

Battle River Watershed

watershed the area of land that catches precipitation and drains into a larger body of water such as a marsh, stream, river or lake.
[syn: basin]

Vol 1, Issue 7, October 2005: Engineered Infrastructure, Biodiversity & Recreation



Events

Nov 10th & 17th (Thur)

10:00- 3:00

Environmental Farm Plan Workshops 1 & 2
Brownfield.

Lunch provided.

Pre-register by November 7th.

Kristin Cuss (780) 384-4100

Nov 16th (Wed)

Wood & Water Pancake Breakfast

Sedgewick Legion Hall

Find out how trees and wetlands impact agric productivity, water quality & quantity

Breakfast **7:30-9:00**, presentations to follow. Pre-register with:

Kristin Cuss (780) 384-4100

Don Ruzicka (780) 385-2474

Nov 18th & 19th

Planning Workshop: Battle R. Water Management Recommendations
Wetaskiwin

Rhonda King (403) 340-7195

Nov 21st (Mon)

9:30-3:30

Women's Grazing School

Coronation Comm. Hall
Pasture supplements, cattle handling, record keeping, pasture hints, rations, calving problems, pasture lease negtns.

Cost: \$20, lunch provided

Pre-register by Nov 18th with:

Chinook Applied Research

Oyen (403) 664-3777

Battle River Research Group

Forestburg 1-866-828-6774

WATER STORAGE

DAMS & WEIRS ON THE BATTLE RIVER

There are three major dams and weirs on the Battle River system: Coal Lake dam, Dried Meat Lake weir, and the ATCO dam near Forestburg,

Coal Lake is our largest reservoir. It was built on Pipestone Creek to serve as both a water supply for Wetaskiwin, and as water storage to supplement downstream flows when the river is low. Alberta Environment owns and operates this structure, along with the Dried Meat weir.

Dried Meat Lake is our



second largest reservoir. It serves as a water supply for the City of Camrose. In 2006 an expansion of the Dried Meat weir will increase storage capacity of the lake by 70%.

The ATCO dam holds

back water for the Forestburg reservoir, which supplies cooling water for the Battle River Electricity Generating Station. ATCO Power owns and operates this structure.

In total, the volume of water that can be stored by these structures is 61,200 dam³. The Dried Meat weir expansion

will raise the total storage capacity on the Battle to 71,000 dam³.

In an average flow year, these structures have the combined capacity to store up to 25% of the Battle River's natural flow. In a low flow year, however, they have the capacity to capture more than 100% of natural flow.

Alberta Environment licences the operation of all dams and weirs. Conditions on these licences require that major dams and weirs pass a minimum flow to ensure that some water always makes its way downstream to other users.

There are also approximately 450 small farm dams and weirs on the Battle system, mostly on the tributaries.

Percentage of natural flow stored by major dams & weirs on the Battle R. system

	Annual Natural Flow Volumes	% flow stored by major dams
Median flow	285,000 dam ³	21% (25%*)
Minimum flow	50,000 dam ³	122% (142%*)
Maximum flow	1,200,000 dam ³	5% (6%*)

Water storage capacity provided by major dams & weirs on the Battle R. system

	Water Storage Capacity
Forestburg Reservoir	9,000 dam ³
Dried Meat Lake	14,200 dam ³ (24,000 dam ³ *)
Coal Lake	38,000 dam ³
TOTAL	61,200 dam³ (71,000 dam³*)

* * With extra Dried Meat storage capacity supplied by 2006 weir extension = +9,800 dam³

Did You Know... new dams and river diversions will rarely offer sustainable solutions, because in most cases they entail drawing more water from freshwater systems that are already overtaxed. In fact, the construction of new dams has slowed markedly over the last couple of decades as the public, governments, and financial backers have begun to pay more attention to their high economic, social, and environmental costs.

From: *Dividing Waters* by Sandra Postel (www.agr.feis.unesp.br/water.htm)

Endangered Species

The Battle River Watershed is home to 8 Endangered and Threatened species, and 5 species of Special Concern.

Endangered
 Piping Plover
 Bison*
 Whooping Crane*

Threatened
 Northern Leopard Frog
 Peregrine Falcon
 Trumpeter Swan*
 Ferruginous Hawk
 Burrowing Owl.

Special Concern
 Spragues Pipit,
 Loggerhead Shrike
 Long-billed Curlew
 White-winged Scoter
 Prairie Falcon

*no longer found in the watershed



Let us know if you have seen this frog!
 Leopard Frog

New Force of Nature, an excerpt from *Keepers of the Spring: Our Water in an Age of Globalization*

There are today some **800,000 dams** around the world. Some 45,000 of them are more than 50 feet high; more than a hundred tower 500 feet or higher above the rivers they are intended to tame. If all the water in all the reservoirs behind all the dams in the world were collected together, it would measure 8 billion acre-feet. It would cover half of California to a height of 130 feet. If it were all released into the oceans, it would raise the sea level on every beach around the world by some 8 inches.

... Since 1900, the world has on average completed one large dam every day. Their turbines generate a

fifth of the world's electricity, and their waters irrigate a sixth of the world's crops. They barricade 61 percent of the world's river flows.

These dams have even changed the shape and rotation of planet Earth. The water in their reservoirs is so heavy that it deforms the Earth's crust and unleashes periodic earthquakes. And by shifting water away from the equator, where ocean water is concentrated, they have altered the speed of the Earth's rotation in much the same way as ice skaters speed up by pulling their arms in close to the body. The "reservoir effect" has so far shortened the length of the day by about

a thousandth of a second. The asymmetrical distribution of reservoirs round the Earth has even tilted the Earth's axis. The North and South Poles and every line of latitude and longitude are now 2 feet from where they would otherwise have been.

Dams are more than an earth-shaping technology. They have great power as totems of modernism and as symbols of a very mechanistic notion of how mankind can "tame nature."

Keepers of the Spring: Reclaiming Our Water in an Age of Globalization, by Fred Pearce, Island Press www.americanscientist.org



Kids' Stuff Animal Magnets!

(Courtesy of Cows & Fish. Illustrations originally produced for Bow Habitat Station by Liz Saunders)



Can you name these Alberta wildlife?

How many of these six animals use riparian areas?

Riparian areas are like magnets to wildlife. They provide food, shelter and clean water for wildlife and fish (as well as for people and livestock!). Most (80%) of Alberta's wildlife use riparian areas for feeding, nesting, seeking shelter and travelling.

Answers: 1. Black-capped Chickadee, 2. Dragonfly (Blue Darter), 3. Red-wing Blackbird, 4. Chorus Frog, 5. Great Blue Heron, 6. Coyote. ALL SIX animals use riparian areas.

Learn more about riparian areas: www.cowsandfish.org/pdfs/cfcdk_activity_sheet.pdf

FORUM VII: SEPTEMBER 2005

BATTLE RIVER WATER MANAGEMENT PLANNING

Forum Notes: Biodiversity & Recreation

Biodiversity

- **Definitions:** Biodiversity is the variety of life in all its forms from genes to species through to ecosystems. The variability of living things and their relationship with other living things, and the habitat and ecological processes that support them.
- The Battle River Watershed is located in the Parkland Natural Region. The Parkland Region is a transition zone between grassland and boreal forest. It is generally wetter & cooler than grasslands to south, being flat to gently rolling and having thousands of wetlands, mostly small.
- The Parkland Region is the most DIVERSE natural region in Alberta. It occupies 37,000 km², 67% of which falls within the Battle Watershed. Less than 2% of the Region is protected.
- Most of the Parkland Region has been cultivated or turned into urban or industrial land. Less than 12% of the Region's native vegetation remains, and almost all of this (84%) is located on private land. The majority of the remaining natural land is on rougher terrain or poorer soils.
- The Parkland Region is made up of 4 major habitats: fescue grasslands, aspen woodlands, creeks & rivers, and lakes, sloughs & wetlands. There are 148 plant species found in the fescue grasslands alone. Some of the common wildlife found in the Parkland Region include: white-tailed deer, moose, elk, black bear, badgers, beaver and Canada & white-fronted geese. Wild bison, wolf and grizzly are no longer found in the Region.

Wetlands & Ducks Unlimited

- Ducks Unlimited Canada (DUC) is a private, not-for-profit science-based organization with a 67-year history in Alberta. DUC's mission is to: "conserve, restore and manage wetlands and associated habitats for North American Waterfowl. These habitats also benefit other wildlife and people."
- DUC has invested over \$7 million in upland and wetland habitat projects in the Battle River Watershed, including over 100 licensed wetland projects.

- Groundwater recharge is especially important in the Battle Basin. Wetlands contribute a significant flow into the Battle River. This contribution is particularly important in periods of low flow.
- Wetlands also improve water quality by reducing sedimentation, removing and storing nutrients, harmful bacteria and other pollutants. In addition, they slow the flow of surface water thus reducing the impact of flooding and soil erosion.
- Efforts by DUC to retain and replace native upland and wetland habitats has been small in relation to drainage of natural wetlands and cultivation of native parkland in the Battle River Basin. Recent estimates suggest that 63% of the watershed's original wetland area has been filled or drained.

Recreation

- At present, current recreation activities in the Battle River Watershed are not heavily dependent on water allocations. Recreational activities associated with water can be classified as consumptive and non-consumptive uses of water.
- Non consumptive uses of water include boating, fishing and various winter sports, and do not require a Water Act. In summary, these activities focus on the enjoyment of the natural features in the watershed.
- There are six major water features that are favourable for recreation within the Battle River watershed. These include Battle River itself and five lakes: Battle, Coal, Driedmeat, Miquelon and Pigeon. Although a number of smaller lakes are found throughout the basin, very few have recreational facilities associated with them.
- Many of the water bodies found within basin provide habitat for waterfowl, upland and game bird species, and consequently support hunting and can be considered to support recreational activities. The Battle Watershed is one of the most productive waterfowl areas in Alberta. Hunters take tens of thousands of ducks, geese, moose, elk & deer annually.
- Some consider that the non-consumptive recreational values, opportunities and attractions are currently available because of the relative health of the Battle River watershed -

where landscape beauty and biological diversity are still prominent. Although the watershed may not be managed for recreational opportunities, or even ecosystem health, recreational opportunities provide an indirect measure for ecosystem health and the intrinsic values associated with such.

- Recreational features like golf courses, ski hills, municipal parks and recreation areas that draw water for use in ponds or irrigation are identified as consumptive uses of water. These activities represent about 2% of consumptive uses of Battle River watershed surface water and do require a Water Act licence. (1,195/ 59,975 dam³)
- Future demand for water for recreational purposes will depend on future participation in the two major recreational uses of water: golf courses and ski hills. Historical trends in Albertan participation in these activities show that participation in downhill skiing has declined steadily since 1984, while the demand for golfing has climbed steadily. Forecasts of water demands for recreational (golf course) purposes by 2030 show an 11% increase in demand over 2004 (current) uses – but that the increased demand would be for groundwater rather than surface water.

Parks & Protected Areas

- Alberta Parks have nine parks and protected areas in the Battle River Watershed. These include the following: Mount Butte Natural Area, Pigeon Lake Provincial Park, Peaceful Valley Provincial Recreation Area, Coal Lake Provincial Recreation Areas (North & South), Miquelon Provincial Park, Big Knife Provincial Park, Ribstone Creek Heritage Rangeland Natural Area, and Wainwright Dunes Ecological Reserve.
- Driedmeat Lake and Battle Lake are also important recreation areas with camping, fishing and wildlife viewing. Neither have facilities run by the Province.

Additional Resources

www.abheritage.ca/abnature/parklands
www.ducks.ca

Your Local Agriculture & Watershed Specialists

Beaver County

Aimee Cook
Municipal Conservation Technician
(780) 663-3730, (780) 895-2585
aesa@beaver.ab.ca

Camrose & Stettler Counties

David Trautman
Asst Ag Fieldman, Farm Prog Spec
(780) 672-4765
Dtrautman@county.camrose.ab.ca

Flagstaff & Paintearth Counties

Kristin Cuss
Rural Conservation Technician
(780) 384-4100, (403) 882-3211
kcuss@flagstaff.ab.ca

Lacombe County

Dion Burlocke
Asst. Agricultural Fieldman
(403) 782-6601
dburlock@lacombecounty.com

Ponoka County

Robert Zimmer
Agricultural Fieldman
(403) 783-3333
rpzimmer@telusplanet.net

Provost, M.D. of

Burt Forbes
Agricultural Fieldman
(780) 753-2434
burtmd52@telusplanet.net

Vermillion R. & Minburn Counties

Mona Lee Kirkland
Municipal Conservation Specialist
Ph: (780) 853-8104
monalee.kirkland@gov.ab.ca

Wainwright, M.D. of

Somerlee Bennett
Asst. Agricultural Fieldman
(780) 842-4454.
asb@mdwainwright.ca

Wetaskiwin & Leduc Counties

Steve Majek
Agricultural Fieldman
(780) 352-3321
smajek@county.wetaskiwin.ab.ca

Battle River Research Group

Jenifer Heyden
Forage/Livestock Agronomist
(780) 582-7308
brg.fl@telus.net

Parkland Conservation Farm

Kelly Montgomery
Farm Extension Coordinator
(780) 632-2244,
paripcf@parklandconservationfarm.com

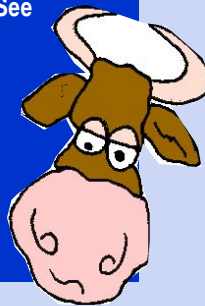


Thinking about water conservation at home? Check out some tips on:

www3.gov.ab.ca/env/water/conservation/residential.cfm

Interested in sustainable soil & water management on the farm? See how on:

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex3918?opendocument#soilwater](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex3918?opendocument#soilwater)



Take Action!

Ready to help the Battle Watershed? Want to find out how? Contact these groups:

Local Agriculture & Watershed Extension Specialists

Sustainable farming, land management & water use
See contacts opposite

Iron Creek Watershed Improvement Society

Promoting sustainable land and water use in the Iron Creek Watershed
(780) 384-4118

Alberta Fish & Game Association's Parkland Stewardship Program & Farm Waterwatch

Farm conservation planning & surface water quality monitoring
(780) 437-2342

Cows and Fish

Partnering with communities on riparian management
(403) 340-7607

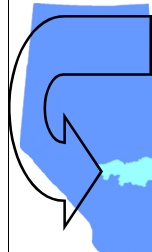
Ducks Unlimited Canada

Restoring & managing wetlands for habitat & wildlife
(780) 672-6786, ext 5

Alberta Conservation Association

Conserving & enhancing wildlife, fisheries, & habitat
1-877-969-9091

BATTLE RIVER WATER MANAGEMENT PLAN



Battle River Watershed

The Battle River is a modest prairie-fed river, and an important water supply for communities, agriculture and industry throughout the river's watershed.

With increasing pressure on the Battle River's water supply, demand for water will soon exceed the river's natural supply, creating social, ecological and economic issues.

The Battle River Watershed Management Planning Process

In an effort to resolve water supply and demand issues, Alberta Environment has recently started working with local stakeholders on a water management plan for the Battle River.

These stakeholders include members from local rural and urban municipalities, agriculture, industry, academia, recreation and conservation.

They have formed the Battle River Watershed Advisory Group (BRWAG).

Learn more, have your say

In Spring 2006, watershed residents will be invited to comment on draft water management options for the Battle River. In the meantime, read our newsletters or go to our website to learn more.

Did You Know... the Battle Watershed is part of the Parkland Natural Region, one of the richest, most biologically diverse landscapes in Canada? Learn more by visiting: www.abheritage.ca/abnature/parklands

**Environmental Hotline
1-800-222-6514**

24 hour Emergency/Complaint

Alberta Environment

Want more information? Contact:

**Rhonda King, Senior Planner
Alberta Environment
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(403) 340-7195
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www.battleriverwatershed.ca**