

In Washington, and elsewhere within the subspecies' range, the principal food is acorns, although the seeds of Douglas-fir and other conifers are also eaten (Dalquest 1948). While pine nuts and acorns are considered essential foods for storing body fat and conditioning western gray squirrels for winter, green vegetation, seeds and nuts of trees and shrubs, fleshy fruits, mushrooms, and other foods are also consumed. Hypogeous fungi (underground fungi such as truffles) comprise a large portion of the western gray squirrel diet (WDW 1993; Carraway and Verts 1994; Ryan and Carey 1995a).

The western gray squirrel is in the northern portion of its range in Washington, where the diversity of mast-producing tree species is less than in Oregon or California. "Mast" includes fruits and nuts used as a food source by wildlife. A decreased diversity of food resources increases the likelihood that concurrent mast failures could seriously affect the survivability of a mast dependent species such as the western gray squirrel population (Ryan and Carey 1995a, b; Linders 2000).

Western gray squirrels require a year-round source of water. On Fort Lewis, western gray squirrels select forested stands within 1,800 ft (550 m) of permanent water (Ryan and Carey 1995b). The majority of nests at one site in Okanogan County, Washington were within 0.6 mile (mi) (1 kilometer (km)) of water, with a maximum distance of 1 mi (1.6 km) (M. Linders, pers. comm. 2003d). Western gray squirrels drink freely from permanent and intermittent water sources, including lakes, marshes, rivers, streams, and puddles (Ryan and Carey 1995a).

Western gray squirrels are active throughout the day, but are most active in the morning. They were observed from dawn to dusk and year round on Fort Lewis; no nocturnal activity has been observed. Western gray squirrels are most active in August and September, when they are collecting and storing food for winter, and they are less visible in June and July (Ryan and Carey 1995a).

Home range sizes can differ with age, sex, location, population density, and from year to year. Home range size increases with social rank and the number of nests used by an individual. Typically, home range sizes for western gray squirrels vary across the subspecies' range from 1.2 ac (0.5 ha) recorded for males in a city park in California, to 16 ac (6.5 ha) in northern Oregon. Recorded home ranges of females vary from 0.3 ac (0.1 ha) in California to 42 ac (17 ha) in Oregon in the summer (Ryan and Carey 1995a).

However, a study on the Klickitat Wildlife Area in Klickitat County, Washington, documented average home range sizes of 180 ac (73 ha) for males and 52 ac (21 ha) for females (Linders 2000). These home range estimates from Klickitat County were significantly larger than in other parts of the subspecies' distribution. However, methods used to determine home range sizes may be a source of variability (Ryan and Carey 1995a).

Western gray squirrels use two types of stick nests: large, round, covered shelter nests are used in winter, and broad platforms are for seasonal or temporary use (Ryan and Carey 1995a). Cavity nests are also used for rearing young and for sleeping at other times (Carraway and Verts 1994). Western gray squirrels frequently use more than one nest, with different individuals often occupying the same nest on successive nights; two squirrels rarely occupy the same nest simultaneously (Linders 2000). Construction and use of multiple nests by individual squirrels, overlap in use, and the fact that nests may remain intact for 3 to 5 years makes it difficult to associate the number of nests with an estimate of the population size. As an example, in Klickitat County, most pregnant and lactating females used cavity nests in oaks and averaged 14.3 nests each, significantly more than the 3.5 nests per squirrel reported for southern Oregon.

Males reach sexual maturity at 1 year and females at 10 to 11 months of age. In western Washington, breeding occurs from January to September, and lactating females have been observed from May to August (Ryan and Carey 1995a; M. Linders, pers. comm. 2003d). Most researchers believe western gray squirrels have only one litter each year, although there is some indirect evidence to indicate two litters may be biologically possible, but uncommon (Ryan and Carey 1995a). Litter counts ranged from one to five, averaging about 2.6 young/litter over a 3-year period (M. Linders, pers. comm. 2003d).

Distribution

Historically, the western gray squirrel's distribution was widespread throughout Washington, Oregon, California, and in western Nevada along the base of the Carson Range and in Washoe County (Dalquest 1948). Currently, the subspecies is rare in Nevada and absent from the Central Valley in California. Western gray squirrels still occur in the interior valley margin of the Cascade Mountains in Oregon and Washington; the foothills of the Coast Range in Oregon; the Sierra Nevada, Tehachapi, Little San

Bernardino, Santa Rosa, and Laguna Mountains in central and southern California; and westward through the Coast Ranges of California (Carraway and Verts 1994). In California, the western gray squirrel is fairly common in the Klamath Mountains of northern California, and the Transverse and Peninsular Ranges of southern California (California Department of Fish and Game (CDFG) 1990). In Oregon, the western gray squirrel distribution extends along the southwestern foothills of the Coast Range northward to Coos Bay, and north along the eastern side of the Coast Range and along both sides of the Cascade Mountains into Washington (Verts and Carraway 1998).

Western gray squirrels in Washington once ranged from southern Puget Sound south to the Columbia River, east along the Columbia River Gorge in the southern Cascades, and north along the eastern slopes of the Cascades to Lake Chelan. Documentation for western gray squirrels includes records for Pierce, Thurston, Grays Harbor, Lewis, Clark, Skamania, Klickitat, Yakima, Kittitas, Chelan, and Okanogan Counties in Washington. There is one record from extreme northeastern Whatcom County, probably associated with western gray squirrels in the northern Cascade Mountains (WDW 1993; WDFW 2002). Currently in Washington, the western gray squirrel distribution has been reduced to three geographically isolated western gray squirrel populations in Washington: the "Puget Trough" population, now centered in Thurston and Pierce Counties in the Puget Sound region; the "South Cascades" population in extreme eastern Skamania County and Klickitat and Yakima Counties; and the "North Cascades" population in Chelan and Okanogan counties (Bayrakçi *et al.* 2001, WDW 1993). The distribution of western gray squirrels in each of these counties is limited.

Status Review

On October 29, 2002, we published a positive initial 90-day administrative finding on the petition to list the Washington population of the western gray squirrel in the **Federal Register** indicating the petitioned action may be warranted (67 FR 65931). At that time, we requested public comments on this initial finding and any additional information, comments, and suggestions from the public, governmental agencies, the scientific community, industry, and any other interested parties concerning the status of the subspecies throughout its range in Washington, Oregon, California, and Nevada. We asked for