

## SPECIES ACCOUNT

### Species Data

Common Name:	<b>Western Screech-Owl</b>
Scientific Name:	<i>Megascops kennicottii macfarlanei</i> (formerly <i>Otus kennicottii macfarlanei</i> )
Species Code:	B-WSOW
BC Status:	Red-listed
COSEWIC / SARA Status:	Endangered



### Project Data

Project Name:	Middle Shuswap River Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecoregions:	Northern Okanagan Highland (NOH), Shuswap Highland (SHH)
BGC Units:	IDFmw1, ICHmw2
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 also have been documented 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 (Davis and Weir 2004), 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

Numerous records exist in the study area; they occur along the Shuswap River from the west end of the study area to Cherry Creek, and extend slightly up Ferry Creek (H. Davis pers. comm.).

## 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).

Along the Shuswap River, Screech-owls use a variety of ecosystems and structural stages for different activities, but nest cavities occurred only in large-diameter cottonwood or paper birch in riparian forest, roosting most frequently occurred in large cedars in riparian forest, and hunting commonly occurred in open forest and sparse/non-vegetated areas, often near water (Davis and Weir 2008).

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). Nests may be in live or dead trees of large diameter, in any decay stage from 2 - 6 (Luttmerding et al. 1990, Cannings 2004). Nest heights in BC ranged from 1.2 to 25.5 m, mostly in cottonwoods, but also in water birch, aspen, or paper birch, and they will use nest boxes as well (Cannings et al. 1987, Campbell et al. 1990, Cannings 1997, Cannings and Davis 2007, Davis and Weir 2008).

Screech-owls require thermal cover during hot or cold weather, as well as protection from predators such as Great Horned Owls and Barred Owls (J. Hobbs pers. comm., H. Davis pers. comm.). They commonly roost in coniferous trees, particularly western red-cedar, on branches near the bole of the tree (Davis and Weir 2008). 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, often in open habitats near water (Campbell et al. 1990, Kirk 1995, Davis and Weir 2008). Upland forest habitat is likely also important for foraging, especially in the non-breeding season (Cannings 2004, Davis and Weir 2008). 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.

Cannings (2004) suggests nesting territories in BC are typically 2.5 to 10 ha, but home range sizes along the Shuswap River average about 65 ha with little or no overlap between pairs (Davis and Weir 2008), and can be up to 144 ha (H. Davis pers. comm.). Home ranges tend to be smaller during the breeding season, and larger in the non-breeding season (Davis and Weir 2008). 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, 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	<ul style="list-style-type: none"> <li>mature riparian and mixed forest</li> </ul>

### Ratings Assumptions

Reproducing – Security/Thermal (RE)	
Site Series	<ul style="list-style-type: none"> <li>Stands containing cottonwood or birch rated up to High, aspen up to Moderate</li> </ul>
Structural Stage	<ul style="list-style-type: none"> <li>Stages 6 and 7 up to High, stage 5 up to Moderate, stage 4 up to Low</li> </ul>
Stand Appearance	<ul style="list-style-type: none"> <li>Up to High for Broadleaf; up to Moderate for Mixed (except Structural stage 7); up to Low for Conifer</li> </ul>
Aspect	<ul style="list-style-type: none"> <li>No effect on rating</li> </ul>
Slope	<ul style="list-style-type: none"> <li>No effect on rating</li> </ul>
Other terrain	<ul style="list-style-type: none"> <li>Up to Moderate for active floodplain (lower bench, younger; appear to have fewer large snags than terraces and fans); up to Moderate for gully</li> </ul>

## Map Interpretation

Only the reproducing (RE) map theme is rated in the Western Screech-owl model, which includes habitats used for nesting during the growing season, although territories are occupied year-round. Screech-owls require roosting and foraging habitat in close proximity to nesting habitat, but these are often micro-sites (e.g., a roost provided by concealing feature of a tree or stand of trees), or the habitat relationships are not as clear. Screech-owls will use a substantial component of upland habitat during the non-breeding season, but home ranges do not occur further than 300 m from riparian habitats (Davis and Weir 2006). Therefore, a 300m buffer is shown around all suitable nesting habitat, to portray possible roosting and foraging areas,

The highest value method is used to portray nesting 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.

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## Western Screech-owl Suitability: Middle Shuswap River

