



WHY MnRAM IN THE RED RIVER BASIN



Well let me tell you

- Big Projects with large wetland “temporary” impacts.
- Required mitigation even though projects resulted in “what appeared” to be more wetland acres.
- High mitigation costs (finding or proving).
- No scientific evaluation as to why and how to mitigate.

THUS MAYBE MnRAM CAN HELP!



LET'S TALK

Those with an interest in wetland mitigation were asked to attend

- Army Corp of Engineers, biologist and PM
- Project sponsor
- Local WCA Administrator
- DNR
- MPCA
- NRCS
- BWSR (discussion facilitator)



INTENT

To determine if we could reach agreement on using MnRAM to determine "temporary" impact mitigation needs based on functional units

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Demonstrate onsite mitigation can be accomplished

Note: temporary impacts = inundation

direct impacts replaced using ratio requirements

WCA did not consider water as fill



Follow-up feed back

ACoE :”MnRAM is a comparison of wetland functions not type”

so:

- Use plant community comparison. Not circular 39
- Run MnRAM on each plant community separately
- Be area-weighted to determine acres needed to cover functional unit mitigation needs. (Functional units = MnRAM rating x acres)
- Gains in one functional unit can not be used to offset functional losses in another



FUNCTIONAL UNIT ASSESSMENT BY ACRES

Functional Unit Formula: $(Ac \times M_e) - (Ac \times M_p) = F_d$

Equivalent Formula: $F_e - F_p = F_d$

then $M_r \times Ac_n = F_d$

Where: Ac is Acres of Wetland

Ac_n is Acres Need at Replacement MnRAM Value

M_e is Existing Conditions MnRAM Value

M_p is Impoundment MnRAM Value

F_e is Functional Unit (Existing Conditions)

F_p is Functional Unit (Impoundment)

F_d is Functional Unit Difference

M_r is Replacement Wetland MnRAM ($M_r = M_p$)



ON-SITE MnRAM EXISTING CONDITIONS

Because of this being a pilot and analytical use of the results, on site assessors were: Experts in

- Wildlife (fish, amphibian, terrestrial)
- Botany
- Hydrology
- ACoE



OFF-SITE MnRAM

ANTICIPATED CONDITIONS of onsite mitigation location

Same Cast of characters

- This being an impoundment project resulting in a temporary flood pool it was agreed upon by the ACoE to use a 10yr frequency flood pool condition to calculate impacts and mitigation requirements
- This being an anticipated condition, literature reviews were used to predict conditions such as plant community response to inundation



COMPARISON

OF

Pre vs Post construction conditions

To determine the functional unit losses (or gains) by plant community we needed to compare the MnRAM runs.

Based on these comparisons we determined the acres needed to meet “no net loss” of wetland functional units for each plant community.



RESULTS

On this particular project, based on “mitigation site” similar to pre project conditions, to mitigation functional Unit losses it would take a combined (by plant community) 55.25 acres (1 to 1)

Using the Austin Method at a 10yr frequency pool elevation it would only require 27.81 acres. This method determines replacement on a pool elevation bases. (80%, 50%, 30%) this method no longer used in MN by ACoE.



MnRAM for BIG time decision making

- **IMPORTANT**

Answers to specific questions become crucial in determining mitigation. In this case the hydrology related questions.

Sooooo be prepared to support your responses



WHAT ELSE

We have used MnRAM to:

- Compare project area land use (CRP vs. project vs. farmed)
- Adjust project;
 - Location
 - Operating plans (lessen impacts)
 - Incorporate project components
 - Show functional quality (or lack there of) of impacted wetlands



TIPS

Determine weight of decisions to be made from the results:

If weighty

- get agreement to us MnRAM by those making determinations
- Use team of experts
- Be able to defend responses

if not so weighty

- Use it as a guide
- Be as accurate as you can
- Have your answers reviewed