

PLANNING FOR THE FUTURE



# PRAIRIE HABITAT JOINT VENTURE

## IMPLEMENTATION PLAN 2013-2020: SUMMARY

THE PRAIRIE PARKLANDS & WESTERN BOREAL FOREST





In 1986, the North American Waterfowl Management Plan (NAWMP) partnership was founded with the goal to restore waterfowl populations to 1970s numbers by implementing conservation projects across priority landscapes in Canada and the United States – Mexico joined in 1994. One of the continent's first priority landscapes was Canada's Prairie Parkland Region, where as much as one third of the continental waterfowl populations breed. The Western Boreal Forest (WBF) has been acknowledged as second only to the Prairie Pothole Region as an important waterfowl breeding area. The Prairie Habitat Joint Venture (PHJV) partnership was formed in 1986 and further expanded into the Western Boreal Forest in the early 2000s.

**PHJV Vision:** Healthy prairie, parkland and boreal landscapes that support sustainable bird populations and provide ecological and economic benefits to society.

**PHJV Mission:** To provide leadership to achieve healthy and diverse waterfowl and other bird populations through conservation partnerships. These partnerships strive for sustainable and responsible management of the landscape taking into account social, economic and environmental factors.

## *PHJV Goals*

**Bird Populations** – Duck populations are maintained at average levels recorded during 1955-2014, recognizing that abundance and species composition will fluctuate in response to variable

pond and upland habitat conditions. Goals for other bird species are aligned with those specified in Bird Conservation Region Plans and Recovery Plans for Species at Risk.

**Habitat** – The Prairie Parkland Region and the Western Boreal Forest are capable of sustaining duck populations at levels recorded during 1955-2014, including populations in years of peak abundances, by maintaining the PHJV's carrying capacity (wetlands support breeding pairs; reproductive and survival rates allow population growth). Identify and pursue opportunities to retain and restore key habitats for non-waterfowl species.

**People** – Programs and policies are delivered and advocated that favour both conservation and long-term sustainability of rural communities. Enhanced opportunities enable people to hunt and view waterfowl, while building support for wetland conservation among a wider community including the general public. Crop damage, over-abundant geese and other socio-economic concerns created by waterfowl or other birds are addressed.

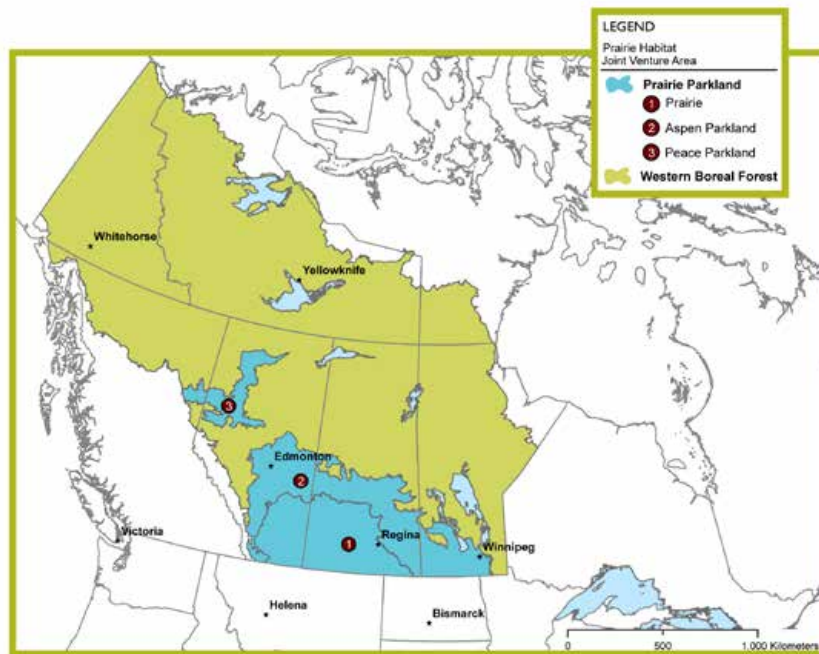
*This document summarizes the Prairie Habitat Joint Venture Implementation Plans 2013-2020 for the Prairie Parklands and Western Boreal Forest. Full plans are available online at [phjv.ca](http://phjv.ca)*





# INTRODUCTION

*The Prairie Habitat Joint Venture (PHJV) area includes two regions of Canada: the Prairie Parkland Region and the Western Boreal Forest. Combined, these are the two most important breeding areas for waterfowl in North America.*



**Figure 1: Prairie Habitat Joint Venture Area**

The remarkable diversity and abundance of bird species across the PHJV area results from the region's highly productive and diverse wetland and upland habitats and the movement of these birds among prairie, parkland, and western boreal forest biomes.

The long-term capacity of PHJV landscapes to support Prairie Parkland Region duck populations remains a concern due to ongoing wetland loss and degradation, as well as market uncertainties regarding demand for cattle (favouring the retention of grassland habitat) versus demand for cereal, oilseed and other crops that favours conversion of grassland to cropland.

In the Western Boreal Forest, widespread industrial expansion in southern regions and climate changes throughout pose potential threats to the ability of this biome to support ducks, creating significant conservation challenges.

**The PHJV 2013-2020 habitat objectives will help PHJV and NAWMP achieve the following goals by 2020:**

- 1 Restore 384,000 acres (155,000 hectares) of habitat.
- 2 Retain 684,000 acres (277,000 hectares) of habitat.
- 3 Ensure an additional ~3,000 hatched nests annually (of the five dabbling duck species combined).
- 4 Assess PHJV impacts on shorebirds, water birds and landbirds.
- 5 Examine restoration and protection of special wetlands and large marshes.
- 6 Build public support for conservation.

Since its inception, PHJV activities have been guided by a series of habitat implementation plans. The plans are modified regularly to reflect current and anticipated landscape conditions, socioeconomic trends, emerging priorities for bird conservation, and new knowledge about bird populations and their habitats. In short, these plans have evolved to meet persistent and new challenges facing the waterfowl conservation community.

*Achieving PHJV objectives is ambitious, and will be accomplished with strong partnerships, a common vision, and a sustained commitment – for waterfowl, the environment, and for people.*

# PRAIRIE PARKLANDS

## *Status of Waterfowl*

The species composition of the PHJV duck community has changed substantially in the past decade. Pond counts are 19 per cent above the long term average, indicating a relatively wet period across the prairies. Pond counts correlate well with increasing counts of northern shoveler, blue-winged teal and gadwall, but contrast with relatively lower northern pintail and American wigeon counts.

- 10-year average population counts of northern pintail, American wigeon, and lesser scaup within the PHJV remain well below NAWMP conservation goals.
- Mallards are at roughly average levels, despite significantly higher pond counts.
- Remaining species are well above their respective long term averages.

Why stronger resurgences in populations of mallard, American wigeon and especially northern pintail have not been observed with wetter conditions remains a concern, warranting further investigation and action.

## *Status of Shorebirds, Waterbirds and Landbirds*

This Plan focuses on 23 species of shorebirds, 13 species of waterbirds and 29 species of landbirds from the priority species list in the Bird Conservation Strategy for BCR 11



### *Northern Pintail: A Species of Conservation Concern*

Over the past three decades, the northern pintail population in North America has remained well below the NAWMP goal. A primary causal mechanism in the decline is thought to be the tendency of pintail to nest in croplands prior to seeding and the resulting destruction of nests with the seeding operation. The PHJV recognizes the urgency and importance of addressing pintail population concerns, and will continue to identify programs, like promoting winter wheat and retaining native grasslands, to improve pintail productivity and survival.

which includes the PHJV's Prairie Parklands Region. These species were identified as those that are vulnerable due to population size, distribution and abundance, population trend and threats, and species of management concern.

## *Status of Habitat*

While PHJV conservation activities result in restoration and protection of habitat, they are but a few of the many influences, positive and negative, on waterfowl habitat.

**Upland Habitat** – Native grasslands declined by approximately 10 per cent within the PHJV from 1985-2001 and have continued to decline at similar rates since 2001. Despite significant gains in areas of permanent cover since 1986, primarily due to strengthening cattle markets and the need for (tame) pasture and forages, pressure on remaining native grassland areas has increased.

**Wetland Habitat:** Approximately 4.6 million wetland acres, most consisting of small prairie-pothole wetlands, are located within PHJV Target Landscapes. In general, smaller wetlands, especially temporary and seasonal ponds found in intensively cropped landscapes, are the most vulnerable to agricultural impacts on pond margins and basins. Wetland loss over the past 30 years has shown little sign of abating, with an annual current loss rate of approximately -0.35%.

## *Setting Habitat Objectives – Biological Foundations*

Since its inception, the PHJV's habitat implementation plans have been guided by quantitative models using the best available information to predict waterfowl responses to habitat program and policy initiatives. The success of restoration activities in achieving habitat objectives is predicted using the Waterfowl Productivity Model (WPM), a decision support tool that is continually refined.

Population objectives for non-game species have been developed as part of the BCR 11 plans for the Prairie Parkland Region (PPR). PHJV's Plan has identified how habitat requirements of BCR 11 priority species align with broad upland and wetland priorities set by the PHJV to achieve its duck population objectives.



The PHJV's Target Landscapes (*see figure 2*) represent areas of  $\geq 30$  pairs/mi<sup>2</sup> of the seven primary breeding waterfowl species and  $\geq 6$  pairs/mi<sup>2</sup> of northern pintail. Slight boundary modifications were made based on local knowledge and to include areas immediately adjacent to Target Landscapes with high value for non-game species.

### Habitat Objectives for Waterfowl

Habitat restoration is the priority means of improving the productive capacity of PHJV's PPR landscapes (1970s levels), while habitat retention prevents further loss of productive capacity. The PHJV will advance its restoration and retention objectives through a broad mix of conservation actions. Expenditure forecasts are also estimated for each program area.

### Habitat Objectives for Shorebirds, Waterbirds, and Landbirds

The Prairie Parklands Implementation Plan provides information on population trends and habitats selected for breeding or migratory stopovers (*see figure 3*).

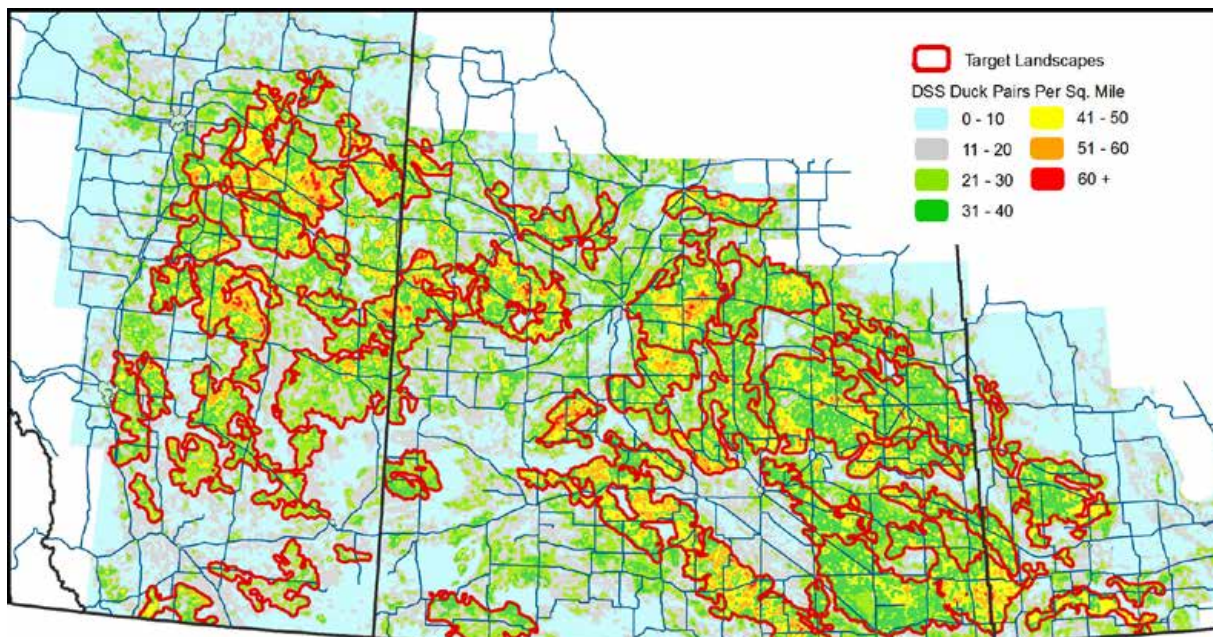
Innovative products have been developed to help guide conservation planning for a broad suite of marshbirds.

### Developing New Objectives for People: Building Support for Conservation

The NAWMP 2012: People Conserving Waterfowl and Wetlands revision incorporated an explicit human dimensions goal: Growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and actively support waterfowl and wetlands conservation.

In the PHJV area, there is history and experience in what works for, and resonates with, landowners and land managers for conservation program delivery, but PHJV knowledge about other stakeholders is limited. The current challenge is to identify what role it should play in including diverse groups of stakeholders in discussions regarding wetland and waterfowl conservation, participation in conservation programs and waterfowl hunting.

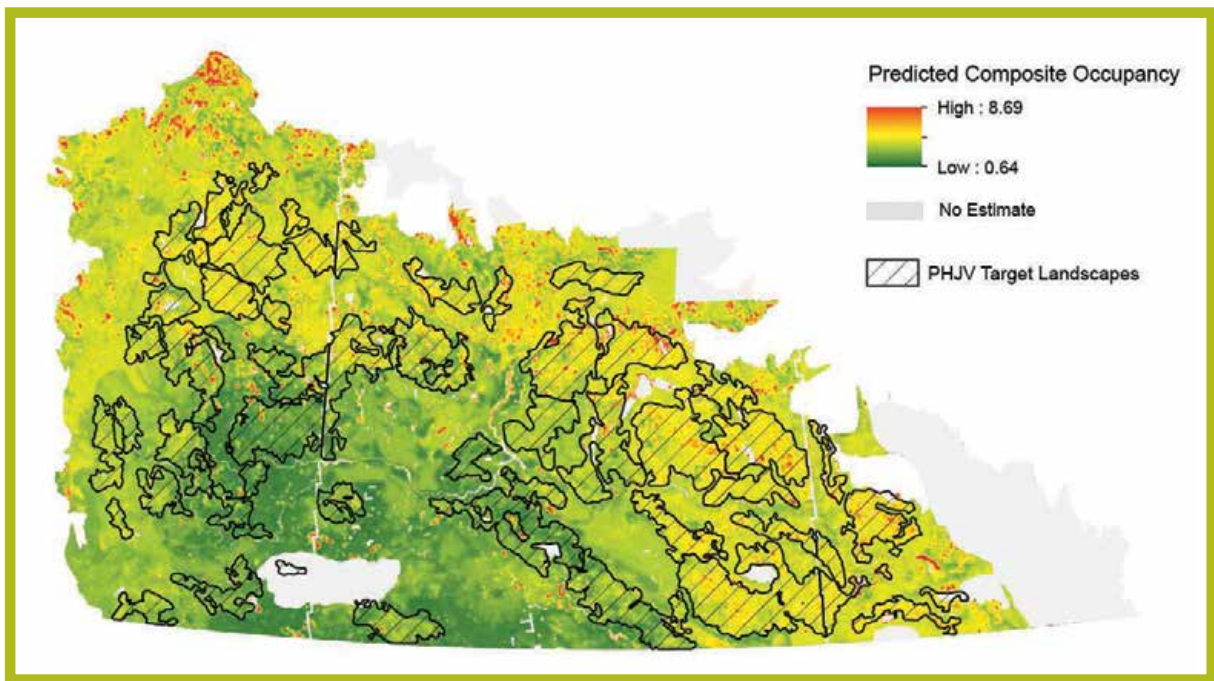
The PHJV Implementation Plan 2013-2020 puts increased emphasis on region-specific strategies to address unique demographics, hunting traditions, perspectives about wetlands and waterfowl, and other social characteristics.



**Figure 2: Prairie Habitat Joint Venture Target Landscapes**

*Note: Species comprising duck density surface include mallard, blue-winged teal, northern pintail, gadwall and northern shoveler, canvasback and redhead*





**Figure 3: Predicted composite occupancy for 10 species of wetland-associated birds and PHJV Waterfowl Target Landscapes**

*Note: Predicted composite occupancy includes the following species: American bittern, American coot, eared grebe, horned grebe, pied-billed grebe, Nelson's sparrow, sora, Virginia rail and Wilson's snipe.*

Habitat Restoration	Year 2030 Habitat Objective (Acres)	By 2020, 8-Year Objectives (Acres)			% of 2030 Habitat Objective	Total 8-Year Expenditure
	Direct NAWMP	Stewardship NAWMP	Total			
Winter Wheat						
Alberta	20%	-	-	20%		\$ -
Saskatchewan	15%	-	-	15%		\$ -
Manitoba	20%	-	-	20%		\$ -
Sub-total	15-20% of all wheat acres	-	-	15-20% of all wheat acres		\$ 17,600,000
Tame Pasture						
Alberta	441,000	0	176,400	176,400	40%	\$ 1,234,800
Saskatchewan	980,373	254,899	137,250	392,149	40%	\$ 15,235,094
Manitoba	55,365	19,266	2,880	22,146	40%	\$ 1,099,056
Sub-total	1,476,738	274,165	316,530	590,695	40%	\$ 17,568,950
Tame Hay						
Alberta	725,000	0	290,000	290,000	40%	\$ 2,030,000
Saskatchewan	234,551	60,984	32,838	93,822	40%	\$ 3,644,970
Manitoba	36,910	12,844	1,920	14,764	40%	\$ 732,704
Sub-total	996,461	73,828	324,758	398,586	40%	\$ 6,407,674

**Table 1 (Above, Right): Prairie Habitat Joint Venture habitat objectives summary by major program areas, and expenditure forecast, 2013-2020, relative to 2030 objectives**

Habitat Retention	Year 2030 Habitat Objective (Acres)	8-Year Accomplishments (Acres)			% of 2030 Habitat Objective	Total 8-Year Expenditure Forecast
		Direct NAWMP	Stewardship NAWMP	Total		
Planted Cover						
Alberta	35,500	14,200	-	14,200	40%	\$ 25,375,400
Saskatchewan	18,596	7,439	-	7,439	40%	\$ 13,293,493
Manitoba	12,000	4,800	-	4,800	40%	\$ 8,577,600
Sub-total	66,096	26,439	-	26,439	40%	\$ 47,246,493
Wetlands						
Alberta	65,708	3,038	-	3,038	5%	\$ 5,428,906
Saskatchewan	7,538	3,015	-	3,015	40%	\$ 5,387,805
Manitoba	4,618	1,847	-	1,847	40%	\$ 3,300,589
Sub-total	77,864	7,900	-	7,900	10%	\$ 14,117,300
Nesting Tunnels (structures)						
Alberta	-	-	-	-	-	\$ -
Saskatchewan	-	-	-	-	-	\$ -
Manitoba	3,400	1,360	-	1,360	40%	\$ 710,875
Sub-total	3,400	1,360	-	1,360	40%	\$ 710,875
Restoration Sub-total	2,620,559	383,692	641,288	1,024,980	39%	\$ 103,651,292
Wetland						
Alberta	97,875	43,500	-	43,500	44%	\$ 10,875,000
Saskatchewan	580,155	232,062	-	232,062	40%	\$ 58,015,434
Manitoba	169,600	67,840	-	67,840	40%	\$ 16,960,000
Sub-total	847,630	343,402	-	343,402	41%	\$ 85,850,434
Upland						
Alberta	199,125	88,500	-	88,500	44%	\$ 48,675,000
Saskatchewan	318,159	127,264	-	127,264	40%	\$ 69,994,956
Manitoba	312,400	124,960	-	124,960	40%	\$ 68,728,000
Sub-total	829,684	340,724	-	340,724	41%	\$ 187,397,956
Retention Sub-total	1,677,314	684,126	-	684,126	41%	\$ 273,248,390
Policy						\$ 4,000,000
Operation and Maintenance Sub-Total						\$ 27,120,000
Research and Evaluation Sub-Total						\$ 22,000,000
Communication Sub-Total						\$ 5,400,000
Coordination Sub-Total						\$ 34,920,000
Sub-total						\$ 93,440,000
Grand Total	4,297,873	1,067,818	641,288	1,709,106	40%	\$ 470,339,682

Note: In previous PHJV habitat implementation plans, "stewardship" was referred to as "extension".

# WESTERN BOREAL FOREST

## *Status of Waterfowl*

The status of Western Boreal Forest (WBF) ducks is based on a trend review of eight species that have at least 25 per cent of their traditional survey area population in this region. Over the past decade, WBF populations of scaup, scoter, mallard and American wigeon have been generally lower than revised NAWMP goals, and overall, WBF waterfowl populations have declined by about 20 per cent since the 1970s.

## *Status of Shorebirds, Waterbirds and Landbirds*

This Plan focuses on a subset of shorebird, waterbird and landbird species from the priority species list in the Bird Conservation Strategy for BCR 4, BCR 6 and portions of BCR 7 and BCR 8. There are 14 shorebirds, 23 waterbirds and 20 landbirds which are a focus of conservation efforts in the WBF program area. While difficult to monitor most of these species in remote boreal areas, 40 per cent of these species may have negative population trends. For those species with adequate data, over half show negative population trends.

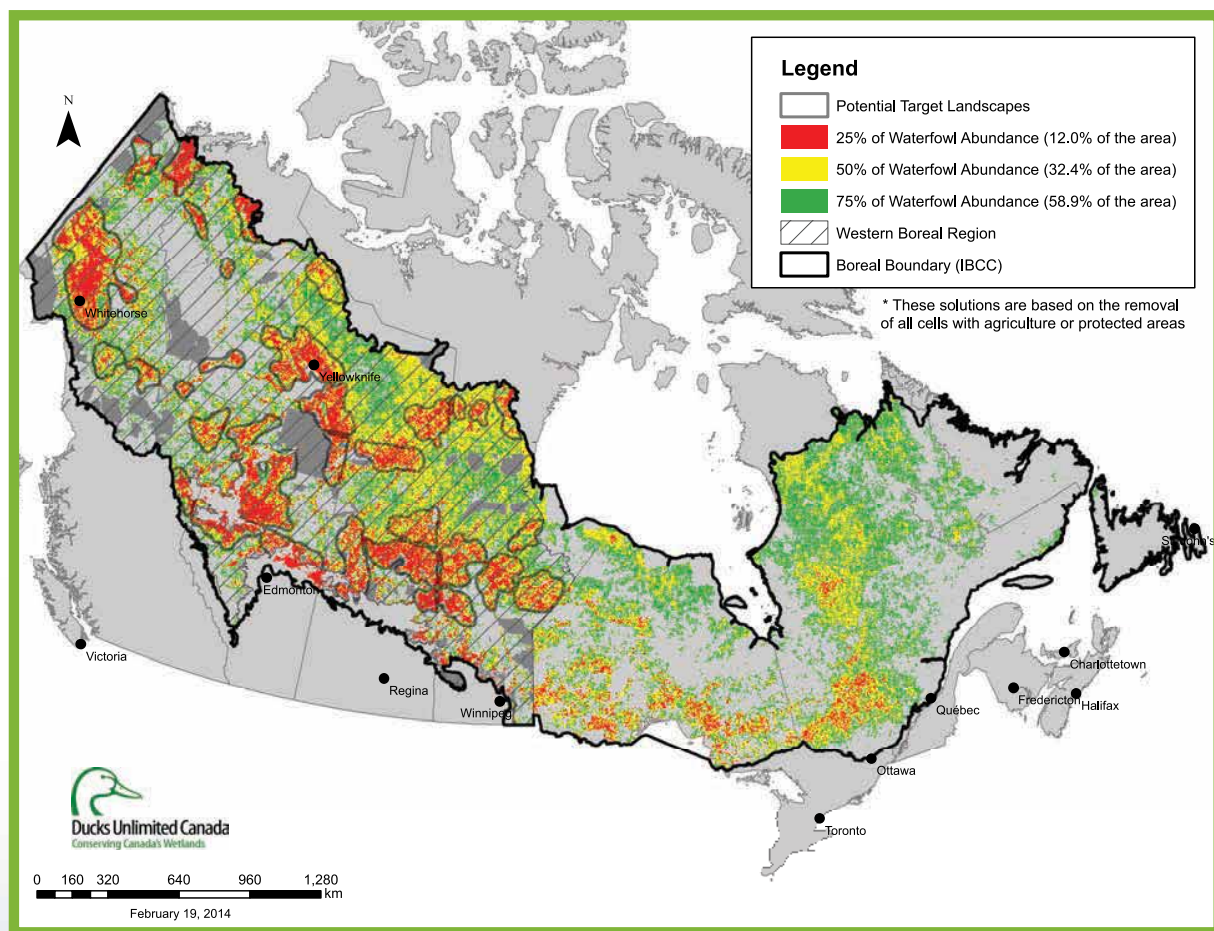
## *Status of Habitat*

The WBF occupies about 750 million acres, of which an estimated 47 per cent is waterfowl habitat. This is generally a peatland-dominated system (i.e. bogs and fens) with about 150 million acres of peatland and 100 million acres of open water. It is the hydrologic inter-connectedness of these peat and open-water systems that make this landscape sensitive to habitat changes, particularly in core areas for waterfowl. Expansion of industry in the southern WBF is generally considered to be rapid, with recent estimates of the anthropogenic footprint in the WBF exceeding 87 million acres.

## *Setting Habitat Objectives – Biological Foundations*

The WBF generally has same number of ducks as the Canadian Prairies, but with five times the land mass. On average, WBF duck populations are distributed at much lower densities. Preliminary target areas have been established and contain about 40 per cent of the ducks in 30 per cent of forested area within the WBF boundary.





**Figure 4: Waterfowl distribution across the Canadian boreal forest and potential Target Landscapes in the PHJV Region outside of long-term protected and agricultural lands.** The underlying duck distribution map was developed by deriving minimum area aggregations of predicted duck pairs. Colours represent quartiles of the population. Red areas have the highest density duck habitat (25% of the duck population on 12% of the land base). The next two quartiles occupy 20% (yellow) and 27% (green) of the land base, respectively. Collectively, 75% of the waterfowl population is estimated to occur on 59% of the entire Canadian boreal forest.





*The PHJV's WBF habitat retention objective is to conserve ~30.7 million acres of core waterfowl habitat by 2020, with about half in protected lands and half in sustainable land-use areas.*

### *Habitat Objectives*

The PHJV's WBF activities are primarily retention based, so the ultimate goal is no net loss of habitat function, which involves countering both degradation and loss. Because over 90 per cent of the WBF is either Crown- or indigenous-owned and industry-worked, these goals will be achieved by influencing various direct, government-led securement programs or regulatory options and industry-led planning and practices (e.g., government or corporate policies).

### *Human Dimension Objectives: Building Support for Conservation*

The PHJV's WBF accomplishments benefit people from the local to continental scales. Wetlands are a focal point for traditional lifestyles, meaning that boreal-based

communities often share interest in conserving the same habitats as the PHJV. As well, carbon stores and sequestration potential of the 150-million acres of WBF peatlands and other wetland types are considered continentally important for carbon market interests such as conservation offsets. PHJV success in the WBF relies on ensuring people recognize these values and support conservation efforts.

The PHJV will continue to work with indigenous communities and other WBF stakeholders to advance protected land and Sustainable Land Use habitat objectives that benefit waterfowl and people.

Activity	Expenditure Forecast
Communication and Education	\$ 3,000,000
Coordination	\$ 2,880,000
Enhancement	\$ 0
Evaluation	\$ 7,024,000
Management	\$ 5,528,000
Policy Support	\$ 4,328,000
Reconnaissance and Design	\$ 640,000
Securement	\$ 12,000,000
Stewardship	\$ 12,000,000
<b>Total</b>	<b>\$ 47,400,000</b>

**Table 2: Expenditure forecast for the Prairie Habitat Joint Venture within the Western Boreal Forest, 2013-2020.**

Jurisdiction	Protected Lands		Sustainable Land-use Areas	
	Total	Waterfowl	Total	Waterfowl
Yukon	3.8	1	4.1	0.8
Northwest Territories	15.6	9.5	16.8	4.9
British Columbia	0.4	0.2	0.8	0.2
Alberta	7.51	3.1	26.1	6.6
Saskatchewan	0.3	0.1	5.4	1.7
Manitoba	3.3 <sup>1</sup>	2.4	0.7	0.5
<b>Total</b>	<b>30.8</b>	<b>16.1</b>	<b>53.7</b>	<b>14.6</b>

**Table 3: Eight-year (2013-2020) total and waterfowl habitat objectives within the Western Boreal Forest.** Thirty percent (4.7 million acres) of Northwest Territories protected lands are transfer of claimed interim withdrawal acres to long-term protection status, hence will not be additive to overall acre accomplishments. All units are in millions of acres. Waterfowl = waterfowl habitat component of total acres.

*Note: Protected land objectives in Alberta and Manitoba are 93% and 29% completed, respectively, with the following accomplishments in 2013: Lower Athabasca Regional Plan (Alberta) and Little Grand Rapids and Pauingassi Land-use Plans (Manitoba).*



# PLANNING FOR THE FUTURE

*The PHJV's program in the Prairie Parklands and Western Boreal Forest has advanced significantly in the last decade, enabling partners to set aggressive, yet achievable, habitat and evaluation objectives for 2013-2020.*

Enduring strengths of the PHJV have been the emphasis on program evaluation, including adaptive management, and the willingness to modify, add or eliminate programs in response to new information. Areas of focus going forward include:

- Effective Provincial/Territorial wetland policies, or suites of policies, that conserve waterfowl habitat
- Population concerns for five duck species and 66 non-waterfowl species
- Continued development and refinement of decision-support tools for all birds and the ecological goods and services provided through conservation investments
- Wetland and upland inventories
- Impacts of future climate and land-use changes on migratory bird populations
- Integrating human dimensions understanding into future program planning, delivery and policy priorities

The PHJV's ongoing commitment to collaborative stakeholder engagement and other partnerships will help to ensure success. The PHJV's strong science program enables the PHJV to adapt conservation activities toward the best possible outcome for migratory birds and for people.

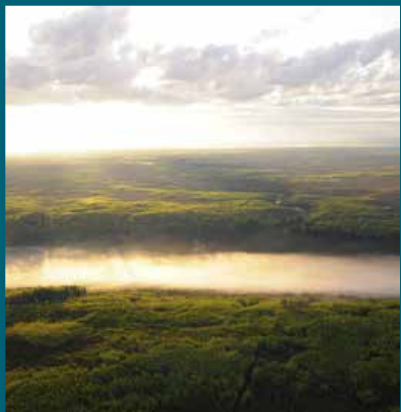
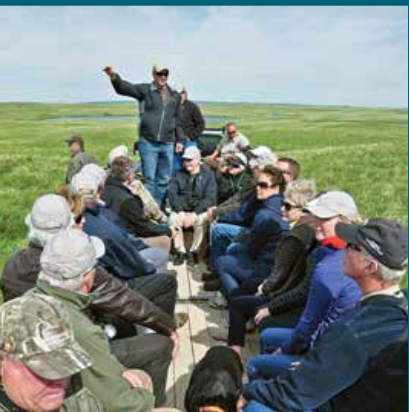






*North American Waterfowl  
Management Plan  
Plan nord-américain de  
gestion de la sauvagine  
Plan de Manejo de Aves  
Acuáticas de Norteamérica*

**CONNECTING PEOPLE**  
through  
**SOUND SCIENCE**  
at the  
**LANDSCAPE LEVEL**  
using a  
**PARTNERSHIP APPROACH**



**prairie habitat**  
*joint venture*