SPECIES ACCOUNT

Species Data

Common Name:	**Western Skink**
Scientific Name:	*Plestiodon skiltonianus* (formerly *Eumeces skiltonianus*)
Species Code:	R-PLSK
BC Status:	Blue
COSEWIC / SARA Status:	Special Concern

Project Data

Project Name:	Mid-Shuswap Sensitive Ecosystems Inventory
Project Type:	Terrestrial Ecosystem Mapping
Ecoprovince:	Southern Interior
Ecoregions:	Thompson-Okanagan Plateau
Ecosections:	Northern Okanagan Highland (NOH), Shuswap Highland (SHH)
BGC Units:	IDFmw1, ICHmw2
Map Scale:	1:20 000

Distribution

Provincial Range

Skinks occur in South-central BC north to Shuswap Lake, east to Kootenay Lake and west to Princeton (Ovaska & Engelstoft 2002, Orchard 1988). One recent sighting and an older listing indicate that the species might also inhabit Vancouver Island, but its persistence there remains unconfirmed (Ovaska & Engelstoft 2002).

Elevation Range

Up to 2100 m (Rutherford and Gregory 2001), with 1080 m the upper elevation limit in B.C. (Ovaska & Engelstoft 2002).

Distribution in the Project Area

Records are known from three locations in the study area, all north of the Shuswap River near Woodward Creek (H. Davis pers. comm.).

Ecology and Habitat Requirements

Western Skinks are partial to open wooded foothills and are usually associated with rocks, under which they take shelter (BC Conservation Data Centre 2011b). Skinks will dig burrows in the soil as well, often under surface rocks.

At occupied sites, skinks often co-occurred with Northern Alligator Lizards (Elgaria coerulia) and Northern Rubber Boas (Charina botae) (Dulisse 2006).

Western Skinks are found in approximately the same locations in spring, summer and fall (Rutherford and Gregory 2001), and seem to have limited dispersal ability (Dulisse 2004), so the same habitat appears to be used year-round, for breeding, foraging and overwintering needs. The conservation of skink habitat is especially important considering the patchiness of suitable sites in many areas, and the species' apparent lack of ability to move between habitats. (Dulisse 2006).

Skinks hibernate in communal dens (hibernacula), and are restricted by the availability of these hibernacula, which occur in talus slopes and deep fissured rock outcrops with southern exposures (BC Conservation Data Centre 2011a).

Eggs are laid in rodent burrows or areas excavated by the female skink under rocks or other cover objects (Rutherford and Gregory 2001, BC Conservation Data Centre 2011b). The Western Skink is oviparous, laying one clutch of 2-6 eggs per season (Nussbaum et al. 1983, Stebbins 1985). Mating takes place in May-June, females lay their eggs in June-July, and the eggs hatch in July-August; the exact timing varies with geographical location (Ovaska & Engelstoft 2002). Like many lizards, the females provide care for the eggs, guarding and warming them until they hatch (BC Conservation Data Centre 2011a), and will stay with the hatchlings unitl they disperse from the nest (BC Conservation Data Centre 2011b). Western Skinks reach sexual maturity at about three years of age, and can live to a maximum age of about 9 years (Ovaska & Engelstoft 2002).

The diet of the Western Skink includes a wide variety of different species of insects, at all stages of the insect life cycle, including crickets, beetles, grasshoppers, caterpillars, moths, and flies, as well as spiders and earthworms (Ovaska & Engelstoft 2002, BC Conservation Data Centre 2011b).

Skinks are vulnerable to mammalian, avian and reptilian predators in addition to many parasites (Ovaska & Engelstoft 2002). According to Dulisse (2004), several observers in rural/residential settings commented that pets (cats and dogs) frequently attack skinks, and some observers with pets perceived a decline in skink observations over time. It is unknown to what extent this predation affects local skink populations but it may have an impact in isolated habitat patches, especially given the relatively low reproductive capacity of the species and the localised nature of its occurrence (Dulisse 2004).

General Living All year (Food and Security/Thermal Habitat)

Western skinks occupy Coniferous Woodland, Grassland, and Sparsely Vegetated ecosystems. Skinks were located primarily in low elevation dry forest and mixed grassland habitat in the Kootenays (Dulisse 2006). Important habitat attributes include south-facing slopes for nesting, herbaceous vegetation cover for foraging and predator avoidance, loose soil for burrow excavation, and an abundance of rocks, woody debris, or shrubs for cover (Ovaska & Engelstoft 2002, Dulisse 2006). According to Dulisse (2004), occupied sites were located on warm aspects, ranging from 140 to 245 degrees azimuth, typically with low crown closure (more solar radiation reaches the substrate at sites with lower crown closure because there is less interception of solar energy).

Western Skinks are also known to use riparian cobble (Gregory & Campbell 1984, Dulisse 2004, M. Sarell pers.comm.), but probably only if it is in close proximity to suitable burrowing habitat with appropriate thermal requirements. Western skinks will also use modified habitat such as road cut banks, railway grades, power line corridors, rock walls, and other anthropogenic environments (Dulisse 2004).

Skinks are prolific burrowers, so loose soil substrate is an important habitat component, and all skink observations in this survey were associated with loose, relatively dry substrate, usually exposed mineral soil or sand and often at the base of a steep bedrock outcropping (Dulisse 2004).

Rarely found in the open, skinks are most often found under rocks, rather than in vegetation or under logs (Rutherford and Gregory 2001). Loose surface rock is generally associated with nearby steep, fractured bedrock features, which also provide thermal stability by absorbing heat during daylight hours and radiated it at night. Deep fissures associated with bedrock also provide hibernacula habitat for wintering skinks (Dulisse 2004).

Dulisse (2004) only found skinks under rocks lying directly on soil; no skinks were found under rocks lying on top of other rocks. Occupied rocks tended to be shallowly embedded in the soil, often with natural or excavated cavities underneath. All locations were in well drained soils, and cover objects with extensive mould growth under them were not used by skinks (Dulisse 2004). Additionally, rocks with thick layers of moss and/or lichen were not used, presumably because this affects the ability of the rock to absorb and reflect solar radiation (Dulisse 2004).

Because vegetation cover is very important for foraging skinks to avoid predation, invasive plants have likely reduced the habitat quality for skinks in many areas, which occurs when native vegetation such as pinegrass (*Calamagrostis rubescens*) is displaced by non-native, less densely growing species such as spotted knapweed and Dalmatian toadflax (Dulisse 2004).

Ratings

This model employs a 4-class rating scheme because there is insufficient knowledge of specific 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 (1999) standards manual.

Provincial Benchmark

Ecosection	Southern Okanogan Basin (SOB)
Biogeoclimatic Zones	BG, PP (also occur in IDF, ICH, ESSF)
Habitats	Talus, and other warm rocky areas with abundant cover.

Map Themes

Habitat Use	Life Requisite	Season	Rating Code	Ecosystem Attributes
Living (includes egg-laying and hibernating)	Food, Security/ Thermal	All year	LIA	• Warm aspect rocky areas, very open woodland, or forest openings, with abundant cover objects (particularly flat rocks not deeply embedded in ground)

Ratings Assumptions

Reproducing – Security/Thermal (RE)	
Site Series	• Units with high solar insolation and abundant security/thermal cover, especially flat, loose rocks, rated up to High • Riparian cobble rated up to Moderate • Cutbanks rated up to Low
Structural Stage	• Prefer nearby shrubs for security cover – structural stage 3 rated up to High; structural stages 6 and 7 rated up to Moderate (High?); structural stage 2 rated up to Moderate (High?).
Aspect	• w (warm and > 25% slope) rated up to High • Ridges up to Moderate • k (cool and >25% slope) rated Nil
Slope	• Flat to moderately sloped ground rated up to Low (? riparian floodplains)
Drainage	• Poorly drained soils rated Nil • Moderately well drained to well drained soils rated up to High
Soil depth	• Less than 10 cm deep rated N
Soil texture	• Loose surface layer, fairly compact subsurface layer, composed of a mixture of small to medium size gravels and fine silts/sands with low organic content rated up to H • High coarse fragment content (cobbles and larger) in surface layers (top 10cm) rated N
Other	• Ecosystem units relatively free of surface vegetation rated up to H • Soils containing root masses rated N • Ecosystem units containing aspen or cottonwood rated N because soil is too moist and high root density
General Living – Food, Security/Thermal (LIA)	
Site Series	• LA, OW, PD, RI (shallow, slow moving only) rated up to H • Absence of water rated N

Map Interpretation

One map theme, general living in all seasons, was modelled for Western Skink. The model uses the highest-value method to display all suitable habitats, even if it only forms a component of a habitat complex. This is due to the fact that the rocky habitats used by this species tend to be small within the study area, and may only form a small component of the polygon.

Potential habitat, as predicted by this model, should be inventoried for the presence of Western Skinks. High suitability habitats should be protected from disturbance, including rock removal from talus slopes.

Predation by cats and dogs may have an impact on local skink populations in isolated habitat patches, especially given the relatively low reproductive capacity of the species and the localised nature of its occurrence (Dulisse 2004). Pets should be kept out of areas of high suitability habitat.

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Personal Communications

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Western Skink Suitability: Middle Shuswap River