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Greater Short-horned Lizard

Land of the Lizard

Deciphering the habitat of a cryptic species at risk

Krista Fink has walked every coulee in Grasslands National Park, searching for the cryptic Greater Short-horned Lizard. She has hiked a thousand kilometres under the hot prairie sun, boots crunching on the rugged shale terrain, walking-stick prodding the scrubby junipers in hopes of startling a lizard out of hiding. On a good day, she and her assistant might spot six of the rare creatures in nine hours.

The Greater Short-horned Lizard is a small, plump reptile, typically measuring 5 to 7 cm from nose to tail, with a row of horn-like bumps across the back of its head. Its range extends south to Mexico, but in Canada, the lizard has been discovered only at ten locations in Alberta and Saskatchewan. While its habitat within Grasslands National Park is protected, outside the park, in Alberta, it is threatened by resource development and proliferation of roads.



Greater Short-horned Lizard

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"They look like rocks until they move," said Fink, a master's student at the University of Alberta. *"It's hours of tedium and 15 minutes of excitement."* But the hours of tedium serve a good cause: her work, supported by Parks Canada, will help to establish the critical habitat requirements for this prairie-dwelling species at risk.

Creeping through the coulees

Grasslands is the only national park in Canada that protects the prairie grasslands ecosystem. Covering 571 square kilometers, the park comprises two distinct parcels of land – an east block and a west block – both within the province of Saskatchewan.

The main geographical feature of the west block is the Frenchman River. Formed by the melting of glaciers that once covered the prairies, the Frenchman River now lies at the centre of a broad floodplain. The surrounding coulees once fed glacial water into the river. These coulees, with their rugged slopes covered in shale scree and sparse vegetation, are the preferred habitat of the Greater Short-horned Lizard.

But what specific aspects of the habitat are important to the animal's survival? The answer is necessary to create a recovery strategy and identify critical habitat for this species, listed as endangered under the Species at Risk Act.



Searching for sun and sheltering in the shade



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In Canada, the Greater Short-horned Lizards find themselves at the northernmost edge of their range. The need to thermoregulate is critical to their survival, and the preliminary results from the research done in Grasslands National Park indicate that

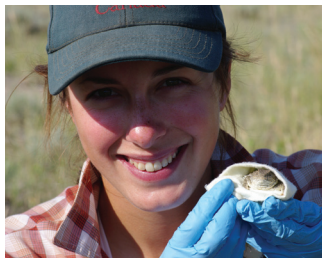
this need influences their choice of habitat. Fink used GPS to precisely locate and record the places where lizards were found, then compared those with the places where lizards were absent. She then used satellite images and a predictive vegetation model created by Parks Canada to compare the vegetation cover at the different sites.

"They seem to favour low amounts of greenness: patches of bare soil with patches of juniper," she said. "Because of their thermal requirements, they don't like a lot of cover."

Fink tested whether the lizards were selecting sites because they had certain thermal and vegetation characteristics that made them different from other nearby sites. Preliminary results indicate that lizards select sites that have certain characteristics such as junipers, rocks, and bare soil. In the spring, lizards select sites that are especially warm in the morning, but are cooler than average in the evening.

During her survey, Fink also used a thermal imaging camera to measure the temperature of the ground surrounding each lizard. Next she will undertake micro-habitat modelling, to build a precise map of temperature differences in ideal lizard habitat.

"Part of the beauty of having these national parks is that we can learn a lot about what species need, and then apply that knowledge outside the park," said Briar Howes, a Parks Canada Critical Habitat Biologist. "This species has its recovery strategy still to come. A lot of the work Krista has done will feed into that."



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Krista Fink



Grasslands National Park of Canada

Living at the limit

Many aspects of the ecology of the Greater Short-horned Lizard are still unknown. For example, it's unclear exactly what determines the northern limit of their range. One thing is certain: Parks Canada and its partners will continue to learn about its habitat requirements so we can manage and protect the species in Grasslands National Park.



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Volunteers

The protection of critical habitat in Grasslands National Park should ensure that a healthy population of Greater Short-horned Lizards remains in Canada, as scientific study of this intriguing reptile continues.

For more information, contact:

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