

# **Manitoba's Prairie Conservation Action Plan**

**1996-2001**

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“Canadians are privileged to live in one of the largest and most beautiful countries in the world. With this privilege comes the responsibility to care for this inheritance on behalf of the global community. By acting with wisdom and prudence today, we will leave to future generations a world in balance, capable of sustaining and enriching life.”

- Canadian Biodiversity Strategy

**Sponsored by:**

Manitoba Natural Resources

Environment Canada

World Wildlife Fund Canada

Critical Wildlife Habitat Program

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# INTRODUCTION

The prairie ecozone contains some of the most altered habitats in the world. It once consisted of tall, mixed and short grass prairie and aspen parkland supporting diverse communities of species. With settlement, it was transformed to produce food to feed the nation and to earn export dollars. The native prairie landscape has been changed as a result of agriculture, urbanization and industrial development. Canada now has less than 13% of short grass prairie, 19% of mixed-grass prairie, 16% of aspen parkland, and 1% of the tall-grass prairie remaining. Manitoba contains one of the most endangered habitats in all of Canada - the tall grass prairie.

Many people ask, “So what? Why should we be concerned about the loss of native habitats? We can’t turn the clock back and “go back to nature.” Scientists warn that the decline of biological diversity is one of the most serious global environmental threats now facing humanity. Ecosystems, species and genetic diversity are being reduced at an unnaturally high rate and this decline affects our physical, mental, economic, spiritual and cultural well-being. Conserving biodiversity is a cornerstone of sustainable development. We may not be able to turn the clock back but we, as landowners and organizations, can help conserve what is remaining.

Natural ecosystems are life-support systems. For example, marshes help to cleanse surface waters as they move through to become part of the ground water system. Bacteria help to decompose plant and animal material to create new soil. Trees use carbon dioxide and give off

oxygen, improving air quality. Prairie grasses and other vegetation help to stabilize soils and reduce erosion impacts. Degraded and damaged ecosystems cannot perform these life-sustaining functions as effectively.

The species that make up natural ecosystems are also vital to human and economic health. Native plant species are the prime source for the development of new strains of grains and other food crops as well as many pharmaceuticals. Wildlife-related activities like hunting, fishing, wildlife viewing, and photography, make substantial contributions to the provincial economy. As we lose prairie habitat, we lose these opportunities.

From 1989 to 1995, World Wildlife Fund Canada and the governments of Manitoba Saskatchewan and Alberta implemented the first **Prairie Conservation Action Plan**. Its goal was to “*conserve the biological diversity found in the Canadian prairies*” through the actions of government agencies, private conservation organizations and individuals. It was a catalyst for conservation actions across the prairies. Habitat was preserved through voluntary landowner programs; wildlife habitat was purchased or leased; species recovery plans were developed; habitat was restored; education and public awareness campaigns were implemented. A Tall Grass Prairie Preserve was established; a prairie rehabilitation manual was produced and a nursery for native species established; and riparian habitat conservation programs were initiated. (For further information on the activities in the ecozone refer to the 1997 State of the Environment Report for Manitoba.)

## ***Manitoba's Prairie Conservation Action Plan Renewed for second five-year term***

Manitoba's second Prairie Conservation Action Plan takes a new direction. Whereas the first plan focused on identification and protection of remaining native prairie habitats, this plan takes a more integrated, landscape or ecosystem based approach - an approach that fosters both economic development *and* a healthy environment. The main focus for the next five years is identifying and implementing economic activities that go hand in hand with the restoration and maintenance of healthy prairie ecosystems.

This second Prairie Conservation Action Plan also recognizes that changes in the way we manage the land and water must come from the people who derive their living from the land. Demonstration projects, information exchange, and education are effective ways for landowners to learn new ways of managing land that provide economic benefits and preserve natural habitats and the wildlife they support. These new practices can even strengthen the economic benefits derived from the land.

This Prairie Conservation Action Plan is a guide for landowners, organizations, and government, who, working together, can put in place the changes necessary for a healthy prairie ecozone and a healthy prairie lifestyle. It describes a number of success stories - projects that landowners have already undertaken and the benefits that have ensued to both their agricultural operations and the environment. It lists a number of objectives that, if achieved, would go a long way toward establishing and sustaining healthy prairie and aspen parkland ecosystems. The plan also identifies resources that are available to assist landowners to obtain support, both financial and technical, for enacting changes in land management, and to visit some of the projects already under way.

# PRAIRIE ECOSYSTEMS

The three major ecosystems found in Manitoba's prairie region are: tall-grass prairie, mixed-grass prairie, and aspen parkland.

## **Tall-grass Prairie**

Dominated by grasses that reached over two metres in height, tall-grass prairie was the most productive type of prairie in North America. It once extended from the Red River Valley in Manitoba as far south as Texas. Over 200 plant species, including flowers and grasses, shrubs and trees, and a variety of wildlife - from butterflies, frogs and songbirds to voles, deer, moose, wolves and bear - inhabit this dynamic ecosystem. Settlers were attracted by the deep fertile soils of the tall-grass prairie and quickly transformed it by planting cereal and forage crops. Today, less than 1% remains of the original 6,000 square kilometres once found in Manitoba. Over 2,000 hectares have been conserved in several preserves throughout the tall-grass prairie region. People can still experience the never-ending succession of colour from the pale green of spring, to summer wildflowers, to the gold and rust of autumn grasses. They can even see two endangered plant species, the western prairie fringed orchid and the small white lady's slipper.

## **Mixed-grass Prairie**

In the south-western corner of Manitoba, temperature extremes, variations in rain and snow fall, soils and landforms all combined to create the resilient mixed-grass prairie ecosystem. Geographically located between the tall-grass prairie and short-grass prairie, mixed-grass prairie is a blend of these two ecosystems. Wildflowers and grasses grow to knee height. Plants are especially adapted to the climate and moisture conditions; cool-season plant species emerge in the spring, lie dormant during summer, and continue their growth in the fall before the onset of winter. Warm-season species, adapted to the extreme summer climate, have a unique metabolism that allows them to grow during hot summers without losing precious moisture.

Today, less than one quarter of the original 24 million hectares of mixed-grass prairie remains in Canada. In Manitoba, it occurs where there are sandy or well-drained soils. Remnants are usually found intermingled with aspen stands or other grassland communities.

## **Aspen Parkland**

White-tailed deer, coyote, snowshoe hare, cottontail, red fox, northern pocket gopher, Franklin's ground squirrel, sharp-tailed grouse and black-billed magpie are some of the wildlife species found in this prairie ecosystem. Trembling aspen and shrubs dominate, interspersed with bur oak and grassland communities on drier sites, and willow and sedge species on poorly drained soils. Numerous tree-ringed, small lakes, ponds, and sloughs provide a major habitat for waterfowl. The aspen parkland is a transition zone between the boreal forest to the north and the grasslands to the south. Due to its favourable climate and fertile soils, this ecosystem represents some of the most productive agricultural land in the Prairies.



# Manitoba's Prairie Conservation Action Plan 1996-2001

## Vision

A mosaic of productive agricultural lands in which there is an abundance of native prairie and aspen parkland habitats, grasslands, natural forests, woodlots, wetlands and natural waterways intermixed with industrial and urban developments, green corridors and natural reserves that conserve biodiversity and provide a sustainable resource base for the maintenance of the social and economic well-being of its residents.

## Purpose

To assist those who live, work and recreate in the prairie ecozone to conserve prairie and parkland landscapes and biodiversity while integrating the need for human economic security and well-being.

## Guiding Principles

- Δ Prairie conservation is a collective responsibility; consultation, cooperation and partnerships are key to achieving the vision and implementing the action plan.
- Δ Prairie conservation and the conservation of biodiversity are fundamental to the maintenance of healthy, functioning ecosystems so that human economic, social and cultural needs can be sustained over time.

*“If Canadians want viable populations of other species to be part of the landscapes of the future, then we must **plan** for them to be there,.....”*

- Wildlife Habitat Canada in *Saving Species: Building Habitat into Endangered Species Conservation in Canada*, November 1995.

# Goals

Goal 1      Adopt economically viable land use and management practices on natural habitats.

Goal 2      Manage water use to reduce potentially negative effects on current and long-term water quantity and quality.

Goal 3      Adopt land and water management practices that sustain healthy functioning wetlands and adjacent natural vegetation.

Goal 4      Protect existing riparian areas and rehabilitate degraded ones.

Goal 5      Preserve biodiversity through identification and preservation of natural prairie and aspen parkland areas.

Goal 6      Diversify to include economic activities related to wildlife (birds, mammals, plants) and native prairie habitats.

Goal 7      Increase understanding of the values of retaining native prairie and aspen parkland ecosystems and alternative land management practices and economic activities.

Goal 8      Manage wildlife habitat in urban environments.

## Rotational Grazing & Native Prairie Habitat - A Winning Combination

Native grasslands in Manitoba provide habitat for many species of wildlife from rare species such as the western prairie fringed orchid to common, familiar species such as the western meadowlark and mountain bluebird. Most of these grasslands are also used for grazing or haying, providing a livelihood for many producers. The challenge of the future is to retain these habitats for wildlife and maintain or enhance the economic gains received from them. In many cases, producers may not realize the impact the condition of their native land has on their pocketbooks. One study in Saskatchewan estimated that the average condition of native range is only two-thirds of its potential. This alone translates into \$20.0 million of lost revenue to producers in Saskatchewan - not just pocket change! Even simple changes in management, like delaying the use of native grasslands until June, can help increase the productivity of these lands and increase benefits to wildlife. Other management techniques, such as rotational grazing, can dramatically increase economic gain while maintaining habitat for wildlife.

A twice over rotational grazing project in the Manitoba Tall Grass Prairie Preserve, initiated by the Critical Wildlife Habitat Program in association with the Stuartburn-Piney Agricultural Development Association and Manitoba Agriculture, demonstrated the benefits of integrating sound agricultural and wildlife management practices. Results show that calf weight gains were good, with average gains of 2.57 lbs/day (1.16 kg/day). A similar rotational grazing project on the mixed-grass prairie had calf weight gains of 2.06 lb/day (.94 kg/day) from June 1 until October 20. Populations of the endangered small white lady's slippers increased with the managed grazing. Other native grass and wildflower species also responded well to

rotational grazing. The density of big bluestem, an important tall-grass prairie plant, increased when rotationally grazed.

Some of the most convincing arguments for rotational grazing comes from the producers themselves. Laurie Davison, a producer near Solsgirth, Manitoba, has found that since he implemented a twice over rotational grazing system with the help of the Manitoba Habitat Heritage Corporation, weight gains have increased and the need for inputs, including creep feeding has decreased. The amount of grass left at the end of the season is more than he used to see with his old system, which is good news for wildlife. A self-admitted doubter in twice over rotational grazing he is now a firm believer!

Essential to any change in management is knowledge. Knowing what plant species are on your land, how they grow and how management practices impact them is one of the first steps in increasing the productivity of any habitat. Being able to identify and control exotic species that have the potential to displace native or planted species can help maintain the value of the land. With a little bit of knowledge and work, native prairie and livestock can co-exist - a winning combination!

# Goal 1 Adopt economically viable land use and management practices on natural habitats.

## Action:

1. Using the Keystone Agricultural Producers, *Manitoba Farm Planner*, prepare a farm resource management plan to achieve sustainable development on your farm. This means deriving economic benefit from your land while maintaining a healthy environment.
2. Establish rotational grazing systems on existing native prairie lands and other grasslands to maintain the health of ecosystems.
3. Rehabilitate marginal crop lands with compatible plantings - native species where practical - and establish rotational grazing systems.
4. Maintain native plants on lands such as unused road allowances.
5. Prevent the introduction of exotic species, such as leafy spurge, and control existing populations.
6. Encourage and support governments, universities and technical colleges to conduct research into sustainable use practices.
7. Learn to recognize native plants and their roles in management.
8. Visit sites demonstrating economically viable land use and management practices.

## Where you can go for assistance: (see Appendix A)

- Keystone Agricultural Producers, *Manitoba Farm Planner*
- Manitoba Agriculture representatives
- Prairie Farm Rehabilitation Administration
- Manitoba Habitat Heritage Corporation
- Manitoba Agriculture, Crown Lands District offices
- Manitoba Natural Resources
- Ducks Unlimited Canada
- Critical Wildlife Habitat Program
- Manitoba Conservation Districts (see Appendix A for one in your area)
- Manitoba Cattle Producers Association

## Potential Funding sources:

- Manitoba Habitat Heritage Corporation
- Manitoba Conservation Districts
- Ducks Unlimited Canada

## Water: The Fuel of the Next Millennium

Do we have enough water to support human use and an expanding economy on the prairies? How many additional industrial and manufacturing operations can be provided with an assured supply of water? How many hog and cattle operations? What about irrigation? Everybody needs water, but will there be enough to meet all the demands of the next century? Will there be sufficient water to support healthy aquatic habitats and the wildlife that depends on these for their survival?

Irrigation is rapidly increasing across the prairies, and Manitoba is no exception. Irrigation is already the biggest groundwater user in Manitoba. Irrigation can have significant impacts on water availability for future water uses particularly in areas where supplies are variable. In wet years, we may be tempted to increase the number of irrigated acres because water is plentiful. However, during drought years when water supply is at its lowest, there may be insufficient quantity available to support the increased irrigation demand as well as other demands, including municipal, industrial, domestic, and the needs of the environment.

There are other water related environmental considerations connected to irrigation. In particular, there is concern about the impact on water quality from the return flow of water from irrigated crops.

Over fertilization and the extensive use of pesticides can lead to degradation of both ground and surface waters. Areas of mixed grass prairie that cannot support cereal crops are being plowed to grow irrigated crops. The environmental costs of this conversion are not usually addressed as the issuance of water licenses does not take into consideration the environmental impacts of changing land use.

Large scale livestock operations are another example of a water intensive industrial use. Hog operations and livestock operations on the prairies are increasing and expanding due to market demand. These operators are large scale water users, and there is a concern that the demand may exceed available water supplies. The disposal of livestock wastes on agricultural land and the runoff

from livestock holding areas may also have significant impacts on surface and ground water. Operators are encouraged to adopt best management practices.

Decreasing or eliminating livestock access to rivers and streams is another important consideration. This decreases erosion and sedimentation, providing benefits for water quality, fish habitat, and bank stability as well as protecting livestock health.

A comprehensive and sustainable water supply and use strategy is needed on a watershed basis. We must *first* determine how much water is available and *then* decide how to allocate the available water based on the projected long term needs of all present and potential water users. How much development can be supported should take into consideration the projected long term needs of all water users. We must explore potential environmentally friendly water supply enhancement opportunities. The cumulative environmental impacts of water use and additional supply development on both land and aquatic environments must be considered. Most importantly, we must also place higher priority on water conservation and invest in research of products, technology, and methods that reduce water consumption.

Water is a precious resource and one without which we cannot survive. It requires careful planning and management to ensure that water quality and quantity will be sufficient to meet present and future needs for both people and wildlife.

## **Goal 2                    Manage water use to reduce potentially negative effects on current and long term water quantity and quality.**

### **Action:**

1. Using the Keystone Agricultural Producers, *Manitoba Farm Planner*, prepare a farm resource management plan that determines the benefits and the costs of water use taking into consideration economic, environmental and social factors.
2. Work cooperatively with provincial resource management agencies, neighbouring landowners and municipalities to manage water on a sub-basin, basin and/or watershed basis.
3. Manage livestock access to rivers and streams to retain vegetation.
4. Switch to low maintenance landscaping around residential, commercial, and municipal areas replacing large expanses of lawn with drought resistant, native shrubs, trees, and wildflowers that are adapted to prairie weather conditions.
5. Adopt land management practices that minimize or avoid degradation of surface water quality.
6. Manage land overlaying aquifers in ways which will not negatively impact ground water quality, including the capping of unused wells.
7. Reduce point source and non-point source pollution, including pesticides, fertilizers, waste oil, and cleaning products.
8. Follow livestock use regulations, guidelines, and best practices for storage, use and disposal of livestock wastes.

### **Where you can go for assistance:**

**(See Appendix A)**

- Manitoba Natural Resources
- Manitoba Environment
- Manitoba Conservation Districts
- Manitoba Association of Landscape Architects
- Manitoba Rural Development
- Manitoba Habitat Heritage Corporation
- Prairie Farm Rehabilitation Administration

### **Potential Funding sources:**

- Special Conservation Fund
- Manitoba Habitat Heritage Corporation, Green Acres Program
- Manitoba Habitat Heritage Corporation, Green Banks Program
- Sustainable Development Innovations Fund
- Prairie Farm Rehabilitation Administration, Rural Water Development Program

## Wetlands - A Natural Filter System

Wetlands are considered by many landowners to be wastelands and are often drained or filled in. We are beginning to realize, however, the benefits that wetlands provide and the critical role they play in prairie ecosystems.

### *Water Quality*

When surface water drains from croplands into wetlands, it often contains fertilizers. In functioning wetlands, these chemicals are absorbed by bulrushes, sedges, grasses, and aquatic plants. Studies have shown, however, that when this vegetation is removed, concentrations of phosphorus and nitrogen increase in both surface runoff and shallow groundwater. Wetlands surrounded with buffer strips of vegetation filter the water before it enters the surface and groundwater systems from which many communities in southern Manitoba obtain their domestic water.

### *Water Quantity*

Flood storage is another benefit of wetlands. Numerous, small wetlands in the upper reaches of a watershed retain water and reduce floodwater velocity and volume. Large wetlands in the lower reaches of a watershed are able to store large volumes of water and retard flows, further reducing the potential for flooding. Studies show that there is greater floodwater reduction as the wetland area in a watershed increases. Watersheds with a 4-5% area in wetlands have a 50% reduction in peak flood period over watersheds that do not have wetlands. The wetlands in the upper reaches of the watershed also increase the low flow rate and duration of brooks and streams. Lands bordering wetlands may also have greater crop yields due to the increased soil moisture.

### *To drain or not to drain - what is the cost?*

The cost and inconvenience of working around wetlands are the major reasons for draining them. A 1991 study showed that the increased cost of farming around wetlands was between \$23 and \$28 per wetland regardless of its size. However, a landowner in Saskatchewan discovered there was a net *cost* for draining the wetland, tilling the soil, planting the crop. The increased revenue from the

area was less than the cost to bring the area under production. Landowners who drain wetlands also forego other benefits including recharging the ground water supply, slowing runoff and reducing erosion, reducing the effects of flooding, and improved soil moisture around the wetland.

### *Importance for Wildlife*

Wetlands are not only beneficial for domestic and agriculture use, they are vital for the millions of waterfowl that use these areas as breeding grounds and for staging areas along their migratory routes. Widespread drainage resulted in a 40-70% reduction in wetlands and drastic declines in waterfowl. Under the North American Waterfowl Management Plan, 100,000 acres of existing wetland and grassland habitat have been protected across Manitoba, Saskatchewan and Alberta and the number of ponds have rebounded from below 2 million to nearly 4 million. The duck population climbed to nearly 12 million from a 1989 low of under 8 million.

Before draining wetlands, careful consideration must be given to the costs of the drainage work and the loss in benefits that wetlands provide - to both people and wildlife.

### **Goal 3            Adopt land and water management practices that sustain healthy functioning wetlands and adjacent natural vegetation.**

#### **Action:**

1. Retain existing wetlands wherever possible and practical, and consider restoration of wetland areas.
2. Maintain buffer zones of vegetation around wetland areas.
3. Plant forage on marginal lands that have been cultivated, or lands that have deteriorated due to erosion or soil salinity. This provides forage for livestock as well as providing nesting cover for waterfowl.
4. Use zero tillage or minimum tillage crop production systems to reduce the transport of agrochemicals and sediment, thereby reducing stress on wetlands.
5. Partner with government and non-government organizations to maintain and enhance fish habitat, and ensure nesting habitat for waterfowl and other wetland species.
6. Minimize the use of pesticides through land management practices and integrated pest management.
7. Ensure safe storage and disposal of pesticide containers, used oil and oil containers and other hazardous materials.

#### **Where you can go for assistance: (See Appendix A)**

- Ducks Unlimited Canada
- Delta Waterfowl Foundation
- Manitoba Agricultural representatives
- Manitoba Habitat Heritage Corporation
- Manitoba Conservation Districts (see Appendix A for one in your area)
- Prairie Farm Rehabilitation Administration
- Manitoba- North Dakota Zero Tillage Farmers Association
- University of Manitoba, University Field Station (Delta Marsh)

#### **Potential Funding sources:**

- Ducks Unlimited Canada, Manitoba Prairie CARE
- Delta Waterfowl Foundation, Adopt-a-Pothole Program
- Manitoba Natural Resources, Wildlife Branch
- Manitoba Habitat Heritage Corporation, Green Acres Program
- Manitoba Hydro, Environmental Partnership Fund



## Riparian Areas - Living Natural Borders Vital to the Prairie Landscape

The land bordering streams, rivers, lakes and ponds is known as the “riparian area”. This transitional area between aquatic and terrestrial ecosystems is a highly complex grouping of plants, mammals, birds and other organisms. Although riparian areas make up a relatively small part of the prairie landscape, they are home to much of our prairie wildlife. Dead and dying trees, or snags, provide nesting areas for flickers, wood ducks, mergansers, owls, and many other cavity nesters. Migrating birds use riparian habitats for loafing and stopover areas. Deer, elk, and moose prefer these areas as travel corridors and use them for shelter against extremes in temperature. Mink, weasel, river otter and muskrat live in, or near, riparian areas.

The maintenance of healthy riparian areas is an essential component of good land management. Crop nutrients, such as phosphorus and nitrogen, can impair water quality for use by humans, fish, and mammals. Healthy riparian areas filter out these nutrients. Nutrients can result in algae blooms and increased weed growth in waterways. Some species of blue-green algae can produce toxins which affect the liver and nervous systems if ingested. Decaying plants consume oxygen, resulting in declines in dissolved oxygen levels which negatively affect fish and other forms of aquatic life.

Vegetated shorelands serve other functions as well. They reduce wind erosion on adjacent croplands and because they slow runoff, they reduce soil erosion into the waterway. Flood damage and the associated costs are often reduced because plants bind the soil and prevent it from being washed away.

Healthy riparian areas save money, too. By maintaining water quality, they reduce water treatment costs. Protecting riparian areas rather than having to rehabilitate them makes good economic sense, too, as the costs for stabilizing even a short stretch of streambank can be very high. Riparian areas can enhance our lifestyle by

spawning healthy fish populations. Trees that overhang stream banks help to maintain constant water temperatures. Small changes in temperature may negatively affect some fish and other aquatic organisms. In addition, woody debris that falls into the water creates fish habitat; and aquatic food webs depend on leaf fall.

Vegetated riparian areas are aesthetically pleasing areas for hikers and boaters. Many enterprising individuals are capitalising on the fast growing interest in wildlife watching and rural getaways by getting into the business of ecotourism and guiding “hunters” armed with cameras and binoculars.

Riverbottom forests have been severely depleted since the arrival of settlers on the prairies. Most settlements were established along the banks of rivers and streams as these often provided the only wood available for the construction of houses, outbuildings and fences. In addition, rivers served as travel routes and provided water for human consumption and for growing food and crops. The removal of forests along waterways, however, has resulted in a decline in the diversity of wildlife found on the prairies. Properly managed, riverbottom forests can provide habitat for fish and wildlife as well as provide benefits to the landowner as a source of harvestable timber for fuelwood, sawlogs, or specialty forest products.

## Goal 4                    Protect existing riparian areas and rehabilitate degraded ones.

### Action:

1. Maintain a buffer zone of vegetation along the banks of rivers, streams, lakes and ponds; ideally, this buffer zone should include at least the natural floodplain.
2. Control where and how often livestock graze along stream banks, especially in riparian areas that are vegetated with grasses. On pasture lands, install fencing along waterways and construct fords for livestock crossings.
3. Provide stock watering away from natural water bodies, or establish appropriate drinking pads to avoid shore degradation and sediment loading.
4. Explore the possible economic opportunities from the sustainable use of riparian areas, like a woodlot management operation.
5. Maintain natural water courses where possible.
6. Promote wildlife watching opportunities and develop ecotourism activities in riparian areas.
7. Enhance the wildlife use of these areas by installing nesting structures for cavity nesting birds.

### Where you can go for assistance: (See Appendix A)

- Manitoba Habitat Heritage Corporation
- Manitoba Agricultural Representatives
- Prairie Farm Rehabilitation Administration
- Manitoba Natural Resources
- Manitoba Conservation Districts
- Manitoba Natural Resources, Watchable Wildlife Program
- Manitoba Rural Development, Manitoba Water Services Board

### Potential Funding sources:

- Manitoba Habitat Heritage Corporation, Green Banks Program and Green Acres Program
- Special Conservation Fund
- Manitoba Natural Resources, Fisheries Enhancement Initiative
- Environment Canada, Action 21
- Sustainable Development Innovations Fund
- Manitoba Natural Resources, Wildlife Branch
- Critical Wildlife Habitat Program
- Manitoba Rural Development, Manitoba Water Services Board
- Manitoba Hydro, Forest Enhancement Program or Environmental Partnership Fund<sup>1</sup>

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<sup>1</sup>Manitoba Hydro, Forest Enhancement Program is available to assist community-based not-for-profit groups with public tree planting initiatives. This program is not available to individual landowners.

## Leaving a Living Legacy

The survival of wildlife species depends on the continued existence of the habitats on which they depend. If we want to conserve species, we must protect sufficiently large areas so that wildlife can continue to survive as part of larger ecosystems. Where possible, these areas should be connected to each other and include riparian areas. This allows species to move and interact between areas of habitat, and prevents species from becoming isolated.

How much land needs to be protected or preserved? What about the cost of “setting aside” land? What about the loss of economic return from these lands?

Manitoba has traditionally set aside lands through its national and provincial parks systems as well as special designations such as Ecological Reserves and Wildlife Management Areas. But our parks and other designated areas only capture a fraction of the habitat that needs to be protected, and, on the prairies, where most of the land is privately owned, we need to encourage private landowners to protect habitat on their lands.

Recognizing this, private, non-government organizations and individual landowners have begun to contribute to the network of protected areas. The Manitoba Naturalists Society was the catalyst behind the creation of the Tall Grass Prairie Preserve. The Manitoba Wildlife Federation operates the MWF Habitat Trust, protecting many hectares through various programs. The Manitoba Habitat Heritage Corporation accepts land donations. In addition, many individual landowners have created their own private nature preserves, like the Hellman family in Virden. They purchased a tract of hilly sand dunes covered with scrub oak, aspen and grasses. This heavily treed oasis on the prairie, voluntarily protected as an Ecologically Significant Area, now provides a sheltered area for cross country skiers in winter and hikers in summer. Wildlife abounds and one is sure to spot a deer or hare in winter, and garter snakes or all manner of birds in summer.

Not only is protecting land good for the environment, it is good for the economy. The Importance of Wildlife to Canadian survey indicated that \$9.0 billion was spent on fish and wildlife based activities by Canadian and U.S. tourists in 1991. Money from outside the country is spent each year by the thousands of tourists that visit our parks and wildlife lands. Parks also provide direct employment, much of which occurs in remote areas of the country where jobs are scarce. Park administrators purchase goods and services, thereby stimulating the local economy.

Protected areas also serve as a benchmark against which we can measure the health of areas that are used more intensively and may provide a source for breeding new plant stocks and new pharmaceuticals.

Aside from these benefits, however, is the living legacy that remains for future generations. Each of us has a special place we remember from our childhood - catching tadpoles and minnows with bare hands, chasing after gophers as they disappeared down their holes, tracking white-tailed deer through deep drifts of snow. The intrinsic values of wild places, although difficult to measure, are as important as their other values.

## Goal 5                    **Preserve biodiversity through identification and preservation of natural prairie and aspen parkland areas.**

### **Action:**

1. Support the creation of protected areas, including parks, wildlife management areas, and ecological reserves in your area.
2. Identify native prairie and aspen parkland areas on your land and nominate some or all of them as protected areas under the Voluntarily Protected Ecologically Significant Areas Program. Contribute land to private land stewardship programs.
3. Conserve, maintain, restore and enhance existing wildlife corridors connecting areas of natural habitat, and establish new wildlife corridors where practical.
4. Work with conservation agencies and neighbouring land owners to determine how you might contribute to preserving a larger area of habitat.
5. Make financial contributions to private and public land stewardship organizations to enable them to continue their work.

### **Where you can go for assistance:**

#### **(See Appendix A)**

- Manitoba Natural Resources
  - Manitoba Habitat Heritage Corporation, Habitat Stewardship Program (accepts land donations)
  - Nature Conservancy of Canada
  - Manitoba Naturalists Society
  - Manitoba Natural Resources, Watchable Wildlife Program
  - Manitoba Wildlife Federation
  - Canadian Heritage Rivers Program
  - Manitoba Natural Resources, Manitoba Conservation Data Centre
  - Ducks Unlimited Canada
  - Critical Wildlife Habitat Program
  - Manitoba Heritage Marsh Program
  - World Wildlife Fund Canada
  - Keystone Agricultural Producers, *Manitoba Farm Planner*
  - Manitoba Conservation Districts (see Appendix A for one in your area)
- Pothole Program
  - Manitoba Habitat Heritage Corporation, Green Acres Program
  - Prairie Farm Rehabilitation Administration, Shelterbelt Program
  - Manitoba Hydro, Forest Enhancement Program
  - Manitoba Conservation Districts (see Appendix A for one in your area)

### **Potential Funding sources:**

- Ducks Unlimited Canada, Manitoba Prairie CARE
- Delta Waterfowl Foundation, Adopt-a-

## Watchable Wildlife

The 1991 Importance of Wildlife to Canadians survey indicated that 93% of Manitobans over the age of 15 participated in a wide range of wildlife related activities. These activities ranged from hunting and fishing to photography and wildlife viewing. Their total expenditures on food, accommodations, transportation, equipment and incidentals was \$158.6 million. Wildlife yields direct and indirect income from hunting, trapping, tourism and associated industries; it provides recreational hunting for over 65,000 people. With 86% stating that wildlife is important to them, Manitobans have sent a clear signal that we must manage our activities to ensure that wildlife and habitat continue to thrive.

Manitoba is well-situated to draw people to wildlife-related activities, but its wildlife-related industry in agro-Manitoba is highly under-developed. Most wildlife viewing areas in Manitoba are not well publicized, and there are as yet unrealized opportunities for ecotourism in the prairie region. The 1991 Manitoba Wildlife Viewing and Tourism Study identified over 100 sites in Manitoba that could be developed to increase our share of the growing tourism market. There are opportunities for linkages between sites, with the potential of creating multi-day tours due to the great variety in terrain and habitat conditions over a relatively small area. Many of these sites offer spectacular scenery as well as wildlife viewing.

A profitable wildlife-based industry would provide the necessary income to enable landowners to retain natural habitat and the wildlife it supports. A survey conducted by the University of Manitoba agricultural economist, Rea Josephson, measured the financial impacts of six land use practices deemed mutually beneficial to both farmers and wildlife. The range of conservation practices improved net farm income by \$13.27 per acre on an annual basis which is derived from an increase in revenue of \$5.14 and a decrease in production costs of \$8.13. Net losses were realized from activities such as setting aside land, delaying hay cutting and modifying fallow techniques, but these were usually exceeded by incentive payments received under the

North American Waterfowl Management Plan.

Wildlife viewing sites also enhance community life. The Alonsa Conservation District, with funding from the Special Conservation Fund, constructed a boardwalk in the Portia Marsh. Residents and their visitors can now take walks out into the marsh and view waterfowl, amphibians and aquatic life up close.

Watchable Wildlife tours can be marketed to naturalists, bird watchers, photographers, urban dwellers looking for a pleasant outing in the countryside, skiers, and general vacationers. Vacation farms and agri-tourism are becoming increasingly popular. Landowners could also get together with motel/hotel operators in neighbouring communities to offer snowmobile or bus tours that travel from site to site across southern Manitoba. These types of tours are predicted to be a growth industry because of our aging population.

Protecting habitat can be good for the economy, contribute to community life, and support thriving wildlife populations.

## **Goal 6 Diversify to include economic activities related to wildlife (birds, mammals, plants) and native prairie habitats.**

### **Action:**

1. Identify potential natural and cultural resources in your region.
2. Develop a wildlife viewing, guiding or tourism program for your area.
3. Develop tour packages with surrounding communities, neighbouring regions.
4. Establish a bed and breakfast operation; offer value-added services such as cross country skiing, snowmobiling, cycling,
5. Develop self-guiding trails and brochures describing the natural habitats, wildlife and cultural resources that may be encountered.
6. Grow native plants for sale as well as to attract wildlife (butterflies, birds).

### **Where you can go for assistance:**

#### **(See Appendix A)**

- Manitoba Natural Resources, Watchable Wildlife Program
- Manitoba Industry, Trade and Tourism
- Manitoba Conservation Districts (see Appendix A for one in your area)
- Keystone Agriculture Producers, *Manitoba Farm Planner*
- Manitoba Agriculture - value-added seminars, agri-tourism

### **Potential Funding sources:**

- Manitoba Industry, Trade and Tourism
- Manitoba Rural Development, Rural Economic Development Initiative
- Manitoba Rural Development, Partners with Youth - employment program
- Manitoba Rural Development, Green Team Hometown Program - seasonal employment for youth
- Manitoba Hydro, Forest Enhancement Program or Environmental Partnership Fund
- Special Conservation Fund
- Sustainable Development Innovations Fund

## Education: *Naturally*

Although the loss of biological diversity and natural habitats is a global problem, solutions must be based on participation and commitment from individuals and communities. Therefore, we must understand and appreciate the value of biodiversity and the causes of its decline in order to develop strategies for its maintenance.

All manner of educational initiatives are required from formal settings such as schools, colleges and universities, to informal locations such as zoos, interpretive programs in parks, presentations and displays at conferences and annual meetings. One of the most effective methods of changing land management practices is a demonstration project where the landowner has the opportunity to see first hand new ways of doing business and the results that are achieved by these new approaches. Tours of projects such as rotational grazing, streambank rehabilitation, maintenance of buffer zones around wetlands and streams and rivers, should become part of every regional and annual agro-organization meeting.

Several educational kits have been prepared by various organizations for integration into the school curricula, particularly in social studies and science. These kits can also be used by groups such as 4-H, Girl Guides and Boy Scouts as they contain many interesting and fun activities that help students learn about their environment and projects they can do to create wildlife habitat. Building and installing bird feeders and bluebird or wood duck nesting boxes always capture the interest of young people, particularly when they revisit them to see what's using them! Ferruginous hawks, a threatened bird species, get a helping hand with the construction of nesting platforms.

One of the best ways to learn about the native prairie habitat and the importance of preserving biodiversity is to explore it on your own or with a

knowledgeable naturalist. Classroom educational kits also include activities for the "outdoor classroom".

There are many experts in Manitoba who enjoy speaking about the importance of biodiversity from the perspective of plants, mammals, birds, butterflies, or the overall landscape. Most have colourful slides that provide an informative and entertaining evening which is best followed by informal chats and information exchange.

Representatives from the various conservation programs can also be contacted to explain the purpose and scope of their programs, and to share success stories from around the province about landowners who have already taken the initiative to create a space for wildlife.

## Goal 7 Increase understanding of the values of retaining native prairie and aspen parkland ecosystems, and alternative land management practices and economic activities.

### Action:

1. **Teachers:** Use educational programs, such as *Project Wild*, *Vanishing Wildlands*, or *Project Learning Tree*, that have been designed as resources for the existing curriculum, to teach about biodiversity and the importance of retaining ecosystems. Initiate field trips to farms and interpretive centres. Arrange with park interpreters to do outreach programs. Work with other teachers to ensure that your school has water conservation and waste reductions programs. Develop natural areas at your school or adopt a natural habitat. Encourage students to become involved in wildlife monitoring programs.
2. **Landowners:** Speak to classes/community groups about activities you are doing to preserve native habitat. Invite students to view the land management practices you are adopting to conserve prairie ecosystems. Write about your experiences for local newspapers.
3. **Community groups:** Organize a program of speakers throughout winter to speak on issues related to native prairie habitat, tourism opportunities, biodiversity and programs available to assist landowners in adopting land management practices that sustain diverse ecosystems.
4. **Students:** Get involved in volunteer wildlife surveys and put up bird boxes. Visit a farm or park and learn about the natural landscape. Start a conservation group to take field trips; organize an environmental conference; monitor a prairie pothole to determine what wildlife species use it. Support and participate in conservation projects, such as water conservation, recycling, and composting at home and school.
5. **Naturalist/Environmental Organizations:** Inform local community groups about the existence of educational kits and projects they can undertake to preserve habitat in their area.
6. **Schools/Community Groups/4-H:** Mount a display and coordinate educational activities around National Wildlife Week, National Forest Week, National Environment Week, on Earth Day, National Parks Day, or create your own community environmental awareness week. Adopt-a-stream or roadway and undertake clean-up activities.

### Where you can go for assistance:

#### (See Appendix A)

- Manitoba Natural Resources, *Project Wild*
- Manitoba Natural Resources offices
- Manitoba Naturalists Society, *Vanishing Wildlands*
- Brandon Naturalists Society
- Intermountain Naturalists
- World Wildlife Fund Canada
- Canadian Parks & Wilderness Society
- Canadian Wildlife Federation
- Manitoba Conservation Districts (see Appendix A for one in your area)
- Manitoba Forestry Association, *Project*

#### *Learning Tree*

- Manitoba Agriculture, Agriculture in the Classroom Program
- Manitoba Habitat Heritage Corporation
- Critical Wildlife Habitat Program
- University of Manitoba, University Field Station (Delta Marsh)
- Internet/World Wide Web for information sources and information dissemination

#### **Potential Funding sources:**

- Local Community Groups
- Environment Canada- Action 21
- Manitoba Hydro, Environmental Partnership Fund or Forestry Enhancement Program



## Creating Backyard Wildlife Havens

When we think of wildlife we tend to think primarily of mammals. But wildlife includes the full range of wild species - plants, insects, butterflies, birds, reptiles, fish, other aquatic organisms, and mammals. We also tend to think of wilderness, or, at least, rural areas, when we think of wildlife. But urban areas have a key role to play in conservation of prairie wildlife. Rivers and streams run through towns and cities, and urban planners are now thinking of how best to manage urban habitats for the wildlife species they support.

Individuals, and organizations can contribute to conserving biodiversity on the prairies by establishing wildlife havens in existing green spaces. The species that are attracted to your space will depend on the habitat you create. And not only can you attract wildlife that is both interesting and pleasing to watch, you can also reduce the expense of maintaining your patch of green space. Low maintenance native plantings can save money and resources because of their hardiness.

A wildflower garden full of native species will attract birds and butterflies. Wildflowers provide nectar, food and cover for many different bird species, insects, reptiles, amphibians and a host of small mammals. Add a backyard pond with aquatic plants, and you further increase the number of species and individuals.

Native wildflowers are not only beautiful and colourful, they are very hardy because they have adapted to prairie conditions which range from extremely dry and hot years to cool, wet years. And they sure save on lawn mowing and lawn watering giving you more time to enjoy the pleasing array. If you want to keep some lawn, though, use environmentally friendly lawn care products. Bees and butterflies have declined in numbers across Canada due to the increase in pesticide use, pollution, and habitat loss. The loss of these

pollinators threatens some major food crops and flowers. Goldenrod, phlox, Flodman's thistle, black-eyed Susan and asters are just a few examples of a "pollinators' banquet" that you can create in your backyard. Don't forget hummingbirds. They have a special affinity for the colour red and are partial to tubular or trumpet-shaped flowers such as day-lily, fireweed, wild geranium, delphinium and phlox.

Streams and rivers in urban areas require special attention. Natural vegetation on river and stream banks help to reduce erosion and bank failure. Trees provide shade and help to control temperatures at levels favourable to fish. Truro Creek in Winnipeg is a good example of what can be done by urban dwellers. The Friends of Bruce Park developed a long term Conceptual Plan for the creek. It includes restoration of a natural buffer zone along the banks, installation of pools and riffles to enhance fish habitat, and the addition of vegetation layers by planting saplings and shrubs to add to the mature trees in the park.

Create your own haven for wildlife, or get together with your community to make it a friendly place for birds, bees, flowers, insects, and small mammals.

## Goal 8 Manage wildlife habitat in urban environments.

### Action:

1. Map out your backyard, make a site plan, select the trees, shrubs, wildflowers you wish to plant with help from knowledgeable people and develop an action plan.
2. Track the species you observe each year and note the increases and declines (if any). Remember that certain species will be attracted to your backyard depending on the habitat you create.
3. Take pictures of your project and share them with your community. Challenge others to create their own backyard haven or public green space.
4. Get a community group together to prepare a native habitat plan for the creek or river that runs through your town or neighbourhood.
5. Participate or organize a clean-up of nearby waterways, riparian areas and wetlands.

### Where you can go for assistance:

(See Appendix A)

- Canadian Wildlife Federation
- Manitoba Natural Resources
- Critical Wildlife Habitat Program
- Manitoba Naturalists Society
- Canadian Nature Federation
- Fort Whyte Nature Centre

### Potential Funding sources:

- Special Conservation Fund
- Sustainable Development Innovations Fund
- Environment Canada, Action 21
- Manitoba Rural Development, Rural Economic Development Initiative
- Canadian Wildlife Federation, Habitat 2000 (for schools and youth groups)

# GOVERNMENT INITIATIVES

We have often viewed conservation activities as a cost when, in fact, they are an investment in our future. Conservation of native prairie habitats results in a landscape that provides many ecological services to the benefit of all. Most of the land on the prairies is owned by private landowners, many of whom struggle to make a living. If society expects landowners to protect ecosystems, conserve biodiversity, retain wetlands, maintain healthy riparian areas, society must be willing to pay for these services at a rate equal to the true economic return that could be derived from the land. The Canadian Biodiversity Strategy encourages government to enact legislation and policies that support conservation and develop the economic instruments to remunerate landowners for the ecological services their land.

Many arms of government have already developed policies and programs that support the conservation of prairie ecosystems. The federal and provincial governments have ratified the Canadian Biodiversity Strategy, the Wildlife Policy for Canada, and are participants in the North American Waterfowl Management Plan. Manitoba Natural Resources is a partner in the Critical Wildlife Habitat Program and helped establish the Tall Grass Prairie Preserve. The Watchable Wildlife program, involving Manitoba Natural Resources and Industry, Trade and Tourism, assists community groups to develop wildlife viewing opportunities in natural areas while the Fisheries Enhancement Initiative funds projects to enhance fish stocks and restore fish habitat. Manitoba Rural Development provides funds and technical assistance for conservation, environment, and tourism development. Manitoba Agriculture offers assistance in water resource management, riparian projects, and grazing management plans.

Government also serves as a central place where people can go for information and referral to other

agencies.

The role that governments can best play, though, is that of initiator and facilitator. The Manitoba Conservation Districts were initially created by the Manitoba government to manage drainage projects. They have now established an independent association and their mandate has expanded to include soil and water management, managed grazing systems, and voluntary habitat lands and donations. Participant numbers have also increased along with their expanded range of activities. Conservation Districts illustrate the sustainable development expression “think globally and act locally”.

Demonstration projects show others the benefits of new practices and products. Government often funds these projects because they are one of the best ways to encourage adoption of new ways of doing things. Initial funding from government to a non-profit organization is often all it takes to get a new conservation initiative off the ground.

While there are many activities already under way by government and its partners, there is still much conservation work to be done. For example, government could take the lead in establishing a mixed-grass prairie preserve which could serve as a tourist destination, demonstrate rotational grazing, and preserve habitat for threatened or endangered wildlife.

However, it will take individuals - landowners, farmers, livestock operators, urban dwellers, wildlife enthusiasts - to generate the interest and commitment to make conservation a cornerstone of prairie life.

# CONCLUSION

The prairie community has a deep sense of responsibility toward, and a close connection with the land and the wildlife it supports. Too often however, landowners are forced to take action for short term financial reasons that results in loss of habitat and biodiversity. There has been some movement in recent years to counteract this trend through reduced taxes on lands that are “left” for wildlife. Society needs to support initiatives that compensate landowners who restore degraded ecosystems, protect native lands, contribute to the preservation of biodiversity and provide benefits for the good of all.

Agricultural associations need to assign a value to the provision of ecological services for the benefit of the “global community” and work to have the costs associated with retaining wildlands, refraining from draining wetlands, and officially designating lands as wildlife lands, parks and ecoreserves, recognized and accounted for by the community at large.

If native habitats are to survive, cooperation and partnerships will be vital. There must be cooperation among different levels of government, non-governmental organizations, and individual landowners. In this era of diminishing resources, partnerships are essential to make habitat protection and rehabilitation, integrated resource management, and education and information sharing happen.

The **Prairie Conservation Action Plan** brings together the ideas of many individuals, organizations and agencies. It will need to be revised, adjusted, and re-worked as people put its suggestions into actions. The plan will only be effective, however, if it does indeed result in action on the ground. It will take individuals to turn the plan into reality on the landscape and ensure that

wild places and wildlife continue to be pieces in the mosaic. We hope you are one of those people!

## Glossary

**Biodiversity (biological diversity)** refers to the variety of life at all levels. It includes genetic variation, the number of species, and the different ecosystems in which they co-exist.

**Buffer zone** is a strip of vegetation along a stream, around a lake or a natural area that is left in a natural state to protect the water body or land from disturbances on adjacent lands.

**Ecological integrity** refer to ecosystems that are self-sustaining and self-regulating; they have a full range of native species capable of maintaining population levels, they have complete food webs, and they have naturally functioning ecological processes.

**Ecological processes** are processes that sustain the land, water, air, and all life on earth. They include recycling of nutrients, breakdown of pollutants and cleansing of air and waters, watershed protection, soil formation, and the supply of food and habitat for all species.

**Ecological system or ecosystem** is a community of organisms functioning and interacting together within their physical environment. It is composed of all living and nonliving parts of the environment in a defined space and time.

**Ecozone or ecoregion** is an area of relatively homogenous ecosystems.

**Endangered species** are species facing imminent extirpation or extinction.

**Extinction** means a species no longer exists anywhere on earth.

**Sustainable development** is development that meets the needs of the present without compromising the ability of future generations to

**Extirpation** means a species no longer exists in the wild in a defined area, but occurs elsewhere.

**Genetic diversity** is diversity within a species. Just as individual humans differ from one another, so do individuals within other species.

**Habitat fragmentation** is the breaking up of large and continuous natural communities, and habitats into smaller areas surrounded by altered or disturbed land.

**Native prairie** is an area of unbroken grassland dominated by naturally occurring species.

**Non-point source pollution** is pollution in surface run-off from urban areas, construction sites, forestry operations, mining sites and agricultural operations.

**Point source pollution** is the direct, concentrated discharge of pollutants (e.g., sewage effluent, industrial waste) into streams and waters or the air.

**Protection** is the retention of the integrity and intrinsic value of an ecosystem in perpetuity. A protected area is a geographically defined area that is designated or regulated and managed to achieve specific conservation objectives.

**Riparian area/zone** is the vegetated zone alongside rivers, creeks, lakes, sloughs, potholes, hay meadows and springs. Increased moisture found in these areas produces unique plant communities that differ noticeably from surrounding crop and pasture land.

meet their own needs. The extent of development and consumption is bounded by the ability of the environment to support that

development and consumption.

***Threatened species*** means a species that is likely to become endangered if limiting factors are not reversed.

***Wildlife*** means all wild life: mammals, birds, reptiles, amphibians, fishes, invertebrates, plants, fungi, algae, bacteria, and other wild organisms.

***Wildlife corridor*** is a ribbon of natural habitat that connects areas of habitat and permits the movement of plants or animals between them.

## Appendix A    Addresses of funding organizations and information sources listed in this document.

Refer also to *A Guide to Conservation Programs and Funding Sources for Agro-Manitoba*

ORGANIZATION	PROGRAM	ADDRESS/PHONE NUMBER
<b>Brandon Naturalists Society</b>		c/o Mrs. V. Shuttleworth 352-27th St. Brandon MB R7B 2E8
<b>Canadian Heritage Rivers Program</b>		contact Natural Resources, Parks and Natural Areas Box 53, 200 Saulteaux Cres Winnipeg MB R3J 3W3 or call toll free 1-800-282-8069
<b>Canadian Parks and Wilderness Society - Manitoba Chapter</b>		c/o Roger Turenne Box 344 Winnipeg MB R3C 2H5
<b>Canadian Wildlife Federation</b>	Habitat 2000	2740 Queensview Drive Ottawa ON K2B 1A2 or call toll free 1-800-563-9453
<b>Critical Wildlife Habitat Program</b>		Contact Natural Resources offices in: -Winnipeg - (204)-945-7775 -Brandon - (204)-726-6448 -Boissevain - (204)-534-6838 -Melita - (204)-522-3719 -Swan River - (204)-734-5356 -Gimli - (204)-642-8155 -Lac du Bonnet - (204)-345-1400 -OR- Toll-free 1-800-282-8069
<b>Delta Waterfowl Foundation</b>	Adopt-A-Pothole	Delta Waterfowl and Wetlands Research Station, Rural Route 1 Portage la Prairie MB R1N 3A1 (204)-239-1900
<b>Ducks Unlimited Canada</b>	Manitoba Prairie Care	Oak Hammock Marsh, Box 1160 Stonewall MB R0C 2Z0 -OR- -Brandon - (204)-729-3500 -Killarney - (204)-523-7567 -Minnedosa - (204)-867-5228 -Shoal Lake - (204)-759-2804
<b>Environment Canada</b>	Action 21	123 Main St. Winnipeg MB R3C 4W2 (204)-983-7048 or 1-800-665-7135 toll free

<b>ORGANIZATION</b>	<b>PROGRAM</b>	<b>ADDRESS/PHONE NUMBER</b>
<b>Fort Whyte Nature Centre</b>		Box 124, 1961 McCreary Rd. Winnipeg MB R3Y 1G5
<b>Friends of Spruce Woods</b>		c/o Don Forbes Box 707 Carberry MB R0K 0H0
<b>Intermountain Naturalists</b>		222 Bossons Avenue Dauphin MB R7N 0R2
<b>Keystone Agricultural Producers</b>		437 Assiniboine Ave Winnipeg MB R3C 0Y5
<b>Manitoba Agriculture</b>	Manitoba Agriculture regional soil conservation specialists in:	Carman - (204)-745-2040 -Morden - (204)-822-5461 -Roblin - (204)-937-2158 -Selkirk - (204)-785-5038 -Shoal Lake - (204)-759-2394
	Agriculture in the Classroom Program	Carman - (204)-745-2040
	Manitoba Agricultural representatives	Contact the Agricultural District in your area
	Agriculture Crown Land District Offices	-Arborg - (204)-376-5211 -Ashern - (204)-768-2545 -Brandon - (204)-726-6019 -Dauphin - (204)-622-2068 -Dominion City - (204)-427-2950 -Neepawa - (204)-476-5076 -Ste. Rose du Lac - (204)-447-2116 -Swan River - (204)-734-3417 -Teulon - (204)-886-2696
<b>Manitoba Association of Landscape Architects</b>		635 Bardal Bay Winnipeg MB R2G 0J1
<b>Manitoba Cattle Producers Association</b>		222-30 Century St. Winnipeg MB R3H 0Y4
<b>Manitoba Conservation Districts</b>	Manitoba Conservation Districts Association	-Winnipeg - (204)-257-8219
	Alonsa Conservation District	-Alonsa - (204)-767-2101
	Cooks Creek Conservation District	-Oak Bank - (204)-444-3652
	Intermountain Conservation District	-Ethelbert - (204)-742-3764
	Pembina Valley Conservation District	-Manitou - (204)-242-3267
	Turtle Mountain Conservation District	-Deloraine - (204)-747-2530
	Turtle River Conservation District	-Ste. Rose du Lac - (204)-447-2139
	Upper Assiniboine River Conservation District	-Miniota - (204)-567-3554



<b>ORGANIZATION</b>	<b>PROGRAM</b>	<b>ADDRESS/PHONE NUMBER</b>
	West Souris River Conservation District	-Reston - (204)-877-3020
	Whitemud Conservation District	-Neepawa - (204)-476-5019
<b>Manitoba Environment</b>		160-123 Main St. Winnipeg MB R3C 1A5
<b>Manitoba Forestry Association</b>		900 Corydon Ave Winnipeg MB R3M 0Y4 (204)-453-3182
<b>Manitoba Heritage Marsh Program</b>		contact Manitoba Natural Resources, Wildlife Branch Toll free 1-800-282-8069
<b>Manitoba Habitat Heritage Corporation</b>		200-1555 St. James St. Winnipeg MB R3H 1B5
	Green Acres Program, Green Banks Program, or Habitat Stewardship	Contact MHHC Field Offices in: -Brandon - (204)-729-3501 -Killarney - (204)-523-7569 -Minnedosa - (204)-867-5245 -Reston - (204)-877-3020 -Shoal Lake - (204)-759-2807
	Manitoba Agro-Woodlot Program	-Killarney - (204)-523-7165 -Melita - (204)-522-8733 -Minnedosa - (204)-867-3488
<b>Manitoba Hydro</b>	Environmental Partnership Fund	Environmental Education Specialist Manitoba Hydro 820 Taylor Avenue, P.O. Box 815 Winnipeg MB R3C 2P4 (204)-474-4934
	Forest Enhancement Program	Forest Enhancement Program Steering Committee in Winnipeg at (204)-474-4934 Pick up an application form package at any Manitoba Hydro District Office
<b>Manitoba Industry, Trade and Tourism</b>		155 Carlton St, 6th Floor Winnipeg MB R3C 3H8
<b>Manitoba Natural Resources</b>	Wildlife Branch	Box 24, 200 Saulteaux Crescent Winnipeg MB R3J 3W3 Toll free 1-800-282-8069
	Watchable Wildlife Program	Contact the Wildlife Branch in Winnipeg at (204)-945-7763 or toll-free 1-800-282-8069
	Manitoba Conservation Data Centre	Box 24, 200 Saulteaux Crescent Winnipeg MB R3J 3W3 (204)-945-7743

<b>ORGANIZATION</b>	<b>PROGRAM</b>	<b>ADDRESS/PHONE NUMBER</b>
	Fisheries Enhancement Initiative	Contact regional Fisheries offices in: -Lac du Bonnet - (204)-345-1450 -Brandon - (204)-726-6449 -Dauphin - (204)-622-2101 -Gimli - (204)-642-6072 -Winnipeg - (204)-945-7797
<b>Manitoba Naturalists Society</b>		401-63 Albert St. Winnipeg MB R3B 0W8 (204)-943-9029
<b>Manitoba Rural Development</b>	Rural Economic Development Initiative, Partners with Youth, or Green Team Hometown Program	Contact the Rural Economic Development Initiative Office at 1-800-567-REDI or contact Rural Development Offices in: -Beausejour -(204)-268-6063 -Brandon -(204)-726-6275 -Dauphin -(204)-622-2158 -Deloraine -(204)-747-3332 -Morden -(204)-822-6221 -Portage la Prairie -(204)-239-3405 -Selkirk -(204)-785-5130 -Steinbach -(204)-326-1381 -Winnipeg -(204)-945-2157
	Manitoba Water Services Board	-Brandon - (204)-726-6076 or (204)-726-6572 -Winnipeg - (204)-945-7496
<b>Manitoba Wildlife Federation</b>	Habitat Trust Cooperator Program	Operations Office 70 Stevenson Rd. Winnipeg MB R3H 0W7 (204)-633-5967
<b>Manitoba-North Dakota Zero Tillage Farmers Association</b>		Contact your local Agricultural Representative
<b>Nature Conservancy of Canada</b>		298 Garry St. Winnipeg MB R3C 1H3 (204)-942-6156
<b>Prairie Farm Rehabilitation Administration</b>	Shelterbelt Program	PFRA Shelterbelt Centre Indian Head SK S0G 2K0 (306)-695-2284
	Rural Water Development Program	Contact PFRA offices in: -Beausejour -(204)-268-3233 -Brandon -(204)-726-7590 -Dauphin -(204)-638-6108 -Morden -(204)-822-4078 -Winnipeg -(204)-983-2243
	Community Pastures	-Brandon - (204)-726-7591 -Dauphin -(204)-638-6108
<b>Special Conservation Fund</b>		Special Assistant,

ORGANIZATION	PROGRAM	ADDRESS/PHONE NUMBER
		Minister of Natural Resources, Room 314, Legislative Building, Winnipeg MB R3C 0V8 (204)-945-0536
<b>Sustainable Development Coordination Unit</b>	Sustainable Development Innovations Fund	305-155 Carlton Street, Winnipeg MB R3C 3H8 (204)-945-1124
<b>University of Manitoba</b>  <b>World Wildlife Fund Canada</b>	University Field Station (Delta Marsh)	208 Buller Building Winnipeg MB R3T 2N2 (204)-474-9297  504-90 Eglinton Ave. E. Toronto ON M4P 2Z7

## **Appendix B      Bibliography of relevant brochures/publications**

Manitoba Farm Planner. A sustainable development initiative of Keystone Agricultural Producers. Available from Keystone Agricultural Producers, 437 Assiniboine Ave. Winnipeg, MB, R7N 0R2.

Project Wild. Contact Manitoba Natural Resources at (204)-945-7763 to find out more information about training workshops.

Project Learning Tree. Contact Manitoba Natural Resources at (204)-945-7775 to find more information about training workshops.

A Guide to Conservation Programs and Funding Sources for Agro-Manitoba. Land Stewardship Directory. 1997. Available from Critical Wildlife Habitat Program at (204)-945-7775.

State of the Environment Report for Manitoba. 1997. Available from Manitoba Environment, 123 Main St. Suite 160. Winnipeg, Manitoba. R3C 1A5.