

Burrowing Animals

MULTISAR focuses on these animals that live in burrows:

Burrowing Owl	- At risk (Endangered)
Swift Fox	- At risk (Endangered)
American Badger	- Sensitive, Keystone Species
Richardson's Ground Squirrel	- Keystone species*

*Richardson's ground squirrel's (RGS) commonly known as gophers, are not a species at risk but are very important for providing burrows for other animals that cannot dig, such as the burrowing owl. It is also an important food source for many animals. Because they are so important to the life cycle of other species they are called a keystone species. American badger's are also a keystone species because they dig burrows that are used by other animals and are an important prey species.

All 3 species at risk live and nest in underground burrows and rely on RGS to some extent. Burrowing owls use abandoned burrows to nest in while swift foxes and American badgers prey on them for food. Swift foxes will also use badger dens or will modify RGS burrows to use for their own. Even snakes and invertebrates use burrows created by RGS and badgers.



Danielle Cross

Swift Fox

Swift foxes were hunted and trapped extensively in the 1800s and early 1900s during the fur trade. After the settlement of the Great Plains and the cultivation of native prairie they also lost most of their habitat and were extirpated from Canada in the early 20th century. This means that some were still surviving in the United States but there were none left in Canada. They have since been reintroduced and are increasing in the wild.



Gordon Court

Burrowing Owl

Burrowing owls have been disappearing from Alberta very quickly since the 1990s likely from the accumulation of changes to their habitat. Their habitat has been reduced dramatically from urban sprawl and cultivation, they are sensitive to pesticides, some of their predators have increased and the number of burrows available to nest in has decreased because of a reduction in burrowing animals.

Species Summaries

Burrowing Owl

- Eat mostly deer mice and meadow voles but also insects and small mammals.
- Predators include skunks, American badgers, coyotes and raptors.
- Rely on burrows excavated by other mammals such as RGS and badgers.
- Ideal habitat is native grasslands with no trees or shrubs and moderate to coarse soil.
- Require short grass near burrows for good visibility and tall grass for foraging.



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Swift Fox

- Omnivorous (voles, RGS, insects, rabbits, berries, grass).
- Declined because of habitat loss, trapping, hunting, vehicle collisions, disease and predation by coyotes and raptors.
- Extirpated from Canada in early 20th century.
- Reintroduced from 1983 to 1997.
- Require short native grasses, flat terrain and sparse vegetation for good visibility and movement.



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American Badger

- Feed mainly on RGS and northern pocket gophers.
- Store RGS carcasses for future meals.
- Predators include bears, wolves, cougars, golden eagles, bald eagles, coyotes and other badgers.
- Declined due to hunting, trapping, poisoning, vehicle collisions and habitat loss and alteration.
- Food sources have become more scarce in some areas.
- Require open native grasslands with moderately coarse or fine soils and little woody cover.



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Richardson's Ground Squirrel

- Not at risk.
- Important food source for badgers, raptors, coyotes and swift foxes.
- Excavate burrows that are used by burrowing owls, snakes, reptiles, insects, mammals and birds.
- Mostly herbivorous but will scavenge on insects or road kill.
- Spend 85% of their life underground.
- Hibernate for 4 to 8 months.
- Up to 50% can be killed by badgers while hibernating.
- Require flat, open dry, upland native grasslands with moderately coarse or medium soils and short vegetation for visibility.



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Beneficial Management Practices

General:

- Maintain native prairie in its natural state.
- Protect active and historical burrowing owl nesting sites.
- Leave a 500m set back distance around known owl burrows and fox dens when spraying chemicals and poisoning rodents and to reduce general human disturbance.
- Avoid killing RGS around active nesting sites. Badgers, swift foxes and raptors naturally control their populations and could be poisoned accidentally. Fewer RGS also means less food for them. Where RGS exceed tolerable numbers allow vegetation to grow longer as this will naturally deter them.
- Remove low yielding land from production and seed back to native grasses or to permanent cover for use as a tame pasture.

For Grazed Land:

- Allow regular grazing within 100m of burrows to keep grass height below 10cm. Once the breeding season is over graze pastures that have active burrows or dens. July to April is the best time to graze.
- Vary stocking rates based on forage production. Increase stocking rates in high production years and decrease them in low production years.
- Create variability in the pasture. A range of grass heights and litter cover is desirable with the shortest grass near burrows.
- Avoid high stocking rates that result in short, uniform grass height throughout a pasture.
- Avoid placing salt blocks and watering sites close to burrows to lessen likelihood of trampling and/or burrow collapse.
- Leave narrow strips of vegetation in tame pastures when swathing to provide foraging areas.
- Maintain healthy streamside (riparian) areas by restricting grazing, especially in wet years.
- Minimize use of cross fencing to reduce perches for predators of burrowing owls.
- Graze seeded pastures heavier than native grasslands.
- Allow grass heights to increase where RGS (gophers) exceed tolerable numbers. RGS prefer not to live in tall grass.
- Use watering sites and/or salt blocks to encourage cattle to loiter where you have designated heavy use areas and to keep them away from nests and dens during nesting season (May - June).

The best decision you can make for all species at risk is to preserve your native grasslands.



Industrial Guidelines

Alberta Sustainable Resource Development, Fish and Wildlife Division created these guidelines for species at risk in Alberta that are effected by industrial development. As a landowner you have the right to ask industrial developers to follow these guidelines when they are on your property. The first step is to ask for a pre-development survey to be conducted to locate nests/dens and plan for set back distances and timing restrictions.

At nesting sites (burrows and dens) these restrictions are recommended:

SPECIES	RESTRICTED ACTIVITY DATES	Setback Distances by Land Use Category		
		NONE (surveying, monitoring)	SHORT-TERM VEGETATION DISTURBANCE (low footprint seismic activities)	HUMAN STRUCTURES CREATED, SOILS DISTURBED OR LONG-TERM VEGETATION DISTURBANCE (wellsite, powerline, pipeline, battery, road)
Burrowing Owl	Apr 1 - Aug 15	200m	500m	500m
	Aug 16 - Oct 15	200m	200m	500m
	Oct 16 - Mar 31	50m	100m	500m
Swift Fox	Feb 15 - Jul 31	500m	500m	500m
	Aug 1 - Feb 14	50m	100m	500m

For more information see the MULTISAR Grazing BMP Factsheet and Industrial Guidelines Factsheet in your binder or online at www.multisar.ca.

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