APPENDIX G

ECOLOGICAL RESOURCES-RELATED DOCUMENTS

Appendix G-1
Professional Qualifications of Ecological Consultants

NP&V, LLC

Charles J. Voorhis, AICP, CEP

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title

Managing Partner of Firm, Nelson, Pope & Voorhis, LLC; Melville, New York

Education & Training

- SUNY at Stony Brook; Master of Science in Environmental Engineering, concentration in Water Resource Management, 1984
- Princeton Associates; Groundwater Pollution and Hydrology Short Course, Princeton, New Jersey, 1983
- New York State Health Department, Environmental Health Training Course, Hauppauge, New York, 1982
- Southampton College of Long Island University; Bachelor of Science in Environmental Geology, 1977

Professional Affiliations, Certifications & Training

- American Planning Association, Washington, D.C.
- National Association of Environmental Professionals, Alexandria, VA
- Environmental Assessment Association, Scottsdale, Arizona
- American Water Resources Association, Syracuse, New York
- New York Water Pollution Control Association, Riverdale, NY
- Water Pollution Control Federation, Washington, D.C.
- Long Island Seaport & EcoCenter, Inc., Director, Port Jefferson, NY
- Boy Scouts of America, Trained Scoutmaster, Nathanial Woodhull District,
- Historical Society of Port Jefferson, Trustee, Port Jefferson, NY
- Environmental Conservation Board, Village of Port Jefferson, NY
- Port Jefferson Village, Waterfront Advisory Committee, Port Jefferson, NY
- Town of Brookhaven Mount Sinai Harbor Advisory Committee, Medford, NY
- Brookhaven Conservation Advisory Council, Medford, NY

Professional Experience

Charles Voorhis is a professional planner (AICP) and a certified environmental professional (CEP) with both private sector and public sector experience. Mr. Voorhis has managed municipal projects including regional and local planning studies, wetlands and shoreline restoration, environmental impact statements, permit compliance and environmental analysis. Charles Voorhis has over 39 years of professional environmental planning experience, including the position of Director of Environmental Protection of the Town of Brookhaven, supervising the environmental implementation of the Town of Brookhaven Comprehensive Plan Update and secured grants under the Local Waterfront Revitalization Program. As a private consultant for over 23 years, Mr. Voorhis has managed environmental planning and analysis of large scale planning and development projects throughout Nassau and Suffolk Counties. Recent projects include a study to eradicate aquatic invasive/nuisance species in upper and lower Canaan Lakes, Yaphank, stormwater management studies on the north and south shores for the Town of Brookhaven and Town of Islip, completion of the Water Supply Management & Watershed Protection Strategy for the Town of Southold, completion of the Suffolk County North Shore Embayments Watershed Management Plan, and completion of the Lake Agawam Comprehensive Management Plan, as well as numerous environmental impact statements, wetland and shoreline feasibility analyses and management plans.

Project Experience

- Great Cove Watershed Management Plan, 2011
- Town of Southold Comprehensive Plan Update, Economic Chapter, 2010
- Beaver Dam Creek Watershed Management Plan, 2009
- Lake Agawam Comprehensive Management Plan, 2009
- Southold TDR Planning Report and GEIS, 2008
- The Residences at North Hills, DEIS and FEIS, 2005-06
- Town of Southold Comprehensive Implementation Strategy, 2003
- Southampton Agricultural Opportunities Subdivision, DEIS, FEIS and Findings, 2001
- Old Orchard Woods, DEIS and FEIS, 2000
- Town of Smithtown Armory Park, DEIS, 2000
- Town of Southold Water Supply Management & Water Protection Strategy, 2000
- Knightsbridge Gardens, DEIS and FEIS, 1997
- Camelot Village @ Huntington, DEIS, 1997
- Airport International Plaza, DEIS and FEIS, 1996
- Price Club @ New Rochelle, DEIS and FEIS, 1995
- Commack Campus Park @ Commack DEIS and FEIS, 1994
- Water Mill Shops @ Water Mill DEIS, 1993
- Town of Brookhaven Land Use Plan, 1987

Hannah Emouna

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title

Environmental Scientist
Division of Environmental Wetlands & Resource Assessment

Education & Training

- Bachelor of Science in Wildlife Science, cum laude, State University of New York College of Environmental Science and Forestry
- Advanced Graduate Certificate in Geospatial Science, Stony Brook University- State of New York
- Master of Arts in Biology- Concentration in Applied Ecology, Stony Brook University- State of New York

Professional Affiliations & Certifications

- NYSDEC Endangered/Threatened Species: Scientific License
- Long Island Native Plant Initiative (LINPI): Executive Board Member
- New York State GIS Association (NYSGIS)
- Long Island GIS Association (LIGIS)
- Ecological Society of America (ESA)

Professional Experience

Hannah Emouna holds a Master's Degree in Biology with a concentration in Applied Ecology, an Advanced Graduate Certificate in Geospatial Science and a Bachelor's Degree in Wildlife Science. Her extensive training in geospatial science includes the use of remote sensing programs and GIS mapping across multiple platforms. Ms. Emouna is trained to perform environmental monitoring and assessment of both wildlife and plant populations. She regularly performs environmental monitoring that includes habitat composition, analysis, and delineation, ecological modeling and field assessments and for a variety of terrestrial and marine habitats. She holds a NYSDEC Endangered/Threatened Species: Scientific license which authorizes the collection and release of select endangered and threatened species within multiple counties across New York State. Ms. Emouna serves as a point of contact for NP&V and oversees wetland permit applications with the NYSDEC, Army Corps of Engineers (ACOE), NYS Department of State (DOS), and Towns and Villages for several projects across Long Island.

Relevant Experience

- Picnic Beach Expanded EAF, Endangered/Threatened Species Assessment
- Hempstead Plains Endangered/Threatened Species Assessment
- Habitat Suitability Study for the Northern Bobwhite Quail (*Colinus virgianus*) in Suffolk County, NY- Collaborated with members of the Suffolk County Soil and Water Conservation District to utilized GIS, remote sensing, and citizen science combined with the known life history characteristics of the species to locate potentially suitable habitat for Northern Bobwhite quail in Suffolk County. Presented recommendations for alternate monitoring of released individuals and located historical breeding locations with the potential to support the species.
- Threatened Species Monitor – MB Environmental Consulting Inc., Fire Island, New York- Determined appropriate Peregrine Falcon nest box locations based. Monitored breeding activity of adult falcons. Completed tri-weekly assessments of chick health and survival. Recorded the daily activities of breeding adults and offspring including movement, hunting activity, and prey species identification. Assessed the impact of construction activities on nest success and overall bird health. Composed and distributed reports, as well as weekly summaries to multiple departments including the NYSDOT and NYS DEC.
- Field Researcher – White Sea Biological Station, Russia- Completed avian species surveys and point counts. Collected, classified, and analyzed marine invertebrates. Classified and analyzed lichen growth rates to determine time of last disturbance.
- Wildlife Rehabilitation Intern – Sweetbriar Nature Center Smithtown, NY- Provided rehabilitative care to various native avian and mammalian species. Assisted in wildlife intake assessments and the creation\implementation of care plans. Guided educational group tours.
- Field Researcher – Cranberry Lake Biological Station, Cranberry Lake, New York- Assisted in mist netting, measuring, and collection of blood samples for genetic analysis of the white-throated sparrow as part of an ongoing project run by Indiana State University. Analyzed minnow populations to determined relative abundance and distributions using seine nets. Participated in a small mammal population surveys.

Ashley Crespo

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title
Assistant Landscape Ecologist

Education & Training
- Bachelor of Arts Degree in Architecture and Earth Science (double major), Landscape Studies (minor), University of Pennsylvania, 2017

Computer Skills
- Proficient in AutoCAD and SketchUp
- Proficient in Adobe Creative Suite (Illustrator, Photoshop, InDesign, Lightroom)
- Proficient in Autodesk Revit, Rhino, Grasshopper, Rhino VRay,
- Experience in 3D printing (MakerBot and Powder Prints)
- Experience in Laser Cutting
- Experience with Geographic Information Systems (ESRI GIS)

Language Skills
- Fluent in Spanish

Professional Experience
Ashley Crespo holds a Bachelor of Arts Degree with a double major in Architecture and Earth Science, and a minor in Landscape Studies and has recently joined NP&V. Ms. Crespo contributes professional planning and graphic expertise for NP&V's sustainable landscape design services. Her skills are used to bring redevelopment concepts to life creating 3D views, photo simulations, and shadow studies. Ms. Crespo integrates the existing environment and proposed landscaping with the built environment through site analysis, model making and preparation of graphic illustrations. Ms. Crespo has created rain garden designs and wetland buffer restoration ranging in size and location from small backyard gardens to a large 700-foot long median. She also designs promotional, educational and environmental signage for raingardens, solar arrays, parks and institutional properties.

Ms. Crespo regularly assists with environmental monitoring visits focusing on habitat composition, delineation and field assessments for a variety of terrestrial and marine habitats across Long Island.

Relevant Experience
- Wetland Restoration Plan Design and Review:
  - Lake Agawam Restoration Plan
  - The Meadows Restoration Plan
- Environmental Signage:
  - Ronkonkoma Train Station Rain Garden Signage
- Shadow Studies and Visual Assessment:
  - New Rochelle Downtown Overlay Zone
  - Village of Woodsburgh Planning and Zoning Analysis
  - 2016 Arthur Ave CEQR EAS
- Architectural Intern, N2Design and Architecture (Port Washington, NY): Daily tasks included drafting, expediting contract administration responsibilities, and site surveys. Ms. Crespo was also responsible for the set up of all construction drawings for the current projects, as well as the input of all redline changes and revisions.
- Summer Institute Intern, NYC Parks and Recreation (NYC, NY): Through the NYC Parks Initiative, she worked with a group of teenagers who were interested in sustainable design. She was responsible for creating and teaching weekly lessons that explored the local landscape and human dynamics through site analysis, model making, graphic presentations and SketchUp tutorials.
- Soil Biogeochemistry Research Assistant, University of Pennsylvania (Philadelphia, PA): Assisted with the processing and packaging of soil samples from the Luquillo CZO plot in Puerto Rico to be analyzed by the Carbon-Nitrogen elemental analyzer. During summer months, she partnered with the US Forest Service to conduct soil pit extractions in the Delaware River Basin.

NELSON POPE VOORHIS

SYLWIA E. NER-KARAS

SENIOR ENVIRONMENTAL SCIENTIST

Location:
Melville, NY

Education:
Hofstra University, Hempstead, NY

Master of Science, 2004
Specialization: Environmental Science Hofstra University, Hempstead, New York

Bachelor of Science, 1999
Specialization: Biology, Organismal Biology

Registration/Certifications:
NYSDEC Endangered Species Collector Permit

Professional Affiliations:
American Society of Ichthyologists and Herpetologists

Society for the Study of Amphibians and Reptiles
Society Conservation Biology

Awards/Recognition:
Auxinn Scholarship, Dept. of Biology, Hofstra Univ., in recognition of superior performance and academic standing

Hudson River Graduate Fellowship

PROFILE

As an Environmental Scientist, Ms. Ner-Karas has 20 years' experience in performing numerous field studies, wetland delineations, as well as freshwater and tidal wetlands inspections. She routinely has prepared Tidal & Freshwater Wetland Applications, planning and executing the work. Ms. Ner-Karas is experienced in environmental permitting with NYSDEC, ACOE and DOS, as well as Town permitting and is familiar with the flora and fauna of Long Island. Ms. Ner-Karas is familiar with utilizing various trapping methods for wildlife surveys, and with using Trimble GPS to identify markers in the field. She is capable of handling small and large mammals, as well as various amphibian and reptiles. In addition, she also has experience in the preparation of Phase I and II Environmental Site Assessments with a thorough knowledge of the Unified Soil Classification System.

SELECTED EXPERIENCE

- Sr. Environmental Scientist, Nelson, Pope & Voorhis, LLC, Melville, NY
  NOC and NOT preparation under General Permit for PSEG-LI, wetlands feasibility, wetlands permitting and delineations, habitat and wildlife assessments.

- Principal Ecologist/GIS Specialist- Dru Associates, Inc., Glen Cove, NY
  Preparation of Tidal & Freshwater Wetland Applications, planning and executing the work under changing project management parameters. Initiating project directives, reports, and represent the organization in negotiations with the client, states, municipal authorities, interested parties and local governments. Serving as the project manager/leader of the project delivery team. GIS analysis to determine where different natural resources are located. Serving as liaison between DEP, NYSDEC, DOS, ACOE and client. Preparing various permitting documents and Environmental Impact Statements. Perform habitat assessments and perform wetland delineations.

- Adjunct Professor, Hofstra University, Hempstead, NY
  General Biology 012 Laboratory, General Biology 001 & 002 Laboratories, Introduction to Environmental Systems Laboratory (TPP 001)

- Graduate Teaching Assistant, Hofstra University, Hempstead, NY
  BIO 1 Introductory Biology, BIO 2 Animal Biology, Animal Physiology Laboratory

- Volunteer- National Park Service's Gateway National Recreation Area
  Participant in surveys with the National Park Service's (NPS) Gateway National Recreation Area in preparing to implement a pilot salt marsh restoration project at Jamaica Bay Wildlife Refuge's Big Egg Marsh.

Scientific Publications:

Ner, S.E., and R.L., Burke. 2008. Direct and indirect effects of urbanization on Diamondback terrapins of New York City: Distribution and predation of terrapin nests in a human modified estuary. J. C., Mitchell, R.E. Jung, and B. Bartholomew (eds.). Pp. 107-117In. Urban Herpetology. Herpetological Conservation Vol. 3, Society for the Study of Amphibians and Reptiles.

☐

Burke, R.L., and S.E. Ner. 2005. Seasonal and daily activity patterns of the Italian Wall Lizard, Podarcis sicula, in NY, USA. Northeastern Naturalist 12:349-360.

Technical Reports:

Ner, S.E., and R.L., Burke. February 2005. Prelim. Assessment of Diamondback Terrapins (Malaclemys terrapin) Nesting Ecology at Sandy Hook, NJ, Gateway Nat. Recreation Area: 7-9. 2002. Technical Report NPS/NER/NRTR-2005-014. National Park Service. Boston, MA.

Paid Participant and field assistant in various studies and projects related to the Jamaica Bay Ecosystem Restoration (JABERRT) Project (mammal, reptile and amphibian surveys, GIS mapping of salt marshes).

Mark-recapture of the diamondback terrapin (Malaclemys terrapin), in Jamaica Bay, NY

Appendix G-2
Historic Aerial Photographs of Site

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

FIGURE
1947 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

Greybarn - Sayville PDD

Draft EIS

NELSON, POPE & VOORHIS, LLC
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FIGURE
1962 AERIAL PHOTOGRAPHY

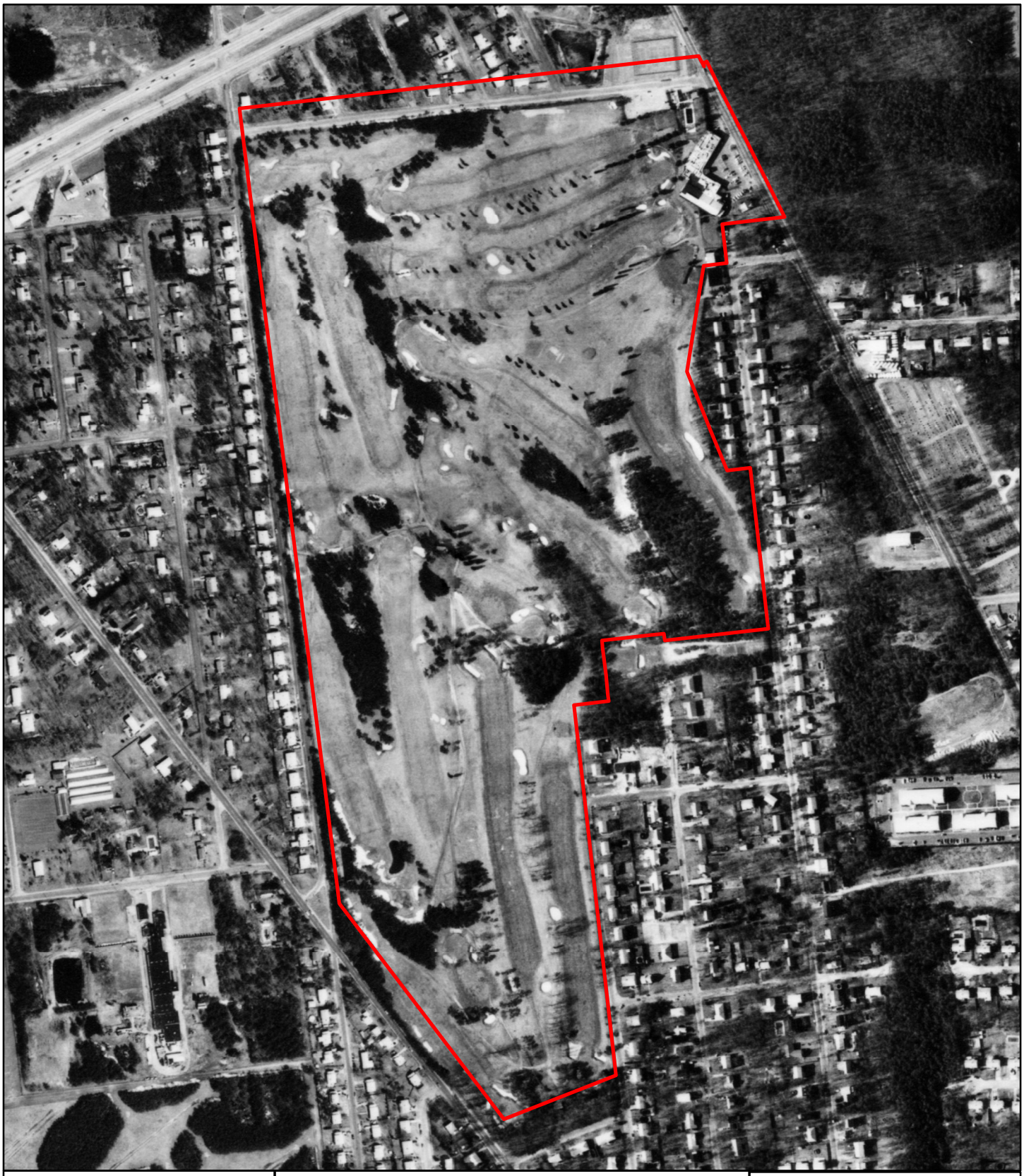
Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

Greybarn -
Sayville PDD

Draft EIS



NELSON, POPE & VOORHIS, LLC
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FIGURE
1978 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

Greybarn -
Sayville PDD

Draft EIS

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FIGURE
1984 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

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Sayville PDD

Draft EIS

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

FIGURE
2001 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

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Sayville PDD

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ENVIRONMENTAL • PLANNING • CONSULTING

FIGURE
2004 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

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FIGURE
2007 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

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FIGURE
2010 AERIAL PHOTOGRAPHY

Source: Suffolk County GIS

Scale: 1 inch = 500 feet

N

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Sayville PDD

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ENVIRONMENTAL • PLANNING • CONSULTING

FIGURE
2013 AERIAL PHOTOGRAPHY

Source: NYS Orthoimagery Program, 2013.

Scale: 1 inch = 500 feet

N

Greybarn -
Sayville PDD

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NELSON, POPE & VOORHIS, LLC
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FIGURE
2016 AERIAL PHOTOGRAPHY

Source: NYS Orthoimagery Program, 2016.

Scale: 1 inch = 500 feet

N

Greybarn - Sayville PDD

Draft EIS

Appendix G-3
Successional Vegetation Species

Appendix G - 3
Successional Vegetation Species

	Common Name	*Scientific Name*
	Trees	
*	Norway maple	*Acer platanoides [i]*
*	red maple[2]	*Acer rubrum*
	silver maple	*Acer saccharinum*
	sugar maple	*Acer saccharum*
*	tree-of-heaven	*Alianthus altissima [i]*
	alder	*Alnus serrulata*
	yellow birch	*Betua allaghaniensis*
	black birch	*Betula lenta*
	white birch	*Betula papyrifolia*
	gray birch	*Betula populifolia*
	bitternut hickory	*Carya cordiformis*
*	pignut hickory	*Carya glabra*
	shagbark hickory	*Carya ovata*
	mockernut hickory	*Carya tomentosa*
	American chestnut	*Castanea dentata*
	northern catalpa	*Catalpa bignonioides*
	flowering dogwood	*Cornus florida [p]*
	gray dogwood	*Cornus foemina racemosa*
	Kousa dogwood	*Cornus kousa*
	red osier dogwood	*Cornus stolonifera*
	hawthorne	*Craetagus sp.*
	American beech	*Fagus grandifolia*
	American holly	*Ilex opaca [p]*
	walnut	*Juglans nigra*
*	eastern red cedar	*Juniperus virginiana*
	tulip poplar	*Liriodendron tulipifera*
	magnolia	*Magnolia sp.*
	crab apple	*Malus coronaria[p]*
	common apple	*Malus pumila*
*	mulberry	*Morus rubra*
	sour gum	*Nyssa sylvatica*
	princess tree	*Paulownia tomentosa [i]*
*	pitch pine	*Pinus rigida*
*	white pine	*Pinus strobus*
	eastern cottonwood	*Populus deltoides.*
	bigtooth aspen	*Populus grandidentata*
*	black cherry	*Prunus serotina*
	choke cherry	*Prunus virginiana*
*	white oak	*Quercus alba*
	swamp white oak	*Quercus bicolor*
	scarlet oak	*Quercus coccinea*
	blackjack oak	*Quercus marilandica*
	pin oak	*Quercus palustris*
	chestnut oak	*Quercus prinus*
*	red oak	*Quercus rubra*
	black oak	*Quercus velutina*
*	black locust	*Robinia pseudoacacia [i]*
	pussy willow	*Salix discolor*
	gray willow	*Salix humilis.*
	black willow	*Salix nigra*
*	sassafras	*Sassafras albidum*
	yew	*Taxus floridana*
	linden	*Tilia sp.*
	eastern hemlock	*Tsuga canidensis*

	Common Name	*Scientific Name*
	Shrubs	
	shadbush	*Amelanchier canadensis*
*	porcelain-berry	*Ampelopsis brevipedunculata*
	chokeberry	*Aronia arbutifolia.*
	Japanese barberry	*Berberis thunbergii [i]*
	boxwood	*Bux sempervirens*
	trumpet creeper	*Campsis radicans*
*	Oriental bittersweet	*Celastrus orbiculatus [i]*
	American bittersweet	*Celastrus scandens [p]*
	sweet pepperbush	*Clethra alnifolia*
*	sweetfern	*Comptonea peregrina*
*	autumn olive	*Elaeagnus umbellata [i]*
	trailing arbutus	*Epigaea repens[p]*
	winged eunonymous	*Euonymus alatus [i]*
*	burningbush	*Euonymus atropurpureus*
	wintercreeper	*Euonymus fortunei [i]*
	forsythia	*Forsythia sp.*
	black huckleberry	*Gaylussacia baccata*
*	English ivy	*Hedera helix[i]*
	hydrangea	*Hydrangea sp.*
*	inkberry[3]	*Ilex glabra [p]*
	winterberry	*Ilex verticillata [p]*
	mountain laurel	*Kalmia latifolia [p]*
*	bush clover	*Lespedeza sp.*
	fetterbush	*Leucothoe racemosa*
	spicebush	*Lindera benzoin*
*	Japanese honeysuckle	*Lonicera japonica [i]*
	fly honeysuckle	*Lonicera morrowii [i]*
	trumpet honeysuckle	*Lonicera sempervirens*
	honeysuckles	*Lonicera spp.*
	tartarian honeysuckle	*Lonicera tatarica [i]*
	sargent crabapple	*Malus sargentii*
	bayberry	*Myrica pensylvanica [p]*
*	Virginia creeper	*Parthenocissus quinquefolia*
	mile-a-minute vine	*Polygonum perfoliatum [i]*
	bitter dock	*Rumex obtusifolius*
	common buckthorn	*Rhamnus cathartica [i]*
	pinkster bloom	*Rhododendron nudiflorum [p]*
	azaelea	*Rhododendron sp. [p, native*
	rhododendron	*Rhododendron sp. [p]*
	swamp azalea	*Rhododendron viscosum [p]*
	winged sumac	*Rhus copallina*
	smooth sumac	*Rhus glabra*
	staghorn sumac	*Rhus typhina*
	currant	*Ribes lacustre*
	gooseberry	*Ribes sp.*
*	multiflora rose	*Rosa multiflora [i]*
	swamp rose	*Rosa palustris*
	wild rose	*Rosa sp.*
*	blackberry	*Rubus allegheniensis*
	common dewberry	*Rubus flagellaris*
	wineberry	*Rubus phoenicolasius [i]*
	brambles	*Rubus sp.*
	common elderberry	*Sambucus canadensis*
*	cat greenbrier	*Smilax glauca*
*	common greenbrier	*Smilax rotundifolia*
*	bittersweet nightshade	*Solanum dulcamara*
	Japanese spiraea	*Spiraea japonica [i]*
	meadowsweet	*Spirea latifolia*
	hardhack	*Spirea tomentosa*
*	poison-ivy	*Toxicodendron radicans*
	low bush blueberry	*Vaccinium angustifolium*
	high bush blueberry	*Vaccinium corymbosum*
	maple-leaved viburnum	*Viburnum acerifolium*

	Common Name	*Scientific Name*
	Shrubs Continued	
	arrowwood	*Viburnum dentatum*
	myrtle	*Vinca minor[i]*
	grape	*Vitis sp.*
	Japanese wisteria	*Wisteria floribunda [i]*
*	American wisteria	*Wisteria frutescens*
	Chinese wisteria	*Wisteria sinensis [i]*
	Herbacious Species	
*	yarrow	*Achillia millefolium*
	sweet flag	*Acorus americanus*
	redtop	*Agrostis gigantea*
*	garlic mustard	*Alliaria petiolata [i]*
*	wild onion	*Allium stellatum*
	wild leek	*Allium tricoccum*
	pigweed	*Amaranthus sp.*
	ragweed	*Ambrosia artemisiifolia*
*	big bluestem	*Andropogon gerardii*
*	little bluestem grass	*Andropogon scoparius.*
	wood anemone	*Anemone quinquefolia*
	dogbane	*Apocynum maculosa*
	wild sarsaparilla	*Aralia nudicaulis*
	Jack-in-the-pulpit	*Ariasaema triphyllum*
*	common mugwort	*Artemisia vulgaris [i]*
*	common milkweed	*Asclepias syrica*
	aster	*Aster sp.*
	Lady fern	*Athyrium filix-femina [p]*
	yellow rocket	*Barbarea vulgaris*
	bald rush	*Brasenia schreberi*
*	mustard	*Brassica sp.*
	bluejoint grass	*Calamagrotis canadensis*
	marsh bellflower	*Campanula aparinoides*
	yellow sedge	*Carex flava*
	bladder sedge	*Carex intumecens*
	lurid sedge	*Carex lurida*
	Pennsylvania sedge	*Carex pensylvanica*
	sedge	*Carex sp.*
	umbrella sedge	*Carex strigosus*
*	spotted knapweed	*Centurea maculosa*
	coontail	*Ceratophyllum demersum*
	common lamb's quarters	*Chenopodium album*
	spotted wintergreen	*Chimaphila maculata [p]*
	chicory	*Cichorium intybus*
	enchanter's nightshade	*Circacea quadrisulcata*
	creeping thistle	*Cirsium arvense*
*	thistle	*Cirsium sp.*
	Asiatic dayflower	*Commelina communis*
*	crown vetch	*Coronilla varia*
	dodder	*Cuscuta gronovii*
	black swallow-wort	*Cynanchum louiseae [i]*
	umbrella sedge	*Cyperus strigosus*
	moccasin flower	*Cypripedium acaule[p]*
*	broom	*Cytisus scoparius*
	poverty grass	*Danthonia spicata*
*	Queen Anne's lace	*Daucus carota*
	hay-scented fern	*Dennstaedtia punctilobula*
*	deertongue	*Dichanthelium clandestinum*
	sundew	*Drosera filiformes[p]*
	sundew	*Drosera intermedia[p]*
	sundew	*Drosera rotundifolia [p]*
	crested wood fern	*Dryopteris cristata[p]*
	woodfern	*Dryopteris spinulosa[p]*
	three way sedge	*Dulichium arundinaceum*
	spikerush	*Eleocharis sp.*
	waterweed	*Elodea sp.*
	beech drops	*Epifagus virginiana*
	pipewort	*Eriocaulon aquaticum*

	Common Name	*Scientific Name*
	cypress spurge	*Euphorbia cyparissias*
	Japanese knotweed	*Fallopia japonica*
*	common strawberry	*Fragaria virginiana*
	cleavers	*Galium aparine*
	wintergreen	*Gaultheria procumbens [p]*
	wild geranium	*Geranium maculatum*
	ground ivy	*Glechoma hederaceae*
	mannagrass	*Glyceria canadensis*
	gratiola	*Gratiola aurea*
	woodland sunflower	*Helianthus divaricatus*
	giant hogweed	*Heracleum mantegazzianum*
*	hawkweed	*Hieracium sp.*
	Canadian St.John's-wort	*Hypericum canadense*
*	common St. Johnswort	*Hypericum perforatum*
	jewelweed	*Impatiens capensis*
	yellow flag	*Iris pseudoacorus*
	blue flag	*Iris versicolor*
	Canada rush	*Juncus canadensis*
	soft rush	*Juncus effusus*
*	bayonet rush[1]	*Juncus militaris*
	rushes	*Juncus sp.*
	rice cutgrass	*Leersia oryzoides*
	duckweed	*Lemna sp.*
	field pepperweed	*Lepidium campestre*
	tiger lily	*Lilium canadense [p]*
*	butter-n-eggs	*Linaria vulgaris*
	rye grass	*Lolium sp.*
	bushy seedbox	*Ludwigia alternifolia*
	white campion	*Lychnis alba*
	tree club moss	*Lycopodium obscurum [p]*
	club moss	*Lycopodium sp.*
	bugleweed	*Lycopus virginicus*
	whorled loosestrife	*Lysimachia quadrifolia*
	purple loosestrife	*Lythrum salicaria*
	tufted loosestrife	*Lythrum thrysiflora*
	Canada mayflower	*Maianthemum canadense*
	Indian cucumber root	*Medeola virginiana*
	Japanese stilt grass	*Microstegium vimineum [i]*
	Chinese silver grass,	*Miscanthus sinensis [i]*
	Indian pipe	*Monontropa uniflora*
	milfoil	*Myriophyllum sp.*
	naiad	*Najas flexilis*
	yellow pond lily	*Nuphar luteum*
	white waterlily	*Nymphaea odorata*
*	evening primrose	*Oenethera biennis*
	sensitive fern	*Onoclea sensibilis*
	sweet cicely	*Osmorhiza claytoni*
	cinnamon fern	*Osmunda cinnamomea [p]*
	royal fern	*Osmunda regalis [p]*
*	Wood sorrel	*Oxalis sp.*
	pachysandra	*Pachysandra terminalis*
	panic grass	*Panicum sp*
	arrowleaf	*Peltandra virginica*
	canary grass	*Phalaris arundinacea*
	timothy	*Phleum pratense*
	common reed	*Phragmites australis [i]*
*	pokeweed	*Phytolacca americana*
	coolwort	*Pilea pumila*
*	plantain	*Plantago sp*
	Soloman's seal	*Polygonatum biflorum*
*	smartweed species	*Polygonum sp.*
	water smartweed	*Polygonum amphibium*
	nodding smartweed	*Polygonum lapathifolium*
	pink smartweed	*Polygonum pensylvanicum*
	Virginia polyploid fern	*Polyploidium virginianum[p]*
	Christmas fern	*Polystichum acrostichoides*
	hair cap moss	*Polytrichium sp.*

	Common Name	*Scientific Name*
	Herbacious Species Continued	
	pondweed	*Potamogeton perfoliatus*
	mock or Indian	*Potentilla indica*
*	cinquefoils	*Potentilla spp.*
	bald rush	*Psilocarya scirpoides[r]*
	bracken fern	*Pteridium aquilinum*
	shinleaf	*Pyrola sp.*
	common buttercup	*Ranunculus acris*
	lesser celandine	*Ranunculus ficaria [i]*
	horned rush	*Rhynchospora macrostachya*
	black-eyed Susan	*Rudbeckia hirta*
	dock	*Rumex crispus*
	bouncing bet	*Saponaria officinalis*
	pitcher plant	*Sarracenia purpurea*
	hard-stem bulrush	*Scirpus acutus*
	wool grass	*Scirpus cyperinus.*
	common three-square	*Scirpus pungens*
	soft-stem bulrush	*Scirpus validus*
	nutrush	*Scleria reticularis [r]*
	skullcap	*Scutellaria galericulata*
	green foxtail	*Setaria viridis*
	false Soloman's seal	*Smilacina racemosa*
*	nightshade	*Solanum sp.*
*	goldenrod	*Solidago sp.*
	bur-reed	*Sparganium eurycarpum*
	sphagum moss	*Sphagnum sp.*
	skunk cabbage	*Symplocarpus foetidus [p]*
*	common dandelion	*Taraxacum officinale*
	New York fern	*Thelypteris novaboracensis*
	marsh fern	*Thelypteris thelypteroides [p]*
	Virginia knotweed	*Tovara virginina*
	clover	*Trifolium sp.*
	trillium	*Trillium sp.*
	cattails	*Typha latifolia*
	bladderwort	*Utricularia sp.*
*	common mullein	*Verbascum thapsus*
	cow vetch	*Vicia cracca*
*	spring vetch	*Vicia satvia*
	sweet violet	*Viola blanda*
	cocklebur	*Xanthium chinense*
	large yellow-eyed grass	*Xyris smalliana*
	wild rice	*Zizania aquatica*
	water starwort	*Zosterella dubia*

	Common Name	*Scientific Name*
*	Indian teasel	*Dipsacus sativus*
*	Canadian horseweed	*Erigeron canadensis*
*	purple deadnettle	*Lamium purpureum*
*	hairy cat'sear	*Hypochaeris radicats*
*	corn speedwell	*Veronica arvensis*
*	narrowleaf plantain	*Plantago lanceolata*
*	European stoneseed	*Lithospermum officinale*
*	smooth cat'sear	*Hypochaeris glabra*
*	common wormwood	*Artemisia absinthium*

Notes:

*Species identified on site during field visits by NPV Staff

[e] NYS endangered species

[i] NYS invasive species (no legal status)

[p] NYS exploitably vulnerable protected plant

1-Bayonet rush was originally seen at one of the depressions but was not present during the 4/14/2021 inspection. Pond liners are now in disrepair and do not hold water and likely no longer support this species

2-One red maple was noted on the site near one of the former ponds and now dry depressions

3-Inkberry were seen east of the depressions and south of the building in a row and appeared to have been planted.

Appendix G - 3
Pine Barrens Vegetation Species

	Common Name	*Scientific Name*
	Tree species	
*	eastern red cedar	*Juniperus virginiana*
*	pitch pine	*Pinus rigida*
*	white pine	*Pinus strobus*
*	black cherry	*Prunus serotina*
*	white oak	*Quercus alba*
	scarlet oak	*Quercus coccinea*
	scrub (bear) oak	*Quercus ilicifolia*
	mossycup (bur) oak	*Quercus macrocarpa*
	blackjack oak	*Quercus marilandia*
	pin oak	*Quercus palustris*
	chestnut oak	*Quercus prinus*
*	northern red oak	*Quercus rubra*
	post oak	*Quercus stellata*
	black oak	*Quercus velutina*
*	sassafras	*Sassafras albidum*
	Shrub species	
	chokeberry	*Aronia sp.*
*	Oriental bittersweet	*Celastrus orbiculatus [i]*
	American bittersweet	*Celastrus scandens [p]*
	meadowsweet	*Spiraea corymbosa*
*	sweetfern	*Comptonia peregrina*
*	black huckleberry	*Gaylussica baccata*
	golden heather	*Hudsonia ericoides*
	beach heather	*Hudsonia tomentosa*
	mountain laurel	*Kalmia latifolia [p]*
*	honeysuckle	*Lonicera sp.*
	stagger-bush	*Lyonia mariana*
	northern bayberry	*Myrica pensylvanica [p]*
*	virginia creeper	*Parthenocissus quinquefolia*
	common buckthorn	*Rhamnus cathartica [i]*
	smooth buckthorn	*Rhamnus frangula [i]*
*	winged sumac	*Rhus copallina*
	smooth sumac	*Rhus glabra*
	brambles	*Rubus sp.*
*	poison-ivy	*Toxicodendron radicans*
	low bush blueberry	*Vaccinium angustifolium*
	highbush blueberry	*Vaccinium corymbosum*

*Species identified on site during field visits by NPV Staff
[e] NYS endangered species
[i] NYS invasive species (no legal status)
[p] NYS exploitably vulnerable protected plant

	Common Name	*Scientific Name*
	Herbs and Groundcover Species	
*	ragweed	*Ambrosia artemisiifolia*
*	little bluestem	*Andropogon scoparius*
*	big bluestem	*Andropogon gerardii*
	bearberry	*Arctostaphylos uva-ursi*
	aster sp.	*Aster sp.*
	eastern silvery aster	*Aster concolor [e]*
	stiff-leaved aster	*Aster linariifolius*
	Pennsylvania sedge	*Carex pensylvania*
	spotted wintergreen	*Chimaphila maculata [p]*
	stripped pipsissewa	*Chimaphila umbellata [p]*
	ladyslipper	*Cypripedium sp.*
	trailing arbutus	*Epigaea repens [p]*
	wintergreen	*Gaultheria procumbens [p]*
	orange grass	*Hypericum gentianoides*
	pinweed	*Lechea villosa*
	round-headed bush	*Lespedeza capitata*
	hairy bush clover	*Lespedeza hirta*
*	trailing bush clover	*Lespedeza procumbens*
	club moss	*Lycopodium sp. [p]*
	wild lupine	*Lupinnus perenis*
	Indian pipe	*Monotropa uniflora*
	cinnamon fern	*Osmunda cinnamomea [p]*
	panic grass	*Panicum sp.*
	bluegrass	*Poa sp.*
	Christmas fern	*Polystichum acrostichoides*
	jointweed	*Polygonella articulata*
	bracken fern	*Pteridium aquilinum*
	milkwort	*Polygala nuttallii*
	hair cap moss	*Polytrichium sp.*
*	goldenrod	*Solidago sp.*
	Indian grass	*Sorghastrum nutans*
	goat's-rue	*Tephrosia virginiana*
	periwinkle	*Vinca minor*

Appendix G-4
POWER Model Results

NP&V, LLC

PROJECTION OF WILDLIFE ECOLOGICAL RESPONSE (POWER)

NELSON, POPE & VOORHIS, LLC, MICROCOMPUTER MODEL

SPECIES LIST

INTRODUCTION

This appendix has been included to present the results of a computer model used to investigate the various wildlife species which can be expected to be found on the site considering the habitats established. This model was developed by and for the use of Nelson, Pope & Voorhis, LLC using available information and references for the various species. The model utilizes Excel spreadsheets to identify wildlife species commonly found in various Long Island habitats, based upon thorough research of available literature. The habitats investigated consisted of Pine Barren, Successional Woodland, Successional Shrubland, Successional Field, Wooded Swamp, and Terrestrial Cultural (agricultural). Some of the species listed in this model would not be expected on the property given the surrounding development, but are present in similar habitats.

The first column identifies the common name of the species, presented with the main common name in alphabetical order (for example: red-tailed hawk would come before blue jay). The scientific name of particular species is in the second column. The third column shows the legal status of the species, of which there are four possible entries (Endangered, Threatened, Special Concern and Local Concern). The fourth column indicates the seasons during which the species might be expected to be present and the fifth column, of particular importance to the environmental setting, contains information on frequency of the species in the habitat (abundant, common, rare and non expected); the species activity in the habitat (nesting, hunting and resting). References are provided with the reference list provided at the end of the appendix. The printout contained in this appendix, coupled with the discussions provided in the main body of the report, provides significant information of the wildlife found, or expected to be found on site.

Pine Oak Forest Species - Inventory and Characteristics

Common Name	Scientific Name	Status	Found During				Frequency/ Habitat Use	References
			winter	spring	summer	fall		
Birds								
gray catbird	Dumetella carolinensis	none		Late	X		R / N,F	4 9
black capped chickadee	*Parus atricapillus*	none	X	X	X	X	A / N,F	4 11
brown-headed cowbird	*Molothrus ater*	none		X	X	Early	A / N,F	4 6
brown creeper	*Certhia familiaris*	none		X	X	Early	C / N,F	4 9
American crow	*Corvus brachyrhynchos*	none	X	X	X	X	A / N,H	4 11
yellow-billed cuckoo	*Coccyzus americanus*	none		Late	X		R / N,F	4 12
mourning dove	*Zenaida macroura*	none	X	X	X	X	C / N,H	4 8
house finch	*Carpodacus mexicanus*	none		X	X	X	A / N,F	4 20
purple finch	*Carpodacus purpureus*	none	X	X	X	X	C / N,F	4 20
common flicker	*Colaptus auratus*	none	X	X	X	X	C / N,F	4 14
great-crested flycatcher	*Myiarchus crinitus*	none		Late	X		C / N,F	4 15
common grackle	*Quiscalus quiscula*	none	X	X	X	X	C / N,F	4 6
ruffed grouse	*Bonasa umbellus*	none	X	X	X	X	R / N,F	4 8
broad-winged hawk	*Buteo platypterus*	none		X	X		R / N,H	4 16
Cooper's hawk	*Accipiter cooperii*	special concern		X	X		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	X	X	X	X	C / N,H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	X	X	X	X	R / N,H	4 16
blue jay	*Cyanocitta cristatta*	none	X	X	X	X	A / N,F	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	none	X			Late	C / N,F	4 21
Eastern kingbird	*Tyrannus tyrannus*	none		X	X	Early	C / N,F	4 15
golden-crowned kinglet	*Regulus satrapa*	none	X	X		X	R / N,H	4 7
ruby-crowned kinglet	*Regulus calendula*	none	X	X		X	R / N,H	4 7
Northern mockingbird	*Mimus polyglottos*	none	X	X	X	X	C / N,F	4 9
white-breasted nuthatch	*Sitta carolinensis*	none	X	X	X	X	A / N,F	4 9
northern oriole	*Icterus galbula*	none		Late	X		R / N,F	4 6
ovenbird	*Seiurus aurocapillus*	none		Late	X	Early	C / N,F	4 19
common screech owl	*Otus asio*	none	X	X	X	X	C / N	4 17
great-horned owl	*Bubo virginianus*	none	X	X	X	X	C / N,H	4 17
long-eared owl	*Asio otus*	none	X	X	X	X	C / N,H	4 17
American robin	*Turdus migratorius*	none		X	X	Early	A / N,F	4 7
yellow-bellied sapsucker	*Sphyrapicus varius*	none		Late	X	Early	C / N,F	14
pine siskin	*Carduelis pinus*	none	X	X	X	X	N / N,F	4 20
fox sparrow	*Passerella iliaca*	none	X	X		X	R / F	20 21
house sparrow	*Passer domesticus*	none	X	X	X	X	C / N,F	4 20

Common Name	Scientific Name	Status	Found During				Frequency/ Habitat Use	References
			winter	spring	summer	fall		
song sparrow	*Melospiza melodia*	none	X	X	X	X	R / N,F	4 22
white-throated sparrow	*Zonotrichia albicollis*	none	X	X	X	X	R / N,F	4 22
European starling	*Sturnus vulgaris*	none	X	X	X	X	C / N,F	4 23
chimney swift	*Chaetura pelagica*	none		X	X		C / F	4 42
scarlet tanager	*Piranga olivacea*	none		X	X		C / N,F	4
brown thrasher	*Toxostoma rufum*	none		X	X	Early	R / N,F	4 9
hermit thrush	*Catharus guttatus*	none	X	X	X	X	C / N,F	4 7
wood thrush	*Hylocichla mustelina*	none		X	X	Early	R / N,F	4 7
tufted titmouse	*Parus bicolor*	none	X	X	X	X	R / N,F	4 11
veery	*Catharus fuscescens*	none		Late	X		R / N,F	4 7
red-eyed vireo	*Vireo olivaceus*	none		Late	X		R / N,F	4 23
black-and-white warbler	*Mniotilta varia*	none		X	X		R / N,F	4 18
black-throated blue warbler	*Dendroica caerulescens*	none		Late	X	Early	C / N,F	18
pine warbler	*Dendroica pinus*	none		X	X	Early	C / N,F	4 19
prairie warbler	*Dendroica discolor*	none		Late	X	Early	C / N,F	4 19
yellow-rumped warbler	*Dendroica coronata*	none		X	X	Early	C / N,F	4 8
cedar waxwing	*Bombycilla cedrorum*	none		X	X	Early	R / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		Late	X		C / N	4 12
Eastern wood-peewee	*Contopus virens*	none		X	X		C / N,F	4 15
downy woodpecker	*Picoides pubescens*	none	X	X	X	X	A / N,F	4 14
hairy woodpecker	*Picoides villosus*	none	X	X	X	X	C / N,F	4 14
red-bellied woodpecker	*Melanerpes carolinus*	none	X	X	X	X	R / N,F	4 14
house wren	*Troglodytes aedon*	none		Late	X	Early	R / N,F	4 9
Mammals								
big-brown bat	*Eptesicus fuscus*	none	X	X	X	X	C / N,F	1 29
hoary bat	*Lasiurus borealis*	none			Late	Early	C / N,F	45
Keen's bat	*Myotis keenii*	none			X	Early	R / N	1 29
little-brown bat	*Myotis lucifugus*	none	X	X	X	X	C / N,F	1 29
red bat	*Lasiurus borealis*	none		Late	X	Early	C / N,F	1 29
Eastern pipistrelle	*Pipistrellus subflavus*	none		X	X	Early	R / N,F	1 29
silver-haired bat	*Lasionycteris noctivagans*	none			X		R / N,F	1 29
Eastern chipmunk	*Tamis striatus*	none	X	X	X	X	C / N,F	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	C / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / N,F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / N,H	1 29
Eastern mole	*Scalopus aquaticus*	none	X	X	X	X	C / N,F	1 29
house mouse	*Mus musculus*	none	X	X	X	X	N / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / N,F	1 29
masked shrew	*Sorex cinereus*	none	X	X	X	X	C / N,F	1 29
short-tailed shrew	Blarina breuicauda	none	X	X	X	X	A / N,F	1 29
striped skunk	Mephitis mephitis	none	X	X	X	X	N / N,F	1 29
Eastern gray squirrel	Sciurus carolinensis	none	X	X	X	X	C / N,F	1 29
southern-flying squirrel	Glaucimys volans	none	X	X	X	X	C / N,F	1 29
pine vole	Microtus pinetorum	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	Mustela frenata	none	X	X	X	X	R / N,H	1 29
woodchuck	Marmota monax	none	X	X	X	X	R / N,F	1 29
Herptiles								
common gray treefrog	Hyla versicolor	none	X	X	X	X	C / N,F	33 37
red-backed salamander	Plethodon cinerus cinerus	none	X	X	X	X	R / N,F	34 36
Eastern tiger salamander	Ambystoma tigrinum tigrinum	endangered	X	X	X	X	R / F	36 38
marbled salamander	Ambystoma opacum	special concern	X	X	X	X	R / N,F	34 36 38
Eastern garter snake	Thamnophis sirtalis	none	X	X	X	X	C / N,F	38 40
eastern hognose snake	Heterodon platyrhinos	special concern	X	X	X	X	R / N,H	38
eastern milk snake	Lampropettis d. triangulum	none	X	X	X	X	C / N,F	38 39
Eastern spadefoot toad	Scaphiopus holbrooki	special concern	X	X	X	X	C / N,F	33
Fowler's toad	Bufo woodhousei fowleri	none	X	X	X	X	C / F	33 37
Eastern box turtle	Terrepene carolina	special concern	X	X	X	X	C / N,F	41

KEY:

Frequency:
A- abundant
C- common
R- rare
N- not expected

Activity:
N- nesting
H- hunting
R- resting
F- foraging

Successional Woodland Species - Inventory and Characteristics

Common Name	Scientific Name	Status	Found During				Frequency / Habitat Use	References
			winter	spring	summer	fall		
Birds	**Birds**							
gray catbird	*Dumetella carolinensis*	none		Late	X		C / N,F	4 9
black capped chickadee	*Parus atricapillus*	none	X	X	X	X	A / N,F	4 11
brown-headed cowbird	*Molothrus ater*	none		X	X	Early	A / N,F	4 6
brown creeper	*Certhia familiaris*	none		X	X	Early	C / N,F	4 9
American crow	*Corvus brachyrhynchos*	none	X	X	X	X	A / N,H	4 11
yellow-billed cuckoo	*Coccyzus americanus*	none		Late	X		C / N,F	4 12
mourning dove	*Zenaida macroura*	none	X	X	X	X	C / N,H	4 8
rock dove	*Columba livia*	none	X	X	X	X	C / N,F	4 8
house finch	*Carpodacus mexicanus*	none		X	X	X	A / N,F	4 20
common flicker	*Colaptus auratus*	none	X	X	X	X	A / N,F	4 14
common grackle	*Quiscalus quiscula*	none	X	X	X	X	A / N,F	4 6
ruffed grouse	*Bonasa umbellus*	none	X	X	X	X	R / N,F	4 8
rose-breasted grosbeak	*Pheucticus ludovicianus*	none		Late	X	Early	R / N,F	4 20
Cooper's hawk	*Accipiter cooperii*	special concern		X	X		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	X	X	X	X	C / H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	X	X	X	X	N / N,F	4 16
blue jay	*Cyanocitta cristatta*	none	X	X	X	X	A / N,F	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	none	X			Late	C / N,F	4 21
American kestrel	*Falco sparverius*	none	X	X	X	X	C / N,H	4 17
Eastern kingbird	*Tyrannus tyrannus*	none		X	X	Early	C / N,F	4 15
golden-crowned kinglet	*Regulus satrapa*	none	X	X		X	R / N,H	4 7
ruby-crowned kinglet	*Regulus calendula*	none	X	X		X	R / N,H	4 7
Northern mockingbird	*Mimus polyglottos*	none	X	X	X	X	C / N,F	4 9
great-horned owl	*Bubo virginianus*	none	X	X	X	X	C / N,H	4 17
long-eared owl	*Asio otus*	none	X	X	X	X	C / N,H	4 17
American redstart	*Setophaga ruticilla*	none		Late	X	X	C / N,F	4 19
American robin	*Turdus migratorius*	none		X	X	Early	A / N,F	4 7
yellow-bellied sapsucker	*Sphyrapicus varius*	none		Late	X	Early	C / N,F	14
fox sparrow	*Passerella iliaca*	none	X	X		X	R / F	20 21
house sparrow	*Passer domesticus*	none	X	X	X	X	C / N,F	4 20
song sparrow	*Melospiza melodia*	none	X	X	X	X	A / N,F	4 22
white-throated sparrow	*Zonotrichia albicollis*	none	X	X	X	X	C / N,F	4 22
European starling	*Sturnus vulgaris*	none	X	X	X	X	A / N,F	4 23
barn swallow	*Hirundo rustica*	none		Late	X		C / N,F	4 15

Common Name	Scientific Name	Status	Found During				Frequency / Habitat Use	References
			winter	spring	summer	fall		
brown thrasher	*Toxostoma rufum*	none		X	X	Early	C / N,F	4 9
hermit thrush	*Catharus guttatus*	none	X	X	X	X	R / N,F	4 7
wood thrush	*Hylocichla mustelina*	none		X	X	Early	C / N,F	4 7
rufous-sided towhee	*Pipilo erythrophthalmus*	none		Late	X	Early	A / N,F	4 20
red-eyed vireo	*Vireo olivaceus*	none		Late	X		C / N,F	4 23
black-and-white warbler	*Mniotilta varia*	none		X	X		C / N,F	4 18
blue-winged warbler	*Vermivora pinus*	none		Late	X		C / N,F	4 14
chestnut-sided warbler	*Dendroica pensylvanica*	none		Late	X		C / N,F	4 19
cedar waxwing	*Bombycilla cedrorum*	none		X	X	Early	C / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		Late	X		C / N	4 12
Eastern wood-peewee	*Contopus virens*	none		X	X		C / N,F	4 15
American woodcock	*Philhela minor*	none		X	X	X	R / N,F	4 30
downy woodpecker	*Picoides pubescens*	none	X	X	X	X	A / N,F	4 14
hairy woodpecker	*Picoides villosus*	none	X	X	X	X	R / N,F	4 14
red-bellied woodpecker	*Melanerpes carolinus*	none	X	X	X	X	R / N,F	4 14
Carolina wren	*Thryothorus ludovicianus*	none	X	X	X	X	C / N,F	4 9
house wren	*Troglodytes aedon*	none		Late	X	Early	C / N,F	4 9
big-brown bat	*Eptesicus fuscus*	none	X	X	X	X	C / N,F	1 29
hoary bat	*Lasiurus borealis*	none			Late	Early	C / N,F	45
Keen's bat	*Myotis keenii*	none			X	Early	R / N	1 29
Mammals								
little-brown bat	*Myotis lucifugus*	none	X	X	X	X	C / N,F	1 29
red bat	*Lasiurus borealis*	none		Late	X	Early	C / N,F	1 29
silver-haired bat	*Lasionycteris noctivagans*	none			X		R / N,F	1 29
Eastern chipmunk	*Tamis striatus*	none	X	X	X	X	C / N,F	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	A / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / N,H	1 29
Eastern mole	*Scalopus aquaticus*	none	X	X	X	X	C / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / N,F	1 29
masked shrew	*Sorex cinereus*	none	X	X	X	X	C / N,F	1 29
short-tailed shrew	*Blarina breuicauda*	none	X	X	X	X	A / N,F	1 29
striped skunk	*Mephitis mephitis*	none	X	X	X	X	N / N,F	1 29
Eastern gray squirrel	*Sciurus carolinensis*	none	X	X	X	X	C / N,F	1 29
meadow vole	*Microtus pennsylvanicus*	none	X	X	X	X	R / N,F	29 45

Common Name	Scientific Name	Status	Found During				Frequency / Habitat Use	References
			winter	spring	summer	fall		
pine vole	*Microtus pinetorum*	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
woodchuck	*Marmota monax*	none	X	X	X	X	R / N,F	1 29
Herptiles								
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern hognose snake	*Heterodon platyrhinos*	special concern	X	X	X	X	R / N,H	38
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39

KEY:

Frequency:	Activity:
A- abundant	N- nesting
C- common	H- hunting
R- rare	R- resting
N- not expected	F- foraging

PROJECTION OF WILDLIFE ECOLOGICAL RESPONSE (POWER)

NELSON, POPE & VOORHIS, LLC, MICROCOMPUTER MODEL

SPECIES ADAPTABILITY

This portion of the appendix has been included to present the results of a computer program to identify "Species Adaptability." This list is another component of the program developed for use by Nelson, Pope & Voorhis, LLC to determine potential impacts of the proposed project on wildlife. In this application the "Adaptability" of the observed and expected species are shown. The "adaptability" as indicated in the table, refers to whether an individual species may potentially benefit from (+) a habitat change from natural to urban/suburban setting; or, be impacted (-), or remain constant (=), as a result of this change. These values are not intended to represent the dynamics of actual species on the subject site under post-development conditions. The column entitled “Comments” provides relevant information which was obtained from the literature, as regards special habits of the particular species, such as adaptability, nesting, food, etc. This column is particularly important in assessing the potential impacts to the species as a result of the proposed project. The preceding text considers the site specific aspects of the proposed development in regard to individual species. This appendix is included to provide the reader with the benefit of what the literature which was consulted in connection with the Habitat Suitability Model suggests, in terms of generalized species dynamics resulting from land use. References are the same as those cited in the previous Species List portion of the appendix.

Successional Woodland Species - Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
American crow	*Corvus brachyrhynchos*	=	extremely adaptable; omnivorous	4 11
American kestrel	*Falco sparverius*	-	adaptable; prefers open areas and parks; will nest near humans	4 17
American redstart	*Setophaga ruticilla*	-	urbanization and agriculture have negative effects	4 19
American robin	*Turdus migratorius*	=	very adaptable; abundant in parks; nests in man-made structures	4 7
American woodcock	*Philhela minor*	-	prefers moist woodland and thicket near open fields	4 30
barn swallow	*Hirundo rustica*	+	nests almost entirely on buildings	4 15
black capped chickadee	*Parus atricapillus*	=	abundant around parks, urban and suburban areas	4 11
black-and-white warbler	*Mniotilta varia*	-	builds nests under shrubs and/or trees	4 18
blue jay	*Cyanocitta cristatta*	=	extremely adaptable to human activity and other stresses	4 10
blue-winged warbler	*Vermivora pinus*	-	primarily abandoned and overgrown field, and thickets	4 14
brown creeper	*Certhia familiaris*	-	prefers predominantly deciduous wooded areas	4 9
brown thrasher	*Toxostoma rufum*	=	common in parks,suburban areas, wooded edges, dry open areas	4 9
brown-headed cowbird	*Molothrus ater*	=	lays eggs in other bird's nests; some stay during winter	4 6
Carolina wren	*Thryothorus ludovicianus*	=	associated with woodland thickets and brushy areas, often near water	4 9
cedar waxwing	*Bombycilla cedrorum*	+	prefers open woodlands, orchards and residential areas	4 23 32
chestnut-sided warbler	*Dendroica pensylvanica*	-	prefers first growth woods, with some open brush area	4 19
common flicker	*Colaptus auratus*	=	abundant around parks, suburban and urban areas	4 14
common grackle	*Quiscalus quiscula*	=	adapts well to urban and suburban habitats	4 6
Cooper's hawk	*Accipiter cooperii*	-	needs extensive woodland	4 17
downy woodpecker	*Picoides pubescens*	=	found in parks and suburban areas	4 14
Eastern kingbird	*Tyrannus tyrannus*	=	very adaptable to human activities; prefers open areas	4 15
Eastern wood-peewee	*Contopus virens*	=	prefers suburban areas, parks and villages with shade trees	4 15
European starling	*Sturnus vulgaris*	+	extremely adaptable to human activity; considered a pest	4 23
fox sparrow	*Passerella iliaca*	-	boreal species, winters here in edge, thickets, brushy areas	20 21
golden-crowned kinglet	*Regulus satrapa*	-	prefers spruce vegetation; no atlas sightings on Long Island	4 7
gray catbird	*Dumetella carolinensis*	=	abundant around parks, urban and suburban areas	4 9
great-horned owl	*Bubo virginianus*	-	nocturnal; rare in wooded areas of less than 20 acres	4 17
hairy woodpecker	*Picoides villosus*	=	found mainly in deciduous forests	4 14
hermit thrush	*Catharus guttatus*	=	not common on Long Island; when present, prefers pine barrens	4 7
house finch	*Carpodacus mexicanus*	+	nests almost entirely on buildings; considered a pest species	4 20
house sparrow	*Passer domesticus*	+	prefers buildings, urban, suburban, gardens; considered a pest	4 20
house wren	*Troglodytes aedon*	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
long-eared owl	*Asio otus*	-	nocturnal; prefers dense forested areas near water	4 17
mourning dove	*Zenaida macroura*	=	abundant around parks, urban and suburban areas	4 8
Northern (dark-eyed) junco	*Junco hyemalis*	-	prefers forested area with elevation >300 meters; no LI atlas record	4 21

Common Name	Scientific Name	Adapt.	Comments	References
Northern mockingbird	*Mimus polyglottos*	+	prefers to nest near humans	4 9
red-bellied woodpecker	*Melanerpes carolinus*	=	prefers forest openings; mostly found on Long Island north shore	4 14
red-eyed vireo	*Vireo olivaceus*	=	found in parks and suburban areas with shade trees and undergrowth	4 23
red-tailed hawk	*Buteo jamaicensis*	-	needs 100 foot radius undisturbed area for nest	4 16
rock dove	*Columba livia*	+	nests almost entirely on buildings; considered a pest species	4 8
rose-breasted grosbeak	*Pheucticus ludovicianus*	=	mainly found on north shore	4 20
ruby-crowned kinglet	*Regulus calendula*	-	occurs as non-breeding species; present during migration	4 7
ruffed grouse	*Bonasa umbellus*	-	prefers dense cover, thick woods; avoids humans	4 8
rufous-sided towhee	*Pipilo erythrophthalmus*	-	may be present year round on Long Island	4 20
sharp-shinned hawk	*Accipiter striatus*	-	avoids humans; nests in heavily forested areas	4 16
song sparrow	*Melospiza melodia*	=	common to most habitats except deep forest, open field and marsh	4 22
whip-poor-will	*Caprimulgus vociferous*	-	nocturnal; prefers open woods with adjacent fields	4 12
white-throated sparrow	*Zonotrichia albicollis*	-	prefers brushy areas and thick undergrowth	4 22
wood thrush	*Hylocichla mustelina*	=	prefers vacant wood (trees >40 feet); may adapt of wooded suburban	4 7
yellow-bellied sapsucker	*Sphyrapicus varius*	=	nests in tree cavity; found in parks, yards and gardens	14
yellow-billed cuckoo	*Coccyzus americanus*	-	avoids heavy urban areas; prefers wooded open or edges for nests	4 12
Mammals				
big-brown bat	*Eptesicus fuscus*	+	roosts in structures; found throughout LI; hunts over water	1 29
hoary bat	*Lasiurus borealis*	=	roosts in trees, sometimes found in parks	45
Keen's bat	*Myotis keenii*	+	roosts in buildings, crevices and bark; more common on eastern LI	1 29
little-brown bat	*Myotis lucifugus*	+	roosts in buildings and man made structures; hunts over water	1 29
red bat	*Lasiurus borealis*	-	feeds in marsh area; nests within 1000 yards of marsh in trees	1 29
silver-haired bat	*Lasionycteris noctivagans*	-	prefers wooded areas near water, primarily during summer months	1 29
Eastern chipmunk	*Tamis striatus*	=	prefers open woods, thickets, and rocky areas	1 29
Eastern cottontail	*Sylvilagus floridanus*	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	*Odocoileus virginianus*	-	requires range of one-half square mile	1 25 29
red fox	*Vulpes vulpes*	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
Eastern mole	*Scalopus aquaticus*	=	tunnels underground	1 29
meadow-jumping mouse	*Zapus hudsonicus*	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	*Peromyscus leucopus*	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	*Didelphis virginiana*	=	common in suburban areas, woods, marsh and coastal areas	1 29
racoon	*Procyon lotor*	+	nocturnal; very adaptive; found in urban and forest areas	1 29
masked shrew	*Sorex cinereus*	=	tunnels underground; common in wood and wet habitats	1 29
short-tailed shrew	*Blarina breuicauda*	=	tunnels underground; abundant in a variety of habitats	1 29
striped skunk	*Mephitis mephitis*	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
Eastern gray squirrel	*Sciurus carolinensis*	=	found in parks, urban and suburban areas; very adaptable	1 29
meadow vole	*Microtus pennsylvanicus*	=	tunnels underground; prefers open woodland	29 45
pine vole	*Microtus pinetorum*	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29

Common Name	Scientific Name	Adapt.	Comments	References
long-tailed weasel	*Mustela frenata*	-	prefers dense wood, but may appear in all land habitats near water	1 29
woodchuck	*Marmota monax*	-	appears primarily in scrub woods and brushy areas; not common on LI	1 29
Herptiles				
Eastern garter snake	*Thamnophis sirtalis*	=	occupies a variety of habitats	38 40
eastern hognose snake	*Heterodon platyrhinos*	=	sandy soil and sunny roadside; feeds on herptiles and insects	38
eastern milk snake	*Lampropettis d. triangulum*	=	occupies a variety of habitats	38 39

Pine Oak Species - Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
gray catbird	*Dumetella carolinensis*	=	abundant around parks, urban and suburban areas	4 9
black capped chickadee	*Parus atricapillus*	=	abundant around parks, urban and suburban areas	4 11
brown-headed cowbird	*Molothrus ater*	=	lays eggs in other bird's nests; some stay during winter	4 6
brown creeper	*Certhia familiaris*	-	prefers predominantly deciduous wooded areas	4 9
American crow	*Corvus brachyrhynchos*	=	extremely adaptable; omnivorous	4 11
yellow-billed cuckoo	*Coccyzus americanus*	-	avoids heavy urban areas; prefers wooded open or edges for nests	4 12
mourning dove	*Zenaida macroura*	=	abundant around parks, urban and suburban areas	4 8
house finch	*Carpodacus mexicanus*	+	nests almost entirely on buildings; considered a pest species	4 20
purple finch	*Carpodacus purpureus*	-	inhabits parks, suburban areas, and coniferous forests	4 20
common flicker	*Colaptus auratus*	=	abundant around parks, suburban and urban areas	4 14
great-crested flycatcher	*Myiarchus crinitus*	-	prefers deciduous forests and deciduous open woodland	4 15
common grackle	*Quiscalus quiscula*	=	adapts well to urban and suburban habitats	4 6
ruffed grouse	*Bonasa umbellus*	-	prefers dense cover, thick woods; avoids humans	4 8
broad-winged hawk	*Buteo platypterus*	-	avoids humans; nests only in dense forests; prefers to be near water	4 16
Cooper's hawk	*Accipiter cooperii*	-	needs extensive woodland	4 17
red-tailed hawk	*Buteo jamaicensis*	-	needs 100 foot radius undisturbed area for nest	4 16
sharp-shinned hawk	*Accipiter striatus*	-	avoids humans; nests in heavily forested areas	4 16
blue jay	*Cyanocitta cristatta*	=	extremely adaptable to human activity and other stresses	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	-	prefers forested area with elevation >300 meters; no LI atlas record	4 21
Eastern kingbird	*Tyrannus tyrannus*	=	very adaptable to human activities; prefers open areas	4 15
golden-crowned kinglet	*Regulus satrapa*	-	prefers spruce vegetation; no atlas sightings on Long Island	4 7
Northern mockingbird	*Mimus polyglottos*	+	prefers to nest near humans	4 9
white-breasted nuthatch	*Sitta carolinensis*	=	abundant in parks, urban and suburban areas	4 9
northern oriole	*Icterus galbula*	=	prefers deciduous woodland and shade trees	4 6
ovenbird	*Seiurus aurocapillus*	-	prefers open forest floor and woodlot greater than 35 acres	4 19
common screech owl	*Otus asio*	=	nocturnal; nests in hollow trees, abandoned buildings, nest boxes	4 17
great-horned owl	*Bubo virginianus*	-	nocturnal; rare in wooded areas of less than 20 acres	4 17
long-eared owl	*Asio otus*	-	nocturnal; prefers dense forested areas near water	4 17
American robin	*Turdus migratorius*	=	very adaptable; abundant in parks; nests in man-made structures	4 7
yellow-bellied sapsucker	*Sphyrapicus varius*	=	nests in tree cavity; found in parks, yards and gardens	14
pine siskin	*Carduelis pinus*	=	one atlas confirmed breeding record on Long Island	4 20
fox sparrow	*Passerella iliaca*	-	boreal species, winters here in edge, thickets, brushy areas	20 21
house sparrow	*Passer domesticus*	+	prefers buildings, urban, suburban, gardens; considered a pest	4 20
song sparrow	*Melospiza melodia*	=	common to most habitats except deep forest, open field and marsh	4 22
white-throated sparrow	*Zonotrichia albicollis*	-	prefers brushy areas and thick undergrowth	4 22

Common Name	Scientific Name	Adapt.	Comments	References
European starling	*Sturnus vulgaris*	+	extremely adaptable to human activity; considered a pest	4 23
chimney swift	*Chaetura pelagica*	+	nests in chimneys, with few exceptions	4 42
scarlet tanager	*Piranga olivacea*	-	rare in wooded area of less than 50 acres; affected by fragmentation	4
brown thrasher	*Toxostoma rufum*	=	common in parks, suburban areas, wooded edges, dry open areas	4 9
hermit thrush	*Catharus guttatus*	=	not common on Long Island; when present, prefers pine barrens	4 7
wood thrush	*Hylocichla mustelina*	=	prefers vacant wood (trees >40 feet); may adapt of wooded suburban	4 7
tufted titmouse	*Parus bicolor*	=	common in suburban areas	4 11
veery	*Catharus fuscescens*	-	prefers damp forest with undergrowth; affected by fragmentation	4 7
red-eyed vireo	*Vireo olivaceus*	=	found in parks and suburban areas with shade trees and undergrowth	4 23
black-and-white warbler	*Mniotilta varia*	-	builds nests under shrubs and/or trees	4 18
black-throated blue warbler	*Dendroica caerulescens*	=	migratory, large range; forest interior specie; can adapt to suburb	18
pine warbler	*Dendroica pinus*	-	prefers pine forest; may appear in overgrown field	4 19
prairie warbler	*Dendroica discolor*	-	prefers scrub fields and open pine barrens habitat	4 19
yellow-rumped warbler	*Dendroica coronata*	-	prefers mixed and conifer forest; may be in yards	4 8
cedar waxwing	*Bombycilla cedrorum*	+	prefers open woodlands, orchards and residential areas	4 23 32
whip-poor-will	*Caprimulgus vociferous*	-	nocturnal; prefers open woods with adjacent fields	4 12
Eastern wood-peewee	*Contopus virens*	=	prefers suburban areas, parks and villages with shade trees	4 15
downy woodpecker	*Picoides pubescens*	=	found in parks and suburban areas	4 14
hairy woodpecker	*Picoides villosus*	=	found mainly in deciduous forests	4 14
red-bellied woodpecker	*Melanerpes carolinus*	=	prefers forest openings; mostly found on Long Island north shore	4 14
house wren	*Troglodytes aedon*	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
Mammals				
big-brown bat	*Eptesicus fuscus*	+	roosts in structures; found throughout LI; hunts over water	1 29
hoary bat	*Lasiurus borealis*	=	roosts in trees, sometimes found in parks	45
Keen's bat	*Myotis keenii*	+	roosts in buildings, crevices and bark; more common on eastern LI	1 29
little-brown bat	*Myotis lucifugus*	+	roosts in buildings and man made structures; hunts over water	1 29
red bat	*Lasiurus borealis*	-	feeds in marsh area; nests within 1000 yards of marsh in trees	1 29
Eastern pipistrelle	*Pipistrellus subflavus*	=	found near water in open woods, also found in buildings	1 29
silver-haired bat	*Lasionycteris noctivagans*	-	prefers wooded areas near water, primarily during summer months	1 29
Eastern chipmunk	*Tamis striatus*	=	prefers open woods, thickets, and rocky areas	1 29
Eastern cottontail	*Sylvilagus floridanus*	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	*Odocoileus virginianus*	-	requires range of one-half square mile	1 25 29
red fox	*Vulpes vulpes*	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
Eastern mole	*Scalopus aquaticus*	=	tunnels underground	1 29
house mouse	*Mus musculus*	+	lives in association with man, not expected away from buildings	1 29
meadow-jumping mouse	*Zapus hudsonicus*	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	*Peromyscus leucopus*	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	*Didelphis virginiana*	=	common in suburban areas, woods, marsh and coastal areas	1 29

Common Name	Scientific Name	Adapt.	Comments	References
racoon	*Procyon lotor*	+	nocturnal; very adaptive; found in urban and forest areas	1 29
masked shrew	*Sorex cinereus*	=	tunnels underground; common in wood and wet habitats	1 29
short-tailed shrew	*Blarina breuicauda*	=	tunnels underground; abundant in a variety of habitats	1 29
striped skunk	*Mephitis mephitis*	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
Eastern gray squirrel	*Sciurus carolinensis*	=	found in parks, urban and suburban areas; very adaptable	1 29
southern-flying squirrel	*Glaucimys volans*	-	common in deep mixed, deciduous and coniferous woods	1 29
pine vole	*Microtus pinetorum*	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	*Mustela frenata*	-	prefers dense wood, but may appear in all land habitats near water	1 29
woodchuck	*Marmota monax*	-	appears primarily in scrub woods and brushy areas; not common on LI	1 29
Herptiles				
common gray treefrog	*Hyla versicolor*	-	prefer mossy trees near ponds	33 37
red-backed salamander	*Plethodon cinerus cinerus*	-	terrestrial, prevelent in moist situations	34 36
Eastern tiger salamander	*Ambystoma tigrinum tigrinum*	-	needs fishless pond or vernal pond with 500' vacant radius to breed	36 38
marbled salamander	*Ambystoma opacum*	=	moist to sandy areas; lays eggs in fall in low spots wet by rain	34 36 38
Eastern garter snake	*Thamnophis sirtalis*	=	occupies a variety of habitats	38 40
eastern hognose snake	*Heterodon platyrhinos*	=	sandy soil and sunny roadside; feeds on herptiles and insects	38
eastern milk snake	*Lampropettis d. triangulum*	=	occupies a variety of habitats	38 39
Eastern spadefoot toad	*Scaphiopus holbrooki*	-	nocturnal; burrows in sandy soil; eats insects, worms; gardens, etc.	33
Fowler's toad	*Bufo woodhousei fowleri*	-	found in suburban areas, gardens; breeds in shallow permanent ponds	33 37
Eastern box turtle	*Terrepene carolina*	-	terrestrial based species	41

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Appendix G-5
Breeding Bird Atlas Results

NYSDEC Breeding Bird Atlas
Atlas Block 6551D
2000-2005

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	7/28/2001	Game Species
Mute Swan	*Cygnus olor*	FL	7/28/2001	Protected
Wood Duck	*Aix sponsa*	FL	7/28/2001	Game Species
Gadwall	*Anas strepera*	P2	6/18/2001	Game Species
American Black Duck	*Anas rubripes*	P2	6/20/2001	Game Species
Mallard	*Anas platyrhynchos*	FL	7/28/2001	Game Species
Northern Bobwhite	*Colinus virginianus*	X1	7/4/2001	Game Species
Green Heron	*Butorides virescens*	FL	6/4/2002	Protected
Cooper's Hawk	*Accipiter cooperii*	X1	6/13/2002	Protected-Special Concern
American Kestrel	*Falco sparverius*	X1	6/5/2005	Protected
Killdeer	*Charadrius vociferus*	FL	7/20/2003	Protected
Spotted Sandpiper	*Actitis macularius*	X1	6/18/2001	Protected
Mourning Dove	*Zenaida macroura*	P2	6/18/2001	Protected
Chimney Swift	*Chaetura pelagica*	FL	6/26/2004	Protected
Belted Kingfisher	*Megaceryle alcyon*	X1	6/18/2001	Protected
Downy Woodpecker	*Picoides pubescens*	P2	6/18/2001	Protected
Northern Flicker	*Colaptes auratus*	S2	6/26/2004	Protected
Eastern Wood-Pewee	*Contopus virens*	S2	6/14/2002	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	FY	7/20/2003	Protected
Eastern Kingbird	*Tyrannus tyrannus*	X1	6/18/2001	Protected
Red-eyed Vireo	*Vireo olivaceus*	X1	6/26/2004	Protected
Blue Jay	*Cyanocitta cristata*	FY	7/20/2003	Protected
American Crow	*Corvus brachyrhynchos*	FL	7/4/2001	Game Species
Fish Crow	*Corvus ossifragus*	X1	6/18/2001	Protected
Purple Martin	*Progne subis*	X1	7/13/2002	Protected
Tree Swallow	*Tachycineta bicolor*	ON	7/8/2001	Protected
Bank Swallow	*Riparia riparia*	X1	7/4/2001	Protected
Barn Swallow	*Hirundo rustica*	ON	7/8/2001	Protected
Black-capped Chickadee	*Poecile atricapillus*	FL	7/20/2003	Protected
Tufted Titmouse	*Baeolophus bicolor*	S2	6/18/2001	Protected
White-breasted Nuthatch	*Sitta carolinensis*	S2	6/20/2001	Protected
Carolina Wren	*Thryothorus ludovicianus*	FL	7/13/2002	Protected
House Wren	*Troglodytes aedon*	D2	7/4/2001	Protected
Wood Thrush	*Hylocichla mustelina*	X1	7/4/2001	Protected
American Robin	*Turdus migratorius*	FY	7/28/2001	Protected
Gray Catbird	*Dumetella carolinensis*	FL	7/20/2003	Protected
Northern Mockingbird	*Mimus polyglottos*	FL	7/13/2002	Protected
Brown Thrasher	*Toxostoma rufum*	FY	7/20/2003	Protected
European Starling	*Sturnus vulgaris*	FL	7/28/2001	Unprotected
Cedar Waxwing	*Bombycilla cedrorum*	FL	6/26/2004	Protected
Yellow Warbler	*Dendroica petechia*	T2	6/18/2001	Protected
Pine Warbler	*Dendroica pinus*	FY	7/4/2001	Protected
Prairie Warbler	*Dendroica discolor*	FL	7/20/2003	Protected
Common Yellowthroat	*Geothlypis trichas*	P2	6/16/2001	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	FY	6/26/2004	Protected
Chipping Sparrow	*Spizella passerina*	FY	7/13/2002	Protected
Field Sparrow	*Spizella pusilla*	FY	//2002	Protected
Savannah Sparrow	*Passerculus sandwichensis*	S2	6/18/2001	Protected
Song Sparrow	*Melospiza melodia*	FL	7/20/2003	Protected
Northern Cardinal	*Cardinalis cardinalis*	FL	7/13/2002	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	FL	7/20/2003	Protected
Indigo Bunting	*Passerina cyanea*	S2	6/30/2002	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FY	7/20/2003	Protected
Common Grackle	*Quiscalus quiscula*	FL	7/20/2003	Protected

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Brown-headed Cowbird	*Molothrus ater*	FY	6/26/2004	Protected
Baltimore Oriole	*Icterus galbula*	FY	6/29/2004	Protected
House Finch	*Carpodacus mexicanus*	ON	7/8/2001	Protected
American Goldfinch	*Spinus tristis*	P2	8/28/2003	Protected
House Sparrow	*Passer domesticus*	ON	6/18/2001	Unprotected

Block 6551D Summary	
Total Species:	59
Possible:	11
Probable:	14
Confirmed:	34

Current Date: 11/6/2018
Source: http://www.dec.state.ny.us/cfmx/extapps/bba/

Appendix G-6
NYS Natural Heritage Program Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

June 14, 2018

Hannah Emouna
Nelson, Pope & voorhis
572 Walt Whitman Road
Melville, NY 11747

Re: Island Hills
County: Suffolk Town/City: Islip

Dear Ms. Emouna:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 1 Office, Division of Environmental Permits, at dep.r1@dec.ny.gov, 631-444-0365.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

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The following state-listed animals have been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for the project, please contact the Permits staff at the NYSDEC Region 1 Office at dep.r1@dec.ny.gov, 631-444-0365. For information about potential impacts of the project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Region 1 Wildlife Manager at 631-444-0310.

The following species has been documented within 0.4 mile of the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Butterflies				
Frosted Elfin	*Callophrys irus*	Threatened		3496

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants, rare animals, and significant natural communities have been documented in the vicinity of the project site.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following animals, while not listed by New York State as Endangered or Threatened, are of conservation concern to the state, and are considered rare by the New York Natural Heritage Program.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Butterflies			
Edwards' Hairstreak	*Satyrium edwardsii*	Unlisted	Vulnerable in NYS

Documented within 0.3 mile southwest of the project site. 1991-06-30: The butterflies were found in pine oak woods interspersed with grasslands and cleared areas succeeding into scrub oak and rich mix of grasses and forbs. 5812

Moths			
Coastal Barrens Buckmoth	*Hemileuca maia ssp. 5*	Special Concern	Imperiled in NYS and Globally Uncommon

Documented within 275 yards south and southwest of the project site. 1984-10: The moths were observed in pine oak woods interspersed with grasslands and cleared areas succeeding into scrub oak and rich mix of grasses and forbs. 3334

Herodias or Pine Barrens Underwing	*Catocala herodias gerhardi*	Special Concern	Critically Imperiled in NYS and Globally Uncommon

Documented within 0.35 mile southwest of the project site. 1989-07-04: The moth was observed in a pine oak woods interspersed with grasslands and cleared areas succeeding into scrub oak and rich mix of grasses and forbs. 9074

The following natural community is considered significant from a statewide perspective by the NY Natural Heritage Program. By meeting specific, documented criteria, the NY Natural Heritage Program considers this community occurrence to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Upland/Terrestrial Communities			
Maritime Grassland			Rare Community Type and Globally Rare

Documented within 0.35 mile southwest of the project site. A grassland community with few emergent trees and shrubs. A grassland that has been kept open by mowing and herbicides. The site consists of patches of mid-age pine barrens interspersed with grassy areas. 7663

The following plants are listed as Endangered or Threatened by New York State, and/or are considered rare by the New York Natural Heritage Program, and so are a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Vascular Plants

Stiff Tick Trefoil — *Desmodium obtusum* — Endangered — Critically Imperiled in NYS

Documented within 120 yards southwest of the project site. 1985-09-12: Maritime grassland. 1590

Showy Aster — *Eurybia spectabilis* — Threatened — Imperiled in NYS

Documented within 170 yards southwest of the project site. 1997-09-08: A successional pine barrens grassland. Open, sandy, grass-herb dominated maritime grassland with bluestem and wild indigo. 10105

Southern Yellow Flax — *Linum medium var. texanum* — Threatened — Imperiled in NYS

Documented within 185 yards southwest of the project site. 1991-07-09: This is a grassy, successional pine barrens at edge of the Federal Aviation administration (FAA) tower facility. 1985: The plants were growing in a successional pine barrens. 2500

Flax-leaf Whitetop — *Sericocarpus linifolius* — Threatened — Imperiled in NYS

Documented within 190 yards southwest of the project site. 1997-09-08: This is a successional pine barrens grassland with mad-made structures. The plants are in the open, sandy, grass-herb dominated clearing. 4730

Velvety Bush Clover — *Lespedeza stuevei* — Threatened — Imperiled in NYS

Documented within 250 yards southwest of the project site. 1985-09-12: This is a successional pine barrens grassland. 9982

Sandplain Wild Flax — *Linum intercursum* — Threatened — Imperiled in NYS

Documented within 250 yards southwest of the project site. 1992-09-09: This is a cleared pine barrens around towers that is dominated by bluestem. 8659

Stargrass — *Aletris farinosa* — Threatened — Imperiled in NYS

Documented within 275 yards southwest of the project site. 2010-08-31: The habitat is scattered pines with broad grassy swaths, a few exotics, and old structures. The pine barrens grassland is good quality. 1281

Northern Blazing Star — *Liatris scariosa var. novae-angliae* — Threatened — Imperiled in NYS and Globally Uncommon

Documented within 0.2 mile southwest of the project site. 2010-08-31: Within good quality grasslands dominated by little bluestem, aster, clover, and wild indigo. 3074

Sandplain Agalinis — *Agalinis decemloba* — Endangered *and Federally Listed as Endangered* — Critically Imperiled in NYS

Documented within 0.3 mile southwest of the project site. 2010-08-31: The plants are in a good quality pine barrens grassland consisting of scattered pines with broad, grassy swaths. There are few exotics and structures. 3026

Slender Pinweed — *Lechea tenuifolia* — Threatened — Imperiled in NYS

Documented within 0.3 mile southwest of the project site. 1997-09-08: This is a successional pine barrens grassland and an Andropogon meadow. There are pine barrens grassland species present. 6712

Few-flowered Nut Sedge — *Scleria pauciflora* — Endangered — Critically Imperiled in NYS

Documented within 0.4 mile southwest of the project site. 1985-09-12: Grassland around towers. There are some open sandy areas. 7134

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.