from all but two portions of its historical range (Aubry and Lewis in press 2003). The two known extant populations are in the southwestern portion of the State: one in the southern Cascade Range that was established through reintroductions of fishers from British Columbia and Minnesota that occurred between 1961 and 1981, and one in the northern Siskiyou Mountains of southwestern Oregon that is presumed to be an extension of the population in northern California. The two populations appear to be disjunct and genetically isolated from each other (Aubry and Lewis in press 2003). The State has designated the fisher as a protected nongame species, considering it as a "Sensitive Species—Critical Category."

In California, the fisher historically ranged throughout forested lands of the Sierra Nevada from Greenhorn Mountain in northern Kern County northward to the southern Cascades at Mount Shasta, and from the Klamath Mountains and north Coast Range near the Oregon border southward to Lake and Marin Counties (Grinnell *et al.* 1937). By the mid-1920s, the fisher was considered to still occur in much of its historical range in California, but at "markedly reduced" numbers (Grinnell *et al.* 1937). Recent surveys suggest there has been a reduction in the occupied range since the early 1900s, particularly in the central and northern portions of the Sierra Nevada (Zielinski *et al.* 1995). Currently, there are two known populations in California, one in the northwestern part of the State (extending into southwestern Oregon) and the other in the southern Sierra Nevada, separated by approximately 260 miles (mi) (420 km) (Zielinski *et al.* 1995). The extent of this separation is far beyond the species' known maximum dispersal distance. The State considers the fisher to be a "Species of Special Concern."

In the western United States, fisher denning and resting sites are forest stands with complex structural characteristics that are typical of late-successional forests (Powell and Zielinski 1994; Seglund 1995; Dark 1997; Truex *et al.* 1998; Aubry *et al.* 1999; Carroll *et al.* 1999; USDA Forest Service 2000; Zielinski *et al.* in litt. 2002). These characteristics include large trees and snags, coarse down woody-debris and other complex structure near the ground, a high amount of canopy closure and overhead cover, and multiple-layered vegetation. Large tree cavities and snags in areas of dense canopy cover are often used as natal and maternal den sites (Lewis and

Stinson 1998; USDA Forest Service 2000); this may provide kits protection from predators while the mother is hunting (Lewis and Stinson 1998).

Late-successional coniferous or mixed forests are considered to provide the most suitable fisher habitat because they provide abundant potential den sites and preferred prey species (Allen 1987). However, according to Powell (1993), forest type is probably not as important as the vegetative and structural aspects that lead to abundant prey populations and reduce fisher vulnerability to predation. Younger forests in which complex forest floor components such as large logs, snags, and tree cavities are maintained in significant numbers, and which provide a diverse prey base, may be suitable habitat for the fisher (Lewis and Stinson 1998). Powell and Zielinski (1994) concluded that although there has been some indication of fishers being detected in second-growth forests and areas with limited overhead canopy, it was not known whether the use was transient or based on stable (regularly used) home ranges. Based on their work and a review of other information, Powell and Zielinski stated that early- and mid-successional forests are unlikely to provide the same prey resources, rest sites, and den sites as more mature forests. They also suggested that habitat for resting and denning sites may be more limiting for fishers than foraging habitat.

Fishers have been found to be associated with riparian areas (Aubry and Houston 1992). Forested riparian areas often are protected from logging and generally are more productive, thus having the dense canopy closure, large trees, and general structural complexity such as broken top trees, snags, and coarse woody debris, all of which provide important rest site elements (Seglund 1995; Dark 1997).

Fishers avoid areas with little forest cover or significant human disturbance and conversely prefer large areas of contiguous interior forest (Rosenberg and Raphael 1986; Powell 1993; Jones and Garton 1994; Seglund 1995; Dark 1997). At a landscape scale, patches of preferred habitat and the location of open areas with respect to these patches may be crucial to the distribution and abundance of fishers in an area; fishers will probably use patches of preferred habitat that are interconnected by other forest types, whereas they will not likely use patches of habitat that are separated by sufficiently large open areas (Buskirk and Powell 1994). Riparian corridors (Heinemeyer and Jones 1994) and forested saddles between major drainages (Buck *et al.* 1983) may provide important dispersal habitat or

landscape linkages (travel corridors) for the species.

The fisher is a generalized predator with a diverse diet that includes snowshoe hares (*Lepus americanus*), porcupines (*Erithizon dorsatum*), birds, squirrels, mice, shrews, voles, reptiles, insects, deer carrion, vegetation, and fruit (Powell 1993; Martin 1994; Zielinski *et al.* 1999; Zielinski and Duncan in litt. 2002). They usually hunt on the ground and occasionally hunt in trees (Raine 1987; Powell 1993).

Other than the breeding season, fishers are solitary. Their home ranges are large, varying across North America from 3,954 to 30,147 ac (16 to 122 km²) for males and from 988 to 13,096 ac (4 to 53 km²) for females (Powell and Zielinski 1994; Lewis and Stinson 1998).

Fishers have a low annual reproductive capacity. Males may not be effective breeders until they are 2 years old (Powell 1993). Females breed at the end of their first year, but because of delayed embryo implantation, do not produce a litter until their second year. Not all females produce young every year. Litters usually consist of 2 to 3 kits, and are raised entirely by the female. Kits have developed their own home ranges by age 1 (Powell 1993). Although relatively little information exists on dispersal by young, recent evidence suggests that only juvenile males disperse long distances, which would affect the rate at which the fisher may be able to colonize formerly occupied areas within its historical range (Aubry *et al.* in press 2003).

Fishers are estimated to live up to 7 to 10 years of age in the wild (Powell 1993). The most commonly reported mortality factors include predation, incidental trapping (*i.e.*, in traps set for other species), and being struck by vehicles (*e.g.*, Buck *et al.* 1994; Lewis and Zielinski 1996; Lewis and Stinson 1998; Truex *et al.* 1998).

Distinct Population Segment

Under the Act, we must consider for listing any species, subspecies, or, for vertebrates, any distinct population segment of these taxa, if there is sufficient information to indicate that such action may be warranted. To implement the measures prescribed by the Act and its Congressional guidance, we and the National Marine Fisheries Service (National Oceanic and Atmospheric Administration—Fisheries) developed a joint policy that addresses the recognition of DPSs of vertebrate species for potential listing actions (61 FR 4722). The policy specifies that we are to use two elements to assess whether a population