

Wildfire and Fire Suppression

Our evaluation of the effects of wildfire on fisher habitat included those activities associated with fire suppression that may result in removal of fisher habitat (for example, backburning, fuel breaks, and snag removal). For the wildfire and fire suppression stressor, we found that the naturally occurring fire regimes vary widely across the analysis area, and, therefore, the effects of wildfire are also likely to vary geographically. In general, high-severity fire has the potential to permanently remove suitable fisher habitat, and is very likely to remove habitat for a period of many decades while the forest regrows. Moderate-severity fire may also remove habitat, but likely in smaller patches and for a shorter length of time. Low-severity fire may reduce some elements of fisher habitat temporarily, but in general is unlikely to remove habitat.

Fishers' behavioral and population responses to fires are unknown within the West Coast range, but it seems likely based on fishers outside of the West Coast range and other related species that large fires, particularly those of higher severity and larger scale, could cause shifts in home ranges and movement patterns, lower the fitness of fishers remaining in the burned area (due to increased predation, for example), or create barriers to dispersal. Fire suppression actions and post-fire management have the potential to exacerbate the effects of wildfire on fisher habitat. Overall, we found that the scope and severity for this stressor were the highest for the Sierra Nevada and northern California–southwestern Oregon areas; these are the two areas where the two remaining original native populations of fishers are found. Because there is evidence of increasing fire severity in yellow pine–mixed-conifer forests, which include the majority of fisher habitat in the Sierra Nevada, the estimate of the severity of stressors related to wildfire is likely to be an underestimate. Also, because fisher habitat in the Sierra Nevada occurs in a narrow band running north to south, fires burning at high severity within fisher habitat have the potential to severely disrupt north–south connectivity of habitat within the Sierra Nevada which, if lost, could prevent population expansion. In addition, forests burned at high severity in this region may be replaced by chaparral or grassland, which may represent a permanent loss of fisher habitat. The fire regime in northern California and southwestern Oregon is historically extremely variable, as is the forest composition within this region. In forests with a large hardwood or redwood component, post-fire stump-sprouting may speed the recovery of fisher habitat. However, fisher habitat is highly fragmented in many parts of northern California and southwestern Oregon, and even temporary losses of habitat may impede dispersal and increase fragmentation of the resident fisher population. Throughout most of Oregon and Washington, the scope and severity for this stressor were lower than the Sierra Nevada and northern California–southwestern Oregon areas; however, high-severity fires that remove fisher habitat have the potential to further disrupt habitat connectivity and availability (Service 2014, pp. 57–71).

We consider wildfire and fire suppression to be a threat to fisher habitat now and in the future because the frequency and size of wildfires is increasing; we expect this trend to continue into the future; and based on fishers outside of the West Coast range and other related species, we predict that large fires (particularly those of higher severity and larger scale) will cause shifts in home ranges and movement patterns, lower the fitness of fishers remaining in the burned area, and create barriers to dispersal. We consider fire and fire suppression to be particularly

problematic in the SSN because of the narrow band of habitat that comprises SSN and the small population size. The degree to which fire-related effects impact NCSO is lower than SSN because the NCSO does not exist in a narrow band of habitat but rather covers a larger area. However, fire and fire suppression will likely have a negative effect on NCSO because fire will decrease connectivity in the highly fragmented habitat of NCSO. It is difficult to fully determine the impact at NCSO because the locations and severities of future fires relative to important habitat components are not known at this time. In Washington and areas of Oregon outside of NCSO, the effect of fire in scope and severity is lower than the other areas, and much of this area is considered to be unoccupied. Fire in these areas is likely to have a negative impact on existing fisher populations only if they occur within or in proximity to occupied areas; however, as with NCSO, it is difficult to fully determine the potential impact because the locations and severities of future fires relative to important habitat components are not known at this time.