



Sediment deposits on tree in MN River valley — Travis Fristed



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**5th Annual MN Wetlands Conference Slated for January 18, 2012**

by Ken Powell, MN Board of Water & Soil Resources

The 5th Annual Minnesota Wetlands Conference will be held on January 18, 2012. This year's conference will be held at the Edinburg Golf Course in Brooklyn Park, Minnesota, a change of venue from previous conferences. The conference is again sponsored by the Wetland Professionals Association and the Minnesota Wetland Delineator and Certification Program (Water Resources Center of University of Minnesota). The goal is to again exceed 200 attendees as was accomplished in the previous four conferences.

The conference lacks a definitive "theme" and instead includes a diversity of wetland-related topics ranging from wetland restoration to buffers to wetland planning and mapping. The lack of a common theme is a result of feedback received from last year's conference where attendees liked the high diversity of topics.

A preview of speakers and topics is as follows:

2013 SWS Conf.—Glenn Guntenspergen

Wetland Buffers in WI—Tom Slawski

Wetland Restoration of Abandoned Road Bed - Chris Weir-Koetter

Drainage Systems & Wetland Restorations—Tom Wenzel

Infiltration & Wetlands—Todd Hubmer

MN Ag Wetland Bank—Les Lemm

What's Working in Restoration—Dan Shaw

Wetland Buffers in a Suburban City—Jason Naber

Wetland Enforcement—Jason Jenson

NE MN Mitigation Inventory—Dale Krystosek

Lidar Use for Wetlands—Joe Knight

Wetland Restoration after Mega-Storm—Paul Bockensted & Jyneen Thatcher

Calcareous Fens—Jim Arndt

This diverse mix of technical, planning, legal, and regulatory topics reflects the diversity of conference attendees. Minnesota's conference is relatively unique in providing a venue that brings together public, private, and academic wetland scientists and practitioners to share information and learn from each other.

This year's conference planning committee includes Jed Chesnut, Alison Harwood, Travis Fristed, Elizabeth Wells, and Ken Powell.

Register before December 14 to receive a \$20 early registration discount. Go to [www.mnwetlands.umn.edu/annualconference/index.htm](http://www.mnwetlands.umn.edu/annualconference/index.htm) for more information.

**Association News**

- The WPA has 6 of its 7 Board positions open for 2012. Ballots have been mailed to all members. Please complete and return your ballot soon!
- The first 2011-12 WPA Training Forum on Wetland Hydrology was held on November 2. Eric Mohring from the Minnesota Board of Water & Soil Resources was the presenter.
- The December Training Forum will be held at REI in Bloomington on Wed. Dec. 7 from 2 to 4 pm. The topic is Watershed Delineation in MN presented by Sean Vaughn, GIS Hydrologist with the Minnesota DNR. Go to the WPA website for more information.
- In the near future look for information on the WPA website on upcoming training forums in March and April plus the annual WPA field trip.

## NEWS FLASHES

**Vegetation Assessment for Wetland Delineations**—Two recent publications in the professional journal *Wetlands* (Gillrich et al, 2011, vol. 31, pp. 865-873 and Lichvar et al, 2011, vol. 31, pp. 603-611) have provided data on problems with using the Dominance Ratio (i.e. 50/20 rule) and Prevalence Index (PI) to assess the hydrophytic status of vegetation for wetland delineation purposes. Inherent bias has been detected in the 2 methods under certain circumstances. This new evidence has prompted debate about possibly changing vegetation assessment recommendations in the 87 Manual and supplements. Stay tuned.

**Minnesota Agricultural Wetland Bank**—A group of private agricultural interests groups have begun development of a private wetland bank for agricultural producers in Minnesota. The groups have been working to form a user-specific wetland bank that would be available for use by agricultural producers in the Federal Farm Program. Details of this private banking initiative continue to emerge as its development proceeds.

**BWSR-NRCS MOU** —In December of 2009, BWSR and the USDA Natural Resources Conservation Service signed a Memorandum of Understanding regarding implementation of the Wetland Conservation Act (WCA) and the “Swampbuster” provisions of the federal farm bill. The USDA North Central Wetland Conservation Initiative, a newly funded 4-state initiative aimed at reducing the backlog of certified wetland determinations in the prairie pothole region, provides an opportunity for improved program coordination through joint implementation of certain WCA and Swampbuster provisions. NRCS has finalized contribution agreements with SWCDs in the prairie pothole region of Minnesota for assistance with certain aspects of Swampbuster. BWSR will also play a role in the implementation of this program. On September 21 2011, consistent with the 2009 MOU and the goals of both agencies, BWSR and NRCS finalized an agreement defining BWSR’s responsibilities and work-products through the end of calendar year 2012.

**Wetland Preservation**—Guidance regarding preservation for wetland mitigation in Minnesota was issued by the St. Paul District Army Corps of Engineers in May of 2011. This guidance can be found on the St. Paul District Corps website at <http://www.mvp.usace.army.mil/regulatory/default.asp?pageid=924&subpageid=387>.

**Wisconsin Wetland Conference**—The 17th Annual Wisconsin Wetlands Conference will be held on Feb. 22-23, 2012 in Lake Geneva, WI. Go to <http://wisconsinwetlands.org/2012conference.htm> for more information.



Redoximorphic soil features

Photo by Jed Chesnut

## Excavating Ponds in Wetlands—A Perspective

by Colleen Allen, Wright County Soil & Water Conservation District

I frequently get calls from people asking to excavate a pond. Talking to a landowner about this topic is different than talking to a wetland delineator who is familiar with the jargon, but here are my thoughts on Pond Excavation for Wetland Delineators.

Excavation within a wetland can fall within a “no-loss” if conditions are met. Chapter 8420.0415 No-loss criteria Part A is for activities that will not impact a wetland. The scope section of the rules 8420.0105 Subpart 1 says “This chapter regulates... excavation in the permanently and semi-permanently flooded areas of type 3, 4, or 5 wetlands, and in all wetland types if the excavation results in filling, draining, or conversion to nonwetland.”

What are the “permanently and semi-permanently flooded areas”? They are defined in WCA rules as “the portion of a type 3, 4, or 5 wetland below the level where the water has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial.” Predominance of aquatic vegetation is required. One method to determine this is to use percent aerial coverage of aquatics, which generally consist of obligate wetland species. A solid stand of cattails is often a good approximation of this area, but other factors should be considered. There are many saturated wetlands with cattails interspersed among sedges and other wet meadow species that typically do not have flooded water regimes.

The excavation is regulated in all types of wetlands if it results in filling, draining, or conversion to nonwetland. In wetlands of types 1, 2, 6, 7, and 8, the excavation can be considered a no-loss if these activities are not conducted. Conversion to nonwetland generally involves excavation to a deepwater habitat. Using the Cowardin classification, this is 2 meters (6.6 feet) deep.

If the excavation is regulated, a wildlife habitat exemption may apply. The exemption can be used for excavation or the associated deposition of spoil if the primary purpose is for wildlife habitat and conditions are met. Eligibility is limited to five percent of the wetland area or one half acre, whichever is smaller. The spoil must be stabilized and noninvasive vegetation must be established. The project cannot have an adverse effect on any threatened or endangered species. And the project must be certified by the SWCD or the TEP using the required guidance.

Purpose and specifications are included in the guidance. The purpose must be to improve habitat and not fill for trails or other reasons. Some fill is allowed if it improves habitat. We use this section mostly for installing berms to restore wetlands. Irregular shorelines and undulating bottom contours help to provide diverse plant communities and thus improve habitat. Sideslopes should be gentle, no steeper than 5:1, but 10 or 15:1 are preferable. Islands are discouraged because they are not effective for protecting nesting ducks. We recommend elevated nesting structures instead. Canada geese do ok on islands but they have become a nuisance in some areas. All disturbed areas should be seeded with a native seed mix and Invasive species should not be transported to other wetlands.

The last section in the wildlife habitat exemption is for duck blinds. I find this slightly ironic since duck blinds are used to shoot ducks rather than provide habitat, but they do sort of fit together. Many wildlife habitat improvements are done for hunting purposes. Also, I would not want to see a whole separate duck blind exemption section in the rules.

Finally, I have an observation of something in the wildlife habitat exemption that I would like to see changed. I would suggest at least 50% excavation be allowed, or better yet, base it on quality. If a landowner has a ½ acre wetland that is a cattail monotype, they can only excavate 1,089 square feet, even with a wildlife habitat exemption. This is not large enough to bother with for most landowners so it ends the project. Yet someone with a pristine sedge meadow

could dig it all out which would decimate it. If excavations were based on quality instead of type and size, decisions would be more consistent with the intent of the WCA, to “achieve no net loss in the quantity, quality, and biological diversity of Minnesota’s existing wetlands.”

## Delineation Precision: Using a Yardstick to Measure Millimeters

By Ken Powell, MN Board of Water & Soil Resources

Hydric soil indicator A11 requires a depleted or gleyed matrix starting within 12 inches of the surface with a minimum thickness of 6 inches or 2 inches if fragmental soil material. For hydrophytic vegetation, the dominance test requires >50% hydrophytes, 50% does not cut it. Wetland hydrology indicator B8 requires less than 5 percent ground cover, 5% does not cut it.

You get the picture. These cutoffs for various wetland indicators in the 1987 Wetland Delineation Manual Supplements are very precise. But, think about how we measure them in practice. For the soil indicator we are digging a hole on typically uneven ground with accumulated plant matter/litter, while simultaneously altering the soil via an auger or other sampling device. For the vegetation and hydrology indicator referenced above we are typically looking at a point on the landscape, imagining a sampling plot, and imagining the percent of cover for each plant species if it were viewed from above while discounting other plants that obscure our view.

I liken our typical field measurements for wetland indicators akin to measuring something to the nearest millimeter using a yardstick. Because I am involved in teaching delineation to those new to the field, I find that students often struggle with reconciling this dilemma. However, there is some logic to it all.

First off, we need a cutoff, that’s what delineation is all about, drawing lines. Yes, we are kind of applying “lab conditions” science to “field conditions” reality, but anytime we take field measurements of anything outside of a controlled lab setting, it is imperfect and subject to many known and unknown variables. We need to recognize this when we are doing field work. But how do we deal with it?

Photo by Scott Milburn

As with any type of variability, we can deal with it by taking multiple samples and looking for the average. We also deal with it by developing standardized sampling protocol that reduces variability from at least some of the confounding influences. Such protocol includes using a shovel/spade in the upper layers of the soil (reduces soil mixing during sampling), continually calibrating depth of sample with depth of hole, using veg sampling quadrants and visual percentage estimate diagrams, etc. Multiple samples from the same area tends to be the best way to find the “average” or “typical” condition for which to apply the precise indicators. Of course, this is only necessary in situations where the determination/delineation is unclear.

What are the wetland professional’s obligations to make these precise measurements associated with wetland indicators? They are to make a reasonable effort to measure the variables, make a reasonable interpretation of their measurements, do multiple samples when dealing with unclear/borderline situations, and make conclusions based on the data collected/analyzed. In short, apply the 87 Manual in a reasonable way. Applying the manual in a reasonable way is accomplished by using experience, judgment, objectivity, and professionalism—in other words, best professional judgment.

So, yes, applying wetland indicators requires making rough measurements/estimates to determine precise cutoffs. However, if done correctly, objectively, and reasonably, the indicators can be applied as intended by the 87 Manual.



## Notes on Blanding's Turtles

By Alison Harwood, WSB & Associates, Inc.

The Blanding's turtle (*Emys blandingii*) is a State Threatened species found in several areas throughout Minnesota. The Anoka Sand Plain, located in the north metro area, is a hotspot for Blanding's turtle activity. Increased development in these areas has resulted in increased attention on this turtle. Understanding the life cycle of the Blanding's turtle and the habitats it uses is important in when trying to develop turtle-safe projects and avoid/mitigate habitat loss.

The Blanding's turtle is a late-maturing species, which makes it difficult for the species to recover from large-scale population declines. The species suffers from low reproductive potential and high juvenile mortality, caused in part by the turtle's trek between hatching and overwintering sites.

Blanding's turtles emerge from their overwintering areas in March and April and move to vegetated shallow marshes and wet meadows. These shallower habitats are important in the life cycle because they provide important food sources and the warmer waters help egg development. The turtles will also breed in these habitats before the females begin their overland trek to nesting grounds where they will lay their eggs. This journey makes them vulnerable to predation, road-related mortality, and interference by construction projects. Blanding's turtles nest in sandy, well-drained upland soils which can be located at great distances (sometimes up to a mile) from the overwintering and breeding locations. Turtles hatch from their nests between late August and early October and immediately begin their journey back to overwintering locations. This journey is also very hazardous for the juvenile turtles and mortality is high. Overwintering areas are generally deeper marshes and backwater pools, where the turtles can bury themselves in the deeper substrate and avoid freezing.

Threats to Blanding's turtles come from a variety of activities. Habitat loss caused by both draining wetlands or converting wetlands into stormwater retention ponds removes critical habitats needed during the various portions of the turtle's life cycle. Loss of upland habitat due to development is also hazardous to turtles because the development removes important nesting habitat. Road mortality is also a threat to turtle populations. In order to avoid habitat loss, small Type 2 & 3 wetlands should not be deepened/converted to storm retention ponds and wide buffers should be provided to minimize human disturbance during basking time. Buffers will also help protect these habitats from pollution caused by yard fertilizers and pesticides. In addition, deeper marshes (Type 4) and backwaters should not be filled, as these areas provide critical overwintering areas for turtles. When developing road projects, there are several recommendations that can be followed. While ditch sections (not curb and gutter) are preferred for roadway project, turtle-friendly curbs (curbing 4" high at 1:3 slopes) and guards placed over gutters are also an option when ditches are not feasible. Other recommendations include establishing turtle fences along busy portions of roadway and providing turtle tunnels in areas where turtle concentrations are greater than 10 turtles per 100 meters of road. In addition, limiting construction to the time period between September 15th and June 1st will help alleviate additional road-related mortality by avoiding the highest times of turtle movement. With careful planning and attention, impacts to Blanding's turtles can be avoided.

## 2011 WPA Field Trip Recap

By Carol Strojny, Minnesota Board of Water & Soil Resources

On June 3<sup>rd</sup> we held our spring field trip at the Bob Jacobson Unit of the Janet Johnson Memorial Wildlife Management Area. After hiding in our cars while the thunder clouds passed over, we enjoyed a nice (humid) sunny day learning about the engineering and restoration designs of the site, which is now in its 5<sup>th</sup> growing season. We identified several species that are commonly found in the wet meadow/ sedge meadow native seed mix, and were able to view the transition from hydric soil to upland soil conditions. This restoration is under the ownership of the DNR, and is open to the public. Stop by the next time you're on your way to North Branch! Directions to the site can be found at: [http://www.dnr.state.mn.us/wmas/detail\\_report.html?map=COMPASS\\_MAPFILE&mode=itemquery&qlayer=bdry\\_adwma2py3\\_query&qitem=uniqueid&qstring=WMA0169601](http://www.dnr.state.mn.us/wmas/detail_report.html?map=COMPASS_MAPFILE&mode=itemquery&qlayer=bdry_adwma2py3_query&qitem=uniqueid&qstring=WMA0169601)

## Back in the Day

Contributions from Andi Moffatt (WSB & Associates, Inc.) and Ken Powell (Minnesota Board of Water & Soil Resources)

Remember When?.....

- There was a big, blue, three-ringed binder that helped everyone interpret WCA. And Barbara Walther worked for BWSR and diligently sent out updates to the manual to keep all the LGU's informed.
- Barbara and John Jaschke used to do all the WCA trainings.
- All we had was low chroma and a few mottles to describe hydric soil.
- Nobody did the 50/20 rule correctly (some still don't!).
- Wetland replacement plans consisted of a 3-page form, one plan sheet, and a short narrative.
- Everyone used their own custom data sheets.
- Delineation reports were only a few pages long, if that.
- In the early days of WCA, there was no e-mail. Voicemail boxes overflowed.....
- You could subtract the de minimis amount from the total wetland impact before determining mitigation.
- There was no nifty, automatic rainfall analysis on the State Climatology website. (In fact, there weren't many web-sites that had much information).
- The WCA rule book in 1996 was blaze orange.
- For a short time period, certain WCA-approved impacts were automatically authorized by a Corps general permit.
- Stormwater ponds could be used to meet some of the mitigation requirement.
- Reed canary grass, white clover, and birdsfoot trefoil were in a lot of seed mixes used by construction contractors.
- People on the WPA Board included Beth Kunkel, Ron Peterson, Mark Kjolhaug, Frank Svoboda.....
- Monitoring wells were used all of the time and conclusions drawn from less than 1 year of data.
- The WL-40 was the latest technology in monitoring hydrology. It automatically read wells so you did not have to do it by hand anymore. Unfortunately, they broke down a lot and were very expensive.
- GPS units were not allowed to survey the delineation line since they were not very accurate.
- John Jaschke travelled the state explaining WCA to everyone (a one-man show). If you had a question, you called John.
- WCA notices were few and far between in the early years of WCA.
- The WPA used to meet at Maple Grove City Hall and then in the Freshwater Society Building in Navarre on Lake Minnetonka. For awhile we met in the Bloomington fire station.
- The WPA newsletter was paper and it was mailed out!!
- We all had less gray hair (or just more hair).

## Botany Corner

By Carol Strojny, Minnesota Board of Water & Soil Resources

Vervains are a favorite plant to latch on to during a plant ID session. They are one group of plants that dispels the urban myth that all square-stemmed plants are mints. For me, 3 species come to mind when I think of vervains: blue vervain or swamp verbena (*Verbena hastata*), hoary vervain (*Verbena stricta*), and white vervain (*Verbena urticifolia*). In Minnesota, these 3 common vervains share the family name of Verbenaceae with lance-leaf fog fruit (*Phyla lanceolata*) and 7 other *Verbena* species (Cholewa, 2010).

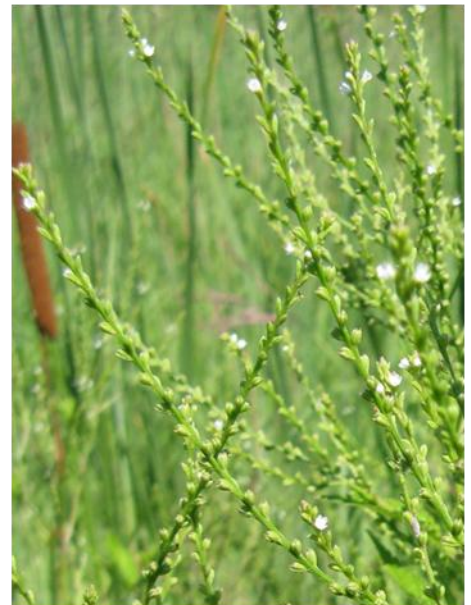
As in the mints, these *Verbenas* have square stems and coarsely toothed opposite leaves, but they lack the minty fragrance. *Verbena hastata* (FACW+) is found statewide, growing in wet meadows, shorelines or ditches. It is a native biennial/perennial plant that can grow up to 5 ft tall. Stems are often purple tinged, rough with sparse hairs. Flowers are blue, tightly clustered along narrow spikelets. The branching of the flower head resembles the form of a candelabra. *Verbena urticifolia* (FAC+ ) is a native annual/perennial plant found nearly statewide, except for the arrowhead region. This plant can reach 6 feet. Stems are green and can be rough with hairs. White flowers grow on spikes that branch off the main stem, but the flowers are loosely arranged and un-crowded. It grows in fields, woodlands, and disturbed sites. *Verbena stricta* (UPL) is a native annual/perennial plant that tends to be rather stout with dense hairs along the stem and leaves. Leaves are sessile or very short peduncled. Both sides of the leaf are fuzzy. Like *V. hastata*, this species also likes full sun, but grows in drier fields and prairies. Its distribution is concentrated in the southern half of the state, with records in St Louis County and a few counties along the northwestern boundary.



Candelabra form of *V. hastata* inflorescence



Tight, crowded flowers of *V. stricta*.



Loose, uncrowded pattern of *V. urticifolia*'s white flowers



**We are on the web**

**[www.mnwetlandprofessionals.org](http://www.mnwetlandprofessionals.org)**

Submission of wetland-related articles, opinions, pictures and news items are welcome. Please forward all submissions to the newsletter editor Ken Powell at [ken.powell@state.mn.us](mailto:ken.powell@state.mn.us).

#### **CODE of ETHICS**

Each member, in striving to meet the objectives of the WPA, pledges to:

- 1)** subscribe to the highest standards of integrity and conduct;
- 2)** recognize research and scientific methodology of wetland science;
- 3)** disseminate information to promote the understanding of and appreciation for wetland science;
- 4)** strive to increase knowledge and skills to advance the practice of wetland science;
- 5)** promote confidence in the field of wetland science by supporting high standards of education, employment, and performance;
- 6)** encourage the use of scientific information in regulatory decisions; and
- 7)** support fair and uniform standards of employment and treatment of those professionally engaged in the practice of wetland science

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