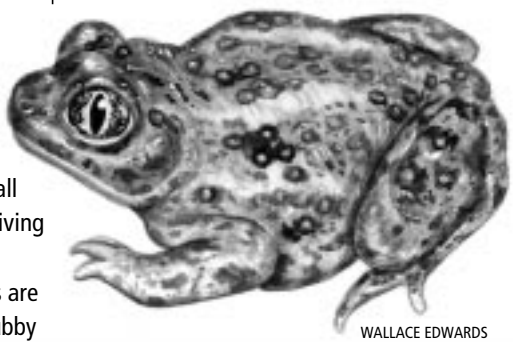
bc frog watch

factsheet

6 Great Basin Spadefoot
Spea intermontana

LENGTH: 4 TO 6.5CM



WALLACE EDWARDS

At a Glance

The Great Basin Spadefoot is a small, rather rotund amphibian, grey or olive green in colour. The eyes are very large, golden yellow, and set on the sides of the head; the pupils are vertical. The tympana ("ears") are small and inconspicuous. They have a bump between the eyes, giving the head a distinctive shape.

Adult spadefoots are 4 to 6.5 centimetres long; males are smaller than females. The limbs are relatively short and stubby and the body rather plump; a Spadefoot sitting still on the ground can give a very convincing impression of a large pebble.

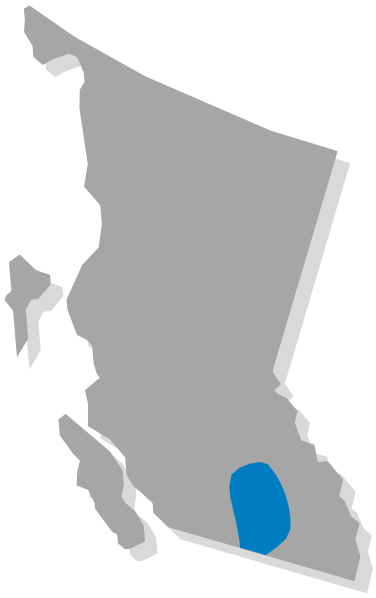
BLUE-LISTED SPECIES ARE CONSIDERED VULNERABLE BECAUSE THEY HAVE CHARACTERISTICS THAT MAKE THEM PARTICULARLY SENSITIVE TO HUMAN ACTIVITIES OR NATURAL EVENTS.

Spadefoots have a bumpy skin but are not quite as "warty" as Western Toads. The bumps, or tubercles, are small and dark brown or reddish in colour; the skin also has other spots and patches of colour that are not raised. There are light-coloured stripes down the sides of the spadefoot's back, and the skin on the tummy is pale.

The most distinctive feature is the source of their name: the small, black "spade" on the first toe of each hind foot. This hardened tissue allows them to dig into loose soil for shelter.

The spade and cat-like vertical pupils set the Great Basin Spadefoot apart from the Western Toad, which has horizontal pupils. Western Toads also have distinct parotoid glands, which appear as large swellings at the back of the jaw.

Male Spadefoots have a call that sounds rather like *"gwaa, gwaa"*, which they use to attract females during the breeding season. Male spadefoots also call in response to each other, forming a chorus of voices that can be heard several hundred metres away.



Present range of the Great Basin Spadefoot in British Columbia

Home Sweet Home

The Great Basin Spadefoot likes drier habitats than most amphibians. Adult spadefoots live in dry grasslands and open woodlands. They need loose soil for burrowing, or access to rodent burrows, to shelter in during the day. They do need ponds for breeding, however, so their habitat is limited by the availability of water.

This is the Life

Spadefoots hibernate in snug burrows, but emerge in early April to breed. Males gather and call at small ponds. The females join the males at the ponds, mate, then lay hundreds of eggs, which they attach to sticks and pebbles underwater. The eggs hatch within a week in cool weather, or as quickly as two days if it is warm, and the tadpoles transform into toadlets six to eight weeks after hatching. Great Basin Spadefoots become mature in their second or third year, and may live up to ten years.

What's on the Menu?

Great Basin Spadefoots feed on insects and small invertebrates. The adult spadefoots forage at night for earthworms and insects, especially ants, beetles, and grasshoppers. They are especially active on rainy or damp nights. The spadefoots are themselves on the menu for Burrowing Owls, herons, crows, snakes and coyotes.

Spadefoot tadpoles are efficient scavengers, munching on algae and aquatic plants as well as the occasional dead fish. Some spadefoot species have carnivorous larval morphs (a genetic variant) that eat brine shrimp and sometimes even their own kind. This behaviour has not been found in Great Basin Spadefoots.

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no kidding!

Great Basin Spadefoots *can lose up to 48 percent of their body moisture without ill effect*

Spadefoots *can estivate (enter a state of torpor during summer dryness) or hibernate (in winter's cold) for seven to eight months of the year*

A frightened ***Great Basin Spadefoot*** *is able to dig itself rapidly into the soil, disappearing from sight in just a few minutes*

Some spadefoot species can gather enough food energy for a year of dormancy in just a few feedings

Where and When

In B.C., Great Basin Spadefoots are found in the dry southern interior. Elsewhere, they are widely distributed in Oregon and Washington, between the Rocky and Coast mountain ranges.

Spadefoots hibernate from October to early April. They remain dormant until warm weather and rain return; during extremely hot and dry weather they retreat again to wait for more comfortable conditions. They are primarily nocturnal even when they are not hibernating, so are rarely seen. Spadefoots may travel long distances between foraging, breeding, and hibernation sites, but little is known about their movement patterns.

How They're Doing

The Great Basin Spadefoot is on the provincial Blue List (species considered vulnerable to human actions) and has been designated Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Their habitat is under great pressure, since human beings also enjoy living in warm dry areas. The dry grassland habitat is one of the rarest habitat types in B.C., making up only six percent of the province's land area. Within the dry grassland, Spadefoots are restricted to those areas with access to breeding ponds. Just three such ponds were found to contain over half the total population of calling males in one survey. Fortunately, two of those ponds are protected.

Current population estimates put the number in the province at about 10,000 adults, but this number is thought to be declining due to the loss of breeding and foraging habitats in the Okanagan Valley.

Fragmentation of the habitat is a serious concern, since breeding and foraging sites must be connected by movement corridors to be useful to the spadefoots. Grazing cattle may compact the soils, making it difficult for the spadefoots to burrow, and have a detrimental effect on water quality in breeding ponds. Perhaps most disturbing of all, intensive human demands on water resources in the Canadian range of the Great Basin Spadefoot have lowered the water table significantly at many sites, thus reducing the number of breeding ponds.

How We're Helping

The Great Basin Spadefoot is protected from being killed, captured or harmed under the British Columbia *Wildlife Act*. Much of their range is privately owned land. Several critical breeding areas, however, are protected: for example, the Haynes Lease Ecological Reserve and the South Okanagan Wildlife Management Area provide some secure habitat for breeding spadefoots at the north end of Osoyoos Lake, and the Nature Trust of British Columbia has acquired several properties with Great Basin Spadefoot habitat in the South Okanagan.

How You Can Help

You can help by learning more about Great Basin Spadefoots and raising awareness about them. Stewardship arrangements for spadefoot habitat are needed. Local land use planning meetings are a good place to get involved. Landowners with spadefoot habitat should be encouraged to fence their ponds and otherwise try to minimise the impact of their livestock on the habitat. You can also help with surveys to learn more about the distribution of the spadefoots and how the populations are doing, by volunteering with BC Frogwatch.

You can find out more about BC Frogwatch, the Wildlife Branch and the Conservation Data Centre at	**http://www.elp.gov.bc.ca/wld**

BRITISH COLUMBIA

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