



Whitemouth River Watershed

Natural Area Conservation Plan Summary
2017-2026

Whitemouth River Watershed Natural Area Conservation Plan Summary

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Cover Photo: Tamarack fen in the Whitemouth River Watershed Natural Area. Photo Credit: Jordan Becker/NCC

The Nature Conservancy of Canada

The Nature Conservancy of Canada (NCC) is Canada's leading national land conservation organization. A private, non-profit organization, we partner with individuals, corporations, other non-profit organizations and governments at all levels to protect our most important natural treasures — the natural areas that sustain Canada's plants and wildlife. We secure properties (through donation, purchase, conservation agreement and the relinquishment of other legal interests in land) and manage them for the long term.

Since 1962, NCC and our partners have helped to conserve more than 2.8 million acres (1.1 million hectares) of ecologically significant land from coast to coast. In Manitoba, we have conserved and protected over 65,000 acres (26,305 hectares) across nine natural areas critical to biodiversity across the province.

Our Mission Statement:

The Nature Conservancy of Canada leads and inspires others to join us in creating a legacy for future generations by conserving important natural areas and biological diversity across all regions of Canada.

Our Vision:

We envision a world in which Canadians conserve nature in all its diversity, and safeguard the lands and waters that sustain life.

Natural Area Conservation Planning

Guided by the best-available conservation science, the Nature Conservancy of Canada (NCC) seeks to protect areas of natural diversity for their intrinsic value and for the benefit of our children and those after them. We focus our work on specific landscapes throughout Canada that have been identified as important to biodiversity conservation, often through ecoregional-scale Conservation Blueprints and Ecoregional Assessments. Specific focal landscapes are referred to as Natural Areas (NA), and a Natural Area Conservation Plan (NACP) is developed for each.

The purpose of these plans is to act as strategic plans for conservation implementation and support decision making at inception and throughout the implementation period, so that limited conservation resources are used most efficiently. Through these plans, we seek to identify desired conservation results, develop, prioritize, and implement activities that will lead to these results, track their progress, and adapt based on what we have learned. The scope of each plan encompasses the long-term conservation of all biodiversity in each NA.

Conservation planning requires recognition of the shifting nature of landscapes and our knowledge of them. This planning process is viewed as an iterative and ongoing, rather than a once-a-decade exercise and this document should be viewed in that context.

Natural Area Vision Statement

The Whitemouth River and its tributaries flow, unimpaired, through a landscape comprised of wetlands, forests and farms. The watershed supports thriving human and wildlife communities dependent on a near-wilderness landscape. Millions of tonnes of carbon are stored in the largest peatland expanse in southern Manitoba. A restored riparian forest zone contributes to the maintenance of water quality, Carmine Shiner and other rare species. Local, regional and national partners work together to achieve shared conservation goals, including addressing emerging eastern invasive species that have the potential to fundamentally alter ecosystems within the watershed and beyond.

Implementation Period

Start date: 01/01/2017

End date: 12/31/2026

Location

The Whitemouth River Watershed Natural Area (WRW) is a 446,428 hectare (1,103,140 ac/ 4,464 km²) landscape in southeast Manitoba. Portions of four Rural Municipalities fall within the Natural Area. The WRW occurs in the westernmost portion of the Lake of the Woods Ecoregion (Marshall & Schut [1999] classification scheme) and in the north-western portion of the Superior Mixed Forest (TNC [2001] classification scheme).

The boundary of the WRW is contiguous with the watershed boundary of the Whitemouth River, including all its tributaries and its headwaters at Whitemouth Lake (Manitoba subbasin = Whitemouth River). The watershed-scale boundary was selected to ensure that conservation actions are designed at a scale that will address the viability of, and threats to, targets such as rivers and streams.

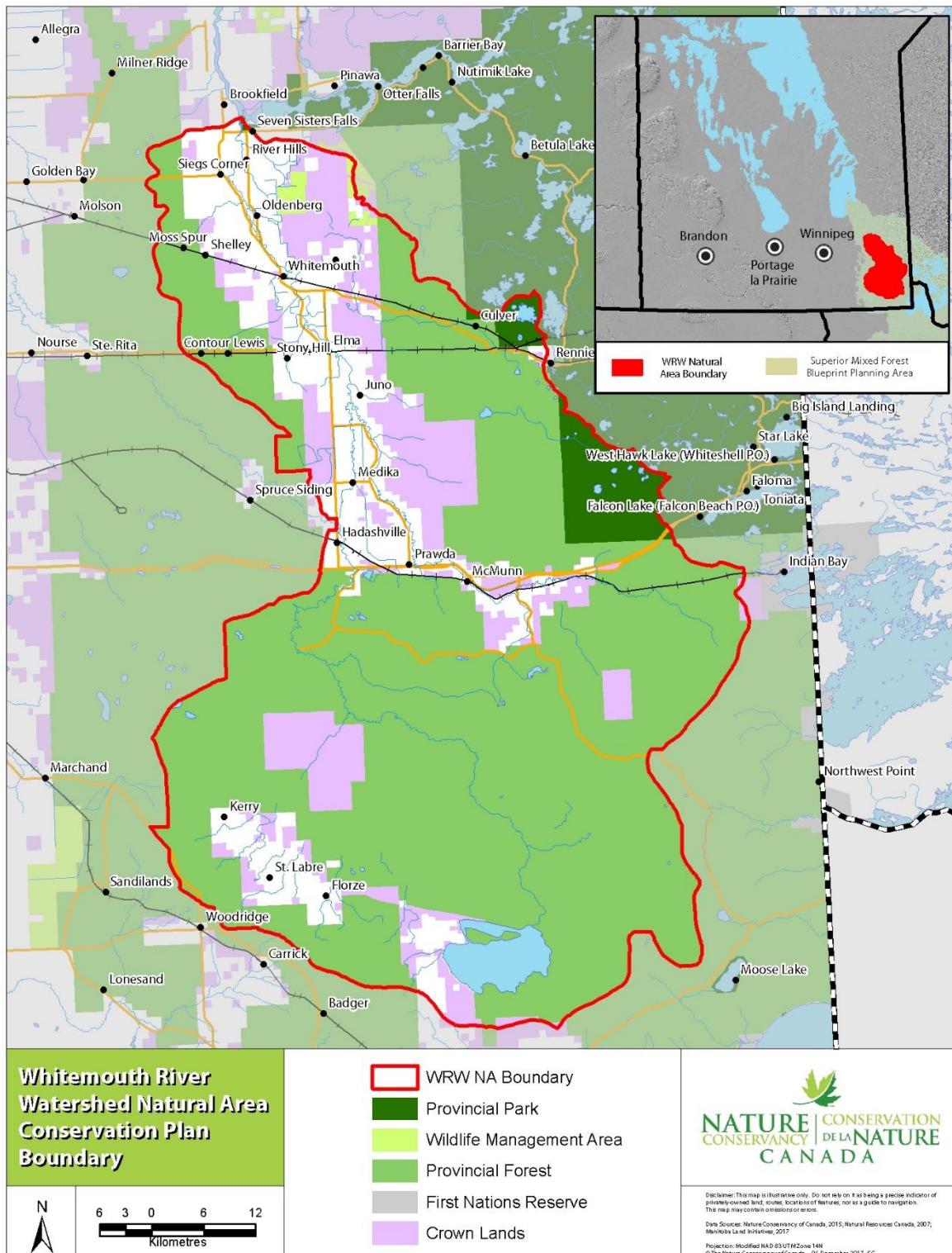
Adjacent watersheds include the Brokenhead, Seine and Rat Rivers to the west and Roseau River to the south. The southwestern boundary is contiguous with the boundary of NCC's Tall Grass Prairie Natural Area.



Tamarack fen. Photo by NCC.

The Natural Area includes the southwestern portion of Whiteshell Provincial Park, portions of which protect Canadian Shield forest and lakes and which is part of a much larger and largely contiguous complex of parks and protected areas that straddle the Manitoba-Ontario border (Whiteshell Provincial Park, Nopiming Provincial Park, Atikaki Provincial Park, South Atikaki Park Reserve and Ontario's Woodland Caribou Provincial Park).

Map 1. Whitemouth River Watershed Natural Area Boundary



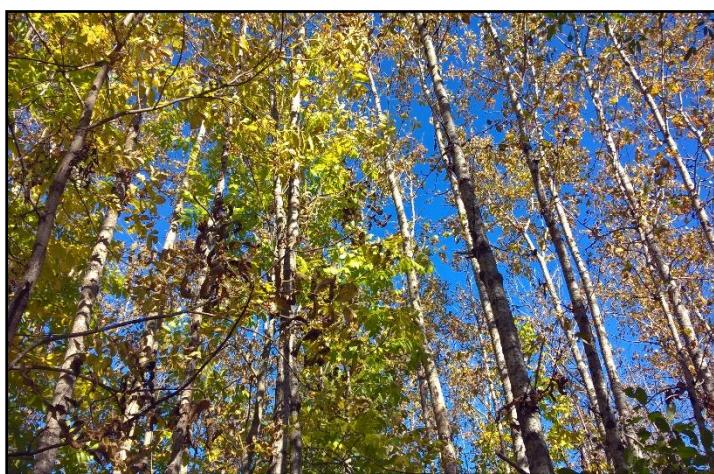
Conservation Context

The WRW represents a hotspot for species diversity in Manitoba. This landscape is the meeting place of the boreal coniferous forest, the eastern Superior mixed forest and vast peatland complexes. Sixty-five percent of the WRW was identified as part of the Superior mixed forest ecoregion conservation blueprint, including the vast Whitemouth Lake lowlands, the best example of a large patterned peatland in south-eastern Manitoba. Peatlands store more carbon per unit area than any other terrestrial ecosystem on earth and, along with other wetland types, extend across almost half of the WRW. Carbon accumulation occurs in organic matter that has built up as peat over thousands of years.



Northern Pitcherplant. Photo by NCC.

The Whitemouth and Birch Rivers wind their way, generally north, through the Natural Area towards their confluence with the Winnipeg River. Large peatland expanses dominate the southern portion of the watershed, and seepage slopes along the Whitemouth River 'Valley' in the northern portion. Bands of rich riparian gallery forest occur immediately adjacent to the Whitemouth, Birch and Boggy Rivers and Whitemouth Lake. Mixed deciduous and upland coniferous forest occurs on better-drained soils. The largely flat landscape typical of land formed under the influence of Glacial Lake Agassiz is punctuated by bedrock outcrops of the Canadian Shield in the northeastern part of the Natural Area and by a series of sandy and gravelly morainal and beach deposits along the western side.



Boreal hardwood forest. Photo by NCC.

Gray Wolf (*Canis lupus*) and the globally uncommon Mottled Duskywing (*Erynnis maritialis*) still roam the Natural Area's large blocks of relatively intact forest. The rivers of the WRW are characterized by a fauna unique among Canadian rivers and support one of Canada's only populations of the threatened Carmine Shiner (*Notropis percobromus*). Hardwood-dominated eastern deciduous floodplain forests extend over a small portion of

the landscape but support a unique species assemblage, including several provincially rare species more typical of eastern North America (e.g., Bloodroot [*Sanguinaria canadensis*] and Dutchman's Breeches [*Dicentra cucullaria*]).

In total, two globally uncommon (G3) species, nine nationally rare or uncommon (N1-N3) species and 73 provincially rare or uncommon (S1-S3) species are present in the Natural Area. Furthermore, fifteen species assessed as endangered, threatened or special concern by COSEWIC occur within the Natural Area boundary; six of these species are also listed under *Manitoba's Endangered Species and Ecosystems Act*.

The size of the rural human population of the Natural Area is generally stable and is supported by a diverse economy that includes pulse and grain farming, livestock production, forestry, mineral extraction, tourism and recreation. Riparian areas in the agricultural portions of the WRW are under a high degree of threat due to incompatible development and habitat conversion.

NCC has conserved 734 hectares (1,813 acres) through fee-simple purchase and a further 211 hectares (521 acres) through perpetual easement. Nearly one third of land conserved in the Natural Area was donated by local landowners. Other conservation organizations have conserved 149 hectares (368 acres) of riparian habitat through easement. The provincial government has protected 14,044 hectares (34,703 acres) of Crown land through the Protected Areas Initiative (including Ecological Reserves and portions of the Whitemouth Bog Wildlife Management Area and Whiteshell Provincial Park). Less than 3.5% of the land base is considered protected (IUCN Category I-IV).

Through implementation of the first generation NACP, NCC successfully secured and managed several hundred hectares of peatland and matrix forest in the WRW, and secured one riparian property. However, conservation success related to rivers and riparian areas was not fully achieved and several NACP goals were not met. Discussions with local residents and municipal leaders suggest that expanded securement and stewardship of riparian habitat is possible, but will require enhanced local engagement and coordination efforts.

The need for private land conservation and stewardship remains urgent. While private lands occupy less than 17% of the Natural Area, they correspond with the extent of several habitat types that support the rarest and most at-risk species. The vast majority of eastern deciduous floodplain forests are privately owned, for example, and most Carmine Shiner observations have occurred in the portion of the WRW with the greatest private land ownership.



Whitemouth Falls. Photo by NCC.

Building on successes from the first generation NACP and relationships built through the development of this NACP, NCC is well-positioned to continue being a conservation leader in this landscape. Over the next 10 years, NCC will work to protect significant habitats, build connections between existing protected areas,

buffer core conservation areas from potentially incompatible land uses, and protect watershed health by securing an additional 2% of the WRW's Priority 1 and 2 private lands through fee-simplle purchase and easement. While a particular focus will be on the most at-risk riparian portions of the landscape, the biodiversity values and ecosystem services of the watershed's vast peatlands is also recognized, and NCC plans to secure 1,500,000 tonnes of carbon over the next 10 years.

Through the sharing of information and expertise, NCC has the capacity to coordinate and influence the



Black Spruce swamp. Photo by NCC.

undertaking of conservation action at a scale large enough to produce measurable, watershed-scale results.

Biodiversity Targets

Target:	Carmine Shiner	Current status:	GOOD	Desired future status:	GOOD
Goals					
<ul style="list-style-type: none">🌿 Maintain Carmine Shiner populations at 2013 abundance and within 2013 distribution within the Whitemouth and Birch river systems through 2026🌿 By 2046, protect at least 50% of Carmine Shiner Critical Habitat¹ in the Whitemouth River Watershed <p><i>Milestone: By 2026, protect at least 5% of Carmine Shiner Critical Habitat¹ in the Whitemouth River Watershed</i></p>					
Target:	Eastern Deciduous Floodplain Forest	Current status:	FAIR	Desired future status:	GOOD
Goals					
<ul style="list-style-type: none">🌿 By 2046, the extent of eastern deciduous floodplain forest increases by 10% of 2016 extent <p><i>Milestone: By 2026, no net loss of eastern deciduous floodplain forest occurs within the Natural Area</i></p>					

Target: Rivers, Streams, Lakes & Associated Riparian Areas	Current status:	GOOD	Desired future status:	GOOD
Goals				
	 By 2046, >75% of lotic riparian area on private land is in permanent cover within an X ² metre buffer from the banks			
<i>Milestone: By 2026, >60% of lotic riparian area on private land is in permanent cover within an X² metre buffer from the banks</i>				
	 By 2026, maintain or increase the water quality ³ of at least one tributary in the lower Whitemouth River Watershed			
Target: Fire-dependant Upland Forest	Current status:	GOOD	Desired future status:	GOOD
Goals				
	 By 2026, at least 30% of fire-dependant forest communities burn once within twice the natural fire return			
	 By 2026, the number of locations supporting Mottled Duskywing within the Natural Area expands to 8			
Target: Forested and Non-forested Peatlands	Current status:	VERY GOOD	Desired future status:	VERY GOOD
Goals				
	 By 2066, 90% of peatlands within the Natural Area remain intact and unaffected by peat harvest			
<i>Milestone: By 2026, 99% of 2016 extent of peatlands within the Natural Area remain intact and unaffected by peat harvest</i>				
Target: Mineral Wetlands	Current status:	FAIR	Desired future status:	GOOD
Goals				
	 By 2026, the extent of wetlands within the natural area is maintained at greater than 95% of 2016 extent ⁴			
Overall target viability for the Natural Area:	Current status:	GOOD	Desired future status:	GOOD

¹ Critical habitat determined by the Department of Fisheries and Oceans as part of the Carmine Shiner Recovery Strategy (Carmine Shiner Recovery Team 2007)

² Appropriate buffer width for effectively protecting the watercourse from adjacent land use impacts within the context of the natural area is to be determined

³ Water quality defined as decreased levels of P

⁴ As determined by the Canadian Wetland Inventory mapping conducted by Ducks Unlimited

Threats

The table below includes only those threats assessed as medium or higher. This assessment is based the threat and their expected impact of the viability of the target over the course of the NACP. See the Appendix for more information on how threats are identified and assessed.

IUCN Classification*	Threat	Overall magnitude
8.1 Invasive Non-Native/Alien Species	Invasive alien species – emerging threats	Medium
1.3 Tourism and Recreational Areas	Incompatible residential or recreational dwelling development	Medium
8.1 Invasive Non-Native/Alien Species	Invasive alien species – established species	Medium
9.3 Agricultural & Forestry Effluents	Incompatible crop & animal production practices	Medium
2.1 Annual & Perennial Non-Timber Crops	Conversion of native habitat to annual & perennial cropland	Medium
	Overall Threat Status for the Natural Area	High

*See Appendix for information on IUCN Classifications

Strategic Plan

1.1 Site/Area Protection

Permanent Protection of key land parcels

Importance: Critical

- Secure Priority 1 or 2 land dominated by peatland through fee-simple purchase by December 2026
- Secure Priority 1 or 2 land adjacent to a watercourse through fee-simple purchase by December 2026
- Opportunistically secure additional land by December 2026
- Secure Priority 1 or 2 lands through easement by December 2026
- Annually submit list of newly-acquired NCC lands to the Government of Manitoba's Protected Areas Initiative (PAI) for inclusion in Manitoba's Protected Areas Network. Encourage PAI to consider protecting ecologically significant Crown lands in the Natural Area.

1.3 Conservation Science & Planning

Conservation Planning

Importance: Necessary

- Review progress of the NACP annually (formal progress reports completed bi-annually)
- By November 2026, review and update the Whitemouth River Watershed NACP

Climate Change Adaptation

Importance: Necessary

- By December 2018, undertake climate change adaptation of the NACP and revise, if necessary

Address Key Knowledge Gaps

Importance: Necessary

- Determine the full extent of eastern deciduous forest within the Natural Area by December 2021
- Determine whether Carmine Shiner distribution extends beyond currently known distribution by December 2021
- Investigate the potential effect that the introduction of Emerald Ash Borer and invasive Phragmites would have on eastern deciduous forest and black ash swamp communities by December 2021
- Investigate whether peatlands are susceptible to invasion by invasive Phragmites by December 2021
- Determine if regional drainage systems have a significant effect on peatland hydrology by December 2026
- Examine the potential effects of a water control structure being installed at the outlet of Whitemouth Lake by December 2026
- Examine the implications of peat harvest on local bog biodiversity
- Opportunistically address additional knowledge gaps throughout the NACP implementation period

2.1 Site/Area Management

Prepare Stewardship Documentation

Importance: Necessary

- Prepare Baseline Inventories for fee-simple properties within one year of closing and Property Management Plans (PMPs) following NCC's approved Policies, Procedures, Standards and Guidelines.

Conduct stewardship actions on NCC-managed properties as required

Importance: Necessary

- Conduct stewardship actions on acquired properties, including short-term stewardship action outlined in Conservation Project Summaries (CPSs), longer term actions as outlined in PMPs. Annually satisfy taxation and other legal obligations for all fee-simple properties.

Monitor Conservation Agreements

Importance: Necessary

- Monitor all Conservation Agreement properties annually following NCC's approved Procedures, Policies, Standards and Guidelines.

Implement status and effectiveness monitoring

Importance: Necessary

- Conduct status and effectiveness monitoring as prescribed by NACP

2.2 Invasive/Problematic Species Control

Prevent the establishment and expansion of emerging Alien Invasive Species

Importance: Necessary

- Engage aquatic invasive species experts to determine priority species and actions by December 2017
- Work with local organizations to develop a watershed-scale plan to implement prevention techniques identified in activity 2.2.1 by December 2018
- Design and implement surveillance/management program for emerging aquatic invasive species by June 2019

Objectives:

-  By 2026, invasive Phragmites has not become established in any natural mineral wetlands
-  Control efforts in the Whitemouth River System prevent Rusty Crayfish from spreading into the Winnipeg river system during the NACP implementation period
-  Zebra mussels do not establish in the Natural Area throughout NACP implementation period

2.3 Habitat & Natural Process Restoration

Improve the condition and connectivity of the Whitemouth River and associated tributaries

Importance: Necessary

- Conduct Natural Area-wide analysis to identify fish passage barriers by December 2019
- Provide ongoing support to Rural Municipalities (RMs) and Crown Lands for any activities to remove barriers or utilize fish-friendly construction practices
- Improve connectivity with enhancement project on NCC-owned or managed land by December 2026
- Identify high priority regions of the Whitemouth River and tributaries by December 2020

Objectives:

-  One fish passage barrier removed during NACP implementation period

Build Forest Restoration Capacity

Importance: Necessary

- Find local seedling/seed harvesting source for restoration projects by June 2018
- Determine the feasibility of eastern deciduous floodplain forest restoration projects in the region by June 2019.
- Establish guidelines for forest restoration projects on NCC-land by December 2019
- Identify local groups interested in partnering to restore forest on NCC or other private land by June 2020

Objectives:

-  Any forest restoration projects completed by NCC during NACP implementation follow developed guidelines and utilize local seedlings appropriate for site conditions

Restore Peatland Hydrology

Importance: Beneficial

- Examine the need to restore peatland hydrology on NCC-owned land by December 2018

Objectives:

-  Identify and restore hydrology at least one peatland site during the NACP implementation period

3.2 Species Recovery

Examine distribution of Mottled Duskywing

Importance: Necessary

- Develop survey methodology, determine survey sites and manage survey effort by December 2021
- Conduct surveys of Mottled Duskywing habitat by December 2021
- Summarize findings from surveys by June 2022.

Objectives:

-  By December 2021, at least 10 sites containing suitable habitat have been surveyed for the Mottled Duskywing

4.3 Awareness & Communications

Raise awareness of NCC's work, conservation practices, science and stewardship and program opportunities

Importance: Necessary

- Undertake initiatives with a focus on sharing information about conservation, management programs and research which includes, but is not limited to, information about the Natural Area
- Engage with conservation easement holders annually by providing materials on land management practices and opportunities

Objectives:

-  By 2026, at least 10 local residents have attended local conservation volunteer events hosted by NCC.

Develop Communications Plan & Implement

Importance: Necessary

- Develop a communications plan by June 2017
- Implement communications plan by July 2017 & review every two years as part of NACP progress report

Objectives:

-  By June 2017, all Natural Area communications by NCC staff are consistent with the communications plan

Community Engagement

Importance: Necessary

- By February 2017, re-engage NACP workshop participants
- By June 2017, develop engagement program targeting residents and non-residents. Upon development, implement annually.

Objectives:

-  At least one engagement event is held annually

5.1 Legislation

Provide support to Regional Development and Planning Initiatives

Importance: Necessary

- Engage RMs and participate in regional development planning processes

5.2 Policies & Regulations

Provide support to Crown Land planning activities

Importance: Necessary

- Provide support to Crown Lands Branch to help identify crown lands of exceptional ecological importance
- Provide support to Sustainable Development – Forestry and Peatlands Branch to help identify significant peatlands throughout the NACP implementation period
- Take part in Provincial Forest management plan reviewing process throughout the NACP implementation period

Objectives:

-  Provide knowledge-transfer to at least one public body affecting management or policy on public crown lands during the NACP implementation period.
-  Provincial government land management decisions on Provincial Forest and other Crown lands is informed by NCC's information

5.4 Compliances & Enforcement

Conservation Agreement Enforcement

Importance: Necessary

- In the event of a breach of a Conservation Agreement, follow NCC's Policies, Procedures, Standards, and Guidelines and obtain legal counsel where appropriate

7.2 Alliance & Partnership Development

Carmine Shiner Recovery Assistance

Importance: Beneficial

- Provide ongoing support to the Carmine Shiner Recovery Team

Promote NCC through Eastman Tourism Partnership

Importance: Beneficial

- Continue to be engaged with tourism initiatives through partnership with Eastman Tourism throughout the NACP implementation period

*Strategies are ranked on their relative importance to achieving the biodiversity goals of the plan. These rankings are defined as follows.

Critical: Conservation strategies that, without implementation, would clearly result in the reduction of viability of a biodiversity target or the increase in magnitude of a critical threat within the next 5-10 years. Also includes information that requires research before important decisions can be made on the management of biodiversity targets.

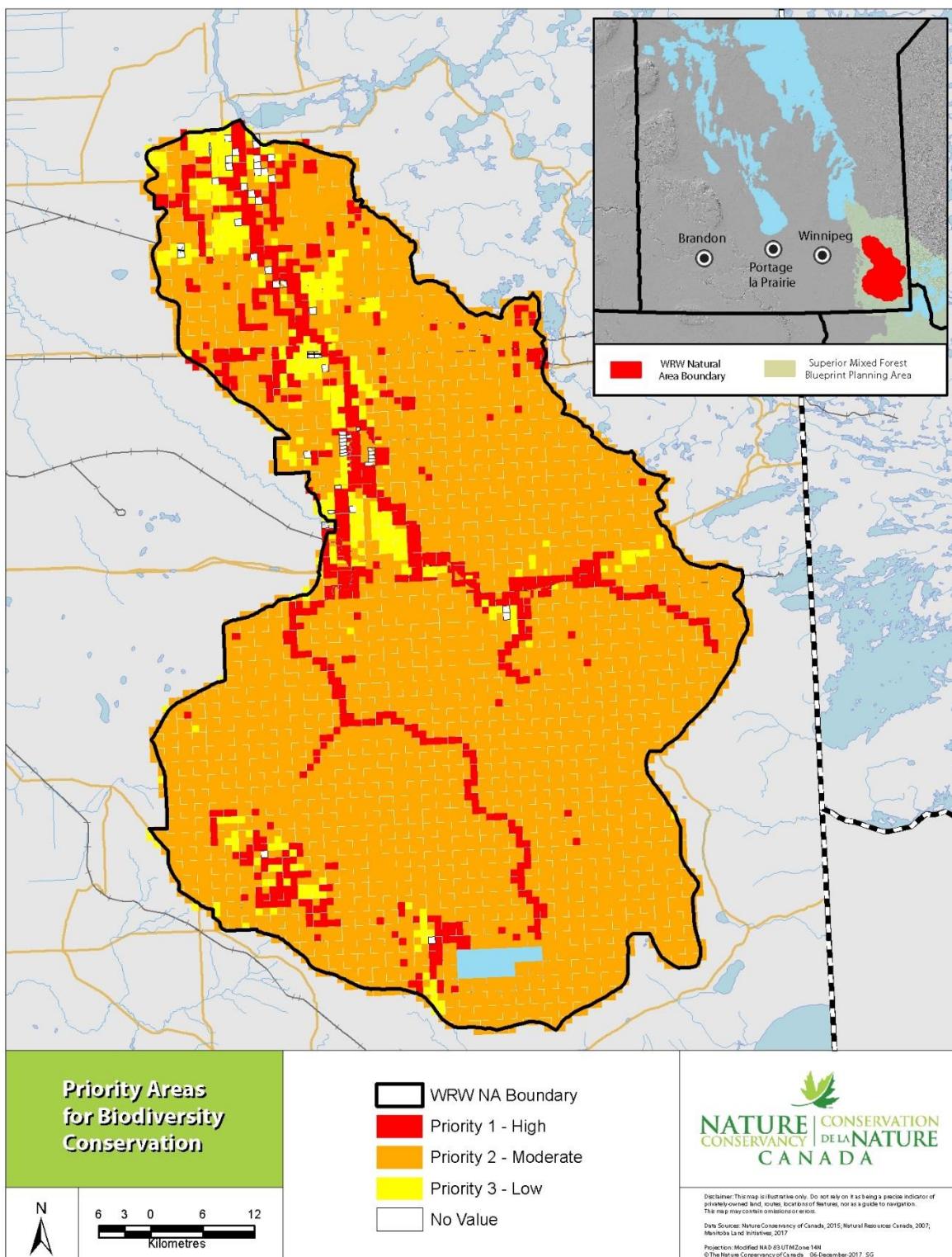
Necessary: Conservation strategies that are needed to maintain or enhance the viability of biodiversity targets or reduce critical threats. Also includes research that will inform decisions regarding management of biodiversity targets.

Beneficial: Conservation strategies that will assist in maintaining or enhancing viability of biodiversity targets and reducing threats.

Priority Areas for Biodiversity Conservation

In order to focus conservation efforts and ensure the most efficient and effective use of resources, NCC conducts an analysis to identify priority areas within the Natural Area landscape. This analysis considers the presence, distribution, and relative abundance of biodiversity targets, Species at Risk, and existing conservation lands within the Natural Area. By using this prioritization to guide the delivery of activities and programming, NCC strives to obtain the best possible impact on defined biodiversity targets while minimizing threats to those targets.

Map 2. Priority areas for delivering conservation programming



Project Team

Primary Authors: Jordan Becker & Cary Hamel, Nature Conservancy of Canada

Planning Team:

Name	Organization	Role
Cary Hamel	NCC - Manitoba Region	Team member
Christine Chilton	NCC - Manitoba Region	Team member
Claire Elliott	NCC - Ontario Region	Project advisor
Jeff Polakoff	NCC - Manitoba Region	Team member
Jordan Becker	NCC - Manitoba Region	Team Member
Julie Pelc	NCC - Manitoba Region	Team member
Kevin Teneycke	NCC - Manitoba Region	Team member
Laura Holt	NCC - Manitoba Region	Team member
Mhairi McFarlane	NCC - Ontario Region	Project advisor
Stephen Gietz	NCC - Manitoba Region	Team member
Steven Harper	NCC - Manitoba Region	Team member
Tim Teetaert	NCC - Manitoba Region	Plan lead

Acknowledgements

A number of external collaborators provided information critical to developing the strategic plan portion of the NACP, as well as key insights that helped in the assessment of biodiversity targets and threats. Dr Pete Whittington of Brandon University, provided important background about peatland hydrology, restoration and threats to peatland viability. Sarah Scarlett, of Manitoba Sustainable Development, provided an update to NCC of the provincial policy and management of crown peatlands. Michael Doig, of Manitoba Sustainable Development provided NCC with information about the management and harvest of provincial forests, in addition to outlining private woodlot management in southeast Manitoba. Manitoba Sustainable Development's Regional Fisheries Manager Derek Kroeker provided critical information about the state of fisheries, riparian areas and watercourses/lakes in southeast Manitoba, with a particular focus on both Whitemouth Lake and the Whitemouth River. David Young, a local watershed resident, provided NCC with a report outlining water quality monitoring research in the watershed. Terry Bus, of Manitoba Agriculture, provided an overview of agricultural trends in the region.

Thirteen participants (with local ties to the Natural Area) provided expert knowledge during an NACP Planning workshop ranging from scientific research, monitoring, policy and local insight.

NCC Manitoba's Scientific Advisory Committee (Robert Wrigley, Bob Jones, Terry Galloway, Liz Punter, Nicola Koper, Larry De March) provided advice through a review of the Natural Area's boundary and target/threat identification, and during discussions regarding strategic direction.

NACP development was supported by a grant from the Province of Manitoba and the Government of Canada's Natural Areas Conservation Program. This program is a unique public-private partnership to accelerate the pace of land conservation across southern Canada. NCC manages the program. Federal funds are matched by contributions raised by NCC and its partners.

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Appendix

Conservation Planning Approach

NCC has committed to examining the effectiveness of conservation activities using an adaptive management approach. To do so, NCC adopted the Conservation Measure's Partnership (CMP)'s *Open Standards for the Practices of Conservation* as an adaptive and results based planning method. For more information on this approach and the methods used in the development of this NACP visit:

<http://cmp-openstandards.org/>

Threat and Conservation Actions Classifications

Threat and Conservation Action Class and Nomenclature are based on the International Union for Conservation of Nature (IUCN) Classification Schemes:

Conservation Actions:

<http://www.iucnredlist.org/technical-documents/classification-schemes/conservation-actions-classification-scheme-ver2>

Threats:

<http://www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme>