

A WETLANDS AND RIPARIAN AREAS CONSERVATION AND MANAGEMENT PLAN FOR COCHRANE, ALBERTA



Prepared by:

Gary Wagner
Environmental Coordinator
Environmental Services Division
Operational Services Department

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Background

Why is this Wetlands and Riparian Areas Conservation and Management Plan necessary?

The Town of Cochrane Strategic Plan, item 1.2, states that the Town will investigate, monitor and implement environmental standards / codes of practice for wetland and watershed management.

Policy 1502-01 “Inventory of Wetlands, their Associated Riparian Lands, and the Development of a Wetland Protection Plan”, dated September 11, 2006, states that:

1. The Town of Cochrane will ensure that there is a wetland inventory and an inventory of all associated riparian lands within the jurisdictional boundaries of the Town of Cochrane, and
2. Will develop and implement a Wetland Conservation and Enhancement Plan that will be incorporated into statutory planning documents to:
 - a) regulate the use and development of all lands in proximity to wetlands, and associated riparian lands;
 - b) protect and enhance Class 1-7 wetlands and their associated riparian lands; and;
 - c) ensure no net loss of wetlands.

The document has been expanded to include riparian areas and is not restricted only to wetland enhancement but to all aspects of wetland and riparian area conservation and management, so will now be known as the Wetlands and Riparian Areas Conservation and Management Plan.

What prompted the development of the Wetlands and Riparian Areas Conservation and Management Plan?

Wetlands and riparian areas are under increasing development pressures, not only in Cochrane but across Alberta. In Alberta, 64 percent of wetlands in the White Area have already been lost.¹ As water and watershed management becomes more important during this period of climate change, with increasing demand for potable water, wetland and riparian area management will also become more important.

Who are responsible for the Wetlands and Riparian Areas Conservation and Management Plan?

Responsibility for development of the Wetlands and Riparian Areas Conservation and Management Plan has been delegated to the Environmental Services Division, with

¹ Alberta Wilderness Association.

support from Planning and Engineering Services and others as required. Technical support will be provided through the Cochrane Environmental Committee (CEC), a committee of Town Council.

Who will help develop and implement the Wetlands and Riparian Areas Conservation and Management Plan?

The Wetlands and Riparian Areas Conservation and Management Plan will be developed primarily by staff through the Cochrane Environmental Committee (CEC), and with the support of the Cochrane Environmental Action Committee (CEAC), technical consultants and advisors, and in consultation with affected parties such as developers, builders, and landowners. Neighbouring jurisdictions, such as the Municipal District of Rocky View, will also be consulted as required. Once the Wetlands and Riparian Areas Conservation and Management Plan is completed as a final draft, the public will be invited to comment. The final draft will then be edited and published.

When will the Wetlands and Riparian Areas Conservation and Management Plan come into effect?

This work is significant, and time-consuming. It is important to get it right. The City of Calgary took one year to develop their Wetland Conservation Plan with the engagement of 21 staff, 45 advisors on the Key Stakeholders Advisory Committee, and numerous private citizens, community associations, and interest groups who provided comments and suggestions on various drafts.

With the assistance of our partners and including consultation with stakeholders and other Cochrane residents, we anticipate that the Wetlands and Riparian Areas Conservation and Management Plan will be completed and made public in the fourth quarter of 2008.

Where will the Wetlands and Riparian Areas Conservation and Management Plan be in effect?

This plan will apply to all lands within the legal boundaries of the Town of Cochrane, including any lands annexed in the future.

How will the Wetlands and Riparian Areas Conservation and Management Plan be updated and revised over time?

This is a living document. The Wetlands and Riparian Areas Conservation and Management Plan will be reviewed and revised every five years, or more frequently if so directed by Council.

The Wetlands and Riparian Areas Conservation and Management Plan must be coordinated with provincial wetland habitat policy currently under development, Water for Life policy, and the work of relevant agencies such as the Alberta Water Council. As

those efforts bear fruit, this Wetlands and Riparian Areas Conservation and Management Plan may have to be updated.

The Wetlands and Riparian Areas Conservation and Management Plan will be integrated with federal, provincial, and municipal policies and legislation dealing with:

1. fish and fish habitat,
2. wetland habitat,
3. migratory birds,
4. riparian habitat,
5. species at risk,
6. water and groundwater,
7. navigable waters,
8. land use,
9. environmental reserves and setbacks,
10. environmental assessment.

As those fields of practice also evolve, further changes to the Wetlands and Riparian Areas Conservation and Management Plan may be necessary.

What are the objectives of the Wetlands and Riparian Areas Conservation and Management Plan?

The Wetlands and Riparian Areas Conservation and Management Plan will:

1. Implement a “no net loss” policy for wetlands and riparian habitat;
2. Increase public awareness and commitment to protecting and / or restoring wetlands and riparian areas;
3. Improve wetlands and riparian areas science, data, and monitoring in Cochrane;
4. Secure and protect existing wetlands and riparian areas in Cochrane with science-based decision-making and best management practices;
5. Create, reclaim, rehabilitate, and manage wetlands and riparian areas in Cochrane for the long term benefit of the community;
6. Provide clarity and certainty for managers and developers whose decisions and plans may affect wetlands and riparian areas;
7. Maintain or improve local water quality and quantity by balancing sediment and erosion control requirements with wetland and riparian habitat functions;
8. Integrate drainage, stormwater management and other engineering constraints with ecological functions of wetland and riparian habitat protection;
9. Use naturally occurring wetlands for stormwater management where it is possible and practical to do so.

Planning and Development Requirements

Wetlands and riparian areas damaged by human activities are very difficult or impossible to fully restore. The Town of Cochrane prefers to:

1. avoid damaging existing wetlands and riparian areas;
2. mitigate adverse effects that cannot be avoided, and;
3. compensate for loss or damage to wetlands and riparian areas, with preference to compensatory habitat within, or near to, the Town of Cochrane.

Before the Town of Cochrane will allow any work in or around wetlands and riparian areas, we expect all landowners and property developers to:

1. Consider creative ways to design development projects to incorporate wetlands and riparian areas in their natural state and, where practical, to enhance those areas to improve wetland and riparian habitat functions;
2. Conduct a reconnaissance level wetland and riparian area habitat survey to enable informed development planning;
3. Depending on the results of the reconnaissance, conduct other more detailed surveys, studies, inventories, and assessments as required;
4. Create and submit for approval a Construction Environmental Management Plan (CEMP);
5. Maintain existing natural drainage in the wetlands and riparian areas throughout the project;
6. Minimize disturbance of wetlands and riparian habitat, wildlife, soils and vegetation;
7. Minimize the amount of sediment, nutrients, and contaminants that enter the wetlands and riparian areas during construction;
8. Restore wetlands and riparian habitat damaged during construction;
9. Wherever it is practical to do so, maintain, protect, and / or establish essential upland habitat and provide a suitably wide buffer (preferably vegetated) that will protect the wetland and riparian habitat from further disturbance;
10. Avoid areas used for breeding, nesting, or rearing young by fish, amphibians, birds, and other wildlife;
11. Prevent or restrict access to wetlands and riparian areas by people and vehicles.

The Town of Cochrane will:

1. Strengthen bylaws, policies, agreements, planning, engineering, compliance monitoring, and enforcement to protect wetlands and riparian areas;
2. Improve coordination with neighbours and partners so wetlands and riparian areas that cross administrative boundaries are administered and protected in a consistent and sustainable manner;
3. Regularly evaluate the Wetlands and Riparian Areas Conservation and Management Plan to ensure consistency and best practice;

4. Maintain public and political support for wetland and riparian area management through the Cochrane Sustainability Plan;
5. Expeditiously consider development proposals that meet the objectives of the Wetlands and Riparian Areas Conservation and Management Plan.

Existing Information

To assist developers and builders to comply with the Wetlands and Riparian Areas Conservation and Management Plan, the Town of Cochrane will provide access to:

1. Aerial photos;
2. Alberta Wetland Survey;
3. Aerial videography;
4. Land Use mapping;
5. Reports and assessments;
6. Topographic mapping.

provided the information is not restricted by Freedom of Information and Privacy (FOIP) requirements. The applicant may have to collect other information to ensure sound and accurate planning, such as a legal land survey. Applicants will also be expected to ensure that their plans are in compliance with the current Municipal Development Plan, Area Structure Plans, and other relevant documents.

Information Standards

The Town of Cochrane expects all proponents to ensure quality assurance and quality control (QA/QC) measures and standards are in place for all data collected, so the information used in the planning process is scientifically valid. Any person conducting scientific studies should have professional status and experience, preferably as a Professional Biologist in the Alberta Society of Professional Biologists. Wetland and riparian area inventories and assessments should be conducted by a Qualified Wetland Aquatic Environment Specialist (QWAES). A QWAES is an expert with detailed knowledge of the aquatic environment, wetland soils, wetland species, hydrology and wetland margin habitat and their management or assessment.²

The Town of Cochrane requires a wetland inventory and / or assessment to be conducted for all wetland habitats potentially affected by development. A wetland inventory and / or assessment should include spatial information on each wetland and associated riparian lands within the jurisdictional boundaries of Cochrane, detailed habitat information, any

² The term Qualified Wetland Aquatic Environment Specialist (QWAES) has been taken from the Water (Ministerial) Regulation - Code of Practice for Pipelines and Telecommunication Lines Crossing A Water Body and adapted for this document.

other relevant data such as water quantity and quality, species at risk etc., plus any detailed environmental impact assessment reports for specific wetlands.

To be valid under the *Water Act*, habitat assessments must be conducted by a QWAES as described above or a Qualified Aquatic Environment Specialist (QAES), which means a person:

- (i) who possesses:
 - (A) a post-secondary degree in biological sciences,
 - (B) a technical diploma in biological sciences, or
 - (C) educational equivalencies; and

- (ii) has a detailed knowledge of the aquatic environment, including fish and fish habitat, management and assessment; and

- (iii) is currently experienced with:
 - (A) fisheries and aquatic environment assessment methods, and
 - (B) the determination of mitigation measures required to maintain the productive capacity of the aquatic environment, including fish habitats in Alberta that may be adversely affected by the carrying out of works in and adjacent to the water, bed and shore of water bodies.³

Wetland and riparian habitat assessments may require only a brief site visit to ensure there are no significant environmental aspects warranting further investigation, or may require at least one full year of habitat studies to a professional standard (field visits by a professional biologist over all four seasons), plus any lab work required on water quality, invertebrates, etc. The developer must select the appropriate level of investigation and be prepared to defend that choice when submitting the development plan.

To assist proponents to prepare the appropriate investigations, methodologies used by the Alberta Riparian Habitat Management Society are presented below. Professional consultants and other specialists may employ different approaches.

Alberta Riparian Habitat Management Society or “Cows & Fish”

Riparian Health Assessments (Cows & Fish)

A Riparian Health Assessment is a short list of questions to quickly help landowners and land managers determine the comparative health of a specific riparian area. It provides a rapid survey and a quick calculation of relative health. This is a very useful tool for resource managers, and may also be employed as training aid and extension tool. The health assessment may also be used to assign priorities for a more detailed riparian health inventory.

³ ADMINISTRATIVE GUIDE FOR APPROVALS TO PROTECT SURFACE WATER BODIES UNDER THE WATER ACT. December 2001. Environmental Assurance, Regulatory Assurance Division, Alberta Environment.

Riparian Health Inventory (Cows & Fish)

A Riparian Health Inventory thoroughly examines vegetation, soil parameters, and hydrology of the study area. The Riparian Health Inventory is employed by riparian resource management professionals to capture benchmark data, examine details of the plant community and structure, and for monitoring. This is a very important tool for examining the health of watersheds, collecting baseline information, and for evaluating the impact of management changes over time. The process requires extensive technical knowledge and training (plant identification, riparian and hydrogeological knowledge, ocular estimating skills, and experience).

Assigning Priorities

The Town of Cochrane will evaluate the wetlands and riparian areas within the community boundaries and rank them in order of importance, based partly on the new information provided by development proponents and partly on existing data. The Town of Cochrane reserves the right to request additional studies should the circumstances warrant.

Cochrane Wetlands and Riparian Areas Priority Rating System

An environmental significance assessment should be completed for each wetland and riparian area in the Town of Cochrane. Variables include:

Ecological and Geological Criteria

- Biodiversity
- Species at Risk
- Water Quality
- Hydrography
- Habitat Rating
- Wetland Class (Stewart and Kantrud Classification System)
- Soil Type
- Elevation
- Total Area (% disturbed)
- Vegetation Type
- Significance of potential environmental effects
- Stormwater treatment and management
- Flood and erosion control
- Riparian area
- Parkland

Geographic Extent

- Less than 1 hectare
- 1 – 5 hectares
- 6 – 10 hectares
- Greater than 10 hectares
- Contiguous habitat (migration or travel route)

Temporal Criteria

- Seasonal wetland
- Semi-permanent wetland
- Permanent wetland
- Alkali pond

Development Criteria

- Not yet developed (greenfield)
- Presently under development
- Within next six months
- Within one year
- Within two years
- Within three years
- Within five years

Aesthetics

- Visual Impact
- Popularity
- Special Community Functions
- Connectivity (pathways and other linkages)
- Recreational value
- Educational value

Information and Communication

- Education and awareness
- Public consultation
- Special places (archaeological, cultural, etc.)

Monitoring, Updating and Enforcement

- Monitoring and Follow-up Program in place
 - Long term data collection
- Importance to local, regional, provincial, or national programs
- Community interest
- Enforcement history

Stewart and Kantrud Wetland Classification System

The Stewart and Kantrud Wetland Classification System (<http://awcwetlandpolicy.com>) is commonly used in Alberta. Developed primarily for prairie and parkland wetlands, this system recognizes different wetland types ranging from temporary to permanent. The following classes do not imply a level of importance.

The long-awaited provincial wetlands inventory delivered in December 2007 did not use this system to classify wetlands, and is therefore of limited use when assigning priorities for further investigation in Cochrane.

Class I – Ephemeral Wetlands

Typically have free surface water for only a short period of time after snowmelt or storm events in early spring. Because of the porous condition of the soils, the rate of water seepage from ephemeral wetlands is very rapid after thawing of the underlying frost seal. They may be periodically covered by standing or slow moving water. Water is retained long enough to establish some wetland or aquatic processes. They are typically dominated by vegetation such as Kentucky bluegrass, goldenrod and other wetland or low prairie species.

Class II – Temporary Wetlands

A temporary wetland is periodically covered by standing or slow moving water. They typically have open water for only a few weeks after snowmelt or several days after heavy storm events. Water seepage is fairly rapid, but surface water usually lingers for a few weeks after spring snowmelt and for several days after heavy rainstorms at other times of the year. Water is retained long enough to establish wetland or aquatic processes. They are dominated by wet meadow vegetation such as fine-stemmed grasses, sedges and associated forbs.

Class III – Seasonal Ponds and Lakes

Shallow marsh vegetation generally occurs in the deepest zone, which is usually dry by midsummer. They are typically dominated by emergent wetland grasses, sedges, and rushes.

Class IV – Semi-permanent Ponds and Lakes

Deep marsh vegetation is found in the central zone, and coarse emergent plants or submerged aquatics like cattails, bulrushes, and pondweeds are present. They frequently maintain surface water throughout the growing season.

Class V – Permanent Ponds and Lakes

Have permanent open water in central zone that is generally devoid of vegetation. Submergent plants may be present in the deepest zone, while emergent plants are found along the edges.

Class VI – Alkali Ponds and Lakes

Deep water is typically not permanently present. Alkali wetlands are characterized by a pH above 7 and a high concentration of salts. The dominant plants are generally very salt tolerant. These wetlands are especially attractive for shore birds.

Construction Environmental Management Plan

Builders and developers are expected to employ current guidelines and best management practices for construction in or around wetlands and riparian areas. These approaches will be described in general terms in the Municipal Environmental Impact Statement (MEIS) required under the Municipal Development Plan. The site specific actions, practices, schedule, and contingency plans will be described in a Construction Environmental Management Plan (CEMP). The CEMP will also describe how on-site contractors and sub-contractors will comply with each legislative, regulatory, and / or technical requirement specific to the project.

For example, consider the following issues and challenges when developing property in and around wetlands and riparian areas:

Urban Wetlands and Riparian Areas

Cochrane development occurs primarily on the undeveloped edges of the community where remnant wetlands and riparian areas are often located. Wetlands and riparian areas cannot function independently from surrounding land uses. Wetland and riparian area protection begins by establishing as much buffer (or setback) as possible to act as a natural boundary and protective border between the wetland and / or riparian area and the surrounding upland areas.

As much as possible, leave the wetlands and riparian areas in their natural state. Minimize clearing and grubbing, and allow native plants to regenerate to provide diverse wildlife habitat. Selectively clear individual trees instead of clear-cutting the entire property. Buildings, paved areas, cleared areas, lawns, and gardens should be kept as far away from wetlands and riparian areas as possible to minimize disturbance. If you have to mow native grasses to limit fire hazards, delay mowing until mid-July so that nesting waterfowl, other birds and small wildlife can rear their young in safety.

Do not cut off a wetland or riparian area from its sources of surface and subsurface water. Ensure the water draining into the wetland or stream is of good quality and does not

contain pesticides, fertilizers, salt, sediment, or other deleterious substances. Use best landscaping practices and control access to minimize wetland and stream disturbance.

Maintain natural vegetation in wetlands and riparian area, nearby uplands, and buffer areas. Leave dead trees that may be standing in the wetland or may have fallen into the stream where they are. Large woody debris provides shelter, shade, and other essential habitat functions. Keep your workers and machinery out of the wetland or stream. Poorly designed water crossings can enhance soil erosion. Eroded soils can increase turbidity in water, damage vegetation, cover fish spawning areas, and damage wildlife and waterfowl habitat.

Aquatic plants are vital to wetland ecosystems and provide food and habitat for many different types of wildlife, as well as spawning and nursery grounds for fish. Aquatic plants stabilize shorelines, prevent erosion and help to improve water quality.

Sometimes it becomes necessary to remove aquatic plants. For example, removal of aquatic plants may be appropriate when nuisance species take hold or when excessive aquatic plant growth occurs because too many nutrients have entered the water. In these circumstances, removal of aquatic plants can actually benefit fish and wildlife and encourage growth of a greater diversity of species by providing both vegetated and open water areas. Any plant removal will affect the wetland and its wildlife.

If you are not sure if your planned construction activities may adversely affect a wetland or riparian area, consult the experts.

The Bow River Watershed

The Town of Cochrane is blessed by its location on the Bow River, a world class river with high quality riparian habitat. The Town of Cochrane participates in regional planning and management initiatives such as the Calgary Regional Partnership, the Bow River Basin Council, and the Three Creeks Watershed Partnership. Three important tributaries, Jumpingpound Creek, Horse Creek, and Bighill Creek, enter the Bow River in or near Cochrane. Residents value these riparian areas for aesthetic reasons, but also understand that world class streams include significant habitats for fish and wildlife, not just humans.

The Town of Cochrane intends to survey all wetlands and riparian habitats in and near the community to determine how to protect them from degradation, and restore damaged habitats, on a priority basis. This work will be done in association with the work of community-based watershed management groups, the Cochrane Sustainability Plan, and other landscape management initiatives.

Developers, builders, and landowners should be aware that wetlands and riparian areas are important to the community residents who will welcome innovative proposals to protect, restore, and enhance wetlands and riparian habitats. The Town of Cochrane will work cooperatively with businesses, environmental groups, and agencies like The Nature

Conservancy, Cows and Fish, Ducks Unlimited, and Trout Unlimited to protect, restore, and preserve wetlands and riparian habitat in the Bow River valley.

Monitoring and Enforcement

The Town of Cochrane will monitor and inspect on-site activities to ensure that the proponent is conducting the work in accordance with the approved plans and agreements. Problems encountered on site must be reported to Town officials as agreed, and solutions will be discussed and agreed upon before work may continue. The Town of Cochrane may issue stop work orders or otherwise control the work should the activities not comply with best management practices.

Proponents must submit regular monitoring reports as agreed in the MEIS, CEMP and other development approvals.

References

Alberta Water Council Wetland Consultation Workbook (2008). Government of Alberta.

Calgary Wetland Conservation Plan (2004). City of Calgary.

Implementing “No Net Loss” Goals To Conserve Wetlands In Canada (1992). North American Wetlands Conservation Council (Canada).

Protecting Riparian Areas - Creative Approaches to Subdivision Development in the Bow River Basin: A Guide for Municipalities, Developers and Landowners (2002). The Bow River Project.

Provincial Wetland Restoration / Compensation Guide, Revised Edition - February 2007. Alberta Environment.

The Canadian Wetland Classification System, Second Edition (1997). National Wetlands Working Group / Edited by B.G. Warner and C.D.A. Rubec .The Wetlands Research Centre, University of Waterloo, Waterloo, Ontario.

The Federal Policy on Wetland Conservation (1991). Government of Canada.

Selected Web Sites

<http://www.cowsandfish.org/>

<http://www.ducks.ca/>

<http://www.waterforlife.gov.ab.ca/>

<http://www.wetkit.net/>