



“Alberta Wetlands: From Classification to Policy”

Course Outline 2019

(updated August 9, 2019)

1 Wetland Classification Systems in Alberta

Wetland Definitions, Wetlands in Canada, classes and areas of wetlands in Canada, Wetland Succession, Peatland Formation (Terrestrialization and Paludification)

1.1 Canadian Wetland Classification System

Organic wetlands, Mineral Wetlands, Wetland Types and Forms, Bogs, Fens, Shallow Open Water, Swamps, Sphagnum, Wetland Trophic Scales, Restrictions/Disadvantages

1.2 Stewart & Kantrud Classification System

Spatial relation of vegetation zones, Class I, Class II, Class III, Class IV, Class V, Class VI, Class VII Wetlands, Alkali Ponds, Fen Ponds, Prairie Pothole Region, Wildlife, Permanence, Inundation Cycles, Prairie Hydrology, Restrictions/Disadvantages

1.3 The Alberta Wetland Classification System

This classification system was developed consistently characterize wetlands based on a similar suite of criteria to include Alberta’s flora and ranges of environmental geological and climate characteristics. This harmonizes the use of at least four different classification systems and multiple wetland inventories previously being used

1.3.1 The Alberta Wetland Classification System – Mineral Wetlands (Marshes)

Classes, Swamps, Marsh, Shallow Open Water, Forms, Cover Types, Salinity, Acidity, Alkalinity, Conductivity, Soil Mottling and Gleying, Soil Redox, von Post Test, Permanence, Vegetation, Changes from CWCS and S&K

1.4 The Alberta Merged Wetland Inventory

This classification system was developed consistently characterize wetlands based on a similar suite of criteria to include Alberta’s flora and ranges of environmental geological and climate characteristics. This harmonizes the use of at least four different classification systems and multiple wetland inventories previously being used

2 Wetland Legislation, Regulations, Policy and Regulatory Bodies

2.1 Water and Provincial Legislation

2.1.1 Environmental Protection and Enhancement Act

2.1.2 Water Act

2.1.3 Public Lands Act

2.1.4 Natural Resources Transfer Act

2.1.5 Surveys Act

2.1.6 Agriculture Operations Practices Act

2.1.7 Responsible Energy Development Act

AER Regulations, Directives and Schedules

Responsible Energy Development Act, Single Regulator, Enhanced Approval Process, Directives, Releases into Wetlands, Spill Reporting Requirements for Releases in Wetlands

2.3 Water and Municipal Legislation

Municipal Government Act, Flood Recovery and Reconstruction Act, Environmental Reserves, Riparian Areas, Flood Hazard Mapping

3 Alberta Wetland Policy

What is Policy, Policy Goals, Key Concepts, Water for Life, Relative Wetland Value Units, Wetland Mitigation Guiding Principles, Avoidance, Minimization and Replacement, Replacement Ratios, Restorative and Non-Restorative Techniques, In-Lieu Fee Payments, Mitigation Banking, White Zone vs. Green Zone Implementation, Introduction to Wetland Directives, Guides and Tools, Criticisms

3.1 Wetland Value Metrics and Valuation

Functional Groups, Biodiversity, Water Quality Improvement, Hydrologic Function, Human Value, Abundance, Value Category, Relative Wetland Value Units, Replacement Ratios

3.2 Alberta Wetland Delineation and Identification Directive

Delineation Protocol, Hydrophytic Vegetation, Boundary, Delineation Pathways, Desktop Pathways, Aerial Photo Interpretation, Climate Model, Field Assessments

3.3 Wetland Regulations

Wetland Regulatory Requirements Guide & Application Checklist, Disturbances, Activity, Wetland Ownership, Introduction to Directives

3.4 Wetland Permanence Assessment Tool

Crown ownership determination, Inundation Cycle, Deviations from Climate Norms, Aerial Photography

3.5 Alberta Wetland Rapid Evaluation Tool (ABWRET)

ABWRET-A, ABWRET-D, White Zone Tool, Green Zone Tool, Valuation System, Estimated and Actual A,B,C,D Values

3.5.1 Desktop Assessments

3.5.1.1 Air Photo Interpretation

Aerial photos, Orthophotos, Stereo Pairs, Shape, Pattern, Tone, Texture, Delineation, Wetland Class, Vegetation Modifier, Landform Modifier

3.5.1.2 Historical Air Photo Analysis

Historic aerial photos, selection, climate model, Alberta Agriculture data, Permanence Assessments

3.5.1.3 Impact Assessment (Avoid, Minimize)

3.5.1.4 Desktop Delineation and Classification (ABWRET-e)

3.6 Alberta Merged Wetland Inventory

Mosaic coverage for most of the Province, different data sources, resolutions and scales, limitations, classification bias, limitations

3.7 WAIR & WAIF Reporting

Differences between WAIR and WAIF, When They Apply, Desktop Assessment, Identification and Classification, Delineation, Wetland Impact Assessment, Digital Shapefile Submission, Species Surveys, Low Risk and Temporary Impacts

3.8 Wetland Mitigation Guiding Principles

Wetland Mitigation Directive, Mitigation Hierarchy, Avoidance, Minimization and Replacement, Replacement Ratios, Restorative and Non-Restorative Techniques, In-Lieu Fee Payments, Mitigation Banking

3.9 Qualified Professionals and Authenticating Professionals

Wetland Practitioners, Pro-10, Stamp, Liability, Education, Experience, Skills, Competencies, Vegetation, Soils, Fish and Wildlife, Landscape, Water Resources, Civil Engineering, Environmental Engineering

Things we don't discuss in the course are Project Management, Safety, Ground Disturbance and other tickets that professional field staff should already have in place.

Professional members shall ensure that they possess a combination of formal education, skill, professional experience, and training as required by their respective PRO-10 and by the provincial regulators to provide technically sound wetland science, design, and/or engineering advice and work. Professionals practicing in wetland science, design, and/or engineering must ensure that their skills are regularly improved and enhanced through training and knowledge sharing.