

MnRAM Guidance on Selected Questions



1



Formula: Vegetative Integrity/Diversity

There are four ways to report this function:

Individual Community Scores: maintain raw data as recorded.

Highest Quality Community: report the highest-functioning community.

Non-Weighted Average Quality of all Communities: straight average

Weighted Average Quality Based on Percentage of Each Community: multiply each community rating by its percentage, then add all together.



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Field Worksheet: Side 2

MNRAM 3.0 Wetland Assessment Methodology Score Sheet					
Date:		Wet ID	Wet ID	Wet ID	Wet ID
MnRAM					
#	Question Description	Rating	Rating	Rating	Rating
7	Hydrogeomorphology and Topography (circle one)	Depressional/Isolated, Depress ¹ /Flow-through, Depress ¹ /Tributary, Riverine, Lacustrine, Peatland, Floodplain, Slope, Other	Depressional/Isolated, Depress ¹ /Flow-through, Depress ¹ /Tributary, Riverine, Lacustrine, Peatland, Floodplain, Slope, Other	Depressional/Isolated, Depress ¹ /Flow-through, Depress ¹ /Tributary, Riverine, Lacustrine, Peatland, Floodplain, Slope, Other	Depressional/Isolated, Depress ¹ /Flow-through, Depress ¹ /Tributary, Riverine, Lacustrine, Peatland, Floodplain, Slope, Other
8	Maximum Water Depth (inches) : % Inundation	:	:	:	:
9	Local Watershed Area—immediate drainage (acres)				
10	Estimated size of existing wetland (acres)				
11	SOILS: Upland/Wetland (survey classification + site)				
12	Outlet characteristics for flood retention	H M L N/A	H M L N/A	H M L N/A	H M L N/A
13	Outlet characteristics for hydrologic regime	H M L	H M L	H M L	H M L
14	Dominant upland land use	H M L	H M L	H M L	H M L
15	Soil condition (wetland)	H M L	H M L	H M L	H M L
16	F-T: Emergent vegetation (% cover)	%	%	%	%
17	Flow-through emerg. veg. (roughness coefficient)	H M L	H M L	H M L	H M L
18	Sediment delivery	H M L	H M L	H M L	H M L
19	Upland soils (based on soil group)	<i>H M L</i>	<i>H M L</i>	<i>H M L</i>	<i>H M L</i>
20	Stormwater runoff pretreatment & detention	H M L	H M L	H M L	H M L
21	Subwatershed wetland density	<i>H M L</i>	<i>H M L</i>	<i>H M L</i>	<i>H M L</i>
22	Channel/sheet flow	H M L	H M L	H M L	H M L
23	Upland buffer average width (feet)	feet	feet	feet	feet
24	Upland area management (% of each, minimum 20%)	H M L	H M L	H M L	H M L
25	Upland area diversity and structure (% percent of each)	H M L	H M L	H M L	H M L
26	Upland area slope (% in each category)	H M L	H M L	H M L	H M L

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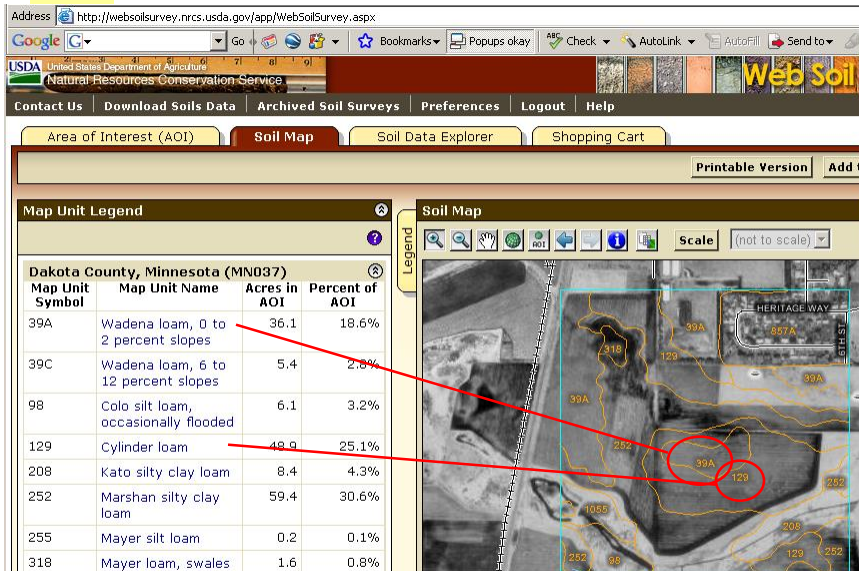
Field Worksheet: useful tips

- The italicized questions require maps or other data to be answered.
- Every other question is formatted as bold just to make it easier to read.
- If the question asks for a percentage of H-M-L, put the percentage of each under the correct heading:

H	M	L
20%	60%	20%

4

#11: Soils data



MnRAM Rating Questions

- The text in the following slides has been edited to fit.
- Starting with #12, questions are answered (generally) by filling in A-B-C.
- Each question has guidance to assist the user in interpreting the question and understanding how to answer in difficult site conditions...

#12: Outlet/Flood retention

For depressional wetlands, describe the wetland surface and subsurface outlet characteristics as it relates to the wetland's ability to detain runoff and/or store floodwater.

High = No surface or subsurface outlet, or a restricted outlet at or greater than 2 feet higher than the wetland boundary

Medium = Swale, channel, weir, or other large, surface outlet (>18 inch pipe) with outflow elevation 0-2 feet above the wetland boundary, subsurface tile with no surface inlet.

Low = Wetland outflow elevation below the wetland boundary with either a high capacity surface outlet (swale, channel, weir, pipe >18 inch diameter, etc...) or a subsurface outlet (drain tile) with a surface inlet.

N/A = Not applicable for floodplain, slope, lacustrine, riverine, and extensive peatland/flat wetlands.

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#13: Outlet/hydrologic regime

Describe the wetland surface and subsurface outlet characteristics as it relates to the wetland hydrologic regime:

High = No outlet, natural outlet condition, or a constructed outlet at the historic outflow elevation; no evidence of subsurface drainage (drain tile).

Medium = Constructed, reduced capacity outlet below the top of the temporary wet meadow zone; moderate indications of subsurface drainage; outlet raised above the wet meadow zone if managed to mimic natural conditions; watercourse has been recently ditched/channelized.

Low = Excavated or enlarged outlet constructed below the bottom of the wet meadow zone; strong indications of subsurface drainage; outlet removes most/all long-term and temporary storage; or outlet changes hydrologic regime drastically.

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#12&13 Guidance: outlet characteristics

The ability of a wetland to maintain a hydrologic regime characteristic of the wetland type is somewhat dependent upon whether a natural outlet is present, or whether an outlet has been constructed or modified by humans. Constructed outlets can significantly diminish the ability of a wetland to provide temporary and long-term

If the constructed outlet changes the wetland to non-wetland or to deepwater habitat or from saturated conditions to open water or from open water to saturated then it is rated **low**.

wetland is able to provide some temporary and long-term water retention (i.e. the wetland is only partially drained), the rating should be **medium**. Constructed outlets, either surface or subsurface, which remove most or all temporary and long-term retention capabilities, significantly reduce the ability of the wetland to maintain its characteristic hydrologic regime; the rating should be **low**. Constructed outlets that keep open water wetlands open water or keep saturated wetlands saturated are rated **medium**.

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#12: Outlet for Flood

How well can this wetland keep water in?
(The more, the better.)



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#13: Outlet for hydrologic regime

How natural is this wetland's outlet?
(Less human intervention = better.)



- H – only for natural outlet conditions
- M – constructed outlets, no hydro. change
- L – changed hydrology (higher *or* lower)

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#16-18: Flow-Through Wetlands

#16: Percent vegetated

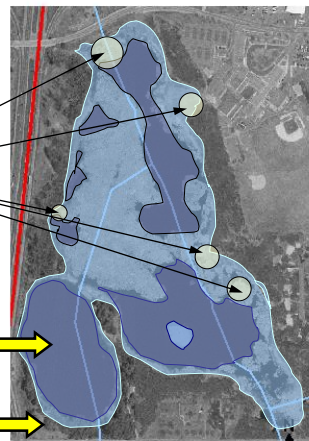
#17: Roughness coefficient

#18: Sediment delivery
Direct stormwater inputs,
mostly from residential.

Darker areas are open-water. The
remaining vegetation is assessed

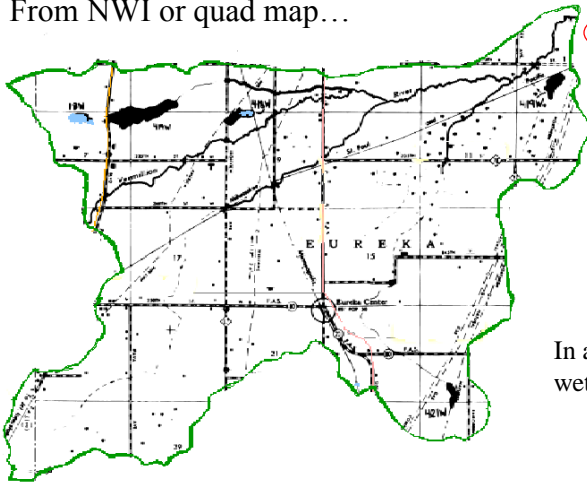
for its ability to slow water.

Outline of wetland area.



#21: Subwatershed wetland density

From NWI or quad map...

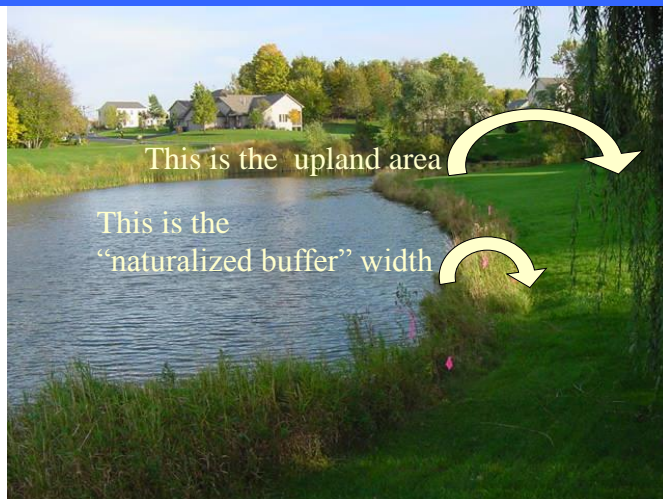


High = <10%
Medium = 10-20%
Low = >20%

In a low-density area, existing wetlands are less dispensable.

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#23–26: Upland area quality



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#23: Buffer width

Upland Buffer width: Average width of the naturalized buffer: _____ feet [Default maximum = 500']

Guidance: Vegetated buffers around wetlands provide multiple benefits including wildlife habitat, erosion protection, and a reduction in surface water runoff. A buffer is an unmanicured upland area immediately adjacent to the wetland boundary. For this question, do not include lawn areas. If the buffer varies from one side to another, take the average width over the entire perimeter.

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#23 Guidance, buffer width

Widths for

Water Quality

High = >50 ft

Med. = 25 – 50 ft

Low = <25 ft

Wildlife Habitat

High = >300 ft

Med. = 50 – 300 ft

Low = <50 ft

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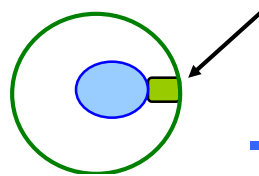
Upland area: general guide

To score the next three questions, consider a 50-foot ring around the wetland.

Describe the condition of each category.

You do not need to measure exactly—use a 20% minimum for faster evaluation (i.e. if it doesn't measure at least 20%, you don't need to count it).

Total should equal 100%.



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Upland Area Demo

Veg. Cover (WQ):

80% Low—cropped/bare, paved

20% Medium—mowed vegetation

Diversity/structure

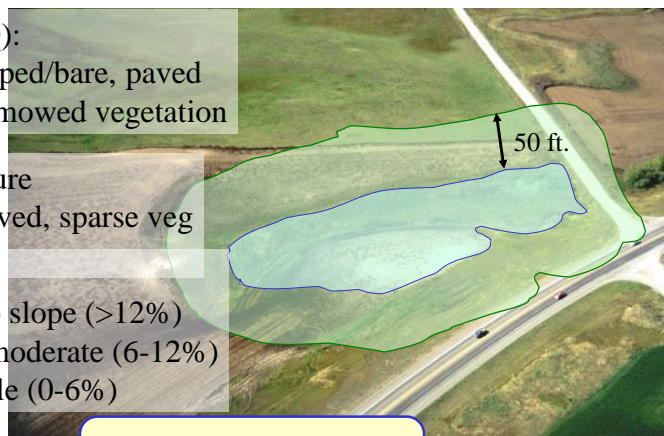
100% Low—paved, sparse veg

Slope:

20% Low: steep slope (>12%)

60% Medium: moderate (6-12%)

20% High: gentle (0-6%)



Remember, there can be a 20% threshold.

18

#24: Upland area management

Upland Area Management: average condition of vegetative cover for water quality.

___% High: Full vegetative cover

___% Medium: Manicured, primarily vegetated (i.e. short-grass lawn, clippings left in place)

___% Low: Lack of vegetation: bare soil or cropped, unfenced pasture, rip-rap, impervious/pavement.

Guidance: This question refers to the 50 feet of upland surrounding the wetland (unlike the shoreland wetland vegetation question, which refers to the vegetation within the wetland itself). Maintenance may include mowing, haying, spraying or burning.

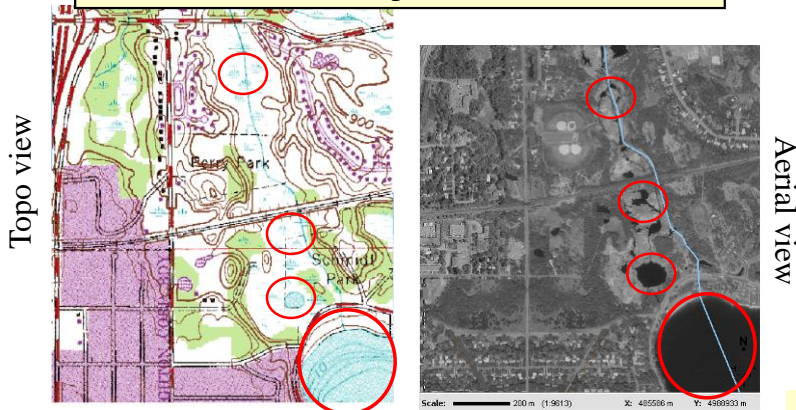
Remember, there can be a 20% threshold.

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#27 demo: water quality protection

(downstream resource)

All these wetlands are upstream of Lake Johanna



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#28: Nutrient loading

Does the wetland water quality and/or plant community exhibit signs of excess nutrient loading:

High = No evidence of excess nutrient loading or nutrient sources (e.g. evidence of diverse, native vegetative community, no pipes, etc.).

Medium = Some evidence of excess nutrient loading source and evidence of plant communities such as dense stands of reed canary grass or narrowleaf, and/or blue (hybrid) cattail.

Low = Strong evidence of excess nutrient loading such as algal mats present or evidence of excessive emergent, submergent

This rating is used in the formula for wetland water quality maintenance and, with the rating reversed, for downstream water quality protection.

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#29-34: Shoreland Questions

■ #33: Erosion potential (opportunity)

■ #30: % cover (density)

■ #31: Average width (in-water area)

■ #32: Shore protection (type of vegetation)



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#35: Rare wildlife

Y / N Is the wetland known to be used recently by rare wildlife species or wildlife species that are state or federally listed? If yes, wildlife habitat functional level rating = exceptional. (If Special Features, question J is answered yes, the functional level will also be exceptional)

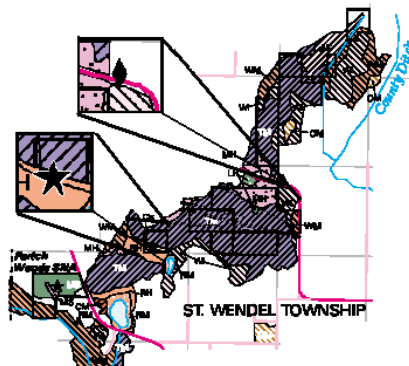
If it is critical, call the DNR and ask. You may need to do a specialized assessment if wildlife is an issue for a project.

or County Biological Survey or are federally listed.

23

#36: Rare / natural community

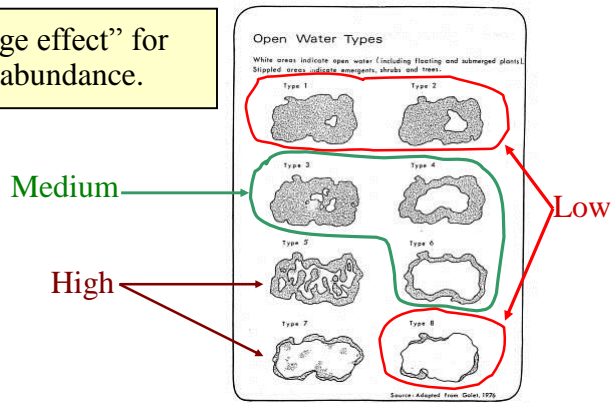
- Mn Natural Heritage Database
- County Biological Survey



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#37: Open water/cover interspersions

Measure of “edge effect” for diversity and abundance.

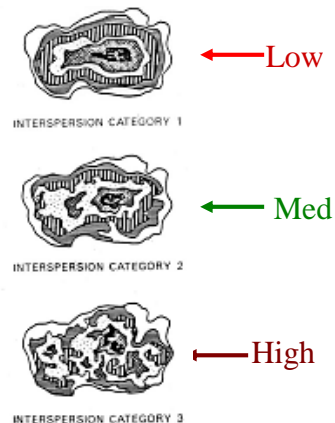


25

#38: Veg. community interspersions

For wetlands having more than one vegetative community, indicate the interspersions category that best fits the wetland.

- High = Category 3
- Medium = Category 2
- Low = Category 1
- N/A = Only one vegetative community is present.



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#38 Guidance, veg. interspersions

For wetlands with multiple vegetative communities, the increased structural diversity and amount of edge associated with greater interspersions is generally positively correlated with wildlife habitat quality.

Vegetative interspersions differs from open water interspersions in that the wetland may not have standing water, or may have open water with several communities interspersed (floating, emergent, submerged).

27

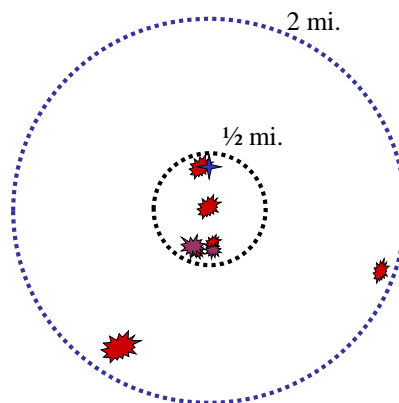
Landscape interspersions demo

H: No others within 2 miles
AND
site has veg rating of Med +
OR

H: ½ mile radius at least 3,
1 w/diff plant comm.

M: other wetlands within ½ mile

L: None < ½ mile, 1+ < 2 miles



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#56: Recreational use (potential)



Is the wetland and immediately adjacent area assumed to be currently used for (or does it have the potential to be

Many wetlands will rate High for this just because they are near places people live.

That is okay.

This question allows a wetland that might rate low in other functional aspects to be understood as valuable for an important social value, rather than a purely ecological function.

This is not necessarily public use; could be on private land.

and educational opportunities that enhance their value.