

Zackow Road wetland project: Wetland plant identification and delineation

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INTRODUCTION

The Zackow Road wetland is located at 42°43'17"N 75°05'23" in the Town of Burlington, Otsego County, New York in Greenwoods Conservancy which is managed by the State University of New York College at Oneonta's Biological Field Station (BFS). The United States Department of Agriculture- Natural Resources Conservation Service (NRCS) constructed the wetland in the summer of 2000 in order to provide wildlife habitat and wetland educational opportunities. The pond construction is a small component of a larger effort to provide environmental educational opportunities and quality research facilities for those conducting research at the Greenwoods Conservancy.

Site Description

The pond in the center of the wetland is approximately 32 x 32 m with the wetland boundary outlying the pond boundary by no more than approximately 30 m. The distance from the pond edge to the determined wetland boundary was variable. The pond has a maximum depth of approximately 2 m.

The pond was constructed in 2000 by the NRCS. The pond was excavated on a site that was a pre-existing wetland. The soils of most of the site have been characterized as Norchip Channery Silt Loams, which are typically wet soils. The soils on the northern side of the wetland may fall into the Mangaup-Franklinville complex, having 8-15 percent slopes which are typically upland soils that are usually woodland or support pasture and cultivated crops. The northern side of the wetland is currently being used as a hay field. A soil sample on the south side of the wetland indicated that the south field (not actively farmed) was plowed at one point (perhaps when the Zackow Farm was in operation). Following the construction of the pond, no seeding or addition of organic materials occurred. The pond was left to develop naturally.

The pond is supplied with water from a series of small, interconnected ponds west of Zackow Road. Water flows east, through a culvert into the Zackow Road Wetland. Water is also supplied via surface runoff from the fields to the north and south of the wetland. Overflow leaves the pond on via a spillway on the east side.

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Delineation Description

The site was delineated in compliance with the New York Department of Environmental Conservation (DEC) Freshwater Wetlands Delineation Manual- July 1995. Two Data Forms for Routine Wetland Determination from 1987 United States Army Corp or Engineers (ACOE) Wetland Delineation Manual were completed north and south of the determined wetland boundary line on the north side of the pond. Because this is a recently constructed wetland, the wetland boundaries were determined using the methods in the problematic area wetlands section of the DEC manual.

Appendix 1 provides an overview of the common plants observed at the site. Figure 1 illustrates the wetland-upland boundary line determined by this delineation. The field to the north is used as a hay field with timothy (*Phleum pratens*) as the dominant plant species. Initially, the boundary flag near the black circles was hung closer to the wetland. However, after further examination, the line was moved north due to topography and the presence of mowed lurid sedge (*Carex lurida*) and hydric soils. Sedges (*Carex* spp.), soft rush (*Juncus effusus*), goldenrods (*Solidago* spp.), bulrushes (*Scirpus* spp.) and spikerushes (*Eleocharis* spp.) dominated the herbaceous layer closet to the water. Farther from the water edge the herbaceous layer is dominated by timothy, sedges, goldenrods, and tall thistle (*Cirsium altissimum*). Plant species that were dominant on the southern sampling station included soft rush, sedges, and manna grass (*Glyceria* spp.). One the west side of the wetland, the road marks the wetland boundary. The dominant shrub plant on the west side of wetland is speckled alder (*Alnus incana*). The dominant trees on the west side include red maple (*Acer rubrum*) and Norway spruce (*Picea abies*). The dominant herbaceous plants on the west side include jewelweed (*Impatiens* sp.), forget-me-not (*Myosotis scorpioides*) and reed canary grass (*Pharlaris arundinacea*). Some difficulty in delineating occurred as a result of the young age of the wetland. Upland plant species were common up to the water edge and the soil was considerably heterogeneous due to plowing.



Figure 1. View from south at the Zackow Road wetland. The line indicates the wetland boundary to the north and east. The dots indicate where the ACOE forms were completed.

The wetland boundary distance from the pond edge was considerably variable on the west, north, and east sides. The distance from the road to the pond on the west side is approximately 10 m. The mean distance from the wetland boundary to the pond on the north side is approximately 2-3 m. The mean distance from the wetland boundary to the pond on the east side is approximately 1 m.

Figure 2 illustrates the wetland-upland boundary line determined by this delineation. The field south of the wetland was previously used for plant cultivation (as determined from the soil sample); however, it is no longer being farmed. Sedges, mannagrass, soft rush, goldenrods, bulrushes, spikerushes, and tall thistle dominated the herbaceous layer closest to the water with tall thistle and goldenrods becoming increasingly dominant as one moves away from the pond. Some difficulty in delineating occurred as a result of the young age of the wetland. Upland plant species were common up to the water's edge and the soil was considerably heterogeneous due to plowing. The distance from the wetland boundary to the water edge varied from 1 m to 10 m. Appendix 1 provides an overview of the plants encountered at the wetland.



Figure 2. View from the north at the Zackow Road wetland. The line indicates the wetland boundary. The dots indicate where the ACOE forms were compiled.

CONCLUSIONS

The construction of this pond is a valuable addition to Greenwoods Conservancy for education, research and as wildlife habitat. It is especially valuable because it allows researchers to examine the development of 'improved' wetlands. It is also valuable for wetland delineation training because of the difficult soil and plant characteristics encountered.

Appendix 1
Common plants observed at the
Zackow Road wetland

Tree layer

Norway Spruce- *Picea abies*
Red Maple- *Acer rubrum*
Willow- *Salix* spp.

Shrub layer

Speckled Alder- *Alnus incana*
Viburnum- *Viburnum* spp.
Willow- *Salix* spp.

Emergent/Wet Meadow/Understory Plants

Arrowhead- *Sagittaria* spp.
Arrow-leaved Tearthumb- *Polygonum sagittatum*
Bedstraws- *Galium tinctorium*
Boneset- *Eupatorium perfoliatum*
Broad-leaf Cattail- *Typha latifolia*
Burreed- *Sparganium* spp.
Common Bullrush- *Scirpus atrovirens*
Forget-Me-Not- *Myosotis scorpioides*
Goldenrod- *Solidago* spp.
Hard-stem Bullrush- *Scirpus acutus*
Jewelweed- *Impatiens* spp.
Joe-Pye-Weed- *Eupatorium maculatum*
Mannagrass- *Glyceria* spp.
Monkeyflower- *Mimulus* spp.
Reed Canary Grass- *Phalaris arundinacea*
Reed-Meadow Grass- *Glyceria* spp.
Rice Cutgrass- *Leersia oryzoides*
Soft Rush- *Juncus effusus*
Soft-stem Bullrush- *Scirpus validus*
Sedges- *Carex* spp.
Skullcap- *Scutellaria* spp.
Smartweed- *Polygonum* spp.
Spearmint- *Menta spicata*
Speedwell- *Veronica* spp.
Spikerush- *Eleocharis* sp.
St. John's Wort- *Triadenum* spp. and *Hypericum* spp.
Three-way Sedge- *Dulichium arundinaceum*
Water Parsnip- *Sium suave*
Wild Millet- *Echinochloa* spp.

Emergent/Wet Meadow/Understory Plants

Water-horehound- *Lycopus* spp.
 Willow-herb- *Epilobium* spp.
 Woolgrass- *Scirpus cyperinus*

Floating Leaved/Submergent Plants

Lesser Duckweed- *Lemna minor*
 Pondweed- *Potamogeton* spp.
 Water Smartweed- *Polygonum* spp.

Ferns and Allies

Horstail- *Equisetum* spp.
 Sensitive Fern- *Onoclea sensibilis*

Common Upland Plants

Bedstraws- *Galium* spp.
 Birdsfoot Trefoil- *Lotus corniculatus*
 Fleebane Daisy- *Erigeron annuus*
 Goldenrod- *Solidago* spp.
 Indian Tobacco- *Lobelia inflata*
 Mullein- *Verbascum thapsus*
 Norway Spruce- *Picea abies*
 Raspberry/Blackberry- *Rubus* spp.
 Queen Ann's Lace- *Daucus carota*
 Tall Thistle- *Cirsium altissimum*
 Timothy- *Phleum pratens*
 Yarrow- *Achillea millefolium*