



**WETLAND RESTORATION PROGRAM
WATER ACT APPROVAL ADMINISTRATIVE GUIDE**

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Table of Contents

Introduction3

Definitions3

Types of Wetland Restorations4

- Re-Contouring.....4
- Engineered.....4
- *Water Act* Approval and/or Licence for Engineered Projects.....5
- Unauthorized Drainage5
- Existing Authorized Drainage5

Summary6

- Re-Contouring.....6
- Engineered.....7

Appendix 18

- Re-Contouring Wetland Restoration8

Appendix 2.....9

- Engineered Wetland Restoration9

Introduction

In the past, wetlands in Alberta have been drained or degraded for a variety of reasons; although this loss has slowed during the last few years many wetlands still remain at risk. One of the most successful methods of returning wetlands to the landscape is the method of wetland restoration carried out by a competent wetland restoration agency.

As partners, Alberta Environment (AENV) and Ducks Unlimited Canada (DUC) support the Alberta North American Waterfowl Management Plan partnership to restore wetlands that have been partially or completely drained or degraded. Specifically, AENV provides regulatory support through implementation of the *Water Act*. DUC supports the implementation of physical wetland restoration projects regulated by legislation administered by AENV. These agencies also recognize the need to provide consistency in the approach, documentation and authorization for provincial wetland restoration works.

Definitions

Naturally Occurring Wetland: is an area where water has or does accumulate to the water elevations documented to have occurred under natural conditions.

Re-contouring: is the practice of using suitable soil material to restore land levels to elevations that existed prior to past drainage work.

Restoration: is the establishment of a naturally occurring wetland with a functioning natural ecosystem whose characteristics are as close as possible to conditions prior to the drainage works.

Suitable Vegetation: is plant material that meets AENV's standards for reclamation at or near the site of restoration, does not contain invasive species, and is established using normal vegetation planting practices.

Types of Wetland Restorations

In Alberta, restoration of drained or degraded wetlands is accomplished, by DUC, through defined watershed implementation plans and the use of two restoration methods as follows:

- **Re-Contouring**

The re-contouring method restores naturally occurring wetland areas drained or degraded as evidenced by air photos, soil characteristics etc. The wetlands are restored to their naturally altered water level without the use of structural components (i.e. pipes, granular material, rock or filter fabric). Suitable local soils and vegetation are used in the restoration work.

DUC will secure the rights to the land for a minimum term of 30 years. Restored wetlands vary from seasonal to semi-permanent types and are usually 1 to 2 hectares in size. The restoration of these wetlands is accomplished through use of on-site material by re-contouring the existing drainage ditch or swale to conditions prior to drainage. These re-contoured features have broad tops, shallow slopes and are blended into the lay of the land. The slope at which the re-contoured area rejoins the downstream channel will be natural or where soil stability is a concern have a slope of 20:1 or flatter and will be vegetated with erosion tolerant grasses where possible. (See Appendix 1).

- **Engineered**

The engineered method is also used to restore naturally occurring wetland areas previously drained or degraded. This type of wetland often naturally spills water to downstream areas in runoff events that are less than 1:2 years in frequency, and is part of the effective drainage area of the larger drainage basins in which they lie. The goal is to restore the altered naturally occurring water level.

In this case, there may be existing structures downstream that must be maintained and/or operated. Full natural restoration may be achievable and operating plans may call for additional water storage or releases.

Engineered restorations are accomplished using earth fill embankments, fixed or variable crest water control structures, outflow conveyance systems and contain provisions for emergency peak flood flows. Engineered works are designed for a 30-year life expectancy and have a minimum land use agreement term of 30 years. (See Appendix 2).

- **Water Act Approval and/or Licence for Engineered Projects**

DUC will file an approval/licence application for all engineered projects, and may request a licence term of 30 years commensurate to the project life expectancy and the term of the land use agreement. Also, where public land is involved, DUC may request a term licence, which is consistent with the term of a Licence of Occupation (currently 50 years) as issued under the *Public Lands Act*.

- **Unauthorized Drainage**

In situations where there has been no previous authorization under the *Water Act* or its predecessor acts to drain a wetland, DUC may proceed to restore the wetland by re-contouring. No *Water Act* authorization is required as long as the site does not have water flowing through or standing in it at the time of construction.

In cases where the drainage course to be re-contoured (plugged) contains flowing or standing water at the time of the re-contouring work, then it will be the responsibility of DUC to apply for a *Water Act* authorization and notify potentially affected landowners of the proposed works.

- **Existing Authorized Drainage**

There are situations where drainage of wetlands has taken place legally and the approval applicant has obtained authorization either under the provisions of the *Water Act* or its predecessor acts.

In these situations, the holder of the authorization (or their agent) may request the Director to amend or cancel the authorization. Procedures to cancel the authorization may include providing notice of the amendment or cancellation in accordance with the *Water Act* and regulations before DUC proceeds with restoration work. It is possible that a downstream landowner has become dependent on the drained water, and may need some assistance until the wetland refills and downstream flows return to normal.

Summary

• Re-Contouring

- In cases where the site of restoration is dry, the restoration by re-contouring of wetlands that have been drained without authorization does not require an approval under the Alberta *Water Act*.
- In cases where the site of the restoration has flowing or standing water, the restoration of wetlands that have been drained without authorization will require an authorization under the Alberta *Water Act*. It is the responsibility of DUC to obtain an approval under the *Water Act* and to notify downstream landowners prior to commencement of works.
- DUC intends to obtain long-term (minimum 30 years) land use agreements from affected landowners.
- DUC will notify AENV (Regional Services) and landowners of the restoration work prior to commencement of work.
- In cases where an authorization has been provided to drain a wetland in the past, DUC as agent for the authorization holder or the landowner will apply to AENV to have the authorization cancelled or amended. DUC will submit a reclamation plan.
- DUC has agreed to provide a report on March 31st of each year for all restoration work carried out in the past year to AENV's Evaluation and Monitoring Branch stating:
 - Water Survey of Canada sub basin
 - Land location (1/4 section)
 - GPS coordinates of restored wetlands
 - Estimated wetland size (ha)
 - Estimated maximum depth (m)
 - Cumulative total of restored wetlands (ha)
 - General habitat conditions
- DUC will periodically inspect and conduct maintenance as required.

- **Engineered**
 - Requires authorization under the *Water Act*.
 - DUC intends to obtain land use agreements with a minimum term of 30 years on the affected land and request a licence term of the same duration.
 - DUC provides standard AENV design information submission with all applications.
 - Where water levels are held above natural elevation, an allocation via a licence must be applied for, but only for the volume of water held in excess of natural conditions.
 - DUC will work with AENV to ensure application requirements are met early enough for approvals to be issued 4 months from date of submission.
 - Whenever possible, AENV will provide DUC with a standard 30-year term licence.
 - In the case of Crown lands, DUC will request AENV to issue an approval with the same expiry date as the Licence-of-Occupation.
 - DUC will submit record drawings to AENV upon completion of the project.
 - DUC is responsible for operation of the works and will inspect, and maintain projects annually and provide to AENV (Evaluation and Monitoring Branch and Regional Services), by March 31st of each year, a general conditions overview report of engineered wetland restoration projects for the past year, including general habitat conditions.

Appendix 1
Re-Contouring Wetland Restoration



Before



After

Appendix 2
Engineered Wetland Restoration



Fixed Crest Weir



Variable Crest Steel Sheet Pile Weir



Variable Crest Drop Inlet Water Control