

SPECIES ACCOUNT

Species Data

Common Name:	MacFarlane's Western Screech-Owl
Scientific Name:	<i>Otus kennicottii macfarlanei</i>
Species Code:	B-WSOW
BC Status:	Red-listed
Identified Wildlife Status:	Version 2
COSEWIC Status:	Endangered

Project Data

Project Name:	Bella Vista / Goose Range Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Area:	North Okanagan
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Basin (NOB)
BGC Units:	IDFxh1
Map Scale:	1:20 000

Distribution

Provincial Range

The *macfarlanei* subspecies of Western Screech-Owl is resident in the southern interior from Adams Lake and Shuswap Lake south through the Okanagan valley (Campbell *et al.* 1990). Interior Western Screech-Owls have been documented from the Okanagan and Similkameen Valleys, the Thompson and Nicola drainages, and from isolated localities near Cranbrook, Grand Forks, Creston and Nelson (Hobbs 2002), but breeding sites are known only from the Okanagan valley (Campbell *et al.* 1990). Nests have been reported from White Lake, Osoyoos and Kelowna (Cannings *et al.* 1987). It probably breeds, at least irregularly, in the Thompson Valley between Chase and Spences Bridge, and in the West Kootenays near Castlegar and Creston (Cannings 2002).

Elevation Range

Western Screech-Owls tend to be found below 600 metres, and no nests have been found above 540 metres in BC (Campbell *et al.* 1990). In Utah they have been found at elevations up to 1645 metres, and in Wyoming at 2380 metres (Dorn and Dorn 1994).

Distribution in the Project Area

No records exist from the study area, but one occurs from east of Ellison Lake (Hobbs 2002).

Ecology and Habitat Requirements

Screech-owls are resident year-round in BC. Nesting begins in mid-March, and young are generally fledged by late August (Campbell *et al.* 1990). Clutches may contain one to four eggs, with most nests in BC having two or three eggs (Campbell *et al.* 1990).

In British Columbia, Western Screech-Owls prefer deciduous forests, especially along lakeshores and streams (Stevens 1995, Campbell *et al.* 1990). Territories are closely associated with riparian habitats, particularly those dominated by black cottonwood, trembling aspen and water birch (Cannings 1997). Cottonwood and water birch habitats appear to be favored in the dry interior (Hobbs 2002). Although closely associated with riparian habitat, they are occasionally observed in mixed coniferous forests away from riparian areas (Holt and Hillis 1987).

Western Screech-Owls are secondary cavity nesters, and will use nest boxes (Marti and Marks 1987). They generally depend on abandoned cavities left by Northern Flicker or Pileated Woodpecker, and on natural cavities (BC Environment 1996, Cannings 2002). They may also use old magpie nests and cliff cavities (Marti and Marks 1987, Kaufman 1996).

Nests may be in live or dead trees (BC Environment 1996). In BC, nests have been found in black cottonwood, red alder, Douglas-fir, western red cedar, and western hemlock that were greater than 25cm dbh (Campbell *et al.* 1990). In Montana, nest sites included a natural cavity in a black cottonwood, a nest box attached to a black cottonwood, and a Pileated Woodpecker hole in a trembling aspen (Holt and Hillis 1987). Generally interior screech-owls in BC nest in natural cavities in birch or cottonwood, woodpecker holes, or nest boxes (Fraser *et al.* 1999). Nest trees can be any decay stage from 2 - 6 (Cannings 2002).

Nest heights in BC ranged from 1.2 to 12.2 m, with most between 3.0 and 4.6 m (Campbell *et al.* 1990). The only nest found with eggs in the Okanagan was 1.5 m above the ground in a hollow stub of a cottonwood; two other nests with young were found in hollow or dead cottonwoods (Cannings *et al.* 1987).

Screech-owls require cavities for roosting as well. Although they will use coniferous trees, day roosts are usually in deciduous trees (mean height 21.2 m) at an average of 4.6 m high (Kirk 1995). The tree density around roosts tends to be greater than in the surrounding forest (Hayward and Garton 1984).

Although they are reported to prefer open habitats (Campbell *et al.* 1990, Kirk 1995), J. Hobbs (pers.com.) argues that they probably require closed forests for protection from predators such as Great Horned Owls. Barred Owls, large hawks and weasels are likely predators as well.

Home range size can be very small in optimal habitat, but in BC a reasonable estimate would be 2.5 to 10 ha (Cannings and Angell 2001). Western Screech-Owls are tolerant of human presence and will breed near human settlements and even in urban areas (Marti and Marks 1987, Campbell *et al.* 1990).

Western Screech-Owls hunt for prey on or near the ground in mixed deciduous/coniferous forests, usually near a creek or pond. Upland forest habitat is likely also important for foraging (Cannings 2002). They have also been found hunting along edges of open fields (BC Environment 1996). They tend to be generalist feeders with a diet that includes voles, mice, shrews, small birds, reptiles, amphibians, fish, crayfish, insects and earthworms (Cannings 2002, Kaufman 1996, BC Environment 1996), but they eat mostly small mammals and large insects. However, J. Hobbs (pers.com.) suggests that the importance of amphibians in the diet is probably understated.

Reproducing

Security/Thermal Habitat (Nesting)

Interior screech-owls occupy mature to old deciduous and mixed forest. They are closely associated with riparian habitats dominated by cottonwood, water birch or aspen. Tree cavities, often provided by Pileated Woodpecker or Northern Flicker, are required for nesting and roosting. Large diameter (>25 cm dbh) wildlife trees in decay stage 2 to 6 have the potential to provide nest cavities. Sufficient overstory cover should be present to reduce vulnerability to aerial predators.

Ratings

This model employs a 4-class rating scheme because there is insufficient knowledge of habitat requirements to use a 6-class scheme yet there is sufficient knowledge to go beyond a 2-class rating scheme. This complies with the recommended rating scheme in the RIC standards manual (1999).

Provincial Benchmark

Ecosection	Southern Okanogan Basin
Biogeoclimatic Units	BGxh, PPxh
Habitats	low elevation (<600 metres) mature to old riparian forests

Map Themes

Habitat Use	Life Requisite	Season	Rating Code	Ecosystem Attributes
Reproducing	Security/Thermal	Growing season	RE	<ul style="list-style-type: none"> mature riparian and mixed forest

Ratings Assumptions

Reproducing – Security/Thermal (RE)	
Site Series	<ul style="list-style-type: none"> Stands containing cottonwood or birch rated up to High, aspen up to Moderate
Structural Stage	<ul style="list-style-type: none"> Stages 6 and 7 up to High, stage 5 up to Moderate, stage 4 up to Low
Shrub Density	<ul style="list-style-type: none"> No effect on rating
Aspect	<ul style="list-style-type: none"> No effect on rating
Slope	<ul style="list-style-type: none"> No effect on rating

Map Interpretation

Only the reproducing (RE) map theme is rated in the Western Screech-owl model, which includes habitats used for nesting territories during the growing season, although territories are occupied year-round. The highest value method is used to portray habitat ratings on the map, displaying the rating for the highest value unit occurring in the polygon, as suitable habitats tend to be small but crucial.

Screech-owls will forage in nearby open habitats. A 150m buffer is shown around all suitable nesting habitats, in part to highlight these often very small or narrow areas.

Literature Cited

- BC Environment. 1996. Managing identified wildlife guidebook 1.0, Kamloops Forest Region. Ministry of Environment, Lands and Parks and Ministry of Forests. Internal Government Review Draft.
- Campbell, R.W., A.K. Dawe, I. McTaggart-Cowan, J. Cooper, G. Kaiser and M.C. McNall. 1990. Birds of British Columbia: Volume 2, Nonpasserines; Diurnal Birds of Prey through Woodpeckers. Royal British Columbia Museum.
- Cannings, R.J. 2002. Interior Western Screech-Owl, *in* Standards for managing identified wildlife, Version 2. K. Paige ed. Min. of Water, Land and Air Protection. Victoria, BC.
- Cannings, R.J. 1997. A survey of the Western Screech-Owl (*Otus kennicottii macfarlanei*) in the interior of BC. Prepared for Min. of Environment, Lands and Parks.
- Cannings, R.A., R.J. Cannings and S.G. Cannings. 1987. Birds of the Okanagan Valley, British Columbia. Royal British Columbia Museum.
- Dorn, R.D. and J.L. Dorn. 1994. Further data on Screech-Owl distribution and habitat use in Wyoming. *Western Birds*. 25: 35-42.
- Fraser, D.F., W.L. Harper, S.G. Cannings and J.M. Cooper. 1999. Rare birds of British Columbia. Min. of Environment, Lands and Parks, Wildlife Branch and Resources Inventory Branch. Victoria, BC.
- Hayward, G.D. and O. Garton. 1984. Roost habitat selection by three small forest owls. *Wilson Bulletin* 96(4): 692-701.
- Hayward, G.D. and O. Garton. 1988. Resource partitioning among forest owls in the River of No Return Wilderness, Idaho. *Oecologies*. 75: 253-265.
- Hobbs, J. 2002. Confidential folio of Western Screech Owl Sites in the Southern Interior of BC. Habitat Branch, Min. of Water, Land and Air Protection.
- Holt, D.W. and J.M. Hillis. 1987. Current status and habitat associations of forest owls in Western Montana. *Biology and conservation of Northern Forest Owls. Symposium Proceedings*. US Dept. Of Agriculture, Fort Collins, Colorado.
- Kaufman, K. 1996. *Lives of North American Birds*. Houghton Mifflin Company. Boston, New York. 675 pp.
- Kirk, D.A. 1995. Status report on the Western Screech-Owl (*Otus kennicottii*) in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, Ont.
- Marti, C.D. and J.S. Marks. 1987. Medium-sized owls. *Proceedings of the Western Raptor Management Symposium and Workshop. National Wildlife Federation Scientific and Technical Series No. 12*. Boise, Idaho.
- Stevens, V. 1995. Database for wildlife diversity in British Columbia; distribution and habitat use of amphibians, reptiles, birds and mammals in biogeoclimatic zones. *Res. Br., B.C. Min. For., Hab. Protect. Br., B.C. Environment, Victoria, B.C. Work. Paper 05/1995*.
- _____. 1995. Draft. Species notes (Latest revision). Western Screech-Owl (*Otus kennicottii*). BC Environment, Victoria, B.C.

Western Screech-owl Suitability Map

