Townsend's Ground Squirrel

(*Urocitellus townsendii townsendii*; formerly, *Spermophilus townsendii townsendii*)

State Status: Candidate, 2003
Federal Status: Species of concern
Recovery Plans: None

Figure 1. Townsend's ground squirrel (*photo by Mike Livingston*).

Townsend's ground squirrels (Figure 1) inhabit shrub-steppe, native grasslands, pastures, orchards, vineyards, highway margins, vacant city lots, and the banks of canals. They are found only in Washington in the Columbia Basin west of the Columbia River in Klickitat, Benton, Yakima, and Kittitas counties, with one additional colony known in Pasco, Franklin County (Figure 2). Two subspecies are recognized, with *U. t. townsendii* found south and west of the Yakima River, and *U. t. nancyae* restricted to areas north and east of the Yakima River (Yensen 2001, Yensen and Sherman 2003). The subspecies differ in the number of chromosomes (*U. t. townsendii* has 36 vs. 38 for *U. t. nancyae*; Nadler 1968).

Animals are only active for 4-5 months, spending most of the year hibernating in underground burrows (Scheffer 1941). The active season begins from late January to late February and extends until late May to late June. Squirrels must gain sufficient fat deposits by early summer to survive hibernation. The species occurs in concentrated colonies and presumably as scattered individuals distributed across the landscape. The diet is largely green vegetation, with Sandberg's bluegrass (*Poa secunda*), western tansymustard (*Descurainia pinnata*), lupine (*Lupinus laxiflorus*) and woollypod milkvetch (*Astragalus purshii*) occurring most frequently in the diet (Johnson 1977, Rogers and Gano 1980).

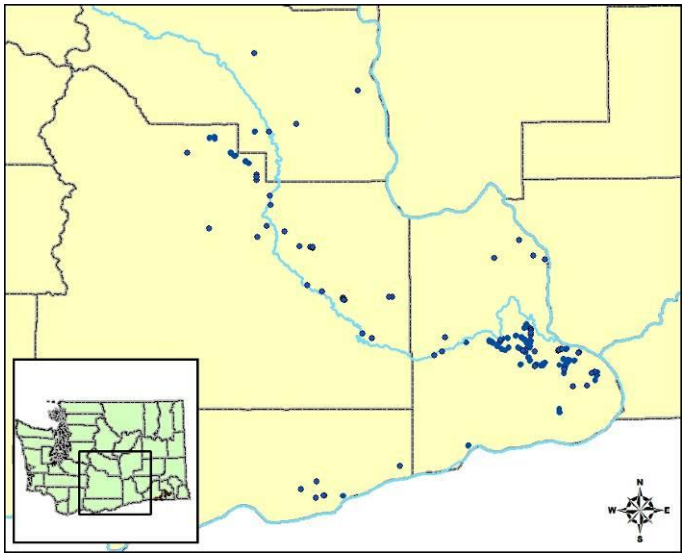

Figure 2. Distribution of Townsend's ground squirrel records.

Townsend's ground squirrels fulfill several important ecological functions, including affecting soil structure and fertility through their burrowing, providing burrow habitats for other wildlife, and serving as prey for numerous predators (Yensen and Sherman 2003). They are prey for the state threatened ferruginous hawk (*Buteo regalis*) (Richardson et al. 2001), as well as snakes, ravens, prairie falcons, weasels, and others (Yensen 2001). Historically, they were also important prey for badgers (*Taxidea taxus*) (Scheffer 1941).

No comprehensive population surveys of Townsend's ground squirrels have been conducted. However, overall abundance appears to have undergone significant decline, especially in the subspecies *U. t. townsendii* (Yensen and Sherman 2001). Most of this subspecies' geographic range has been converted to agriculture, and much of the remaining shrub-steppe is being degraded by cheatgrass and other exotic

annuals. Studies of closely related species in Idaho found a strong negative relationship with cheatgrass because it is not a reliable year-to-year food source (Yensen et al. 1992). Recent urban development and agricultural expansion have destroyed significant areas of suitable habitat for this species and continue to be a threat. Similarly, control programs involving poisoning and shooting, which were widely practiced in the past, remain a concern for some locations where farmers and fruit growers consider the squirrel a pest. Many colonies isolated by agricultural conversion and urban expansion may eventually die out. Disease and drought are other threats.

Research and monitoring. Little research and few conservation actions aimed specifically at Townsend's ground squirrels have been undertaken. WDFW maintains a database of known sites for the species, which is updated as new reports are received.

Land acquisitions. A WDFW land acquisition east of Ellensburg in 2006 and 2007 permanently protected about 17,500 acres of shrub-steppe, including some habitat for Townsend's ground squirrels. WDFW is also in the process of acquiring 14,000 acres on Rattlesnake Mountain in Benton County, where Townsend's ground squirrels and a considerable amount of suitable habitat are present.

Landscape management. The Washington Wildlife Habitat Connectivity Working Group is addressing the conservation and restoration of habitat connectivity for numerous focal species, including Townsend's ground squirrels. A statewide connectivity analysis was completed in 2010 (WHCWG 2010) and a regional analysis for the Columbia Basin is currently being conducted and should be completed by 2012. The latter analysis is modeling habitat concentration areas and movement corridors for Townsend's ground squirrels.

The Arid Lands Initiative is a group of governmental (WDFW, WDNR, BLM) and non-governmental organizations (TNC) formed in 2010 to engage landowners with the goal of conserving shrub-steppe across multiple jurisdictions. Townsend's ground squirrels have been identified as one of the focal species for which conservation strategies will be developed and implemented.

Partners and Cooperators: U.S. Fish and Wildlife Service, The Nature Conservancy, Washington Department of Natural Resources.

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