



# At Home on the Range

Living with Alberta's  
Prairie Species at Risk



## Brought to you by...

This Guide is a collaborative effort between the following organizations; Alberta Conservation Association, MULTISAR, Nature Conservancy Canada and Alberta Environment and Parks.

## Acknowledgements

Our thanks to everyone that took the time to review and provide input on drafts of this document: Specifically, Heidi Eijgel, Norine Ambrose, Fern Zoeteman, Robert Zoeteman, Terry Clayton, Kim Morton, Leo Dube, Bradley Taylor, Julie Landry-DeBoer, Francois Blouin, Brad Downey, Julie Lefebvre, and Kara Tersen.

Much of the information in this Guide is from the following documents:

Rangeland Conservation Service Ltd. 2004. Beneficial Management Practices for the Milk River Basin, Alberta: A component of the Multi-Species Conservation Strategy for Species at Risk in the Milk River Basin (MULTISAR). Unpublished report prepared for Alberta Sustainable Resource Development, Fish and Wildlife Division and the Alberta Conservation Association. Airdrie, Alberta, 369 pp.

Blouin, F. 2006. The Southern Headwaters at Risk Project: A Multi-species Conservation Strategy for the Headwaters of the Oldman River. Volume 4: Beneficial Management Practices and Land Use Guidelines for Focal Species. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 106, Edmonton, AB.

### Photo Credits

Thank-you to the following people for generously providing photos for this publication: Dr. Gordon Court (GC), Andy Hurly (AH), Lorne Fitch (LF), Elizabeth Saunders (ES), Cheryl Bradley (CB), Lance Engley (LE), Dave Fairless (DF), Heidi Eijgel (HE), Alberta Parks & Protected Areas (APPA), Glenbow Museum Archives (GMA), Brad Downey (BD), Kris Kendall (KK) and Richard Elhert (RE).

All oblique aerial photos taken by Lorne Fitch on behalf of the Grassland Vegetation Inventory.

p2-ES, LF; p3-ES, AH, LF, GC; p5-ES; p6-ES; p8-LF, ES; p9-ES, DF, LE; p10-AH,ES; p11-GMA, AH, BD; p12-AH, ES, p13-GC, ES; p14-AH; p16-ES, GC, AH; p17-ES, GC, RQ; p22-ES; p23-ES, AH, LE; p24-ES, LF; p25-ES, BD, GC, CB; p26-ES, LF, RE, BD, AH; p27-ES, AH, LF; p28-JLD, LF; p29-LF, BD; p30-ES, LF; p31-ES; p32-ES; p33-ES; p34-ES, GC; p35-AH, ES; p36-ES, AH, GC; p37-APPA, ES; p40-AF, LF; p41-HE, AH; p42-LF, GC, ES, AH.

Cover Photos - Prairie Falcon (GC), Grasslands (ES)

**Maps** on page 2 - Blair Watke and Patrick Wensveen, Alberta Environment and Parks

**Design & Layout** - Elizabeth Saunders

**All Illustrations** - Elizabeth Saunders

**Printed** by Warwick Printing Co. Ltd., Lethbridge on FSC certified paper

Thank-you to the following organizations for funding this project:



Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada



# At Home on the Range

## Living with Alberta's Prairie Species at Risk

### Authors:

Elizabeth Saunders, Richard Quinlan, Paul Jones,  
Barry Adams and Kimberly Pearson

Copies of this Guide are available from

MULTISAR  
2nd Flr. YPM Place, 530-8 St. S.  
Lethbridge, Alberta T1J 2J8  
Tel: (403) 382-4364

This publication may be cited as:

Saunders, E., R. Quinlan, P. Jones, B. Adams and K. Pearson. 2016. At Home on the Range: Living with Alberta's Prairie Species at Risk (Second Edition). Alberta Conservation Association and Alberta Environment and Parks, Lethbridge, Alberta.

ISBN 978-0-9782446-1-3

Copyright 2016

All rights reserved. No part of this publication may be reproduced or used in any form or by any means - graphic, electronic or mechanical - without the prior permission of the Alberta Conservation Association and Alberta Environment and Parks.

## Foreword

At one time, our national census classified prairie grasslands as “other unimproved lands”, a kind of wasteland of limited value. From the earliest days of settlement, ranchers knew otherwise. Cattlemen were among the first to recognize the concept of carrying capacity and to lobby for rangeland research such as the early studies at Onefour. As generations of ranchers gained experience on the land, they became convinced that rangeland management is an adaptive process which evolves over time.

Today there is a growing recognition of the special value of our remaining native prairie to species at risk, and the role that landowners and leaseholders have in protecting these habitats, now and in the future. Our first ranchers didn’t have a handbook to guide them. As a new chapter of prairie management unfolds, this Guide will provide valuable insights for the adaptive management process to continue. In my own short career, I have witnessed a growing recognition of the unique role that people on the land have in protecting and enhancing wild prairie places for creatures great and small. It is our sincere hope that this Guide will inform and inspire managers of our native prairie treasures. These ongoing contributions to stewardship will add to the stability and success of ranching in the future.

Barry W. Adams  
Provincial Rangeland Specialist – Grasslands  
Lethbridge, AB





# The Purpose of this Guide

At Home on the Range is a tool for landowners, leaseholders and others who manage land on Alberta's prairies. It is a guide to help people manage prairie areas in a way that benefits both species at risk and the landholder.

Alberta's prairies are home to a large diversity of plants and wildlife, many of which are considered to be species at risk in the province and in Canada. One of the reasons that these species are still found residing in Alberta's prairies is because of a legacy of sound management of our native grasslands and other prairie habitats. This Guide introduces Alberta's prairie species at risk and describes the implications of sharing your land with these species. It strives to dispel some of the myths surrounding species at risk and to help landowners maintain and improve management of prairie areas so that these species will continue to flourish in Alberta. There are many things that landowners and land managers can do to benefit species at risk and often these positive practices result in broader scale benefits to the landowner. Some are simple and require minimal or no investment of time and energy. Others may require more effort, but such actions may also be eligible for funding and other assistance.

This Guide applies primarily to Alberta's Grassland Natural Region, but most of the information can also be applied to the "grassy parts" of the Montane Natural Sub-Region and Foothills Parkland Natural Sub-Region.

## What you will find in this Guide:

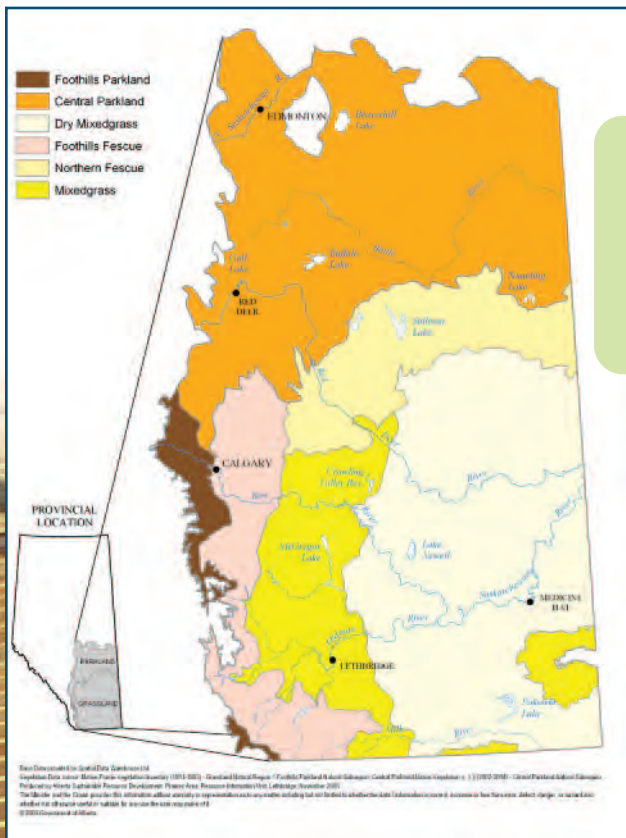
A BUNCH OF FACTS ABOUT ALBERTA'S GRASSLANDS .....	2
SPECIES AT RISK 101 .....	4
A brief introduction to Alberta's prairie species at risk – who they are, where they live and how they came to be at risk.	
WHY SHOULD YOU WELCOME SPECIES AT RISK?.....	15
The implications (good and bad) of sharing your land with species at risk.	
POSITIVE PRACTICES .....	20
A "how-to" guide of what you can do to benefit species at risk and how species at risk can benefit you. Includes a summary of range management principles and how they relate to species at risk.	
SUMMARY .....	42
GETTING HELP.....	43
Resources that are available to you to help species at risk.	
PRAIRIE SPECIES AT RISK .....	45



# A Bunch of Facts About Alberta's Grasslands



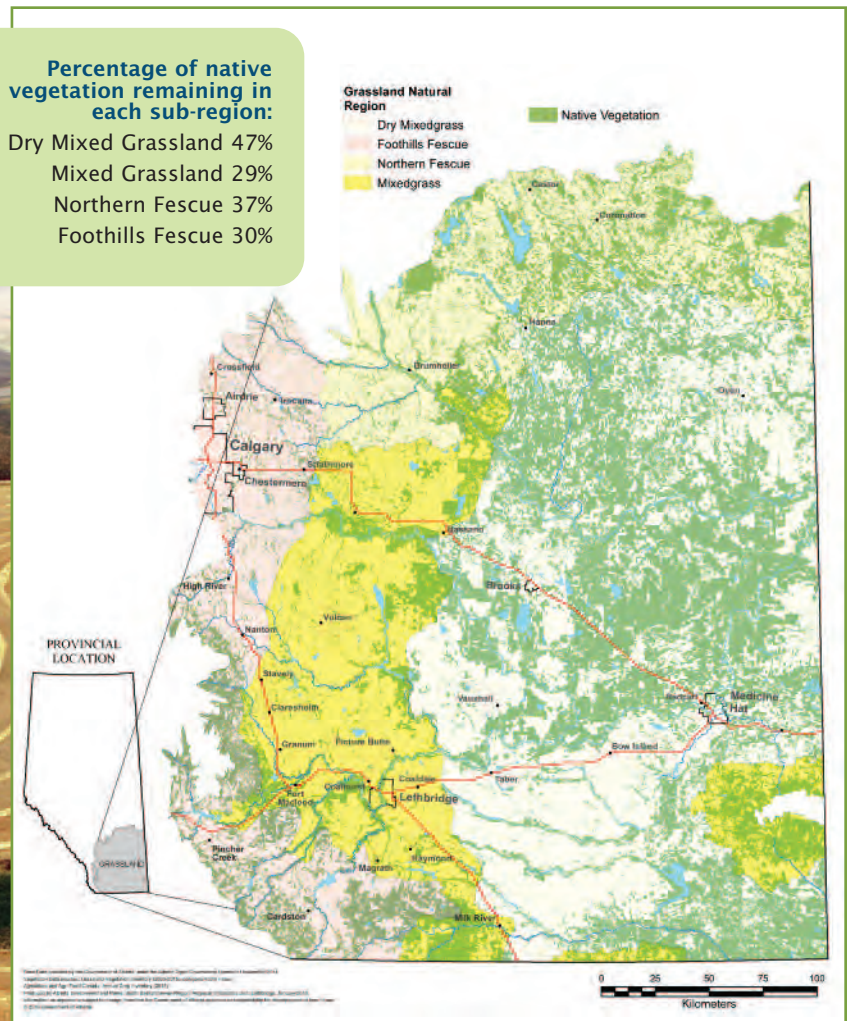
Grasslands are found across the southern and central parts of Alberta. Although primarily found in the Grassland Natural Region, there are also grasslands in the Central Parkland, Foothills Parkland, Foothills Fescue and Montane Natural Sub-regions.



## Remaining Native Vegetation in the Grassland Natural Region

**Percentage of native vegetation remaining in each sub-region:**

- Dry Mixed Grassland 47%
- Mixed Grassland 29%
- Northern Fescue 37%
- Foothills Fescue 30%

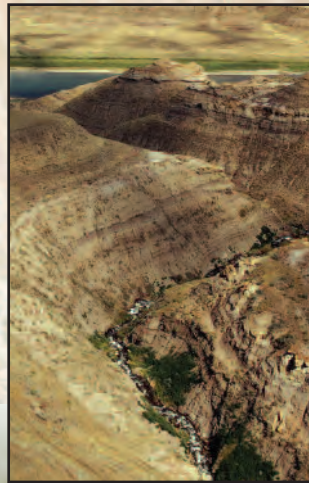
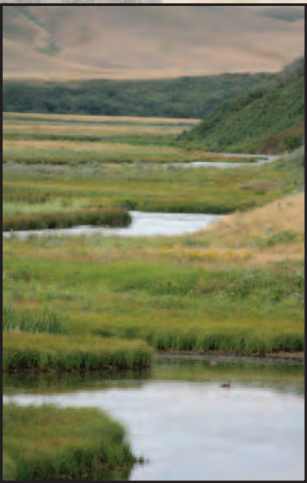


In Alberta, 36% of our grasslands remain in a relatively natural state. Cultivation, urbanization, industry and other land uses have all impacted grasslands. Much of the remaining grassland is fragmented into small parcels.

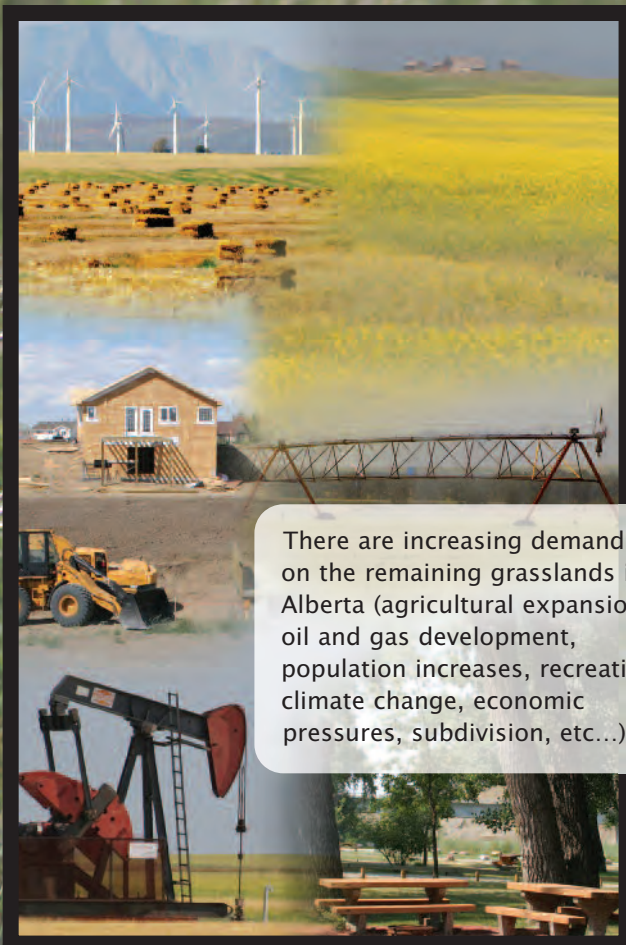


56% of the native grasslands in the Grassland Natural Region are under crown ownership and 44% are under private ownership.

In the Mixed Grasslands, 43% of native prairie is privately owned. In the Dry Mixed Grasslands, 34% of native prairie is privately owned. In the Foothills Fescue Grasslands, 82% of native prairie is privately owned.



The Grassland Natural Region is so much more than grass! There are many unique and special habitats within the grasslands, such as coulees, badlands, sandstone outcrops, wetlands, riparian forests and sandhills.



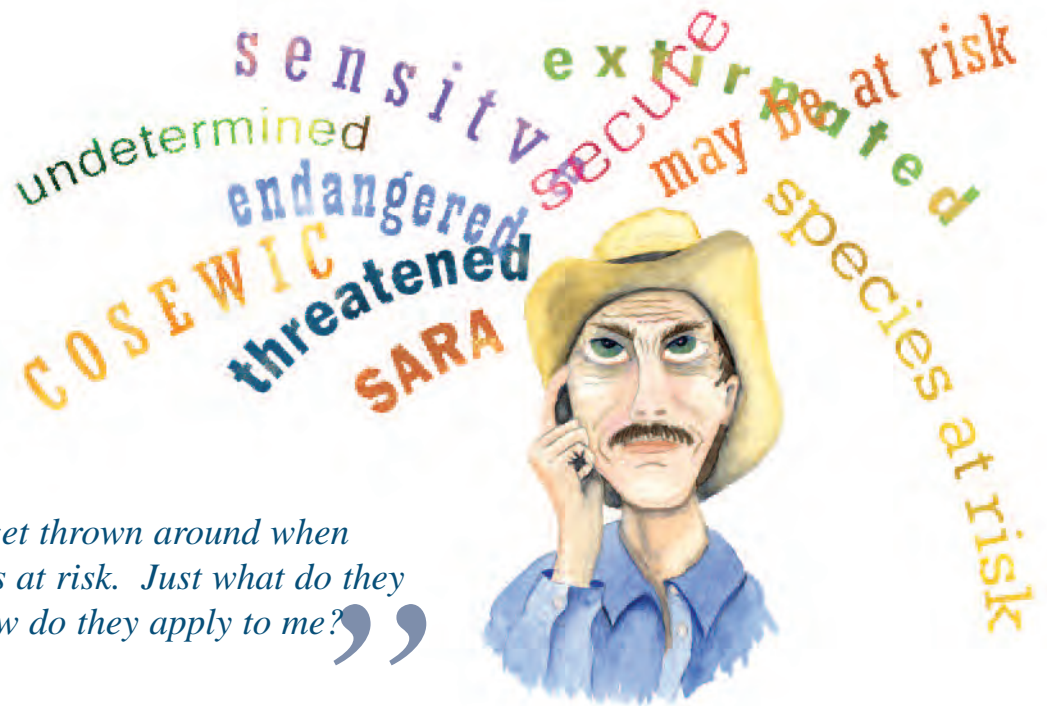
There are increasing demands on the remaining grasslands in Alberta (agricultural expansion, oil and gas development, population increases, recreation, climate change, economic pressures, subdivision, etc...).



75% of Alberta's species at risk are found in the grasslands.



# Species at Risk 101



“ So many words get thrown around when talking about species at risk. Just what do they all mean and how do they apply to me? ”

## Just What is a Species at Risk?



Bison were almost extirpated\* from the prairies.

**Species at risk** are plants and animals that have a low or declining population and are at risk, or may be at risk of disappearing, or are sensitive to human disturbance or natural events. Special management is needed for species at risk.

In Alberta, plant and animal species are assigned a general status. Species with a general status label of At Risk, May Be At Risk or Sensitive are all species at risk. Species with healthy populations are labeled Secure. Some species are labeled Undetermined when there is insufficient information to determine their status.

\*An extirpated species is one that no longer exists in the wild in Alberta but occurs elsewhere in the wild.



## Provincial Versus Federal Responsibilities

In **Alberta**, wildlife are addressed in the **Wildlife Act**, but for some wildlife the federal government maintains some responsibility. For example, the **Canada Fisheries Act** and the **Migratory Birds Convention Act** are federal acts which identify a federal role in the management of fish and migratory birds. The Alberta government retains primary responsibility for other birds (i.e. upland game birds and birds of prey), and all mammals, reptiles, amphibians, plants and invertebrates.

In Alberta, on **federal land**, such as military reserves and national parks, the federal government has responsibility for all wildlife, including species at risk through the **Species At Risk Act (SARA)**. On **Alberta's provincial public** and **private land**, the **Wildlife Act** applies for the management and recovery of Endangered and Threatened species.

Alberta will retain its jurisdiction over species at risk as long as the province can demonstrate that its laws and programs are adequate for the management of Endangered and Threatened species. SARA allows for negotiations towards federal take-over of this provincial jurisdiction if Alberta does not demonstrate effective species at risk management.



On private land and provincial public land in Alberta, the province's Wildlife Act applies. The Wildlife Act refers to endangered organisms (plants and animals). On federal land, the Species at Risk Act applies.

## Assessing Species at Risk

Both the **federal government** and the **Alberta government** have processes for assessing species at risk. The federal government process involves the Committee on the Status of Endangered Wildlife in Canada or **COSEWIC**, while the provincial process involves the Endangered Species Conservation Committee or **ESCC**.

This results in both the federal and provincial governments having their own ranking/status assignments. While they are often the same for a particular species, there are a number of reasons that the national and provincial status may vary for a species. For example, the Northern Leopard Frog has an Alberta designation of Threatened, due to dramatic declines in the province, while the national designation is Species of Concern (a less endangered status) due to its status across a larger area, including some areas where it is thriving.

## The Road to Recovery

If a species receives a national or provincial status of Endangered or Threatened, then a **recovery plan** must be prepared. The plans are prepared by a team of experts and stakeholders (people who may be affected by the recovery efforts for the species), under the leadership of a biologist. The recovery plan is reviewed by the **ESCC** (if provincial) or **COSEWIC** (if national) and is forwarded to the appropriate government Minister for approval. The recovery plan guides management and recovery efforts for the species, generally for a five year period.

# Which Species are At Risk?

There are about 70 fish and wildlife species, as well as a similar number of plants and invertebrates, that are considered species at risk in Alberta's grasslands.

It is important to remember that the status of a species can change as more is learned about population numbers and the factors affecting a species' survival. When species are reviewed, some may get "down-listed" to a lesser category and others may get "up-listed". For example, the Western Blue Flag was down-listed from "Threatened" to "Special Concern" in Alberta. This was a result of extensive surveys and reports from landowners, leading to the discovery of new Western Blue Flag sites on private land. Because the population was higher than originally thought and there was excellent cooperation with landowners in the Western Blue Flag Conservation Program, the species was down-listed. A true "good news" story!



Western Blue Flag

This table lists **only some** of the current species at risk in Alberta's grasslands. A full list is provided at the end of this Guide.

## BIRDS

	Alberta General Status	Alberta Detailed Status	Canada Species at Risk Status	Habitat & Threats
Burrowing Owl	At Risk	Endangered	Endangered	Grasslands; sensitive to disturbance at nests
Greater Sage-grouse	At Risk	Endangered	Endangered	Sagebrush; severely reduced numbers
Piping Plover	At Risk	Endangered	Endangered	East-central Alberta lakes; impacted by shoreline use
Ferruginous Hawk	At Risk	Endangered	Threatened	Grasslands; sensitive to disturbance at nests
Loggerhead Shrike	Sensitive	Special Concern	Threatened	Shrubby areas in riparian areas and shelterbelts; habitat loss due to clearing is a concern
Sprague's Pipit	Sensitive	Special Concern	Threatened	Grassland dependent, lightly to moderately grazed areas are preferred habitat; declining
Golden Eagle	Sensitive	N/A	Not at Risk	Sensitive to disturbance near cliff nests along rivers, large numbers of migrants through prairies & foothills
Sharp-tailed Grouse	Sensitive	N/A	N/A	Grasslands and shrubs that are lightly to moderately grazed
Sora	Sensitive	N/A	N/A	Large declines; threatened by loss of wetland habitat

N/A = not assessed \* denotes ministerial approval, but pending regulation amendment 2 = Listing under SARA in process

**Alberta General Status:** At Risk, May be at Risk, Sensitive, Undetermined, or Secure designation by Alberta Environment and Parks, resulting from a general status evaluation process every 5 years.

**Alberta Detailed Status:** Alberta's Wildlife Act legislative status of Endangered or Threatened, or non-legislative status of Special Concern, resulting from a detailed status review of At Risk, May be at Risk and selected Sensitive and Data Deficient species, designated by the Alberta Endangered Species Conservation Committee.

**Canada Species at Risk Status:** Canada's Species at Risk Act legislative status of Endangered, Threatened or Special Concern or non-legislative status of Not at Risk or Data Deficient, designated by the Committee on the Status of Endangered Wildlife in Canada.



		Alberta General Status	Alberta Detailed Status	Canada Species at Risk Status	Habitat & Threats
MAMMALS	Swift Fox	At Risk	Endangered	Threatened	Was extirpated; successful reintroduction resulted in population and range expansion in southern prairies
	Ord's Kangaroo Rat	At Risk	Endangered	Endangered	Localized populations dependent on sand dune areas
	American Badger	Sensitive	Data Deficient	Special Concern	Burrows important to Burrowing Owls and Swift Foxes
	Pronghorn	Sensitive	N/A	N/A	Population vulnerable to extreme winters; threatened by cultivation and habitat fragmentation
AMPHIBIANS & REPTILES	Northern Leopard Frog	At Risk	Threatened	Special Concern	Disappeared from much of Alberta range; remaining breeding ponds need protection from draining and pollution
	Great Plains Toad	May be at Risk	Special Concern	Special Concern	Vulnerable to drainage of ephemeral (seasonal) wetland habitats and intensive use of these ponds by livestock
	Prairie Rattlesnake	Sensitive	Special Concern	Special Concern	Grasslands; vulnerable to disturbance and persecution at hibernacula, roads near tops of valleys cause high numbers of road-kills
	Short-horned Lizard	At Risk	Endangered	Endangered	Negatively impacted by intensive developments in badland and river valley break habitats
FISH	Lake Sturgeon	At Risk	Threatened	Endangered <sup>2</sup>	Prairie rivers; low populations, threats include habitat degradation, fragmentation and over-harvesting
	Western Silvery Minnow	At Risk	Threatened	Threatened	Distribution limited to Milk River; threats may include altered water flows
PLANTS	Small-flowered Sand Verbena	At Risk	Threatened	Endangered	Restricted distribution; threats include grassland conversion to cropland and stabilization of dunes
	Tiny Cryptanthus	At Risk	Endangered	Endangered	Small number of occurrences; grassland habitat threatened by oil and gas activities
	Western Blue Flag	At Risk	Special Concern	Special Concern	Limited distribution in SW Alberta; threats include invasive grasses and heavy grazing
	Western Spiderwort	At Risk	Endangered	Threatened	One location in SE Alberta; threats include cultivation of native sand dunes and industrial development
INSECTS	Weidemeyer's Admiral	May be at Risk	Special Concern	Special Concern	Cattle grazing may affect grassland and coulee habitats along Milk River
	Yucca Moth	At Risk	Endangered*	Endangered	Mutualism with Soapweed; restricted distribution in SE Alberta

N/A = not assessed      \* denotes ministerial approval, but pending regulation amendment      2 = Listing under SARA in process

**Alberta General Status:** At Risk, May be at Risk, Sensitive, Undetermined, or Secure designation by Alberta Environment and Parks, resulting from a general status evaluation process every 5 years.

**Alberta Detailed Status:** Alberta's Wildlife Act legislative status of Endangered or Threatened, or non-legislative status of Special Concern, resulting from a detailed status review of At Risk, May be at Risk and selected Sensitive and Data Deficient species, designated by the Alberta Endangered Species Conservation Committee.

**Canada Species at Risk Status:** Canada's Species at Risk Act legislative status of Endangered, Threatened or Special Concern or non-legislative status of Not at Risk or Data Deficient, designated by the Committee on the Status of Endangered Wildlife in Canada.



# Why are Species at Risk?

There are many reasons why species come to be at risk. In some cases, there is one clear cause for the population decline. In other cases, populations have dropped because of a combination of reasons. For some species we do not fully understand why they came to be at risk.

Here are the primary reasons why some of Alberta's grassland species have come to be at risk:



## Disappearing Habitat

Many grassland animals and plants require healthy native

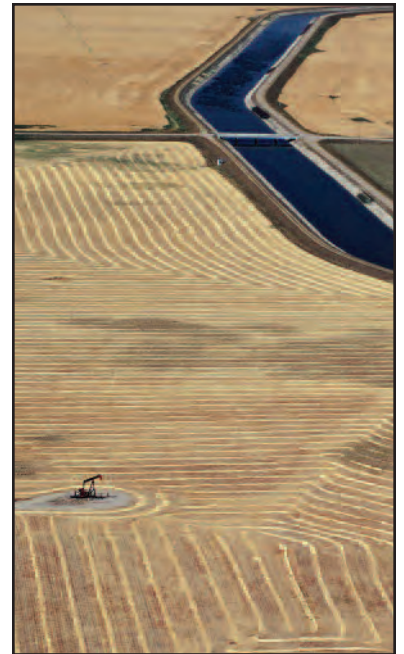
habitats for their survival.

Most are not able to live or reproduce in cultivated, industrial or urban landscapes.

With a reduction in the amount of

available habitat, there is a corresponding reduction in the number of individuals of that species. It is a bit like the game "musical chairs"; as chairs (habitat) are taken away, the number of players (individuals of a species) that can survive is reduced.

As only 36% of Alberta's grasslands remain, it is not too surprising that many grassland species have experienced large population declines as a result of habitat loss.



## Sharp-tailed Grouse



### The Sharp-tailed Grouse

In Alberta, Sharp-tailed Grouse populations have decreased substantially over the past several decades, primarily because of habitat loss. Sharp-tails require a mosaic of native grassland and shrubby areas. Their dancing grounds or leks (used to attract mates) are usually in areas of short, sparse grass, but they prefer to nest in lush areas with taller vegetation. Protection of existing leks and the surrounding nesting areas is crucial to maintaining and improving the existing Sharp-tailed Grouse population in Alberta.



# Habitat Degradation

Some species have been affected by a loss of habitat quality. The habitat is still there, but overuse or human activity has affected the ability of that habitat to support native plants and animals.



## The Piping Plover

The Piping Plover is a shorebird that nests on sand and gravel shorelines of saline lakes in southern and central Alberta. With fewer than 300 Piping Plovers in Alberta, they are designated an Endangered species in Alberta's Wildlife Act. While their habitat still exists, it is subject to a variety of disturbances. Recreational and residential use of shorelines can interrupt adult birds that are establishing territories and result in the direct destruction of nests by trampling or vehicles. Residential and recreational developments also increase the number of predators, such as foxes, gulls, crows, magpies and raccoons.

A variety of actions are being taken to protect Alberta's remaining Piping Plovers. Lake management plans are being developed for key nesting lakes, to improve the quality of their nesting habitat and limit disturbances during their breeding season. Predator exclosures have been successful at increasing Piping Plover reproductive success.



Piping Plover

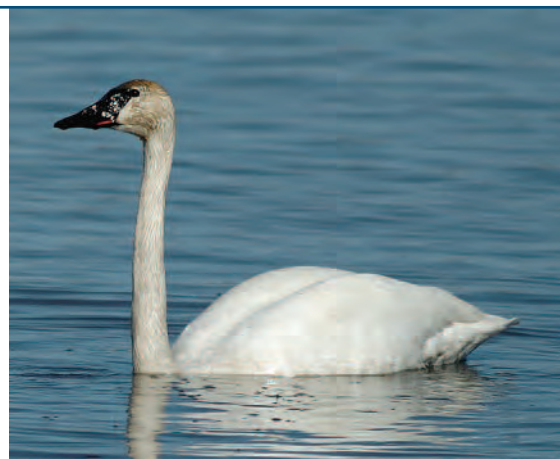
# Human Disturbance

Just as different people have different tolerances for noise and activity, some species are very sensitive to human activities and others are more tolerant. Wildlife species that live around your house and yard, such as the American Robin and Deer Mouse are very tolerant of human activity and often benefit from living in close proximity to humans. Other species are less tolerant and will vacate an area at the first sight of a person or vehicle. Not surprisingly, many of our species at risk are sensitive to human disturbance.



## The Trumpeter Swan

Unlike their very tolerant relative, the Canada Goose, Trumpeter Swans are highly sensitive to human disturbance on their breeding ponds. Considered "sensitive" in Alberta, the Trumpeter Swan was almost completely wiped out in the early 1900s as a result of over-hunting and habitat loss. The population has gradually increased and surveys estimate about 1500 breeding Trumpeter Swans in Alberta. Human disturbance in the water can cause Trumpeter Swans to abandon their nest. Even relatively unobtrusive disturbances such as canoes and anglers can result in nest abandonment.



Trumpeter Swan

Other grassland species that are particularly sensitive to human disturbance include the Burrowing Owl and Ferruginous Hawk. Ferruginous Hawks are easily disturbed during the early stages of nesting and they generally build their nests over 500m away from active farmyards.



# Introduction of Exotic Species

Exotic species are those that come from other areas and are not native to the grasslands of Alberta. Some exotic species have caused our native species to decline in numbers. Exotic birds can compete with native birds for food and nest sites. Exotic plants can replace native plants in grassland habitats, causing a loss or degradation of habitat for native wildlife.



## Mountain Bluebird



### The Mountain Bluebird

The introduction of the European Starling and English House Sparrow to North America caused significant declines in Mountain Bluebird populations in North America. House Sparrows and Starlings nest in holes in trees, which is also where Mountain Bluebirds nest. Starlings arrive on the breeding grounds before bluebirds and take over most of the prime nesting holes. House Sparrows will kill bluebirds and destroy their nests, using them for themselves. Dedicated volunteers and landowners have halted this downward trend in the bluebird population by establishing and maintaining bluebird boxes in suitable habitat. The entrance holes in the boxes are too small for starlings to get in, thus providing a relatively safe place for bluebirds to nest.

Note: The Mountain Bluebird is not a species at risk

## Long-toed Salamander

### The Long-toed Salamander

Introduced sport fish, such as Rainbow Trout and Brook Trout, have been shown to have negative impacts on Long-toed Salamander populations in lakes in south-western Alberta. Trout prey on salamander hatchlings and larvae, resulting in very low salamander reproductive success in lakes that contain trout. Introduced bait species, such as Fathead Minnows, may also have impacts on salamander larvae, most likely because they are competing for invertebrate prey.



## Over-harvesting

At the turn of the century, unregulated harvesting had a big impact on some populations of wildlife. One of the most dramatic examples is the Plains Bison, whose population tumbled from millions of animals to near extinction in a span of only 40 years. The population crash was a result of hunting for both meat and hides. Present day hunting regulations are designed to prevent over-harvesting of wildlife.



Glenbow Archives NA-297-3



### The Pronghorn

Similar to Plains Bison, the Pronghorn was severely affected by hunting in the early 1900s. The Pronghorn population crashed from 10,000 in 1900 to 1,000 by 1907 due to severe winters and over-harvesting. Intensive conservation efforts by Alberta's first Game Guardian Benjamin Lawton and the famous writer Ernest Thompson Seton helped to reverse this situation by establishing game reserves at Nemiskam, Foremost and Lake Newel. The population has since recovered to the point that it can sustain limited hunting.

Pronghorn



Glenbow Archives NA-544-81

## Persecution

In the past, some wildlife species have been persecuted because they were considered a threat to livestock or dangerous to people. Also, some species were inadvertently killed in efforts to eliminate or reduce other species.

### The Prairie Rattlesnake

Because of their venomous bite and people's aversion to snakes, the Prairie Rattlesnake has been a victim of constant persecution. In southern Alberta, used shotgun shells have been found around rattlesnake dens, suggesting that people have been shooting snakes. It is illegal to kill rattlesnakes in Alberta.

There are also many examples of people intentionally running over snakes. Without a doubt, the cumulative effects of persecution of rattlesnakes over many years has taken its toll on this long-lived species.



Prairie  
Rattlesnake



# Isolation of Populations



When populations become isolated from others, they become more vulnerable to outside influences such as disease, drought and habitat degradation. This is because isolated populations usually have lower genetic diversity and there is no immigration of individuals from other areas.

## Greater Sage-grouse



### The Greater Sage-grouse

Alberta's Sage-grouse population has declined by between 65 and 90 percent in the last 30 years. They are designated as an Endangered species under the Wildlife Act. There are various reasons for this decline, including habitat loss and degradation. To add to this, the population in Alberta and Montana is thought to be isolated from other Sage-grouse populations. As there is little or no movement of genetic material between populations, there is less genetic variation. This means that the population is less likely to contain individuals that are resistant to new infectious diseases, such as West Nile Virus or climatic disturbances, such as drought.

# Pesticides

Chemicals that are used to control insects, rodents, weeds and other pests can sometimes have wide-ranging effects on other wildlife. Although the sale and use of pesticides is regulated today, this was not the case in the past. Some pesticides get transferred through the food chain, impacting species other than those they were intended to control.



## The Peregrine Falcon

The classic example of how pesticides can inadvertently affect another species is the case of the Peregrine Falcon and DDT. The extensive use of DDT after World War II had a huge effect on Peregrine Falcons. DDT was used to control insect pests, which were then eaten by rodents and small birds, which in turn were eaten by Peregrine Falcons. High levels of DDT in falcons causes their egg shells to be very thin and break. The resulting population decline left the Peregrine Falcon on the brink of extinction in North America. Banning of DDT in Canada in 1969 combined with intensive recovery efforts has resulted in a very gradual increase in the numbers of Peregrine Falcons. Recently, in Alberta the Peregrine Falcon has been down-listed from Endangered to Threatened. However, Peregrine Falcons and other prairie raptors still encounter DDT on their wintering grounds in South America, where the insecticide is not banned.

Peregrine Falcon

# Disease

Some species at risk are affected by diseases. Although disease is a natural part of all ecosystems, its effect can be magnified when animal populations are already low because of other factors. Plus, human activity can transfer new diseases into an area where the wildlife is not adapted to cope with it.



## The Tiger Salamander

In recent years there have been several mass die-offs of Tiger Salamanders and their larvae. It appears that they are due to Ranavirus, an amphibian virus about which very little is known. Although Tiger Salamanders are not considered at risk in Alberta, a disease such as Ranavirus has the potential to significantly impact their populations and that of other amphibians.

Tiger Salamander

## Greater Sage-grouse

West Nile Virus is a serious threat to the remaining Sage-grouse in Alberta. In 2003, five dead Sage-grouse were found in Alberta and testing showed that they all died from West Nile Virus. Research suggests that the survival rate of Sage-grouse has decreased by 25% as a result of West Nile Virus.



## A Combination of Causes

Almost all species at risk have come to be at risk as a result of several factors rather than just one cause. Here are some examples:



	Habitat Loss	Habitat Degradation	Human Disturbance	Over-harvesting	Exotic Species	Persecution	Pesticides	Disease	Isolation
Burrowing Owl	●	●	●				●		
Swift Fox	●	●	●	●		●	●	●	
Western Hognose Snake	●	●	●			●			●
Lake Sturgeon		●		●			●		●
Western Blue Flag	●	●			●				

## Unknown Causes

For some species at risk the exact cause of their population decline is unknown.

### Northern Leopard Frog

#### The Northern Leopard Frog

The once very common Northern Leopard Frog experienced large and sudden population declines starting in the late 1970s. It has now completely disappeared from some parts of its range in Alberta and is very scarce elsewhere. The main cause of the plummeting frog population is unknown, although some factors that may have contributed to it include drought, disease, habitat loss, pesticides and the introduction of non-native game fish that prey on frogs and tadpoles.

Recent inventories suggest that there has been a slight increase in Leopard Frog populations and efforts are underway in parts of Alberta to reintroduce the frog.





# Why Should You Welcome Species at Risk?



*Thanks to long-term and well-managed ranches, many species at risk still have a home to come back to.*



# What are the benefits of having species at risk on your land?



Species at risk. . .

. . . indicate that you are managing your land well!

Having species at risk on your land is like receiving an “A+” for the management of your land! The presence of species at risk usually indicates long-term sound land management practices and a healthy ecosystem. Give yourself a pat on the back!

Species at risk. . .

**= agricultural sustainability**

This might seem like a giant leap in thinking, but if you have a well-functioning healthy ecosystem, you will probably have some species at risk living on your land. And a healthy ecosystem provides agricultural sustainability. For example, diverse healthy ecosystems are much more resilient to natural disturbance events such as fire, flood, insect outbreaks and drought. Healthy ecosystems provide stability and greater predictability to an agricultural operation. Water quality and availability is improved, weed invasion is reduced and forage production is higher.



Species at risk. . .

**. . . help with pest control**



16 Long-tailed Weasel

The presence of Ferruginous Hawks, Swainson's Hawks, Prairie Falcons, Short-eared Owls, Prairie Rattlesnakes, American Badgers and Long-tailed Weasels can put a serious dent in your ground squirrel and mouse population. A pair of Ferruginous Hawks and their young can consume as many as 500 ground squirrels in one season. The Burrowing Owl, Loggerhead Shrike and Long-billed Curlew eat a tremendous number of grasshoppers, helping to keep insect pest populations at a lower level. Leopard Frogs, other amphibians and bats can help to keep mosquito problems at bay.



Ferruginous Hawk



Richardson's  
Ground Squirrel

Species at risk are . . .

## . . . part of our prairie heritage and western identity

How quiet would the range be without the cry of the curlew, the screech of the Prairie Falcon or a chorus of Spadefoots (spadefeet?) after a heavy spring rain? And how dull would it be without the splashes of colour painted by prairie wildflowers, flashy butterflies and brightly coloured songbirds? The thrill of catching a glimpse of a Swift Fox or Long-tailed Weasel slinking across the pasture or watching a Ferruginous Hawk as it patrols for ground squirrels is part of what makes living and working in the prairie so special and unique.



Burrowing Owl

Species at risk are . . .

## . . . fabulous public relations personnel

Species at risk and healthy ecosystems have great societal value and are perceived by many to be an important part of our Canadian heritage. Landholders that strive to look after species at risk on their land are collectively recognized as doing something positive for society as a whole and this in turn helps to strengthen the ranching industry and its image.

Species at risk can . . .

## . . . open doors and provide new opportunities!

Having species at risk on your land can make you eligible for special programs and incentives. They may also open doors for new ventures, such as ecotourism.



## You can profit . . .

. . . from species at risk

Programs such as MULTISAR, Nature Conservancy of Canada and Operation Grassland Community can provide you with technical assistance, answer range management questions and provide you with potential options for financial assistance to improve your habitat for species at risk.





## What are the downsides to having species at risk?

There may be some downsides to having species at risk on your land, but many of the implications that are talked about are simply myths. For example, a landowner will not lose his or her land if there are species at risk living there. On privately owned or leased public land, most species at risk come under the jurisdiction of the provincial government. Species which are listed as Endangered or Threatened in the Wildlife Act (see pages 45-47) have recovery plans associated with them. These plans may involve provincial wildlife staff working with landowners that have these species on their land. Wildlife staff may have suggestions or recommendations for changes in your land management, but the most likely recommendation will be “**keep doing what you are doing**”, as you are likely already doing the right thing if you have species at risk in the first place!

Some tweaking of your land management may be suggested, such as altering some range management practices. But if there are costs involved, there are various programs in place that can help cover these costs. MULTISAR and Operation Grassland Community can provide you with options for financial support (see page 43 for contact information).

## Dear Sally Mander

*Offering sound and practical advice for people  
with species at risk*



Dear Sally Mander,

*I have found a  
Ferruginous Hawk nesting  
on my land. Will the  
federal government step in  
and tell me how to manage  
my land? Or worse still,  
could they take my land  
away from me?*

*Sincerely,*

*Worried in Warner*

Dear Worried in Warner,

Nope, the federal government would likely not even be involved, as your land is private land, so it's the Alberta legislation that applies. Also, all birds of prey fall under Provincial jurisdiction. The Ferruginous Hawk is considered to be “At Risk” in Alberta as there are likely only 600 pairs left in our province.

There are things you can do on a voluntary basis that will help the hawks on your land. For example, avoid human disturbance within 1000m of the nest while it is occupied. If you protect the nest site from disturbance, it is very likely that they will come back and use the same nest over and over again.

So go ahead, enjoy watching your hawks, think about the 500 ground squirrels that they will eat this summer and worry no more!

*Sally Mander*

P.S. Rest assured, there has never been a case of a landowner losing their land because of a species at risk in Alberta.



Dear Sally Mander,

*This spring I found a Sharp-tailed Grouse dancing ground in my south pasture. I read somewhere that they are a "species at risk". Does this mean that I will have the government watching over me and telling me how to manage my land?*

*Should I just keep quiet about this or tell someone? I must say that I do enjoy seeing the grouse around and would like to encourage them to stay.*

*Cautiously Concerned  
near Cardston*

Dear Cautiously Concerned near Cardston,

Lucky you! There are few things more thrilling than the sight and sound of sharp-tails dancing in the spring. But I understand your concern. You are correct, Sharp-tailed Grouse are considered to be "Sensitive" in Alberta. This means that they are not at risk of extinction, but may require special attention or protection to prevent them from becoming at risk.

I suggest that you talk to your local wildlife biologist and they can help you to ensure that the grouse lek (dancing ground) continues to be used for many years. With the increase in oil and gas development in Alberta, a wildlife biologist can help you to steer such developments away from sensitive sites, such as your lek.

*Sally Mander*

Dear Sally Mander,

*I have Swift Foxes and Burrowing Owls on my leased land. I enjoy seeing both and would like to encourage them to stick around, but I am concerned that I will have to change my grazing systems in order to do this and that this will cost me money.*

*Mindful in Manyberries*

Dear Mindful in Manyberries,

If you have Swift Foxes and Burrowing Owls on your leased land, then you are probably doing the right things already! Obviously your grazing system is resulting in good habitat for these rare species. Well done!

May I prescribe that you contact a program in your area called MULTISAR? They can provide range and wildlife experts to help you manage your deeded and leased land in a way that benefits both your ranching operation and wildlife. Alberta Environment and Parks, Public Lands is also a partner in MULTISAR.

Enjoy those foxes and owls!

*Sally Mander*





# Positive Practices

There are many actions that you can take that will benefit species at risk on your land. Some require little or no effort, while others may need a considerable investment of time and effort. These positive practices all fit into one of three categories;

## Keeping

holding on to what you have



*If you have native grasslands and other natural prairie habitats, the most important thing you can do is to hang on to it!*

# Tweaking

making a  
small adjustment  
to a current practice  
or landuse

*Small changes in how things  
are done can have big benefits  
for species at risk.*



# Restoring

creating new and  
improved prairie habitats

*Taking non-native habitats and  
restoring them to permanent  
cover – either native or tame.*



You can choose to do just one or two of these, or for maximum impact – all three! This next section describes some of the positive practices you might be able to do on your land that will benefit species at risk. Most of these practices will also result in significant benefits to your operation and livestock.



# The **TOP 10** Things YOU Can DO to Help Species at Risk!



1

Keep a **GRIP**  
on your **GRASSLANDS!**

Don't Let *Slumps* and Other *Slopes*  
Get You *Down*



2



3

**WOOD IS GOOD**  
(even in prairie landscapes)

Riparian **HEALTH**  
mean\$ **WEALTH!**



4



5

Keep Your Grasslands  
Under Cover!



6

## NIP Exotic Plants in the Bud!

*Shhhhh!*

DO NOT DISTURB

7



8

## PREY for species at risk!

Cultivate Your Relationship  
*with Prairie Birds*

9

Take the *Plunge*....



10

## Restore the Range!

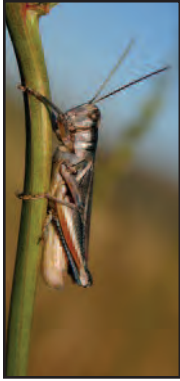
Explore these in the next few pages and look for positive actions you can take, as marked by this symbol:





# Keep a Grip on Your Grasslands!

All native prairie habitats are important to species at risk. This includes grasslands, wetlands (permanent and temporary), riparian areas, coulees, badlands, shrublands and sandhills.



Hanging on to the native habitats that you have is one of the single most important things that you can do for species at risk!



Investigate conservation easements and similar long-term programs to see if they can help you conserve your native prairie habitats (see the Nature Conservancy of Canada and Southern Alberta Land Trust Society in “Getting Help” on page 43).

An easement puts your sound land management practices to paper and ensures that your land is managed that way by all future owners.

Conservation easements give your descendants options for future land management because they ensure that there will be a farm or ranch in the future.

Large tracts of native prairie habitats can support many species at risk. Some species, such as the Ferruginous Hawk, require fairly extensive areas of undisturbed prairie grasslands. But thin strips or small patches of native habitats are also valuable, as they provide corridors and stepping stones for species that are not able to survive in the surrounding disturbed habitats. Even very small patches of native habitat, say a quarter section or less, can offer significant nesting habitat for grassland songbirds in a sea of intensive agriculture.



# Don't Let Slumps and Other Slopes Get You Down

Hilly, steep and rocky areas may sometimes appear to have little value or even get in the way, but to some species at risk, these areas are critical! Unique and rare landscapes, such as river cliffs, sandhills, badlands, coulee slopes, hoodoos, sandstone outcrops and slumps make up a relatively small part of the prairie landscape, but they are highly significant to some species at risk:



Short-horned Lizards are usually found on sparsely-vegetated south-facing slopes of coulees and canyons.



Prairie Rattlesnakes over-winter in dens along river escarpments, usually in stable slumps, sinkholes or rocky outcrops.



Prairie Falcons nest on cliffs, usually along prairie rivers.



Small-flowered Sand Verbena grows on drifting, unstable sandhills. It is vulnerable to sand removal, dune stabilization and invasive species such as Leafy Spurge.



Ferruginous Hawks and Golden Eagles will also nest on cliff ledges.

- It is important to limit disturbance to these critical areas as much as possible. Typical disturbances include seismic exploration, oil and gas development, recreational use (such as off-road vehicle use), sand and rock removal and residential subdivision.
- In your negotiations with oil and gas drilling companies, direct well development and access roads away from these unique areas. Encourage geophysical companies to take special measures or avoid these areas completely when conducting seismic tests.
- Where oil and gas activity must occur in these areas, ensure that oil and gas companies are using minimum disturbance practices (see "Useful Publications" on page 44).
- Limit off-road vehicle use, especially in sensitive periods, such as the spring and early summer. Off-road vehicle use can disturb nesting/breeding species at risk and cause extensive habitat damage in steeply sloping areas through erosion and compaction.
- Where possible, restrict human activities and development in these unique areas.





Ferruginous Hawk in a tree nest



Loggerhead Shrike



## Wood is Good! (even in prairie landscapes)

If a tree falls on the prairies, does anybody care? There are some species at risk that would raise a ruckus if they could! To a Ferruginous Hawk looking for a place to nest in the grasslands, finding a single tree or small grove of trees is like striking gold! Likewise, naturally occurring shrubby patches are vitally important nesting places for the Loggerhead Shrike. They also provide a winter forage supply for Sharp-tailed Grouse.



Although “wood is good”, it is generally best not to plant trees where they are not growing naturally in the grasslands. This can destabilize the delicate balance that has been established and may negatively affect some species at risk. Let nature do its thing when it comes to trees and shrubs!

Small patches of naturally occurring trees or shrubs ultimately help out landowners as well, as hawks and shrikes perform a significant amount of ground squirrel and grasshopper control. Shrubby areas also collect and store moisture as well as providing shelter and calving areas for cattle.



If a snowflake is blown more than 1000m without being trapped by vegetation, it will sublimate (go back to the vapour stage). Thus, shrubs play a significant role in helping to enhance local water storage.





If you have lone trees, groves of trees or shrubby patches in your grasslands or farmland, you can help species at risk by protecting these areas. Where they are threatened by cattle damage, they can be fenced off.



Leave dead or dying trees standing to provide foraging perches and sometimes nest sites for raptors.



Where raptors are nesting, minimize human activities nearby from mid-March to mid-July.



## From Days Gone By

The thickets of trees and shrubs that often surround abandoned farmsteads and field edges can provide significant wildlife habitat in some situations. There are a few species at risk that can make use of these areas. Perhaps the best example is the Loggerhead Shrike. While they seem to prefer natural shrub communities, Loggerhead Shrikes will also nest in planted shelterbelts and hedgerows.

Old shelterbelts are sometimes also used by Swainson's Hawks and Ferruginous Hawks and they can provide shelter for prey species such as mice and rabbits.

One of the downsides of shelterbelts is that they can attract the riffraff of the bird community, such as crows and magpies. These species have the potential to impact surrounding grassland songbirds by taking eggs and nestlings.



To find out about the value of the shelterbelts on your land to species at risk and other wildlife, you may wish to consult with the Alberta Conservation Association (see "Getting Help, page 43).



# 4 Riparian Health means WEALTH!

Healthy riparian areas alongside rivers, streams, wetlands and lakes are dripping in biodiversity. There are some species at risk that rely on healthy riparian habitats and wetlands, such as the Trumpeter Swan, Little Brown Myotis and Northern Leopard Frog. Thickly vegetated riparian areas also provide habitat for rabbits, voles, mice and other prey that support species at risk such as the Prairie Falcon and Short-eared Owl.

As well as providing habitat for wildlife and species at risk, healthy riparian areas provide many other wide-ranging benefits such as improved water quality and quantity, erosion control, water storage and excellent forage for livestock.



## Lending a Hand to the Northern Leopard Frog

If you have riparian areas and standing water on your property, there are several things that you can do to help the Leopard Frog population recover from its dramatic population crash. These actions will also benefit riparian areas in general and result in increased biodiversity, water quality and erosion control.

- ★ Protect existing wetlands from being drained or ploughed and where possible, reclaim previously drained wetlands. Ducks Unlimited may be able to help you out with restoring wetlands (see contact information on page 43).
- ★ Maintain a buffer zone around wetlands and if possible, maintain links of native or undisturbed vegetation between different wetlands to allow for frog movement.
- ★ Limit the use of pesticides, herbicides and nitrogen-based fertilizers near riparian areas and wetlands, as amphibians are very sensitive to these chemicals.
- ★ Where possible, minimize industrial and road development within 100m of wetlands and ponds.
- ★ Prevent the introduction of game fish into frog ponds, as they prey on tadpoles and may eliminate the frog population over time.
- ★ Use low to moderate stocking rates in pastures that contain frog ponds. This helps to minimize physical disturbance and allows for good cover so that frogs can escape from predators.
- ★ Defer cattle use near riparian areas and wetlands during the spring.
- ★ Provide alternative watering sites (e.g. troughs) to reduce impact on ponds and riparian areas. This can provide benefits to cattle as well, as improved water quality improves livestock health and weight gain. There may be help for this available from groups such as the Alberta Conservation Association and Alberta Environmental Farm Plan (Growing Forward 2). See contact information on page 43.
- ★ Place salt and mineral sources at least 1km from natural water bodies, if possible.

## Now You See Them, Now You Don't . .

Seasonal wetlands (also referred to as ephemeral wetlands) are the shallow ponds that appear for a few months in wet years, but are waterless for much of the year and often dry all year in drought years. There are some species at risk that rely on these seasonal wetlands, particularly the Plains Spadefoot and the Great Plains Toad.



Great Plains Toads are mostly found in the south-east corner of Alberta and rely on rainy periods and permanent and seasonal wetlands for breeding. Breeding success is usually higher in seasonal wetlands as these do not harbor as many predators as are found in permanent wetlands. They select breeding ponds with clear water. During dry periods, the toads remain buried and dormant. Their long lifespan of up to 20 years enables them to wait out the dry periods between breeding years.

Here are a few things that can help these unique amphibians:



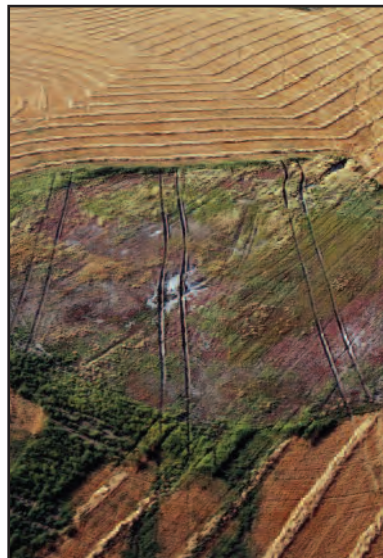
Avoid draining or cultivating through seasonal ponds. Where they have been removed or drained, re-establish if possible.



Avoid converting seasonal ponds into permanent water bodies, as permanent ponds may contain amphibian predators such as fish.



Leave a buffer of natural vegetation around seasonal ponds to provide shelter and foraging habitat for amphibians.



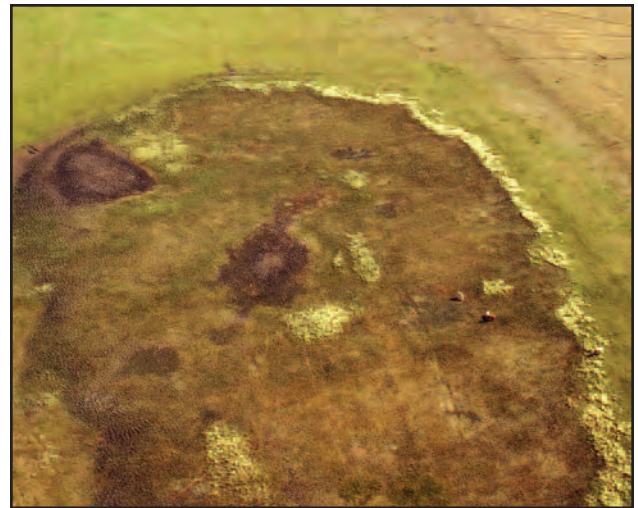
Avoid using pesticides or herbicides in the vicinity of seasonal ponds as they have adverse effects on frogs, toads and their tadpoles.



Establish a 100m setback from seasonal wetlands for any industrial activity, such as oil and gas development. Work with oil and gas companies to ensure that they do not put installations (such as wells) in these areas in dry years.



Avoid heavy cattle use around seasonal ponds, especially in the spring and early summer.



Plains Spadefoots are elusive creatures that spend much of their existence underground. Spade-like appendages on their hind feet help them to burrow into the soil in dry periods. They emerge above ground in wet springs during heavy rains and breed in the resulting seasonal ponds.

For more information on the value of riparian areas, how to assess riparian health and sound management of riparian areas, refer to the materials by Cows and Fish (see pages 43 and 44).



## Keep Your Grasslands Under Cover

No one likes a grassland that bares naked soil, including most species at risk. Healthy native grasslands, with good plant cover are of the most benefit to species at risk. Cover includes both live and dead plant material that is left over from previous years (litter). Litter is important to rangeland health because it conserves moisture. Removing the litter from mixed grass prairie results in a 50% reduction in forage production in dry years!



White-tailed Prairie Hare (jackrabbit)

Some of the species at risk that benefit from good cover include Sharp-tailed Grouse, Long-billed Curlew, Sprague's Pipit, Upland Sandpiper, Swift Fox and many of the prairie amphibians. Good cover is also important for prey species of some of the raptors at risk, such as jackrabbits and voles. The benefits to you include a reliable forage supply, improved water quality, less erosion, improved drought resistance and fewer weeds.



Upland Sandpipers need native grasslands with good plant cover.



June Grass

Here are some basic range management principles that will help to keep your range healthy and functioning well for both your operation and for species at risk. The Mini Range Guide on the next few pages helps to illustrate these principles.

- ★ Balance livestock demand with forage supply.
- ★ Patchy grazing can be good for species at risk.
- ★ Limit grazing in vulnerable periods. For example, restrict use of native pastures in the early spring.
- ★ Provide rest after grazing so that grasslands are allowed to recover and produce reliable forage year after year.



# Over and Under the Range

## A Mini-Guide

Prior to European settlement, Alberta's rangelands were well adapted to natural disturbances such as fire, drought, flood and grazing by bison, elk and pronghorn. Where possible, today's range management practices seek to emulate these natural rhythms and patterns.





# Rangelands at Work

Rangelands that are in a healthy condition perform a variety of jobs for us and for wildlife and plants:



## Provide Forage for Livestock and Wildlife

Plant communities in healthy rangelands make efficient use of sunlight and water to produce a reliable and high quality source of forage.



## Protect the Soil

Healthy rangelands provide a plant cover that protects prairie soils from water and wind erosion. Rich prairie soils have taken centuries to develop and are one of the reasons for the high forage production in the grasslands.



## Store and Release Water

Like a sponge, healthy rangelands store, retain and slowly release water. This means more water for plant growth and less erosion.



## Keep Weeds at Bay

Healthy, well-vegetated rangelands do not allow spaces for weeds to invade.





# Rangelands at Work



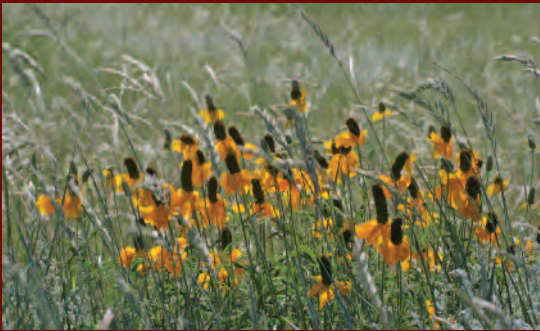
## Recycle Nutrients

Healthy rangelands do not require inputs of fertilizer or irrigation water in order to keep them productive. Good range management practices encourage the conservation and recycling of nutrients.



## Foster Diversity

A diversity of grasses, forbs and shrubs characterize healthy rangelands. This diversity provides stability in times of drought, creates high quality forage for livestock and wildlife and contributes to the overall biodiversity of the prairies.



## Filter Water and Keep Watersheds Healthy

Healthy rangelands help to filter nutrients and sediment out of runoff water and keep our watersheds and waterways cleaner.





# Keeping your Rangeland Healthy

for you, your livestock and species at risk

## Balance Livestock Demand with Forage Supply

How many cows should you put in your pasture? Good question! The answer is “the number that can safely graze it without degrading the soil or plants over time”. It can be a balancing act, but a good rule of thumb is to use 25-50% of the forage that is produced in the growing season. Use less on dry and shallow soils and more where the moisture supply is better and more reliable. The remainder, called “carryover”, is left to form an insulating layer, to protect the plants and soil. The carryover from this year becomes next year’s litter. Carryover will ensure continued good forage production for your cattle and mean that your rangelands are providing you with all of the benefits listed on the previous pages.

Most grassland species at risk thrive in areas of healthy, well-vegetated grasslands. Many migratory grassland birds arrive in Alberta in April and start nesting well before the grass really gets going. They are relying on the “carryover” from last year’s season to provide cover for nesting sites. Some species, such as Sprague’s Pipit and Baird’s Sparrow, require relatively tall grass for foraging and for nesting. If the grass is grazed right down to the ground in an even manner, these species will not be able to live here.



The presence of Sprague’s Pipits is a good indicator that you are leaving enough carryover to ensure a reliable supply of grass in the future.

### Sprague’s Pipit

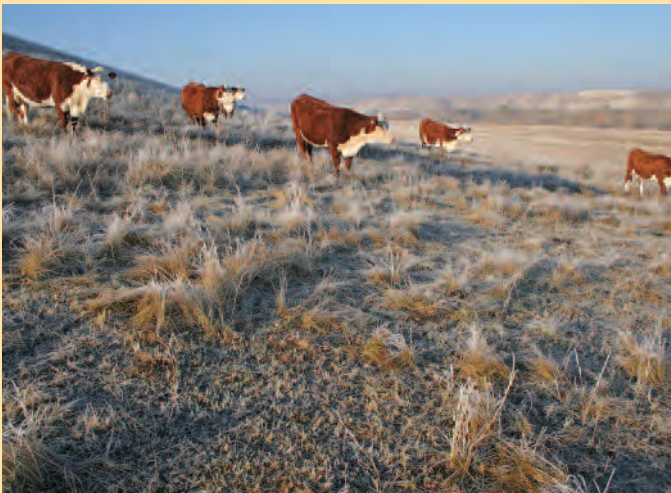
This secretive little brown bird goes unnoticed by many. It is most easily recognized by its distinctive song, heard high above the grasslands from April to July. Listen for a musical, tinkling song on a descending scale, way up in the air. This is the courtship song of the male pipit, which it sings as it flies in wide circles above the grasslands. Usually they are so high that you cannot see them until they fly back down to the ground.



# Patchiness is Good!

Livestock and other animals are not mowing machines, and do not graze their way evenly across a pasture. They tend to use the pasture in an uneven manner, using some areas quite heavily, some lightly and other areas are left ungrazed. As long as the heavier use is not taking place in sensitive areas, such as riparian areas or steep slopes, patchy grazing can actually be a very good thing for species at risk.

Many species at risk favour a patchy habitat. A good example is the Long-billed Curlew. For nesting areas, they seek out pastures with some short areas (more heavily grazed patches) with clumps of longer vegetation (less heavily grazed or not grazed). The taller areas provide good nesting cover and camouflage, whereas the shorter grass areas allow them to see predators and to easily forage for food. Once their young have hatched, they then seek out areas of thicker, taller vegetation where their young have hiding places and are less vulnerable to predators.



The Burrowing Owl is another example. They nest in ground squirrel or badger burrows, usually in quite heavily grazed areas with sparse vegetation. The low vegetation helps the owls to detect predators near the nest. During the day, the owls hang out near the nest site, snacking on grasshoppers, roosting and keeping an eye out for predators. At night, they travel to nearby areas of much longer grass to forage for small mammals. In a patchily grazed landscape, Burrowing Owls can find both of these requirements in close proximity.



Burrowing Owls prefer sparse vegetation during the day and taller vegetation for night time hunting.





# Limit Grazing in Vulnerable Periods

Different plant communities are more susceptible to heavy grazing at different times. Native grasslands are especially vulnerable to early spring grazing and should generally be protected from livestock grazing until this sensitive growth period has passed. Many producers use non-native pastures early in the season and then move cattle on to native grasslands in late spring, summer, fall and winter.



Western Blue Flag

This practice encourages long-term sustainability of the rangeland and also benefits species at risk. Many grassland birds, such as the Short-eared Owl, Long-billed Curlew, Sage-grouse and Upland Sandpiper, are ground nesters and they nest in the early spring (April to June). By delaying grazing until after this period, the risk of nests being trampled on is reduced. Delayed grazing also benefits a rare plant, the Western Blue Flag, which thrives when early spring grazing pressure is reduced.



The nests of ground-nesting birds, such as the Short-eared Owl are vulnerable to trampling in the spring.

## Provide Rest after Grazing

Plants need a period of rest after grazing so that the grazed material can be replaced and the root systems can recover. Repeated grazing without rest leads to a loss of root depth, plant vigor and productivity.

A healthy grassland that is allowed to recover after grazing will continue to provide quality forage for livestock and provide good habitat for species at risk, year after year.

There are very few species at risk, such as the Mountain Plover, that need some heavily grazed areas (i.e. areas that are not given adequate rest



from grazing). However, the use of heavy grazing to create habitat for these species is something that should be carefully planned and monitored and

used only in specially designated areas that are generally very small in size. For example, small areas such as calving pastures and the area around a dugout often receive increased grazing pressure. This must be balanced with the negative side effects to the landowner, such as increased soil erosion and weed invasion.

Conversely, some prairie species are adapted to grasslands that are ungrazed or very lightly grazed, with a large buildup of litter. The Sprague's Pipit is a good example of a bird that requires well-managed grasslands.



## Nip Exotic Plants in the Bud!

When exotic (non-native) plants invade native habitats they can exclude native plants and cause an overall loss of health and function. For example, a riparian area that has been taken over by Leafy Spurge will function very differently than a natural riparian area: The ability of that riparian area to reduce erosion and filter water is reduced. Forage production for livestock is greatly diminished and biodiversity plummets. Native plants and animals are often negatively affected, including species at risk.

In natural rangelands, non-native grasses, such as Crested Wheatgrass can move in and spread. Crested Wheatgrass tends to create areas of little to no plant diversity and a correspondingly low animal diversity. Clumps of Crested Wheatgrass dry out the spaces between the grass clumps, leading to exposed soil and serious soil loss. And again, forage production and flexibility are reduced.



Compare the diverse native grassland on the left with the one that has been invaded with Canada Thistle on the right.

While eliminating weeds from your land may seem like an impossible and daunting task, here are a few tips that can help you to get a handle on exotic plants and cut down on the chances that they will show up in the first place.



Monitor your land for weeds and if you spot something new, carry out spot weed control right away. It is much easier to pull or dig a handful of plants now than deal with a big patch a couple of years down the road.



Maintain sound grazing practices that reduce the opportunities for weed invasion by limiting the amount of bare ground that is present (see previous pages on range management).



Avoid planting tame grasses that will invade adjacent natural areas (e.g. Timothy, Crested Wheatgrass).



Remember that as a landowner, you can influence reclamation approaches with oil and gas companies. In natural areas, such as rangelands, it has been found that the least invasive approach is to not seed after the disturbance. This way, the surrounding native plants move back in to the disturbed area.



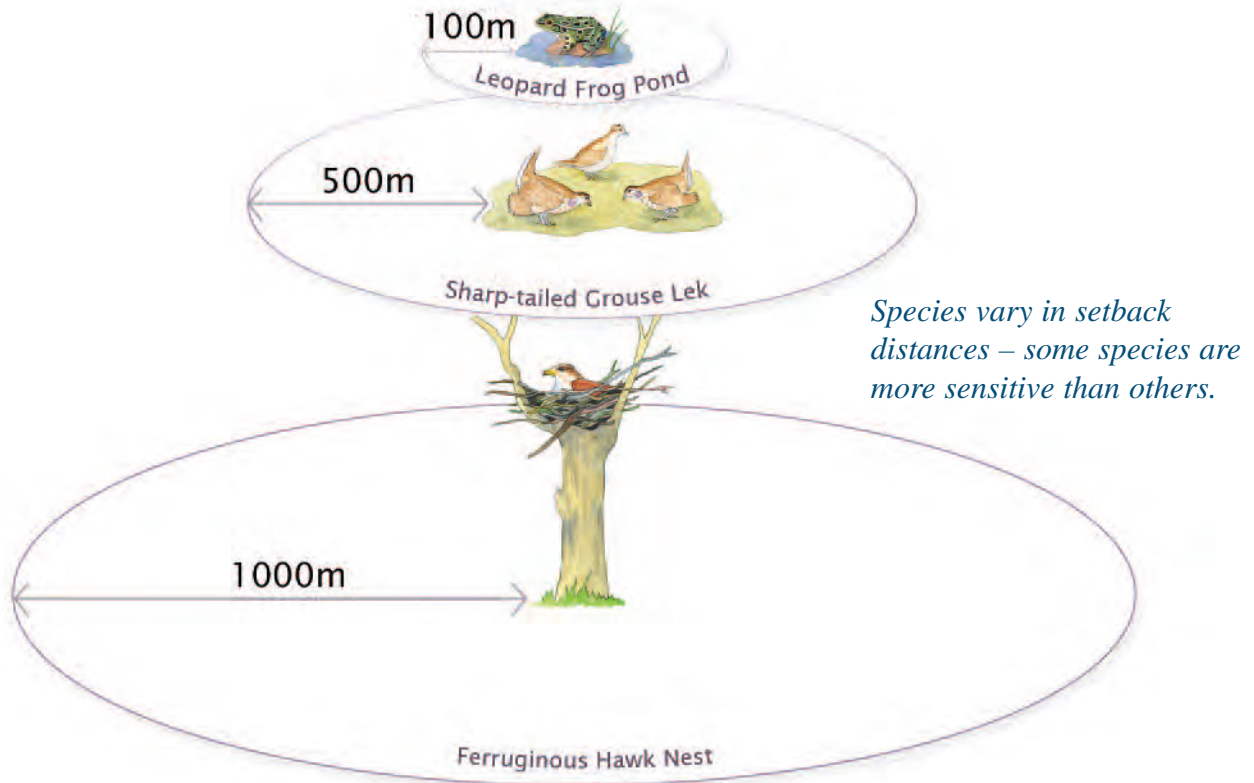
Check with your local Agriculture fieldman at your county office for a list of weeds that are a concern in your area and learn how to identify them. The Alberta Invasive Plant Council has many fact sheets with control information. See page 43 or [www.invasiveplants.ab.ca](http://www.invasiveplants.ab.ca).





# Shhhh! Do Not Disturb!

Some species at risk are highly sensitive to human disturbance and it is often one of the reasons why the species came to be at risk in the first place. Just like people, animals have their own personal space and when there is disturbance inside of that personal space, it causes stress that may cause them to leave the area entirely. For example, if an oil well is put in near a Ferruginous Hawk nest while the parents are incubating eggs, it is very likely that the hawks will abandon the nest and leave the area.



Setback distances vary according to species and season. You can find the most up to date information on setback distances for a variety of species here: [aep.alberta.ca/fish-wildlife/wildlife-land-use-guidelines/documents/WildlifeLandUse-SpeciesHabitatGrasslandParkland-Apr28-2011.pdf](http://aep.alberta.ca/fish-wildlife/wildlife-land-use-guidelines/documents/WildlifeLandUse-SpeciesHabitatGrasslandParkland-Apr28-2011.pdf).

Here are a few tips to avoid disturbing species at risk:

- ★ Minimize human disturbance of nesting and breeding sites in critical periods. Human disturbance includes people driving and walking in the area. Even nature lovers can cause species at risk to abandon an area by spending too much time watching a nest or other critical area.
- ★ When negotiating with oil and gas companies, consider where the species at risk are on your land and try to steer industrial activities away from these critical areas.
- ★ To avoid conflicts with species at risk, construction projects are best undertaken in the winter, where possible. However, this may put projects in conflict with critical ungulate winter ranges, so such considerations must be carefully balanced.

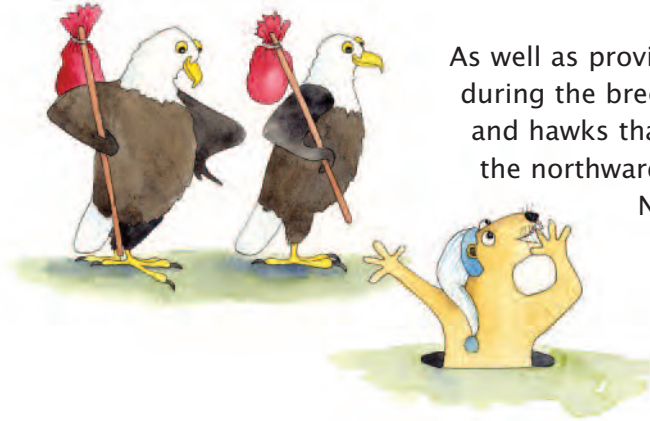
# PREY for Species at Risk!

This might be tough to swallow, but....it's important to maintain a population of prey animals for species at risk. Yes, we are talking about mice, ground squirrels (gophers), grasshoppers, etc... These prey animals support populations of species at risk. Species at risk that rely on ground squirrels for food include the American Badger, Long-tailed Weasel, Swift Fox, Ferruginous Hawk, Golden Eagle, Prairie Falcon and Prairie Rattlesnake.



# 8

*Supporting species at risk*



As well as providing a food source for predators and their young during the breeding season, ground squirrels are vital to eagles and hawks that are migrating north in the spring. For example, the northward migrating Bald and Golden Eagles that nest in the Northwest Territories, Yukon and Alaska rely on emerging ground squirrels in southern Alberta in February and March.

Ground squirrel burrows are used by Burrowing Owls, Tiger Salamanders, Prairie Rattlesnakes and other amphibians and reptiles.

But, but, but.....what about the damage that ground squirrels do to crops and pasture? While ground squirrels do consume vegetation, are they really that detrimental? Unfortunately the exact answer to that question is unknown, as there have not been any studies that document the extent of damage done by ground squirrels to crops or pasture. It has been estimated that the vegetation intake of a cow approximates that of about 2,275 ground squirrels. However there are big differences in how a ground squirrel grazes, compared to cattle, both in their choices of plants and how they eat them.

- ★ Have tolerance for some level of prey populations in some areas. By encouraging predators such as hawks, you may obtain a natural balance between predators and their prey.
- ★ Where ground squirrel populations require reining in, choose non-toxic, safe methods of control, such as trapping or shooting. Avoid using poisons as these can end up poisoning non-target species. The most effective time to control ground squirrels is in February and March, before they have reproduced.
- ★ Consider the role that your range management practices play in keeping ground squirrels at bay. Lightly grazed areas with good cover will minimize ground squirrel abundance. Heavily used areas tend to have more ground squirrels.





# Cultivate your Relationship with Prairie Birds

While this Guide focuses mainly on native prairie areas, there are some things that can be done in cultivated areas that will benefit species at risk and other wildlife. Some grassland birds will use tame pasture and cropland in addition to native rangelands. The Long-billed Curlew is a good example.



Long-billed Curlew



While they prefer native grasslands, Western Meadowlarks will also use tame pasture and cropland.

Here are a few things you can do in your cropland and tame pasture to help prairie birds:



Where possible, maintain spring nesting cover and limit disturbances such as haying and harvesting until after the breeding season (May to mid-July).



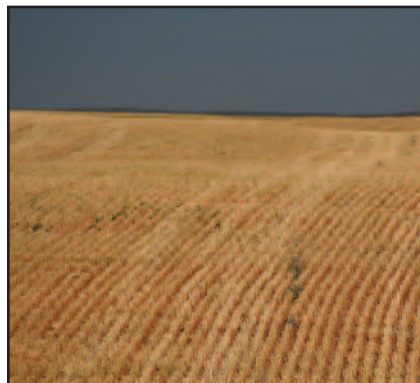
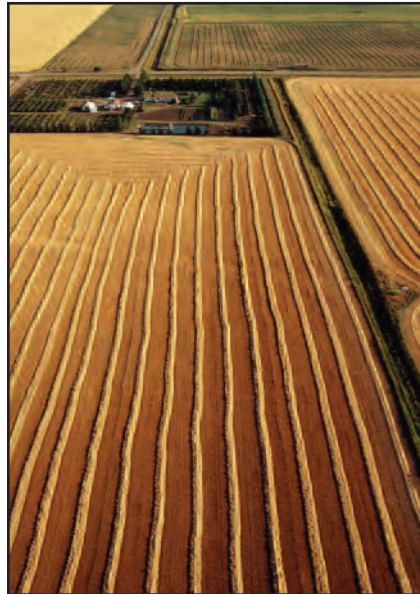
Use flushing bars on haying equipment.



Use zero-till or minimal tillage so as to limit disturbance. Studies have found more songbirds in minimum versus conventional tilled crops in Alberta.



Consider winter wheat as a crop alternative, as winter wheat fields require less disturbance in spring and early summer, meaning less disturbance to nests and broods that use cultivated fields. Ducks Unlimited has also found that winter wheat crops provide excellent cover for nesting Northern Pintails.



Savannah Sparrows prefer native grasslands, but can breed in tame pasture and at field edges.



Northern Pintail

## Take the Plunge – Restore the Range!

Consider converting non-native lands, such as marginal cropland, to native vegetation or other permanent cover. While this is a fairly big undertaking, it is not an impossible task in most areas and it is becoming more widespread. Also, there have been some big advances in wild seed collection and production, making it possible to use native seed mixes. Converting cropland to cover has the potential to benefit many species at risk, such as the Sharp-tailed Grouse, Long-billed Curlew and Swainson's Hawk. It will likely also provide benefits to your operation, especially when marginal cropland is replaced with a productive pasture. For example, equipment costs will be reduced and grazing flexibility will be increased.

If you are considering converting cropland to cover, it is important that you research the most suitable seed mixes for your local area and the conditions on your land. There are several organizations, such as Ducks Unlimited, the Alberta Conservation Association, MULTISAR, Operation Grassland Community and Alberta Environment and Parks that can provide expertise and advice for your conversion project. Some of these agencies may also provide funding assistance for restoration projects.



Swainson's Hawk



This productive pasture in south-western Alberta was once marginal cropland. The landowners planted a native seed mix of Western Wheatgrass, Slender Wheatgrass and Northern Wheatgrass. This photo was taken three years after the native seed was sown.



## In Summary...

Species at risk and the native habitats that support them are a valuable and important part of our prairie heritage, as is ranching and farming. This Guide describes many suggested actions or “positive practices” that landholders can take to help species at risk and ensure that they continue to thrive and provide us with many benefits. Such actions will inevitably help numerous other prairie species. In many cases, these actions will also result in direct benefits to the landholder as well, such as increased forage production and reliability, improved water quality and reduced erosion.



# Getting Help

If you are interested in finding out more about how you can help species at risk or would like to get assistance with managing your native prairie, there are many resources, organizations and groups that can help:

## Programs & Organizations

MULTISAR  
403-382-4364  
[www.multisar.ca](http://www.multisar.ca)

Alberta Conservation Association  
403-382-4361  
[www.ab-conservation.com](http://www.ab-conservation.com)

Nature Conservancy of Canada  
1-877-262-1253  
[www.natureconservancy.ca](http://www.natureconservancy.ca)

Cows and Fish  
403-381-5538  
[www.cowsandfish.org](http://www.cowsandfish.org)

Alberta Agriculture and Forestry  
1-866-882-7677  
[www.agric.gov.ab.ca](http://www.agric.gov.ab.ca)

Ducks Unlimited Canada  
780-489-2002  
[www.ducks.ca](http://www.ducks.ca)

Fisheries and Oceans Canada (DFO)  
204-983-5000  
[www.dfo-mpo.gc.ca](http://www.dfo-mpo.gc.ca)

Operation Grassland Community  
780-437-2342  
[www.grasslandcommunity.org](http://www.grasslandcommunity.org)

Environment and Climate Change Canada  
1-800-668-6767  
[www.ec.gc.ca](http://www.ec.gc.ca)

Alberta Environmental Farm Plan  
780-612-9712  
[www.albertaefp.com](http://www.albertaefp.com)

Land Stewardship Centre  
[www.landstewardship.org](http://www.landstewardship.org)

Alberta Stewardship Network  
1-877-727-5276  
[www.landstewardship.org/ASN](http://www.landstewardship.org/ASN)

Water for Life  
310-4455  
[www.waterforlife.alberta.ca](http://www.waterforlife.alberta.ca)

Prairie Conservation Forum  
[www.albertapcf.org](http://www.albertapcf.org)

Milk River Watershed Council Canada  
403-647-4342  
[www.mrwcc.ca](http://www.mrwcc.ca)

Southern Alberta Land Trust Society  
1-877-999-7258  
[www.salts-landtrust.org](http://www.salts-landtrust.org)

Western Sky Land Trust  
403-974-0756  
[www.westernskylandtrust.ca](http://www.westernskylandtrust.ca)

Alberta Invasive Plants Council  
403-317-2286  
[www.invasiveplants.ab.ca](http://www.invasiveplants.ab.ca)

Alberta Native Plant Council  
[www.anpc.ab.ca](http://www.anpc.ab.ca)

Foothills Restoration Forum  
[www.foothillsrestorationforum.ca](http://www.foothillsrestorationforum.ca)



# Getting Help

## Useful Web Resources

### MULTISAR

Fact sheets, BMPs, habitat assessments, maps  
[www.multisar.ca](http://www.multisar.ca)

### Alberta Species at Risk

[esrd.alberta.ca/fish-wildlife/species-at-risk](http://esrd.alberta.ca/fish-wildlife/species-at-risk)

### Sensitive Species Guidelines

[aep.alberta.ca/fish-wildlife/wildlife-management/sensitive-species-inventory-guidelines.aspx](http://aep.alberta.ca/fish-wildlife/wildlife-management/sensitive-species-inventory-guidelines.aspx)

### Operation Grassland Community

Prairie conservation-based Fact Sheets  
[www.grasslandcommunity.org](http://www.grasslandcommunity.org)

### COSEWIC

Committee on the Status of Endangered Wildlife in Canada  
[www.cosewic.gc.ca](http://www.cosewic.gc.ca)

### Canada's Species at Risk Act (SARA)

[www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)

## Useful Publications

### Caring for the Green Zone: Riparian Areas and Grazing Management

Fitch, L., B. Adams, K. O'Shaughnessy, 2003. Lethbridge, Alberta, Cows and Fish Program. Available from 403-381-5538 and [www.cowsandfish.org](http://www.cowsandfish.org).

### Riparian Areas: A User's Guide to Health

Fitch, L. and N. Ambrose, 2003. Lethbridge, Alberta, Cows and Fish Program. Available from 403-381-5538 and [www.cowsandfish.org](http://www.cowsandfish.org).

**Alberta Prairie Conservation Action Plan: 2016-2020.** Prairie Conservation Forum, 2016. Lethbridge, Alberta. Available at [www.albertapcf.org](http://www.albertapcf.org).

### Prairie Oil and Gas – A Lighter Footprint

Sinton, H.M., 2001. Alberta Environment. 67 pages. Available from Alberta Environment Information Centre, 780-422-2079, [environment.gov.ab.ca/info/library/7150.pdf](http://environment.gov.ab.ca/info/library/7150.pdf).

### When the Oilpatch Comes to Your Backyard: A Citizens' Guide, 2nd Edition

M. Griffiths, T. Marr-Laing and C. Severson-Baker, 2004. The Pembina Institute. To purchase contact 780-542-6272 or [www.pembina.org](http://www.pembina.org).

### Petroleum Industry Activity in Native Prairie and Parkland Areas: Guidelines for Minimizing Surface Disturbance

Native Prairie Guidelines Working Group, 2001. Calgary: Energy and Utilities Board, 38 pages. Available from EUB Information Services (403-297-8190) and [www.eub.gov.ab.ca](http://www.eub.gov.ab.ca).

## The Alberta Government has four Species at Risk Offices in the prairies:

### Lethbridge

Brandy Downey  
2nd Flr. YPM Place, 530-8 St. S.  
Lethbridge, Alberta T1J 2J8  
(403) 381-5526  
[Brandy.Downey@gov.ab.ca](mailto:Brandy.Downey@gov.ab.ca)

### Red Deer

Dave Prescott  
404 First Red Deer Place  
4911-51 St.  
Red Deer, Alberta T4N 6V4  
(403) 340-4309  
[Dave.Prescott@gov.ab.ca](mailto:Dave.Prescott@gov.ab.ca)

### Medicine Hat

Joel Nicholson  
Room 301, Provincial Building  
346 - 3rd St. SE  
Medicine Hat, Alberta T1A 0G7  
(403) 528-5202  
[Joel.Nicolson@gov.ab.ca](mailto:Joel.Nicolson@gov.ab.ca)

### Calgary

Brett Boukall  
Fish and Wildlife Division  
EP Building, Suite 100  
3115 - 12 St. NE  
Calgary, Alberta T2E 7J2  
(403) 297-7349  
[Brett.Boukall@gov.ab.ca](mailto:Brett.Boukall@gov.ab.ca)

# Appendix - Prairie Species at Risk

Subject to change (see page 6)

## BIRDS

	Alberta General Status	Alberta Detailed Status	Canada Species at Risk Status	Habitat & Threats
Burrowing Owl	At Risk	Endangered	Endangered	Grasslands; sensitive to disturbance at nests
Greater Sage-grouse	At Risk	Endangered	Endangered	Sagebrush; severely reduced numbers
Piping Plover	At Risk	Endangered	Endangered	East-central Alberta lakes; impacted by shoreline use
Ferruginous Hawk	At Risk	Endangered	Threatened	Grasslands; sensitive to disturbance at nests
Mountain Plover	At Risk	Endangered	Endangered	Sparse grasslands; extreme northern limit of range in SE corner of province
Peregrine Falcon	At Risk	Threatened	Special Concern	Cliffs, tall buildings; population recovering from earlier declines due to pesticides
Chestnut-collared Longspur	At Risk	N/A	Threatened	Grassland dependent; steep population declines in last decade
Clark's Grebe	At Risk	N/A	N/A	Peripheral species, few breeding pairs; vulnerable to disturbance at nesting colonies
Western Wood Pewee	May be at Risk	N/A	N/A	In the Grassland Natural Region relies on riparian forests; declining population
McCown's Longspur	May be at Risk	N/A	Special Concern	Grassland dependent; populations have declined
Short-eared Owl	Sensitive	N/A	Special Concern	Grasslands, ground-nester; threats include cultivation of grasslands
Long-billed Curlew	Sensitive	Special Concern	Special Concern	Grasslands; threats include cultivation of grasslands
Baird's Sparrow	Sensitive	N/A	Special Concern	Grasslands; threats include cultivation of grasslands
Loggerhead Shrike	Sensitive	Special Concern	Threatened	Shrubby areas in riparian and shelterbelts; habitat loss due to clearing is a concern
Sprague's Pipit	Sensitive	Special Concern	Threatened	Grassland dependent, lightly to moderately grazed areas are preferred habitat; declining
Prairie Falcon	Sensitive	Special Concern	Not at Risk	Sensitive to disturbance near cliff nests
Golden Eagle	Sensitive	N/A	Not at Risk	Sensitive to disturbance near cliff nests along rivers; large numbers of migrants through prairies and foothills
Trumpeter Swan	Sensitive	Special Concern	Not at Risk	Grande Prairie area and foothills of SW Alberta; sensitive to disturbance on water and near breeding ponds
Sharp-tailed Grouse	Sensitive	N/A	N/A	Grasslands and shrubs that are lightly to moderately grazed
Upland Sandpiper	Sensitive	N/A	N/A	Grasslands; population declining
Black-crowned Night Heron	Sensitive	N/A	N/A	Declining population; threats include wetland drainage and human disturbance at nesting colonies
Black Tern	Sensitive	N/A	Not at Risk	Large marshes; vulnerable to wetland drainage
Bobolink	Sensitive	N/A	Threatened <sup>2</sup>	Tall-grass meadows
Brewer's Sparrow	Sensitive	N/A	N/A	Declining population in sagebrush habitat
Common Nighthawk	Sensitive	N/A	Threatened	Food supply vulnerable to pesticides

N/A = not assessed \* denotes ministerial approval, but pending regulation amendment 2 = Listing under SARA in process

**Alberta General Status:** At Risk, May be at Risk, Sensitive, Undetermined, or Secure designation by Alberta Environment and Parks, resulting from a general status evaluation process every 5 years.

**Alberta Detailed Status:** Alberta's Wildlife Act legislative status of Endangered or Threatened, or non-legislative status of Special Concern, resulting from a detailed status review of At Risk, May be at Risk and selected Sensitive and Data Deficient species, designated by the Alberta Endangered Species Conservation Committee.

**Canada Species at Risk Status:** Canada's Species at Risk Act legislative status of Endangered, Threatened or Special Concern or non-legislative status of Not at Risk or Data Deficient, designated by the Committee on the Status of Endangered Wildlife in Canada.




		Alberta General Status	Alberta Detailed Status	Canada Species at Risk Status	Habitat & Threats
BIRDS	Grasshopper Sparrow	Sensitive	N/A	N/A	Sandhill habitats vulnerable to overgrazing
	Barn Swallow	Sensitive	N/A	Threatened	Relatively common but declining in Alberta and Canada
	American Kestrel	Sensitive	N/A	N/A	In the Grassland Natural Region relies on riparian forests for nesting; declining population
	Great Blue Heron	Sensitive	N/A	N/A	Vulnerable at colonies; threats include disturbance and removal of nest trees
	White-faced Ibis	Sensitive	N/A	N/A	Relatively new to Alberta; vulnerable to loss of wetland habitat
	Black-necked Stilt	Sensitive	N/A	N/A	Small population size; vulnerable to loss of wetland habitat
	Sora	Sensitive	N/A	N/A	Large declines; threatened by loss of wetland habitat
	Sedge Wren	Sensitive	N/A	Not at Risk	Draining of wetlands degrades nesting habitat
	Lark Bunting	Sensitive	N/A	N/A	Relies on grasslands; great variability in numbers from year to year
	Least Flycatcher	Sensitive	N/A	N/A	In the Grassland Natural Region relies on riparian forests; declining population
	Eastern Kingbird	Sensitive	N/A	N/A	Relies on riparian forests and shelterbelts in the grasslands; declining population
	Common Yellowthroat	Sensitive	N/A	N/A	Common and widespread, but riparian habitat is threatened
	Sage Thrasher	Undetermined	N/A	Endangered	Peripheral species in southeast corner of province
MAMMALS	Swift Fox	At Risk	Endangered	Threatened	Was extirpated; successful reintroduction resulting in population and range expansion in southern prairies
	Ord's Kangaroo Rat	At Risk	Endangered	Endangered	Localized populations dependent on sand dune areas
	Grizzly Bear	At Risk	Threatened	Special Concern	Montane and foothills fescue; requires specific management to avoid and respond to human conflicts
	Little Brown Myotis	May be at Risk	N/A	Endangered	Population crash in eastern Canada because of white-nose syndrome, caused by an introduced fungus
	Long-tailed Weasel	May be at Risk	N/A	Not at Risk	Grasslands and wetlands; population declining due to unknown causes
	Bobcat	Sensitive	N/A	N/A	Population size and trends unknown
	American Badger	Sensitive	Data Deficient	Special Concern	Burrows important to Burrowing Owls and Swift Foxes
	Olive-backed Pocket Mouse	Sensitive	N/A	N/A	Isolated but apparently stable populations in dune grasslands in SE Alberta
	Western Small-footed Bat	Sensitive	Special Concern	N/A	Localized distribution in cottonwoods and cliffs along prairie rivers
	Pronghorn	Sensitive	N/A	N/A	Population vulnerable to extreme winters; threatened by cultivation and habitat fragmentation
	Thirteen-lined Ground Squirrel	Undetermined	N/A	N/A	Data deficient, appears to be widely but sparsely dispersed in a variety of grassland habitats
46	N/A = not assessed      * denotes ministerial approval, but pending regulation amendment      2 = Listing under SARA in process				
	Alberta General Status: At Risk, May be at Risk, Sensitive, Undetermined, or Secure designation by Alberta Environment and Parks, resulting from a general status evaluation process every 5 years.				
	Alberta Detailed Status: Alberta's Wildlife Act legislative status of Endangered or Threatened, or non-legislative status of Special Concern, resulting from a detailed status review of At Risk, May be at Risk and selected Sensitive and Data Deficient species, designated by the Alberta Endangered Species Conservation Committee.				
Canada Species at Risk Status: Canada's Species at Risk Act legislative status of Endangered, Threatened or Special Concern or non-legislative status of Not at Risk or Data Deficient, designated by the Committee on the Status of Endangered Wildlife in Canada.					

	Alberta General Status	Alberta Detailed Status	Canada Species at Risk Status	Habitat & Threats	
AMPHIBIANS & REPTILES	Northern Leopard Frog	At Risk	Threatened	Special Concern	Disappeared from much of Alberta range; remaining breeding ponds need protecting from draining and pollution
	Great Plains Toad	May be at Risk	Special Concern	Special Concern	Vulnerable to drainage of ephemeral (seasonal) wetland habitats and intensive use these ponds by livestock
	Plains Spadefoot	May be at Risk	N/A	Not at Risk	Vulnerable to drainage of ephemeral wetlands
	Long-toed Salamander	Sensitive	Special Concern	Not at Risk	Foothill and mountain habitats; vulnerable to habitat loss near breeding ponds; negatively influenced by fish stocking
	Western Toad	Sensitive	N/A	Special Concern	Foothill (and mountain) ponds; declining elsewhere, Alberta trends unknown
	Columbia Spotted Frog	Sensitive	N/A	Not at Risk	Foothill (and mountain) ponds; threatened by introduced fish
	Bullsnake	Sensitive	N/A	N/A	Grasslands; vulnerable to persecution at dens and to road-caused mortality
	Prairie Rattlesnake	Sensitive	Special Concern	Special Concern	Grasslands; vulnerable to disturbance and persecution at hibernacula, roads near tops of valleys cause high road-kills
	Western Hognose Snake	May be at Risk	N/A	N/A	Sparse information on populations and hibernacula
	Short-horned Lizard	At Risk	Endangered	Endangered	Negatively impacted by intensive developments in badland and river valley break habitats
	Western Painted Turtle	Sensitive	N/A	Not at Risk	Breeding in Milk River & Oldman River basins, isolated introductions elsewhere; susceptible to habitat loss
Garter Snakes (Wandering, Plains, Red-sided)	Sensitive	N/A	N/A	Variety of habitats; vulnerable at hibernacula	
FISH	Lake Sturgeon	At Risk	Threatened	Endangered <sup>2</sup>	Prairie rivers; low populations; threats include habitat degradation, fragmentation and over-harvesting
	Rocky Mountain Shorthead Sculpin	At Risk	Threatened	Threatened	Distribution limited to Milk and St. Mary's Rivers; threats may include altered water flows
	Stonecat	At Risk	Threatened	N/A	Distribution limited to Milk River; threats may include altered water flows
	Western Silvery Minnow	At Risk	Threatened	Threatened	Distribution limited to Milk River; threats may include altered water flows
	Bull Trout	At Risk	Threatened	Threatened <sup>2</sup>	Foothill (and mountain) streams; threats include over-harvesting and habitat degradation
	Brassy Minnow	At Risk	N/A	N/A	Distribution in prairies limited to the Milk River and tributaries; threats may include altered water flows
	Sauger	Sensitive	N/A	N/A	Sparsely distributed in slow-moving prairie rivers
PLANTS	Small-flowered Sand Verbena	At Risk	Threatened	Endangered	Few occurrences, restricted distribution; threats include conversion of habitat to cropland and stabilization of dunes
	Soapweed	At Risk	Endangered	Threatened	Few occurrences; threats include high levels of native ungulate and domestic livestock grazing
	Tiny Cryptanthus	At Risk	Endangered	Endangered	Small number of occurrences; grassland habitat threatened by oil and gas activities
	Western Blue Flag	At Risk	Special Concern	Special Concern	Limited distribution in SW Alberta; threats include invasive grasses and heavy grazing
	Western Spiderwort	At Risk	Endangered	Threatened	One location in SE Alberta; threats include cultivation of native sand dunes and industrial development
	Slender Mouse-ear Cress	May be at Risk	Endangered	Threatened	One known occurrence in SE Alberta
INSECTS	Weidemeyer's Admiral	May be at Risk	Special Concern	Special Concern	Cattle grazing may affect grassland and coulee habitats along the Milk River
	Yucca Moth	At Risk	Endangered*	Endangered	Mutualism with Soapweed; restricted distribution in SE Alberta
	N/A = not assessed      * denotes ministerial approval, but pending regulation amendment      2 = Listing under SARA in process				
Alberta General Status: At Risk, May be at Risk, Sensitive, Undetermined, or Secure designation by Alberta Environment and Parks, resulting from a general status evaluation process every 5 years.					
Alberta Detailed Status: Alberta's Wildlife Act legislative status of Endangered or Threatened, or non-legislative status of Special Concern, resulting from a detailed status review of At Risk, May be at Risk and selected Sensitive and Data Deficient species, designated by the Alberta Endangered Species Conservation Committee.					
Canada Species at Risk Status: Canada's Species at Risk Act legislative status of Endangered, Threatened or Special Concern or non-legislative status of Not at Risk or Data Deficient, designated by the Committee on the Status of Endangered Wildlife in Canada.					

47





Printed in Canada  
10,000 copies, December 2006 (First Edition)  
6,600 copies, March 2009 (First Edition)  
10,000 copies, April 2016 (Second Edition)