

Grassland Gazette

WWW.MULTISAR.CA

ISSUE 5 - SUMMER 2011

BADLANDS OF FORTY MILE COULEE: A CONSERVATION SUCCESS FOR CATTLE, WILDLIFE AND A UNIQUE LANDSCAPE

By Kristen Rumbolt

In 2010 the Nature Conservancy of Canada (NCC) acquired a property along Forty Mile Coulee in south eastern Alberta. Because of its expertise, NCC approached MULTISAR to complete a habitat conservation strategy for their new land holding. The goal of the strategy was to inventory the property's diverse plant and wildlife communities and assess the health of the range so that recommendations could be made on how to graze the land to optimize forage production, range sustainability and wildlife habitat quality and how to improve it to benefit the species present.

The property, approximately 640 acres in size adjacent to one quarter section of Public Land and bisected by Forty Mile Coulee, is a unique landscape. On the east side of the coulee, bedrock is exposed, emerging from the ground as badlands along the steep coulee slopes. Native grasses, such as needle and thread and blue grama, occupy the uplands, while shrubs, such as greasewood, can be found eking out an existence along the arid coulee slopes. As a result of a water management project by Ducks Unlimited Canada, the coulee bottom has been dammed, providing a stark contrast between the lush wetland teeming with waterfowl and the seemingly desolate badlands above.

MULTISAR spent several weeks completing wildlife surveys and range inventories on the property. Twenty plant communities (including over 80 different species of plants) and over 60 species of birds, mammals, amphibians and reptiles were identified. The presence of badlands, a unique habitat type, prompted MULTISAR to conduct special surveys for species of wildlife known to be badland inhabitants. These included prairie rattlesnake and short-horned lizard.

Continued on page 2.



Forty Mile Coulee by Kristen Rumbolt

Continued from page 1:

The short-horned lizard is a species that is seldom seen in Alberta. It is listed as Endangered in the province because populations are rare and localized, much like the badland habitat they inhabit. Equipped with hockey sticks (to push back vegetation under which lizards often can be found hiding), surveyors walked the coulee slopes in early August looking for the expertly camouflaged lizards. In total, nine lizards were found on the property, confirming the significance of the property for this species.

A MULTISAR staff member holding a short-horned lizard.



Adam Moltzahn

MULTISAR also surveyed the badlands for evidence of the prairie rattlesnake. Coulee slopes were searched in late September for snake hibernacula (or over-wintering dens) where snakes, often of different species, congregate and spend the winter below the frost line. A wandering garter snake seen slithering in the uplands drew surveyors to investigate an area of the badlands that had experienced considerable slumping, creating a series of large holes in the steep, south facing coulee slope. Upon further investigation, seven prairie rattlesnakes and one bullsnake were found congregating near the holes' entrance, indicating an active hibernaculum. As these structures are typically used year after year by snakes, their protection is critical to maintain the snake population in the area and ensure their continued role in the prairie ecosystem.



Kristen Rumbolt



Kristen Rumbolt

A bullsnake (left) and a prairie rattlesnake (right) at a hibernaculum along forty mile coulee.

Several other species of significance were also found on the property. These included the Sprague's pipit, the long-billed curlew, the chestnut-collared longspur, the loggerhead shrike and the common night hawk, all of which are provincially or nationally listed species at risk.

Taking into consideration the range and wildlife findings on the property, MULTISAR and NCC worked together to develop a management plan. This plan combined knowledge of the needs of at risk species and their habitats together with the ecological status of the plant communities occurring on the property. Based on this knowledge, grazing management and habitat enhancement recommendations were made that promote ecologically sustainable range use and habitat conservation on this unique property. A local rancher is now grazing the property under a lease agreement with NCC, proving that under the right management conditions and by collaborating among conservation partners and ranchers, cattle grazing, range sustainability and habitat protection can all benefit from their coexistence.

ALBERTA'S BADLANDS: SNAKES, LIZARDS, AND A WHOLE LOT MORE

By Darryl Jarina

Looking at the Alberta badlands landscape, one can begin to understand why in fact these unique areas were once and still are considered by some, as a wasteland of rock and exposed soil, more similar to the surface of our moon than any other productive natural area on our planet. However, the undulating terrain, complete with crevices and steep rock walls, the river and coulee system and their associated riparian areas, as well as the arid environment plays a vital role in creating unique habitats for many wildlife species.

Snakes and the elusive short-horned lizard are often the first to come to mind when considering wildlife species of the badlands, but a variety of other rare to more common species also call this unique landscape "home". Rocky outcrops and cliff faces provide excellent nesting and perching sites for raptors. Ferruginous hawks, golden eagles, prairie falcons, and Swainson's hawks, which are all considered species at risk in Alberta, can be found nesting along such slopes. Prey abundance for hawks is often prevalent in and around badlands, including Richardson's ground squirrels, white-tailed jackrabbits, and swallows. Other songbirds such as rock wrens and Say's phoebes thrive in the rock outcrops, while clay-colored sparrows, gray catbirds, spotted towhees and brown thrashers prefer the shrubby patches found in those areas.

The badland landscape is also important for other more charismatic species, including elk, moose, cougar, and bobcats. Many of these species are considered uncommon in the prairie landscape but will use the badlands as travel corridors to and from areas of permanent residence. Aside from these migrants, residents of the badlands like mule and white-tailed deer will utilize this undulating terrain for thermal and escape cover.

Amphibians can be more common than one would expect in Alberta's badlands. Creeks, permanent wetlands, and ephemeral (temporary) wetlands that occur within the badlands are all potential habitats for various species of amphibians. Just last summer, in the heart of the Manyberries badlands, I located a Northern leopard frog and dozens of plains spadefoot tadpoles on the same day, which surprised me to say the least.

Continued on page 4



*Ferruginous hawk
nest on a badlands
cliff*



Darryl Jarina

Continued from page 3

The role of MULTISAR is not only to identify these important habitats and the wildlife that reside there, but it is to also work with the landowners to ensure that they understand how important these areas are. Landowners are provided with information about badlands habitats as well as Beneficial Management Practices (BMP's), which are recommendations on how to manage these sensitive areas for wildlife, without negatively impacting their ranching operations. In most cases, BMP's will result in mutual benefits to cattle and to wildlife.

The badlands offer abundant opportunities for wildlife of all kind and should be considered a place where an observer can expect to see a wide variety of species. Although common inhabitants, snakes and lizards are not alone in this diverse area, as word has obviously got out in the animal kingdom that Alberta's badlands are a great place to call home.



S h o w m e t h e m o n e y !



Shining the spotlight on financial incentives for environmental projects on agricultural land.

Ducks Unlimited Canada

Ducks Unlimited Canada (DUC) offers assistance and incentives to landowners in the grasslands and aspen parkland regions of southern and central Alberta where the presence of wetlands and native lands are part and parcel of your operation. Their field specialists can assess your farm or ranch to determine whether you will qualify for a combination of direct incentives like conservation easements, wetland restoration services, and rangeland services. DUC also offers a series of extension opportunities like on-farm wildlife planning services, forage seed incentives and winter cereals programs and incentives.

Contact:

Scott Henowitch
(403) 394-9492

Julie Pierce
(403) 362-4827

Or check out their website: www.ducks.ca/province/ab/index

Partners in Habitat Development

An initiative developed to work closely with landowners, irrigation districts and municipalities in the cultivated areas of southern Alberta, to create and preserve wildlife habitat. They have a very flexible program aiming to provide landowners with a free project(s) which fits their operation and provides on farm benefits where possible.

Contact: Margo Jarvis Redelback
(403) 362-1413



Weed Watch: Controlling invaders in riparian areas

By Lee Moltzahn

Leafy Spurge (*Euphorbia esula*)

Grazing: Readily consumed by sheep and goats; avoided by other livestock.

Mechanical: Hand pulling or mowing small, young infestations is effective. Wear gloves and wash after handling leafy spurge to avoid skin rashes.

Chemical: A few herbicides have been effective in controlling leafy spurge, but timing is critical. Combining chemical control and seeding/fertilizing to encourage the growth of desirable vegetation has proven to be the best approach.

Biological: Two types of moths and 5 flea-beetle species are used.

Areas prone to invasion: Disturbed riparian areas but tolerates a wide range of conditions.

Interesting facts: Dead plants appear to inhibit the growth of other plants. All parts of the plant contain a milky sap that can poison livestock and humans. Sheep and goats are resistant to the toxin.



Francois Blouin

Common Burdock (*Arctium minus*)

Grazing: Unpalatable.

Mechanical: Mowing/cutting can eliminate seed production and should be done after the plant has bolted (advanced from the seedling to the juvenile stage), but before flowering.

Chemical: Several herbicides have proven effective on common burdock - there are limitations for infestations in riparian areas though. Grazon, 2, 4-D, MCPA (Amine, Ester, Na-salt) and Remedy/Garlon 4 have all been approved for use.

Biological: None yet but research is being conducted on 13 possible insects.

Areas prone to invasion: Disturbed areas. Moist, fertile soils are preferred.

Interesting Fact: Common burdock's prickly seed heads were the inspiration for the invention of "Velcro" by George de Mestral in 1940s.



MULTISAR

Blueweed (*Echium vulgare*)

Grazing: Unpalatable; contains alkaloids which are toxic to livestock.

Mechanical: Mowing will prevent seed production and deplete root reserves. However; mowing must be repeated to be effective as it encourages re-sprouting. Hand-pulling can be effective in loose soil, but is virtually impossible in packed soils. Wear gloves and long sleeves as the plant causes itching and rashes.

Chemical: Picloram and 2, 4-D has proven effective on blueweed.

Areas prone to invasion: Thrives on gravelly/sandy stream banks with high sun exposure.

Interesting Fact: A single plant is capable of producing 2,800 seeds, which can remain viable for several years.



D Gordon Robertson

Contact your local Agricultural Fieldman for more information about weeds in your area.

MULTISAR FOCAL SPECIES: BADLAND REPTILES

Prairie Rattlesnake *May be at risk - data deficient (AB), Not listed (CAN)*

Description: Diamond-shaped, broad head with vertical, cat-like pupils. Yellow-green to tan body with dark spots down sides and back. A rattle at the end of their tail vibrates when alarmed to warn enemies. Length ranges from 80-140cm. Elongated hollow fangs deliver venom to prey. Can detect warm-blooded prey through heat-sensing organs on their head.

Status: Limited data available to establish long term trends. Highly variable numbers between hibernaculum sites with some stable, some increasing and some decreasing.

Habitat: Dry native grassland and shrubland areas in or near badlands, coulees and river valleys. Rock outcrops or steep slopes with fissures, holes or burrows in the side suitable for a hibernaculum. Southeastern Alberta is the northernmost extent of their range in North America.

Threats: Intentional persecution and hibernaculum destruction has been a problem but public perception seems to be improving. Roads and pipeline construction cause rattlesnakes to be run over or buried. Agricultural intensification has reduced the availability of foraging habitat. Cultivation of native grasslands for crop production, rodent control and increased grazing pressure can all impact the quality of foraging habitat.



Short-horned Lizard *At risk - endangered (AB), Special concern (CAN)*

Description: Very small (5-7cm long). Brown to beige with short horns on back.

Status: Limited data available. Population appears to have decreased over the past 20 years. Some populations are stable and some are decreasing. Total Alberta population estimated between 5,000 - 35,000.

Habitat: Sparsely vegetated south facing slopes at interface of prairie and coulees. Exposed soil surface to dig shallow burrows for over wintering. Sparsely distributed in extreme corner of southeastern Alberta.

Threats: Climate is a natural limiting factor. Industrial development, urbanization and agricultural activities are potential threats.



BENEFICIAL MANAGEMENT PRACTICES FOR BADLAND SPECIES:

- Maintain existing shrub communities. Shrubs are used for foraging and shelter from heat.
- Avoid disturbing south, southeast and east facing slopes that have short, sparse vegetative cover. Restrict livestock access if needed.
- Protect known hibernacula from all types of disturbance and report these sites to MULTISAR.
- If possible, avoid grazing near known hibernacula in spring and fall as snakes will bask near them at these times.
- Road construction should not occur within 500m of river valleys in known snake ranges.
- Tolerate Richardson's ground squirrels (gophers) and American badgers if they are not causing excessive damage. They are an important food source for snakes and dig burrows that all reptiles may use for refuge. Poison is especially harmful as it can kill reptiles accidentally.

See www.multisar.ca/industrial.php for recommended setback distances and timing restrictions for prairie rattlesnakes and short-horned lizards.



Contact Us:
Francois Blouin, Program Coordinator - 403-381-5318 or Francois.Blouin@gov.ab.ca

www.multisar.ca