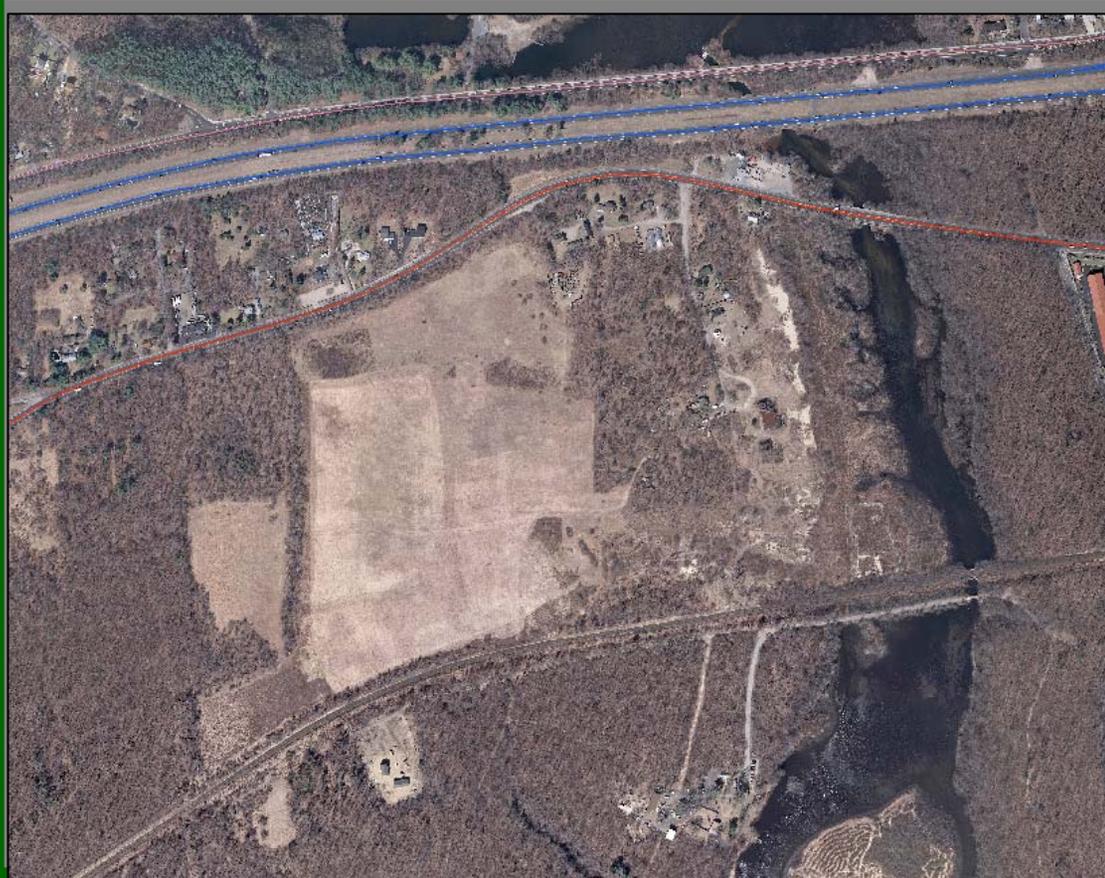
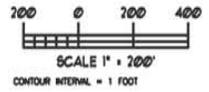
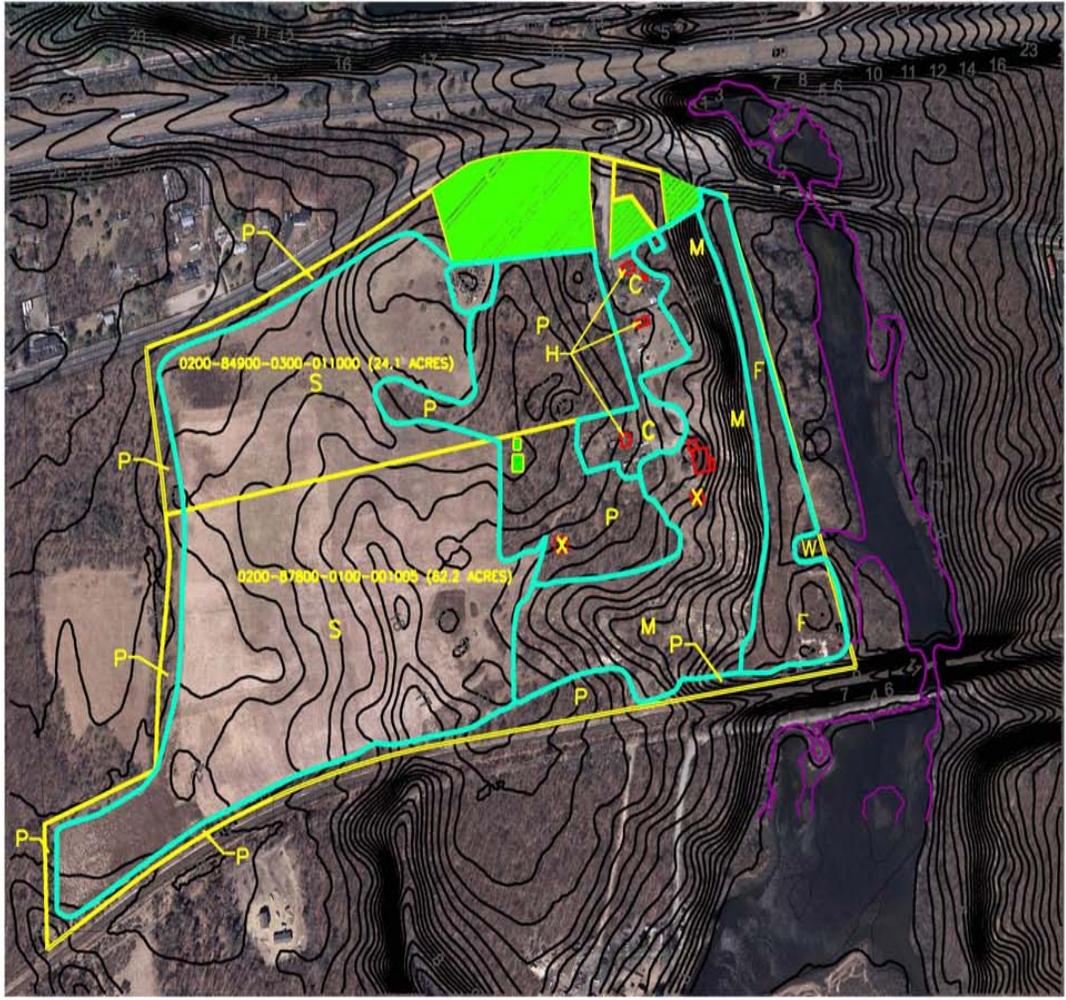


Habitat Restoration Feasibility Study at the Robinson Duck Farm County Park





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* excerpted from (P.O.L.) the provisions of the Freedom of Information Law
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GPI
 Greenman-Pedersen, Inc.
 Engineers, Architects, Planners
 Construction Engineers & Inspectors
 330 West Main Street, Watertown, NY 11792
 Tel: (815) 887-0000 Fax: (815) 422-3479

- FEATURE LEGEND**
- C - CULTURAL FEATURES
 - F - WETLAND FRINGE
 - S - SUCCESSIONAL OLD FIELD
 - H - HISTORIC FEATURE
 - M - MARSHINE HEATHLAND
 - P - PITCH PINE-OAK FOREST
 - V - TIDAL WETLAND
 - X - BUILDINGS TO BE DEMOLISHED
 - - OUTPARCELS
- LINE LEGEND**
- PROPERTY LINE
 - HABITAT BOUNDARIES
 - TIDAL WETLANDS
 - BUILDINGS

Client:
 Suffolk County Department
 of Planning

Project:
 ROBINSON DUCK FARM
 COUNTY PARK
 HABITAT RESTORATION
 FEASIBILITY STUDY

No.	Date	Revision	Appr'd

Drawing Title:
BASE MAP

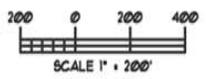
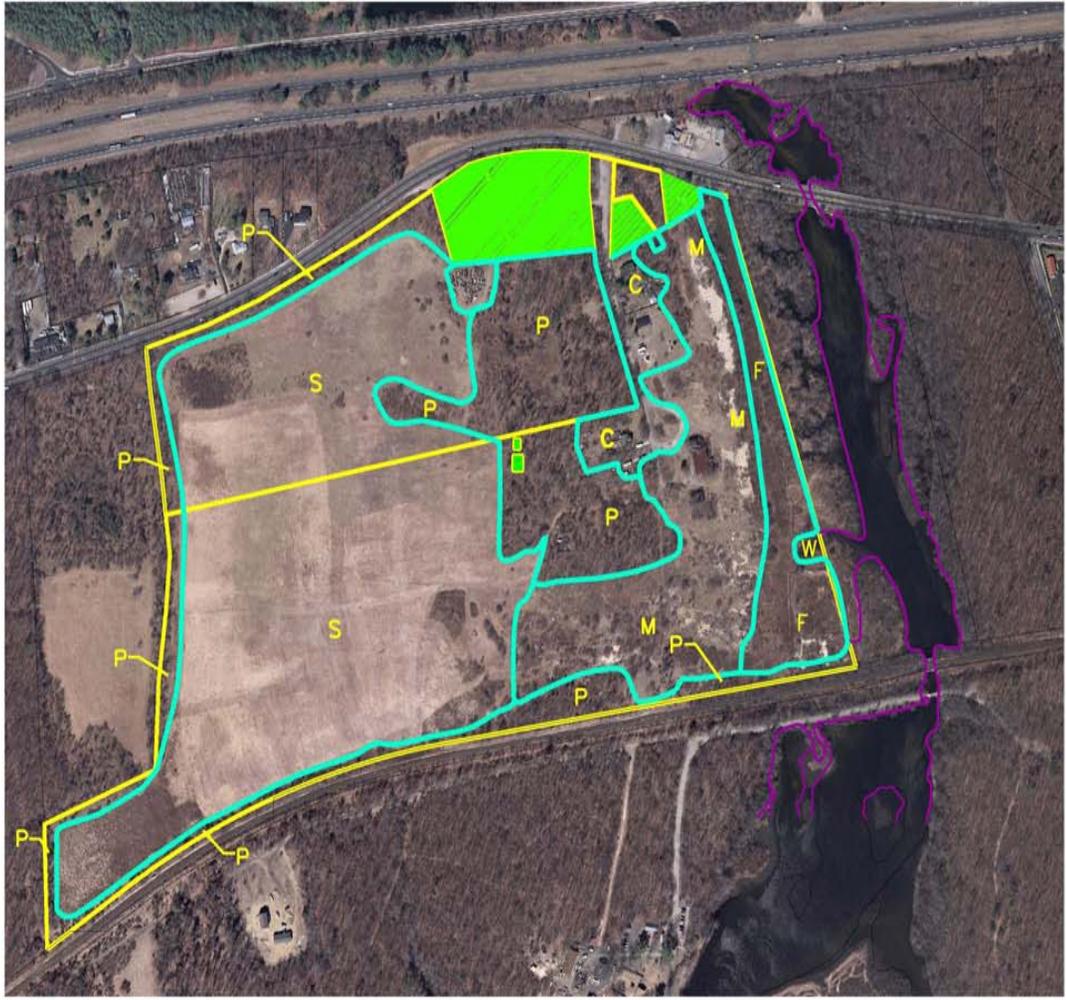
Date:
 JUNE 10, 2009

Drawn By:
 KAH

Shown:
 AS SHOWN

Checked By:
 JRG

Drawing Number:
 Project Number: 2009011



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FEATURE LEGEND

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- M - OUTPARCELS

LINE LEGEND

- PROPERTY LINE
- HABITAT BOUNDARIES
- TIDAL WETLANDS
- BUILDINGS

Client:

Suffolk County Department
of Planning

Project:

ROBINSON DUCK FARM
COUNTY PARK
HABITAT RESTORATION
FEASIBILITY STUDY

No.	Date	Revision	Appr.

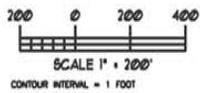
Drawing Title:

HABITAT MAP

Date: JUNE 10, 2009	Drawn By: KAH
Status: AS SHOWN	Checked By: JRG

Drawing Number:

Project Number: 2009011



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■ - OUTPARCELS
— - PROPERTY LINE

Client:
 Suffolk County Department
 of Planning

Project:
 ROBINSON DUCK FARM
 COUNTY PARK
 HABITAT RESTORATION
 FEASIBILITY STUDY

No.	Date	Revision	Appr.

Drawing Title:
TOPOGRAPHIC MAP

Date: JUNE 10, 2009	Drawn By: KAH
Scale: AS SHOWN	Checked By: JRG

Drawing Number:
 Project Number: 2009011

Task 2 – Identify Recognized Environmental Conditions

This Task was performed in two phases :

- Review of public documents.
- Site walkthrough conducted on April 17, 2009.

Review of Public Documents

The reviewed documents include the following:

- “Long Island Duck Farm History and Ecosystem Restoration Opportunities Suffolk County, Long Island, New York”, February 2009, Army Corp of Engineers (ACoE)
- Site Survey located at Suffolk County web site (http://www.suffolkcountyny.gov/upload/planning/pdfs/robinson_survey.pdf)
- Historical site photographs and aerial photos from various sources

Findings: Historical Document Review

- Past agricultural use of the property.
- Historical site survey revealed the location of former site structures beyond the three residential structures and two former farm buildings which are currently present.
- Additional structures were largely located in the south east corner of the property.
- Historic photos show that the large field located on the western portion of the subject site was historically utilized for farming.

Findings: Historical Document Review

The review of the AcoE Report showed the following exceeded New York State Department of Environmental Conservation (NYSDEC) TAGM Guidance Values:

- Semi-volatile organic compounds (SVOCS)
- Zinc
- Nitrogen
- Phosphorus

Purpose of Site Walk on April 17, 2009

To observe evidence of environmental conditions including, but not limited to:

- Prior chemical spills and stained soil
- Materials storage, scrap piles, drum storage, aboveground tanks
- Underground tanks
- Hazardous waste storage
- Floor drains or machinery pits

Re-Inspection

The following were previously identified environmental concerns which were noted during the May 2008 bid walk:

- A former vehicle storage area
- An onsite sanitary system associated with the northern historic farm building
- Oil staining associated with the southern farm building
- Potential underground storage tanks associated with the residential buildings

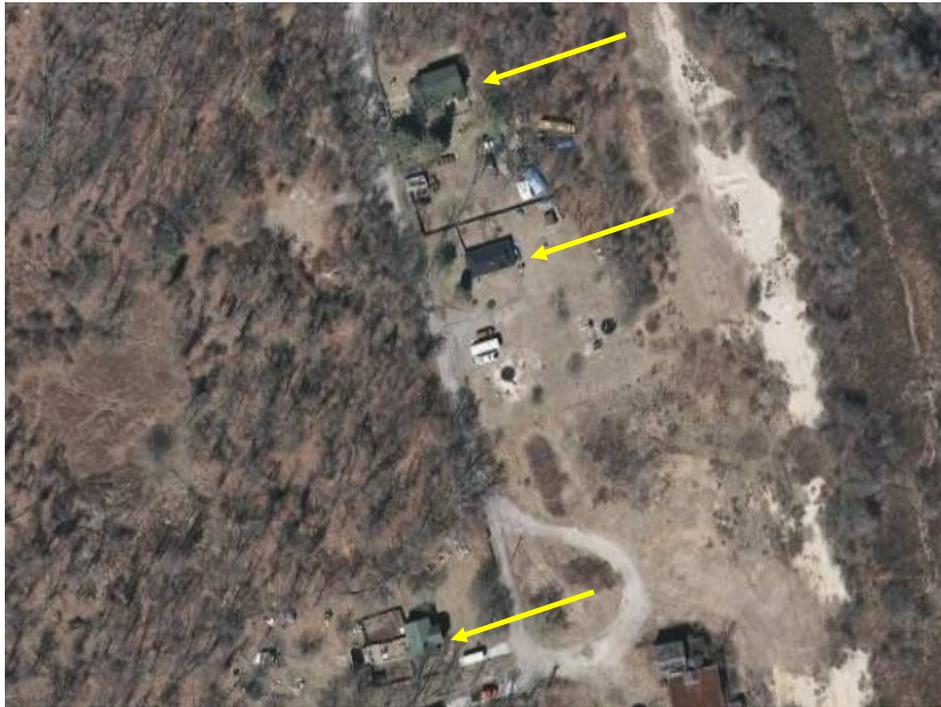
Site Walkthrough

The following were identified areas of concern:

- Three residential buildings
- Northern Farm Building
- Southern Farm Building
- Suspected Leaching Structures, Northwest of North Farm Building
- Former Aircraft Hanger
- Former Leaching Structures, East of Former Hangar
- Former Vehicle Storage Area
- Former Coal Storage Area
- Former Agricultural Field
- Former Duck Swim Pond / Waste Lagoon
- Trash Debris Pile

Three Residential Buildings

- Fuel oil tanks present in the basement of each building. PWGC recommends inspecting each of the tank areas for signs of leaks/spills.



Location of the three residential homes. Only the central one is currently occupied.



View of fuel oil tank fill and vent, typical of each of the three homes.

Northern Farm Building

- Onsite sanitary system associated with this building. PWGC recommends that the sanitary system and floordrain discharge locations be exposed with a backhoe.



Location of northern farm building



Interior view of northern farm building showing trench drains which appear to have discharged to the east.

Southern Farm Building

- Building used as repair shop. PWGC recommends hand excavating the areas of potential soil staining in order to determine if the staining is superficial or indicative of a notable spill.



Location of the southern farm building



View of automotive parts and oil staining present within the southern farm building.

Suspected Leaching Structures, Northwest of North Farm Building

- PWGC recommends that the structures be exposed so that a sample can be collected from the base of each structure for as per SCDHS prior to closure.



Location of suspected collapsing leaching structures located northwest of the northern farm building.



View of one of the collapsing structure which is causing a large sinkhole to form.

Former Aircraft Hanger

- Building has been demolished. No impact noted, PWGC does not recommend any sampling of the former hangar area at this time.



Location of the former aircraft hanger (aerial photo taken prior to demolition of the building).



View of the former aircraft hanger area following removal of the building.

Former Leaching Structures, East of Former Hangar

- PWGC recommends performing soil borings through both structures to identify the former base of the structure.



Location of the leaching pools identified east of the former hangar building.



View of one of the two identified leaching pools located east of the former hangar. The other structure was of similar construction.

Former Vehicle Storage Area

- Vehicles have been removed. No staining was noted. PWGC does not recommend any sampling of the former vehicle storage area at this time.



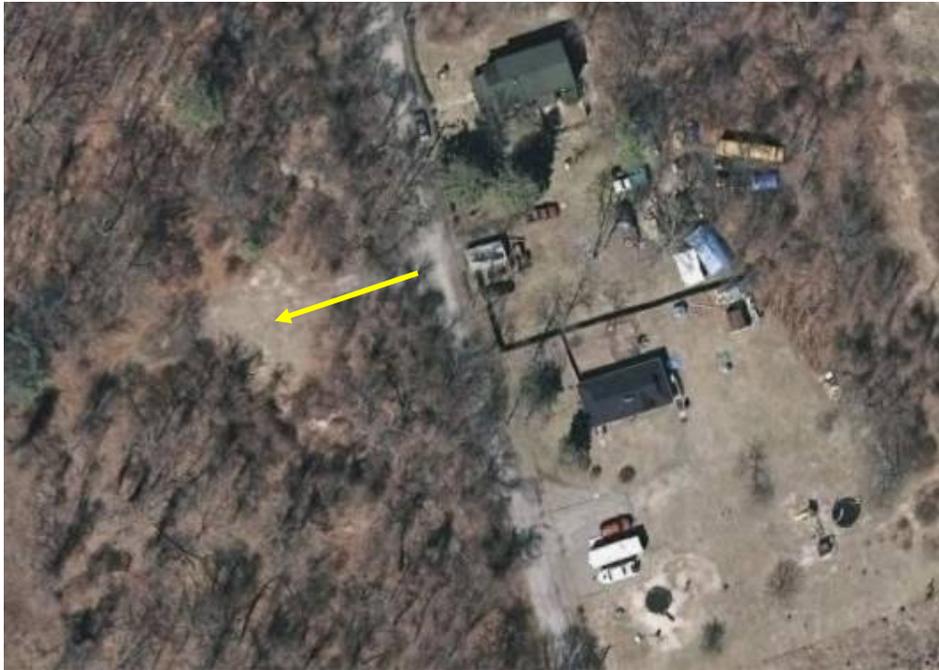
Location of the former vehicle storage area. Vehicles have since been removed.



View of the former vehicle storage area. No signs of impact or soil staining were noted.

Former Coal Storage Area

- A former coal storage area was observed. PWGC recommends that the coal and shallow surface soils be removed and properly disposed of.



Location of former coal storage area.



View of coal piles observed in an apparent former coal storage area.

Former Agricultural Field

- Pesticides may have been used in the field and duck waste may have been used as a fertilizer. PWGC recommends conducting representative soil borings to two feet below grade utilizing a hand auger to assess soil quality.



Location of former agricultural fields



View of the former agricultural fields (summer 2008 photo)

Former Duck Swim Pond / Waste Lagoon

- PWGC recommends that several representative soil borings be performed to assess the vertical extent of duck waste.



Location of the former swim ponds and waste lagoon (south end)



View of the former swim pond area looking northward.

Trash Debris Pile

- A former dumping area was identified. PWGC recommends that the debris be removed and properly disposed of. During removal, the area should be assessed for potential impacts.



Location of the debris / trash dumping area.



View of the western portion of the debris / trash dumping area

Conclusions

- Based upon the above findings, Phase II activities will be required to assess environmental concerns at the former Robinson Duck Farm property.
- The site investigation will require additional investigation beyond the issues identified during the bid walkthrough.

TASK 4

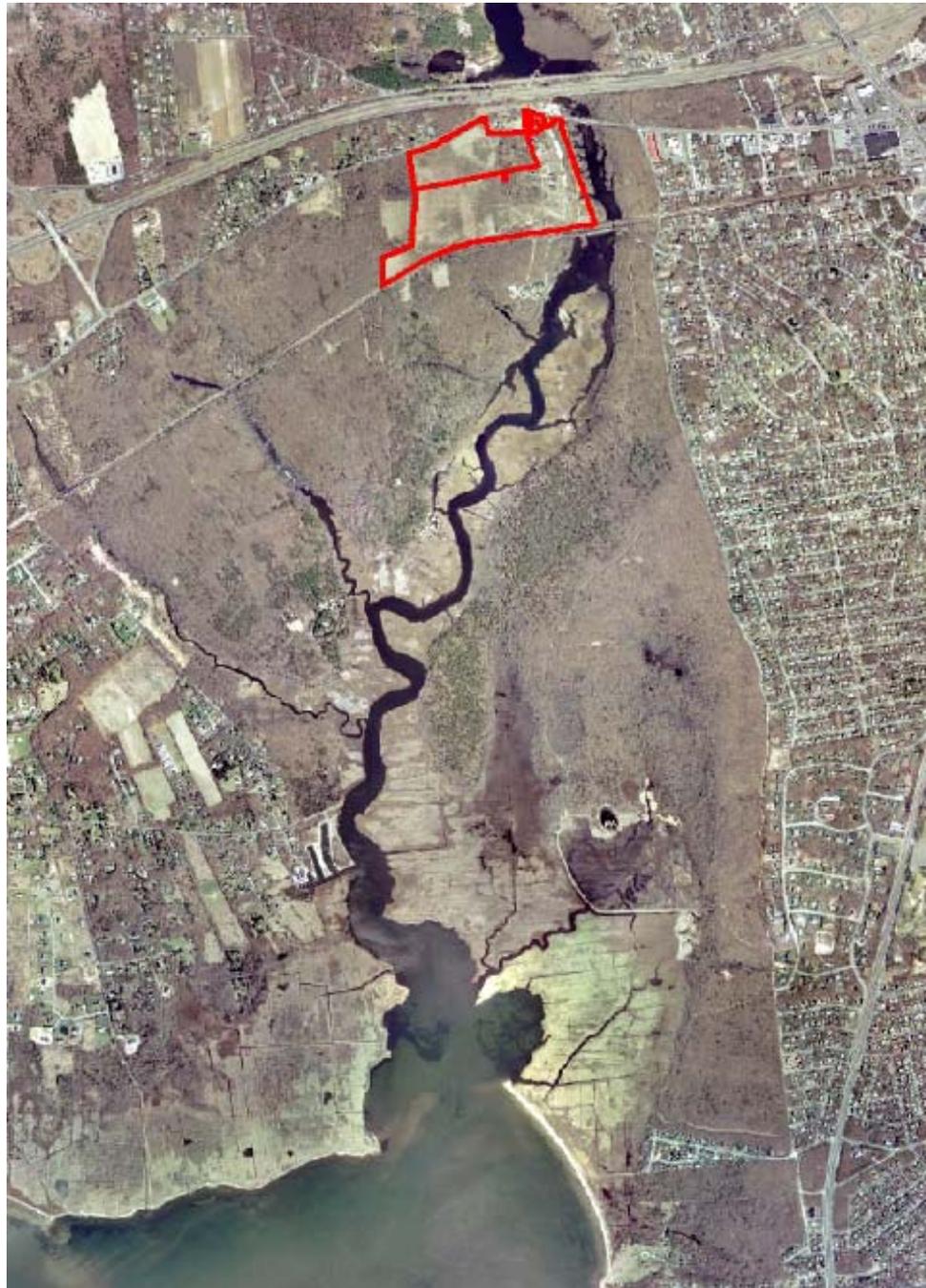
PAST AND CURRENT MANAGEMENT ACTIVITIES



Working Group Meeting

June 17, 2009

Landscape Approach to Restoration Efforts





Alterations to Natural Habitats

- Swin River
- Lago contain
- Field
- Many and be



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and
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Purpose of Task 4 Report

1. Describe past and current management and stewardship activities on the Robinson Duck Farm since the property has been owned by Suffolk County.
2. Describe management actions and plans of the USFWS/Wertheim NWR that are of direct relevance to the Duck Farm Property and this project.

PART 1

1. Describe past and current management and stewardship activities on the Robinson Duck Farm since the property has been owned by Suffolk County.

Water Quality

Soil Quality

Habitat Restoration

Invasive Plant Management

Water Quality
was monitored
1968-1999

SCDHS Water Quality Data*
Streams Formally Impacted by Duck Farms

Stream	Location	No. of Sampling Events	Sampling Dates **
Mud Creek	N/S Robinson pond	15	1968-73
Mud Creek	N/S Robinson pond	25	1977-87
Carmans River	Wertheim NWR, S/O RR off Old River Rd.	6	1968, 87,95-99
Carmans River	S/S Rt 27	3	1974, 75, 90
Carmans River	N/S Victory Ave., N/O spillway	6	1974, 75, 77, 80, 96, 99
Carmans River	At weir above Hard's Lake	4	96, 99, 00
Carmans River	At gaging station N/S RR, E/O Upper River Rd.	106	1967 - 00
Carmans River	N/S Mill Rd. at upper lake outlet	4	1974, 75, 99
Carmans River	N/S Bartlett Rd.	7	1966, 70, 71, 92
Forge River, East	N/S 27A, E/S Barnes Rd. at spillway	39	1971-96
Sawmill Creek	SW end of 1 st St. off Hubbard Ave., N/S RR culvert	6	1984, 93-99
Sawmill Creek	N/S East Main St.	28 (Water Resources)	1970-92
Sawmill Creek	N/S East Main St.	54 (Office of Ecology)	1976, 88, 89, 96-04
Terrell River	N/S Rt. 27A at weir	39	1966-97
Terry's Creek	E/S Rt. 105 at entrance ramp N/O Hubbard Ave.	18 (Water Resources)	1974-96
Terry's Creek	E/S Rt. 105 at entrance ramp N/O Hubbard Ave.	51 (Office of Ecology)	1976, 88, 89, 96-04

* Samples collected by the SCDHS Office of Water Resources, unless otherwise noted. Sampling parameters generally include inorganic nitrogen (ammonia, nitrite, nitrate), TKN, PO₄, coliform bacteria, conductivity, pH, metals, and on a limited basis, VOCs and pesticides.

** Sampling was not conducted in all years and when done, was generally limited in frequency.

Locations of Sampling Stations:

240-28,30

240-15



Nutrient levels and coliform measured for sites along Carmans River near Robinson Duck Farm

- Data are averages for samples taken over all years
- Data here can be used to compare current levels

**Table 2. Nutrient and Coliform Statistics: Mean, Maximum, & Minimum Values, and Number (N) of Cases
Great South Bay Tributaries**

Embayment	Statistic	Ammonia (NH ₃ -N)	Nitrite + Nitrate (NO _x -N)	Total Nitrogen (TN)	Dissolved Inorganic Nitrogen (DIN)	Total Phosphorus (TP)	Dissolved Phosphorus (DP)	Ortho- Phosphate (o-PO ₄ -P)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Carmans River S/O Rt. 27A (Station 240-15)	Mean	0.018	0.856	----	0.874	----	----	0.012	520	250
	Max	0.040	1.11	----	1.12	----	----	0.016	800	800
	Min	< 0.02	0.28	----	0.29	----	----	0.008	170	80
	N	6	6	----	6	----	----	2	5	5
Carmans River N/O Rt. 27 (data for Stations 240-28 and 240- 30 combined)	Mean	0.167	0.689	----	0.836	----	----	0.012	421	214
	Max	0.82	0.91	----	1.30	----	----	0.017	>2,400	>2,400
	Min	< 0.02	0.482	----	0.540	----	----	0.008	60	< 20
	N	7	8	----	8	----	----	6	8	8

Note: Note: Nutrients are in mg/l as N or P; Coliforms are No./100 ml

Soil Quality

Summary of Results



Priority Pollutant Metals

Arsenic--ok

Chromium--ok

Copper--ok

Lead--high but from natural deposits.

Nickel--ok

Zinc--levels > TAGM limit

Volatile Organics

Acetone—high—unknown source

Semi-volatile Organics

Di-n-butylphthalate and Bis(2-ethylhexy)phthalate – high (from gloves)

Soil Quality

Summary of Results continued

Nitrogen--very high—
downstream 2x higher
upstream samples

Phosphorus—very high—
downstream 5x lower than
upstream

Total organic carbon —very high—downstream
7.5x higher than upstream

Habitat Restoration



Some Native Plants



Grassland Community Restoration Efforts

2 years: 2000 (40 acres)

2001 (15 acres)

2 phases: burning

seeding (warm season grasses)



Wildlife Conservation Potential

Artworkbynature.com



www.nbii.gov

Artworkbynature.com



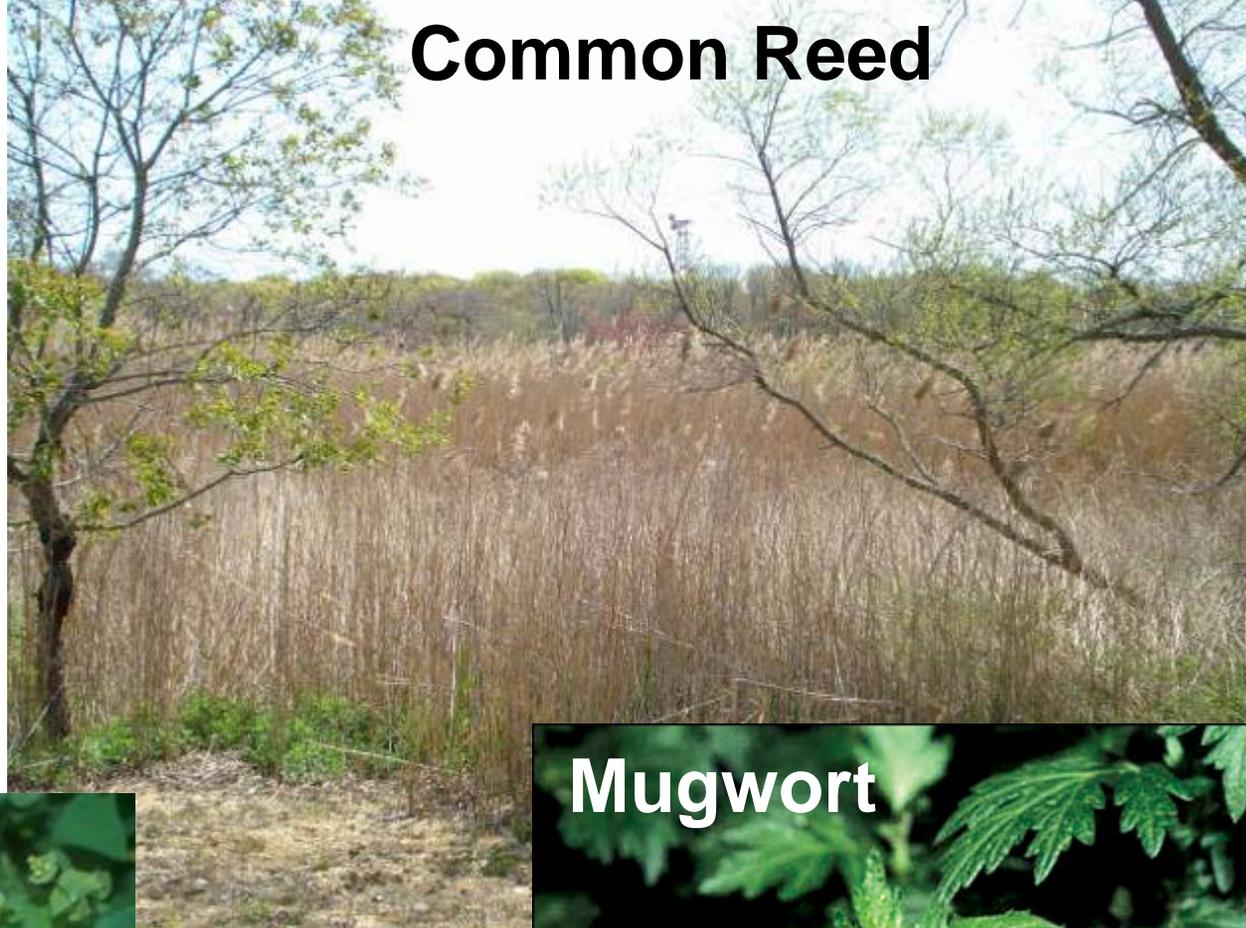
www.nps.gov/hafe/naturescience/images/red
back_salamander.jpg

Artworkbynature.com



Invasive Plant Management

Common Reed



Mile-A-Minute Weed



<http://njaes.rutgers.edu/weeds/full.asp?milea+minute>

Mugwort



PART 2

2. Describe management actions and plans of the USFWS/Wertheim NWR that are of direct relevance to the Duck Farm Property and this project.

Habitat Restoration

Invasive Plant Management

Wildlife Conservation

Habitat Restoration Efforts

Fire Dependent Communities

Grasslands

Sandplain Gerardia Habitat

Shoreline Restoration

Habitat Restoration

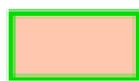


2001



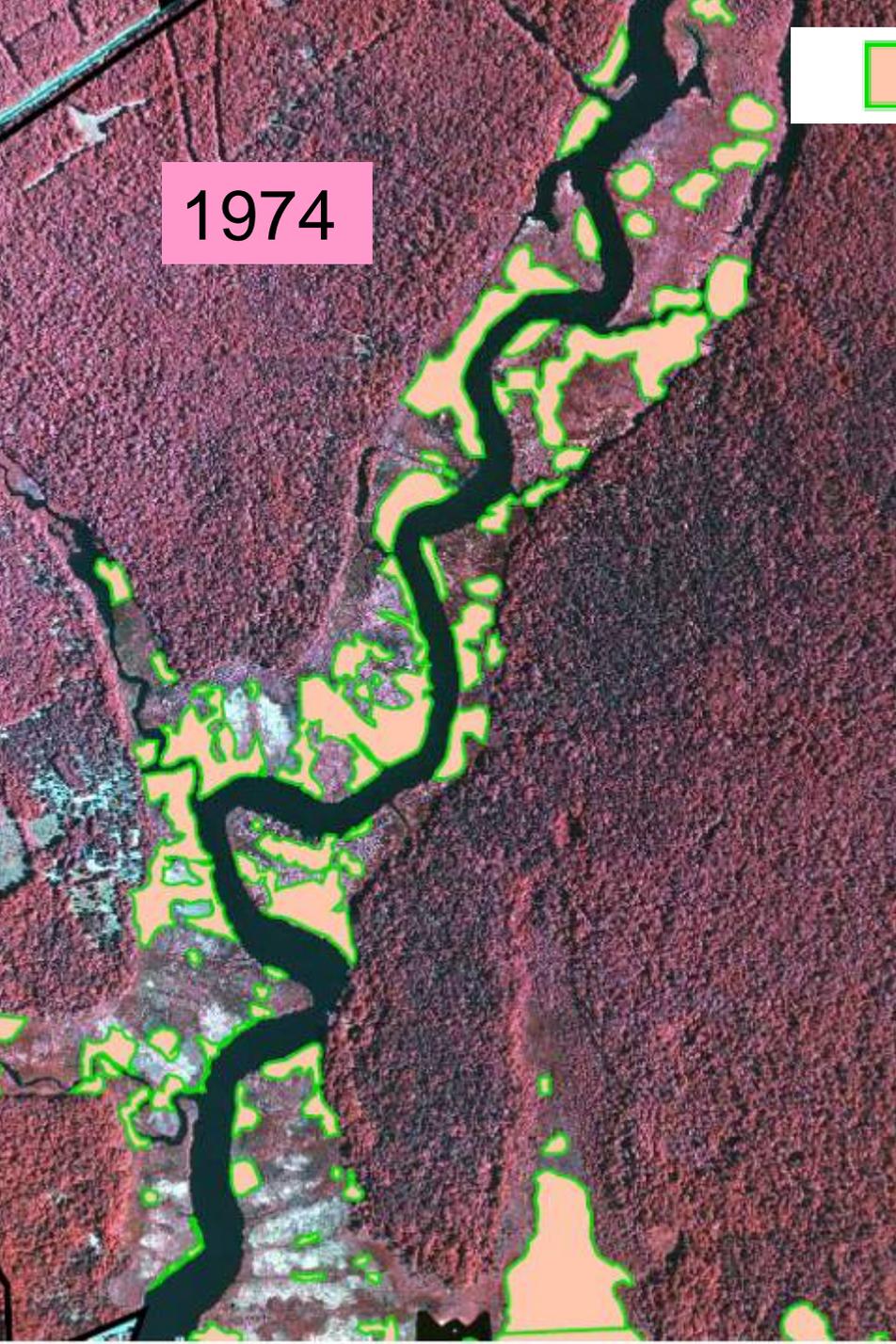
2003



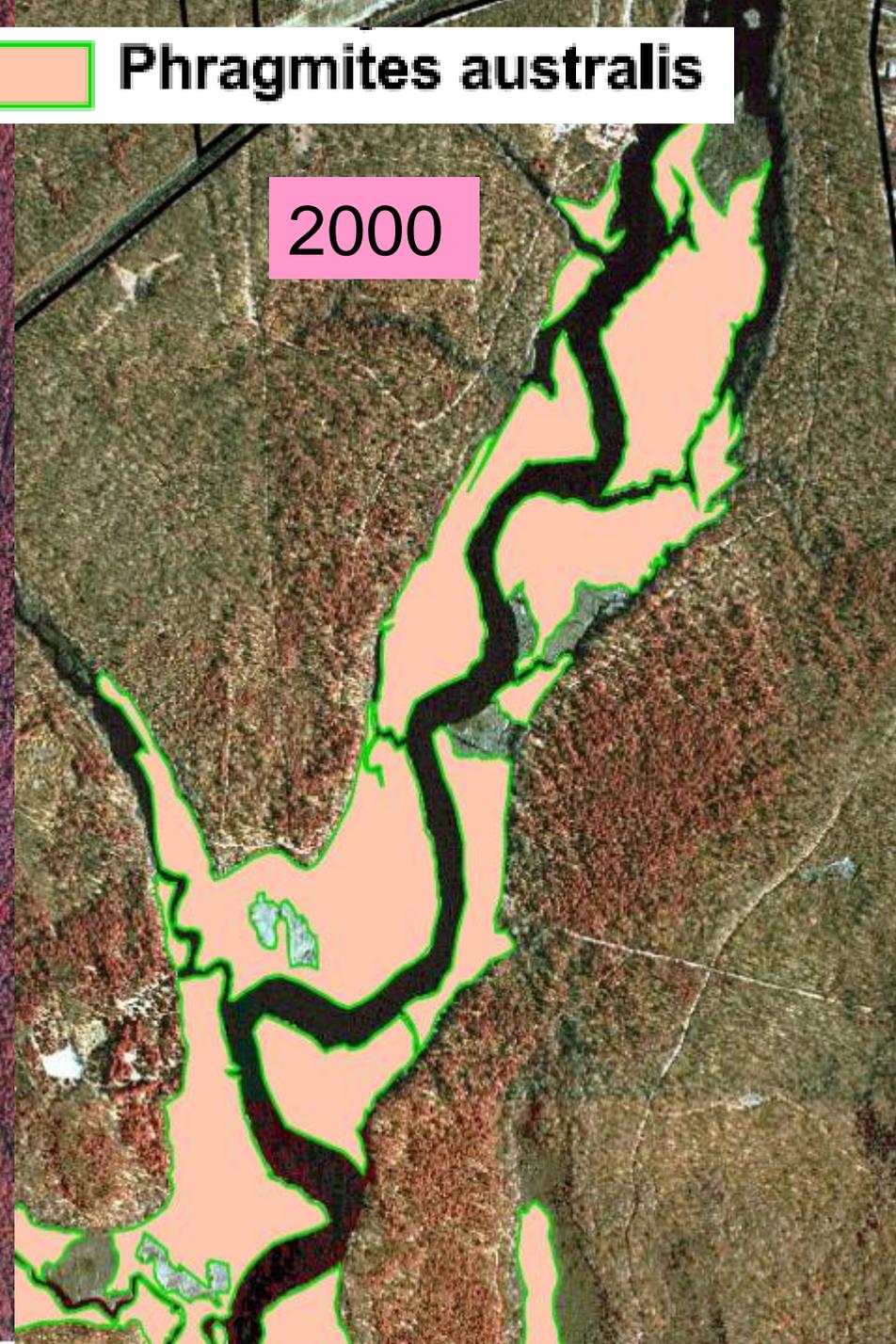


Phragmites australis

1974



2000



Invasive Plant Management

Common Reed (*Phragmites australis*)

Asiatic Bittersweet (*Celastrus orbiculata*)
and Black Locust (*Robinia pseudoacacia*)

Mile-A-Minute (*Persicaria perfoliata*)

Black Swallow-wort (*Vincetoxicum nigrum*
or *Cynanchum louiseae*)

Japanese Barberry (*Berberis thunbergii*)

Russian Olive (*Elaeagnus angustifolia*)

Garlic Mustard (*Alliaria petiolata*)



UGA5275018



www.chestertownship.org/environmental-commission.html



UGA2307119



UGA2189081

2006 Pre-treatment



2008 Post-treatment



Wildlife Conservation



Eastern Mud Turtle

American Woodcock

White-tailed Deer

Breeding/Non-breeding Birds

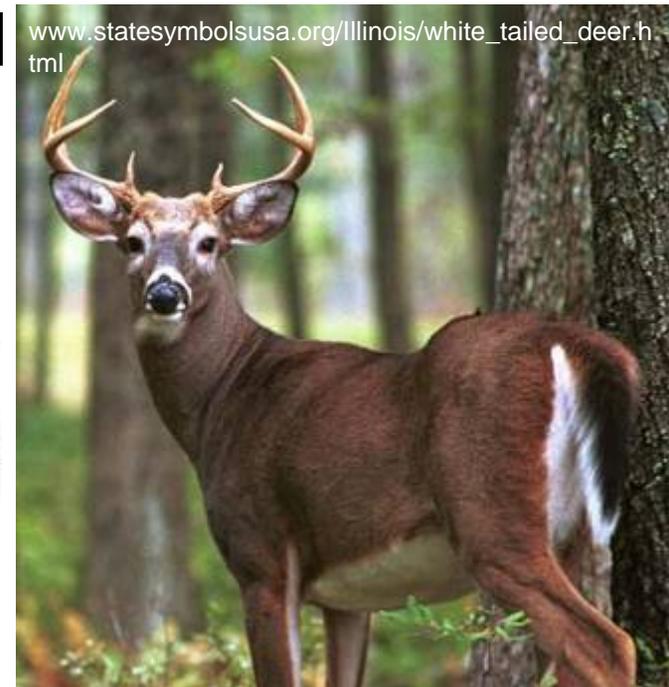
Salt Marsh Sharp-tailed Sparrow and Seaside Sparrow

Brook Trout



whatbird.wildbird.com

whatbird.wildbird.com



pond.dnr.cornell.edu/nyfish/salmonidae/brook_trout.jpg

Sources

- Diana Sanford, Suffolk County Department of Parks, Recreation and Conservation
- Tom Williams, Friends of Wertheim National Wildlife Refuge
- Susi Ponce, Long Island National Wildlife Refuge Complex
- Suffolk County Parks historical files
- “Water Quality Trends at Selected Streams Impacted by Duck Farm Operations,” Suffolk County Dept. of Health Services, Feb. 2008
- “Robinson Duck Farm County Park Habitat Restoration Feasibility Study Work Group Meeting” March 12, 2009 and June 25, 2007 (http://www.co.suffolk.ny.us/upload/planning/pdfs2/rdf/2009/rdfwg_031209.pdf and http://www.co.suffolk.ny.us/upload/planning/pdfs/robinson_overview_ppt.pdf)
- Army Corps of Engineers Report, entitled “Long Island Duck Farm History and Ecosystem Restoration Opportunities” from February 2009
- Fish & Wildlife Service Long Island National Wildlife Refuge Complex Comprehensive Conservation Plan, September 2006.

PROPOSED PROJECT SCHEDULE

SUFFOLK COUNTY DEPARTMENT OF PLANNING

Robinson Duck Farm County Park Habitat Restoration Feasibility Study

DESCRIPTION TASK	MONTHS												
	***	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10
TASK 1.1: Develop Basemap Architecture		■											
TASK 1.2: Locate and Map All Site Features		■	■										
TASK 1.3: Document Existence of Any Historic Resources On-site			■	■									
TASK 2: Identify Recognized Environmental Conditions				■									
TASK 3: Conduct Phase II Environmental Site Analysis				■	■	■	■	■	■				
TASK 4: Describe Past and Current Management Activities					■	■	■						
TASK 5.1: Site Management Goals								■	■	■	■		
TASK 5.2: Site Habitat Restoration and Management Options										■	■	■	■
TASK 6: Prepare Park Management and Habitat Restoration Report											■	■	■
TASK 7: Meetings		■			■				■			■	

* Bars do not indicate relative effort but merely represent a suggested duration for each scheduled task.

** The start dates and durations of each task are approximate, however, all tasks will be completed on or about one year from the execution of the contract.

*** Assume start date of 2/15/09