



Non-native and Invasive Species: Implementation Guidelines



Leafy Spurge near the Battle River
(photograph courtesy of Flagstaff County)

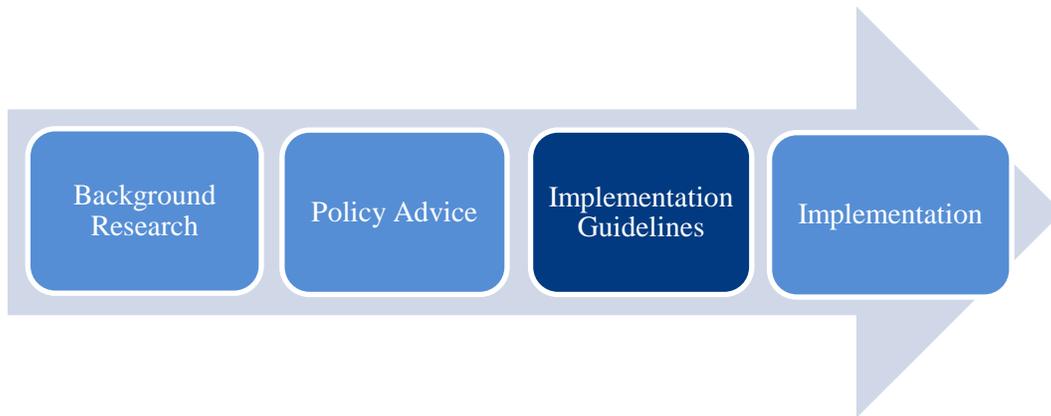
*Serving the Battle River and
Sounding Creek watersheds
in Alberta*

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About This Document

Non-native and invasive species management is one component of the BRWA’s watershed management planning (WMP) process. For each component, a background research report, policy advice, and implementation guidelines are developed. This process is outlined in the figure below, and more information is also provided on page 17. The following document outlines the BRWA’s policy advice for non-native and invasive species management in the Battle River and Sounding Creek watersheds in Alberta.



BRWA Watershed Management Planning Process

These implementation guidelines were developed with broad input from watershed residents, stakeholders and decision-makers, and is supported by information compiled in the BRWA’s *Non-native and Invasive Species Management: A Review of Policies and Practices* report¹.

Accompanying Policy Advice

This implementation guidelines document is accompanied by a corresponding policy advice document². Whereas the policy advice document puts forward an overarching policy direction for non-native and invasive species management, this implementation guidelines document describes options for management actions and strategies aimed at supporting the implementation of that policy direction.

Alberta Water Council Recommendations

The Alberta Water Council recently released recommendations for aquatic invasive species management in Alberta.³ The BRWA supports these recommendations and encourages their implementation in the Battle River and Sounding Creek watersheds of Alberta.

The Alberta Water Council recommends that the Government of Alberta:

- continue working with governments and national, regional and local partners to enhance the effectiveness of the provincial Aquatic Invasive Species (AIS) program, focusing particularly on: prevention; increasing public awareness of AIS and their potential impacts, targeting high-risk audiences; and supporting AIS-related stakeholder communication and coordination networks
- collaborate and support industry, non-government organizations, academia and governments to develop and disseminate effective AIS tracking and control options for long-term management
- work with its partners to communicate success stories of AIS management
- work with the Alberta Environmental Monitoring, Evaluation and Reporting Agency [*now the Government of Alberta's Environmental Monitoring and Science Division*] to develop and begin implementing a provincial AIS monitoring plan for fish, invertebrates and aquatic plants, with assistance from stakeholders including citizen scientists
- maintain the mandatory watercraft inspections element of the AIS program and also begin inspecting other vectors of potential introduction. This should include working with stakeholders where inspections are planned to raise the profile of the issue and increase buy-in from the public
- have a protocol in place to ensure fishery officers and fishery guardians are educated and trained on their authority to enforce AIS legislation
- share information on enforcement activities and potential penalties with stakeholders and the public to raise the profile of the AIS issue

Guideline Purpose

The purpose of this document is to provide implementation guidelines for the prevention, early detection, and management of non-native and invasive species in the Battle River and Sounding Creek watersheds of Alberta.

Guideline Objectives

This document seeks to support non-native and invasive species management in the Battle River and Sounding Creek watersheds through:

- local and regional invasive species prevention, early detection, and management strategies and actions,
- invasive species monitoring, supported by citizen science and education, and
- ongoing investigation of emerging invasive species risks.

Using the Guidelines

These implementation guidelines apply to the Battle River and Sounding Creek watersheds within Alberta, and are intended for all residents, stakeholders and decision-makers within these watersheds. This includes all four orders of government (municipal, provincial, federal and First Nations), urban and rural residents, agricultural producers, business and industry, environmental and community organizations, academia and watershed stewardship groups. See page 18 for a map of these watersheds.

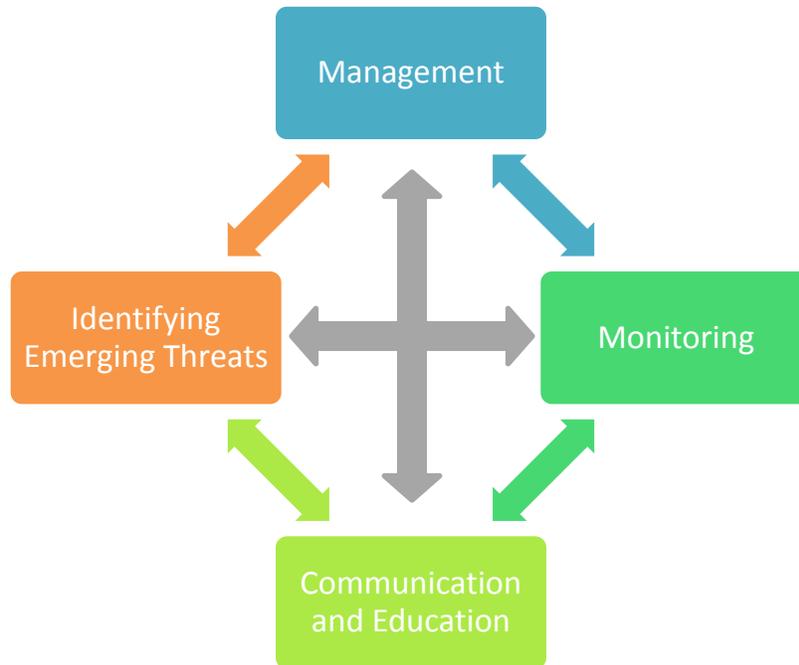
Specific guidelines for each stakeholder group, as applicable, are described in each section. Some guidelines appear multiple times as they apply to multiple stakeholders. The section numbers adjacent to each guideline refer to the section(s) in the *Non-native and Invasive Species Management: A Review of Policies and Practices* report¹ from which the guidelines are derived. More information on a particular guideline can be found there. Italicized text below guidelines provides additional information relevant to those guidelines.

The BRWA's WMP process is non-regulatory. This means that implementation of the policy advice and implementation guidelines developed for each of the BRWA's 12 watershed management priority areas is dependent on the voluntary actions of watershed residents, stakeholders and decision-makers. In addition, implementation of these recommendations is based on an adaptive management approach. The BRWA recognizes that we do not have a complete understanding of the natural and social systems functioning within the Battle River and Sounding Creek watersheds. Implementation actions are viewed as experiments that may or may not result in the desired outcomes; lessons learned through these experiments allow us to collectively improve watershed management approaches over time.

The BRWA will work to support the implementation of policies and management practices that align with the goals and objectives outlined in this document.

Invasive Species Management Framework

The invasive species management policy advice and implementation guidelines are organized into four interrelated categories (see figure below). Coordinated management strategies, plans, and practices are supported and informed by ongoing monitoring efforts, communication and education work, and the identification of emerging invasive species threats. In turn, each of these areas of work may support and inform the other areas.



BRWA Invasive Species Management Framework

Implementation Guidelines

1 Invasive Species Management

Invasive species are defined as any species whose introduction or spread causes or may cause harm to the local environment, human health, society and economic activity. Watershed-scale invasive species management encourages collaboration and coordination of efforts among many jurisdictions, organizations, and communities.

Policy Advice:

It is recommended that a comprehensive and coordinated terrestrial and aquatic invasive species management approach be developed and implemented in Alberta, with direction for watershed-specific actions required in the Battle River and Sounding Creek watersheds. Such an approach should include the development of management strategies with provisions for the early detection, rapid response, and long-term management of invasive species.

Implementation Guidelines:

Landowners and Land Managers

Guidelines	Policy report section
<p>1.1 Implement beneficial management practices that support non-native and invasive species management. Support may be available from municipalities and other agencies (see recommendations 1.3 and 1.4).</p> <p><i>Beneficial management practices may include:</i></p> <ul style="list-style-type: none"> ▪ <i>maintaining or improving the health of riparian areas in order to reduce the opportunity for invasive plants to establish</i> ▪ <i>managing invasive plants in upland areas to prevent spread into riparian areas</i> ▪ <i>taking action promptly when new infestations of invasive plants are found</i> ▪ <i>distributing livestock evenly and using rotational grazing to keep grazing pressure in balance with forage productivity</i> ▪ <i>using manual or biological control measures to manage invasive plants</i> ▪ <i>cleaning/decontaminating equipment when moving between sites</i> <p><i>Note: Under the Alberta Weed Control Act⁴, individuals are responsible for controlling noxious weeds and destroying prohibited noxious weeds found on land they own or occupy. A comprehensive list of noxious and prohibited noxious weeds can be found in the Alberta Weed Control Regulation⁵.</i></p>	<p>5.2, 6.2.1</p>

All Individuals and Agencies Involved in Water-based Recreation, Activities and Programs

Guidelines	Policy report section
<p>1.2 Adhere to the “Clean, Drain, Dry” and “Play, Clean, Go” principles, as well as other recognized decontamination protocols developed by various sectors in order to prevent the spread of invasive species.</p> <p><i>Individuals and agencies should seek out sector and species-specific decontamination protocols that may apply to their activities and programs.</i></p>	6.2.1

Agricultural Service Boards, Research and Forage Associations; Alberta Invasive Species Council; Battle River Watershed Alliance

Guidelines	Policy report section
<p>1.3 Work with municipalities, agricultural producers and other rural landowners to implement beneficial management practices that support non-native and invasive species management. <i>(see recommendation 1.1 for examples of beneficial management practices)</i></p>	5.2

Municipal Governments

Guidelines	Policy report section
<p>1.4 Work with agricultural producers and other rural landowners to implement beneficial management practices that support non-native and invasive species management. <i>(see recommendation 1.1 for examples of beneficial management practices)</i></p>	5.2
<p>1.5 Where possible, prevent non-native and invasive plant species from becoming established in large tracts of undisturbed native vegetation.</p> <p><i>All ecosystems in the prairie and parkland natural regions contain many non-native plants. Eradication of these plants from small areas that are continually “invaded” is not feasible.</i></p>	5.2.1
<p>1.6 Work with partners to identify appropriate and effective means of invasive plant control near waterbodies.</p> <p><i>Invasive plant management options near waterbodies are currently limited due to herbicide restrictions and, in some cases, accessibility issues.</i></p> <p><i>Partners may include the agricultural service boards and research groups, Alberta Invasive Species Council, Battle River Watershed Alliance, Government of Alberta, and others.</i></p>	5.2.1.1

Guidelines	Policy report section
<p>1.7 Work with partners to investigate the feasibility of using manual and biological control measures to manage invasive plant species in the Battle River and Sounding Creek watershed and implement pilot projects where feasible.</p> <p><i>Manual and biological control measures are particularly useful in areas around water where herbicide use is restricted.</i></p> <p><i>Partners may include the agricultural service boards and research groups, Alberta Invasive Species Council, Battle River Watershed Alliance, Government of Alberta, and others.</i></p>	5.2.1.1

Government of Alberta

Guidelines	Policy report section
<p>1.8 Work with partners to develop an Invasive Species Early Detection and Rapid Response Plan for Alberta, which would outline a process for dealing with new invasive species introductions in the province.</p> <p><i>The “Invasive Species Early Detection and Rapid Response Plan for British Columbia”⁶ may serve as a reference for the development of such a plan.</i></p> <p><i>Partners may include municipal governments, Alberta Invasive Species Council, Battle River Watershed Alliance, and others.</i></p>	5.1.1, 6.2.2
<p>1.9 Work with partners to develop specific management strategies for invasive aquatic and terrestrial species that have been identified as a serious threat to social, economic and ecological systems in the province. Such strategies would include actions required for early detection, rapid response, and long-term management. These plans should outline watershed-specific actions to be taken.</p> <p><i>Invasive species management plans from surrounding jurisdictions may serve as a reference for the development of such strategies.</i></p> <p><i>Partners may include municipal governments, Alberta Invasive Species Council, Battle River Watershed Alliance, and others.</i></p>	5.1

Canadian Food Inspection Agency

Guidelines	Policy report section
<p>1.10 Look into developing a more robust screening process for wildflower and native seed packages sold in Canada.</p> <p><i>Wildflower and native seed packages may contain invasive species, or plant species from other regions that are non-native to Canada or particular regions of Canada where they are sold.</i></p>	6.2.7

2 Invasive Species Monitoring

Ongoing monitoring is essential to the prevention and early detection of new invasive species. The earlier an invasive species is detected, the greater the likelihood that it may be contained or eradicated altogether.

Policy Advice:

It is recommended that current aquatic and terrestrial invasive species monitoring programs in the Battle River and Sounding Creek watersheds be continued and expanded, and that new programs be developed where gaps exist (related to the species monitored, locations covered, etc.). Where possible, citizen science should be incorporated into these programs.

Implementation Guidelines:

All Residents, Landowners, Land Managers and Agencies Involved in Invasive Species Monitoring

Guidelines	Policy report section
<p>2.1 Use the EDDMapS Alberta system to report invasive species discovered in the Battle River and Sounding Creek watersheds.</p> <p><i>This will enable information on invasive species distribution to be consolidated into a single database.</i></p> <p><i>New invasive species should also be reported directly to the Government of Alberta.</i></p>	6.2.1

Battle River Watershed Alliance

Guidelines	Policy report section
<p>2.2 Encourage watershed residents to undertake invasive species monitoring and use the EDDMapS Alberta system to report any invasive species discovered in the Battle River and Sounding Creek watersheds.</p> <p><i>These citizen science efforts may enhance invasive species identification and mapping efforts.</i></p>	6.2.1

Municipal Governments

Guidelines	Policy report section
2.3 Continue current terrestrial invasive plant species inspection and monitoring programs and expand (as necessary) to address any gaps in delivery.	5.1.2, 6.2.1
2.4 Use the Agricultural Infestation Management System or a comparable system to map and track invasive plant species infestations (distribution, density, etc.) from year to year.	6.1, 6.2.1

Guidelines 2.3 and 2.4 support municipal government responsibilities to enforce and monitor compliance with the Alberta Weed Control Act.⁴

Government of Alberta

Guidelines	Policy report section
<p>2.5 Continue current aquatic invasive species watercraft inspection and ecosystem monitoring programs and expand (as necessary) to address gaps in delivery in the Battle River and Sounding Creek watersheds.</p> <p><i>Future programs may build upon aquatic invasive species monitoring programs developed by the Alberta Lake Management Society (aquatic plants focus) and Government of Alberta (fish and mussels focus). Watershed residents may be involved through the development of citizen science programs to support monitoring work.</i></p> <p><i>Partners may include municipal governments, Alberta Lake Management Society, and Battle River Watershed Alliance.</i></p>	6.2.1
2.6 Work with municipalities and the Alberta Invasive Species Council to investigate means of incorporating municipal government invasive species monitoring data into provincial databases and management systems (for example, the EDDMapS Alberta system).	6.1, 6.2.1

3 Invasive Species Communication and Education

Communication and engagement of watershed residents, stakeholders and decision-makers is required in order to create broad-based support for invasive species monitoring, prevention and management programs. Educational efforts also help to promote desired behaviours that support these programs.

Policy Advice:

It is recommended that invasive species communication, education and engagement programs be expanded in the Battle River and Sounding Creek watersheds.

Implementation Guidelines:

All partners involved in invasive species education, inspection, monitoring and management

Guidelines	Policy report section
<p>3.1 Explore opportunities to incorporate citizen science and hands-on resident involvement into invasive species programs.</p> <p><i>Veliger (larval) and adult mussel monitoring through water sampling, the use of submerged substrates, and other appropriate methods.</i></p> <p><i>This may involve using the EDDMapS Alberta system and/or other methods for reporting invasive species.</i></p>	5.1.2

Battle River Watershed Alliance

Guidelines	Policy report section
<p>3.2 Develop a fact sheet to share information on invasive plant species management in riparian areas (impacts, common species and management recommendations).</p> <p><i>This fact sheet may build upon existing fact sheets such as the Government of Alberta’s “Invasive Plants in Alberta” fact sheet series and the Alberta Invasive Species Council’s species-specific fact sheets.</i></p>	5.2.1.1
<p>3.3 Work with partners to distribute invasive species resources broadly across the Battle River and Sounding Creek watersheds.</p> <p><i>Resources may include the Government of Alberta’s “Invasive Plants in Alberta” fact sheet series, aquatic invasive species fact sheets, “Clean, Drain, Dry” and “Don’t Let It Loose” resources, as well as the Alberta Invasive Species Council’s “Play, Clean, Go” resources, “Grow Me Instead” brochures, and other materials.</i></p>	6.2.1

Guidelines	Policy report section
<p><i>Partners may include municipal governments, agricultural service boards and research groups, environmental/community organizations, and local businesses (greenhouses, pet stores, etc.).</i></p>	
<p>3.4 Work with partners to develop and distribute terrestrial and aquatic invasive species identification guides in the Battle River and Sounding Creek watersheds.</p> <p><i>The “Alberta Invasive Plant Identification Guide”⁷ (developed by Wheatland County) and the “Aquatic Plants of Alberta”⁸ guide (developed by the Alberta Lake Management Society) may be used or updated to incorporate new information and address particular invasive species of concern in east-central Alberta.</i></p> <p><i>Partners may include Alberta Invasive Species Council and municipal governments.</i></p>	6.2.1

Municipal Governments

Guidelines	Policy report section
<p>3.5 Identify current locations where invasive species signage and resource materials are present and put additional signage and resource materials in place where gaps exist.</p> <p><i>Various invasive species programs have associated signage:</i></p> <ul style="list-style-type: none"> ▪ <i>Clean, Drain, Dry (aquatic invasive plant and mussel species)</i> ▪ <i>Play, Clean, Go (terrestrial invasive plant species)</i> ▪ <i>Don’t Let It Loose (aquatic invasive species)</i> <p><i>The Battle River Watershed Alliance may provide support in implementing this recommendation.</i></p>	6.2.1

Government of Alberta

Guidelines	Policy report section
<p>3.6 Continue to enhance Clean, Drain, Dry resources to include the various kinds of watercraft and recreational water users that may apply the Clean, Drain, Dry principles (motorized and non-motorized watercraft, waterfowl hunters, anglers, etc.). Work with local and regional agencies and municipalities to ensure that these resources are distributed broadly across Alberta.</p>	6.2.1

4 Identification of Emerging Invasive Species Threats

Early identification of emerging threats is required to determine which species may have the potential to be invasive in a particular region. Although not currently a known threat, identification prior to introduction will reduce potential harm.

Policy Advice:

It is recommended that ongoing research be undertaken to determine key invasive species threats in Alberta, including geographically-based risk assessments to evaluate probabilities of invasive species arrival, establishment, spread and impacts across Alberta.

Implementation Guidelines:

Alberta Biodiversity Monitoring Institute, Municipal Governments, Government of Alberta

Guidelines	Policy report section
<p>4.1 Continue to monitor terrestrial and aquatic non-native and invasive species distribution and abundance in Alberta and assess trends over time.</p> <p><i>Work with all partners involved in non-native and invasive species monitoring to ensure all relevant non-native and invasive species distribution and abundance data is included in these assessments.</i></p>	5.1.2
<p>4.2 Undertake geographically-based risk assessments on a regular basis to evaluate new aquatic and terrestrial invasive species threats in Alberta.</p>	5.1.2

About the Battle River Watershed Alliance

The Battle River Watershed Alliance (BRWA) was created in 2006 as a non-profit society. Shortly after its formation, the BRWA was selected by Alberta Environment, under *Water for Life: Alberta's Strategy for Sustainability*⁹, as the designated Watershed Planning and Advisory Council (WPAC) for the Battle River and Sounding Creek watersheds within Alberta. See page 18 for a map of the Alberta portions of these watersheds.

Under Alberta's *Water for Life* strategy, WPACs have a role to report on the state of the watershed, lead in watershed planning, develop best management practices, educate users of the water resource and foster stewardship activities within the watershed.

The BRWA works in partnership with communities, individual watershed residents, watershed stewardship groups, all four orders of government (municipal, provincial, federal and First Nations), industry, academia, and environmental organizations to promote the health and sustainable management of the land and water resources of the Battle River and Sounding Creek watersheds using the best science and social science available.

We exist to have a watershed that sustains all life by using sound knowledge, wisdom, and wise actions to preserve our watershed for future generations.

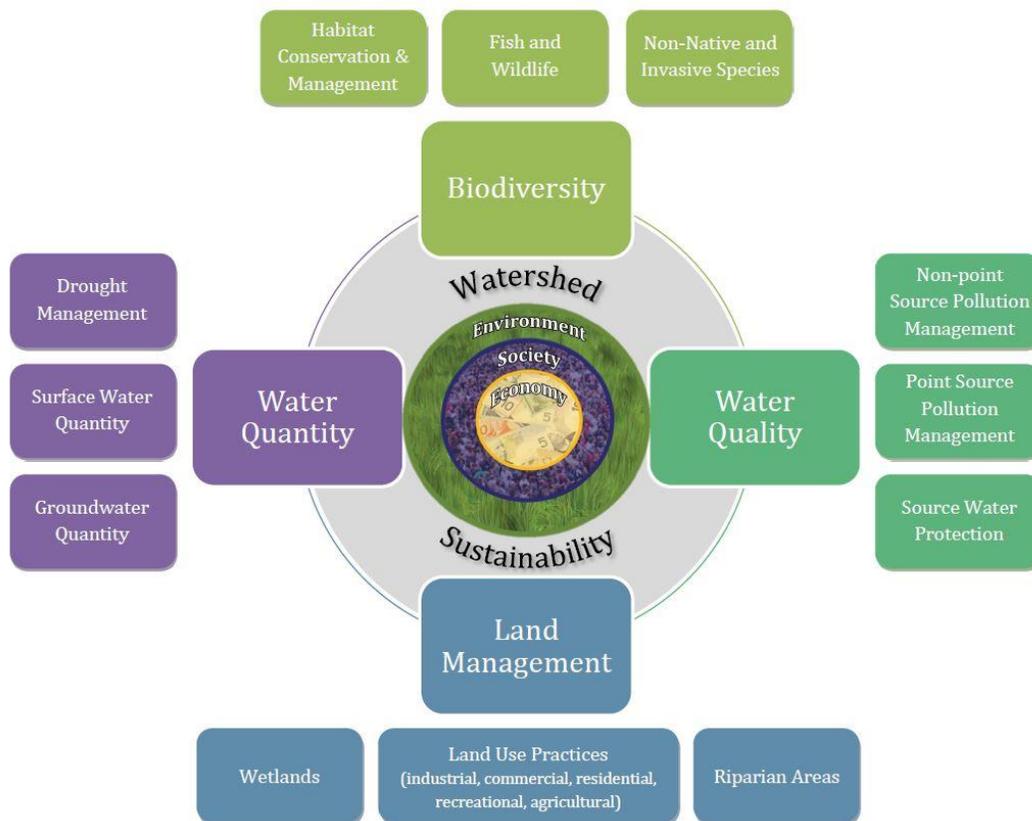
About BRWA's Watershed Management Planning Process

As the provincially designated Watershed Planning and Advisory Council (WPAC) for the Battle River and Sounding Creek watersheds within Alberta, the BRWA has a role to lead in watershed planning.

The BRWA's Watershed Management Planning Process was initiated in 2011. This planning process will ultimately result in a comprehensive Watershed Management Plan for the Battle River and Sounding Creek watersheds in Alberta, and is guided by the *Battle River Watershed Management Planning Process Phase Two Terms of Reference*¹⁰.

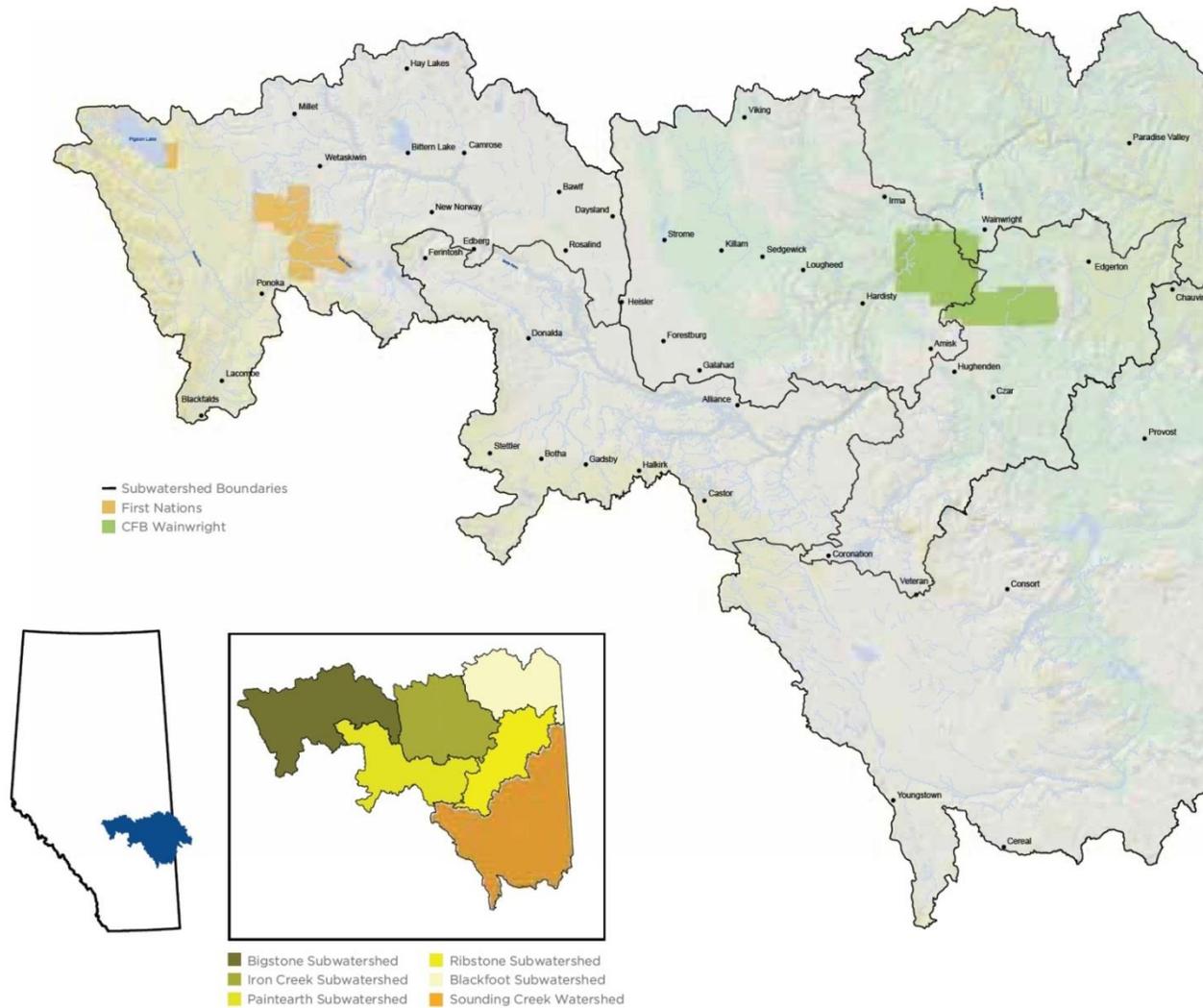
The Watershed Management Planning Process will address a number of watershed management priorities that have been identified through the BRWA's 2011 State of the Watershed Report¹¹ and extensive public engagement. These priorities are outlined in the figure below.

Policy advice and implementation guidelines will be developed for each of these priority areas. These documents will comprise the Watershed Management Plan for the Battle River and Sounding Creek watersheds in Alberta.



Key components of the BRWA's Watershed Management Planning Process

Battle River and Sounding Creek Watersheds within Alberta



Endnotes

- ¹ Battle River Watershed Alliance (BRWA). 2016a. *Non-native and Invasive Species Management: A Review of Policies and Practices*. BRWA Watershed Planning Document, 66 pages.
- ² Battle River Watershed Alliance (BRWA). 2016b. *Non-native and Invasive Species Management: Policy Advice*. BRWA Watershed Planning Document, 12 pages.
- ³ Alberta Water Council. (2016). *Recommendations to Improve Aquatic Invasive Species Management in Alberta*. Edmonton, Canada: Alberta Water Council.
- ⁴ Weed Control Act (Statutes of Alberta 2008 cW-5.1)
- ⁵ Weed Control Regulation (Alberta Regulation 19/2010)
- ⁶ Inter-Ministry Invasive Species Working Group. (2014). *Invasive species early detection and rapid response plan for British Columbia*. Victoria, British Columbia: Government of British Columbia.
- ⁷ Wheatland County. (2011). *Alberta Invasive Plant Identification Guide*. Alberta, Canada: Wheatland County.
- ⁸ Alberta Lake Management Society. (2016). *Aquatic plants of Alberta: A collection of native and invasive species*. Edmonton, Canada: Alberta Lake Management Society.
- ⁹ Government of Alberta. 2003. *Water for Life: Alberta's Strategy for Sustainability*. 31 pages.
- ¹⁰ Battle River Watershed Alliance (BRWA). 2012. *Battle River Watershed Management Planning Process Phase Two Terms of Reference*. Battle River Watershed Alliance Watershed Planning Report, 36 pages.
- ¹¹ Battle River Watershed Alliance (BRWA). 2011. *State of the Battle River and Sounding Creek Watersheds Report 2011*. Battle River Watershed Alliance, 64 pages.

This is our battle: the watershed we all share, and the fight to maintain a healthy environment, vibrant communities and a stable economy.

Battle River Watershed Alliance

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Connecting People to Place for Action



Goats eating Leafy Spurge along the Battle River (photo courtesy of Flagstaff County)