Why are burrowing owls endangered?

Saskatchewan Interpretive Centre

http://www.skburrowingowl.ca/about-owls/problems-facing-burrowing-owls (11.1)

Burrowing owls are in trouble. Biologists who have monitored their population around Regina, Saskatchewan for more than a decade have recorded a population trend that points straight down; over the past 10 years, we have been losing burrowing owls at a rate of about 22% per year! The same trend is apparent to landowners who voluntarily report their sightings of burrowing owls on their land to Operation Burrowing Owl.

Unfortunately, there doesn't appear to be just one cause for the burrowing owls' decline, and there certainly doesn't look like there is an easy solution to the problem. Several factors likely contribute to varying degrees, and several stages of the burrowing owls' life are probably affected.

We've described a few of the more likely problems below, but this is certainly not a complete list. We've divided the potential problems into three broad categories -- lack of space (habitat loss), low birth rate (low productivity) and high death rate (high mortality).

The information presented here comes from the hard work and dedication of biologists, volunteers, and landowners who are all doing their best to try to help the burrowing owl.

Habitat Loss

As with many endangered species, one of the main problems facing burrowing owls today is the loss of habitat (the land and resources) that they need to survive.

Burrowing owls live in open grassland areas in western North America. In Canada they are currently restricted to the southern areas of Saskatchewan and Alberta. Since the early 1900s, much of the western Canadian prairie has been cultivated for agriculture, especially here in Saskatchewan.

Agricultural crops don't provide the habitat that burrowing owls require, so the owls are restricted to the small fragments of prairie that remain as cattle pastures. In much of southern Saskatchewan, these small cattle pastures are the last remaining refuge for burrowing owls. The horses and cattle are beneficial to the owls, as they keep the grass short by grazing and provide nest-lining material (manure!) for the owls.

In addition to grasslands, burrowing owls also need burrows to nest in. Since they don't dig their own burrows, they must rely on animals like prairie dogs, badgers, and ground squirrels (also known as gophers) to dig holes for them. Unfortunately, these animals are often seen as pests and are killed -- sometimes with poisons that could just as easily kill the owls. If too many of these burrow-providing animals are lost, there will be no place for burrowing owls to live. In the United States, 99% of the prairie dogs have been exterminated. Considering how fundamentally important prairie dogs are to burrowing owls (because of the burrows they provide), it's not difficult to see how that could be extremely detrimental to the owls.

***Did you know . . .***

Ground squirrels (gophers) are not only essential for burrowing owls but for many other prairie residents as well. They are considered "keystone species" because of their importance at many levels of the prairie ecosystem. To learn more about ground squirrels from an expert in Lethbridge, AB, click on the picture to the left.

Low Reproduction

Like any other species, burrowing owls need food to survive and raise their chicks. If not enough food is available to them, they will not be able to raise as many chicks as they would if food was plentiful. Click on the thumbnail below to see the chicks and their pantry of food.

Burrowing owls are a generalist predator, which means that they will hunt and eat almost anything that's small enough for them to catch. Here in Canada, their diet consists mainly of small mammals (mice and voles) and insects (grasshoppers, beetles, etc.). But they've been known to eat everything from birds to snakes to salamanders.

Recently, biologists have found that by providing supplemental food to the owls during the period when the chicks are young, the owls were able to raise a larger family than they would have without receiving the extra food. This suggests that there may not be enough food naturally available in the environment for the owls to be able to maximize their families.

It's always important to look at the big picture. No matter what we do to try to help the owls themselves, we won't be successful unless we consider that they are a part of a larger ecosystem, and that things that affect other members of that ecosystem will affect the owls as well. If there is not enough food for the owls because a prey population is in trouble, burrowing owls will feel the effects.

High Mortality

Although burrowing owls are predators, they are not at the top of the prairie food chain, which means that they are also in danger of becoming prey for other predatory species. Larger owls, hawks, coyotes, foxes, weasels, and badgers all naturally prey on burrowing owls. However, domestic dogs and cats have also been known to make a meal out of unsuspecting burrowing owls.

***Fast Facts . . .***  
Pet cats that are allowed to wander freely outside are responsible for the death of more than a billion birds in North America each year! Cats are not naturally found in the prairie landscape, and they can have a devastating effect on native wildlife, including the burrowing owl. **Please -- keep your cats indoors.** They'll live longer, and you'll be protecting wildlife.

Juvenile burrowing owls are the hardest hit by predators on the breeding grounds. Biologists have discovered that as many as 45% of all juvenile owls that survive long enough to fledge may be killed before they migrate south for the first time. In an average owl family of 4 chicks, that means that only 2 may survive long enough to begin migration.

There are a number of reported causes of mortality for burrowing owls on the breeding grounds. They have been killed and eaten by other predators, they have starved to death because food was in short supply, they have been hit by vehicles on country roads, they have become entangled in barbed-wire fences, and they have been accidentally shot because they resemble gophers.

One issue that is currently being investigated is whether or not pesticides may be causing a problem for burrowing owls. The owls may be coming into contact with the pesticides indirectly, as they eat infected food (like mice, grasshoppers and gophers).

A rather ironic twist to the burrowing owl story is that while they are occasionally killed and eaten by badgers, burrowing owls could not exist in Canada without them. Since prairie dogs (the animals that burrowing owls rely on throughout most of the US) are naturally restricted to only a small area in the southwest corner of Saskatchewan, the main burrow provider for burrowing owls throughout the Canadian prairies is the badger. The badger's main source of food is ground squirrels, and occasionally burrowing owls are just in the wrong burrow at the wrong time!