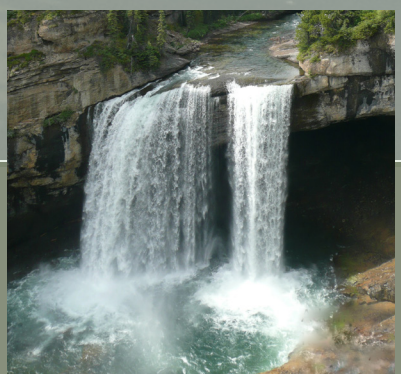
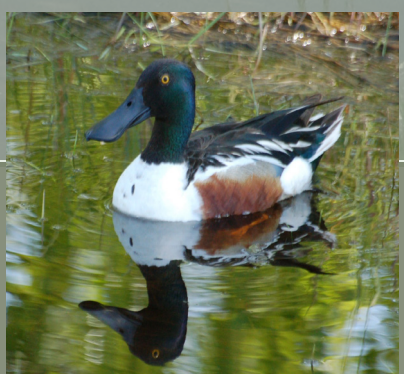
MIGHTY PEACE WATERSHED ALLIANCE

Integrated Watershed Management Plan

SUMMARY





What is the Plan?

The Mighty Peace Watershed Alliance (MPWA) supports the three goals of Alberta's Water for Life Strategy: safe secure drinking water, healthy aquatic ecosystems, and reliable, quality water supplies for a sustainable economy. The Integrated Watershed Management Plan (IWMP) is a roadmap toward those goals. It is based on a review of technical documents and the Mighty Peace *State of the Watershed* report, which provides a comprehensive overview of the watershed context, its natural resources, the influences of human activities, and baseline physical, ecological, and socio-economic conditions.

This brochure summarizes the recommendations, objectives, and strategic directions of the full IWMP, which is available at mightypeacewatershedalliance.org.

The non-statutory Plan is the first step in a systematic and prioritized adaptive management process. It coordinates the efforts of communities, First Nations, industries, governments, stakeholders, and other decision-makers involved in managing the Alberta portion of the watershed. The Plan will ensure that cumulative effects are understood by all users involved in making decisions about human activity in the watershed.

Key Issues of Concern

The Plan identifies these issues of concern:

- **Water Quality and Availability Away from the Mainstem and Consumptive Use**
- **Peace River Flow Regime**
- **Wetlands and Wetland Loss**
- **Non-Saline Groundwater**

This Plan also describes the tools to conserve valued lands and waters.

» Water Quality and Availability Away from the Mainstem and Consumptive Use

Water conditions are generally good on the Peace River, with large volumes and few sources of pollution. However, many communities and industries draw their water from smaller tributaries, lakes, or groundwater sources that may not provide optimal quality or volume. Several tributaries, such as the Little Smoky River, where water is withdrawn for municipal and industrial use, face costly restrictions on when and how much water can be drawn.

Use of water for oilfield injection and hydraulic fracturing is growing. Complicating factors include source (surface water or groundwater); quality (saline or non-saline); timing of flows and withdrawals (particularly for small, seasonal tributaries and lakes); and the need for timely monitoring of the cumulative effects of multiple withdrawals on downstream aquatic health.

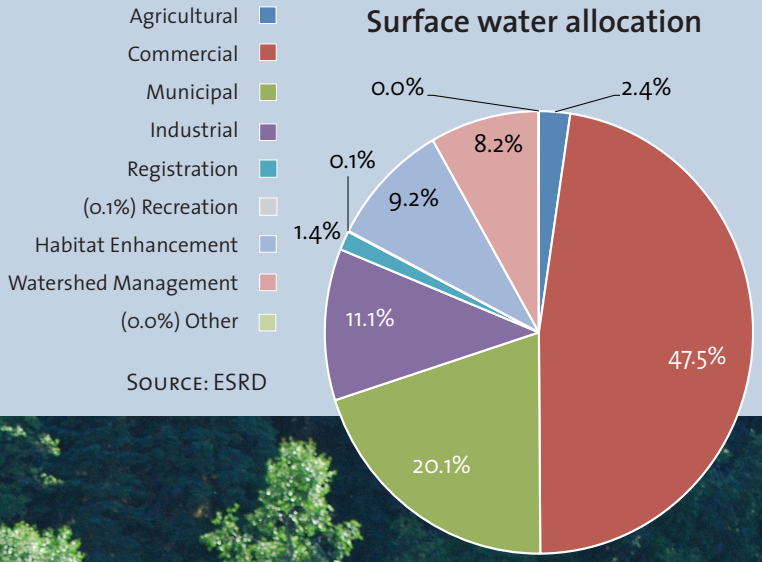
Vision: *Water in the watershed is adaptively managed for current and future generations such that the water resource is well understood, quality source and drinking waters are available where and when they are needed, and aquatic ecosystems are healthy.*

Recommendations

» Develop an education and outreach strategy that identifies target audiences, key messages, and appropriate communication tools.

» Raise awareness and promote the use of source-water protection plans for all source waters.

» Identify and support communities with critical water supply and/or treatment issues.

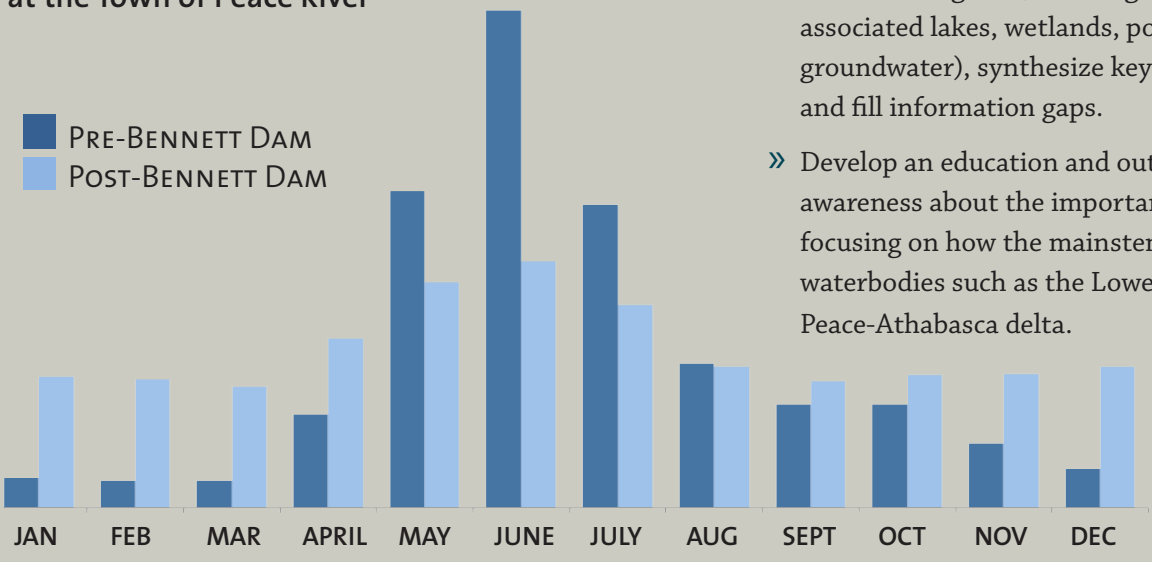


SOURCE: ESRD

» Peace River Flow Regime

Flow on the Peace is controlled by dams, which reduce flows in spring and summer, and increase them in autumn and winter. Evidence shows that the modified flow regime has created cultural, social, economic, and environmental challenges for residents of the watershed, in particular in Aboriginal communities in the Lower Peace sub-basin. On the other hand, specific effects on aquatic ecosystems and communities, and on Aboriginal and Métis lifestyles, as well as flow rates required to mitigate these effects, have not been fully characterized.

Predicted Natural Flow at the Town of Peace River



Source: Water Survey of Canada

Vision: *The Peace River Flow Regime is healthy, understood and adaptively managed (using both western science and traditional ecological knowledge) to deliver optimal social, economic and ecological goods and services (including instream flow needs and wetland health in the Lower Peace watershed), for current and future generations.*

Recommendations

- Using traditional and local knowledge, compile an inventory of sites with flow regime issues and identify community flow values to guide water and land managers and decision-makers and share them with other basin initiatives.
- Collect existing technical information on the Peace River flow regime (including its interactions with associated lakes, wetlands, ponds, channels, and groundwater), synthesize key learnings, and identify and fill information gaps.
- Develop an education and outreach strategy to raise awareness about the importance of healthy river flow, focusing on how the mainstem interacts with other waterbodies such as the Lower Peace wetlands and Peace-Athabasca delta.

» Wetlands and Wetland Loss

Wetlands cover slightly more than 29% (52,898 km²) of the watershed (plus those in national parks, for which information was not available). Wetlands provide cultural and ecological services, they supply food and recreational opportunities, and they fulfill spiritual needs. They store and purify water, mitigate floods and droughts, moderate flow, stabilize shorelines, and discharge and recharge groundwater. Wetlands also moderate weather and climate, and process and store greenhouse gases. Their high biological productivity and aquatic components provide diverse wildlife habitats. In northern Alberta, wetlands provide key habitat for fish, birds, amphibians, beavers, mink, muskrats, otters, moose, caribou, and plants.

Regions with high coverage of wetlands correspond with extensive boreal forest areas and less human activity. Where the watershed has been developed, wetlands have been converted to agricultural and industrial uses and urban settlements. The extent and intensity of these disruptions are difficult to assess, given the lack of data on the historical distribution of wetlands in the watershed.

Vision: *The state and functions of wetlands are well understood and human activities affecting wetlands are mitigated (avoided, minimized, or replaced) such that ecological integrity and resilience of wetlands are maintained, and sustained for current and future generations.*

Source: ESRD

Recommendations

- » Strike an education committee to develop and implement a general wetland education and outreach plan.
- » Communicate the state of wetlands and wetland trends.
- » Promote stewardship with various users.

» Non-Saline Groundwater

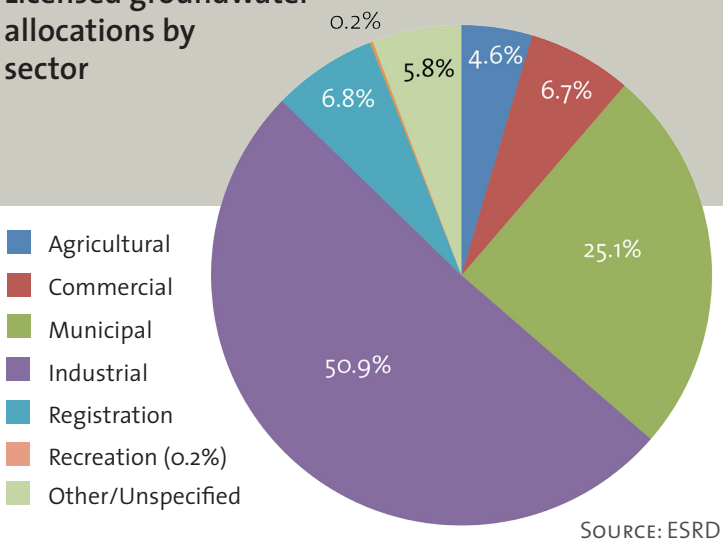
Groundwater is a crucial resource for many residents and communities in the watershed. Non-saline groundwater is present throughout the watershed, but the current level of knowledge is limited to select areas, and nothing is known about conditions elsewhere. Until we have a more complete understanding of non-saline groundwater aquifer volumes, as well as an understanding of current and future use, potential risks, cumulative effects, and how climate change will affect this resource, setting groundwater management priorities will be challenging.

Vision: *Abundant, uncontaminated groundwater is managed with integrity so that the resource is publicly understood, predictable, sustainable, and protected to benefit and meet the needs of the basin's inhabitants.*

Recommendations

- Develop, complete, and update a single, centrally located, accessible and shared groundwater database, and ensure new data is automatically entered.
- Share sector information about the Water Allocation System and water use with the public and other audiences through fact sheets and state of watershed reporting.
- Improve public understanding of groundwater resources and interactions with surface water, the cumulative effects of land cover and land use on groundwater quantity and quality, and the effects of climate change.

Licensed groundwater allocations by sector



Source: ESRD

The Planning Process

Watershed management in the Mighty Peace watershed employs an adaptive management approach. Following identification of critical issues in the *State of the Watershed* report, the MPWA consulted the public and watershed stakeholders. Twenty-two open houses supported by an online stakeholder survey allowed for broad input from across the region. The Plan makes recommendations for courses of action to be implemented by appropriate authorities. The Plan will be monitored, reviewed, evaluated, and updated based on new information.

The Watershed

The Geography

The Mighty Peace is the largest watershed in Alberta, draining more than 208,834 km^2 — an area almost three times the size of New Brunswick. It is split into six sub-basins: Smoky/Wapiti, Upper Peace, Central Peace, Lower Peace, Wabasca and Slave River. Approximately 35% of the watershed is "Aquatic Environmentally Significant" based on the area's wildlife, habitat, peatlands, biological connectivity, and features that support water quality and quantity.

The People

About a third of the watershed's 165,000 residents live in rural areas, a third in Grand Prairie, 23% in smaller towns and villages, 6% on First Nations reserves, and 1% in Métis settlements.

Most people work in the resource economy. The foothills and mixed-wood regions support forestry and oil and gas operations. Nutrient-rich soils of the parklands support agriculture in the watershed. Agriculture is expected to expand as the population increases.

Major Rivers

There are three major rivers in the watershed: the Peace, the Slave, and the Smoky. The main stem of the Peace River is approximately 1,900 km long and begins at Finlay River in the Rocky Mountains of British Columbia. The Peace River is regulated by Bennett Dam in northern BC. It flows into the Slave River at the Peace-Athabasca Delta.

Next Steps

This Plan is the result of years of work collecting information, establishing relationships, and working toward recommendations that address key watershed health issues. The next steps are to ensure that conditions for successful implementation are met through ongoing collaboration and awareness of the issues and the current state of the watershed. To achieve this, **the MPWA will encourage the relevant governments, stakeholders, communities, residents, and decision-makers to work together to support the Plan.**

This Plan is intended as a living document. It will be subject to discussion and stakeholder review by those in the watershed to incorporate new information, challenges, conditions, and priorities and to ensure the Plan remains relevant for generations to come. The needs of the different users of the landscape will be central to the work being done by the MPWA and its partners. We welcome your input. Write, call, or email us.

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