

**Fisher**

*(Pekania pennanti)*

**State Status:** Endangered, 1998

**Federal Status:** Candidate, 2004

**Recovery Plans:** State, 2006

The fisher is a large, dark brown member of the weasel family, about the size of a large house cat (Figure 1). Fishers generally eat small mammals (mice, voles, shrews, mountain beavers, and squirrels), snowshoe hares, ungulate carrion, birds, and insects. They also occasionally prey on beavers, muskrat, and porcupines.



Figure 1. Fisher released on the Olympic Peninsula (photo by Jessica Hoffman).

The fisher was listed as endangered in Washington in 1998 (Lewis and Stinson 1998), and as a federal candidate species in its west coast range in 2004 (USFWS 2004). Historically, fishers occurred throughout the forested habitats of western Washington, northeastern Washington and the Blue Mountains of southeastern Washington (Lewis et al. 2012). Fishers were extirpated from Washington by the mid-1900s as the result of historical overharvest, incidental capture, predator control campaigns, and loss and fragmentation of mature low and mid-elevation coniferous forests. Despite 70 years of protection, fishers did not recover in Washington. No fishers were detected during extensive carnivore surveys in the 1990s, and the fisher was listed as a state endangered species in Washington. Following the listing, WDFW developed a fisher reintroduction feasibility assessment (Lewis and Hayes 2004), a fisher recovery plan (Hayes and Lewis 2006), and an implementation plan for a fisher reintroduction in Olympic National Park (Lewis 2006). The reestablishment of self-sustaining fisher populations in three recovery areas, (Olympic Peninsula and the North and South Cascades) are essential goals of the fisher recovery plan.

**Olympic fisher reintroduction project.** To restore fishers to Washington, WDFW, Olympic National Park, Conservation Northwest, British Columbia Ministry of the Environment, and other partners, initiated a reintroduction effort to capture and translocate fishers from central British Columbia to Olympic National Park over three years.

A total of 90 fishers (50 females, 40 males) were released at 21 locations in Olympic National Park from 2008 to 2010 (Figure 2).

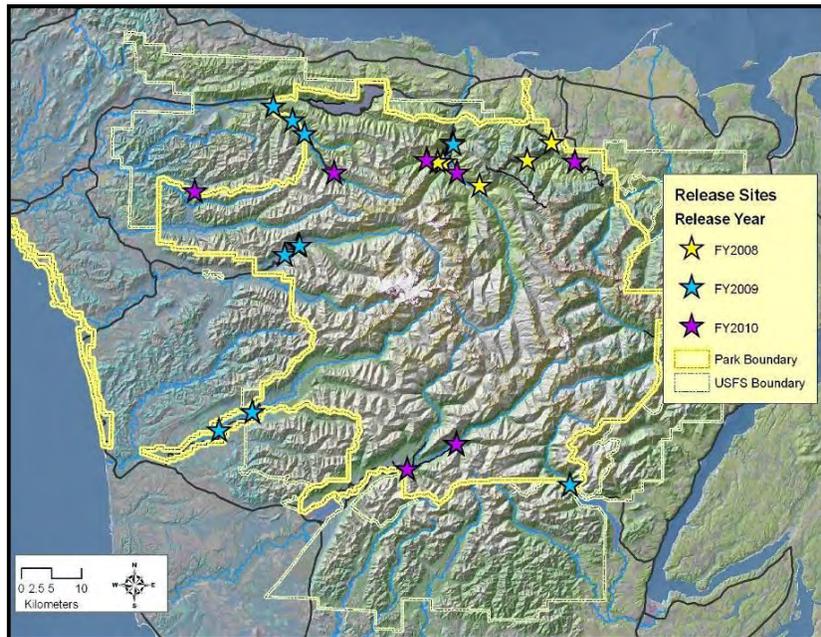


Figure 2. Release locations for fishers (n=90) in Olympic National Park in 2008 (yellow stars), 2009 (blue stars), and 2010 (purple stars).



Figure 3. Automated camera photo of a female moving a kit from its natal den in Olympic National Forest, April 2011.

Each fisher was equipped with a radio-transmitter to allow project biologists to track their movements, assess survival, detect where and when a fisher established a home range, and to determine if females gave birth to kits. Fishers were tracked primarily from the air because of the limited access and rugged nature of Olympic National Park and surrounding area, and the limited power of the radio-transmitters. Ground telemetry and remote cameras were used to confirm that a female was occupying a den and caring for kits (Figure 3). Ground telemetry was also used to recover collars that were transmitting a mortality signal, which indicated that a fisher had died or that its collar had come off.

While monitoring released fishers for four years, biologists located the dens of seven females; litter sizes ranged from 1-4 kits. First year survival varied by release-year cohort; those released in year 1 had the highest survival rates (85-94%) as compared to those released in year 2 (33-65%) and in year 3 (52-78%). Male survival rates were greater than those of females. Of the 35 fishers recovered, 14 (40%) were killed by a predator, seven (20%) were killed by a vehicle strike, 7 (20%) died of unknown causes, 4 (11%) died of an unknown cause but possibly by a predator, 2 (6%) drowned, and 1 (3%) died after it was caught and escaped from a trap. Initial findings from survival analyses indicated that release-year (whether it was released in year 1, 2, or 3), sex, age, and the duration of time spent in captivity prior to release, were factors that influenced the survival of released fishers.

Fishers moved extensively after being released but most fishers established a home range by the end of

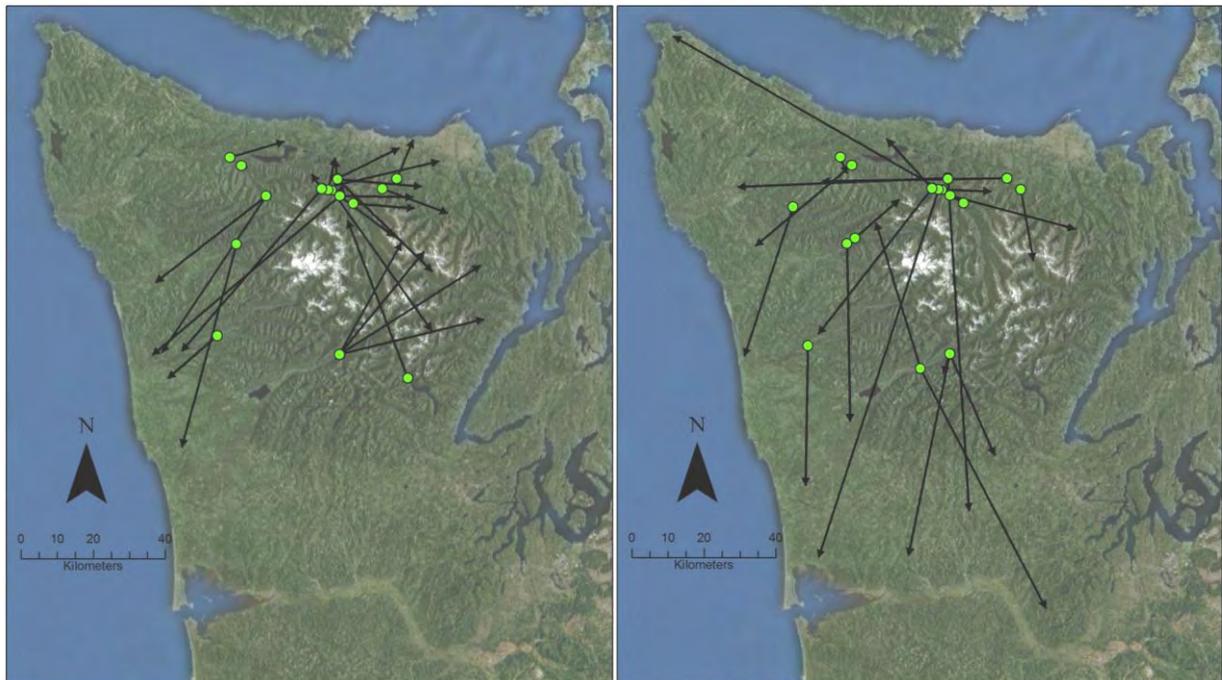


Figure 4. Arrows illustrating straight-line distances from release sites to the center of home ranges of 27 females (left) and 21 males (right) on the Olympic Peninsula, 2008-2011.

their first summer (Figure 4; Lewis et al. 2012). Males moved greater distances from a release site to a home range than females, and females initiated home ranges over a longer period of time compared to males. Fishers established home ranges in a variety of managed (e.g., Washington DNR lands, private timber company lands, tribal lands, Olympic National Forest) and unmanaged landscapes (Olympic National Park, wilderness areas in Olympic National Forest) (Figure 5). Initial findings of home range analyses indicate that fishers released on the Olympic Peninsula used home ranges that were the largest (females; mean:  $63.5 \pm 39.2$ [SE] km<sup>2</sup>) or among the largest (males; mean:  $128.3 \pm 66.9$ [SE] km<sup>2</sup>) reported for the species (Lewis et al 2012).

Monitoring has been successful in tracking the reintroduced population. A photograph of a fisher at remote camera station in the Duckabush River watershed (Figure 6; March 2013), recoveries of 2 individuals killed by cars on State Highway 101 near Port Angeles (April and May 2013), and numerous other unconfirmed sightings indicate that fishers are persisting within the Olympic Recovery Area. The success of the reintroduction project at reestablishing a self-sustaining population will be determined by long-term monitoring to assess fisher occupancy and population growth throughout the Olympic Recovery Area. Continued monitoring through 2015 by Olympic National park and partners, will use hair-snare and camera stations placed throughout the Olympic Peninsula to detect fishers. Detection data collected at these stations will be used to determine the location, size, persistence and genetic characteristics of fisher populations that now occur on the Olympic Peninsula, and will indicate if the reintroduction was successful.

***Cascades fisher reintroduction project.*** Recovery criteria require that fisher populations be established in the Cascade Recovery Area, as well as the Olympic Recovery Area for the fisher to be down-listed from endangered to threatened or sensitive (Hayes and Lewis 2006). WDFW, National Park Service (NPS), and the US Forest Service are now planning for a reintroduction effort in

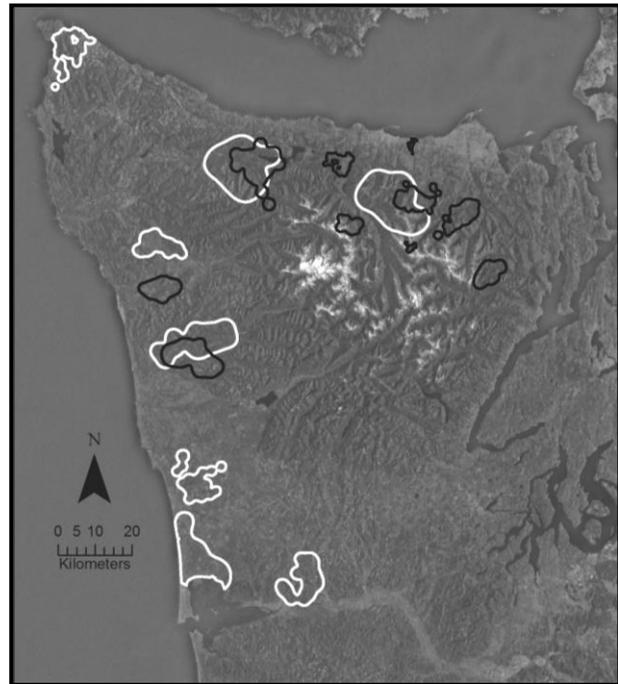


Figure 5. Home ranges (95% fixed-kernel contours) of 8 male (white) and 10 female (black) fishers on the Olympic Peninsula from 2008–2012 (not all home ranges are shown).



Figure 6. Automated camera photo of fisher in the Duckabush River watershed, March 2013.

the Cascade Recovery Area. Information from the Olympic fisher reintroduction is being used to shape the reintroduction process for the Cascades to increase the likelihood of success. WDFW will be working with the NPS in 2013-2014 to conduct a NEPA analysis for the proposed fisher reintroduction in the Cascades and WDFW is developing an implementation plan for the reintroduction. WDFW biologists are also coordinating with the British Columbia Ministry of Environment to continue our cooperative efforts to translocate fishers from central B.C. to the Washington Cascades as well as seeking funding and support to initiate a Cascades reintroduction project in fall 2014.

**Partners and cooperators:** Olympic, North Cascades, and Mt. Rainier National Parks and the National Park Service; U.S. Geological Survey; U.S. Fish and Wildlife Service; Conservation Northwest; U.S. Forest Service; British Columbia Ministry of Environment; British Columbia Trappers Association; Doris Duke Foundation; Makah Tribe, Lower-Elwha Klallam Tribe; Quinault Tribe; Washington Department of Natural Resources; Washington's National Park Fund; Seattle City Light; University of Washington; Wildlife Conservation Society.

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