

APPENDIX M

ECOLOGY-RELATED DOCUMENTS

Appendix M-1
Memorandum of Understanding to Town with Respect to Analysis
Procedure

NP&V, LLC

July 28, 2015



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To: Kyle Collins, Land Management Administrator
Town of Southampton

From: Lara Urvat, Certified Ecologist
Chic Voorhis, CEP, AICP

Date: July 28, 2015
Revised: Monday, August 10, 2015

Re: The Hills at Southampton
Ecological Inventory Methodology
NP&V 05105

Kyle,

This memo serves to provide the data collection methodology of ecological resources at the Hills at Southampton property, as required by the Final DEIS Scope, issued July 1, 2015. The specific request as outlined in the Final Scope is as follows:

Submit a technical memo to the Town for review and approval describing the data collection/inventory methodology (e.g., dates and locations of field work, data collection methods, species targeted, etc.).

The data collection/inventory methodology for the ecological assessment of The Hills at Southampton project involves the following:

1. Review of office records, literature and map research in preparation for field work;
2. Review of Town GIS database for ecological information related to the subject site;
3. Contact with New York Natural Heritage Program (NHP) to identify potential for rare habitats, and plant/animal species;
4. Research regarding rare habitats, plant or animal species to determine potential presence, biological needs of species, habitat suitability, host plants and proper times/seasons for species identification;
5. Conduct random transect site inspections throughout the subject property for observation and evidence of flora and fauna; evidence of fauna includes direct observation, audible encounters, presence of scat, "rubs," nest and den site observation and related indirect evidence to be factored with expected species based on observation and habitat;
6. Ground-truth habitats based on field inspection of conditions throughout the subject site;
7. Using site specific habitat information gathered during field work classify site habitats using Edinger, et. al., 2014;
8. Map of habitats encountered based on aerial photography and field visits;

9. Compile a comprehensive list of flora expected and observed on site during site specific inspections;
10. Compile a comprehensive list of fauna expected and observed on site during site specific inspections;
11. Supplement list of observed fauna with extensively researched Prediction of Wildlife Ecological Response (POWER) model which includes historic naturalist observations of species encountered based on habitat.¹

Ecological inventories have been conducted on the property since 2005. The history of field work and opportunities for flora/fauna observations is much greater than typical for a State Environmental Quality Review Act (SEQRA) Draft Environmental Impact Statement (DEIS) level analysis. This history of ecological information provides a comprehensive evaluation of the site's natural resources ensuring that the requisite "hard look" is conducted for this specific site. The methodology utilized for ecological surveys included the steps listed above, with extensive multi-seasonal, random transects throughout the property with notation of flora and fauna encountered either visibly or audibly, supplemented with evidential information and the POWER model. Species and communities identified by the New York Natural Heritage Program were searched for during each visit. Specifically, species and communities searched for include:

- Collins' sedge – *Carex collinsii* (endangered plant)
- Atlantic White Cedar – *Chamaecyparis thyoides* (threatened plant)
- Rough Hedge-nettle – *Stachys hyssopifolia* (threatened plant)
- Great Plains Flatsedge - *Cyperus lupulinus ssp. luplinus* (threatened plant)
- Coastal Barrens Buck moth – *Hemileuca maia ssp. 5* (special concern moth)
- Scarlet bluets – *Enallagma pictum* (threatened damselfly)
- New England bluets – *Enallagma laterale* (unlisted, rare damselfly)
- Mantled baskettail – *Epiptera semiaquea* (unlisted, rare dragonfly)
- Golden-winged skimmer – *Libellula auripennis* (unlisted, rare dragonfly)
- Northern long-eared bat – *Myotis septentrionalis* (threatened mammal)
- Pine Barrens Shrub Swamp (uncommon community)
- Highbush Blueberry Bog-thicket (uncommon community)
- Coastal Plain Pond Shore (rare community)
- Pitch Pine Oak-Heath Woodland (rare community)

¹ It is not possible to observe all species which may be present on a given property. A high frequency of inspections and multi-seasonal observations are not always possible. Consequently, NP&V has over 25 years of company database information, supplemented by literature research of naturalist observations of species expected based on habitat. The POWER model is useful in identification of potential species which is supplemented by on-site observations and specific assessment of rare species based on NYNHP detailed site evaluation.

The following provides the preferred habitat for each species and indicates the best time for species identification, which was considered during the scheduling of each site visit:

Plants

Collins' Sedge (*Carex collinsii*) is an endangered forb/herb identified at Sears Pond in 1990. This species requires sphagnum swamps for survival and propagation, and is most often identified in association with Atlantic white cedar. This species is best identified when in fruit, between mid June and the end of August. While some sphagnum does exist within the Hills North wetlands, no Atlantic white cedar was identified within the wetland habitat.

Atlantic White Cedar (*Chamaecyparis thyoides*) is a threatened tree identified at Sears Pond in 1997. This species requires swamps and ponds, and particularly favors areas with a high water table and deep organic soils. This species can be identified at any time during the year as both foliage and fruits are present year round. Although some suitable habitat exists on the Hills North, this species was not identified in association with the wetland. It is noted that the Hills North parcel is located on the north side of Sunrise Highway (S.R. 27) and is located within the Central Pine Barrens Core Preservation Area. As such, no development is permitted within this area and the existing wetlands will remain undisturbed.

Rough Hedge-nettle (*Stachys hyssopifolia*) is a threatened forb/herb of wetlands with historical records from the NYNHP in the vicinity of the subject site. Suitable habitat includes coastal plain ponds and open wet sandy areas. This plant is best identified in the months of July and August, which is the flowering period of the species. Suitable habitat (coastal plain ponds and open wet sandy areas) does not exist on the subject site.

Great Plains Flatsedge (*Cyperus lupulinus* ssp. *lupulinus*) is a terrestrial forb/herb with historical records from the NHP in the vicinity of the subject site. Suitable habitat for this species includes open, sandy areas. Proper identification of this species must occur when fruits are present, which are formed in late July and persist into early to mid-October. Although suitable habitat for this species exists on site (open, sandy areas) this species is not expected on the subject site due to its historical nature. Site inspections in specific areas to confirm the presence/absence of this species will be completed and results will be documented in the DEIS.

Moths, Dragonflies and Damselflies

The Coastal Barrens Buckmoth (*Hemileuca maia* ssp. 5) is a terrestrial species identified by the NYNHP. The NYS Natural Heritage Program lists the buck moth as present in the vicinity of the project area as recently as 1984. The buck moth (*Hemileuca maia*) is a diurnal moth found exclusively in pine barrens habitat, and prefers areas of open Pine Barrens which have burned within the past 20 years (Cryan, 1985). Important host plants to the developing caterpillars include the scrub oak (*Quercus ilicifolia*) and dwarf chestnut oak (*Quercus prinoides*). The moth prefers areas where these trees are less than 10 feet in height for both food and reproduction (Dirig and Cryan, 1977).

Buck moths can be identified in the field in one of three ways: by the detection of larval caterpillars in May and June during which time they feed on the unfolding leaves of their host plant; by detection of adults in flight during autumn; and by detection of egg masses deposited on the twigs of their host plants. Unlike most moths, the buck moth mates in the fall and overwinters in the egg stage rather than as a pupa. The eggs are laid in a tight spiral on the twigs of scrub oaks, and are identifiable during the winter months. Inspections revealed few areas of scrub oak, and densities present within the site were considered "sparse" or "low," which is generally not suitable for buck moth. As a result, on site habitat for this species is considered marginal. Nevertheless, site inspections of areas identified as containing scrub oak will be conducted, the results of which will be documented in the DEIS.

Scarlet bluets (*Enallagma pictum*) is a threatened damselfly identified within a half mile of the project site. This species requires ponds with water lilies (NYNHP, 2013). This species is best identified when in flight during the reproductive stage, which is between mid-June and the end of July. While wetlands with ponded areas are present on the Hills North, water lilies were not present within this habitat and as such, no suitable habitat for this species is present within the project area.

New England bluets (*Enallagma laterale*) is an unlisted, rare damselfly identified at Sears Pond in 2006, which is located north east of the project area. This species requires ponds with emergent vegetation or boggy edges (NYNHP, 2013). This species is best identified when in flight during the reproductive stage, which is between the end of May and the end of June. While wetlands with ponded areas are present on the Hills North, emergent vegetation or bogs were not present within this habitat and as such, no suitable habitat for this species is present within the project area.

Mantled basekettail (*Epitheca semiaquea*) is an unlisted, rare dragonfly identified at Sears Bellows wetlands in 2008, which is located north east of the project area. This species requires lakes and ponds with clear water (NYNHP, 2013). This species is best identified when in flight during the reproductive stage, which is between late May and mid-July. While wetlands with ponded areas are present on the Hills North, significant areas of clear water were not present within this habitat and as such, no suitable habitat for this species is present within the project area.

Golden-winged skimmer (*Libellula auripennis*) is an unlisted, rare dragonfly identified at Sears Pond in 2006, which is located north east of the project area. This species requires coastal plain ponds (NYNHP, 2013). This species is best identified when in flight during the reproductive stage, which is between June and mid-July, however, the species may be seen until early September. While wetlands with ponded areas are present on the Hills North, a coastal plain pond was not present within this habitat and as such, no suitable habitat for this species is present within the project area.

Mammals - The northern long-eared bat was recently listed by the US Fish and Wildlife Service (USFWS) as a threatened species. This species requires woodland habitat for foraging with open areas between either the shrub layer or sub canopy layer and the canopy. Roosting habitat requires trees with peeling bark or snags, and will more rarely utilize structures for roosting. Locally, habitat for hibernation includes caves and structures that provide some insulation from the winter temperatures. This species is best identified through the use of acoustical detection equipment to positively identify calls, or through mist-netting for temporary capture and identification of the species. Habitat for roosting and foraging is present on the subject site, however, habitat for hibernation is not present on the site as no structures exist on the site.

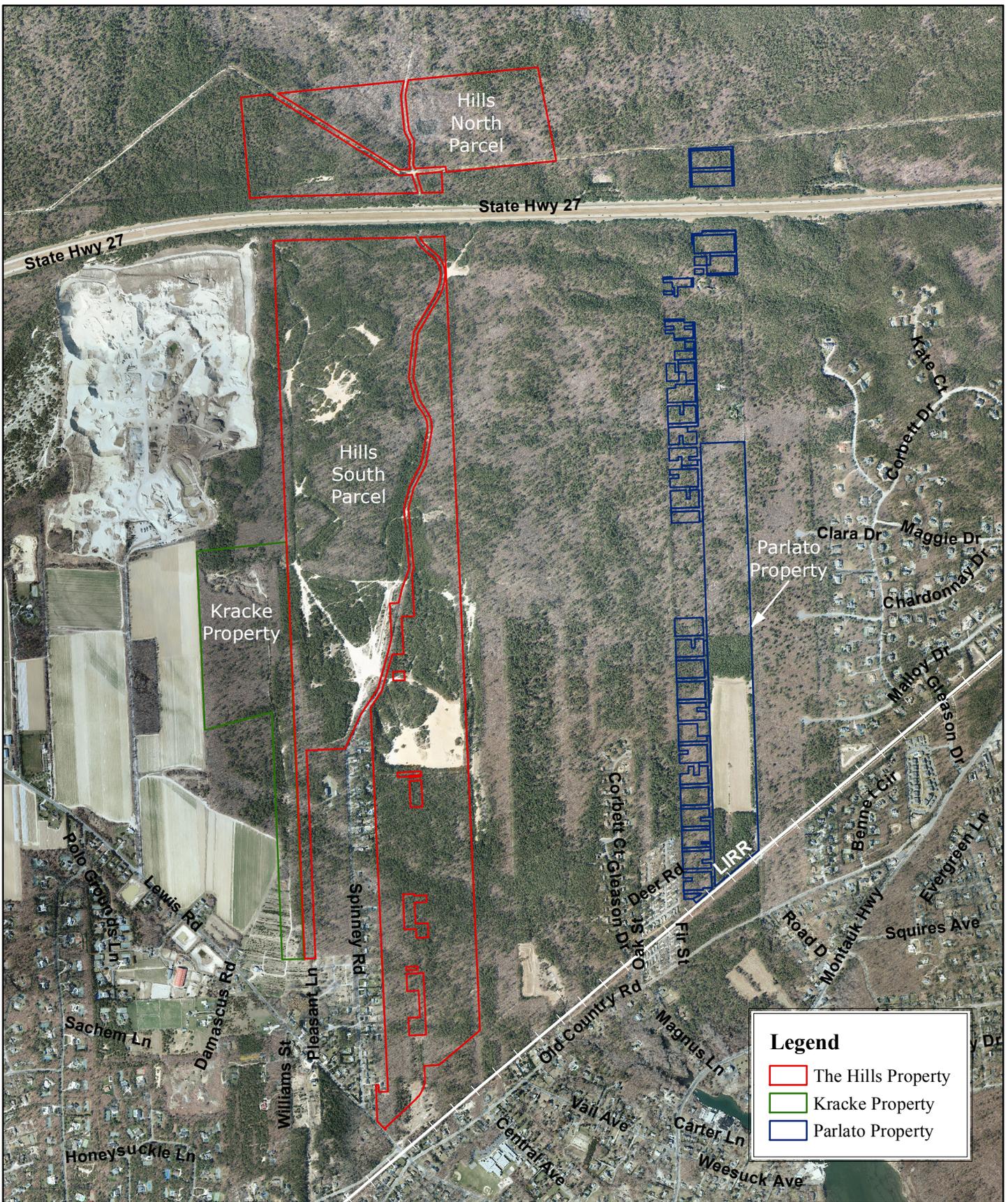
Three surveys, conducted by a lepidoptera specialist, and one survey, conducted by NP&V Staff, were conducted solely to determine the presence/absence of buck moth (*Hemileuca maia*), a special concern species in New York State. Surveys by the lepidoptera specialist included examining concentrations of scrub oak on the Hills South parcel for the presence/absence of egg masses, which including sampling of the terminal 70 cm of 500 scrub oak branches on two separate occasions in areas identified as having concentrations of scrub oak. Surveys for adults included visiting known buck moth sites prior to visiting the subject site to ensure that surveys were being conducted during the appropriate season. During these site visits, unmated female buckmoths were utilized to attract male buckmoths through the use of pheromone emissions from the females. Surveys conducted by NP&V staff for buckmoth included visual survey for flying individuals and examination of scrub oak branches for egg masses.

The enclosed map illustrates the locations of each property inspected, and the following table provides the dates, property(s) inspected, and species searched for during each visit.

Date:	Conducted By:	Property(s) Visited:	Species Targeted:
May 4, 2005	NP&V Staff	Hills North, Hills South	All flora and fauna encountered
May 5, 2005	NP&V Staff	Hills North, Hills South	All flora and fauna encountered
December 2, 2008	NP&V Staff	Hills South	All flora and fauna encountered
February 25, 2009	NP&V Staff	Hills South	All flora and fauna encountered
March 24, 2009	NP&V Staff	Hills South	All flora and fauna encountered; focus on identifying patches of scrub oak
March 25, 2009	NP&V Staff	Hills South	All flora and fauna encountered; focus on identifying patches of scrub oak
May 9, 2009	Hugh McGuinness	Hills South	Buck Moth
June 8, 2009	Hugh McGuinness	Hills South	Buck Moth
October 15, 2009	NP&V Staff	Hills South	Buck Moth
October 31, 2009	Hugh McGuinness	Hills South	Buck Moth
May 30, 2014	NP&V Staff	Hills South, Parlato	All flora and fauna encountered
June 24, 2014	NP&V Staff	Hills South	All flora and fauna encountered, focus on identifying presence/absence of Buck Moth
July 22, 2014	NP&V Staff	Kracke	All flora and fauna encountered
September 26, 2014	NP&V Staff	Kracke, Hills South, Parlato	All flora and fauna encountered
April 15, 2015	NP&V Staff	Hills North, Parlato	All flora and fauna encountered
June 8, 2015	NP&V Staff	Hills South	All flora and fauna encountered
June 18, 2015	NP&V Staff	Hills South	All flora and fauna encountered

Data was then compiled and reviewed in the office to determine the natural community types, as described by Edinger, et. al. (2014), that were present on site. This enables the preparation of comprehensive mapping of habitats, and compilation of flora and fauna lists of expected and observed species consistent with the steps outlined above.

As demonstrated above, thorough investigations of the subject properties have been conducted to establish the existing environmental conditions of the site with respect to ecological resources. This information will be used as a basis for analysis of potential impacts based on the proposed project and project alternatives in the DEIS. As a result, concurrence and approval of the methodology and associated data collection as described herein is requested in fulfillment of the Final Scope.



**FIGURE 1-1
LOCATION MAP**

**The Hills
at
Southampton**

Draft EIS



Source: NYSGIS Orthoimagery Program, 2013
Scale: 1 inch = 2,000 feet

