Saskatchewan Prairie Conservation Action Plan 2003-2008

PREPARED BY

PCAP PARTNERSHIP

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Representatives from 13 Partner organizations* participated at the March 2002 Plan Renewal meeting. They included AAFC-PFRA, AAFC-SPARC, DFO, DUC, EC-CWS, NCC, NPSS, NS, PC-GNP, SAFRR, SE, SP, SRM, SSGA, SWF, and U of R-CPRC. Representatives from the following 17 Partner groups participated at the October 2002 Plan Renewal meeting: AAFC-PFRA, DFO, DUC, EC-CWS, NCC, NPSS, NS, PC-GNP, SAFRR, SE, SP, SRC, SRM, SSGA, SWA, SWF, U of R-CPRC. The SSDB and the SFC accepted our invitation to join the Partnership and provided representation at the March and October meetings respectively, and the RSM became a Partner in 2003.

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Introduction to Prairie Conservation - David Gauthier (U of R-CPRC) and Greg Riemer (SE)

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Executive Summary

2003–2008 PCAP

VISION, GOALS AND OBJECTIVES

Saskatchewan's Prairie Conservation Action Plan (PCAP) complements similar provincial efforts in Alberta and Manitoba. It builds upon the prairie region PCAP that was developed by World Wildlife Fund Canada (WWFC) (1989-1994) and the first Saskatchewan PCAP (1998-2003). In the fall of 2001, consensus was reached by the Saskatchewan PCAP Partnership that a renewal of the Plan was essential for ensuring continued progress on ongoing initiatives and for addressing new Actions of emerging importance. This Plan reflects discussion and consensus among representatives of groups representing industry, federal and provincial government agencies, non-government organizations (NGOs) and Saskatchewan's two universities regarding the conservation and management of Saskatchewan's native prairie resource. Toward that end the PCAP Partnership has identified a renewed Vision and Goals encompassing 25 Objectives and 78 direct Actions to be addressed over a five-year period. The Vision and Goals I, II, and III remain unchanged from the 1998-2003 Plan, indicating their continuing relevance. Goals IV and V were amended slightly to better reflect the scope of activities associated with them.

VISION: "The native prairie is to be sustained in a healthy state in which natural and human values are respected."

This Action Plan defines "native prairie" as native aquatic and terrestrial habitats within the Prairie Ecozone of Saskatchewan.

GOAL I. To Sustain a Healthy Native Prairie Grazing Resource.

Livestock producers can and do maintain healthy native grasslands with rich and diverse wildlife and high levels of native biodiversity. Studies show that appropriate grazing by livestock is economically and ecologically sustainable. There are four Objectives contained under this Goal:

OBJECTIVE 1: Promote grazing management programs that are based on economically and scientifically sound principles.

OBJECTIVE 2: Explore the economics of maintaining a healthy range resource for grazing.

OBJECTIVE 3: Recognize and support the efforts of private and public land managers who conserve native prairie.

OBJECTIVE 4: Increase the inventory of range resources on public and private lands to promote guidance on grazing management plans.

GOAL II. To Conserve the Remaining Prairie Resource.

More than 80% of Saskatchewan's native prairie land base has been lost to cultivation or development and much of the remaining prairie is highly fragmented. Native prairie continues to be threatened. The conservation of the remaining native prairie will be fostered by accomplishing the following eight Objectives:

OBJECTIVE 1: Complete and maintain an inventory of native prairie.

OBJECTIVE 2: Continue to develop a system of managed conservation areas.

OBJECTIVE 3: Encourage voluntary stewardship to conserve native prairie.

OBJECTIVE 4: Ensure that the remaining native prairie is protected from cultivation and development.

OBJECTIVE 5: Improve the use of Conservation Easements (CEs) and other tools to conserve native prairie that accommodate and respect agricultural interests.

OBJECTIVE 6: Ensure that property taxation and assessment policies are favourable to native prairie conservation.

OBJECTIVE 7: Adopt and improve regulations, policies, programs, and economic instruments that reward rather than penalize stewardship and conservation of native prairie ecosystems.

OBJECTIVE 8: Encourage government and industry to improve regulations, monitoring and technology to minimize negative impacts upon native prairie.

GOAL III. To Maintain Native Prairie Biological Diversity.

The management of native prairie must sustain the full range of native prairie diversity. In some cases, it may be necessary to re-vegetate cultivated land with native species in order to have viable, well functioning native prairie landscapes. Four Objectives are outlined to achieve this Goal:

OBJECTIVE 1: Improve our understanding of native prairie biological diversity.

OBJECTIVE 2: Promote management of native prairie to maintain biological diversity.

OBJECTIVE 3: Control the threat and impact of introduced invasive species to native prairie.

OBJECTIVE 4: Promote restoration and recovery of native prairie ecosystems.

Goal IV. To Promote Complementary Sustainable Uses of Native Prairie.

This Goal promotes community-based resource use that is complementary to grazing as well as ecologically, economically and socially sustainable. Four Objectives are proposed under this Goal:

OBJECTIVE 1: Promote community-based business opportunities associated with native prairie.

OBJECTIVE 2: Encourage the development of a native plant production industry.

OBJECTIVE 3: Advance the exploration of native prairie towards the sustainable development of other bio-based products.

OBJECTIVE 4: Recognize and quantify the socio-economic contribution of native prairie and perennial grasslands.

Goal V. To Increase Awareness and Understanding of Native Prairie and Its Values.

Education and communication are vital components of each PCAP Goal and to the continuing success of the PCAP Partnership. Education and communication with various audiences regarding PCAP's Vision, Goals and Objectives are essential parts of ensuring that we meet our Goals related to grazing, conservation, biodiversity and complementary sustainable uses of native prairie. Five Objectives are outlined to achieve this Goal:

OBJECTIVE 1: Promote awareness of the PCAP Vision, Goals, Objectives and Actions.

OBJECTIVE 2: Evaluate public awareness, appreciation and understanding of native prairie.

OBJECTIVE 3: Coordinate PCAP communication and education activities with other native prairie conservation initiatives at local, national and international levels.

OBJECTIVE 4: Educate the general public about native prairie ecosystems.

OBJECTIVE 5: Increase public appreciation of the beneficial role played by the livestock industry and other stewards in the management of native prairie.

IMPLEMENTATION OF THE PLAN

The success of the 1998-2003 PCAP was due largely to the inclusiveness of the Partnership, the open, frank, and respectful discussions between PCAP Partner representatives at meetings, and the consensual approach to decision-making.

An important aspect of Saskatchewan's PCAP is that it assigns lead and support roles to the Partners relative to each Action, and provides timelines for deliverables. Progress will be tracked annually by the Partnership with results published in Partner Updates. These Updates constitute an inventory of Partner activities, relative to the 85 Actions contained in the Plan, and provide a list of progress and shortfalls in implementation. Groups that support the PCAP Vision and Goals continue to be invited to join the Partnership in order to increase awareness of the diversity of values and to expedite progress on Objectives and Actions of mutual concern.

Seven Objectives are outlined for successful implementation of the Plan.

1. Seek formal endorsement of the 2003-2008 PCAP.
2. Establish PCAP Partnership and Executive Committees.
3. Secure financial and in-kind support from PCAP Partners and other sponsors.
4. Maintain a home office in the SSGA Office, a full-time manager and permanent part-time support staff.
5. Develop an annual work plan.
6. Evaluate and report on progress annually.
7. Facilitate recruitment of new Partners.

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Introduction to Prairie Conservation

David Gauthier (U of R-CPRC) and Greg Riemer (SE)

The 2003-2008 Saskatchewan Prairie Conservation Action Plan advances a Vision, Goals, Objectives and direct Actions for the conservation of native prairie. It represents a consensus among numerous industry groups, government agencies, organizations and institutions to address the loss and deterioration of remaining native prairie. The Plan is intended to achieve sustainable development objectives within the context of appropriate management of prairie ecosystems. It complements similar efforts in Alberta and Manitoba, as well as internationally, and builds upon the 1998-2003 Plan.

Sustainable development is a type of contract made cooperatively among citizens that commits them to meeting their own needs without seriously compromising the rights of others. It emphasizes the need to live within and as a part of nature, to save for the future and to ensure that environmental attributes that support life are maintained. Ranching is considered one of the best examples of sustainable development in Canada. Several of Saskatchewan's third and fourth generation ranch families provide testimony to this fact.

In current thinking there are three principal environmental goals for sustainable development: to ensure ecosystem integrity; to ensure human health and well-being; and to ensure natural resource sustainability. Sustainable development cannot be achieved without achieving all of those elements. Saskatchewan's PCAP recognizes that the conservation of native prairie can be accomplished only within this view of sustainable development that requires that we think, plan and act in terms of ecosystems.

GRASSLAND ECOSYSTEMS

Grassland ecosystems cover between 41-56 million km^2 (31-43%) of the earth's surface. They represent one of the earth's major biomes and, historically at least, are one of the most productive and diverse terrestrial ecosystems.

Grasslands are created and sustained by fire, flood, drought, grazing, erosion, deposition, soil disturbance, and decomposition. These processes are dynamic and display great variability in terms of time, extent, intensity, and place. The range of variation of these processes is a critical component of grassland biodiversity. Today, grasslands of all types are the most imperiled ecosystem on the planet, their habitats having been modified by human activity to such a degree that a low percentage remains in a natural state relative to other habitats.

In North America the central grassland region (Figure 1) covers around one-fifth of the sub-continent and represents 7–10% of the grasslands of the world. It extends over the widest latitudinal range of any single North American ecological region and constitutes a relatively continuous and roughly triangular area covering about 4.1 million km^2. The central grassland region extends from the provinces of British Columbia, Alberta, Saskatchewan and Manitoba in Canada, south through the central, northern and midwest states of the United States to southern Texas into northeastern and central Mexico, and from western Indiana to the foothills of the Rockies.

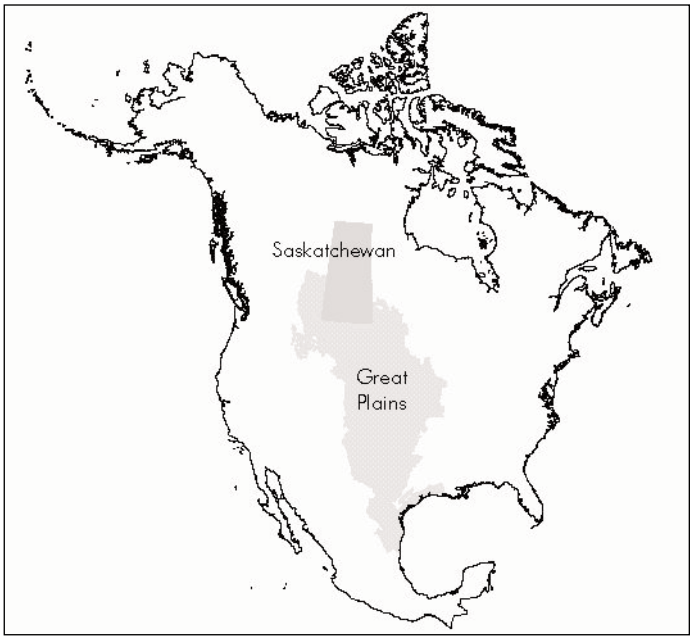
THE CANADIAN PRAIRIES

Canada's central grasslands include the Prairie and Boreal Plains Ecozones extending from the Precambrian Shield in eastern Manitoba, through southern and central Saskatchewan to the foothills and northern regions of Alberta and a northeastern portion of British Columbia.

Prairie Landscapes

The landscape of the Canadian Prairies (as well as the northern prairies of the United States) has been shaped by a variety of glacial deposits consisting mostly of undulating and kettled glacial till, and level to gently-rolling lacustrine deposits. These landforms are associated with intermittent sloughs and ponds. The Canadian prairie is underlain by Pleistocene

Figure 1. The North American Great Plains.



Source: U of R-CPRC

sedimentary rock, which was extensively scoured by both Continental and Cordilleran glaciation. The present landscape, formed after the last glacial period ended 12,000 years ago, includes old lake beds, gently undulating plains, rolling hills, wetlands, coulees, sand dunes, and exposed bedrock. Several well-defined river valleys cut through the region exposing Cretaceous shales and sandstones. Over 90% of the carbon in grassland ecosystems is in the soil, and these soils store substantial amounts of atmospheric carbon. For example, it is estimated that temperate grasslands contain 18% of global soil carbon reserves, more than any other ecosystem except for forest ecosystems.

Climate

The climate of the central grasslands is dry and continental, characterized in the north by short, hot summers and long, cold winters. High winds are an important climatic factor in many parts of the grasslands since they evaporate moisture from soil and plants. The central grasslands are subject also to periodic, intense droughts and frosts. Low annual precipitation is a defining characteristic of central North American grasslands. The climate of the central grasslands of Canada, with an average of 25 to 75 cm of rain and snow annually, ranges from semiarid to humid continental, with long and cold winters, short and very warm summers, and cyclonic storms. Precipitation is generally low, but it increases slightly from south to north and more markedly from west to east. Spring is the wettest season in most of the Canadian central grasslands while temperatures range from very warm summer temperatures (40° C) to very cold winter weather (-40° C). Temperatures are highest at lower elevations in the south, progressively decreasing with increasing altitude and latitude. The precipitation trend combined with the temperature gradients creates a series of climatic zones from cool semiarid in the southwest to moderately cold subhumid in the northeast. Climatic zonation occurs also in response to altitude, as moderately cold semiarid to subhumid conditions prevail on uplands in what is otherwise the driest part of the Canadian central grasslands.

Biodiversity

In their native state the central grasslands supported rich and highly specialized plant and animal communities. The interaction of climate, fire and grazing influenced the development and maintenance of the central grasslands. The increasing amounts of rainfall from west to east defined different types of native prairies. Short-grass prairie occurs in the west, in the rain shadow of the Rocky Mountains, with mixed-grass prairie in the central grasslands, tall-grass prairie in the wetter eastern region and fescue grasslands in the northwestern plains and parkland from central Saskatchewan to the foothills of the Rockies.

The central grasslands of Canada constitute a relatively young ecosystem following glaciation just 12,000 years ago. Grass is the dominant vegetation of the prairies, but there are also a variety of forbs and low shrubs present. Taller shrubs and trees, mostly aspen, are found in areas where there is sufficient moisture. In Canada, the prairie grasslands surround a small, geologically unique unglaciated upland (the Cypress Hills) that has lodgepole pine forest and fescue grassland similar to that found in montane regions to the west.

In the historic past large populations of grazing animals (for example, bison, elk, pronghorn antelope, jack rabbit, Richardson's ground squirrel, northern pocket gopher) inhabited the Canadian prairies and were preyed upon by several species of mammalian predators (for example, plains wolf, plains grizzly bear, black-footed ferret, swift fox, long-tailed weasel, badger, and coyote). White-tailed deer are a recent invader.

Examples of representative bird species of the Canadian prairies include long-billed curlew, Swainson's hawk, ferruginous hawk, burrowing owl, black-billed magpie, brown thrasher, Sprague's pipit, Baird's sparrow, chestnut-collared longspur, lark bunting, western meadowlark, and brown-headed cowbird.

In the prairie pothole region of the northern Great Plains, wetland concentrations are generally greatest in the glaciated, subhumid northern grasslands and adjacent aspen parkland where up to half of the land is wetland. These wetlands provide major breeding, staging, and nesting habitat for shorebirds and migratory waterfowl. Overall, these wetlands provide critical habitat for more than half of North America's ducks and are key staging or breeding areas for many Western Hemispheric species of shorebirds.

Numerous amphibian species, such as northern leopard frog, boreal chorus frog and tiger salamander find critical habitat in these wetlands. Many amphibian species such as great plains toad, Canadian toad, and plains spadefoot toad also inhabit the central grasslands as well as several reptiles, including western hognose snake, smooth green snake and prairie rattlesnake.

Invertebrates (animals without backbones) are a major component of the central grasslands. For example, invertebrates are integral to many ecosystem processes such as nutrient cycling, pollination and seed dispersal. Many birds, mammals and fish rely heavily on invertebrates as food.

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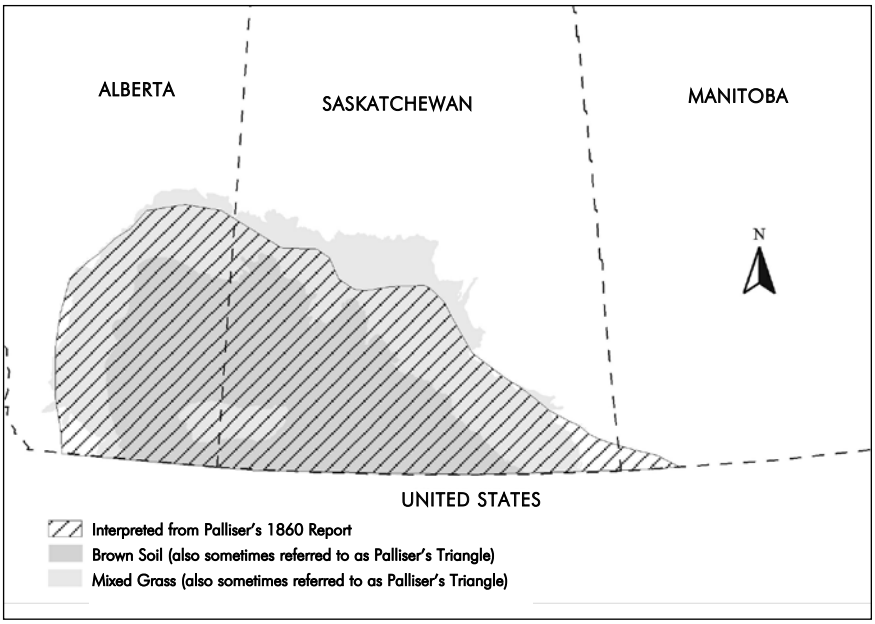
Today, the remaining natural vegetation is dominated by spear grasses, wheat grasses and blue grama grass, where local saline areas feature alkali grass, foxtail barley, greasewood, red samphire and sea blite. A mixed-grass community dominates the central part of the Ecozone where a late summer moisture deficit, caused by low precipitation and high evapotranspiration, and periods of extensive droughts typify the climate of the area. The vegetation includes what are often referred to as "short grasses" (blue grama and June grass) and "mid to tall grasses" (wheatgrasses and spear grasses), along with pasture sage and club moss. Drier sites in the southwest support sparser grass cover with abundant prickly pear and sagebrush. Northward and eastward from the mixed grassland, moisture deficits are less severe and droughts are less prolonged. Here "mid-grass"-dominated mixed grasslands alternate with plains rough fescue grasslands, more extensive shrublands, aspen grove woodlands, and wetlands. The aspen parkland, the northern transition zone to the boreal forest, has expanded south into former grassland areas since European settlement effectively stopped prairie fires.

Figure 2. Palliser's Triangle



Source: U of R-CPRC

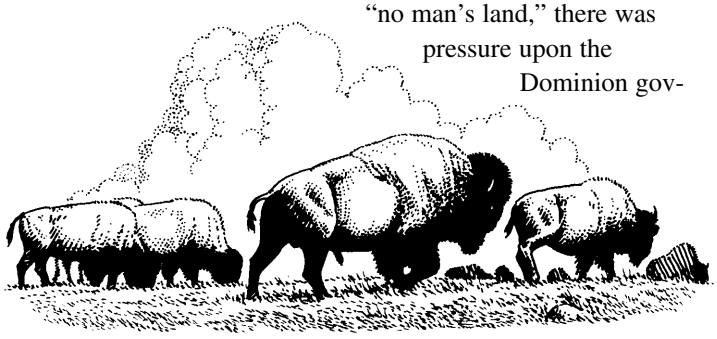
Human Activities

The central North American grasslands have been shaped in different ways by the influence of a variety of human cultures. While climate, fire and grazing are often cited as dominant factors influencing natural prairie environments, the cumulative impacts of human activity over the past century have had the largest effect in reshaping the grasslands. Human population and demographic trends, the economics of farming and ranching combined with agricultural policy and industrial development—all have been driving forces in shaping the impacts of human activity throughout the grasslands.

Historical Perspective on the Settlement of the Canadian Prairies*

During the mid 1800s the Dominion government had few plans for the western portion of Canada then known as Rupert's Land. These "fur trading lands" were generally viewed as having little value. The first investigation into the potential agricultural value of western Canada began with John Palliser who surveyed the Great Plains from 1857 to 1860 and whose reports were published in 1859, 1860 and 1863. Palliser's travels through western Canada took place during a period of drought, leading him to conclude that the limitations to agricultural development were very restrictive. He recommended against settling farmers on the Great Plains. This area of the Canadian Great Plains is still known as "Palliser's Triangle."

A re-assessment by the Dominion government of the region was sparked by talk of an American annexation of western Canada which became a possibility with the "54/40 or Fight" movement in 1844. This U.S. movement proposed extending the U.S. border north to 54° 40'; however, the Treaty of Oregon in 1846 saw the boundary established at 49°. The Dominion government took the 1844 threat of annexation seriously enough to re-evaluate the settlement potential of Rupert's Land and reassess the agricultural potential of western Canada. John Macoun, the Dominion government botanist, was commissioned to conduct the assessment and in 1872 he made the first of four trips to the Great Plains. Unlike Palliser's visits, which occurred during a prolonged period of drought, Macoun's visits occurred during a period when climatic conditions were more favourable. This resulted in his conclusion that there were no impediments to cultivation in "Palliser's Triangle," which also provided support to the construction of the Canadian Pacific Railway (CPR). Given that in the annexation dispute the territories of western Canada were viewed as "no man's land," there was pressure upon the Dominion gov-



Source: Paul Geraghty

** See Riemer 1998.*

ernment to establish deeded land in the region. The pattern of privately owned land was established in western Canada with the passage of *The Homestead Act* in 1870. This Act was tied to the construction of the CPR and the creation of the government's capacity to grant homesteads. The original "homestead" was a free quarter section of land (160 acres; approximately 65 hectares) given to any male settler, provided that he live on and cultivate a certain portion of the land grant. The CPR was completed in 1885, but the anticipated massive influx of settlers did not materialize in spite of hard times and starvation in Europe and massive immigration to the United States. The Dominion government's response was the passage of the *Crowsnest Pass Act* (September 6, 1897). The federal government recognized that the export of grain was essential in developing the agricultural potential of the region. However, being more than a thousand miles from export ports placed grain farming on the Canadian prairies at a significant disadvantage. The *Crowsnest Pass Act* allowed for subsidized freight rates for the transport of grain and initiated a rush to settle and cultivate the prairies. The Dominion government's position was that the key to economic prosperity was to attract more people to the region, and the key to keeping them on the land were policies that supported cultivation. The provisions in both federal and later provincial legislation stated that if land was allowed to "go wild" the homestead rights were revoked or land taxes increased. Such legislation ensured that the new settlers would not allow their land to revert to pasture. Grain production continued to receive increasing government support until the early 1990s. However, during all of this time, the livestock sector was unsubsidized, essentially resulting in much higher economic returns being paid to land in grain production than in livestock production. The impact on the landscape was inescapable and is reflected in the current land use of the prairies, where only soils with the most severe climatic or physical limitations remain uncultivated.

Changes to the Prairies

Prior to European settlement, the central grasslands supported millions of bison, pronghorn antelope, elk, mule deer, plains grizzly bears and plains wolves. Today, the central grasslands are home to a disproportionately high number of rare, vulnerable, threatened and endangered species. Some species are extirpated while others have suffered severe reductions. Other less visible species (such as plants and insects) may have disappeared without ever having been recorded by science. Freshwater snail species, for example, are very environment specific and many may have become extinct when the wetlands in which they lived were drained.

Thus, within the last 150 years, sweeping changes have taken place in central prairie grassland communities. Change in itself is not necessarily cause for alarm. Prairie ecosystem processes are normally dynamic and variable. However, the rate of change to prairie ecosystems rapidly accelerated with human settlement.

In North America, the grasslands were once the dominant vegetation type across the entire continent. Tall grass prairie has been reduced to <1%, and mixed prairie and short grass prairie to 20-30% of their former extent, jointly exceeding losses reported for any other major ecological community in North America. In Saskatchewan, it is estimated that over 80% of the prairie has been lost. In local areas of prime cropland, less than 2% of the original prairie remains.

The Prairie Ecozone is estimated to include nearly 241,000 km^2 of land. Only 21% of the Ecozone is classified as native dominant grassland, while 68% is classified as cropland. Approximately 20% of Saskatchewan's native grassland occurs in the Aspen Parkland ecoregion. Within this ecoregion, however, native grassland occupies only 13% of the landscape; over 71% has been cultivated. Because of the favourable conditions, trees and shrubs occupy over 9% of the land area. The Aspen Parkland contains more wetlands than any other prairie ecoregion. Native grassland remaining in the 22 Landscape Areas of this ecoregion ranges from 6% in the Quill Lake Plain (north of the Quill Lakes) to 37% in the Lower Battle River Plain and the Ribstone Plain in the western part of the ecoregion. Invasion of woody and exotic plants is an important threat to the remaining native grassland in this ecoregion, especially in the absence of grazing and fire. These few invasive plants replace the diverse native communities of grasses and wildflowers that provide habitat for many grassland animals. Although this is the most productive grassland ecoregion in the province, it is also the most fragmented, overused and threatened by exotic species.

As in the case of the Aspen Parkland, the Moist Mixed Grassland ecoregion contains about 20% of the remaining native grassland in the province. Over 76% of the land base has been cultivated, leaving only 16% of the ecoregion as native grassland. In its 20 Landscape Areas, remaining native grassland ranges from 46% of the land area in the Neutral Hills (the most westerly area of the ecoregion) to 6% in the Griffin Plain (the Estevan/Weyburn area).

Over 50% of remaining native grassland in Saskatchewan occurs in the 25 Landscape Areas of the Mixed Grassland ecoregion. Overall, 31% of the land area is occupied by native grassland and 62% is cultivated. Native grassland cover ranges from 78% in the Great Sandhills to 14% in the Lake Alma Upland in the southeast corner of the ecoregion. Large areas of this region are uneconomical for crop production due to poor soils and hilly topography. The climate of the region reduces the establishment and spread of invasive woody and exotic plants except in sensitive ecosystems like sand hill complexes and wetlands that seem to be particularly vulnerable to invasion. Producers are very conscious of how this grassland is managed because of its lower productivity and high sensitivity to overgrazing.

With its long slopes and rolling hills, the Cypress Upland ecoregion is a unique and picturesque feature in the prairie landscape. Although only 7% percent of all native grassland in

Species at Risk in Saskatchewan

Karyn Scalise (PCAP)

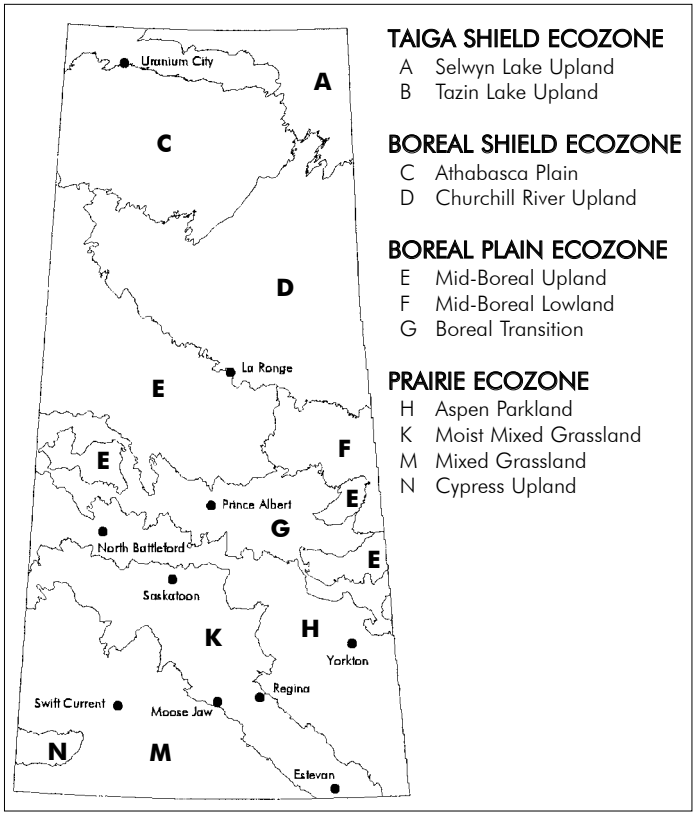
Table 1. Wild Species at Risk in Saskatchewan as listed in regulations of *The Wildlife Act*

EXTIRPATED	ENDANGERED	THREATENED
Mammals Plains Grizzly Bear (EFGHKMN)* Black-footed Ferret (M)	**Mammals** Swift Fox (MN)	**Plants** Slender Mouse-ear-cress (KMN)
Birds Greater Prairie Chicken (GHKMN) Eskimo Curlew (BCDE-FGHKMN)	**Birds** Burrowing Owl (HKMN) Piping Plover (CGHKM) Sage Grouse (MN) Whooping Crane (CDE-FGHKMN)	
Plants Small White Lady's Slipper (H)	**Plants** Hairy Prairie Clover (KM) Sand Verbena (M) Tiny Cryptanthe (M) Western Spiderwort (K)	

*(ABCDEFGHKMN) = Ecoregion(s) of Saskatchewan in which species occur(red)

Source: SE

Figure 3. Ecoregions of Saskatchewan



Source: SE

The first 15 plants and animals in new regulations under the species-at-risk provisions of *The Wildlife Act* of Saskatchewan were officially designated in 1999. An additional 32 species are pending designation. Their designation means that they are protected from being disturbed, collected, harvested, captured, killed and exported. The determination of the status of species under *The Wildlife Act* is based on a review of a status report containing biological information. Saskatchewan's process of listing plants and animals under *The Wildlife Act* uses the same risk categories and definitions as the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It also uses the ranking scheme of the Nature Conservancy (TNC) and the Saskatchewan Conservation Data Centre's (SKCDC) data base in the selection and priority-setting of candidate species for status assessment. A Scientific Working Group ensures a science-based approach is used in status assessments. These status assessments are then reviewed by Saskatchewan's Endangered Species Advisory Committee (ESAC) which consists of twelve stakeholder groups. In addition to reviewing the status assessments, the ESAC also provides recommendations to the provincial government on conservation and protection actions regarding the designation and recovery of wild species considered to be at risk in Saskatchewan. An ecosystem approach will be used in future recovery planning initiatives for animals and plants in Saskatchewan.

Left: Sage grouse
Source: Lawrence Baschak (copyright SE)

Below: Piping plover
Source: SWA

Inset: Western spiderwort
Source: Sheila Lamont (copyright SE)

The Wildlife Act deals primarily with species under provincial jurisdiction and those occurring on private and provincial Crown lands. For more information on species listed under *The Wildlife Act* visit www.se.gov.sk.ca/ecosystem/speciesatrisk.

The federal *Species at Risk Act* (SARA) received Royal Assent in December 2002 and will come into effect in 2003. The SARA deals primarily with species under federal jurisdiction and those occurring on federal Crown lands. For more information on COSEWIC listed species, visit www.cosewic.gc.ca

Left: Sand verbena, Canadian Forces Base Suffield National Wildlife Area, Alberta
Source: Garry Trottier, EC-CWS

the province occurs in this relatively small ecoregion containing 2 Landscape Areas, the unique character of its fescue grasslands makes it a high conservation priority. Due to soil limitations, terrain and a ranching tradition, however, this area has been least disturbed by cultivation (22%) with over 70% of the land area remaining as native grassland.

Large areas of the North American prairie grasslands are now severely fragmented. Cultivation, urban development, oil and gas development, and the construction of transportation corridors and dams are the major agents of fragmentation. Increasing road density is also a major agent of fragmentation. Roads not only allow other kinds of development to exist and flourish, they change patterns of water flow, reduce infiltration of water to the soil and water table, compact soils, alter animal movements and destroy habitat for ground-burrowing animals. Roads also act as conduits for the dispersal of weed species and exotic plants. Reclamation and mitigation policies, and somewhat tougher environmental regulations relating to access, are helping to alleviate these stressors. Habitat fragmentation has been recognized as a serious threat to biological diversity, but to date there has been little assessment of the cumulative impacts of habitat fragmentation. It is known that fragmentation of habitats impedes the movements of wildlife in their search for food, water, shelter, and mating partners. Attempts to move between fragments of habitat can be fatal, particularly when animals cross busy transportation corridors. Land fragmentation can cause changes in micro-climate and vegetation. Plant and animal communities suffer from loss of genetic diversity as species are replaced by monoculture crops, disappear due to changing conditions, or are pushed out by non-native species invading disturbed areas.

Urbanization has drastically altered native prairie landscapes. Towns, cities and related developments (for example, golf courses) continue to expand onto rural land, including native prairie. Throughout most of the Great Plains, urban sprawl has become the major threat to biodiversity resulting from predatory species change and habitat fragmentation. Introduced garden plants and weed species from cities, cottage developments, acreages and industrial areas are spread by waterways, wind, wildlife, livestock, equipment and vehicles to riparian and native prairie areas. Once land use has shifted from grazing to cultivation or urbanization, the change back is almost impossible.

BARRIERS TO THE CONSERVATION OF NATIVE PRAIRIE

Compounding the changes to the grasslands over historic time are a number of major interconnected impediments to the conservation of native prairie and its wetlands and riparian areas. The major barriers are climatic, economic, institutional / political and personal belief systems.

Climatic

Droughts are a natural feature of the central grassland environment. An important consideration is that most historical droughts have been longer-lasting (~10 years) and more intense than those of the 1930s. In the Canadian central grasslands extreme droughts (that is, 1930s and worse) occur every 60-100 years, with a 23-45% probability of occurring by 2030. Over an approximate 20-year cycle, moisture conditions will range from relatively moist summer growing conditions to prolonged periods of drought. In the wetter portion of the cycle, cropping conditions are good and farming is relatively profitable. In such times there is a tendency to expand crop production. In the dry part of the cycle, attempts to diversify from annual crop production are thwarted by poor establishment of perennial crops and economic difficulties.

These drought cycles form a “double-edged sword” as the lower carrying capacity of the native range results in the sell-off of cattle by ranchers. This has the potential to reduce the livestock herd at a much faster rate than it can be rebuilt, making the expansion of the tame grass base around native prairie much more difficult. Encouragement and expansion of the livestock base of Saskatchewan will result in an expansion of tame pastures, which not only increases patch size but also provides a protective economic buffer around native prairie. These tame grass areas are more likely to be cultivated in the future than the associated native prairie.

In addition to drought, the projected impacts of climate change are causing concern and confusion among scholars and landowners alike. Some climate change response models project that the agro-climatic regions of North America will be pushed north, meaning the “corn belt” with high rainfall and heat will be pushed into southeastern Saskatchewan and the dry conditions of the southwest will be pushed into the Lloydminster area. This change would favour expanded crop production in the southeast. Other models suggest that overall conditions will be hotter and drier favouring a move towards more forage-based agriculture.

Economic

Many factors driven by economic forces and historical perceptions influence the cultivation of small parcels of native prairie. These perceptions include:

- The costs of farming are relatively high and idle land generates no cash flow.
- Many landowners have the incorrect perception that all of the land in any particular quarter section is valued the same for taxation purposes. This perception fuels the desire to make all of the land agriculturally productive.
- Large machinery is difficult and expensive to use in irregularly-shaped fields.
- Weed control costs are reduced by removing sources of unwanted plant species.
- Seasonal wetlands and spring sheet water delay access to

fields and the onset of seeding.
- Abandonment of mixed farming operations results in no economic use for bluffs, ravines, wetlands and small parcels of prairie.
- Many farmers see the value in livestock, but the cost of a major diversification into livestock is prohibitive.

These factors are exacerbated when a new farmer acquires land and is faced with both a large long-term mortgage and a desire to succeed. These economic pressures may result not only in cultivation but also in overstocking of native rangelands in order to realize short-term economic gains. Statistics reveal that the breaking of "new" land is more likely when land changes hands. Given that the average age of a Saskatchewan farmer is over 55 years of age, most of the farmland in Saskatchewan is going to change hands in the next 10 years. Unless provisions can be made to add economic value to wildlife habitat, often regarded by farmers as agriculturally unproductive, the trend will be towards the continued loss of native prairie.

Institutional/Political

Over the past 100 years agricultural production policies which encouraged cultivation have had the most deleterious effect on the native grassland ecosystem. With the deregulation of agriculture in Canada the pressures exerted on the native prairie have been reduced. However, government policies still discriminate against the conservation of native prairie by the following:

- Saskatchewan Assessment Management Agency (SAMA) is responsible for determining the taxable assessment on all land and real estate property in Saskatchewan. Habitat lands are lumped with "wastelands," which suggests that they have no value to society or the environment. In 2001, the assessment value of "wastelands" increased from $5 to $25 per acre. However, in 2002, an amendment was made to reinstate the $5 per acre assessment on land that is permanently covered by water or permanently non-vegetated (for example, shale outcrops).
- Landowners do not receive adequate compensation from society for conserving habitat on private land.
- Wildlife crop damage prevention and compensation programs are considered by some landowners to be inadequate and cumbersome.
- Government attempts to make Conservation Easements (CEs) a valuable tool in conserving native ecosystems are experiencing growing pains but it remains imperative that, collectively, we make CEs fair, effective and simple.
- Conditions in international world markets have resulted in long-term volatility in the value of grains, oilseeds and specialty crops. These volatile markets place additional economic stress on Saskatchewan farmers, which contributes to the further breaking of native prairie and cultivation of marginal lands.

Personal Beliefs

Personal beliefs have a great impact on decision-making. For example, some landowners may feel that there are increased risks for crop depradation if natural areas are maintained on their property. Still others are concerned that their neighbors will think their land appears unkempt. They worry that they may be considered poor farmers or poor stewards. Nonetheless, almost all landowners consider themselves to be good stewards. The conservation movement has expanded stewardship to mean the proper care of the natural system. However, conservationists must recognize that many farmers consider good stewardship to mean clean, healthy crops from fence-line to fence-line.

Many landowners fear the impact of government policies such as the *Species At Risk Act* (SARA). In addition many fear involvement with CEs, as they believe it will lead to less control over how they and their descendants manage their land. To a degree these fears are based on and expand from the feeling that they are losing control over their ranching or farming operations. In that context it is critical in conservation planning to reduce the fear and mistrust that often leads to irrational decision-making. This can best be accomplished by involving land users in planning processes and ensuring that effective communications exist between all stakeholder groups.

Personal beliefs have also influenced conservationists in their approach to conservation. In the past there was a widely held belief that human-related disturbances of any kind were incompatible with the protection and conservation of ecosystems. Consequently, discussions and negotiations between land users and conservationists often came to an impasse with much finger pointing and distrust being the only results. Scientific research around the necessary role of disturbance in ecosystem functioning, improvements to land-use practices, and more open thinking and communication have resulted in a positive change. Several examples exist in Saskatchewan of conservation and agricultural groups, landowners and managers working closely with each other to achieve mutual conservation and sustainable resource-use goals.

Personal beliefs are also influenced by the information age and the media. Individuals and community groups may be motivated to undertake environmental action or make lifestyle choices based on information received from the popular media. A huge challenge exists in providing accurate information on issues affecting native prairie to urban populations, so that people can make informed choices that support the conservation of native prairie ecosystems.

APPROPRIATE LAND USE AND CONSERVATION PROGRAMS

Despite the barriers to conservation described above, there are important examples of appropriate land use and numerous con-

servation policies, programs and initiatives that are working to conserve native prairie.

Both livestock and wildlife benefit from healthy, productive grasslands and clean water. To the extent to which cattle have replaced the great herds of bison, pronghorn, and elk which once grazed the prairie, ranching has been a major force in keeping native grassland from being ploughed or developed. Good range management practiced by livestock producers has included adjusting numbers of animals to compensate for periods of drought, using planned grazing systems with pasture rest periods, and better fencing and watering systems to protect riparian areas and distribute grazing pressure. Increasingly in the past decade, improved range management practices as well as partnerships with conservation groups have resulted in "win-win" results for both livestock and wildlife. Increasingly, more native plant species are being used to reclaim and improve disturbed rangelands. Ranching has also helped to protect the prairie against fragmentation, because ranchers need large blocks of land for their cattle due to the low productivity of some areas.

Conservation programs on the prairies typically involve a multiplicity of owners, including private owners and lessees, as well as rural and urban municipalities, provincial and federal governments, and a host of interest groups. On a regional scale, private land stewardship is important for the grasslands. Saskatchewan has about 85% of its prairies in private ownership and the bulk of provincial lands are controlled by individuals or group lessees. Much of the private land is in the hands of agricultural producers who have often argued that they are expected by society to privately absorb the cost for the conservation of a public good (that is, wildlife species and habitat) at the expense of losses to crop depredation or lost opportunity. Faced with economic pressures and taxation policies that have traditionally favoured crop production, there have in the past been few incentives for landowners to maintain wildlife habitat. Changes in policies are occurring that recognize the ecological value of these lands and encourage land owners to conserve wildlife habitat, for example, through stewardship agreements, CEs, and programs such as the North American Waterfowl Management Plan (NAWMP), the Government of Canada Habitat Stewardship Program (HSP) for Species at Risk, and AAFC-PFRA's Permanent Cover Program. Various programs exist which encourage rural landowners to maintain or create habitat for prairie species. In many cases, changing management to benefit wildlife also benefits livestock and improves economic returns to producers. AAFC-PFRA initiated the Permanent Cover Program (PCP) in 1989 and announced the Green Cover Program in 2002. These programs support the establishment of perennial forages on marginal land that is in annual crop production. AAFC-PFRA's Community Pasture Program began in 1937. It encompasses in excess of 900,000 hectares of native rangeland and has returned over 145,000 hectares of poor quality cultivated lands to grass cover.

Canada's federal endangered species legislation, the *Species at Risk Act* (SARA) received Royal Assent in December 2002 and will come into effect in 2003. The primary purpose of the legislation is to prevent wildlife species from being extirpated or becoming extinct. While many agricultural producers are concerned about the potential impact of the legislation in relation to their control over their land, the legislation does call for continued cooperative partnerships with land and water managers in order to protect SAR and their habitats. Since 2000, the Government of Canada has provided funding to PCAP Partners and other groups through the Habitat Stewardship Program (HSP) for Species at Risk, which is intended to assist private landowners, conservation groups, First Nations and the resource sector in protecting SAR and their habitats. Stewardship remains the cornerstone of both federal and provincial strategies for the protection of SAR.

By endeavoring to integrate existing conservation programs and encouraging development of those still needed, Saskatchewan's PCAP Partnership supports a cooperative approach to land use planning and management that works toward the goals of sustainable development outlined earlier. The experiences of the SK-PCAP Partners during the course of the last Plan show the superior benefits of such an approach.

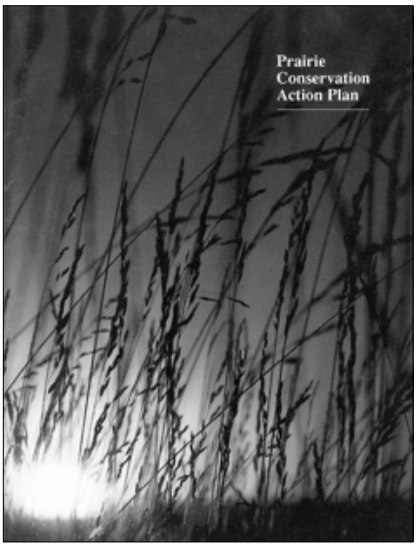
Landowners inspect solar-powered electric fencing, part of the demonstration project Ludger Poncelet completed in cooperation with Saskatchewan Watershed Authority.
Source: SWA

List of acronyms on page 45 • Glossary on pages 40 and 41

History of the Prairie Conservation Action Plans

Karyn Scalise (PCAP), Greg Riemer (SE), Miles Anderson (SSGA/PCAP)

WORLD WILDLIFE FUND CANADA (WWFC) PCAP, 1989-1994



WWFC formally initiated the Wild West program across the three prairie provinces in 1986, with the primary objective of biodiversity conservation. Accomplishments included over 90 demonstration projects for Species at Risk (SAR), nearly 500 stewardship projects with agencies and landowners, and launching the first PCAP in 1989. Partners included: Alberta Forestry, Lands and Wildlife (AFLW); Ducks Unlimited Canada (DUC); Environment Canada-Canadian Wildlife Service (EC-CWS); Manitoba Department of Natural Resources (MDNR); Saskatchewan Parks, Recreation and Culture (SPRC), now Saskatchewan Environment (SE); Saskatchewan Wildlife Federation (SWF); the University of Calgary—Faculty of Environmental Design (U of C - FED); the University of Saskatchewan, College of Agriculture (U of S-C.Ag); Wildlife Habitat Canada (WHC); World Wildlife Fund Canada (WWFC); and two landowners. The ten Goals of the Plan were to:

1. Identify the remaining native prairie and parkland;
2. Protect at least one large, representative area in each of the four major prairie ecoregions;
3. Establish across the three prairie provinces a system of protected native prairie ecosystems and, where possible, connection corridors—this system should include representative samples of each habitat subregion;
4. Protect threatened ecosystems and habitats by preparing and implementing habitat management and restoration plans;
5. Protect and enhance the populations of prairie species designated nationally or provincially as vulnerable, threatened, endangered or extirpated by implementing recovery and management plans;
6. Ensure that no additional species become threatened, endangered or extirpated;
7. Encourage governments to more explicitly incorporate native prairie into their programs;
8. Encourage balanced use of private lands that allows sustained use of the land while maintaining and enhancing the native biological diversity of the prairies;
9. Promote public awareness of the values and importance of prairie wildlife and wild places; and
10. Promote research relevant to prairie conservation.

The 1989-1994 Plan was successful in drawing attention to critical issues associated with the conservation of the prairies. It was comprehensive in focusing attention across the three prairie provinces and it provided the first visionary master plan for the conservation of prairie species and spaces.

Evaluation of the 1989-1994 Plan

When the 1989-1994 Plan drew to a close, an ad hoc committee consisting of representatives from SE and SWCC evaluated it and concluded that although it was visionary and well written, little progress had been made towards its Objectives. The committee concluded that Plan implementation was hindered by the following factors:

- Absence of involvement from the agricultural sector, primarily the ranching industry, that manages much of the native prairie;
- Lack of an implementation strategy with assigned responsibilities and timelines;
- No dedication of resources, including staff, to implement the Plan;
- Lack of an evaluation strategy to assess progress and shortfalls of the Plan;
- Lack of ongoing recruitment of Partners that influence the Prairie Ecozone; and
- No special initiatives to raise awareness of native prairie.

In 1997 members of the ad hoc committee invited the Saskatchewan Stock Growers Association (SSGA) to chair a process to establish a Saskatchewan PCAP. The SSGA accepted the challenge and a workshop was held in Mankota to develop a new Plan, complete with a Vision, Goals, Objectives and Actions, timelines for deliverables, and lead and support Partners. The resulting 1998-2003 Plan was launched at the 5th Prairie Conservation and Endangered Species Conference in Saskatoon, Saskatchewan, in 1998.

List of acronyms on page 45 • Glossary on pages 40 and 41

THE SASKATCHEWAN PRAIRIE CONSERVATION ACTION PLAN, 1998-2003

Chaired by the SSGA, a Partnership that grew from 16 to 25 groups formed the SK PCAP Partnership including: Agriculture & Agri-Food Canada–Prairie Farm Rehabilitation Administration (AAFC-PFRA); Agriculture & Agri-Food Canada–Semiarid Prairie Agricultural Research Centre (AAFC-SPARC); Canadian Parks and Wilderness Society (CPAWS); Fisheries and Oceans Canada (DFO); Ducks Unlimited Canada (DUC); Environment Canada–Canadian Wildlife Service (EC-CWS); Grazing and Pasture Technology Program (GAPT); Native Plant Society of Saskatchewan (NPSS); Nature Conservancy of Canada (NCC); Nature Saskatchewan (NS); Parks Canada–Grasslands National Park (PC-GNP); Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR); Saskatchewan Burrowing Owl Interpretative Centre (SBOIC); Saskatchewan Environment (SE); Saskatchewan Environmental and Industry Managers Association (SEIMA); Saskatchewan Industry and Resources (SIR); SaskPower (SP); Saskatchewan Research Council (SRC); Saskatchewan Stock Growers Association (SSGA); Saskatchewan Wetland Conservation Corporation (SWCC); Saskatchewan Wildlife Federation (SWF); Society for Range Management (SRM); University of Regina - Canadian Plains Research Center (U of R-CPRC); University of Saskatchewan, College of Agriculture (U of S-C.Ag); and World Wildlife Fund Canada (WWFC).

The Partnership set five Goals for the Plan:

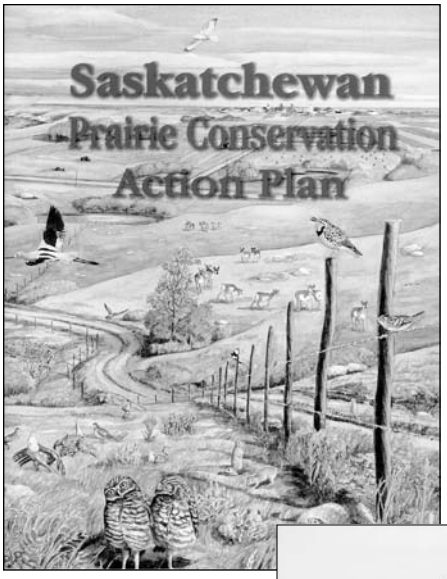
1. To sustain a healthy native prairie grazing resource.
2. To conserve the remaining prairie resource.
3. To maintain Saskatchewan's native prairie biological diversity.
4. To promote the sustainable use of native prairie to enhance quality of life.
5. To promote education and develop communication programs.

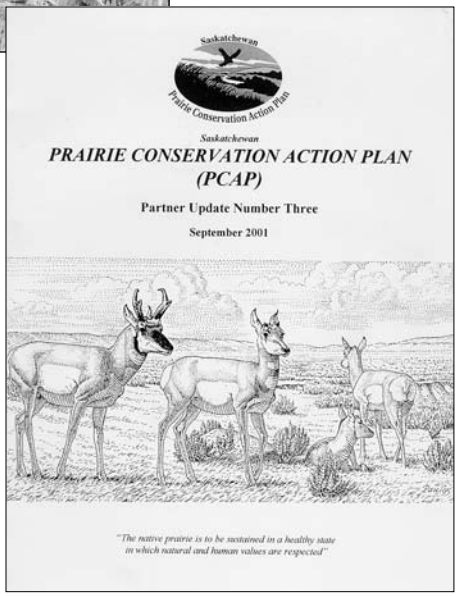
The Plan achieved numerous successes as documented in 1999–2001 "Partner Updates" of activities. These successes were based on a number of factors:

- Diversity of Partner groups with committed representatives.
- Chaired by an agriculture industry Partner, the SSGA.
- Detailed implementation strategy with Actions and timelines assigned to lead and support Partner groups.
- Progress evaluated and communicated annually via Partner Updates.
- Multi-stakeholder funded (Funding Partners grew from 6 to 23).
- Full-time dedicated Manager to oversee implementation and facilitate communication between Partners.
- Occasional part-time staff to assist with implementation and programs.
- Special initiatives to raise awareness of native prairie (for example, Provincial Grass Emblem, Native Prairie Appreciation Week (NPAW), Stewardship Education Programs, Communications Materials).
- Ongoing recruitment of Partners (Partners grew from 16 to 25) that share the PCAP Vision and Goals.

Partners also were aware of weaknesses in the Plan. For example, there was a continued lack of participation and/or involvement from some important interest groups, and there was minimal coordination with other prairie jurisdictions, regionally or internationally.

Partners reached consensus in fall 2001 to begin work on renewal of the expiring PCAP to ensure that progress would continue towards prairie conservation and that weaknesses in the Plan would be addressed. Plan Renewal Meetings were held at Manitou Springs in March and October 2002, with working groups established to develop the Goals and other sections contained in this Plan. A consolidation workshop was held in January 2003 to review and approve the final draft. The 2003-2008 Plan contains 5 Goals, 25 Objectives and 78 Actions complete with timelines and assigned responsibilities to PCAP Partners.





List of acronyms on page 45 • Glossary on pages 40 and 41

Saskatchewan Prairie Conservation Action Plan 2003–2008

VISION STATEMENT

"The native prairie is to be sustained in a healthy state in which natural and human values are respected."*

At the March 2002 Plan Renewal Meeting, PCAP Partners reached consensus that the Saskatchewan PCAP Vision statement should remain unchanged from the former Plan. The Vision strives to strike a balance between the maintenance of the ecological health of the prairie and the importance of sustaining the economic livelihood and lifestyles that are linked to appropriate forms of resource production and consumption within the Prairie Ecozone. The Vision recognizes that the native prairie provides a range of societal values, uses, goods and services, including forage, water, soil conservation, recreation, medicinal plants, heritage, wildlife, and genetic resources. However, the full potential of many of these societal values are, as yet, unrealized. It is, therefore, important to conserve and maintain the remaining native prairie for the use and enjoyment of present and future generations.

"Needle and Thread" *(Stipa comata)* was designated as Saskatchewan's Provincial Grass Emblem in 2001 (see page 44).
Source: Dean Nernberg, EC-CWS.

The conservation of native prairie requires that we think, plan and act in terms of ecosystems. In that context, a comprehensive, shared vision for grassland conservation should address three needs: to assure ecosystem integrity, human health and well-being, and natural resource sustainability. The PCAP Vision is founded on the following guiding principles:

- Most of the original native grassland in Saskatchewan has been destroyed;
- Interactions between the environment (air, water, land and biota) and human activities (social, cultural and economic systems) are inseparable parts of an ecosystem;
- Humans, through their activities and decisions, are a major driving force of ecological change;
- Habitats critical for the maintenance of all grassland biodiversity must be sustained;
- Healthy grasslands are linked to the economic and social viability of ranching and other agricultural communities (for example, the direct, human benefits of grazing management depend on healthy grasslands);
- In addition to other benefits, there are substantial gains to be realized from maintaining and restoring grasslands to sequester carbon and to mitigate potential climate change;
- The needs of current and future generations must be an integral basis for grasslands conservation; and
- The ecological integrity of grasslands must be sustained.

Following upon the principles identified above, the PCAP Vision aims to**:

- Contribute to the maintenance of the ecological integrity of Saskatchewan's native prairie;
- Contribute to the mitigation, reduction and eventual elimination of current and future threats to Saskatchewan's native prairie species and ecosystems;
- Foster an integrated perspective to the management, conservation and sustainable use of native grassland biodiversity;
- Strengthen the capacity of a wide array of sectors of society to conserve Saskatchewan's native grassland biodiversity;
- Promote public support for the conservation of Saskatchewan's native prairie; and
- Demonstrate leadership in the development of a trinational grassland conservation strategy across the Great Plains.

** For the purposes of this Action Plan, "native prairie" is defined as native aquatic and terrestrial habitats within the Prairie Ecozone of Saskatchewan.*

*** Adapted from the first draft of the CEC's biodiversity strategy for North America.*

GOAL I:
TO SUSTAIN A HEALTHY NATIVE PRAIRIE GRAZING RESOURCE

Chris Nykoluk (AAFC-PFRA) and Tom Harrison (SWA)

BACKGROUND AND RATIONALE

The native prairie evolved under natural disturbances such as fire, drought, and grazing. Individual prairie plants and communities possess strategies to cope with these disturbances, and a moderate level of disturbance appears to be necessary to maintain the ecological integrity and biodiversity of native prairies. Plant diversity tends to increase when native prairies are grazed. While the dominant native grazer, bison, has been largely replaced by domestic livestock, long-term studies show that proper grazing by livestock has minimal or no adverse effects on plant community or soil characteristics. In some cases, net primary productivity is greater with grazers than it would be without them, indicating that grazing by ungulates may help with nutrient cycling, which is an essential ecosystem function. Thus, ranching and livestock production play an important role in conserving and managing the remaining prairie. Ranching and livestock production contribute significantly to the rural and provincial economies, providing more than five million Animal Unit Months' production for livestock with an estimated annual income of $200-300 million. In addition, ranching represents an important western Canadian heritage and way of life.

Goal I is specifically directed at landowners and managers. While it is the responsibility of livestock producers and community pasture managers to ensure that native prairie remains healthy, PCAP Partners can help to influence producer behavior with respect to management. Since grazing is the main economic use of Saskatchewan's native prairie, working with livestock producers and public land managers is key to the successful delivery of the PCAP.

PROGRESS TOWARDS GOAL I

Extension Activities: During the 1998-2003 Plan, thirteen PCAP Partners conducted extension activities aimed at grazing management on Crown leases, community pastures and private lands. Their activities included organizing field days, workshops, conferences, and demonstration projects, providing technical support, conducting research, and developing publications and other communication products. One notable loss, however, was the demise of the Grazing Gazette in 2000, an important publication that disseminated practical information to livestock producers. In 2002 a committee consisting of various PCAP Partner organizations secured funding and in-kind support and distributed the first issue of the Livestock and Forage Gazette to address this gap. Issues are produced bi-annually and are available on several Partner websites.

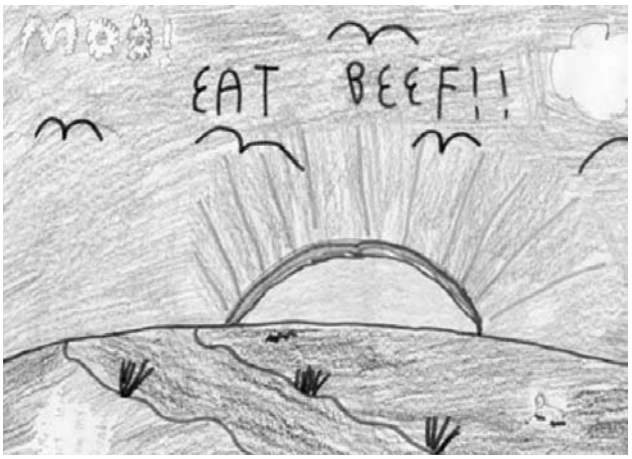
Rangeland Assessment: Good progress on rangeland assessment activities was made in the 1998-2003 Plan, but the need exists for more communication between agencies on this issue. Most assessment activity was focused on AAFC-PFRA community pastures, provincial community pastures and Crown Leases. To date, 58 of 60 AAFC-PFRA pastures have been assessed and have management plans written, and 10 of 55 SAFRR pastures have been completed, with work ongoing on the remaining pastures. There is a need to direct more evaluation efforts towards private lands and those native prairies that are managed by non-agriculture based organizations. There is a general lack of information about the state of health of our native prairie. For example, a verbal survey of range agrologists in Saskatchewan indicated that range condition in Saskatchewan was estimated at only "Fair" condition. However, a random survey of range condition in 1500 sites plus AAFC-PFRA community pastures in southern Saskatchewan placed the condition of Saskatchewan rangeland in low to mid "Good" condition or higher. It may be time to undertake quantitative "state of health" inventories of rangelands for the whole province. Range health assessment activities on private land might be best accomplished through assisting producers in assessing the health of their own native prairie through hands-on range management workshops.

Research Activities: There has been good support of studies relating grazing, biodiversity and rangeland health and ecological integrity. There were 10 agencies involved in vegetation, habitat and wildlife research activities. Results, however, need to be better communicated to both livestock producers and society in general, promoting use of a "common language" on a regular basis. PCAP Partners could provide an important contribution in that regard. In addition to providing wildlife technical support to agriculture based agencies, both researchers and range managers need to work together to profile "win-win" benefits for agriculture and the environment. Wildlife benefits associated with healthy rangelands need to be emphasized, and effective communications between agriculture and wildlife professionals are a prerequisite for future work.

List of acronyms on page 45 • Glossary on pages 40 and 41

Saskatchewan Beef Industry Facts

- 1.2 million beef cows
- 2.4 million cattle and calves
- 27% of Canadian herd
- 2nd largest beef producing province in Canada
- 9th largest beef producing jurisdiction in North America



Source: Jill Schmidt and Michelle Wittal, Grade 5, Assiniboia Elementary School, Assiniboia, SK; Eco-X 2001

Saskatchewan Sheep Industry Facts

- 85,000 ewes
- 12% of Canadian flock
- 4th largest sheep-producing province in Canada

Sheep grazing leafy spurge.
Source: SWA

THE ROLE OF LIVESTOCK PRODUCERS: An annual Native Prairie Appreciation Week (NPAW) was developed by the Partnership in 1999 and continues to be well supported by the Partners. The Week offers excellent opportunities to promote activities that influence the general public, especially messages about the important role that livestock producers play in conserving and managing native prairie. The SRM workshop and field tour, held in conjunction with NPAW, provides a unique forum in which livestock producers, naturalists, resource specialists, and the general public can learn about the diverse values of native prairie from each other. Urban people need to be reached with specially targeted messages, stressing examples of "win-win" situations regarding livestock production and the conservation of native prairie. Some Saskatchewan ranchers who provide eco- and agritourism experiences have been particularly successful in communicating this message.

STEWARDSHIP RECOGNITION: It is important to recognize and support the efforts of both private and public land managers who conserve native prairie in Saskatchewan. For example, SWA's Prairie Stewardship Program recognizes prairie stewards. In addition, two awards exist for stewardship recognition—The Environmental Stewardship Award (TESA) for livestock producers, and the SRM Outstanding Achievement Award for range management professionals. More effort needs to be placed on promoting nominations for these awards and on communicating the successes of award recipients by acknowledging recipients in publications and displays and at field days and conferences. In 2003 the SSGA developed revised information on TESA and the nomination process.

While good progress was made towards this Goal in the 1998-2003 Plan, an evaluation of that Plan identified a number of shortfalls in educating the general public about the important role that "on-the-ground" decision makers play in conserving native prairie. All Partners should be communicating this message to their client groups and associates.

The 2003-2008 Plan builds upon the successes of the former Plan and aims to improve on its weaknesses by addressing four major Objectives.

The Environmental Stewardship Award (TESA)

TESA has been presented annually since 1995 to recognize excellence and innovation in environmental stewardship in the ranching industry. Innovative and successful approaches to environmentally and economically sustainable cattle production are honoured with this award.

TESA offers an opportunity to showcase the cattle industry's commitment to conservation as well as for producers to share their knowledge and ideas. TESA winners are:

2003 – Lisieux, RAYMOND & DONNA PREFONTAINE
2002 – Radville, MURRAY & SALLY MCGILLIVRAY
2001 – Bethune, HENRY & BILL SEIDLITZ
2000 – Cabri, JASON & JOAN JACKSON
1999 – Maple Creek, ERIC & ANNE LAWRENCE
1998 – Glaslyn, TOM & LOIS WOOD
1997 – Tompkins, EMIL & ANGELA CHOMISTEK
1996 – Hallonquist, JIM & LOUISE OSTRANDER
1995 – Cypress Hills, RON & ROBERTA WOLFATER

Saskatchewan's TESA is open to all Saskatchewan cattle producers. Recipients of the Saskatchewan award also quality for the National TESA. Contact the SSGA Office for more information and nomination forms (see page iv).

OBJECTIVES

Objective 1: Promote grazing management programs that are based on economically and scientifically sound principles.

Ecologically-based management and monitoring are keys to maintaining the health, biological diversity and ecological integrity of prairie ecosystems. They are achieved through increasing the awareness and application of range management practices that take into account all forage resources and multiple uses. Both provincial and federally funded programs have resulted in an increased awareness of the importance of appropriate rangeland management. Saskatchewan's first range condition guide was published in 1990, and many organizations, including SAFRR, are jointly conducting range management extension activities. AAFC-PFRA has also made substantial contributions to the assessment and understanding of range management in Saskatchewan. In addition, research at AAFC-SPARC is developing grazing management strategies that allow and promote the sustainable use of rangeland resources.

In the past, rangeland extension programs in Saskatchewan have tended to be disconnected from one another and short-term in nature, largely due to intermittent funding. There is a need for greater program stability and integration. To help ensure success, it is very important to involve producers in range management extension planning, programming and delivery. Excellent cooperation is being experienced on some initiatives, such as field and range days, which typically involve several PCAP Partner groups as well as producers. The native prairie grazing management information needs of new non-traditional clients, such as acreage owners and developers, need to be addressed effectively.

Objective 2: Explore the economics of maintaining a healthy range resource for grazing.

The livestock industry in Saskatchewan is expanding, and new forage stands are being seeded to support this industry. New conservation cover programs should focus on sustaining the biological stability of native prairie, including recognizing threats posed to it by introduced, invasive species. Financial incentives and extension programming will be required in order to increase the number of seeded hectares of non-invasive species. Without incentives and extension, the cheaper invasive species will be more likely to be used by producers. The use of these species will continue to threaten native prairie and riparian areas for years to come.

There is good evidence that well managed native prairies can produce up to twice the amount of forage as those in poorer condition, and that their production is more stable through dry cycles. Consequently, healthy rangelands add significantly to the long term economic viability of ranching and mixed-farming operations. Profit agriculture, not production agriculture, needs to be emphasized and specifically targeted to livestock producers.

A significant portion of Saskatchewan's native prairie is

Branding time in southwestern Saskatchewan. Source: Slippery Moon Ranch Calendar 2003. Heather S. Beierbach, SSGA.

Slippery Moon Ranch Calendars portray ranch life in southwestern Saskatchewan. For more information and to order calendars, contact the SSGA Office (see page iv).

managed by ranchers who lease Crown lands. In some parts of Saskatchewan, Crown leases can form the largest portion of a livestock producer's grazing resource. At present, ranchers pay the same lease fees, regardless of how they choose to manage the lease. The lease fee structure on these Crown lands should encourage lessees to adopt management practices that will promote healthy prairies, particularly as Crown lands are a publicly held resource.

Objective 3: Recognize and support the efforts of private and public land managers who conserve native prairie.

Many ranchers, farmers and community pasture managers are doing an excellent job of conserving their native prairie. Their efforts should be recognized and information about their operations compiled and made available to other ranchers. Exchange of information among livestock producers is an effective way to promote sound rangeland management practices.

Furthermore, the public needs to be made more aware of the use of beneficial management practices by ranchers.

Objective 4: Increase the inventory of range resources on public and private lands to promote guidance on grazing management plans.

A better understanding of the current state of health of native prairie in Saskatchewan is needed to help guide policy and extension programming. This information would also increase our knowledge of biodiversity at the landscape level. A comprehensive inventory of native prairie requires both a long-term vision and commitment to the process. The cost of occasional inventories should be recoverable in terms of the improvements in management that could be made. Although effective partnerships can help to address such costs, additional long-term funding is required to conduct inventories and develop and implement management plans.

Table 2. Objectives and Actions—Goal I: To sustain a healthy native prairie grazing resource.

Objectives	Actions	Timetable	Lead and Support Partners (lead partners shown in **boldface**)
1. Promote grazing management programs that are based on economically and scientifically sound principles.	a) Continue extension programming with landowners.	Ongoing	AAFC-PFRA, DUC, **SAFRR**, SFC, SWA
	b) Host workshops, field days, range schools and other extension events.	Ongoing	AAFC-PFRA, AAFC-SPARC, DUC, **SAFRR**, SFC, SWA
	c) Produce and distribute extension materials for land managers.	Ongoing	AAFC-PFRA, DUC, **SAFRR**, SSGA, SWA
	d) Provide ongoing training and resources for extension staff.	Ongoing	**SAFRR**, All
	e) Update and publish the "Range Plan Development Guide."	2004	**AAFC-PFRA**, **SAFRR**, SRC, SFC, SWA
2. Explore the economics of maintaining a healthy range resource for grazing.	a) Encourage development of conservation cover programs that contribute to the ecological and socio-economic sustainability of rangelands.	Ongoing	**AAFC-PFRA**, DUC, SAFRR, SWA
	b) Develop an incentive-based lease rate structure program to encourage enhanced management on Crown leases.	2003	DUC, SAFRR, **SSGA**
3. Recognize and support the efforts of private and public land managers who conserve native prairie.	a) Increase support, awareness and publicity for the SSGA/Royal Bank TESAward, the SRM Outstanding Achievement Award and other prairie conservation related awards.	Annual, ongoing	AAFC-PFRA, DUC, SAFRR, **SSGA**, **SRM**, SWA
	b) Acknowledge the efforts of Award winners through the development of a comprehensive communication plan (print media, advertising, presentations, etc.).	Annual, ongoing	**SRM**, **SSGA**
4. Increase the inventory of range resources on public and private lands to promote guidance on grazing management plans.	a) Complete range assessments and management plans for remaining pastures (2 of 60 AAFC-PFRA and 45 of 55 SAFRR pastures have yet to be completed), plus assessments on 100 Crown leases.	2007	**AAFC-PFRA**, DUC, **SAFRR**
	b) Promote range health assessment and management plan development on private lands (e.g., range schools).	Ongoing	**AAFC-PFRA**, DFO, DUC, NPSS, **SAFRR**, SRM, SSGA, SWA
	c) Promote range health assessment and management plan development on lands owned and managed by each respective agency or organization.	Ongoing	AAFC – PFRA, **DFO**, **DUC**, **EC-CWS**, **GNP**, **NCC**, SAFRR, **SE, SWA**, **SWF**
	d) Compile a "state of the resource" report, compiling all available public and private inventory data and analysis.	Ongoing; Annually	AAFC-PFRA, DUC, GNP, RSM, SAFRR, SE, SWA, **U of R-CPRC**

GOAL II:
TO CONSERVE THE REMAINING PRAIRIE RESOURCE

Greg Riemer (SE)

BACKGROUND AND RATIONALE

Human activity has always been a part of the prairie landscape. In the distant past, human populations lived in relative harmony with natural systems. With the European settlement of the prairies in the late 1800s, radical new views of land use had an impact upon the grasslands. Implementation of concepts of private ownership, resource development, wealth generation, majority-rule and nation building resulted in substantial changes to grasslands. Within a hundred years large-scale annual crop production was in place on almost all of the fescue prairie in the north, the vast majority of the moist mixed grasslands and a large proportion of the dry mixed grasslands. Today the remaining prairie is highly fragmented, and the smaller parcels that are not part of large ranches or community pastures are at continued risk of cultivation or development.

PROGRESS TOWARDS GOAL II

Quantifying and Monitoring Native Prairie: One of the Objectives of the 1998-2003 Plan was to quantify the remaining prairie and monitor its health. Activities occurred on a small scale but inadequate financial and technical resources limited province-wide analysis. The Southern Digital Land Cover program provided relatively coarse-scale, comprehensive information that allowed an initial assessment of the amount and location of remaining native prairie and an estimate of its fragmentation. More detailed analyses at a regional scale came about through a concerted effort of PCAP Partners, including SWCC, to acquire and interpret recent digital land cover and soils maps for 2,400,000 hectares of the Missouri Coteau. That information was used to correct errors in the digital information base. Another major accomplishment occurred in 2001 when the U of R-CPRC and the NPSS released "Saskatchewan's Native Prairie: Taking Stock of a Vanishing Ecosystem and Dwindling Resource." SE has also modeled the historic and remaining fescue grassland distribution for the province.

Stewardship Programs: Most of Saskatchewan's prairie is controlled by individual landowners or lessees (in the case of Crown land). Thus voluntary stewardship must be encouraged in order to effect better conservation of rangelands. To that end the PCAP Partnership developed and implemented a communications strategy. Considerable progress was made supporting private stewardship programs. For example, some Partners consulted with landowners/lessees to further advance improvements in programming. Ongoing work by PCAP, EC-CWS, SWA, NCC, NPSS, NS, DUC, SSGA and others indicates real strength in the delivery of stewardship support.

Stewardship Education Programs: Much progress has been made in promoting public education on prairie conservation. Ongoing program planning and support by various Partners and the PCAP Manager have effected geographic targeting of stewardship education program delivery within the Prairie Ecozone. Overall, this has been one of the major successes in the Partners' delivery of the PCAP.

Conservation Easements (CEs): The Partners sought to fully explore the potential for the *Conservation Easement* (CE) *Act* to conserve native prairie. While there was an initial flurry of activity around voluntarily donated CEs, the pace has slowed noticeably. Many landowners are unsure of the motivation behind CEs and are reluctant to close any options for future owners. Low appraiser capacity within the province and inconsistencies in appraisal methodology relating to the valuation of CEs have also affected CE donations. Program developments and new requirements under the *Income Tax Act* have resulted in changes to the Ecological Gifts Program (EGP). The time to complete a donated CE has lengthened, affecting the delivery of donated CEs coming through the Program. For donated CEs to work more effectively, certain issues require attention. The EGP is working to improve the donation process through the delivery of appraiser training workshops, development of new appraisal tools (for example, appraisal short form), changes to the *Income Tax Act* (for example, bargain sales), as well as assistance to recipients. However, it is recognized that the EGP may not be the best choice for all donated CEs, lower value gifts in particular. Some potential donated Easements have been lost because the donors felt that the appraised value, determined using The Appraisal Institute of Canada (AIC) standards, was far below the value they were forgoing. Several PCAP Partners believe that the cost-benefit ratio of low-value donated CEs is too high and have begun to explore other avenues, such as CEs donated outside the EGP, as well as paid CEs. A number of PCAP Partners have simplified their agreements and have developed monitoring systems, although there is still concern about the potential weakness of enforcement.

List of acronyms on page 45 • Glossary on pages 40 and 41

Taxation and Assessment Policies: In the first few years of the PCAP, progress was made to ensure that property taxation and assessment policies were at least neutral and, in the longer term, would favour the conservation of prairie. The Plan suffered a setback when the SAMA Manual increased the assessment on wetlands and habitat areas five fold in 2001. However, the previous rate of $5 per acre was reinstated in 2002 for land that is permanently covered by water or permanently nonvegetated, but not for other habitat lands.

The Partners were not successful in determining costs and benefits of a conservation land tax credit program and other income tax credit programs. In Manitoba a similar program delivered by AAFC-PFRA and DUC was evaluated and deemed to be very effective. Overall, PCAP Partners recognize the need to be more diligent and proactive in terms of policy reform.

The provincial government has made considerable progress promoting adherence to provincial wetland policies. In 2000, SE successfully prosecuted illegal drainage activities and continues to work with its partners, including other government departments, to rationalize watershed management in Saskatchewan. DFO increased its presence in Saskatchewan in 2001 and is actively addressing fish habitat issues in Saskatchewan's waterways. SWA (a major reorganization of SWCC and components of SE and Sask Water) is intended to ensure that water quality, and fish and wildlife habitat in watersheds, receive high priority. SWA, DUC, NCC, PCAP, NS, SAFRR, AAFC-PFRA, EC-CWS and others have successfully implemented and continue to work on the Upper Assiniboia, Missouri Coteau and Frenchman River initiatives.

As alluded to earlier, agricultural policy has been dramatically deregulated in Canada. The Crop Insurance Program now has a Forage Insurance Option that should negate any risk reduction bias in favour of annual crop production and should remove any possibility of subsidy distortion. SE is conducting a review of its policies and will be recommending policy changes.

OBJECTIVES

Objective 1: Complete and maintain an inventory of native prairie.

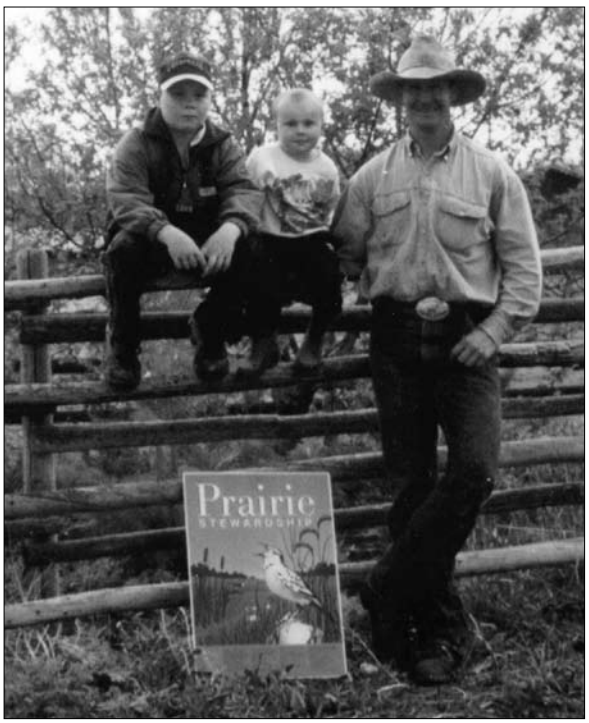
Data from the last two federal censuses of Agriculture indicate that the amount of land being cultivated in Saskatchewan is declining. These data indicate that financial pressures have removed the desire to cultivate more land. The removal of the vast majority of the agricultural subsidies has moved land use away from annual crop production in favour of forage-based agriculture. As a result, the tremendous incentives to break native prairie for annual crop production have been diminished. Nonetheless, a basic comprehensive biological inventory of remaining native prairie has yet to be completed. While most of the land cover of the Prairie Ecozone of Saskatchewan has been mapped using digital land cover imagery, the imagery does not contain specific information on plant communities or range condition. To make the best use of this digital data, ground-truthing the data is required to ensure accuracy, as are mechanisms to interface range condition and SAR information. This latter information is particularly important when working with landowners to improve range condition, SAR habitat, and to ensure the long-term security of upland and riparian sites.

Objective 2: Continue to develop a system of managed conservation areas.

While much of the original native prairie has been destroyed and there is substantial fragmentation of the remaining native prairie, some relatively large contiguous areas of native prairie remain. Both large and small remaining areas deserve as much protection and management as possible. The efforts of the stewards who have been managing these areas need to be rewarded and encouraged. SE is continuing to work towards completion of the Representative Areas Network (RAN) in the Prairie Ecozone. An integral part of developing the RAN is identifying and securing areas that are a priority for conservation. Most of the RAN grasslands are managed pastures which now receive increased protection from cultivation and development.

Objective 3: Encourage voluntary stewardship to conserve native prairie.

The vast majority of Saskatchewan's remaining native prairie, while owned by the government, is leased to private



Duane Thompson and sons Adam (left) and Cole (centre) from Kelliher. Thompson is one of SWA's Native Prairie Stewards.
Source: SWA

Completing Saskatchewan's Representative Areas Network

During the past five years there has been tremendous growth in the Representative Areas Network (RAN). The RAN has nearly doubled the amount of land which is either under protection or recognized as contributing to the goals of the program. While many RAN initiatives have taken place in the northern ecoregions, there has been substantial activity in the Prairie Ecozone. Table 2 outlines the amount of land recognized as part of the RAN in the Prairie Ecozone as of 2003. Highlights of progress in the past five years include the agreements recognizing both the federal and provincial pasture systems, recognition of the federal migratory bird sanctuaries, various wildlife areas and CEs held on private land.

Table 3. Lands designated or recognized as part of the Representative Areas Network in the Prairie Ecozone.

Type	Area in hectares	(acres)
Provincial Administration		
SAFRR		
Provincial Community Pastures	166,221	(410,732)
WHPA Lands	942,282	(2,328,379)
SE		
Ecological Reserves	848	(2,095)
FWDF Fund Lands	42,287	(104,491)
Park Lands		
Protected Areas	1,167	(2,884)
Provincial Parks	85,494	(211,256)
Recreation Sites	1,672	(4,132)
Wildlife Refuges*	3,652	(9,024)
SWCC (SWA) Lands	910	(2,249)
Federal Administration		
CFB Dundurn	23,209	(57,349)
Migratory Bird Sanctuary	50,841	(125,628)
National Parks	91,370	(225,775)
National Wildlife Area	18,941	(46,803)
PFRA Community Pastures	644,997	(1,593,788)
Corporate		
PCS (Potash Corporation of Saskatchewan) Rocanville	1,552	(3,835)
NGO		
DUC (approx. numbers)	239,070	(590,742)
NCC**	24,096	(59,541)
Private Land		
Conservation Easements (CEs)	9,887	(24,431)
Total RAN lands	**2,324,400**	**(5,743,592)**
Total SE designated lands	**145,917**	**(360,561)**

** Some wildlife refuges are on private land.*
*** NCC lands are included in Conservation Easements (CEs) total.*

With only six per cent of the RAN land legally designated by SE, as the above table shows, it is clear that working with our Partners to conserve native prairie has been extremely important. The challenge for the future will be to maintain ecological integrity on these lands through appropriate land use and management.

individuals and grazing cooperatives. Managers of these lands control day-to-day use of and access to the native prairie by livestock and the public and are pivotal in maintaining ecological drivers that continuously regenerate the prairie. Saskatchewan is a leading jurisdiction in North America with respect to its wide-ranging stewardship support programs. PCAP Partners deliver effective programming. However, there are too many ranchers for any single agency to meet on a one-to-one basis. The PCAP has met this challenge by helping coordinate, promote and support the delivery of various Partners' stewardship activities.

Objective 4: Ensure that the remaining native prairie is protected from cultivation and development.

Most of the remaining native prairie is Crown land. The role of the provincial government through SAFRR and the federal government through AAFC-PFRA in the protection of the remaining prairie has been pivotal. There have been numerous pressures on government to sell remaining tracts of native prairie. The PCAP seeks to maintain the Crown's commitment to conserving native prairie under its control by encouraging the use of new conservation tools to protect Crown land in the future. Other threats to native prairie include loss to acreages, subdivisions and related developments.

Objective 5: Improve the use of Conservation Easements (CEs) and other tools to conserve native prairie that accommodate and respect agricultural interests.

In 1998, at the beginning of the first SK PCAP, a great deal of enthusiasm greeted newly passed CE legislation. After five years of experience promoting the use of CEs the Partnership sees many problems associated with their use. In general, CEs that exclude all other land uses are not sustainable or acceptable to rural communities and must be re-examined in the context of whole agro-ecosystems. Landowners view CEs with suspicion and are very reluctant to impede their own use of the land or that of the next generation. For CEs to become a valuable conservation tool, many impediments to their use must be addressed, and better information and benefits to landowners are required. In addition, alternate forms of non-purchase securement must be investigated.

Objective 6: Ensure that property taxation and assessment policies are favourable to native prairie conservation.

Many landowners have the incorrect perception that all of the land in any particular quarter section is valued the same for taxation purposes. The land assessment system is poorly understood and is based upon a combination of market and arbitrary factors. The principal failure of the system is that it assesses land value based on its value to the owner and provides no mechanism for rewarding or acknowledging landowners who maintain habitat on their land for public or environment bene-

Producers attending a field day view parts of George DeCorby's demonstration project, completed in cooperation with Saskatchewan Watershed Authority.
Source: SWA

fits. In response, strategic planning by SSGA, PCAP, DUC and SE around new policy aimed at improving the system is underway. Work needs to be done with SAMA and GRAA to ensure that the next revisions to the SAMA Manual are "conservation-friendly." The next SAMA Manual, which will come into effect in the 2005 tax year, will be based on June 2002 improvement costs and sale prices. Plans are for this Manual to calibrate the "wasteland" rate to low carrying capacity pastures, with proposed rates estimated in the $5–10 per acre range.

Objective 7: Adopt and improve regulations, policies, programs, and economic instruments that reward rather than penalize stewardship and conservation of native prairie ecosystems.

Landowners and lessees do not make their land use plans in isolation, nor do they make those plans with the sole purpose of destroying habitat. A great many influences are placed on the use of native prairie by numerous regulators and land use advocates including the banks, governments and NGOs. The PCAP Partnership seeks to discriminate between beneficial and detrimental regulations, policies, programs and economic instruments to reform or improve the detrimental ones and promote the beneficial ones.

Objective 8: Encourage government and industry to improve regulations, monitoring and technology to minimize negative impacts upon native prairie.

Over the past decades the impacts of the oil and gas industry, road construction, and other industrial development upon native prairie have grown to the point where, except for cultivation, they are much larger stressors on the prairie than all other human activities. The role of government as regulator, licenser and landlord of industrial development is large. It is incumbent on the PCAP Partnership to ensure that securing the long-term conservation of native prairie ecosystems is not compromised by poor regulation of industrial development.

Table 4. Amount of remaining native prairie in Saskatchewan.

Ecoregion	Land Area Total (km^2)	Native Grassland	Cropland and Seeded Pasture	Trees and Shrubs	Water and Wetland	Other
Aspen Parkland	81,693	13%	71%	9%	6%	1%
Moist Mixed Grassland	67,833	16%	76%	3%	5%	1%
Mixed Grassland	86,422	31%	62%	2%	5%	1%
Cypress Upland	5,020	71%	22%	5%	2%	0.2%

Table 5. Objectives and Actions—Goal II: To conserve the remaining prairie resource			
Objectives	**Actions**	**Time-table**	**Lead and Support Partners** (lead partners shown in **boldface**)
1. Complete and maintain an inventory of native prairie.	a) Acquire and interpret the most recent land cover and soils maps for southern Saskatchewan (update 2001 NPSS/CPRC publication).	2007	AAFC-PFRA,EC-CWS, NPSS, **SE**, SWA, **U of R-CPRC**
	b) Identify areas of high risk for drainage or destruction.	Ongoing	DFO, DUC, EC-CWS, NCC, SE, **SWA**
	c) Coordinate the development of land information data bases as tools for landowner negotiation, extension and technology transfer.	Ongoing	AAFC-PFRA,EC-CWS, NCC, NPSS, PC-GNP, **SE**, SWA, **U of R-CPRC**
2. Continue to develop a system of managed conservation areas.	a) Work towards completion of the RAN in the Prairie Ecozone.	Ongoing	**SE,** All
	b) Identify and ensure that areas which are a priority for conservation receive protection.	Ongoing	DFO, DUC, EC-CWS, **NCC**, **SE**, SWF
3. Encourage voluntary stewardship to conserve native prairie.	a) Support private stewardship programs that involve landowner extension work.	Ongoing	AAFC-SAFRR, DFO, DUC, EC-CWS, NCC, NS, PCAP, PFRA, SBOIC, SE, **SWA**, SWF
	b) Develop a landowner stewardship program directory.	2004	DFO, EC-CWS, PCAP, SSGA, **SWA**, SWF
4. Ensure that the remaining native prairie is protected from cultivation and development.	a) Maintain the Crown's commitment to conserving native prairie under its control, excluding prior commitments and promises made.	Ongoing	DUC, **SAFRR**, SE, SSGA
	b) Review all Crown land proposed sales involving native prairie and register CEs where appropriate.	Ongoing	DUC, **SAFRR**, SE, SSGA
	c) In all circumstances, if WHPA land is sold, a CE should be placed on the property to ensure that the natural values of the land receive the same level of protection as provided under WHPA.	Ongoing	SAFRR, **SE**, SSGA
	d) Acknowledge that under certain conditions there are options to make a CE agreement for a designated length of time rather than in perpetuity.	2003	SAFRR, **SE**, SSGA
5. Improve the use of Conservation Easements (CEs) and other tools to conserve native prairie that accommodate and respect agricultural interests.	a) Promote the use of CEs to maintain native prairie on private lands.	Ongoing	All
	b) Do a gap analysis for non-purchase securement tools.	2005	**DUC**, EC-CWS, NCC, **SE**, SWF, SSGA
	c) Determine the types and levels of incentives required for native prairie conservation.	Ongoing	**DUC**, **NCC**, NS, SAFRR, SE, SWA, SWF
	d) Improve and simplify the process, agreements and valuation procedures for donated CEs.	Ongoing	DUC, **EC-CWS**, NCC, **SE**, SWF
	e) Develop protocols, monitor and police CEs.	Ongoing	**SE**, All Partners with CEs
	f) Determine the effect of CEs on land values.	Ongoing	DUC, NCC, **EC-CWS**, SAFRR, **SE**, SWA, SWF
	g) Develop a forum for landowners to discuss pros and cons of CEs and other conservation tools.	2004	DUC, EC-CWS, NCC, NPSS, PCAP, **SE**, SSGA, SWF
6. Ensure that property taxation and assessment policies are favourable to native prairie conservation.	a) Determine the impact of existing tax assessment policies and land use ratings on conservation of native prairie. Change policies that encourage "development" of land or place an unrealistic value on native prairie.	Ongoing	**DUC**, SAFRR, **SE**, SSGA, SWF
	b) Develop "conservation land" category with SAMA which better recognizes the public values provided by native prairie.	2004	DUC, **SE**, SSGA
7. Adopt and improve regulations, policies, programs, and economic instruments that reward rather than penalize stewardship and conservation of native prairie ecosystems.	a) Identify and prioritize those regulations, policies, programs and economic instruments that are most significant.	2003 and ongoing	DFO, DUC, SAFRR, **SE**, SSGA, SWF
	b) Promote adherence to federal and provincial wetland policies.	Ongoing	**DFO**, EC-CWS, SE, **SWA**
	c) Work to change regulations that are in conflict with stated government policies.	Ongoing	DFO, DUC, SAFRR, **SE**, SSGA, SWF
	d) Develop watershed conservation and restoration plans and improve watershed management.	Ongoing	AAFC-PFRA, DUC, DFO, EC-CWS, NS, SE, **SWA**
8. Encourage government and industry to improve regulations, monitoring and technology to minimize negative impacts upon native prairie.	a) Encourage industry to adopt the least invasive technologies when working on native prairie.	Ongoing	AAFC-PFRA, DFO, NPSS, SAFRR, SIR, SP, **SE**, SSGA
	b) Develop and deliver industry-specific conservation and stewardship education programs.	2005	DFO, DUC, NPSS, NS, RSM, **SP,** SE, SWA
	c) Encourage government and industry to develop cumulative impacts guidelines.	2005	DFO, DUC, SAFRR, **SE**, SSGA, SWF

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GOAL III:
TO MAINTAIN NATIVE PRAIRIE BIOLOGICAL DIVERSITY

Pat Fargey and Robert Sissons (PC-GNP)

BACKGROUND AND RATIONALE

Breaking of native sod and its replacement with agricultural crops is the primary reason for the reduction in the physical area of native prairie and its associated biological diversity. In addition to absolute habitat loss, cultivation of native prairie has resulted in habitat fragmentation that can affect ecological processes like species dispersal, predation and parasitism rates. One of the most significant effects of fragmentation is increased exposure and vulnerability to the invasion of exotic plant species. Other more subtle changes have also affected life forms of the prairies. Saskatchewan's native prairie co-evolved with large herbivore grazing. The elimination of wild herds of bison and replacement with domestic livestock has affected an important ecological process. Domestic livestock production with the attending fences, water developments, and supplemental feeding results in grazing patterns that differ from those of wild grazing systems. Grazing becomes more important for maintaining plant diversity in the more productive dark brown and black soil zones than in the drier brown soils regions. However even on semi-arid mixed prairie, grazing does affect important habitat components such as grass height and the amount of litter. A range of plant heights and litter is required to maintain the full range of habitats required by native vertebrates and invertebrates. The control of fire, over-harvesting of species, climate change, wetland drainage, residential and industrial development, and roads have all exerted effects on native prairie. The permanent changes that have occurred in Saskatchewan's native prairie, combined with the small amount remaining, are factors which must be considered when making future management decisions if native biodiversity is to be maintained. Goal III addresses the management of native prairie necessary to sustain the full range of native prairie biodiversity and recognizes that native re-vegetation / restoration may be necessary in order to re-establish well-functioning prairie landscapes.

PROGRESS TOWARDS GOAL III

Ensuring Native Prairie is Protected. There is a strong policy commitment in place by SAFRR to restrict subsidized breaking and to control any breaking of Crown lease land. As well, current lease agreements restrict cultivation without the permission of the Minister. These policy positions represent good progress in the protection and administrative control of native prairie landscapes. There also is commitment to ensure that any Crown land containing native prairie that is sold from the Crown portfolio is secured from cultivation by a CE that details future land use and protection prohibitions. Private landowners are participating in voluntary stewardship programs with a high degree of success. For example, Operation Burrowing Owl is a voluntary habitat stewardship program initiated by NS in 1987 to protect owl habitat. Also, SWA's Prairie Stewardship Program was initiated in 1997 to promote the conservation and management of native prairie and riparian habitat.

Complete the Representative Area Network (RAN): Significant progress was made on the RAN program in the Prairie Ecozone. The RAN Action Plan was completed and endorsed by Cabinet in 1997 with a blueprint document providing implementation priorities and direction for Departmental use in 1998. Agreements with provincial, federal and private land-holding agencies have contributed over 2 million hectares of grassland and aspen parkland into the RAN program. The majority of native prairie included in the RAN consists of AAFC-PFRA and SAFRR community pastures. Private organizations also have contributed substantial areas to the Network.

Invasive Non-native Species: There is growing awareness of the threat that noxious weeds like leafy spurge and spotted knapweed pose to native prairie and livestock production. While the distribution of these species in Saskatchewan is still quite localized, the experience of other jurisdictions (such as Montana) suggests that a high level of vigilance and early intervention will be necessary to prevent these species from becoming widespread problems. The last five years have seen considerable research on the control of these species and the application of these techniques in protected areas. There also has been an increase in awareness in the agricultural community of the threat that these species can pose for native prairie and dependent economies such as livestock grazing.

Invasive Plants Poster

The "Invasive Plants in Saskatchewan Rangelands" poster features colour photos and descriptions of 12 plants that threaten native prairie sustainability.

Contact the PCAP Office for information and copies (see inside front cover).

Restoration of Native Ecosystems: There has been considerable activity undertaken in developing techniques to revegetate with native plant materials. Conservation areas such as Last Mountain Lake National Wildlife Area and PC-GNP have been able to establish diverse stands with wild-harvested plant materials and there is a greater emphasis on using native materials for restoration in the oil and gas utilities and road construction industries. There has been some increase in the supply of native plant material by commercial seed growers. The most significant player is DUC's new commercial company "Native Plant Solutions" (NPS) that is making native Ecovar™ material available commercially. In general, the mechanics of establishing native stands is well worked out for many grassland community types. Research is underway to show the grazing production potential of newly established native pastures. The challenge for the future is to secure sufficient native seed supplies and resources and to develop concomitant extension programs so that use of native plants in permanent cover programs can become a viable option for livestock producers.

Monitoring of Health: Although some progress has been achieved towards this Objective, there remains the difficulty of defining suitable targets for "healthy native prairie," given the sometimes conflicting habitat needs of different species. Another challenge is the lack of resources available to develop or implement monitoring programs. In the long term, a process should be identified for setting management goals for native prairie and for developing measures by which to assess ecosystem health. In addition, protocols for monitoring and reporting on results should be developed.

Recover Species at Risk (SAR): Provincial SAR legislation was passed in 1997 and 15 species have been listed (see page 5). National recovery teams are in place for several prairie species. There are success stories such as the reintroduction of swift fox in portions of its former range (see page 23) while other species continue to decline at rates that suggest their imminent extirpation if current trends continue unchecked (for example, burrowing owl: 22% decline per year; sage grouse: 80% decline from 1987-97). There is now a greater awareness of the importance of recovery teams working with land managers and agronomists to develop practical best management practices for SAR; however, considerable work remains. For example, experimental studies designed to develop management practices that are beneficial for prairie SAR are urgently needed so that recommendations can be provided to land managers. Many prairie SAR are inter-jurisdictional, and there have been improvements in sharing information and cooperating in recovery actions between Canada, United States, and Mexico. The federal *Species at Risk Act* (SARA) received Royal Assent in December 2002 and will come into effect in 2003. This has led to increased federal funding for scientific research and habitat stewardship and education programs.

Understanding Native Biodiversity: There has been considerable progress in understanding affects of land use on components of biodiversity such as upland songbirds. Also, there has been an increase in research on taxa such as insects that have received little attention in the past. Thus, for some species, overall understanding of habitat requirements has improved considerably, helping to improve conservation strategies (see Figure 4). Nonetheless, knowledge is limited for most

Beyond Restoration: Do diverse native plantings have a role in agro-production systems?

Native prairie, two years after establishment.
Source: Dr. Alan Iwaasa, AAFC-SPARC

In 2001, AAFC-SPARC successfully initiated a project to re-establish mixed native grassland in southwest Saskatchewan. The project was jointly funded by Saskatchewan's Agriculture Development Fund (ADF), AAFC-Market Industry Initiative (MII) and 7 collaborative partners (DUC, SP, DUC-NPS, PC-GNP, SE, Nexen Canada Inc., and Monsanto Canada Inc.). Although 2001 was a drought year and ranked as the second driest year on record behind 1937, soil moisture was sufficient for seed germination, and successful establishment was achieved (average # of seedlings 4–5/ft^2). Abundant moisture in 2002 resulted in excellent growth. The research literature has shown the ability of native species to withstand extreme environmental conditions that would kill other non-native plants. In the next three years, this project will assess animal grazing performance, native stand establishment characteristics and environmental benefits of mixed native grasslands.

Swift Fox Recovery

Swift foxes.
Source: Robert Harrison

The swift fox was considered extirpated from Canada by 1938 due to the fur trade, poisoning, and ploughing land for crop production. One of the smallest members of the dog family, the swift fox weighs only 2.5 kilograms and has earned the title of "prairie phantom" due to its incredible speed. Between 1997 and 1983, a reintroduction program was implemented to restore this species to Canada. The two release areas included the AB-SK border area and the Val Marie – Wood Mountain area, with foxes released in Grasslands National Park, community pastures and ranches.

In 1996-97 a census of swift foxes was conducted of 108 townships in the release area in Alberta and Saskatchewan using a live-trapping technique. The area was resurveyed in 2000-01 along with an additional 80 townships in northern Montana. Major findings included:

- three-fold increase in population size and distribution in Canada,
- 98% of the caught foxes were wild-born, up from 81% in 96-98, and
- the total Saskatchewan, Alberta, and northern Montana population is estimated to be 877 foxes.

Census team leader and Head of Conservation Research at the Calgary Zoo, Dr. Axel Moerenschlager, says: "These results suggest that the recovery of the swift fox may now be one of the most successful endangered species reintroduction programs in the world."

species. For example, Richardson's ground squirrels are a critically important prey for prairie predators, and their burrows provide habitat for many species, yet scientists, managers and land users have only a rudimentary understanding of how land management affects their population dynamics.

Minimize Industrial Impact: Progress has been made in increasing the awareness of restoration procedures after industrial development, and encouraging industry to adopt less invasive technologies when working with native prairie. This has been accomplished through a variety of methods:

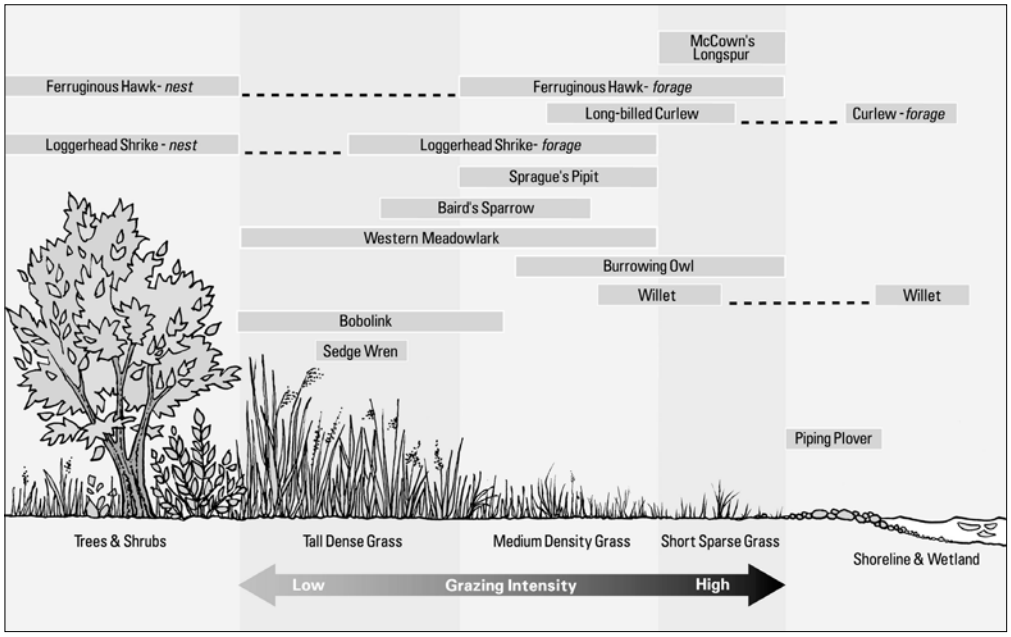
- A number of fact sheets and guidelines have been published about restoration of sites after industrial development. Examples of these are: SAFRR's document entitled *Restoration of Saskatchewan's Agricultural Crown Rangelands* and a fact sheet that PCAP Partners developed entitled *Oil and Gas Exploration and Development on Saskatchewan Agricultural Crown Lands*.
- Several government departments and NGOs have held minimal disturbance and reclamation programs and workshops for their staff and industry.
- Through the Saskatchewan Petroleum Industry and Government Environmental Committee (SPIGEC), SE SAFRR, SIR and the oil and gas industry are working together to minimize the impact that oil and gas activity has upon native prairie.
- Minimizing the damage to native prairie has been reduced through government regulations and lease clauses. For example SAFRR, SIR and SE continue to amend lease clauses and conditions respecting petroleum and gas development on WHPA lands.
- The Great Sand Hills Planning District Commission, in conjunction with industry, stakeholders and several government agencies, is analyzing the impact of trail development in the Great Sand Hills and looking at trail reclamation procedures. Oil and gas companies are one of the main generators of significant vehicle trails in this area.

It is essential that work continue in the areas of education, awareness, research, and the development of regulations that will lessen the impact of industrial development on native prairie. Land use and reclamation guidelines should be reviewed regularly. Progress is also needed in the area of assessing cumulative impacts. It is hoped that representatives from the oil and gas industry will continue to participate in PCAP.

Habitat Associations of Selected Grassland Birds

Grass grows taller and denser in areas that receive more moisture and have better quality soil. In contrast, consumption of grass by grazing cattle reduces the height and density of the grass. Soil, moisture and grazing intensity combine, resulting in diverse grass conditions suitable for different species. The bars in this figure represent the habitats with which each bird species associates. For example, some grassland birds are associated with tall, dense grass (e.g., bobolinks) while others prefer short, sparse grass (e.g., McCown's longspur). Ferruginous hawks nest in trees but forage over a wider range of vegetation height and density. Areas with grass ranging from short to tall provide suitable conditions for the entire grassland bird community.

Figure 4. Habitat Associations of Selected Grassland Birds



Source: A Land Manager's Guide to Grassland Birds of Sasktachewan. SWA, 2002.

OBJECTIVES

Objective 1: Improve our understanding of native prairie biological diversity.

Our current understanding of biological diversity in native prairie systems continues to improve; however, gaps in knowledge still exist. There is a requirement for continued research on biological diversity with particular emphasis on how it is affected by different land management systems. The interactions between native prairie management and biodiversity are complex and some species have competing needs. One way of simplifying this complexity is to develop a decision support model that can simulate the effect of management on selected ecosystem components. This approach can aid in clarifying our understanding of prairie ecosystems, help form better land management objectives that will account for biodiversity needs, and assist in communicating the complex interactions between biodiversity and land management.

Objective 2: Promote management of native prairie to maintain biological diversity.

The commitment of stakeholders to manage their lands to conserve biological diversity can be facilitated through the development of guidelines collaboratively developed to reflect the diverse interests found on the prairies. These guidelines should outline management practices best suited to the diverse landscapes and land uses found across the prairies. Additionally, ongoing monitoring and reporting are essential to determine the success of maintaining the ecological diversity of native prairie under different land management programs.

Objective 3: Control the threat and impact of introduced invasive species to native prairie.

Introduced species such as downy brome, purple loosestrife, and knapweeds are highly competitive and invasive. Many introduced species are already threatening prairie ecosystems and have the potential to competitively exclude native species. There needs to be increased awareness of the potential negative effects of invasive exotic species in order to prevent their introduction and establishment in native prairie ecosystems. Prevention will involve educating land users about the potential sources for exotic species introductions such as through contaminated seed and feed. Additionally, the development of control methods and monitoring of established invasive species

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is essential if the integrity of Saskatchewan's native prairie is to be maintained. In addition to noxious weeds, some agronomic forage species such as smooth brome grass and crested wheat grass can be invasive in some environments, and there is a broadening recognition that their use in proximity to native prairie needs to be curtailed. Ideally, permanent cover programs that provide financial incentives and strong extension components should be developed to promote the use of native species and non-invasive tame forages, especially in areas that are in close proximity to native prairie.

Objective 4: Promote restoration and recovery of native prairie ecosystems.

Saskatchewan prairie landscapes no longer support viable populations of many native species or communities. While Goal II prescribes Actions required to secure the remaining prairie, conserving the status quo will not ensure the conservation of the remaining native biodiversity. The decline of formerly widespread species like burrowing owls, sage grouse, and Sprague's pipits is a symptom of landscape dysfunction. The recovery of SAR will require some degree of restoration. Restoration targeted to address specific species, community or landscape connectivity goals requires comprehensive conservation planning, including communication, priority-setting and evaluation strategies. Where possible, efforts should link with agricultural programs that can much more broadly affect land use. Given the cost and scarcity of resources available for restoration work, careful planning will be required.

Table 6. Objectives and Actions—Goal III: To maintain native prairie biological diversity.

Objectives	Action	Timetable	Lead and Support Partners (lead partners shown in bodface)
1. Improve our understanding of native prairie biological diversity.	a) Encourage studies and research on native prairie ecosystems with emphasis on the effects of different land management practices on key components of native biodiversity.	Ongoing	AAFC-PFRA, DUC, **EC-CWS**, PC-GNP, NPSS, NS, RSM, SAFRR, SE, SSGA, SWA, Universities
	b) Develop a prairie ecosystem management decision support computer model that includes representative components of native biodiversity as one of the model outputs.	GNP Pilot by 2004	AAFC-PFRA, EC-CWS, **PC-GNP**, SE SWA, Universities
2. Promote management of native prairie to maintain biological diversity.	a) Develop and incorporate biodiversity best management practice recommendations in range extension communication products.	Ongoing	**AAFC-PFRA, DFO, DUC, EC-CWS, GNP, NCC, NPSS, NS, SAFRR, SE, SRM SSGA, SWA**
	b) Encourage information exchange between range managers, biologists and others.	Ongoing	**All**
3. Control the threat and impact of introduced invasive species to native prairie.	a) Identify and promote awareness of the negative impacts of introduced and invasive species to native prairie.	Ongoing	**SE**, All
	b) Investigate and promote methods to manage and control invasive species.	Ongoing	AAFC- PFRA, AAFC-SPARC, DUC, EC-CWS, NCC, NS, PC-GNP, RSM, **SAFRR**, SP, SE, SSDB, SSGA, SWA, SWF, Universities
	c) Discourage the introduction of additional non-native species that threaten native prairie biodiversity (e.g. development of protective buffer areas around significant native prairie areas by seeding non-invasive pasture species).	Ongoing	**SE,** All
4. Promote restoration and recovery of native prairie ecosystems.	a) Promote practical research to refine and increase use of restoration technology including the evaluation of the agricultural potential of using native species in forage production and grazing systems.	Ongoing	**AAFC-SPARC**, DUC, EC-CWS, PC-GNP, NPSS, SWA
	b) Encourage the development and use of native seed mixes in permanent cover, reclamation programs and projects.	Ongoing	**SAFRR**, All
	c) Promote communication of Species at Risk legislation to stakeholders and actively encourage that implementation be guided by the principle of working cooperatively with land managers.	Ongoing	**EC-CWS**, All
	d) Identify restoration and recovery targets of high conservation value, assess the feasibility of restoration and recovery of those targets, and develop restoration strategies for suitable target sites.	Ongoing	**EC-CWS**, GNP, **NCC**, RSM, SE

GOAL IV:
TO PROMOTE COMPLEMENTARY SUSTAINABLE USES OF NATIVE PRAIRIE

Ann Gerry (SE)

BACKGROUND AND RATIONALE

One of the aims of the PCAP is to increase the real benefits and perceived value of native prairie while maintaining its ecological integrity. The PCAP recognizes that interactions between the environment and human activities are inseparable and that the economic needs of current and future generations are important. At the same time maintaining the integrity of grasslands is necessary for both conservation reasons and for economic sustainability. The essence of Goal IV is to promote community-based resource-use opportunities, in addition to grazing, that complement each other and that are ecologically, economically and socially sustainable.

Development of native prairie-based resources is particularly important for rural areas of the province. Revenue from niche markets for new products and services could be used to supplement overall farm income and revitalize small town economies. Traditional markets such as hunting and fishing need to be encouraged, particularly in light of declining rural populations and a reduction in the number of hunters and anglers. There is currently a strong demand for bio-based products in the pharmaceutical and personal care markets and, given Saskatchewan's abundance of natural resources, there is a real potential for Saskatchewan to become a world leader in advancing new technologies and products. Encouraging the growth of this sector could attract new residents, increase capital investment, build awareness of the prairie for non-agricultural people, and complement and facilitate the growth of existing enterprises. There is also great potential to promote and market the natural and cultural heritage of Saskatchewan's native prairie through the ecotourism/agritourism industry. As an added benefit these specialty markets also may increase the utilization of smaller remnants of native grassland thereby promoting the value of conserving those lands. The tools needed to move these efforts forward in a sustainable manner include management guidelines and monitoring programs related to both the economic and ecosystem impacts as well as marketing and business planning expertise.

Public involvement and equitable sharing of benefits should occur hand-in-hand to encourage economic growth. Involvement of local communities encourages a sense of protective ownership, helping to ensure sustainability of the enterprise. Promoting a stronger connection between urban resource users and the rural source of the resource would also help establish a sense of stewardship and raise awareness of the diverse values of native prairie. Stakeholder involvement and cooperative partnerships will ensure that respect for both human and natural values is maintained.

Measures of success for this Goal might include improvements to provincial and local economies, increased outdoor recreation user levels, greater voluntary stewardship on the part of industry, maintenance of ecosystem integrity, and enhanced quality of life. While many people recognize the intrinsic value of native prairie ecosystems and the services they provide, others require evidence of tangible economic benefit to appreciate the value. Thus Goal IV promotes complementary uses of native prairie and works to ensure that the overall socio-economic value of grassland ecosystem processes is assessed and reported to the public.

PROGRESS TOWARDS GOAL IV

Over the past five years, progress towards promoting the sustainable use of native prairie, especially the smaller remnants, has been variable. A variety of excellent demonstration projects promoting sound range management on remnant prairie have been developed, and stewardship workshops are ongoing. There is still a need to increase the emphasis on the economic benefits of appropriate range management and make related extension tools available to producers and the public.

ECOTOURISM/AGRITOURISM: One rationale for maintaining healthy prairie is its ability to support multiple uses. Eco- and agritourism are uses that can take full advantage of the natural and related cultural heritage resources offered by Saskatchewan's spectacular grasslands. Some progress has been made in terms of producer-operated horseback adventure tours, self-guided tours, interpretive centres, and an ecotourism training program offered by Saskatchewan Institute of Applied Arts and Sciences Technology (SIAST), but overall provincial coordination, promotion and uptake of native prairie within the provincial tourism strategy still is quite weak.

NATIVE PLANT PRODUCTION: Another industry promoted through PCAP that has good future economic potential is native plant production. Research and development in the native plant material production industry has increased slowly over the past ten years. Some research into ecological variety

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Left, trail riders enjoying the grasslands and treed coulees of Saskatchewan's Qu'Appelle Valley.
Source: Karyn Scalise, PCAP

Below, drying and bundling speargrass seed in the Missouri Coteau, July 2000.
Source: Dean Nernberg, EC-CWS.

development has already been initiated and production is beginning. Increased funding for ecological variety development has resulted in good progress in both the public (AAFC) and private (DUC's Native Plant Solutions (NPS)) sectors. NPS is increasing commercial production and distribution of many of its Ecovars™. While advances have been made in the development of ecological and traditional varieties, and agronomic and production technology, the industry as a whole has yet to become self-sustainable. The requirements for specialized harvesting and processing machinery, variable seed production and germination, and inconsistency of supply keep production costs high. These high production costs keep seed prices inflated which, in the absence of strong policy requiring or promoting the use of native species in reclamation, weakens demand. Weak market demand, in turn, discourages expenditure of research dollars or other involvement in the industry. Further development of this industry will depend largely on increased market demand.

Wild-type Seed Production and Harvesting: The use and production of wild-type seed is perhaps the most direct use of native prairie. Wild-type seed often is the most desired source where biodiversity conservation is the re-vegetation goal. There has been modest progress in the areas of developing wild-type seed harvesting technology and restoration research (for example, Last Mountain Lake National Wildlife Area, PC-GNP). The use of native wild-type seed has been encouraged for restoring marginal lands and in landscaping public properties (for example, RSM, SWA's U of R test site). Available support for native wild-type and commercial seed producers include educational materials, listing services, and producer groups sponsored by NGOs, such as the NPSS, and government agencies. DUC's NPS maintains contract production with individual seed growers to increase wild-type seed collections of numerous species. Weak market demand due to high seed costs remains the most immediate impediment to further progress in this area.

Native Plant Industry Standards and Guidelines: The growing market for genetic, biochemical, and pharmaceutical products derived from native prairie resources presents new economic opportunities. An added benefit could be realized if a portion of the revenue from these markets went back to support prairie research and conservation. The U of S-C.Ag and private industry groups have been conducting research into the possible uses of native plants; however, no specific strategies or programs are in place at this time. As the value of certain species becomes apparent to these industries, measures such as harvest guidelines and management plans will need to be in place. To date, the NPSS has developed guidelines on native seed harvesting to avoid the collection of rare and endangered species, and AAFC-PFRA has developed guidelines regarding what and how species can be collected on community pastures. SE is in the process of developing such guidelines for all Saskatchewan wild species. Furthermore, as the native plant industry grows, there will be a need for standards and guidelines to ensure product quality. Adding ecological varieties and wild-type seed to the *Canada Seeds Act* was an original PCAP Objective; however, changes expected in 2003 may result in native and other forage species no longer being subject to the

current requirements of the *Canada Seeds Act*. As some form of quality testing will still be necessary, it will be up to the province, through groups such as Canadian Seed Growers Association (CSGA) and Saskatchewan Advisory Council on Forage Crops, and the federal government, to devise a new mechanism.

Reclamation Guidelines: Development of reclamation guidelines that require disturbed native areas to be restored to the pre-existing native plant community do help to promote the native plant materials industry. Guidelines exist that call for the use of native species in reclaiming some federal and provincial lands (for example, AAFC-PFRA, SAFRR Crown land, SE designated lands); however, with the exception of a species mixture guide for the Prairie and Parkland Ecoregions (EC-CWS), detailed methodology for re-vegetating different Saskatchewan environments is lacking. In addition, there are no approved guidelines in place for the reclamation of road right-of-ways and some Crown lands which together constitute, or are adjacent to, a large proportion of the province's native land base.

Value of Ecological Services: Recognition of the overall economic importance of native prairie and associated perennial grasslands is key to conserving the resource. An economic valuation must be extended to include the value of ecological processes such as carbon sequestering, oxygen production, and nutrient cycling. Research findings need to be communicated to those responsible for conserving native prairie, including the general public. Research has begun to look at carbon sequestration in wetlands and perennial grasslands, as well as under different grazing regimes. Models predicting the effects of climate change on Saskatchewan's biodiversity and distribution of wetlands are under development and refinement. There has, however, been little quantitative analysis of the socio-economic value of ecosystem services to Saskatchewan, and little has been done to coordinate the above analysis among agencies and researchers.

OBJECTIVES

Objective 1: Promote community-based business opportunities associated with native prairie.

In addition to livestock production, native prairie has immense potential as a tourism resource. Appropriately managed, regulated, and promoted eco- and agritourism could infuse much needed revenue into Saskatchewan's rural economy and could improve the real and perceived value of native prairie to the public.

Native seed harvesting as either a direct reclamation seed source or as a source of parent seed for ecological variety and wild-type commercial seed development also could be promoted as a diversification opportunity while still promoting sustainable use of native prairie. Management guidelines need to be developed to ensure that the regenerative ability of the prairie is not compromised, particularly where individual or annual species are targeted.

Support for community-based businesses, particularly in terms of marketing and sound business planning should become a high priority in tourism and rural revitalization programming. Incorporating educational or interpretive components would also raise the importance of native grasslands in the public's mind, thereby promoting conservation initiatives. NGOs are particularly good at supporting educational initiatives. Government agencies and others should assist with the development and coordination of scientific advice and management guidelines.

Acquiring Native Plant Materials and Information

The Native Plant Society of Saskatchewan (NPSS) is a non-profit organization that promotes the awareness of native plants and their ecosystems through education and research.

The NPSS website features a listing service that allows individuals and companies to list and search a variety of products and services related to native plants. Visit the NPSS home page at www.npss.sk.ca and follow the links (see page iv).

Objective 2: Encourage the development of a native plant production industry.

Maintenance of ecological integrity and sustainable production requires the development and production of non-aggressive native and non-native ecological varieties and cultivars for use in the reclamation industry and forage production. Strong promotion and development through incentive programs, research funding, and stronger policy regarding the use of native species in reclaiming public lands are needed for the native seed industry to achieve its potential.

Changes slated for 2003 may mean that native and many forage species will no longer be addressed in the *Canada Seeds Act* and could, therefore, be exempt from the current level of testing or certification. As a result, seed of poor quality and plants ill-adapted to local environmental conditions or contaminated with weed species may increase in the marketplace. Apart from the immediate negative consequence to buyers, market demand for native seed could suffer a sharp decline. Buyer confidence, successful re-vegetation and avoidance of introduced weed species depend on the development of a new mechanism for assuring quality of forage species.

Objective 3: Advance the exploration of native prairie towards the sustainable development of other bio-based products.

The pharmaceutical industry and the large, growing market for

"natural" personal care products present new possibilities for deriving economic return from native prairie as well as providing alternative business opportunities for rural communities. Incentives such as exploration, research and development tax credits should be considered as a means of promoting this industry, while creation of harvest and management guidelines and policies would ensure industry sustainability and conservation of the prairie resource. Increased support in the way of marketing and business planning expertise also is required to commercialize these new products and to explore and develop new markets.

Objective 4: Recognize and quantify the socio-economic contribution of native prairie and perennial grasslands.

Prairie ecosystems perform many of the functions that society expects and needs without any apparent cost. Consequently, the value of native prairie and associated perennial grasslands is largely a vague, intuitive concept to most people. The generally low level of knowledge about ecosystems means that most people underestimate the real value of ecosystem processes. This intuitive value increases with an individual's understanding of ecosystem function and knowledge of the cost of industrial processes required for greenhouse gas reduction, water treatment and fertilizer production. Replacing intuitive values with more tangible numbers will increase the value and importance of conserving grasslands to society.

Apart from its value as a grazing resource and carbon sequestration potential, assessment of the overall socio-economic value of grassland ecosystem processes has not occurred. Some non-market values were estimated in a recent Saskatchewan research project led by AAFC-PFRA and published in 2002. However, concerted efforts must be made among agencies and researchers to survey existing information and identify gaps in our knowledge about ecosystem processes and the cost of replacing those processes with technology. Where gaps exist, organizations should be encouraged to quantify the benefits they receive from ecosystem processes and report results to a coordinating body. Compiled information on the socio-economic value of native grassland and other perennial grasslands should then be disseminated through the media and educational programs, and shared with other jurisdictions.

Table 7. Objectives and Actions—Goal IV: To promote complementary sustainable uses of native prairie.

Objectives	Actions	Timetable	Lead and Support Partners (lead partners shown in **boldface**)
1. Promote community-based business opportunities associated with native prairie.	a) Provide the tourism industry and community organizations with information and technical experience to support hunting, fishing, eco- and agritourism and other recreational activities.	Ongoing	NS, PC-GNP, SAFRR, **SE**, SSGA, SWA
	b) Liaise with rural revitalization groups to develop guidelines to ensure sustainable use of native prairie.	Ongoing	NPSS, NS, PC-GNP, SAFRR, **SE**, SSGA, SWA, SWF
2. Encourage the development of a native plant production industry.	a) Develop a native plant materials centre for research and development.	2006	**AAFC-SPARC**, DUC, EC-CWS, NPSS, PC-GNP, SE
	b) Develop educational materials and guidelines to promote the use and production of non-invasive native plant materials for re-vegetation in and adjacent to native areas.	Ongoing	AAFC-SPARC, DUC, EC-CWS, **NPSS**, SE, SWA
	c) Encourage the establishment of new, mandatory testing and certification programs for native, forage, and horticultural species, varieties, cultivars and ecological varieties at federal and provincial levels.	Ongoing	AAFC-PFRA, **AAFC-SPARC**, DUC, NPSS, **SAFRR**, SE, SP, SSGA, SWA
	d) Promote the development of local native seed growers, processors, suppliers and testing facilities.	Ongoing	AAFC-PFRA, AAFC-SPARC, DUC, NPSS, **SAFRR**, SP, SSGA
3. Advance the exploration of native prairie towards the sustainable development of other bio-based products.	a) Develop exploration and research and development tax credits and other incentives for companies exploring and developing new bio-based products.	2006	AAFC-SPARC, AAFC-PRFA, **SAFRR**, SE, U of S-C.Ag
	b) Develop guidelines, management plans, and licensing for the harvest of native prairie species.	2004	AAFC-PFRA, EC-CWS, NPSS, **SE**, SAFRR, SSGA
4. Recognize and quantify the socio-economic contribution of native prairie and perennial grasslands.	a) Survey the literature and conduct gap analyses regarding ecological services including grazing and carbon sequestration, and communicate the findings.	2008	**U of R-CPRC, SPARC**, All
	b) Encourage organizations to quantify and report on the economic and social benefits associated with their particular use of the native prairie resources.	Ongoing	**All**

GOAL V:
TO INCREASE AWARENESS AND UNDERSTANDING OF NATIVE PRAIRIE AND ITS VALUES

Karyn Scalise (PCAP) and David A. Gauthier (U of R-CPRC)

BACKGROUND AND RATIONALE

Education is fundamental in ensuring that everyone understands basic issues. Education and communication at many levels are therefore major components of successful sustainable development programs. Public understanding of environment and resource-related issues is critical for successful conservation efforts. There are many perspectives and questions regarding the meaning of sustainable development and the role of conservation among the many different interests on the prairies. They reinforce the need to take a broad, inclusive view of goals, practices, effects and expectations. Communication and education programs provide the means by which prairie conservation goals, objectives and methods can be shared and discussed by a wide range of stakeholders.

Lessons from early efforts towards sustainable development highlight the importance of including local people in land-use planning, development, and management. The process of involving local communities is not easy. The prairie population is widely distributed over a large geographic area, and individuals may not necessarily be part of any established organization. Nonetheless, local residents must be involved in developing proposed conservation actions in order to be able to evaluate and support those actions within the context of their lives and livelihoods. Without active participation of local communities, individuals may choose to use prairie resources in less sustainable ways. Education and communication activities regarding prairie conservation must encourage the integration of information into daily behaviour.

Environmental education is oriented to promoting changes in attitudes and behaviour that will help to solve existing problems relating to the environment and to avoid the generation of new ones. Environmental education should encourage problem-solving, decision-making and participation, and take into consideration ecological, political, economic, social, aesthetic and ethical aspects. The ultimate aim is for every citizen to have formulated for him or herself a responsible attitude towards the sustainable development of native prairie, an appreciation of its diverse values and beauty, and a personal conservation ethic.

Research on environmental education has shown that many influences play a significant part in promoting environmental awareness and concern. These include education courses, family, friends, books, television and media, the impact of environmental disasters, travel, and so on. However, the single most important factor relates to experiences in the natural world, including aspects of spiritual thinking and experience that are derived from spending time in the outdoors—either living in a rural environment, involvement in agriculture or conservation, or engaging in activities such as hiking, camping, birding, gardening, and other outdoor pursuits. Research data strongly suggests that people's personal experiences in and with the natural world are by far the most significant factor influencing environmental thinking and awareness. This suggests that the formal education system should ideally be structured so the environment is used as a medium for enquiry and discovery and also as a source of material for realistic activities related to language, mathematics, science and arts.

Education and communication are vital components of each PCAP Goal and in the continuing success of the PCAP Partnership. Education of and communication with various audiences is essential for ensuring that PCAP's Goals related to grazing, conservation, biodiversity and sustainable use of native prairie are met. Audiences include stakeholders such as ranchers, mixed farmers, other industry groups, federal and provincial government departments, NGOs, First Nations and the general public. Education and communication tools include formal and informal education programs, presentations, publications, displays, websites, field and ranch tours, and extension programs, as well as special events such as Native Prairie Appreciation Week (NPAW) and the designation of Needle and Thread (*Stipa comata*) as Saskatchewan's official grass emblem.

For the most part, education and awareness activities have been targeted at private landowners and the formal education system. However, shortfalls are evident with regards to directing these activities towards the general public. Attention should be paid to ensure that future events are designed to include or target other interest groups.

PROGRESS TOWARDS GOAL V

Growth in the PCAP Partnership: The PCAP Partnership grew from 16 original Partners in 1998 to a total of 25 Partner groups. PCAP meetings provided an effective forum for sharing information, addressing issues and evaluating progress on

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Plan implementation. PCAP held 16 Executive and Partnership meetings between 1998 and 2003 in addition to participating in 3 joint SK-PCAP and AB-PCF meetings (one in 1998 and two in 2002).

COMMUNICATIONS: Annual Partner Updates were published and distributed in 1999, 2000, and 2001 to document progress relative to each of the 85 Actions contained in the 1998-2003 Plan. In addition, Partners reviewed and ranked progress on Actions annually in order to determine progress and shortfalls in Plan implementation. In addition to Partner Updates, the PCAP office produced several other materials with assistance from its Partners and other groups (indicated below) including:

- Newsletter articles which were submitted to SSGA and other Partners
- Oil and Gas Exploration and Development on Saskatchewan Agricultural Crown Lands fact sheet (SSGA, SWCC, SEM, SERM, SAF, MACH, CMPP)
- Grasslands Poster (Alberta Environment and Protection)
- Did You Know? - Native Prairie Facts Poster (CMPP, SWCC)
- Invasive Plants in Saskatchewan Rangelands Poster (SWCC, SE, SAFRR)
- Saskatchewan Native Prairie Conservation Directory
- Saskatchewan Native Prairie Research Bibliography (U of R-CPRC)
- PCAP Partner (Mandate) fact sheet
- PCAP Brochures
- Missouri Coteau Initiative Brochure (SWCC, DUC, NCC, NS, EC-CWS)
- Cows, Fish, Cattle Dogs and Kids (CFCDK) Game Show Brochure and Video
- PCAP fridge magnets
- Laminated Native Plant Collections featuring ~ 20 species
- PCAP website

Information on the PCAP was communicated through displays and presentations at approximately 25 conferences, meetings, and trade shows between 1998 and 2003. Venues ranged from meetings with staff or members of PCAP Partner groups to provincial, national and international conferences and trade shows. The Saskatchewan PCAP hosted the Saskatchewan component of the Voluntary Stewardship Initiatives (VSI) Sector workshop that was facilitated by Wildlife Habitat Canada (WHC) on behalf of EC-CWS in 2001. This national workshop series was developed to provide recommendations to facilitate the development of a national stewardship action plan. WHC reported that recommendations obtained from our workshop were more consistent than those from other jurisdictions, which illustrates PCAP's strength in facilitating communication and awareness among its Partners.

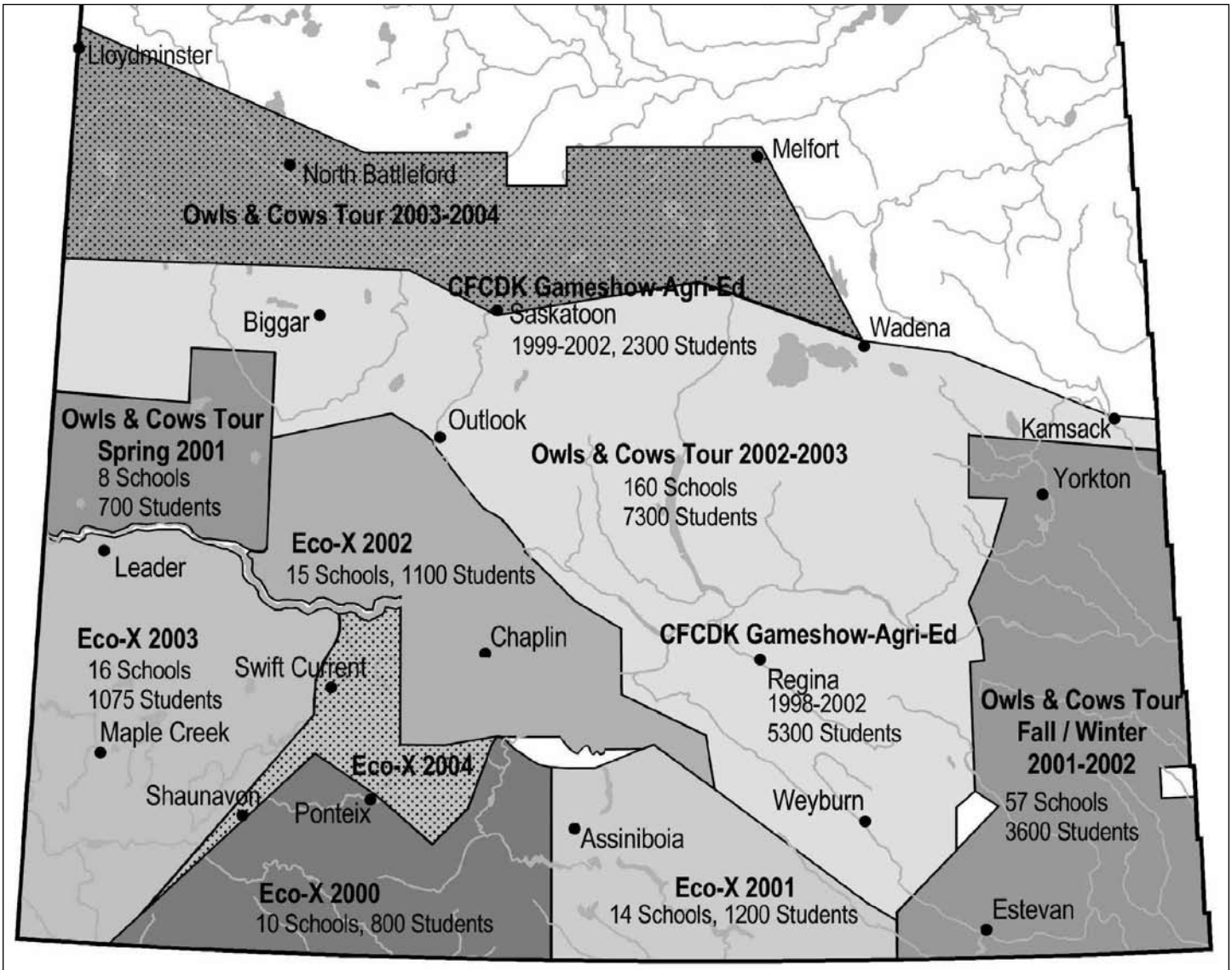
STEWARDSHIP EDUCATION: Exceptional progress was made on the delivery of stewardship education programs (CFCDK Game Show, Owls and Cows Tour, Eco-Extravaganza (Eco-X)) and materials (poster mail-out in 2002) to elementary schools. The Game Show has become a regular feature at Agri-Ed events in Regina and Saskatoon during Western Canadian Agribition and Fall Fair, respectively. Approximately 7,500 students have received the CFCDK Game Show through Agri-Ed and other events since 1998. The CFCDK Game Show is also a major component of the Owls and Cows Tour and the Eco-X. The Owls and Cows Tour twins the Game Show with SBOICs Owls On Tour program so that students receive information on native prairie and riparian stewardship.

The Eco-X includes both of these programs, along with other fun, interactive stewardship activities delivered by other PCAP Partners, including PC-GNP, SWA, DUC, EC-CWS, AAFC-PFRA, NS, and NCC. Target areas and content for the Owls and Cows Tour and the Eco-X are determined by the PCAP in consultation with delivery Partners. Partners are primarily responsible for program delivery, while the PCAP office plays a lead role in fund-raising, promotion, and coordination. In-kind and financial support from PCAP Partners and funding from federal grants including AAFC's Canadian Adaptation and Rural Diversification in Saskatchewan (CARDS) Program, the National Soil and Water Program, the Canada Millennium Partnership Program (CMPP), and the Government of Canada's Habitat Stewardship Program (HSP) for species at risk made these highly acclaimed programs possible. Between spring 2001and March 2003, the Owls and Cows Tour was delivered to 158 schools (~11,400 students) and by March 2003, the Eco-X was delivered to 55 schools (~4,100 students) since it began in 2000. Evaluations revealed very high levels of satisfaction among teachers, who particularly liked our presenters and the interactive nature of our activities. In 2002 PCAP coordinated a mail-out of posters provided by PCAP, SWF, DUC and NPSS to all elementary schools in Saskatchewan (~800), with strong in-kind support from Saskatchewan Education - Curriculum and Instruction Branch.

PCAP Partners have been active in developing and delivering their own education programs to youth audiences. Between 1996 and 2002 public visitations to the SBOIC exceeded 18,000, and since 1999 their Owls On Tour program reached over 29,000 individuals though the Owls and Cows Tour, Eco-X, and other visits to schools and community groups. The NPSS coordinated school field trips to 7 schools (234 students) in the Missouri Coteau in the late summer of 2002 as a follow-up to the Eco-X visits. NPSS reached an additional 560 students through a native grassland ecology and stewardship education program as part of the Saskatoon Board of Education Brightwater Science and Environmental Program and delivered a workshop for Saskatoon educators interested in including native plants as a part of their science programs.

TOWN HALL MEETINGS ON LANDOWNER STEWARDSHIP: A total of 12 town hall meetings on landowner stewardship were held in the Missouri Coteau, Frenchman River Watershed, and Great Sandhills areas to communicate information on stewardship programs offered by PCAP Partners. The meetings featured displays and presentations by several Partner Groups, including PCAP, SWA, NCC, EC-CWS, DUC, SAFRR, DFO

Figure 5. Stewardship Education Program Coverage.



PROGRAM	YEAR(S)	GRADES	REACH
CFCDK Game Show	1998-2002	4-6	~7,500 students
Owls & Cows Tour	2001-2003	3-6	158 schools; ~11,400 students
Eco-X	2000-2003	K-6	55 schools; ~4,100 students
Poster Mail out	2002	All	~800 schools

Owls & Cows Tour 2001:	PCAP, SBOIC
Owls & Cows Tour 2002:	PCAP, SBOIC, SWA
Eco-X 2000 Partners:	GNP, PCAP, SBOIC, SWCC
Eco-X 2001 Partners:	GNP, PCAP, SBOIC, SWCC, DUC, NCC
Eco-X 2002 Partners:	GNP, PCAP, SBOIC, SWCC, DUC, EC-CWS
Eco-X 2003 Partners:	GNP, PCAP, SBOIC, SWA, DUC, EC-CWS, AAFC-PFRA, NS
Poster Partners:	PCAP, SWF, NPSS, DUC, Saskatchewan Learning

Funding support provided by EC-HSP; DFO

Map source: Dave MacDonald, SWA

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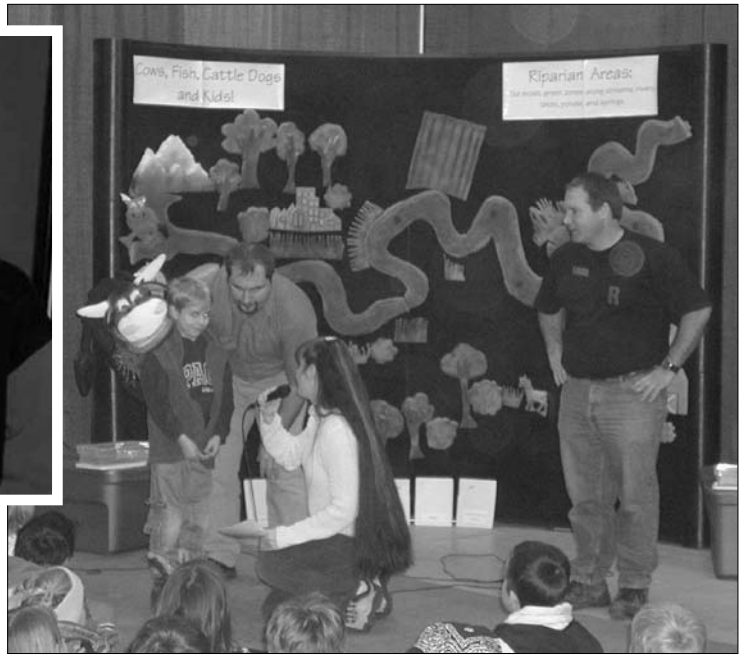

Left: PCAP's Cows, Fish, Cattle Dogs, and Kids Game Show—Agribition 2002.
Source: Karyn Scalise
Inset far left: SBOIC's Owls on Tour Program—Agribition 2002.
Source: Krista Connick

and AAFC-PFRA. Evaluations revealed that participants liked the coordinated and cooperative approach of government agencies and NGOs in working together to promote and share information on their programs.

Special Events: The designation of Needle and Thread as Saskatchewan's official grass emblem in 2001 and the annual proclamation of Native Prairie Appreciation Week (NPAW) since 1999, were PCAP-led initiatives designed to raise awareness of native prairie, its values, and the role played by the ranching industry in its conservation and management. NPAW has evolved to become a multi-Partner event encompassing the SRM Workshop and Field Tour, an NPSS field tour, ranch stewardship demonstrations, and profiles of local conservation and management activities of PCAP Partners including SAFRR, AAFC-PFRA, AAFC-SPARC, DUC, NCC, PC-GNP, SWA, SSGA and SE. The multi-partnership approach facilitates promotion, planning, and delivery and helps to eliminate conflicts among Partner groups regarding event scheduling.

The Missouri-Coteau Initiative: Developed to expedite ecosystem-based conservation efforts in the Missouri Coteau, this program is arguably one of the most effective, multi-partner strategies in North America. Partners include PCAP, SWA, NCC, DUC, NS, SE, SAFRR and EC-CWS with major funding provided by the Government of Canada Habitat Stewardship Program (HSP) for Species at Risk. This initiative has been effective in minimizing or eliminating duplication between complementary programs, identifying and addressing program gaps, and developing a unified communication and delivery strategy.

Multi-disciplinary Research and Education: University Partners (U of S and U of R) led the Prairie Ecosystem Sustainability Study (PECOS), studies of rural social cohesion (U of R-CPRC) and adaptations to climate change on the prairies (Prairie Adaptation Research Collaborative-PARC). These initiatives facilitate multi-disciplinary studies of socio-economic and ecological factors relating to sustainable development in the Prairie Ecozone. U of R-CPRC distributed the Saskatchewan Natural Heritage Map and Ecoregions of Saskatchewan book, CD-Rom and Teacher's Guide to all schools in the province, and produced a detailed status report on native prairie and protected areas in the prairie ecozone. U of S Biology 107, 108, and 110 classes and SIAST's Integrated Resource Management Course contain information on prairie ecology and the PCAP. In 2001, U of R completed the first interdisciplinary graduate student course on Environmental Sustainability.

OBJECTIVES

Objective 1: Promote awareness of the PCAP Vision, Goals, Objectives and Actions.

PCAP will continue to provide articles on its work to Partner newsletters and will post them on its website. Partners will continue to be encouraged to submit information on events they are planning so that the PCAP can assist in promoting them. PCAP Partners will continue to be linked to and from the PCAP website, along with other appropriate links. PCAP Partner representatives are encouraged to provide staff and members with information on the PCAP and to update them on PCAP progress and events. The PCAP Office and Partners will continue to promote the PCAP through conferences and trade shows. To reach a broader audience, additional work is required to promote the PCAP through the media.

As with the previous Plan, Partners will submit an inventory of their activities to the PCAP Office for inclusion in annual Partner Updates. Inventories are apt to be more comprehensive among groups that promote awareness of PCAP Actions to their staff and members so that they, in turn, can provide information to their PCAP representative for inclusion in Partner Updates. Prior to publication, Partners will evaluate and rank progress relative to each Action and identify progress and shortfalls for inclusion in the Partner Update. Prospective Partners that support PCAP's Goals and Vision will continue to be recruited to advance PCAP implementation.

Objective 2: Evaluate public awareness, appreciation and understanding of native prairie.

There is a need to conduct a questionnaire survey to assess public awareness, understanding, and appreciation of native prairie. The report will serve to identify areas in which education is required and to identify and develop optimum communication strategies.

Objective 3: Coordinate PCAP communication and education activities with other native prairie conservation initiatives at local, national and international levels.

The PCAP Partnership will exchange information regularly with other prairie conservation groups active in Saskatchewan and other jurisdictions (for example, Saskatchewan Network of Watershed Stewards (SNOWS), and Alberta Prairie Conservation Forum (AB-PCF)). In addition, PCAP will contribute to the development of the North American Free Trade Agreement (NAFTA)–Commission for Environmental Cooperation (CEC) North American Grassland Conservation Strategy and other conservation strategies (for example, North American Bird Conservation Initiative (NABCI)). The Saskatchewan PCAP is regarded as a North American leader in developing and implementing effective, action-oriented prairie conservation strategies and hopes to play a lead role in the development of tri-national grassland conservation planning.

Objective 4: Educate the general public about native prairie ecosystems.

The PCAP Partnership will continue to develop and distribute communications and educational materials and programs to various audiences. The PCAP and its Partners will continue to deliver youth education programs in partnership with each other and independently. The Eco-X is an excellent example of a cost-effective partnership where Partners share resources and costs associated with program planning and delivery. Work is in progress for other Partners to develop similar partnerships to facilitate more comprehensive, ecosystem-based programs for delivery to youth audiences.

Support is required to develop and deliver regional native prairie education workshops and other programs. Results from surveys assessing public awareness will be useful in guiding the development and delivery of needed programs.

PCAP and its Partners will continue to raise awareness of native prairie and its values though Native Prairie Appreciation Week (NPAW) and other special events, such as the designation of Needle and Thread as Saskatchewan's official grass emblem in 2000. Multi-Partner events such as NPAW and field and grazing tours delivered by several PCAP Partners are effective tools for sharing information and for promoting prairie conservation and management goals and strategies.

Objective 5: Increase public appreciation of the beneficial role played by the livestock industry and other stewards in the management of native prairie.

Ranching is regarded as one of best examples of sustainable development in Canada. It contributes significantly to the provincial economy and forms an important part of Saskatchewan's heritage. Recognition for the role of the livestock industry in conserving attributes associated with well-managed grasslands urgently needs to be promoted to society. Such attributes include biodiversity and SAR conservation, hunting, fishing, eco- and agritourism and related recreational activities, and the conservation of historical artifacts. A strong ranching industry in Saskatchewan sets the ideal climate in which to advance progress related to the PCAP Goals and Vision. Ongoing efforts by the PCAP Office and all Partners are required to promote and support the livestock industry and other stewards and their role in native prairie conservation.

Native Prairie Appreciation Week 2001: Participants celebrate the diverse values of native prairie during a ranch stewardship tour.
Source: Glenys Weedon, SSGA

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Table 8. Objectives and Actions—Goal V: To increase awareness and understanding of native prairie and its values.			
Objectives	**Actions**	**Timetable**	**Lead and Support Partners** (lead partners shown in **boldface**)
1. Promote awareness of the PCAP Vision, Goals, Objectives and Actions.	a) Increase co-ordination and communication between agencies conducting research on native prairie ecosystems. To facilitate this, each PCAP meeting will feature presentations on important activities featuring a particular Goal.	Ongoing	**All**
	b) Maintain and regularly update the PCAP website.	Ongoing	**PCAP Office**, All
	c) Link PCAP Partners to (and from) PCAP website.	Ongoing	**PCAP Office**, All
	d) Recruit new PCAP Partners.	Ongoing	**PCAP Office**, All
	e) Promote the PCAP through the media.	Ongoing	**PCAP Office**, All
	f) Compile and distribute annual Partner Updates.	Ongoing	**PCAP Office**, All
	g) Promote the PCAP at trade-shows, conferences, etc.	Ongoing	**PCAP Office**, All
	h) Encourage Partners to regularly update staff and members.	Ongoing	**All**
	i) Provide newsletter articles to PCAP Partners and post them on websites.	Ongoing	**PCAP Office**
2. Evaluate public awareness, appreciation and understanding of native prairie.	a) Conduct and report on a questionnaire survey assessing public awareness, understanding, and appreciation of native prairie.	2005	**U of R-CPRC**
3. Coordinate PCAP communication and education activities with other native prairie conservation initiatives at local, national and international levels.	a) Contribute to the development of the CEC North American Grassland Conservation Strategy.	2003	**U of R-CPRC**, All
	b) Exchange information on a regular basis with other prairie conservation groups.	Ongoing	**All**
4. Educate the general public about native prairie ecosystems.	a) Develop and deliver youth education programs.	Ongoing	AAFC-PFRA, **PCAP**, EC-CWS, NPSS, NS, PC-GNP, RSM, SBOIC, SRM, SWA, SWF
	b) Develop and distribute educational materials.	Ongoing	**All**
	c) Organize NPAW and other special events.	Ongoing	**PCAP**, All
	d) Develop and deliver regional native prairie education workshops and other programs.	Ongoing	DUC, NPSS, NS, **PCAP**, RSM, SWA
5. Increase public appreciation of the beneficial role played by the livestock industry and other stewards in the management of native prairie.	a) Promote the role of the livestock industry and other native prairie stewards through the media, presentations and publications.	Ongoing	**All**

Left and above: Eco-X 2003—Caronport School

Above: SWA delivers Macroinvertebrate Mayhem—a Project WET tag game that illustrates how range biologists use insects to evaluate water quality in riparian health assessments.

Source (both photos): Lorne Scott

How PCAP 2003-2008 Will Work

The Saskatchewan Stock Growers Association (SSGA) has chaired the Saskatchewan PCAP since it was launched in 1998 and provides space to house the office of the PCAP Manager. The PCAP Partnership consists of representatives from each of the PCAP Partner Groups. A smaller Executive Committee, comprised of representatives from the Partnership, provides specific direction on Plan implementation, including developing the annual work plan. The work plan guides communications, program delivery, and budgetary and fund-raising strategies. Executive and Partnership meetings are held three times annually to exchange information, discuss issues, evaluate progress and develop strategies related to Plan implementation. The PCAP uses a consensus-based approach to decision making. Most PCAP Partners contribute funding and in-kind support towards its implementation and programs, and additional funding is acquired through federal granting agencies and other sponsors.

The following activities will help to ensure sustained momentum towards the delivery of this Plan:

1. Seek formal endorsement of the 2003-2008 PCAP.

A formal signing ceremony, such as the one held in 2000, provides formal recognition of the importance of the PCAP and the role of the various Partners in its implementation. This endorsement confirms the Partners' commitment to carrying out and annually reporting on Plan Actions and determining progress and shortfalls in implementation. The signing ceremony for this Plan was held on June 17, 2003at the RSM, during Saskatchewan's 5th annual Native Prairie Appreciation Week.

2. Establish PCAP Partnership and Executive Committees.

The Partnership consists of representatives from each of the PCAP Partner groups and meets three times per year. The Executive Committee has responsibility for financial planning, guiding the activities of the PCAP Manager and providing any necessary assistance in guiding Plan implementation and representing the PCAP.

3. Secure financial and in-kind support from PCAP Partners and other sponsors.

Adequate financial and in-kind support is required to maintain operations of the PCAP. Funding is provided through commitments from PCAP Partners, federal granting agencies via proposals, and donations of financial and in-kind support from other sponsors.

4. Maintain a home office in the SSGA Office, a full-time manager and permanent part-time support staff.

The PCAP office will continue to operate out of the SSGA Office in Regina. A full-time manager, permanent part-time staff, and technical support are required to maintain current levels of communication and programming.

5. Develop an annual work plan.

Annual work plans are developed by the PCAP Manager and Executive Committee for approval by the Partnership. Annual work plans forecast activities for the upcoming year and must be completed by April 1st of each year. Work plan activities include communications, securement of financial and in-kind support, program coordination and delivery, and recruitment of prospective Partners.

6. Evaluate and report on progress annually.

Annual Partner Updates provide an inventory of Partner activities and summarize progress and shortfalls in Plan implementation. They are developed and distributed annually according to the following process: (a) Partners submit an inventory of their activities, relative to Plan Actions, to the PCAP Office at least six weeks prior to the annual Plan Evaluation Meeting; (b) the PCAP Office compiles a comprehensive inventory of activities and distributes it to the Partnership for review two weeks before the Evaluation Meeting; (c) during the Evaluation Meeting, Partners rank progress on each Action as good, fair, or weak, and those identified as good or weak serve to facili-

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tate the identification of progress and shortfalls, respectively; (d) publication and distribution of the Partner Update is then coordinated by the PCAP Office. Partners are encouraged to poll staff and members of their groups for activities to make it as comprehensive as possible, thereby alleviating under-reporting.

7. Facilitate recruitment of new partners.

Ongoing recruitment of Partners is essential to the development of an inclusive forum that is able to appreciate and address issues related to the entire complement of native prairie-related issues and values. The recruitment of additional Partners aids the PCAP in promoting awareness of its Vision and Goals to broader audiences. Recruitment also enhances opportunities for funding, in-kind support and collaboration in regard to Objectives or Actions of mutual concern. New Partners are required to provide information about their organization and the role they play in the Prairie Ecozone, and to formally endorse the PCAP Vision and Goals.

Table 9. Process of implementing the Saskatchewan Prairie Conservation Action Plan, 2003-2008.

OBJECTIVES	ACTIONS	TIMETABLE	LEAD and SUPPORT PARTNERS (lead partners shown in **boldface**)
1. Seek formal endorsement of the 2003-2008 PCAP.	a) Confirm Partners.	May 2003	**PCAP Partnership**
	b) Coordinate signing ceremony during NPAW 2003.	June 2003	PCAP Manager
2. Establish PCAP Partnership and Executive Committees.	a) Review and ratify the process for establishment of Committees.	2003	**PCAP Executive Committee** and PCAP Partnership
3. Secure financial and in-kind support from Partners and other sponsors.	a) Confirm Partner commitments, develop proposals for granting agencies, and seek support from other sponsors.	Ongoing	**PCAP Manager**, Executive Committee and PCAP Partnership
	b) Administer PCAP funds.	Ongoing	**PCAP Executive Committee**, **SSGA**
4. Maintain a home office in the SSGA office, a full-time manager, and part-time support staff.	a) Funding and in-kind support, above, is essential to maintaining the office and staff.	Ongoing	**PCAP Executive Committee**, **SSGA**, PCAP Partnership
5. Develop an annual work plan.	a) The PCAP Manager and Executive Committee develops an annual work plan for approval by the Partnership which addresses the following components: annual operational policy, communication strategy, budget and funding strategy, stewardship education program strategy.	Annually by April	**PCAP Manager, Executive Committee**
6. Evaluate and report on progress annually.	a) Compile, publish and distribute annual Partner Updates.	Annually	**PCAP Manager**, PCAP Partnership
7. Facilitate recruitment of new Partners.	a) Seek and recruit potential Partners that influence the Prairie Ecozone.	Ongoing, as required	**PCAP Manager**, Executive Committee, PCAP Partnership

Eco-X 2003—
Leader Composite School.
Source: Gerald Smith

Appendix 1. Suggested Readings

David Gauthier (U of R-CPRC) and Michel Tremblay (SRM, SAFRR, SFC)

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Appendix 2. Glossary of Terms

Krista Connick (SWA)

Abiotic - Non-living; usually referring to rock, minerals, and non-organic parts of the natural environment.

Agritourism - The combination of a natural setting and products of agricultural operations combined within a tourism experience.

Animal Unit Month - The amount of dry forage required to sustain a 1000 lb cow for one month.

Arable - Land that is capable of producing crops.

Bargain Sale - A sale of a property at less than its fair market value to a recipient qualified to issue a tax receipt for some consideration (i.e. part sale and part donation of a property); also known as split-receipting.

Biodiversity - The variety, distribution, and abundance of different plants, animals, and microorganisms on a landscape. Includes the ecological functions and processes they perform and the genetic diversity they contain at local, regional, or landscape levels of analysis.

Biotic - Of or relating to life and living things.

Carbon Sequestration - Carbon removed from the atmosphere and fixed in living or dead organic material.

Conservation - The use and management of natural resources according to principles that assure their sustained economic and social benefits, without damaging the environmental quality.

Conservation Easement (CE)- A legal agreement through which a landowner voluntarily restricts or limits the type and amount of development that may take place on his or her land, in order to conserve its natural features.

Cropland - Land used primarily for the production of cultivated crops.

Crown Land - Land owned by either the provincial or the federal government.

Cultivated - Land that has been broken from its native state in order to raise crops.

Deeded Land - Any privately owned land.

Development - Any project, operation or activity or any alteration or expansion of any project, operation or activity which is likely to:

i) have an effect on any unique, rare or endangered feature of the environment;

(ii) substantially utilize any provincial resource and in so doing preempt the use, or potential use, of that resource for any other purpose;

(iii) cause the emission of any pollutants or create by-products, residual or waste products which require handling and disposal in a manner that is not regulated by any other Act or regulation;

(iv) cause widespread public concern because of potential environmental changes;

(v) involve a new technology that is concerned with resource utilization and that may induce significant environmental change; or

(vi) have a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment.

Drainage - Artificial removal of standing water from fields or pasture.

Ecological Gifts Program - A federal government initiative that allows people to make donations of ecologically sensitive lands or easements on ecologically sensitive lands to authorized government agencies or non-government organizations in exchange for a tax credit or money.

Ecological Integrity - The quality of a natural, unmanaged or managed ecosystem in which the natural ecological processes are sustained, with genetic species, and ecosystem diversity assured for the future.

Ecological Variety - A plant species variety that is the result of the collection of plants from a diversity of populations and environments with the objective of providing a genetically diverse commercial seed source.

Ecoregion - A subdivision of representative areas with similar attributes, characterized by similar landforms, climates, vegetation, soils, water, and regional human activity patterns.

Ecosystem - An interdependent system consisting of all the living organisms in a given area, and all the physical and chemical factors of their environment that link them.

Ecosystem Management - A management practice and philosophy aimed at selecting, maintaining, and/or enhancing the ecological integrity of an ecosystem in order to ensure continued ecosystem health while providing resources, products, or non-consumptive values for humans.

Ecotourism - A nature travel experience that contributes to conservation of the ecosystem and to the cultural and economic resources of the host communities.

Ecovar™ (see ecological variety) - An ecological variety licensed to Native Plant Solutions.

Ecozone - An area of the earth's surface representative of large and very generalized units and characterized by interactive and adjusting abiotic and biotic factors.

Encroachment - The advance of undesirable species beyond acceptable limits.

Endangered - Any native wild species of plant or animal that is threatened with imminent extirpation or extinction.

Exotic Species - A species which is not native to the region in which it is found.

Extirpated - Any native wild species of plant or animal that no longer exists in a given area, but exists elsewhere in the wild.

Grazing System - The manipulation of grazing and browsing animals to accomplish a desired result. The manner in which grazing and non-grazing periods are arranged within the grazing season, either within or between years.

Herbivore - An animal that subsists on plants or plant materials.

Indicators - Species that indicate the presence of certain environmental conditions, seral stages, or previous treatment.

Indigenous - Born, growing, or produced naturally in a specific region.

Landscape Area - A subdivision of an ecoregion, characterized by distinctive assemblages of landform, relief, surficial geological material, soil, water bodies, vegetation and land uses.

Leased Land - Government-owned lands that are rented to individual producers on a long-term basis.

Management Plan - A program of action designed to reach a given set of objectives.

Monitoring - The orderly collection, analysis, and interpretation of resource data to evaluate progress toward meeting management objectives.

Monoculture - Vegetation dominated by only one species of plant.

Native Prairie - Native aquatic and terrestrial habitats within the Prairie Ecozone of Saskatchewan.

Partnership - An agreement between two or more individuals, for the common good of all parties involved.

Range Management - A distinct discipline founded on ecological principles and dealing with the use of rangelands and range resources for a variety for purposes. These purposes include use as wildlife habitat, grazing by livestock, recreation, aesthetics, as well as other associated uses.

Reclamation - To return the capability of disturbed land to support its prior use or some other land use.

Representative Areas Network (RAN) - A system of land and waters which are designated and managed to represent and conserve Saskatchewan's ecological resources for current and future generations. Representative Areas act both as reservoirs of biological diversity and as benchmarks for comparison with more heavily utilized landscapes.

Restoration - To bring land back as close as possible to its original state.

Revegetation - Establishment of vegetation following a disturbance that partially or completely removes the original vegetation.

Stewardship - The individual and corporate responsibility of one generation to maintain the natural inheritance that it has received, both for its benefit and for the benefit of future generations. A commitment to conserve and maintain the natural features of the land.

Sustainable Development - A conceptual ideal where development meets the needs of the present generations without compromising the ability of future generations to meet their own needs.

Sustainability - The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Threatened - Any native wild species of plant or animal that is likely to become endangered if the factors leading to its endangerment are not reversed.

Ungulate - A hoofed animal, including ruminants but also horses, deer, and swine.

Vulnerable - Any native wild species of plant or animal that is not endangered or threatened, but that is of special concern because of low or declining numbers due to human activities or natural events.

Watershed Management - A management approach focused on the interaction of all aspects and areas of a watershed or drainage basins to maintain high levels of productivity. A large-scale approach to management.

Wetland - An area of low-lying land, submerged periodically by fresh or saline water.

Wild type Seed - Seed of native species harvested from the wild.

Appendix 3. Saskatchewan PCAP — 1998–2003 Summary of Accomplishments

Karyn Scalise, PCAP

SASKATCHEWAN PCAP 1998-2003 PARTNERS

Agriculture and Agri-Food Canada - Prairie Farm Rehabilitation Administration (AAFC-PFRA)
Agriculture and Agri-Food Canada - Semiarid Prairie Agricultural Research Centre (AAFC-SPARC)
Canadian Parks and Wilderness Society (CPAWS)
Ducks Unlimited Canada (DUC)
Environment Canada - Canadian Wildlife Service (EC-CWS)
Fisheries and Oceans Canada (DFO)
Grazing and Pasture Technology Program (GAPT)
Native Plant Society of Saskatchewan (NPSS)
Nature Conservancy of Canada (NCC)
Nature Saskatchewan (NS)
Parks Canada - Grasslands National Park (PC-GNP)
Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR)
Saskatchewan Burrowing Owl Interpretive Centre (SBOIC)
Saskatchewan Environment (SE)
Saskatchewan Environmental and Industry Managers Association (SEIMA)
Saskatchewan Industry and Resources (SIR)
Saskatchewan Research Council (SRC)
Saskatchewan Stock Growers Association (SSGA)
Saskatchewan Wetland Conservation Corporation (SWCC)
Saskatchewan Wildlife Federation (SWF)
SaskPower (SP)
Society for Range Management, Northern Great Plains Section, Prairie Parkland Chapter (SRM)
University of Regina - Canadian Plains Research Center (U of R-CPRC)
University of Saskatchewan - College of Agriculture (U of S-C.Ag)
World Wildlife Fund Canada (WWFC)

SUMMARY OVERVIEW OF 1998-2003 PCAP ACCOMPLISHMENTS

The Partnership

- Creation of a "forum" in which Partners with diverse perspectives feel comfortable with each other and can work towards mutual Goals. The PCAP has become a sounding board for environmental and agricultural issues and has been effective in identifying and addressing potential duplication between complementary programs, addressing gaps and addressing ineffective and/or detrimental communications strategies and tools proposed by Partners.
- Partnership grew from 16 to 25 Partner groups.
- First stockgrower (landowner/manager-led), multi-partner funded coordination of native prairie programming in Canada.
- Organized and hosted 16 (to June 2003) Executive Committee and Partnership meetings.
- Consensus based.

Funding

- Multi-Partner funded: Funding and in-kind support for PCAP Implementation and Stewardship Education programs secured from 14 Partner groups, 4 federal granting agencies, 1 provincial granting agency, 2 additional provincial government departments and 2 industry groups. Proposals to federal granting agencies are designed to address Plan Objectives and Actions that have not been achieved.

Special Events (Canadian Firsts!)

- Annual proclamation of Native Prairie Appreciation Week (NPAW) since 1999. NPAW has evolved into an annual event that includes the multi-disciplinary SRM Workshop and Field Tours with support provided by several PCAP Partners including AAFC-PFRA, AAFC-SPARC, DUC, EC-HSP, NPSS, PC-GNP, SAFRR, SE, SRM, SSGA, and SWCC. Venues have included Cypress Hills -1999, Swift Current/Grasslands National Park - 2001, the Manitou Sandhills - 2002, and the Big Muddy Badlands - 2003 (see press release on page 44).
- Designation of Needle and Thread as Saskatchewan's official grass emblem in 2001 (see press release on page 44).

Stewardship

- Development of 35 demonstration sites in the Prairie Ecozone featuring landowner stewardship projects (in partnership with SWCC).
- Delivery of 10 landowner and 2 technical workshops (in partnership with SWCC).
- Facilitate the coordination of the Missouri Coteau

Initiative to enhance stewardship program delivery in cooperation with the EC-HSP. Other Partners include SWCC, NS, NCC, DUC, PFRA, and SAFRR. This ecosystem-based, multi-partner stewardship model will be applied in other areas to make information on stewardship programs more available and programming more landowner-friendly.

- Coordination and delivery of Town Hall meetings to 8 communities in the Missouri Coteau (2001-2002), 2 communities within the Frenchman River watershed (2003) and 2 communities within the Great Sand Hills (2003) to acquaint landowners with stewardship programs.
- In 2000 the SK PCAP hosted one in a series of 12 national workshops designed to provide recommendations on stewardship programming towards a National Stewardship Action Plan that is planned to be launched in 2003. The workshop was facilitated by WHC on behalf of EC-CWS. Saskatchewan participants included 11 PCAP Partner groups plus FSIN and the SSGA Land Use Committee. The workshop identified a number of issues with proposed solutions and their priorities. Participants were asked to rate their priorities. The following table summarizes rankings and shows that landowner incentives and awareness programs are priorities for stewardship programming.

Landowner Incentives	3.0
Awareness Programs	1.9
Integration/Coordination	1.0
Legislative Changes	0.9
New Planning Approaches	0.9
Information Sharing	0.8
Other (Recognition, Funding for NGOs)	1.6
	10.0

Communications Materials

- PCAP Partner Updates (published annually from 1999-2001 and posted as pdf files on the website).
- Brochures on the PCAP, the Cows, Fish, Cattle Dogs and Kids Game Show, and the Missouri Coteau Initiative.
- Posters on Grasslands (reprinted with permission from Alberta Environment), Invasive Plants in Saskatchewan Rangelands, and Native Prairie Facts (Did You Know?).
- Factsheet on Oil and Gas Exploration and Development on Agricultural Crown Lands, a PCAP Partner Profile, and a 2000 directory of Partner Events.
- Articles on the PCAP, its progress and programs to Partner newsletters and the media.
- Articles on 6 Species at Risk (SAR), provincial SAR legislation, and the Missouri Coteau Initiative.
- PCAP Website (www.pcap-sk.org).
- PCAP display.
- Stewardship Program display.
- Delivery of presentations on the PCAP at national and provincial conferences.
- Delivery of the communication component of the Saskatchewan and Manitoba PCAP project entitled "Reconnecting Lands and People" with funding provided, in part, through the Canada Millennium Partnership Program (CMPP). Other Partners included SWCC and MHHC.

Stewardship Education to School Audiences

- Delivery of the Cows, Fish, Cattle Dogs and Kids Show on riparian stewardship to ~7,500 Grade 4 to 6 students at Agri-Ed and other events.
- Development and coordination of the Owls and Cows Tour to 158 schools (~11,400 students) in 2001-2003. The tour consists of the Cows, Fish, Cattle Dogs and Kids Game Show and SBOIC's Owls on Tour Program).
- Coordination and delivery of the Eco-Extravaganza (Eco-X) to ~ 4,100 students from 55 schools in the area around Grasslands National Park, the Missouri Coteau, the Frenchman River watershed and the Great Sand Hills. The Eco-X is an outreach program for grade K-6 students on native prairie and riparian stewardship. Partners have included PCAP, SWA, NCC, PC-GNP, DUC, SBOIC, EC-CWS, AAFC-PFRA and NS.
- In partnership with Saskatchewan Learning - Curriculum and Instruction Branch, coordinate the distribution of posters provided by PCAP, SWF, DUC and NPSS to Saskatchewan schools (~800).

Eco-X 2002—Caronport School: GNPs Sanford and Polonius: PI (Prairie Investigators). A sage grouse and black-tailed prairie dog lead students on a search for clues and factors that influence native prairie health.
Source: Lorne Scott

PCAP MILESTONE ANNOUNCEMENTS

Saskatchewan Proclaims Native Prairie Appreciation Week 2003

June 9, 2003 - Saskatchewan's Deputy Premier and Minister of Agriculture, Food and Rural Revitalization, the Honourable Clay Serby, has proclaimed June 15 to 21 as Native Prairie Appreciation Week (NPAW). Saskatchewan is the only province in Canada with a week dedicated to raising awareness and appreciation of native prairie ecosystems and their importance to Saskatchewan's environmental and agriculture sectors.

"The use of native grasslands by our ranchers is among the strongest examples we have of sustainable resource use in this country," says Serby. "Saskatchewan's third and fourth generation ranch families provide testimony to this fact."

"Thousands of native plant and animal species in Saskatchewan depend on native prairie," says Buckley Belanger, Minister of Saskatchewan Environment. "Our ranching community deserves credit for managing their use of the grasslands so that biodiversity and habitat for species at risk are maintained."

The *Discovering the Big Muddy Badlands Workshop and Field Tour* will be held during Native Prairie Appreciation Week. The conference is sponsored by the Society for Range Management, Saskatchewan Agriculture, Food and Rural Revitalization, Saskatchewan Watershed Authority, Saskatchewan Environment, Saskatchewan Stock Growers Association, the Native Plant Society of Saskatchewan, Agriculture and Agri-Food Canada, SaskPower, and the Prairie Conservation Action Plan. It features presenters and field tours and will bring together ranchers, naturalists, hunters, and resource agency specialists to celebrate the diverse values of native prairie. All are welcome to attend. Information and registrations are available from the PCAP office or on our website - www.pcap-sk.org.

Saskatchewan's renewed Prairie Conservation Action Plan (PCAP) will officially be launched during Native Prairie Appreciation Week. The PCAP is an action-oriented 5-year Plan that is driven by a diverse partnership and is chaired by the Saskatchewan Stock Growers Association. The Partnership features representation from industry, federal and provincial agricultural and conservation agencies, non-government organizations, and Saskatchewan's two universities. The vision of PCAP Partners is that the native prairie be sustained in a healthy state in which natural and human values are respected.

Needle and Thread, Saskatchewan's Official Grass Emblem—Good for Cattle and Wildlife

Regina - June 15, 2001 - Needle and Thread was recently proclaimed as Saskatchewan's official grass species under the provincial Honours and Emblems Act. As its name implies, Needle and Thread Grass resembles a threaded needle; a sharp, needle-like seed sits at the end of a long, thin, awn, which when dried, turns curly. Needle and Thread (*Stipa comata*) is a dominant grass of Saskatchewan's Mixed Grassland Ecoregion and is also common in other parts of the Prairie Ecozone. It is one of three species of spear grass found in Saskatchewan, and common names include spear grass and Western needle grass.

Needle and thread is a protein-rich grass whose seeds are favoured by small mammals that, in turn, are prey for several predators including the endangered swift fox and burrowing owl. This grass also provides important forage for cattle and wild ungulates. Its deep root systems contribute to its drought tolerance and its ability to hold soil. Needle and thread is often used in native prairie reclamation projects, and seed prices range from $50 to $500 per kilogram, depending on markets.

"The designation of a provincial grass is welcome in that it draws attention to Saskatchewan's remaining native grasslands," says Dr. Paul James, Head of the Ecosystem Science Unit with Saskatchewan Environment and Resource Management's Fish and Wildlife Branch. "We have already lost over three-quarters of the native prairie, and the remainder must be protected from cultivation, not only from the perspective that thousands of species depend on it, but also because thousands of people depend on it. The use of native grasslands by our ranchers is probably the strongest example we have of sustainable development in this country. The ranching industry must be preserved."

The nomination was advanced by the Prairie Conservation Action Plan (PCAP), a partnership of over 20 organizations representing industry, federal and provincial government agencies, non-government organizations and Saskatchewan's two universities, which is chaired by the Saskatchewan Stock Growers Association. The vision of all PCAP Partners is that the native prairie be sustained in a healthy state in which natural and human values are respected.

PCAP organized a vote among staff and members of PCAP Partner organizations in order to determine the winning candidate. The Native Plant Society of Saskatchewan initiated the selection process in 1998 when it put forward Needle and Thread, Western Porcupine, and June Grass as potential candidates.

List of acronyms on page 45 • Glossary on pages 40 and 41

Appendix 4. List of Acronyms

PCAP PARTNERS & SPONSORS

AAFC-PFRA	Agriculture & Agri-Food Canada, Prairie Farm Rehabilitation Administration
AAFC-SPARC	Agriculture & Agri-Food Canada, Semiarid Prairie Agricultural Research Centre
CMDF	Cattle Marketing Deductions Fund
CPAWS	Canadian Parks and Wilderness Society
DUC	Ducks Unlimited Canada
EC-CWS	Environment Canada - Canadian Wildlife Service
DFO	Fisheries and Oceans Canada
NCC	Nature Conservancy of Canada
Nexen	Nexen Canada Inc.
NPSS	Native Plant Society of Saskatchewan Inc.
NS	Nature Saskatchewan
PC-GNP	Parks Canada - Grasslands National Park of Canada
RSM	Royal Saskatchewan Museum
SAFRR	Saskatchewan Agriculture, Food and Rural Revitalization (formerly SAF)
SaskEnergy	SaskEnergy
SBOIC	Saskatchewan Burrowing Owl Interpretative Centre
SEIMA	Saskatchewan Environmental and Industry Managers Association
SIR	Saskatchewan Industry and Resources (formerly SEM)
SP	SaskPower
SE	Saskatchewan Environment (formerly SERM)
SFC	Saskatchewan Forage Council
SRC	Saskatchewan Research Council
SRM	Society for Range Management, Northern Great Plains Section - Prairie Parkland Chapter
SSGA	Saskatchewan Stock Growers Association
SWA	Saskatchewan Watershed Authority (includes former SWCC)
SWCC	Saskatchewn Wetland Conservation Corporation
SWF	Saskatchewan Wildlife Federation
U of R-CPRC	University of Regina, Canadian Plains Research Center
U of S-C.Ag	University of Saskatchewan, College of Agriculture

OTHER GROUPS

AAFC	Agriculture & Agri-Food Canada
AB-PCF	Alberta - Prairie Conservation Forum
AFLW	Alberta Forestry, Lands and Wildlife
CEC	Commission for Environmental Cooperation
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CSGA	Canadian Seed Growers Association
EGP	Ecological Gifts Program
ESAC	Endangered Species Advisory Committee
EU	European Union
FSIN	Federation of Saskatchewan Indian Nations
GRAA	Government Relations and Aboriginal Affairs
IUCN	International Union for the Conservation of Nature
MACH	Municipal Affairs, Culture, and Housing (now GRAA)
MDNR	Manitoba Department of Natural Resources
MHHC	Manitoba Habitat Heritage Corporation
NGO	Non Government Organization
PCS	Potash Corporation of Saskatchewan
SAMA	Saskatchewan Assessment Management Agency
SE-FWDF	Saskatchewan Environment - Fish and Wildlife Development Fund
SIAST	Saskatchewan Institute of Applied Arts and Sciences Technology
SKCDC	Saskatchewan Conservation Data Centre
SNOWS	Saskatchewan Network of Watershed Stewards
SPIGEC	Saskatchewan Petroleum Industry and Government Environmental Committee
SPRC	Saskatchewan Parks, Recreation and Culture
SSDB	Saskatchewan Sheep Development Board
TNC	The Nature Conservancy
U of C - FED	University of Calgary, Faculty of Environmental Design
U of R	University of Regina
WHC	Wildlife Habitat Canada
WRI	World Resources Institute
WWFC	World Wildlife Fund Canada

PROGRAMS, ETC.

AAFC-MII	AAFC - Market Industry Initiative
AAFC-NSWCP	AAFC - National Soil and Water Conservation Program
ADF	Agriculture Development Fund (a SAFRR program)
CARDS	Canadian Adaptation and Rural Diversification in Saskatchewan (an AAFC program)
CE	Conservation Easement
CFCDK	Cows, Fish, Cattle Dogs and Kids (Game Show)
CMPP	Canada Millennium Partnership Program
EGP	Ecological Gifts Program
ECO-X	Eco-Extravaganza
GAPT	Grazing and Pasture Technology Program
HSP	Habitat Stewardship Program
NABCI	North American Bird Conservation Initiative
NAFTA	North American Free Trade Agreement
NAWMP	North American Waterfowl Management Plan
NPAW	Native Prairie Appreciation Week
PCP	Permanent Cover Program
RAN	Representative Areas Network
SARA	Species at Risk Act
TESAward	The Environmental Stewardship Award
WHPA	Wildlife Habitat Protection Act

IN MEMORIAM

Carl at his ranch in the Great Sand Hills.
Source: Pat Block

CARL BLOCK (1944 – 2002)

Carl Block and his wife Pat ran a 900-head cow-calf and backgrounding operation on their ranch near Abbey in the Great Sand Hills. Carl served as president of the SSGA from 1995 to 1996 and was elected as a director of the Canadian Cattlemen's Association (CCA) in 1993, a position he held until March 2002. As a CCA director, Carl served on numerous committees, many of which reflected his interest in animal health issues and trade. Range condition on his ranch was always the top priority and it is reflected today in tremendous ecological integrity in an extremely fragile area.

Carl was one of the original supporters of the PCAP. He attended the earliest PCAP planning meetings and was one of the principal architects of the direction and substance of the Plan. Carl was instrumental in working to foster relationships and identify common ground shared by the ranching industry, government agencies, conservation organizations, and the academic community on grassland conservation. The success of the PCAP and its inspiration to others is due in part to Carl's efforts. Carl's knowledge and insights were instrumental in building bridges and supporting the effective working relationships that currently exist between these groups.

Carl understood that the basis of the ranching industry was the prairie. He knew that the prairie was the source of wealth in his business and that it had to be conserved through wise stewardship. To ensure this, Carl set up Rangeland Reclamation in 1991, a company specializing in grassland revegetation and reclamation. The company was initially formed to re-establish disturbed oil and pipeline sites so that problems associated with erosion and noxious weed invasion in the Great Sand Hills area could be addressed. The company expanded to other areas in Saskatchewan as well as Alberta. Carl shared his ideas and knowledge with others to achieve solutions regarding the conservation and management of native prairie in Saskatchewan. Carl was also a staunch supporter and participant in community activities.

In his memory, the Carl Block Memorial Stewardship Education Fund is being established. The aim of the fund is to provide an opportunity for groups and individuals to access funding for enhanced learning in the areas of ecology, sustainability, and environmental stewardship. Donations to the Fund may be forwarded to the SSGA Office. For more information, please contact the SSGA Office (see page iv).

WAYNE HARRIS (1951 – 2002)

Wayne Harris was one of Saskatchewan's best and best-known naturalists whose knowledge of nature was exceeded only by his love of it. Wayne received an advanced degree in biology from the University of Saskatchewan in 1975 and began his career as an ecologist with the provincial Forestry Branch. Wayne and his partner Sheila Lamont operated Prairie Environmental Services, a consulting business, from their mixed farm near Raymore from 1981 through the early 1990s. In 1994, he began his "dream job" as a senior ecologist for the Grassland Eco-Region with Saskatchewan Environment.

Wayne was one of the original supporters and principal editors of the 1998-2003 PCAP. Wayne's impeccable knowledge of the grassland ecosystem, its species, their inter-relationships, land use, and issues affecting landowners and lessees contributed greatly to the development and vision of the Plan.

Wayne was particularly well known for his work on species at risk, non-game wildlife, plants and lepidopterans. Wayne provided technical expertise to the National Burrowing Owl, Swift Fox, Piping Plover, and Loggerhead Shrike Recovery Teams, co-chaired the National Sage Grouse Recovery Team, chaired the Saskatchewan Burrowing Owl Working Group and participated in the Moose Jaw Burrowing Owl Conservation Plan. In addition to authoring or co-authoring numerous papers on species at risk and raptors, Wayne was first author of the *Ecological Regions of Saskatchewan* and sole author of the *Guide to Forest Understory Vegetation.* He banded thousands of birds, coordinated and compiled Saskatchewan's annual Christmas bird and mammal counts, and provided about 20% of the total sighting and breeding records for the *Atlas of Saskatchewan Birds.*

Wayne had an exceptional rapport with landowners and lessees and understood the need to consult with them and provide them with accurate information on wildlife and land use issues. He also developed effective working relationships with several industry groups, including oil and gas. Wayne shared his knowledge and love of nature by leading numerous field tours for various naturalist groups, school children, and resource agency staff.

Wayne banding Great Horned Owl chicks with students from Ecole Oman Elementary in Swift Current.
Source: Marj Peltier

In his memory, the Prairie Conservation Fund has been established and is administered by the Nature Conservancy of Canada (NCC) – Saskatchewan Region. Wayne had endeavoured to garner support for this Fund during his lifetime. It is intended to finance research that will expedite the conservation of all provincial species and ecosystems and those in neighbouring jurisdictions. For more information contact the NCC Office (see page iv).