SPECIES ACCOUNT

Species Data

Common Name:	Western Screech-Owl
Scientific Name:	*Megascops kennicottii macfarlanei* (formerly *Otus kennicottii macfarlanei*)
Species Code:	B-WSOW
BC Status:	Red-listed
Identified Wildlife Status:	V2004
COSEWIC Status:	Endangered

Project Data

Project Name:	Vernon Commonage Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Area:	Central Okanagan
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Basin (NOB)
BGC Units:	IDFxh1
Map Scale:	1:15 000

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). Until recently, breeding sites were known only from the Okanagan valley (Campbell et al. 1990), but breeding has now been confirmed in the middle Shuswap (H. Davis pers. comm.), and one location near Creston in the West Kootenays (Beaucher and Dulisse 2004). It probably breeds, at least irregularly, in the Thompson Valley between Chase and Spences Bridge (Cannings 2004).

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 Vernon Commonage study area, although there are a few from surrounding areas, including Okanagan Landing, Coldstream Creek and Winfield. Numerous observations occur in the Kelowna area (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).

Western Screech-Owls prefer deciduous forests on valley bottoms and low-elevation riparian areas along lakeshores and streams (Campbell et al. 1990, Cannings et al. 2005). 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 generally depend on abandoned cavities left by Northern Flicker or Pileated Woodpecker, and on natural cavities (Cannings 2004). They will use nest boxes (Marti and Marks 1987) and may also use old magpie nests and cliff cavities (Marti and Marks 1987, Kaufman 1996). Nests may be in live or dead trees of large diameter, in any decay stage from 2 - 6 (Luttmerding et al. 1990, Cannings 2004). Generally, interior screech-owls in BC nest in birch or cottonwood (Fraser et al. 1999), but nests have been found in red alder, Douglas-fir, western red cedar, and western hemlock that were greater than 25 cm dbh (Campbell et al. 1990). In Montana, nest sites also included a trembling aspen (Holt and Hillis 1987).

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 commonly roost in coniferous trees, on branches near the bole of the tree (H. Davis pers. comm.). They will use cavities for day roosts as well, 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), they probably require closed forests for protection from predators such as Great Horned Owls and Barred Owls (J. Hobbs pers. comm., H. Davis pers. comm.). Large hawks and weasels are likely predators as well.

Adequate foraging habitat adjacent to nesting and roosting habitat is required as well. 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 2004). They tend to be generalist feeders with a diet that includes voles, mice, shrews, small birds, reptiles, amphibians, fish, crayfish, insects and earthworms (Kaufman 1996, Cannings 2004), but they eat mostly small mammals and large insects. However, J. Hobbs (pers. comm.) suggests that the importance of amphibians in the diet is probably understated.

Nesting territories are typically 2.5 to 10 ha (Cannings 2004), but minimum home range size is 26 ha and can be up to 144 ha (H. Davis pers. comm.). 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).

Reproducing (Security/Thermal Habitat)

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 (Luttmerding et al. 1990) 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	• mature riparian and mixed forest

Ratings Assumptions

Reproducing – Security/Thermal (RE)	
Site Series	• Stands containing cottonwood or birch rated up to High, aspen up to Moderate
Structural Stage	• Stages 6 and 7 up to High, stage 5 up to Moderate, stage 4 up to Low
Shrub Density	• No effect on rating
Aspect	• No effect on rating
Slope	• 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

Beaucher, M.A. and J.A. Dulisse. 2004. First confirmed breeding record for the western screech-owl (*Megascops kennicottii macfarlanei*) in southeastern British Columbia. Northwest Naturalist 85:128-130.

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.A., R.J. Cannings and S.G. Cannings. 1987. Birds of the Okanagan Valley, British Columbia. Royal British Columbia Museum.

Cannings, R.J. 1997. A survey of the Western Screech-Owl (*Otus kennicottii macfarlanei*) in the interior of BC. Prepared for Ministry of Environment, Lands and Parks.

____. 2004. Interior Western Screech-Owl, *in* Identified Wildlife management strategy – accounts and measures for managing Identified Wildlife, Version 2004. Ministry of Water, Land and Air Protection. Victoria, BC.

Cannings, R.J. and the Western Screech Owl (*macfarlanei* subspecies) Recovery Team. 2005. Draft for internal review – National Recovery Strategy for the Western Screech-owl *macfarlanei* subspecies (*Megascops kennicottii macfarlanei*).

COSEWIC. 2002. COSEWIC assessment and update status report on the Western screech-owl *Otus kennicottii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa.

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. Ministry 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.

____. 1988. Resource partitioning among forest owls in the River of No Return Wilderness, Idaho. Oecologia. 75: 253-265.

Hobbs, J. 2002. Confidential folio of Western Screech Owl Sites in the Southern Interior of BC. Habitat Branch, Ministry 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 Department 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, Ontario.

Luttmerding, H.A., D.A. Demarchi, E.C. Lea, D.Z. Meidinger, T. Vold. 1990. Describing Ecosystems in the Field: Second Edition. MOE Manual 11. Ministry of Environment and Ministry of Forests. Victoria, BC.

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.

RIC (Resources Inventory Committee). 1999. British Columbia wildlife habitat rating standards, Version 2.0. Ministry of Environment Lands and Parks, Resource Inventory Branch. Victoria, BC.

Stevens, V. 1995. Database for wildlife diversity in British Columbia; distribution and habitat use of amphibians, reptiles, birds and mammals in biogeoclimatic zones. Resource Branch, Ministry of Forests, and Habitat Protection Branch, BC Environment. Victoria, BC. Working Paper 05/1995.

Personal Communications

Davis, H. 2005. Artemis Wildlife Consulting. Armstrong, BC.

Hobbs, J. 2004. Ministry of Environment. Victoria, BC.

Western Screech-owl Suitability - Vernon Commonage