

PRAIRIE ACRES

NEWS FOR ALBERTA'S LAND STEWARDS



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OFF-SITE WATERING: A WIN-WIN MANAGEMENT PRACTICE FOR RANCHERS AND BURROWING OWLS

Operation Grassland Community (OGC) is one of the first programs to promote the use of off-site watering to improve burrowing owl foraging habitat while bringing direct benefits to ranchers.

The burrowing owl remains an endangered species in Canada. While the cause of its population decline is still not well understood, researchers do know that increasing the amount of prey available to breeding burrowing owls has a direct impact on their success at raising a larger number of young to flying age. And the more young that can survive to that age, the greater the number of owls returning the following year, increasing the prospect of building up the population again.

This is where the off-site watering systems may prove to benefit the population of this little owl. "By improving the vegetative growth around wetlands, we are improving habitat for the burrowing owl's favorite food - mice and voles" reports Francois Blouin, Manager of Operation Grassland Community. "The owls are known to prefer hunting in these areas of lush vegetation, so by increasing the

quality and quantity of this type of habitat, we hope to increase the quality and quantity of the owl's food".

In the Sunnynook area south of Hanna, OGC is working with one of its ranching members to set up an off-site watering system near a burrowing owl nest. As this is the first time that such an experiment has been conducted, OGC will carefully monitor both the populations of mice and voles and the nesting success of the owls nearby to determine if such an approach is worth applying on a larger scale.

At the same time, these solar-powered off-site watering systems provide cattle with cleaner water, reducing the algae, bacteria, viruses, and parasites associated with direct watering. These systems ultimately contribute to healthier cattle and better weight gain; a win-win management practice that benefits ranchers and burrowing owls.

BURROWING OWL CENSUS: PRELIMINARY RESULTS FOR 2005

For over 14 years members of Operation Grassland Community have participated in an annual survey of their land for burrowing owls. This continued important and generous contribution from our membership has allowed us to monitor change in population numbers of this endangered species.

Preliminary results are in for the 2005 Burrowing Census, and owl numbers appear to be remaining relatively stable, as counts for this past year are very close to 2004 results (in 2004, there were an estimated 53 pairs on members' land) - both 2004 and 2005 results are not an insignificant increase over the 31.4 pairs in 2003, and the 23.8 pairs reported in 2002!!

Why the apparent increase? Two major contributions: 1.) It is thought that some of this increase may be due to better than average food availability for the owls in recent years, and 2.) Due to OGC's partnership with the Canadian Wildlife Service (starting in 2004, and continuing this past summer), *search effort* has increased significantly. With more people actively looking for owls, there may have been more pairs spotted than there would have been without this intensive search effort.

Regardless, what does all this mean for the owls? We will need to continue monitoring the owls to determine whether the apparent increase in the recent years represents an actual upward trend or simply a natural fluctuation in the population. Importantly, we will need to remain cautious as we have a long way to go to return to numbers we saw as recently as 14 years ago: *In the early 90's, a whopping 242 pairs were counted by OGC members.*

Many many thanks to those OGC members who participated in the census!!



THANKS TO OUR PARTNERS 2005-2006

FINANCIAL SUPPORTERS

- Government of Canada, Habitat Stewardship Program for Species at Risk
- Alberta Conservation Association
- Alberta Sport, Recreation, Parks and Wildlife Foundation
- Endangered Species Recovery Fund
- Alberta Fish and Game Association

IN-KIND CONTRIBUTORS

- OGC Members
- Alberta Fish and Game Association
- Science Alberta Foundation
- Medicine Hat Interpretive Centre
- National Burrowing Owl Recovery Team Members
- Alberta Agriculture Food and Rural Development
- Alberta Environment
- Canadian Wildlife Service
- Nature Conservancy of Canada

IDENTITY CRISIS: WHAT'S A MOLE AND WHO'S A GOPHER?

By Lindsay Tomy

In Alberta we do not have any true moles. How can that be, you ask? Well, when European settlers arrived, they thought the dirt mounds they saw were those made by moles, because they were similar to those seen in Eastern Europe. The culprit however in our province, is the Northern Pocket Gopher. This species is essentially "nature's rototiller", and spends most of its time tunnelling underground.

Moles belong to a family of small burrowing insectivores found in Europe, Asia and North and Central America. Their distinguishing characteristics include; velvety, often dark fur, forearms specialized for digging, small eyes, and they have no external ear. Their closest relative in Alberta is actually the shrew, which is also an insectivore.

Our Northern Pocket Gopher is a type of rodent. It has a stout body, long and powerful claws, small eyes, and a hairless tail 2-6 inches long. The fur of this animal varies in color from black, to brown or grey. Its coat is soft and short, perfectly designed not to slow them down when manoeuvring through tunnels. This species also has unique fur-lined cheek pouches to carry meals like roots of perennial forbs, and a large lower jaw, which is used to excavate the tunnels. Perhaps the mystery of their mistaken identity has to do with the fact that they are rarely seen above ground. If you are lucky enough to spot one, they likely haven't strayed more than 2 1/2 feet from the entrance to their burrow.

Now the confusion does not end there. The Northern Pocket Gopher is Alberta's only true "gopher". The other rodents you see continually risking their lives on Alberta's highways and occupying pastures in great numbers are actually ground squirrels!

Ground squirrels are related to chipmunks, marmots, flying squirrels and tree squirrels and are generally known for being active during the day. We have five species in Alberta, which include the Columbian Ground Squirrel, Thirteen-lined Ground Squirrel, Franklin's Ground Squirrel, Golden-mantled Ground Squirrel, and the most well known Richardson's Ground Squirrel.

The Richardson's Ground Squirrel was named after the British explorer who collected the first specimen in 1820, Sir John Richardson. Similar to other species of ground squirrels they eat flowers, fruits, seeds, grasses, insects and occasionally carrion.

And there you have it! The identity crisis of what's a mole and who's a gopher explained. For more interesting information on the Northern Pocket Gopher visit <http://people.uleth.ca/~michener/links.htm>, and for more information on ground squirrels, visit <http://www.uleth.ca/~michener/frames.htm>



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COALBED METHANE: THE NEXT MAJOR SHALLOW GAS PLAY IN WESTERN CANADA

By Kara Rowan

Lately, there's been a lot of talk about Coal Bed Methane (CBM) - otherwise known in Alberta, as Natural Gas from Coal (NGC). NGC is a type of "unconventional gas" that has been given the name because it is found in "difficult to produce" rock formations, which require new techniques to retrieve the resource. As Canada's natural gas begins to run out, the energy industry is now turning to NGC - an industry characterized by drilling more wells that yield less and disrupt more. Experts believe that by 2025, unconventional gas will account for more than 80% of new drilling in Alberta, and 50% of total unconventional gas production.

Occurrences of coal on the Alberta Plains are found in three main formations which include the Horseshoe Canyon Formation, Scollard Formation and Mannville Group. Resource estimates by the Alberta Energy and Utilities Board expects the Horseshoe Canyon Formation to produce 66 (*tcf), the Scollard Formation 63 (*tcf) and the Mannville group 320 (*tcf). *[A *trillion cubic feet!! How much gas is that? One trillion cubic feet will heat all gas-heated homes in Canada for one year!]*

The Horseshoe Canyon Formation are known as "dry coals," which are shallow coals of the plains which do not generate as much methane, and have virtually no water in their seams and do not require dewatering. The Drumheller coal zone is found in the lower part of the Horseshoe Canyon Formation and is the primary target for NGC production in Alberta, situated between Bashaw and Rockyford. Currently, most of the wells drilled in Alberta are "Dry Coals" and they represent 25% of NGC in Alberta.

The Ardley Coal Zone is found near the top of the Scollard Formation and most NGC exploration has focused on two main areas - north of Edson, AB, and Buck Lake/Drayton Valley areas. Ardley coals typically produce usable water. Potable water that is produced in the Ardley Coal Zone is handled according to the regulations in the *Water Act*.

Approximately 15% of Alberta's total NGC resource comes from Ardley Coals.

The Mannville Group of coals are deep, thick, continuous, deposits that have the highest gas content of coals on the Alberta Plains. The Mannville Group extends from Grand Prairie into a wedge between Edmonton and Calgary. Mannville coals produce saline water and according to Alberta Energy and Utilities Board, any saline water produced during gas production must be re-injected into underground formations through deep disposal wells. Mannville Coal's are the largest deposits and account for 60% of Alberta's total resource.

Unique environmental concerns have been raised as NGC poses new environmental issues including concentrated land use disruptions, excessive noise, large volumes of "waste" water, and the possibility of methane migration into water supplies and soils.

Natural Gas from coal is molecularly bonded to the surface of coal by pressure from overlying rock or water present within the seam. It is often referred to as "tight" gas as the paths for gas flow are very narrow, increasing the difficulty for methane to flow for long distances. This characteristic of NGC results in the need for additional wells to be drilled for optimum gas recovery. On average, four to eight wells are drilled per section of land, but well density can be as high as 18 wells per section. The concern of this high well density, is that each well requires roads and pipelines to service the wellsite, and these linear disturbances have been known to alter predator-prey relationships, increase reproductive failure in birds, fragment wilderness, transport noxious weeds from one site to another through truck traffic, and increase hunting and poaching activity in previously inaccessible areas. Of course, all these wells, roads, and pipelines result in direct losses in agriculture land.

What can you do as a landowner? There are questions you can ask production companies about potential environmental impacts from NGC production including:

- 1.How will the water produced by extraction be managed, and if it is re-injected, ask how underground water sources will be protected?
- 2.Has the issue of migrating methane been examined?
- 3.Has the possibility of sinking or shifting ground (due to dewatering) been assessed?
- 4.Will monitoring wells be implemented to assess changing water quality, including pressure drops, water table decreases and aquifer recharge rates.
- 5.Can special baffles and mufflers be installed if noise is a problem on compressors?
- 6.Has the possibility of drilling multiple wells from one site (directional drilling) been considered?
- 7.Has the possibility of multiple operating companies' sharing leases, facilities, and, roads and pipelines with other companies been investigated?
- 8.Can zero disturbance be achieved?

For more information about NGC, visit the Alberta Energy and Utilities Board website at <http://www.eub.gov.ab.ca/BBS/public/EnerFAQs/EnerFAQs10.htm> or the Canadian Society for Unconventional Gas website at <http://www.csug.ca/faqs.html>.

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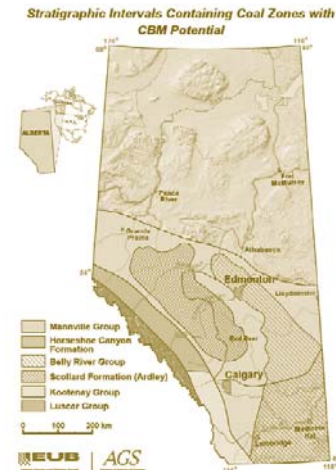
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Source: http://www.ags.gov.ab.ca/GRAPHICS/CBM/CBM_intro/CBM_Potential_large.jpg



HABITAT ENHANCEMENT PROJECTS - HOW OGC MEMBERS ARE HELPING THE BURROWING OWL

OGC now has more than 340 members - all land managers who steward land throughout the grassland region of Alberta. A diverse and passionate group of environmental stewards, our members have provided OGC with unique insights and significant knowledge on balanced approaches to protecting and enhancing prairie habitats. This knowledge has enabled us to produce relevant fact sheets, informative natural resource inventories, and implementable management plans for species at risk. In 2005, we used this shared knowledge as a building base, and as a result, we have worked closely with several members to implement larger habitat enhancement projects.

Habitat Enhancement Projects

Starting in 2005, OGC began to work with its members to directly and significantly change management practices to improve habitats for species at risk. Projects to date have focused on Burrowing Owl habitats. Together with a few of our members, we have worked toward improving nesting and foraging habitats for the owls through off-site watering, native seeding, mitigation of pest control (ground squirrels and badgers), and mitigation of predation pressure.

RATIONALE:

- 1.*Increase/Improve Prey habitats through off-site watering and native seeding projects.* Studies have shown a significant association between Burrowing Owl reproductive success and prey availability. Burrowing owl prey (most importantly, voles and mice) are more abundant in wetter areas, where grass height and density is greater. Telemetry studies have shown that owls select such areas to hunt (e.g., healthy riparian areas, natural draws, and/or grassed waterways).

- 2.*Increase nest/roost availability through reduction of pest control* (i.e., decrease lethal control of ground squirrels and badgers). Nest holes appear to be limiting for burrowing owls. Burrowing Owl nest and roost holes are created primarily by badgers excavating ground squirrel holes. New holes need to be created each year to replace old holes that have filled in naturally, or collapsed for any other reason. Higher densities of roosts increase post-fledging survival.

- 3.*Mitigation of Predation Pressure* (e.g., removal of predator perches and nesting structures, and preventative site-planning that ensures potential predator perches or nesting platforms are not placed close to Burrowing Owl nests). Certain avian predators, such as Great Horned Owls, are in higher abundance currently than historically, likely because of an increased number of human structures used as supports for nests.

In 2006-2007 we hope to continue expanding this work. We will also monitor our existing sites to measure the impact of the habitat changes. This is an exciting new venture for OGC, and we hope that these simple land management changes can prove to have a positive influence on the number of owls returning to breed in the coming years.