

Botanical Study in the South Field of the Whiting Road Nature Preserve in Webster, NY

Summer 2007

By Norma Platt



Cover photo: View of the study area in the Whiting Road Nature Preserve

Author: Norma Platt is a 20-year resident of Webster who has an interest in understanding and preserving nature.

Abstract: The Whiting Road Nature Preserve in Webster, NY has been set aside for preservation of natural habitat and public enjoyment of green space. A study was undertaken in 2007 to document the plants, birds and butterflies occurring in a 3600 square foot area in the 'south field' in the Whiting Road Nature Preserve. Twenty-six native and non-native plant species, some of which are invasive, grew in the study area. This census provides a baseline for future comparisons.

Acknowledgements:

This study was performed with the permission of Ron Nesbitt, Webster Town Supervisor, and Mark Yaeger, Commissioner of Parks and Recreation. John Boettcher provided encouragement and persistence in identification of grasses. Bruce Cady provided his comments on the study design and interpretation of results.

The Study Site: Observations were made in a 3600 square foot area in the ‘south field’ of the Whiting Road Nature Preserve. The location of the study plot is shown in Figure 2. As shown in the cover photo, this area is at the edge of an open field bordered by woods and colonizing woody plants. This location was selected because it contained host plants of butterfly larvae and nectar plants for adult butterflies.

Geology, Soil and Climate: The soil of this area is sandy, well drained and dry. This area originated as the beach ridge of the ancient Lake Iroquois.¹ It is acidic, with a pH of 4.5-5. The 2007 summer season was very dry: “from May through August, only 5.66 inches of rain was recorded – a 7 inch deficit”² (from the expected).

The Survey: Vascular plants were surveyed every week from mid-April to early September, 2007. Butterfly and bird species were noted for each visit to the site. Details of the study are noted in the study’s proposal, recorded in Appendix 1³.

Results and Discussion The study area was covered with a grass thatch (Table 1). Two species -- one tall (*Bromus inermis*) and one short (*Poa pratensis*) -- provided major contributions to this thatch. Three other grasses were present in small patches.

Table 1. Grasses⁴.

Common Name	Latin Name	Origin ⁵	Occurrence in plot
Smooth Brome	<i>Bromus inermis</i>	Alien	50% of thatch
Kentucky Bluegrass	<i>Poa pratensis</i>	Native	50% of thatch
Fall Witch Grass	<i>Leptoloma cognatum</i>	Native	Infrequent patches
Reed Canarygrass	<i>Phalaris arundinacea</i>	Native	Infrequent patches
Orchard Grass	<i>Dactylis glomerata</i>	Alien	Infrequent patches

¹ Bradford, B. Van Diver, *Roadside Geology of New York*, Mountain Press Publishing Company, 1992.

² Glenn Johnson in the 9/9/2007 Democrat and Chronicle.

³ The original plan was to use sub-samples of the greater area. Instead, I kept track of the whole area.

⁴ a) Lauren Brown, *Grasses an Identification Guide.*, Houghton Mifflin Company, 1979.

b) Edward Knobel, *Field Guide to the Grasses, Sedges and Rushes of the United States*, Dover Publications, Inc., 1980.

⁵ Peterson’s *Field Guide to Wildflowers* (see reference 5) defines an alien plant as ‘foreign, but successfully established in our area by man, or as an escape.’



GPS coordinates of study plot:
SW corner: 43 14.385/77 28.350
NW corner: .397/ .367
SE corner: .391/ .345
NE corner: .403/ .362

Figure 2. Map of study area with GPS coordinates.

Woody plants (see Table 2) were beginning to encroach on the open area at the southern edge of the plot. Left unchecked, these will fill in the open field area. (Mowing would provide control of these plants. Protocols and recommendations are available from Cornell University⁶.)

Twenty-one non-grass plant species were observed. These are listed in Table 2.

Table 2. (Non-Grass) Plant Species⁷

Common Name	Latin Name	Origin	Occurrence in plot
Woody plants: sassafras, honeysuckle, blackberry			Encroaching at south edge
Common Milkweed	<i>Asclepias syriaca</i>	Native	Common, see Fig. 3
Butterfly-weed	<i>Asclepias tuberosa</i>	Native	Common, see Fig. 4
Hoary Alyssum	<i>Beterea incana</i>	Alien	Patches
English Plantain	<i>Plantago lanceolata</i>	Alien	Infrequent
Cow Vetch	<i>Vicia cracca</i>	Alien	Common
Field Pepperweed	<i>Lepidium campestre</i>	Alien	Infrequent
Black-eyed Susan	<i>Rudbeckia hirta</i>	Native	Infrequent
Yarrow	<i>Achillea millefolium</i>	Alien	Infrequent
Smoothish Hawkweed	<i>Hieracium floribundum</i>	Alien	Infrequent
Yellow Goat's-beard	<i>Tragopogon pratensis</i>	Alien	Infrequent
Night-flowering Catchfly	<i>Silene noctiflora</i>	Alien	Infrequent
Horsetail	<i>Equisetum</i> species	Native	Infrequent
Sweet Everlasting	<i>Gnaphalium obtusifolium</i>	Native	Infrequent
Common Mullein	<i>Verbascum thapsus</i>	Alien	Infrequent
Queen Anne's Lace	<i>Daucus carota</i>	Alien	Infrequent
Common Ragweed	<i>Ambrosia artemisiifolia</i>	Native	Infrequent
Black Swallowwort	<i>Cynanchum nigrum</i>	Alien/invasive	Common
Spotted Knapweed	<i>Centaurea maculosa</i>	Alien/invasive	Common

⁶ Three documents available at scnyat.cce.cornell.edu are 'Hayfield Management and Grassland Bird Conservation,' 'Transforming Fields into Grassland Bird Habitat' and 'Enhancing Pastures for Grassland Bird Habitat.'

⁷ Roger Tory Peterson and Margaret McKenny, 'A Field Guide to Wildflowers', Houghton Mifflin Company, 1968.

Two milkweeds, Common Milkweed and Butterfly-weed, occurred frequently in the study area. Both plants are important to butterflies, serving as food for larvae and/or nectar sources for adults. The distributions of Common Milkweed and Butterfly-weed are shown in Figures 3 and 4. At highest density, Common Milkweed reached 16 plants/10-foot square and Butterfly-weed could be found at 29 plants/10-foot square.

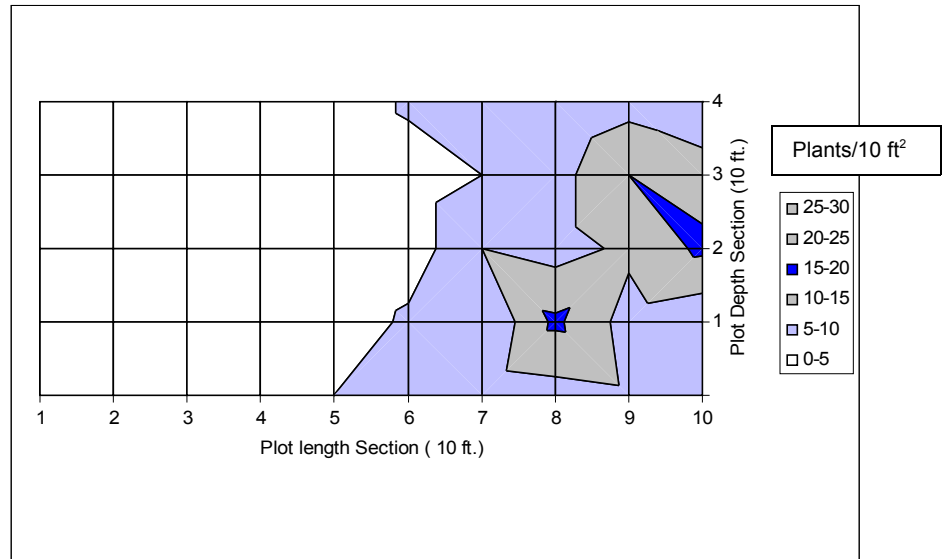


Figure 3. Plant density distribution of Common Milkweed.

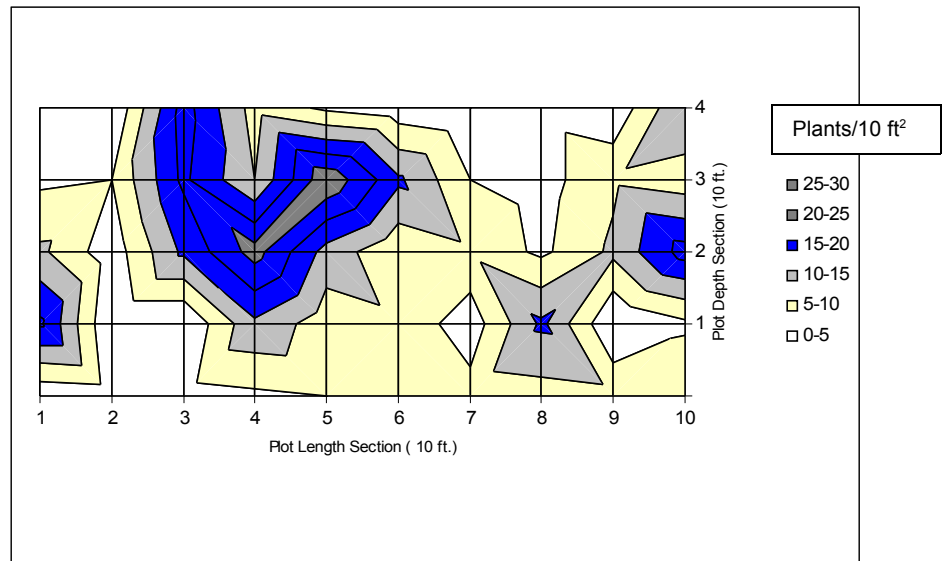


Figure 4. Plant density distribution of Butterfly-weed.

Invasive Species and Remediation: Christopher Mattrick⁸, Senior Conservation Program Manager for the New England Wild Flower Society, defined invasive plant species as “plants that have, or are likely to spread into native or minimally managed plant systems, and cause economic or environmental harm by developing self-sustaining populations and becoming dominant or disruptive to those systems”.

Two alien plants, Black Swallowwort and Spotted Knapweed⁹, both recognized as undesirable and ‘invasive,’ were present in the study area. Clumps of the Black Swallowwort were numerous on the southern side of the plot and scattered throughout the area. The Spotted Knapweed was scattered throughout the northern 1/3 of the plot.

In late-June, measures were undertaken to control both the Black Swallowwort. The Friends of Webster Trails¹⁰ obtained permission and assistance from the Town of Webster to spray clumps of the swallowwort throughout the ‘south field’ and on the trail leading to it. The study area also received this treatment. This measure effectively removed the clumps of swallowwort. In addition, I personally dug up the knapweed from the study area.

Both the swallowwort and the knapweed have established strong populations in the ‘south field.’ Swallowwort is thick along the southernmost end, choking out all other plants. The knapweed has a strong presence midfield.

Although they did not occur in the study plot, other invasive plant species -- Garlic Mustard, Oriental Bittersweet and the shrubs Autumn Olive and Multiflora Rose -- have a substantial presence in the Whiting Road Nature Preserve.

⁸ From the text of an article written for Wellesley College.

⁹ The internet provides extensive information on these species and efforts to map and control them. a)The Brooklyn Botanic Garden provides a good listing of invasive species at the site: http://www.bbg.org/gar2/pestalerts/invasives/worst_nym.html.

b) Spotted Knapweed releases substances toxic to other plants (allelopathy). <http://www.usask.ca/agriculture/plantsci/classes/range/centaurea.html>

¹⁰ This activity was organized by Don Baird.

Birds and Butterflies in the Preserve: Birds that were observed in the 'south field' or on the trail included: Wild Turkey, Red-tailed Hawk, Turkey Vulture, Mourning Dove, Ruby-throated Hummingbird, Pileated Woodpecker, Downy Woodpecker, Hairy Woodpecker, Red-bellied Woodpecker, Eastern Kingbird, Great Crested Flycatcher, Eastern Pewee, Eastern Phoebe, American Crow, Blue Jay, Black-capped Chickadee, White-breasted Nuthatch, House Wren, Brown Thrasher, Gray Catbird, American Robin, Wood Thrush, Hermit Thrush, Veery, Cedar Waxwing, Red-eyed Vireo, Common Yellowthroat, Hooded Warbler, Yellow Warbler, Blue-winged Warbler, American Redstart, Black-throated Blue Warbler, Red-winged Blackbird, Common Grackle, Northern Oriole, Northern Cardinal, House Finch, American Goldfinch, Indigo Bunting, Rufous-sided Towhee, Rose-breasted Grosbeak, Field Sparrow¹¹ and Song Sparrow

The following butterflies were observed: American Copper, Northern Pearly Eye, Red Admiral, Common Ringlet, Little Wood Satyr, Dun Skipper, Monarch, European Skipper, Least Skipper, Tiger Swallowtail, Viceroy, Spicebush Swallowtail, Common Wood Nymph, and Black Swallowtail. The American



American Copper

Coppers were numerous and occurred in two generations near a robust stand of sorrel, their food plant (on the orange trail, just south of the woods, on the east side).

The future:

The 'south field' in the Whiting Road is in transition: Woody plants are encroaching on the open space and will, without intervention, eventually, fill in the open area. Alien plants that are 'invasive' by nature, will displace the existing plants.

¹¹ The field sparrow was listed on the Audubon's 'Common Birds in Decline' list. Its current estimated population is 5.8 million, down from 18 million 40 years ago. The habitat found currently in the 'south field' is the type they recommend to retain the current population.

Proposal for a Field Study

By Norma Platt

Proposal: I would like to census the plants and animals on a 5000¹² square foot section of 'the south field' area of the Whiting Road green space in Webster N.Y. (Figure 1).

Time: Spring, summer, fall of 2007

Site Selection: The area selected contains host plants of butterfly larvae and nectar plants for adult butterflies.

Method: Locate site (GPS) and mark area
Mark 10 ft. grid within area
Characterize soil (type, pH)
Visit area on a weekly basis
Record temperature and rainfall each visit
Document site and contents photographically

'Background Census' of overall area

For a 1 square foot area at grid intersections¹³

Identify visually and record plants/animals

Map plants/animals onto grid map

'Additional' Census

If atypical plants or animals occur outside sample areas, identify, document location and monitor

Tools: Flush-with-ground markers (sample provided)
Camera

Results: Characterization of field section.
Plant list
Animal list

¹² The area was, in fact, only 3600 square feet.

¹³ The sampling technique means that I'll be looking in detail at 50 square feet that would be representative of the total area. In the field, it turned out that I preferred to keep track of the entire area, in implementing the study.