



1



2



3

8420.0900 Subp. 3.
Restoration and Replacement orders.

- B. Promptly upon being informed by the enforcement authority or the local government unit of the need, a soil and water conservation district staff person **must** inspect the site and prepare a plan in consultation with the local government unit and the enforcement authority for restoring the site to its pre-altered condition.



4

SWCD Role in a violation

- Landowner contact for CDO or RPN
- Site visit- gather information/evidence
- Prepare Restoration/Replacement Order
- Monitor restoration/ replacement site.
- Certificate of Satisfactory Completion
- Track the cases.



5

LGU Role in a violation

- Help Determine if site has permit for work or prior work done.
- Assist SWCD on Restoration/Replacement Orders
- Assist with gathering evidence
- Receive application from landowner for exemption, no-loss determinations, and replacement plans
- Track the cases



6

BWSR's Role in a violation

- Rule interpretation
- Bounce ideas back and forth (appropriate seed mixes)
- May contact more specialist BWSR staff to assist in difficult projects
- Assist SWCD/LGU in developing RO's
- Assist in technical findings



7

DNR Enforcement Role

- Landowner contact if Cease and Desist Orders
- Write Summary of information on violation
- Gather Evidence of the violation including contractors' info
- Issue Restoration and Replacement Order
- Grant Extensions
- Initiate enforcement action
- Follow and track all violation cases
- Issue RPN for after the fact cases. (not in progress)



8

Resource Protection Notices

DNR ENFORCEMENT	
Resource Protection Notification	
System No. RPN # 000741	<input type="checkbox"/> Wetland (WCA) <input type="checkbox"/> Public Waters (PW)
Date: 12/1/21	<input type="checkbox"/> Aquatic Plant (APM)
File: 2021	<input type="checkbox"/> Aquatic Insect <input type="checkbox"/> Private Waters <input type="checkbox"/> Violation
Comment: RPN	
<input type="checkbox"/> Corrective <input type="checkbox"/> Extension <input type="checkbox"/> Reinstatement pending <input type="checkbox"/> Other	
By: [Redacted]	
For: [Redacted]	
County: [Redacted]	County No. [Redacted]
Parcel No. [Redacted]	
Location (Address/Section/Range/Township, or GPS)	
Name: [Redacted]	
Local Government Use/POC Contact: [Redacted] Phone: [Redacted]	
Map: [Redacted]	
Issued/Office/Employee: [Redacted]	Noted/By: [Redacted]
Created/Date/Time: [Redacted]	Noted/By: [Redacted]

Used as a notice when activity is complete and no sign it will continue



9

Cease & Desist Orders

Used when equipment is on site, and it appears the activity will continue to impact wetlands.



10

Data Collection

Who – landowner and/or responsible party, contractor

- RO will go to all

What – type of disturbance or activity that occurred

- Useful for determining impact

Why – purpose of action? Were goals achieved? (i.e. some drainage is not effective...)



11

Data Collection

When – estimated time of activity occurrence

- Helpful in determining responsible party if ownership change has occurred
- Aerial photos/PID information
- Did the activity work?

Where – Property location (critical), but also landscape position, slope, etc.



12

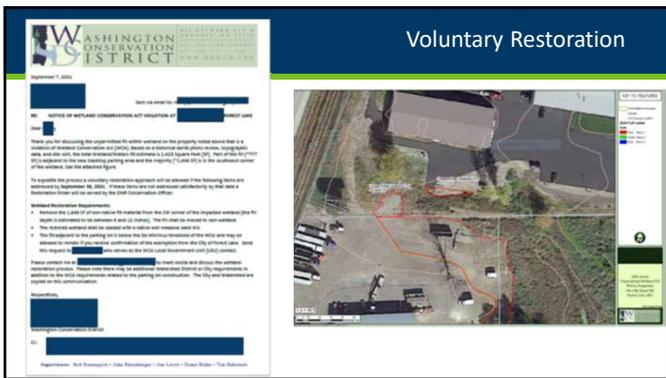
Is a formal Restoration Order Always Required?

- No, voluntary restoration is allowed but should consider
 - Willingness to cooperate
 - Past history
 - Shortened timeframe for completion to allow for formal RO process
 - Some kind of written plan or agreement with deadlines
 - Communication and agreement with DNR Enforcement
 - No formal way to make other responsible parties liable



16

Voluntary Restoration



The document includes sections for 'Restoration Requirements' and 'Please contact me at...'. It also features an aerial map of a site with red and green overlays.

17

Certificate of Successful Restoration

Prepared and issued by the SWCD



The screenshot shows a 'Determination Notice Form' with various fields for project information and a photo of a construction site with a yellow excavator.

18

RO Non-Compliance

The landowner does not comply with the RO. Now what?

- Enforcement will work with you!
 - CO Sends a Letter
 - CO Makes a Phone call
 - Deed restriction in some cases
 - Landowner Served a Criminal Citation
 - Court



19

Contractors Responsibility

Prior to working in wetlands:

- Must have obtained signed statement from landowner
- Mailed a copy to the LGU
- They do not need to verify if the landowner has a permit or not. Just have the signed form and mailed it.

20

Appeals

- Landowner has 30 days to appeal Order
- RO must allow minimum of 30 days to comply with Order
- TEP, in consultation with DNR Enforcement, may allow longer to complete restoration.



21



Scenario- lake fringe fill

- What kind of information is relevant to collect?
 - Who, when, why?
 - Extent of fill and depth
 - Wetland boundary and type
 - Impact amount
 - Applicable exemptions?
 - Jurisdiction(s)?
- How should this be handled?

22



Submitting & Reviewing Wetland Delineation Reports



23

Guidance for Submitting Delineation Reports in MN

- Delineation report content
- Delineation Method and data collection
- On-site field demarcation
- Field Notes
- Basic Report Components
- Field Review
- Non-Routine Wetland Delineations



24

What to Record While in the Field

- Plant communities
 - Describe and sketch on aerial photograph
- Landscape settings
 - Topographic changes from wetland to upland
 - Gradual, abrupt?

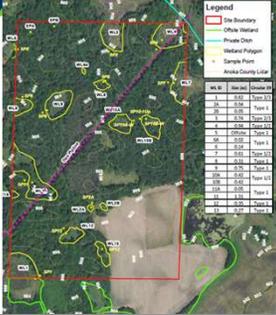


- Vegetation
 - Dominant veg
 - changes from wetland to upland
- Soil
 - Changes from wetland to upland
 - Textures, Colors
- Hydrology indicators
 - Changes from wetland to upland

25

What to Record

- Area of wetland within project area
- Wetland type (HGM, Eggers & Reed)
- General site description
 - Buildings, ditches, culverts, etc.
 - Field conditions
 - Precip. before site visit, cloud cover, drought, etc.



WUL#	Wetland	Wetland ID
1	Wetland 1	Wetland 1
2	Wetland 2	Wetland 2
3	Wetland 3	Wetland 3
4	Wetland 4	Wetland 4
5	Wetland 5	Wetland 5
6	Wetland 6	Wetland 6
7	Wetland 7	Wetland 7
8	Wetland 8	Wetland 8
9	Wetland 9	Wetland 9
10	Wetland 10	Wetland 10
11	Wetland 11	Wetland 11
12	Wetland 12	Wetland 12
13	Wetland 13	Wetland 13
14	Wetland 14	Wetland 14
15	Wetland 15	Wetland 15
16	Wetland 16	Wetland 16
17	Wetland 17	Wetland 17
18	Wetland 18	Wetland 18
19	Wetland 19	Wetland 19
20	Wetland 20	Wetland 20

26

Notes on Field Notes (cont.)

- Note taking skills improve with experience as you figure out what is important and what is not
- Take time to organize, refine, and augment field notes immediately following your field visit.
- Label and organize photos so you know where you took them and what they are intended to show.



WETLAND DETERMINATION DATA FORM - Northeast and Northwest Regions

Project No: 2000 1234 Avenue NE City/County: Blaine/Anchorage Sampling Date: 3-1-2017

Applicant/Owner: Contractor Name State: AK Sampling Point: 022566

Investigator(s): J. Smith, K. Johnson Section: Wetland, R/W, etc. Date: 3-1-2017

Latitude (NAD83): 61.234567 Longitude (NAD83): 159.876543 UTM Zone: 18Q UTM Easting: 650000 UTM Northing: 6500000

Site No.: 01

Are any anthropogenic alterations of the site typical for this type of site? Yes, explain in notes. No

Are hydrology indicators present? Yes No

Are vegetation indicators present? Yes No

Are hydrology indicators present? Yes No

Are vegetation indicators present? Yes No

Are hydrology indicators present? Yes No

Are vegetation indicators present? Yes No

SUMMARY OF FINDINGS

Hydrology indicators present? Yes No

Vegetation indicators present? Yes No

Indicators of wetland hydrology present? Yes No

If yes, indicate wetland site ID: Wetland ID

Notes: (Separate additional procedures here or in a separate report.)

Climate conditions typical (normal) based on gridded database.

27

Text Examples

Mineral Flat

Wetland A is a **Type 7** – Hardwood Swamp located in the northcentral part of the delineation area and covers +/- 1.04 acres. Wetland A hydrophytic vegetation criteria were met by the Dominance Test (>50% FAC, FACW, or OBL) and the Prevalence Index. The Wetland A sampling point met hydrology indicators B9 – Water-Stained Leaves, D2 – Geomorphic Position, and D5 – FAC-Neutral Test. Hydric soil indicators A11 – Depleted Below Dark Surface and F3 – Depleted Matrix were present. Wetland A is not identified on the NWI or PWI. The source of hydrology for Wetland A appears to be from precipitation.

34

Outlined Text Examples

Wetland A – Type 7, Shallow Marsh/Shrub Swamp/Hardwood Swamp

Wetland A is a wetland located along the central portion of the project area. The wetland is connected through drainage and groundwater discharge from nearby uplands. Data point DP_WET_A1, DP_WET_A2, DP_WET_A3, and DP_WET_A4 was documented to show wetland characteristics.

Data Point DP_WET_A1 (Type 7, Hardwood Swamp)

- **Hydrology** – Wetland hydrology indicators observed at data point DP_WET_A1 included: High Water Table (A2), Saturation (A3), Water-stained Leaves (B9), Hydrogen Sulfide Odor (C1), Thin Muck Surface (C7), Drainage Patterns (B10), Moss Trim Lines (B16), Stunted or Stressed Plants (D1), Geomorphic Position (D2), Shallow Aquitard (D3), Microtopographic Relief (D4), and FAC-Neutral Test (D5).
- **Vegetation** – Dominant vegetation observed included: **Trees** – Balsam Fir (*Abies balsamea*, FAC), and Quaking Aspen (*Populus tremuloides*, FAC), **Saplings/Shrubs** – Speckled Alder (*Alnus incana*, FACW), and Quaking Aspen (*Populus tremuloides*, FAC), **Herbaceous** – Reed-canary Grass (*Phalaris arundinacea*, FACW), Jewelweed (*Impatiens capensis*, FACW), Dwarf Raspberry (*Rubus pubescens*, FACW), and Bristly Sedge (*Carex comosa*, FACW).
- **Soil** – The soil within this portion of the wetland complex was classified as a silty clay loam with a matrix color of 10YR 3/1 from 0-6 inches bgs. Hydric soil indicators Loamy Mucky Mineral (F1), and 2 cm Muck (A10) were met at DP_WET_A1.

35

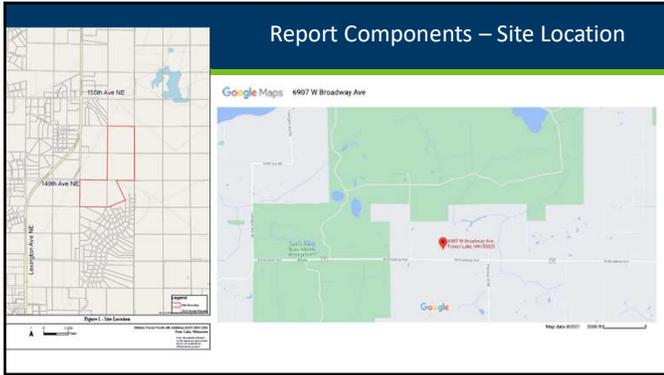
Report Components – Figures

1. Site Location
2. National Wetland Inventory (NWI)*
3. Soils
4. Public Waters Inventory (PWI)*
5. Wetland Boundary Map



*often combined

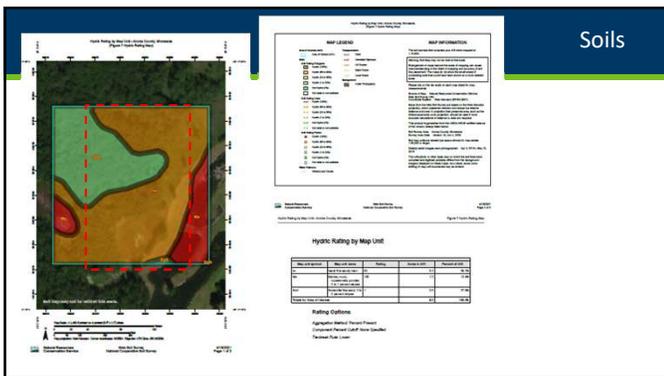
36



37



38



39



40



41



42

Basic Class Summary

mi BOARD OF WATER AND SOIL RESOURCES

BWSR Wetland

Minnesota Wetland Professional Certification Program

46

MINNESOTA WETLAND PROFESSIONAL CERTIFICATION PROGRAM
CORE CURRICULUM

- **Critical Definitions**
- **Classification Systems & Functions**
- **Wetland Delineation**
 - Vegetation – hydrophyte, Dominance
 - Soil – hydric indicators
 - Hydrology- inputs/outputs, indicators, monitoring
- **Wetland Conservation Act**
 - Purpose & Scope
 - Application Procedures & Noticing Requirements
 - Basic Decisions
 - Boundary/Type
 - No-Loss
 - Exemptions
 - Replacement plans
 - Wetland Banking
 - Enforcement & Appeals

Minnesota Wetland Professional Certification Program

47

What is a Wetland?

Definition: Those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.

Hydrology + Vegetation + Soil = Wetland

48

3-Parameter/ Indicator Approach

1. **Soils** –Historic conditions, may not reflect current condition.
2. **Hydrology** –Current condition, but heavily influenced by recent climate conditions
3. **Vegetation** – Somewhere between



The 87 Manual requires 3 parameters because no one source typically gives the answer in all situations

49

Wetland Functions & Values

Wetland Functions: in scientific assessments means natural processes



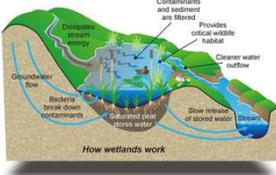
Wetland Value: wetland goods and services providing monetary or social welfare benefit.



50

Wetland Functions

- Act as a natural “filter” to maintain water quality
- Facilitates infiltration recharging groundwater
- Stabilize base flow
- Decreases fluid velocity during high flow events which decreases turbidity
- Storm water retention (i.e. storage)
- Provides habitat
- Shoreline protection



How wetlands work

BWSR Wetland Section | www.bwsr.state.mn.us/wetlands

51

Land Resource Regions

- **Regions dictate which indicators are used and how they are used**

a) The indicator descriptions in this guide are abbreviated versions of the full descriptions found in the Regional Supplements to the Corps of Engineers Wetland Delineation Manual (Great Plains, North-Central/North-East, Midwest). Users are encouraged to reference the full descriptions and user notes found in those documents.

b) An indicator is applicable statewide unless otherwise indicated below the indicator description.



Minnesota Land Resource Regions

52

Land Resource Regions

- **Regions dictate which indicators are used and how they are used**










53

Wetland Delineation Types

ROUTINE

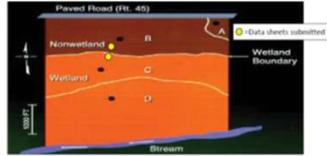
- **Level 1** - Onsite Inspection Unnecessary
- **Level 2** - Onsite Inspection Necessary
- **Level 3** - Combination of Levels 1 and 2



54

Sampling Location Should Be Representative

- Representative of soil changes (from upland to wetland)
- Representative of vegetation changes
- Representative of hydrology indicator changes
- Representative of landscape changes



55

Wetland Classification Systems in MN

- **Circular 39**
- **Eggers & Reed**
- Cowardin
- **Hydrogeomorphic Method**

Circular 39	Eggers & Reed
1	Seasonally Flooded Basins
1	Floodplain Forests
2	Sedge Meadows
2	Fresh (wet) Meadows
2	Wet to Wet-Mesic Prairies
2	Calcareous Fens
3	Shallow Marsh
4	Deep Marsh
5	Shallow, Open Water
6	Shrub-Carr
6	Alder Thicket
7	Hardwood Swamp
7	Coniferous Swamp
8	Open Bog
8	Coniferous Bog



56

Research Data Sources

- Aerial Photos (current and historic)
- Soil map (Web Soil Survey)
- Topographic\LiDAR
- NWI Map (updated version in MN)
- DNR Protected Waters Map



57

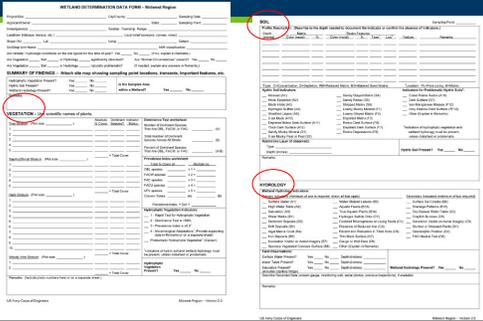
Critical Definitions

- Wetlands
- Growing Season
- Atypical Situations
- Problem Areas
- Normal Circumstances



58

It's all about the documentation!

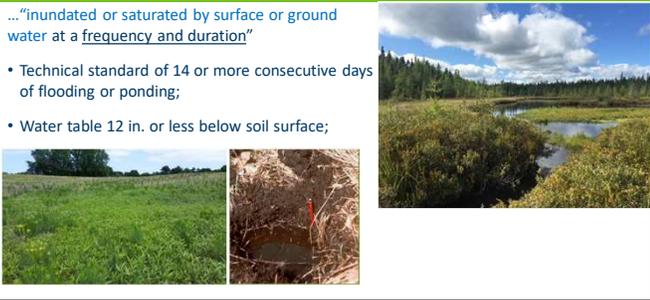


59

Hydrology

...“inundated or saturated by surface or ground water at a frequency and duration”

- Technical standard of 14 or more consecutive days of flooding or ponding;
- Water table 12 in. or less below soil surface;



60

Hydrology Indicators

Evidence that there is continuing hydrology and confirms that an episode of inundation/saturation occurred recently.

Wetland hydrology indicators are divided into two categories:
Primary – provide stand-alone evidence of a current or recent hydrologic event; and
Secondary – provide evidence of recent hydrology when supported by one or more other hydrology indicators.



61

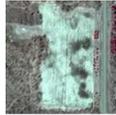
Hydrology Indicator Groups



Group A – direct observation of water



Group B – evidence of flooding/ponding



Group C – evidence of current or recent saturation.



Group D – Landscape and veg. characteristics that indicate contemporary wetland conditions.

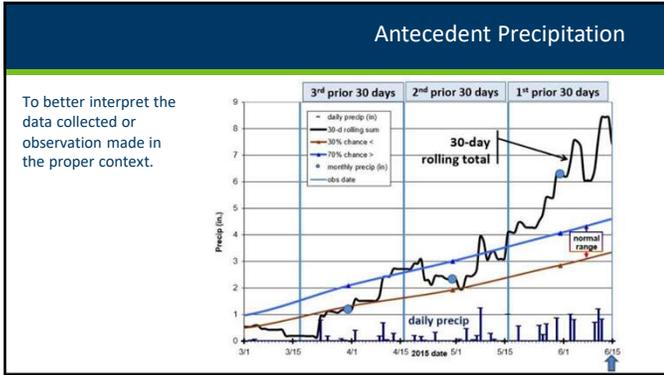
62

Soil

- Basics of Soil
 - Soil formation
 - Landscape position
- Soil Properties
 - Texture
 - Color
- Hydric soil development
- Web Soil Survey
 - Interpreting soil reports
- Hydric soil indicators
 - All
 - Fine
 - Sandy
- Common soil indicators



63



67

MN Wetland Regulatory Programs

- Public Waters Permit Program
- Wetland Conservation Act (WCA)
- Clean Water Act Section 404
- Section 401 of the Clean Water Act (401)
- Swampbuster provisions of the Food Security Act (FSA)

DEPARTMENT OF
NATURAL RESOURCES

Communities
and Local Government

US Army Corps
of Engineers

BOARD OF WATER
AND SOIL RESOURCES

68

Public Waters Permit Program

- **Regulates:** changes to "course, current or cross-section"
- **Administered by:** DNR – Area Hydrologists
- **Authorities:** M.S. 103G; M.R. Chapter 6115
- **Jurisdictional boundary:** "Ordinary High-Water Level"
- **Review standards:** Public interest; reasonable/practical, Riparian rights, Availability of feasible & prudent alternatives, Compensatory mitigation
- **Appeals:** Contested case hearing
- **Enforcement:** DNR Conservation Officers; cease & desist, restoration orders
- **Application:** on-line via "MPARS"

69

Clean Water Act Section 404

- **Regulates:** Discharges of dredged or fill material, including reposit
- **Administered by:** U.S. Army Corps of Engineers – St. Paul District
- **Authorities:** 33 U.S.C. §1251; 33 CFR Parts 320-332; 40 CFR Part 230
- **Jurisdictional boundary:** 1987 Corps of Engineers Wetland Delineation Manual
- **Review Standards:** Sequencing, public interest, adequate compensatory mitigation
- **Appeals:** COE administrative appeal
- **Enforcement:** COE and USEPA; administrative orders
- **Application:** Joint Application Form for Activities Affecting Water Resources in Minnesota





70

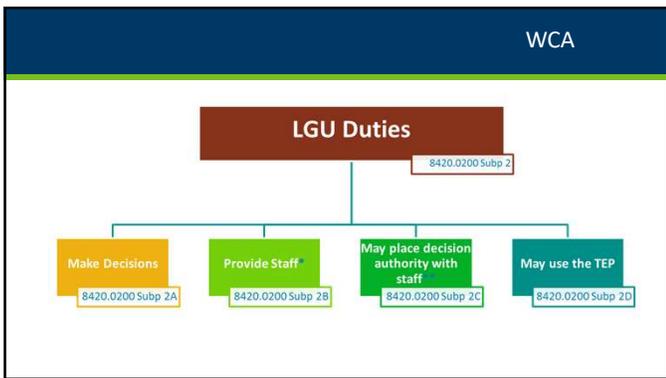
Wetland Conservation Act

- **Regulates:** draining, filling, some excavation
- **Administered by:** Local Government Units, SWCDs, Watershed Districts
- **Oversight by:** MN Board of Water and Soil Resources
- **Authorities:** M.S. 103A, 103B, 103G; M.R. Chapter 8420
- **Jurisdictional boundary:** 1987 Corps of Engineers Wetland Delineation Manual
- **Review standards:** Avoid, minimize, replace (sequencing)
- **Enforcement:** DNR Conservation Officers; cease & desist, restoration orders
- **Application:** Joint Application Form for Activities Affecting Water Resources in Minnesota

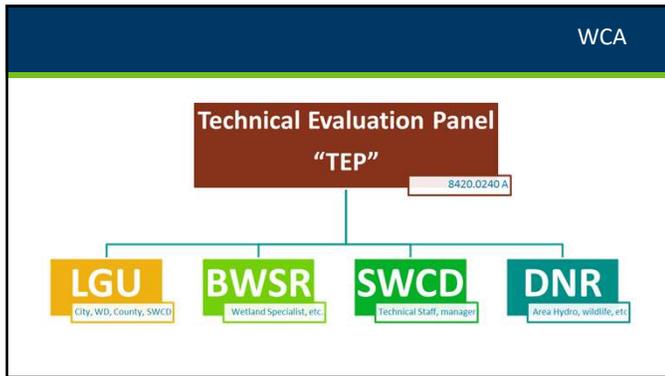




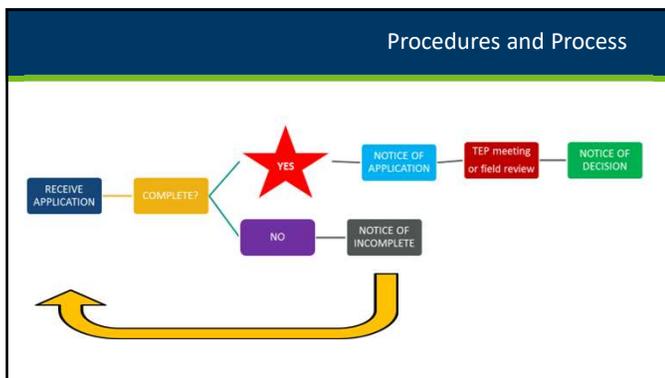
71



72



73



74

-
- Overview of Wetland Vegetation
- Hydrophytic Vegetation Definition
 - Define Hydrophyte
 - What makes a plant a hydrophyte
 - Determine why matters
 - Hydrophytic Vegetation Indicators
 - Field indicators
 - Indicator status
 - Dominance
 - Determining Hydrophytic Plant Community
 - Rapid Test
 - Dominance Test (50/20 Rule)
 - Prevalence Index
 - Morphological Adaptations
- 75

75

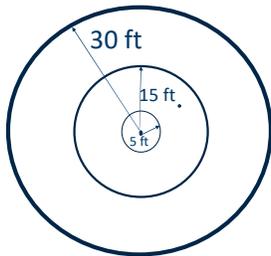
Determining Hydrophytic Vegetation

The procedure for using hydrophytic vegetation indicators is as follows:

1. Apply Indicator 1 (Rapid Test for Hydrophytic Vegetation).
2. Apply Indicator 2 (Dominance Test).
3. Apply Indicator 3 (Prevalence Index). This and the following step assume that at least one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present.
4. Apply Indicator 4 (Morphological Adaptations).

76

Vegetation Sampling



5 ft Herbaceous; 15 ft Shrub/Sapling; 30 ft Tree

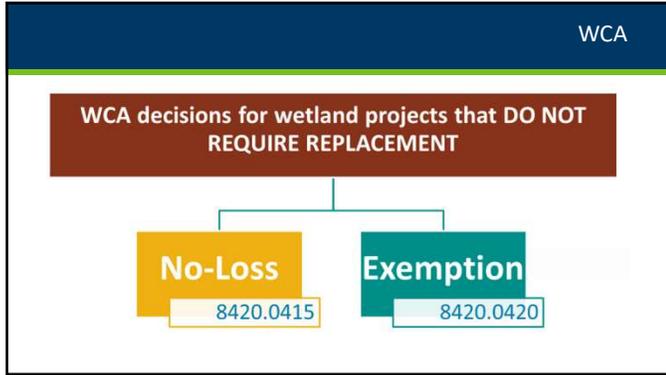
77

WCA

Application Types and Procedures

- Boundary/Type
- No-Loss
- Exemption
- Sequencing
- Replacement Plan
- Banking

78



79

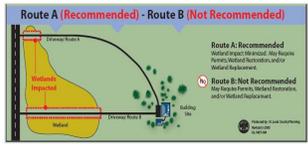


Replacement Plans

8420.0330 REPLACEMENT PLAN APPLICATIONS.
Subpart 1. Requirement. A landowner proposing a wetland impact that requires replacement under this chapter must apply to the local government unit and receive approval of a replacement plan before impacting the wetland.

Sequencing

8420.0520



Avoid Impact
8420.0520 Subpart 3

Minimize Impact
8420.0520 Subpart 4

Replace
8420.0522

80

Overview of Wetland Banking

- Purpose of Wetland Banking
- Types of Wetland Banks
- Actions Eligible for Credit
- Establishing a Wetland Bank
- Certification and deposit of credits
- Withdrawals and transfers
- Replacement for Public Road Projects

Banking-related topics covered in other sections:

- Restoration Construction Standards
- Monitoring and Corrective Actions



81

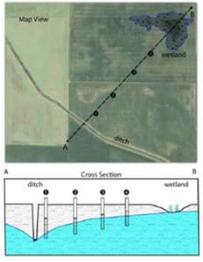
Overview of Wetland Restoration

- General considerations for successful restoration
 - MN Restoration Guide
- Restoring natural hydrology
 - Hydrogeomorphology
 - Landscape position
 - Hydrology
 - hydraulics
- Restoration techniques
 - Filling ditches
 - Removing drain tile
 - Rerouting & pump removal
- Establishing vegetation
- Monitoring
 - Timelines
 - Roles and responsibilities
 - Interpreting hydrology and vegetation monitoring data

82

Overview of Wetland Bank Monitoring

- Monitoring process
 - Construction Certification
 - Duration of monitoring
 - Deposit of Credits
- Maintenance responsibilities
 - Monitoring reports
 - Timeline
 - Reports
- Corrective Actions
- Hydrology Monitoring
 - Performance standards
- Vegetation Monitoring
 - Performance standards



83

Functional Assessment Methods

- MN Routine Assessment Method (MNRAM)
 - Numeric model for assessing wetland functions and some values
- Floristic Quality Assessment
 - Vegetation based ecological condition assessment method



9/15/2010 BWSR Wetland Section | www.bwsr.state.mn.us/wetlands

84

Summary Quiz



1) Sometimes referred to as the "60 day Rule", this Minnesota State Statute determines the agency action deadline for all WCA LGUs to make a decision on a wetland application.

A) MN Statute 8420
 B) MN Statute 15.99
 C) MN Statute 404
 D) MN Statute 103G

88

2) An exemption is:

a) An activity that no matter how large of an impact requires replacement.
 b) A regulated activity that does not require replacement.
 c) An activity that requires an application everywhere in the State.
 d) An activity occurring in a calcareous fen.

3) During the review of a replacement plan application, LGUs must use this process to determine whether a project avoids, minimizes then replaces wetland impacts:

a) No-loss criteria
 b) Sequencing
 c) Exemption standards
 d) Replacement order

89

4) Per Rule, pre-settlement wetlands are wetlands or public water wetlands that:

a) Have been constructed since humans developed the area.
 b) Existed at the time of Minnesota statehood in 1858.
 c) Natural wetlands that have been altered since statehood.
 d) Are high quality wetlands where no impacts can occur.

5) Bank Service Areas are factored into what aspect of implementing the Wetland Conservation Act?

a) Calculating de minimis
 b) Wetland replacement siting
 c) Determining the LGU
 d) Prioritizing wetland restoration projects

90

<p>6) A project to restore a partially drained wetland may be qualify as what under the wetland banking program:</p> <ul style="list-style-type: none"> a) Action eligible for credit b) Compensation planning framework c) Local Government road wetland replacement project d) Full application 	<p>7) Who certifies construction of a wetland bank project?</p> <ul style="list-style-type: none"> a) BWSR b) Army Corps c) LGU d) SWCD

91

<p>8) Which of the following are considerations for wetland restoration projects?</p> <ul style="list-style-type: none"> a) Adjacent land uses b) Location of existing drainage ditches c) Drainage law implications of restoring ditches d) All of the above 	<p>9) Which of following is a vegetation based ecological condition assessment method for wetlands:</p> <ul style="list-style-type: none"> a) MNRAM b) Cowardin c) Floristic Quality Assessment d) Eggers & Reed

92

<p>10) Which member of TEP is responsible for writing a WCA Restoration Order?</p> <ul style="list-style-type: none"> a) LGU b) BWSR c) SWCD d) Army Corps 	<p>11) In the WCA, fill is defined as:</p> <ul style="list-style-type: none"> a) Any solid material added to or redeposited in a wetland b) Woody vegetation that originated in the wetland that impairs water flow c) Posts or pilings for linear projects such as boardwalks d) Both a and b

93

12) A delineator conducts a desktop review of air photos, soils map, topographic maps, and local wetland maps to identify and defines a wetland boundary without making a site visit. This is an example of what?

- a) A comprehensive level 3 delineation
- b) An unacceptable methodology under any circumstances
- c) A quantitative delineation approach
- d) A routine level 1 delineation

13) A Circular 39 Type 2 wetland, is most similar to what Cowardin Classification?

- a) PEMB
- b) PUBF
- c) PSS1C
- d) PFO1B

94

14) A seasonally flooded wetland on agricultural land is normally plowed and planted in most years. For delineation purposes, which of the following conclusions is most likely true?

- a) This is not a jurisdictional wetland
- b) Normal circumstances are not present
- c) Normal circumstances exist
- d) A level 1 delineation is required

15) A wetland good and services which provides monetary or social welfare benefit is known as:

- a) wetland value
- b) Floristic Quality Assessment
- c) wetland function
- d) stormwater retention

95

16) What is the definition of depleted matrix? Describe what it looks like.

Value 4 or More
Chroma 2 or Less



17) A project is located in the 50-80% presettlement area outside of shoreland. The landowner proposes to excavate in a semipermanently flooded wetland. What is the maximum de minimis allowed for this activity?

- a. 10,890 square feet
- b. 4,356 square feet
- c. 400 square feet
- d. 100 square feet

96

18) When administering the Wetland Conservation Act, duties of the Local Government Unit include:

- a) Providing knowledgeable and trained staff.
- b) Making recommendations to TEP on WCA applications.
- c) Writing the WCA Rule.
- d) Maintaining WCA records for 5 years.

19) Which of the following is the least important when conducting hydrology monitoring with shallow wells for determining if the wetland hydrology technical standard is met for an area?

- a) Growing season.
- b) Depth to restrictive soil layer.
- c) "A" horizon thickness.
- d) Well installation methodology.

97

20) Which of the following tests is used for a wetland hydrology indicator?

- a) 50/20 dominance
- b) FAC Neutral
- c) Prevalence Index
- d) Bulk density

21) When should the Prevalence Index be calculated?

- a) When dominant vegetation (as determined by the 50/20 rule) is determined to be hydrophytic.
- b) When non-dominant vegetation (as determined by the 50/20 rule) is determined to be hydrophytic.
- c) When hydric soils and wetland hydrology indicators are absent and the wetland determination is made by vegetation alone.
- d) When wetland plant communities fail the dominance test, but have indicators of hydric soils and wetland hydrology

98

22) Based on the following vegetation sampling, how many dominant species are present?

Herb Strata	Shrub Strata	Tree Strata
Species A – 45%	Species A – 4%	Species A – 10%
Species B – 35%		Species B – 5%
Species C – 30%		
Species D – 30%		

23) Which of the following does not qualify for a no-loss?

- a) Activity that will not impact the wetland.
- b) Excavation limited to sediment removal in wetlands that are utilized as a stormwater basin.
- c) Excavation in wetlands that removes sediment which alters the original cross section of the wetland.
- d) Seasonal water level management activities.

a) 2
b) 6
c) 7
d) 8

99

24. A primary function-based goal of a wetland restoration project should include:

- a) Build structures to impound water to create ponding.
- b) Reestablish a plant community that will thrive no matter the conditions.
- c) Create open water habitat.
- d) Restore the site to the natural hydrology.

25. When using the "Guidance for Offsite Hydrology", Area A shows what wetland signature?

- a) Altered Pattern (AP)
- b) Upland (UP)
- c) Normal vegetative cover (NSS)
- d) Drowned out (DO)



100

MWPCP Exam Instructions

- Show State-issued ID
- Fill out name and date
- Circle the **one best** answer
- 2 hours to complete
- No cell phones allowed on desk
- Use calculators provided
- Return test and all materials
- Results in ~4 weeks

101
