

manmade factors affecting its continued existence.”

The petition presents information and supporting references with regard to threats according to each of the five factors under section 4(a)(1) of the Act, based on numerous publications in scientific journals and documents prepared by federal and State agencies. The petition concludes with a summary statement that the remaining populations of the fisher within its range on the West Coast are at risk due to “a combination of continued habitat destruction caused by logging and development, poaching, predation, small population size and population isolation” and also as a result of current regulations that the petitioners consider to be inadequate.

With respect to factor A, information in the petition and other information in our files focuses on late-successional forests as the principal habitat of the West Coast population of the fisher. In some circumstances, areas other than late-successional forests may contain habitat features used by the fisher, and not all late-successional forests are necessarily fisher habitat (*e.g.*, forests at higher elevations). However, late-successional forests appear to be an appropriate index of suitable habitat. The petition and other information in our files indicates that present and expected future timber harvests, various types of development, and recreational pressure may result in the destruction, modification, or curtailment of the fisher’s habitat and range. Some of these effects, such as timber harvest and various human developments, may be more likely to occur on private land than on the National Forests and other public lands within the range of the fisher, due to differences in management. An estimated 25 percent of the historical range of the fisher in the Sierra Nevada is on non-federal land, and approximately 60 percent of the private land is managed as industrial forest. In recent years these industrial forest lands have accounted for more than 80 percent of the timber volume harvested in the Sierra Nevada, and recent analyses concluded “Old forest conditions on private land [in the Sierra Nevada] may decrease” (USDA Forest Service 2000). In the portion of Washington, Oregon, and northern California covered by the Northwest Forest Plan (NWFP) (concerning management of certain Forest Service and Bureau of Land Management (BLM) lands), approximately 34 percent of the fisher’s range is estimated to be on non-federal land, where timber harvest is expected to continue in various portions of late-successional forest (USDA and

U.S. Department of the Interior (USDI) 1994). Portions of late-successional forests on the National Forests and BLM lands also are subject to timber harvest under the NWFP (USDA and USDI 1994).

Although the effects of recreational activities on wildlife species, including the fisher, are not well understood, such activities can result in displacement of animals from habitat (*i.e.*, indirectly degrading habitat suitability) or have other negative impacts. According to the Final Environmental Impact Statement (FEIS) for the Sierra Nevada Forest Plan Amendment (SNFPA), the human population in the Sierra Nevada is expected to be nearly 2 million by 2040, more than triple the population in 1990, and recreational activities of various types are expected to increase (USDA Forest Service 2000). The human population increase also is expected to result in increased developments of various types, particularly on private lands, and this also may reduce and fragment fisher habitat.

Habitat fragmentation is a concern because, as noted above, fishers avoid crossing open areas. Lack of habitat connectivity may result in significant delay or failure to access and use patches of suitable habitat. Lack of connectivity also may contribute to population isolation. The analysis of the connectivity of old forests in the Sierra Nevada noted that “checkerboard” land ownership patterns in the central Sierra Nevada (where there is considerable intermingling of private land with National Forest System land), coupled with assumptions about reasonably foreseeable timber harvesting on private lands, make the retention of connectivity “problematic” in these areas (USDA Forest Service 2000). The FEIS further stated that: “* * * lack of appropriate habitat elements, including large trees and snags, the lack of connectivity among patches of remaining habitat, the fragmenting effect of major highways, and human disturbance associated with the presence of smaller roads” may account for the lack of increase or expansion of the fisher population in the southern portion of the Sierra Nevada.

The petition cites the risk of crown fires to fisher habitat as one of the natural or anthropogenic factors affecting the continued existence of the West Coast fisher population. Changes in the structure of forests—due to past timber harvest practices, fire suppression, and other activities—have resulted in increased fuel loadings in many forested areas, which in turn have increased the risk of crown or “stand-replacing” fires. The petitioners also

assert, however, that the late-successional, mixed conifer forests where the fisher generally is found are at lower risk of crown fires than other seral-stages and forest types, and that fuels reduction activities could pose risks to the fisher. In particular, they cite the potential for such activities to reduce the large trees and snags used by the fisher for resting and denning.

The analyses for the SNFPA considered the likelihood and potential effects of fires of various intensities in the Sierra Nevada, as well as the potential effects of prescribed fire or mechanical fuels reduction treatments. The FEIS stated there is considerable uncertainty regarding fire effects on large trees, as well as uncertainty regarding the effects of prescribed fire or various mechanical fuels reduction treatments on canopy closure and other components of fisher habitat in the Sierra Nevada (USDA Forest Service 2000). Regarding the remainder of the West Coast range of the fisher (*i.e.*, Washington, Oregon, and northern California), the petition and our files for this 90-day finding contain almost no specific information regarding the risk to the fisher and its habitat posed by potential crown fires, or the potential threats or benefits to fisher habitat that may be associated with various fuels reduction treatments.

With regard to factor B, overutilization for commercial purposes, the trapping of fishers has been prohibited for decades in California, Oregon, and Washington. However, fishers sometimes are incidentally caught in traps legally set for other furbearers (Luque 1983 as cited in Lewis and Stinson 1998; Douglas and Strickland 1987; Lewis and Zielinski 1996), which can result in crippling injury or mortality (Cole and Proulx 1994; Strickland and Douglas 1984 as cited in Lewis and Zielinski 1996). Information is limited regarding the extent to which incidental trapping or poaching may be affecting the fisher, but even low rates of additive mortality from trapping have been predicted to affect fisher population stability (Powell 1979; Lewis and Stinson 1998), and may slow or negate population responses to habitat improvement (Powell and Zielinski 1994).

With regard to factor C, the available information indicates that disease is not a significant threat, while the threat posed by predation is not clear. Healthy adult fishers are not usually subject to predation (Powell and Zielinski 1994), but predation risk may be greater in areas with relatively less canopy cover and forest structure (Buck *et al.* 1994). Truex *et al.* (1998) stated that predation