

## Oregon

There are no historical or current population data for the western gray squirrel in Oregon, but based on Bailey (1936) and anecdotal information (Marshall *et al.* 1996), the numbers and distribution of western gray squirrels appear to be much reduced. The Natural Heritage Rank for the western gray squirrel in Oregon is S4? (*i.e.*, the subspecies is not rare and apparently secure, but with cause for long-term concern; the “?” indicates the assigned rank is uncertain) (Oregon Natural Heritage Program 2001).

Oregon maintains a list of State threatened and endangered species under the authority of ORS 496.172, the Oregon Endangered Species Act of 1987 (OESA) (Oregon Administrative Rule (OAR) 635–100–100 to 635–100–130), which helps in carrying out the State’s policy of preventing the serious depletion of any indigenous species. Oregon’s Sensitive Species Rule (OAR 635–100–040) requires the Oregon Department of Fish and Wildlife (ODFW) to develop and maintain a State list of sensitive vertebrate species that are likely to become threatened or endangered throughout all or any significant portion of their range in Oregon. This list was created for the purpose of encouraging actions that will prevent further declines in species’ populations and habitats and avoid the need for listing under the OESA. The western gray squirrel is classified by ODFW as a sensitive species of “undetermined status” in Oregon, which indicates the subspecies may be susceptible to population decline of sufficient magnitude that it could qualify for State classification as endangered, threatened, critical, or vulnerable status, but additional research is needed (ODFW 1997; Oregon Natural Heritage Program 2001). The basis for the western gray squirrel’s sensitive species classification in Oregon includes population declines caused by timber harvesting and competition with other tree squirrel species (Marshall *et al.* 1996). Western gray squirrels are legally hunted in Oregon. Hunting restrictions that delay and shorten the hunting season in north-central Oregon, however, help avoid take of lactating females (Marshall *et al.* 1996).

## Washington

The western gray squirrel was once considered one of the most commonly encountered mammals in the Pacific Northwest (Bowles 1921). The western gray squirrel was more widely distributed in prehistoric times,

probably ranging throughout western Washington and the Cascade Mountains in association with oak communities, but has diminished in recent times along with the decrease in distribution of oak woodlands (Rodrick 1987; WDW 1993). One hypothesis suggests that the western gray squirrel migrated northward into Washington with the spread of Oregon (Garry) white oak (*Quercus garryana*) from the Willamette Valley in Oregon. Dalquest (1948) described the western gray squirrel in Washington as being a species “of oak woods rather than coniferous forest” with its geographic range largely regulated by the distribution of oaks, especially Oregon white oak. The range of this subspecies in Washington, formerly widespread in the oak-conifer forests, is now less widely distributed and limited to small scattered populations that follow the range of Oregon white oak (Ryan and Carey 1995a; WDFW 1995).

In Washington, western gray squirrels once ranged from southern Puget Sound south to the Columbia River, east along the Columbia River Gorge in the southern Cascade Mountains, and north along the east side of the Cascade Mountains to Lake Chelan (Booth 1947; Larrison 1970). During the last century, the western gray squirrel distribution in Washington 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 (WDW 1993). The National Heritage Status Rank for the western gray squirrel in Washington is S2 (imperiled) (NatureServe Explorer 2002).

There have been relatively few studies of western gray squirrels in Washington. Early literature was largely observational and anecdotal (Bowles 1920, 1921; Scheffer 1923; Couch 1926; Dalquest 1948; Larrison 1970). Recent studies to determine western gray squirrel densities, biology, and ecology have not been consistent in objectives, effort, or techniques, and have not been directed at determining the status and trends of the subspecies in all areas of the State.

A regional assessment of the conservation status for potential western gray squirrel habitat in Washington determined that there are approximately 1.8 million ac (719,035 ha) of potential western gray squirrel habitat in the state (M. Linders, pers. comm. 2003d). In the

Puget Trough, there are 1,797 ac (727 ha) of occupied habitat remaining (David Brittell, WDFW, *in litt.* 2003). The estimate of “occupied” habitat was based on western gray squirrels and nest locations buffered by a 183-ac (74-ha) circle, the average home range size for male squirrels in Klickitat County (D. Brittell, *in litt.* 2003). A 1996 model was developed to direct survey efforts in Klickitat County, where 62,189 ac (25,167 ha) were identified as occupied. However, application of the buffering method, developed in a later study, to the 1996 potential habitat model indicated there may be only 56,607 ac (22,908 ha) that are occupied in Klickitat County. In Chelan and Okanogan Counties, 3,094 ac (1,252 ha) were identified as occupied (Cassidy *et al.* 1997; D. Brittell, *in litt.* 2003).

**Puget Trough Population.** Bowles (1920, 1921) stated that western gray squirrels were in the Puget Trough as early as 1896, although “by no means common” at that time, probably because of adverse environmental conditions and lack of legal protection. He suggested that western gray squirrels had always been in Pierce County in low numbers, traveling up from Oregon over time and becoming permanent residents if food and other natural conditions were satisfactory. Bowles reported that following legal protection about 1910, there was an “immense increase” in numbers of western gray squirrels. By 1921, there was significant damage to trees caused by western gray squirrels stripping bark for food in the Pierce County area. Squirrel hunting was reinstated in 1926 and continued until 1943, except for a localized hunt in Thurston and Pierce Counties in 1949 and 1950. The western gray squirrel became a State protected species in 1954. Although records show that western gray squirrels still occurred in the Puget Trough in the 1970s and 1980s, they had become increasingly rare and were found only in isolated relict populations restricted to a few locations in the state (Rodrick 1987, WDW 1993, WDFW 2002).

Current population estimates of the western gray squirrel in the Puget Trough area are limited. In southern Thurston County, the last western gray squirrel was seen in the late 1970s (WDFW 2002). Surveys during 1985 and 1986 detected western gray squirrels on just 4 of 26 sites (15 percent), and these were confined to the Fort Lewis area (Rodrick 1987). In Statewide surveys of 40-ac (16-ha) survey blocks from 1994 to 2000 by WDFW, western gray squirrels or nest locations were found in 9 of 100 (9 percent) survey blocks in the Puget Trough. In February 1996, no