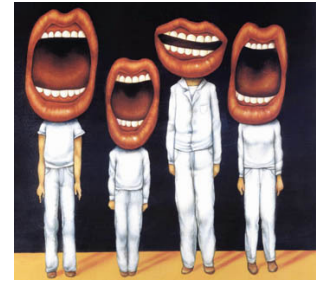


Take Home Summary



Eric said....



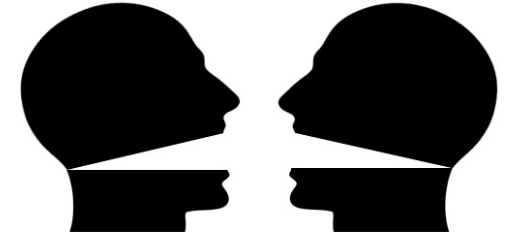
- Consider the whole landscape and the water budget
- Hydrology is the most temporal and variable of the three wetland determinants
- Lateral effect determinations are a useful tool best complemented by other data
- Many useful data sources are web-served and designed to address wetland hydrology questions

Joel said.....



- The scientific basis for lateral effect determinations is based on our long-held views of water flow through porous media
- Missing data elements can be determined through readily available websites
- Users should be consistent in their selection of inputs
- Put the result in the proper context of “precision” and use other data for support

Jason said.....





- Techniques are available to field-determine missing parameters or to verify output
- Observed drainage rates vary based on site-specific factors
- Lateral effect can be useful for different types of projects (drainage, restoration, etc.)
- Given the cost and time involved in field studies, it is essential that the project purpose be clearly stated early

Current Guidance on Scope and Effect (Regional Supplements)

- The NRCS Web-based tool and DRAINMOD are **suggested** --but NOT the only methods
- Their output are approximations only and may not reflect field conditions
- Their results should be verified by comparison with **other techniques** for evaluating drainage and **should not** overrule on-site evidence of wetland hydrology
- **Other techniques** include mapping conventions and the review of other aerial photography

Hydrology Indicators versus Technical Standard?

- Wetland Hydrology Indicators  Routine Delineations
- Hydrology Technical Standard  Atypical Sites involving monitoring

The BIG question is when has the hydrology been altered to the extent that the technical standard is invoked? Lateral effect equations can help.

Technical Factors to consider before invoking the hydrology technical standard

- The hydrology of a site (after considering the season, antecedent conditions and so forth) does not match the landscape position, soils and vegetation normally present
- Presence of hydrology-altering disturbances—both on and off site
- Temporal changes in the wetland from a review of historic imagery
- Vegetative indicators of disturbance as compared to a reference undisturbed wetland

Other factors to consider before invoking the hydrology technical standard

- Time

-monitoring will require several years



- Money



- Commitment to hang in there



- Risk

-data may not support hypothesis



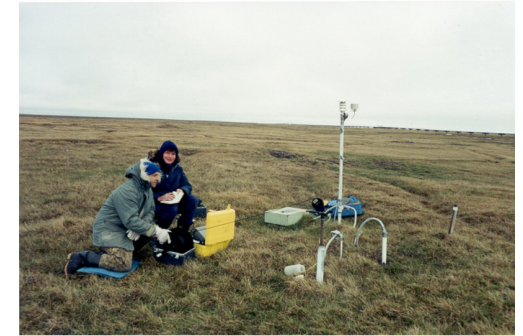
Calculating the Effect of a Drain: Pre-project and Offsite Work

- Consider goal of determination (restoration or regulation)
- Consider the water budget of the “ditch shed” and hydrologic inputs and outputs
- Determine dominant soil type (s)
- Perform mapping conventions and review other historical imagery

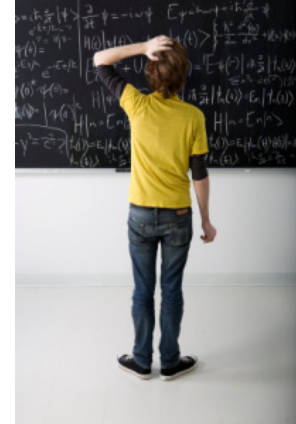


Calculating the Effect of a Drain: On-site Work

- Determine spacing, depth and size of drain (s)
- Determine location of drain with respect to wetland (through or near)
- Consider effect of diversions, adjacent drains and culverts-even those outside project area
- Consider the maintenance condition of drain and outlet adequacy
- Look for evidence of ponding
- Complete enough delineation data sheets to characterize the site



Calculating the Effect of a Drain: Pre-calculation



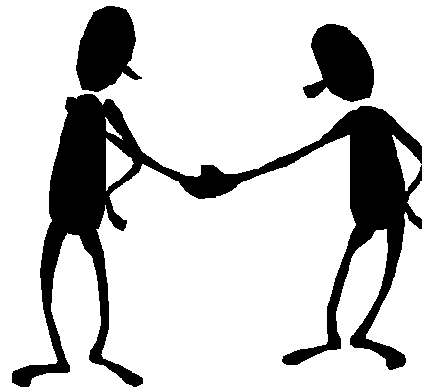
- Determine suitable equation (s)
- Select input parameters (strive for consistency of inputs: do not mix and match)
- Determine if the assessment should be done in phases due to complex soils, complicated drainage pattern or other factors

Calculating the Effect of a Drain: Interpreting Results

- Compare results against on-site assessment of hydrology indicators and mapping conventions
- Considering the original goal and other data, determine the appropriate answer among the range of +/- feet of output
- Based on the above, determine how to best report the results as they relate to the project goal

Calculating the Effect of a Drain: Going from Results to Decision

- Decide if a functional assessment should be incorporated
- Using all the data, attempt to reach an agreement before invoking the technical standard



Goals of BWSR/COE Guidance

- Develop a Web site for the equation (s) and guidance
- Address the Saint Paul District (MN and WI) area
- Develop missing data elements for download or develop a “how to” procedure
- Revise existing NRCS guidance to fit the regional supplements
- Offer training (starts today)
- Create a “help desk”
- BWSR and the COE will endorse the guidance as policy

Guidance must address the following situations:

- Dense glacial till or shallow bedrock (shallow impermeable layers)
- Ponded water
- Varying ditch and tile depths (can alter several variables)
- Organic soil (water retention characteristics differ)
- Soil complexes (difficult to determine a representative soil)
- Single drain versus multiple drains

Guidance

- Drain near a wetland versus through a wetland
- How to report results (a range?)
- Soils (much guidance needed)



What's Next ?

For Part 2 of this effort, we propose
a day long training session to introduce the
aforementioned website and guidance to
address many of the issues discussed today



When?

Spring, 2010 ??



What to do in the interim?

- Use NRCS Web tools along with guidance from this class
- But remember, do NOT place too much emphasis on lateral effect equations
- As stated repeatedly, the “equation” is but one tool