Wetland and Wildlife Habitat Monitoring Report
Manchester Essex Conservation Trust
Upper Pine Street
ACOP-NE-09-6W018

Prepared for:

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REC
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Introduction

The following information is provided in accordance with the Wetland and Wildlife Habitat Monitoring Plan approved by the Department of Environmental Protection on April 22, 2010, and Section III Item 7B of the Administrative Consent Order issued to the Manchester Conservation Trust (ACOP-NE-09-6W018). The purpose of the monitoring was to 1) evaluate the condition of wetland resources near the location of recent paving of upper Pine Street by the Town of Manchester, 2) to determine the extent to which the area continues to provide vernal pool habitat and 3) to determine whether the wetland resources have experienced any functional deficit as a result of activities conducted by the Manchester-Essex Conservation Trust.

Study Methods

The study area extends approximately 1,100 feet west of the commencement of new paving and extends into wetland areas to the north and south a maximum of 120 feet from the edge of pavement as shown in Figure 1 below.

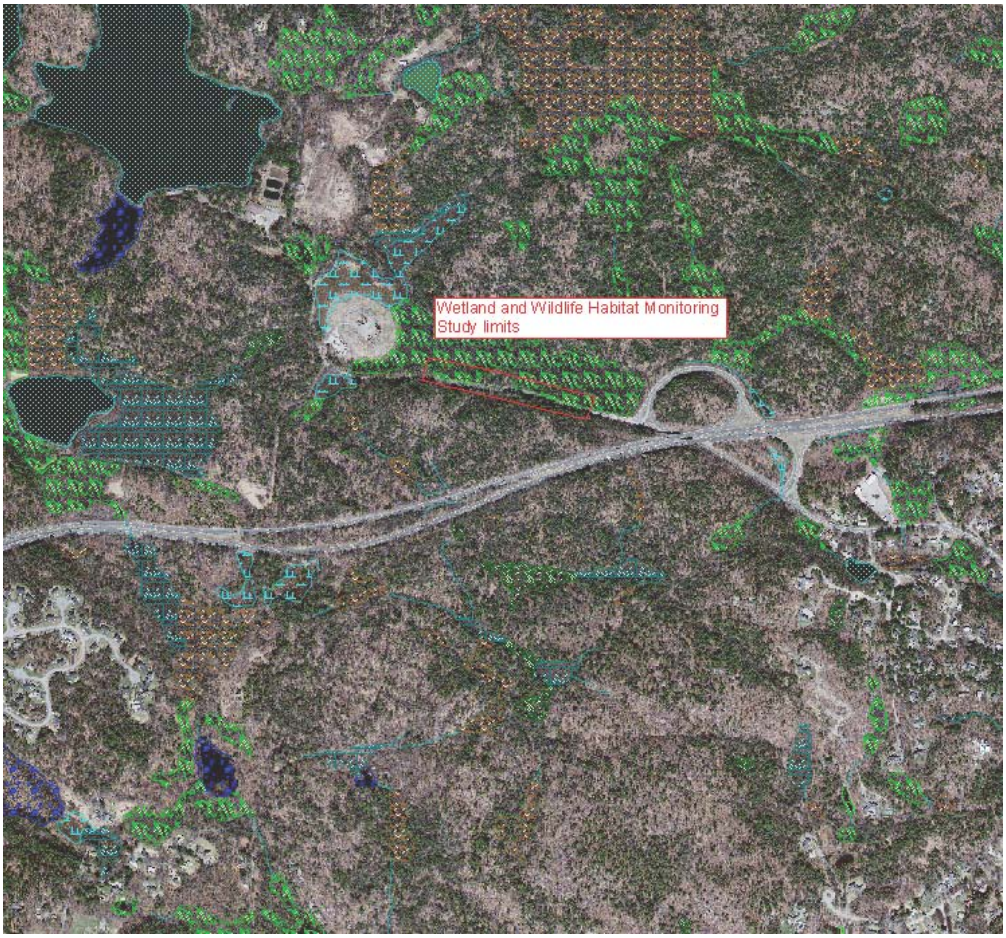

Figure 1: Study Limits

On April 21, 2011 two researchers from Rimmer Environmental Consulting conducted a site inspection of the study area. Equipped with chest waders and

polarized sunglasses, the researchers waded into the wetland areas and conducted visual sweeps moving in a grid pattern so as to cover the entire study area, searching for evidence of breeding by obligate or facultative vernal pool species. The site inspection was timed for maximum observation of mole salamander and wood frog egg masses. The unseasonably cold spring delayed amphibian migration by several weeks this year.

When egg masses were identified, they were photographed where possible, marked with surveyors flagging, located by GPS and mapped on an aerial photograph of the study area.

Other observations of general wildlife habitat, significant wildlife habitat features, water quality, and evidence of erosion of buffer areas were noted.

Project Area

The north side of the study area consists of an extensive forested wetland system known as Maple Swamp (see Figure 2). Using the classification system established in "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin, et al 1985), the site is a Palustrine scrub-shrub, seasonally flooded wetland. The area contains a moderate to sparse overstory of red maple (*Acer rubrum*) with a moderate to dense understory of shrubs, winterberry (*Ilex verticillata*) and northern arrow-wood (*Viburnum recognitum*) with sweet pepperbush (*Clethra alnifolia*), speckled alder (*Alnus rugosa*) and poison ivy (*Toxicodendron radicans*) near the road shoulder. Other vegetation includes royal fern (*Osmunda regalis*) , bulrush (*Scirpus sp.*) and blueflag iris (*Iris versicolor*). Common reed (*Phragmites australis*) is found on the road shoulder and edge of wetland in the northwestern part of the project area.

1. Typical habitat

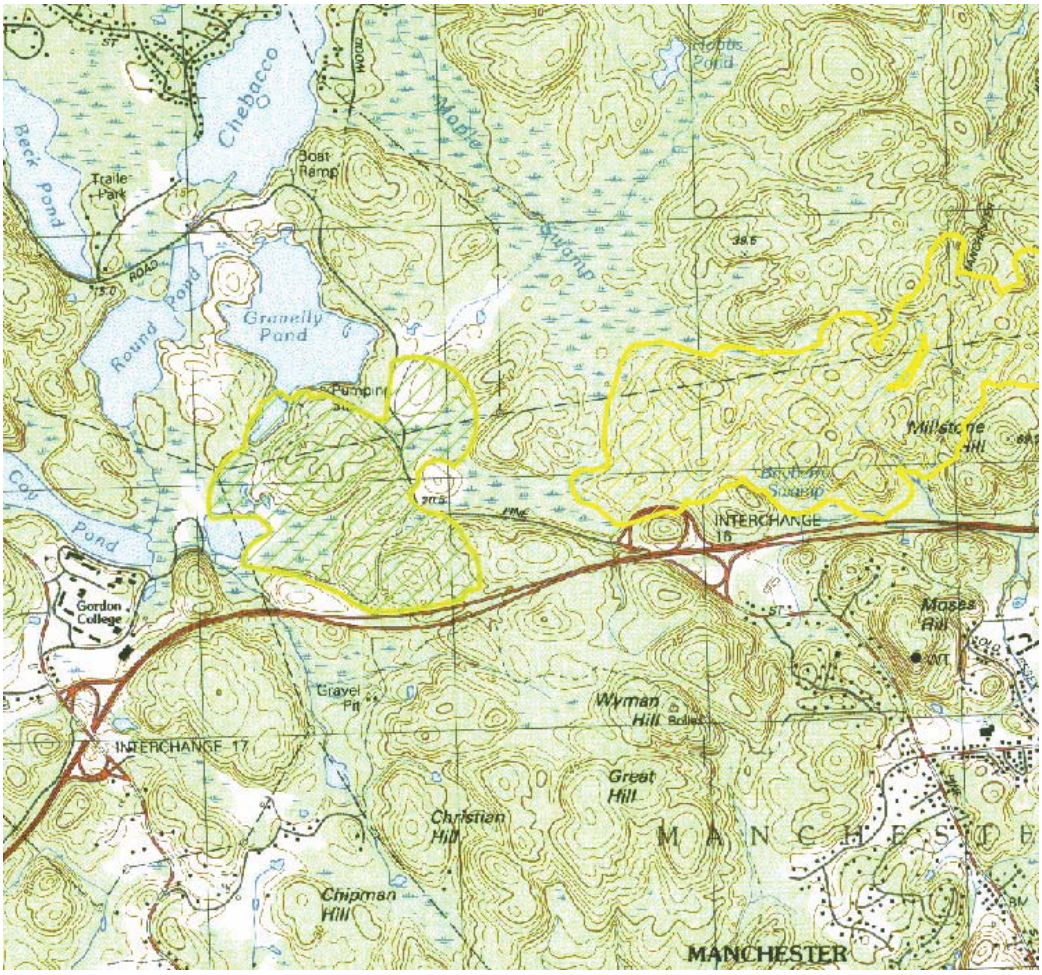

Figure 2: USGS Site Locus
with location of Estimated Habitat of Rare Wetlands Wildlife Near the project area

The south side of the study area consists of two small, narrow (less than 10 feet in width) wetlands the drain toward recently improved culverts under Pine Street. Upland portions of the study area were not included in this investigation.

Findings

Water depth at the time of observation was 2-3 feet, averaging approximately 2.5 feet. Bottom sediments consist of deep organics, and fine sand and silt. Water color was dark and became quickly turbid upon disturbance of bottom sediment.

A total of 95 egg masses of spotted salamander (*Ambystoma maculatum*) and 12 egg masses of wood frog (*Rana sylvatica*) were found. This represents a significant increase from the previous year's total of 56 spotted salamander and 4 wood frog. The locations of these egg masses are depicted on Figure 3. No egg masses were found on the south side of the road as in previous years. Most egg masses were attached to small twigs and branches but a few were free-floating.

	Spotted Salamander	Wood Frog
2009 (DeRosa)	51	
2010	56	4
2011	95	12

These results are very similar to what was observed by DeRosa Environmental Consulting on April 15, 2009, at which time 51 total egg masses were noted.

General wetland conditions in the main wetland on the north side of the road appeared very good, with a healthy diversity of plant species. The erosion control sock and stakes remains in place but is now significantly decayed and provides little function. Continued sedimentation of the wetland due to erosion from the roadway shoulder is likely without improved vegetative cover.

There did not appear to be any functional deficits of this wetland system as a result of activities conducted by MECT. Poor water quality at the two outlets indicates that sediment is still likely entering the system. Some erosion and bare spots on the roadway shoulder was also observed.

Road shoulder on north side of Pine Street in study area. Erosion control sock and stakes remain in place but have deteriorated