

Storrs Center MDP
Biodiversity Surveys—Existing Conditions
Michael W. Klemens, LLC--December 1, 2004

INTRODUCTION

Biodiversity surveys were conducted in the spring and summer of 2004 at the Storrs Downtown (a.k.a.) Mansfield Partnership site in Storrs by Michael W. Klemens, LLC of Rye, NY. Herpetological studies were conducted by Michael W. Klemens, PhD assisted by Kevin J. Ryan, and ornithological studies by Nicholas A. Miller, MSc. These surveys were completed in order to determine the current composition and distribution of focal taxa species (amphibians, reptiles, and breeding birds) on the subject property.

METHODS (HERPETOLOGICAL)

To detect amphibians and reptiles requires using a variety of techniques over an extended time period. These techniques include auditory surveys (to detect calling frogs), egg mass counts and larval sampling to detect breeding amphibians, minnow trap emplacement in small wetlands to capture breeding amphibians, turning rocks, logs, and other cover objects to detect animals that are hiding, and visual searching on the forest floor, along trails and edges, for basking animals. Streams are searched intensively to detect salamanders that are captured by hand or with small nets or scoops.

Surveys were conducted on the site on: April 7, 8, May 19, and August 10, though some data were collected in conjunction with other activities on the site, such as site walks with state and federal agency representatives or with the Mansfield Partnership Board.

RESULTS (HERPETOLOGICAL)

The study has identified three major wetland resource zones on the property. The northern and southern stream corridors and their associated wetlands, and a large vernal pool. The southern stream corridor has a larger assemblage of wetlands and is more biologically intact as it does not receive much stormwater runoff, though its headwaters area is filled in the vicinity of the Post Office. The northern watercourse is heavily impacted by stormwater runoff from the existing development along Storrs Road. The vernal pool is an exceptional resource with high biological values.

Salamanders

Dusky Salamander (*Desmognathus fuscus*): This is an ecologically sensitive stream salamander that is undergoing a long-term non-cyclical decline in Connecticut due to impairment of its stream habitats. Its distribution on the site reflects the quality of the riparian habitats, with this species being dominant in the southern watercourse and very rare in the northern watercourse.

Two-lined Salamander (*Eurycea bislineata*): This is a species that is able to exploit compromised riparian habitats, and although it requires clean water, is better able to tolerate thermal alterations, flashiness, and scouring that occurs in streams that receive stormwater runoff from the built environment. It is the dominant species in the more impaired northern

watercourse, however, it is limited from the upper portions of that stream because of the seasonal deposition of large volumes of silt.

Redback Salamander (*Plethodon cinereus*): This is Connecticut's most common salamander and is totally terrestrial. It favors deciduous woods with a well-developed duff layer. It occurs on the site, but is not common in the extensive areas of pine plantation.

Frogs

Spring peeper (*Pseudacris crucifer*): Found throughout the site in moist woods, breeds in various wetlands on site. Common and secure in Connecticut.

Green frog (*Rana clamitans*): Found in both watercourses as well as the vernal pool. Common and secure in Connecticut.

Wood frog (*Rana sylvatica*): A large breeding population occurs in the "classic" vernal pool, with several hundred egg masses counted on April 7-8. A smaller satellite population occurs in a "cryptic" vernal pool (ca. 25 egg masses) located just downstream of the Post Office in the southern watercourse. The wood frog is a declining species in Connecticut and the presence of a large breeding population on the site is significant.

Snakes

Snakes are uncommon in forested habitats, congregating along edge areas where there is sufficient sunlight to bask. Single specimens of two common snakes were found during the survey, both at the perimeter of the woodlands, a garter snake (*Thamnophis sirtalis*) and a ringneck snake (*Diadophis punctatus*).

The herpetofauna is typical of upland sites in eastern Connecticut. The lack of permanent water and deeper wetlands precludes turtles from the site, and the lack of extensive open area precludes many snakes and terrestrial turtles. It is likely that several other species may occur on the site (gray tree frog, pickerel frog, brown snake, milk snake), but if they do the numbers are quite low or they are transient. The one species where special attention was paid to documenting its occurrence was the State-listed (Threatened) spring salamander (*Gyrinophilus porphyriticus*). There is a historical record (1900) from the Storrs Plateau area. Intensive stream salamander surveys of the site revealed no evidence of the presence of this species. Both stream watercourses lack sufficient seepage and are too warm to support this coldwater species.

METHODS (ORNITHOLOGICAL)

The following bulleted list presents protocols for bird surveys that are established in the scientific literature. These protocols were followed during bird surveys at the Storrs Downtown Alliance site in order to maximize bird detectability and the reliability of results. Details specific to this site are provided following the bulleted list.

- *Bird surveys should occur during the spring breeding season (mid-May through early July).*
- *Surveys should occur during the early morning hours.*
- *Surveys should occur under relatively fair weather conditions.*
- *Surveys should follow standardized point-count or transect techniques.*
- *Surveys should be conducted within all habitats on site (e.g., grasslands, forested uplands, forested wetlands), regardless of where proposed construction activities would take place.*
- *Multiple field visits to the same site—spaced throughout the breeding season—increases detectability.*

Three surveys (i.e., visits) were conducted throughout the breeding bird season on the following dates: May 24, June 9, and June 16. All birds seen and heard during these surveys were recorded (see species list). Each survey commenced by 5:00 am and continued until bird activity levels declined (i.e., in the late morning); all surveys were concluded by noon. Weather conditions on these visits ranged from adequate to optimal. The weather on Visit 1 was 58 degrees at survey start time, overcast, no wind, and a slight mist/drizzle on and off throughout the survey. The weather on Visit 2 was 60 degrees at survey start, intermittent light breezes, and mostly sunny. The weather on Visit 3 was 65 degrees at survey start, mostly sunny, and no wind.

Transect surveys were conducted at this site in order to maximize the number and extent of habitats covered during the surveys. The entire site was surveyed during each of the three visits, and all habitats were surveyed, including both stream corridors and associated forested wetlands, the vernal pool, the open canopy area near the parking lot, the upland deciduous and mixed forest that dominates the site, and the pine forest on the central ridgeline.

On the first visit, observations were made of some probable migrants (i.e., birds that are migrating through the area, rather than establishing territories and breeding here). Some species of conservation concern were also observed. To determine if birds in these two categories were actively holding territories on the site, song playback methods were used on Visits 2 and 3. Song playback (i.e., broadcasting recorded bird songs to elicit territorial behavior and counter-singing) can confirm the continued presence and likely breeding status of these birds.

RESULTS (ORNITHOLOGICAL)

Fifty bird species were detected during the three bird survey visits (see attached bird species list). None of these species have endangered, threatened, or special concern status at either federal or state levels. Two of the species (worm-eating warbler and wood thrush) are included on the Audubon Society's WatchList.

Mourning dove	<i>Zenaida macroura</i>	Brown creeper	<i>Certhia americana</i>
Cooper's hawk	<i>Accipiter cooperii</i>	White-breasted nuthatch	<i>Sitta carolinensis</i>
Great horned owl	<i>Bubo virginianus</i>	Tufted titmouse	<i>Baeolophus bicolor</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Black-capped chickadee	<i>Poecile atricapillus</i>
Downy woodpecker	<i>Picoides pubescens</i>	Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>	Wood thrush	<i>Hylocichla mustelina</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	Veery	<i>Catharus fuscescens</i>
Chimney swift	<i>Chaetura pelagica</i>	Swainson's thrush	<i>Catharus ustulatus</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>	American robin	<i>Turdus migratorius</i>
Eastern phoebe	<i>Sayornis phoebe</i>	Eastern bluebird	<i>Sialia sialis</i>
Eastern wood-pewee	<i>Contopus virens</i>		
Blue jay	<i>Cyanocitta cristata</i>		
American crow	<i>Corvus brachyrhynchos</i>		
European starling	<i>Sturnus vulgaris</i>		
Common grackle	<i>Quiscalus quiscula</i>		
House finch	<i>Carpodacus mexicanus</i>		
American goldfinch	<i>Carduelis tristis</i>		
Chipping sparrow	<i>Spizella passerina</i>		
Song sparrow	<i>Melospiza melodia</i>		
Northern cardinal	<i>Cardinalis cardinalis</i>		
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>		
Scarlet tanager	<i>Piranga olivacea</i>		
Cedar waxwing	<i>Bombycilla cedrorum</i>		
Red-eyed vireo	<i>Vireo olivaceus</i>		
Blue-headed vireo	<i>Vireo solitarius</i>		
Black-and-white warbler	<i>Mniotilta varia</i>		
Worm-eating warbler	<i>Helmitheros vermivorum</i>		
Yellow warbler	<i>Dendroica petechia</i>		
Magnolia warbler	<i>Dendroica magnolia</i>		
Chestnut-sided warbler	<i>Dendroica pensylvanica</i>		
Blackpoll warbler	<i>Dendroica striata</i>		
Black-throated green warbler	<i>Dendroica virens</i>		
Ovenbird	<i>Seiurus aurocapilla</i>		
Common yellowthroat	<i>Geothlypis trichas</i>		
American redstart	<i>Setophaga ruticilla</i>		
House sparrow	<i>Passer domesticus</i>		
Northern mockingbird	<i>Mimus polyglottos</i>		
Gray catbird	<i>Dumetella carolinensis</i>		
Carolina wren	<i>Thryothorus ludovicianus</i>		
House wren	<i>Troglodytes aedon</i>		