

The South Okanagan Valley: A National Treasure at Risk

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Key words: *Artemisia tridentata*, antelope-brush, bunchgrass, Okanagan, ponderosa pine, *Purshia tridentata*, sagebrush.

EXPANDED ABSTRACT

The South Okanagan Valley is one of the 4 most endangered ecosystems in Canada. Its chain of large lakes moderates winter temperatures, allowing species typical of the Columbia Basin and Great Basin to extend north into Canada. The proximity of valley-bottom wetlands to arid benchlands, and the presence of montane forests that quickly merge with subalpine and eventually alpine zones, produce a mosaic of very different habitats. As a result, the Okanagan has a unique flora and fauna from a national perspective, as well as a tremendously diverse biota.

The unique characteristics of this ecosystem are centred on the low-elevation grasslands and dry forests, which are also the habitats most threatened by agricultural and urban developments. The Canadian ranges of 8 vertebrate species are restricted to the Okanagan Valley, and a further 6 species are restricted to the valley in their British Columbian ranges. Of the total Canadian breeding bird fauna, almost half (187 species) is known to nest in the South Okanagan, and the valley's 15 species of bats represent the highest bat species diversity in the country as well. The level of breeding bird diversity in the South Okanagan is matched in very few places in North America. Invertebrate diversity is far higher, of course, and 69 species have their Canadian or British Columbian ranges restricted to the South Okanagan. Seven of these species were described from the South Okanagan and have been found nowhere else in the world.

The dry grasslands and open pine forests of the Okanagan serve as a vital landscape corridor between the shrub-steppe habitats of the Columbia Basin in Washington and Oregon and the grasslands of the Thompson and Nicola valleys to the north and west. The low-elevation Bunchgrass biogeoclimatic zone makes up <33% of the study area, but 81% of the agricultural and urban development has taken place there. Less than 40% of the grasslands and shrub-steppe habitats of the Bunchgrass zone remain intact, and only 9%

are in a truly natural state.

The shrub-grassland ecosystems of the South Okanagan can be divided into 3 types that differ floristically and in terms of the fauna they support: antelope-brush (*Purshia tridentata*), sagebrush, and bunchgrass. The antelope-brush ecosystem is mostly restricted to low elevations on the east side of the valley south of Penticton, usually on sandy or gravelly soils. It is the most endangered of the 3 ecosystems. Most of the present threats come from the rapidly expanding wine industry, which uses antelope-brush as an indicator species for high-quality vineyard land. Antelope-brush habitats are used by a number of Red-listed species, including the lark sparrow (*Chondestes grammacus*) and the pigmy short-horned lizard (*Phrynosoma douglasi*), which is probably extirpated from the area.

Sagebrush ecosystems are more widespread, both in the Okanagan and southern British Columbia as a whole. Nevertheless, the Canadian range of the sage thrasher (*Oreoscoptes montanus*), listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), is restricted to big sagebrush (*Artemisia tridentata*) ecosystems in the South Okanagan, as is the Blue-listed Brewer's sparrow (*Spizella breweri*). Merriam's shrew (*Sorex merriami*) is known from Canada from only 1 sagebrush site near Kilpoola Lake west of Osoyoos (Dave Huggard, University of British Columbia, 1999, pers. comm). The Canadian range of Lyall's mariposa lily (*Calochortus lyallii*) is restricted to a few spots near Kilpoola Lake as well. Pure bunchgrass habitats are not so common in the South Okanagan. The Red-listed grasshopper sparrow (*Ammodramus saxannarum*) is found in these habitats in both the South and North Okanagan.

The ponderosa pine (*Pinus ponderosa*) forests of the South Okanagan also harbour a number of species of interest. These open woodlands are the habitat of white-headed woodpeckers (*Picoides albolarvatus*), which are restricted to the South Okanagan in Canada and listed as Threatened by COSEWIC. Large pines in open grassland habitats are favoured as nest and perch sites for the Blue-listed Lewis's woodpecker (*Melanerpes lewis*).

Lewis's woodpeckers are also found in riparian ecosystems, another of the important habitat types in the South Okanagan. Riparian thickets in the valley bottom provide habitat for yellow-breasted chats (*Icteria virens*); the British Columbia chat population likely consists of <20 pairs and it is listed as Threatened by COSEWIC. Wet meadows at the north end of Osoyoos Lake are one of the most important breeding sites in British Columbia of the Blue-listed bobolink (*Dolichoryx oryzivorus*). More than half of the Canadian population of the Great Basin spadefoot toad (*Spea intermontana*), listed as Vulnerable by COSEWIC, is found in the South Okanagan, particularly in the Osoyoos Lake area.

The rugged rock cliffs and talus slopes that typify the South Okanagan also have an impressive list of species of concern associated with them. The night snake (*Hypsiglena torquata*) is found in Canada only in the Okanagan south of Penticton, as is the canyon wren (*Catherpes mexicanus*).

With the human population of the South Okanagan projected to increase to 112,000 by 2021, from its present level of about 70,000, and with increasing pressures from agricultural developments, the area has been a focus of conservation efforts for the past decade and more. Very few areas have any form of protection. The Canadian Wildlife Service

manages the Vaseux-Bighorn National Wildlife Area around Vaseux Lake; Okanagan Mountain Provincial Park protects some rugged habitat at the northern end of the area; and the Nature Trust of British Columbia has purchased a number of properties, particularly in the Vaseux Lake area. The Okanagan-Shuswap Land and Resource Management Plan process, which is now nearing completion, may recommend the establishment of further protected areas on Crown land in the South Okanagan.

Most critical habitats, about 61% of the total, are in private hands or on Indian Reserves, so perhaps the most important process now underway is the South Okanagan Similkameen Stewardship program. This program provides information on the special nature of local habitats and management recommendations for landowners. Programs such as this need to be expanded and given ongoing funding if an effective ecosystem recovery process is to succeed. The South Okanagan Ecosystem Recovery team, formed under the auspices of the federal RENEW program for the recovery of endangered species, is providing scientific and technical support for this planning process, but a truly local initiative is needed as well. The Okanagan Similkameen Conservation Alliance, formed to take over from the South Okanagan Conservation Strategy, is attempting to fill this need.