

# **Robinson Duck Farm County Park Habitat Restoration Feasibility Study**



**Steve Levy**  
Suffolk County Executive

## **Park Management and Habitat Restoration Report**

### **Executive Summary**

**June 2010**

**Suffolk County Department of Planning**  
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This publication is available on the WEB at:  
<http://www.suffolkcountyny.gov/Home/departments/planning/RobinsonDuckFarm.aspx>

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## I. Introduction

The purpose of this study was to investigate and document existing geological and environmental conditions and determine the feasibility of restoring the Robinson Duck Farm County Park to an assemblage of native plant and animal communities.

Transforming the former Robinson Duck Farm into a scenic, natural habitat will contribute to many public needs, including improved ecological health, cultural opportunities and educational value. Through ecological restoration, species-poor remnants on this site can be renewed as a sustainable preserve with high native animal and plant diversity, providing the people of Suffolk County a place to enjoy their natural heritage and to gain a deeper understanding of local biodiversity, natural processes and the ecosystem services that natural habitats supply.

The vision for the Robinson Duck Farm restoration includes enhancement of existing habitat, establishment of several habitat types, and the increase in the ecological value of this site. This habitat complex, while providing significant ecological services, will add scenic vistas for visitors and both passive recreational and cultural opportunities. The proposed habitat amendments will highlight the south shore of Long Island's natural heritage and serve as a demonstration of the potentially successful interaction between people and nature. There is great opportunity to restore/improve new native grasslands and meadows, early successional woodlands, shrublands, and wetland swales and pools from the extensively degraded sections on this site. The enhanced habitats will complement the existing mature woodlands and riverine habitats of the surrounding Wertheim National Wildlife Refuge. Together, the Robinson Duck Farm County Park and the Wertheim National Wildlife Refuge will be a complex mosaic of natural habitats that together will allow sustainable ecological communities of native species of plants and animals to thrive.

## II. Existing Conditions

The first task of the Robinson Duck Farm County Park Habitat Restoration Feasibility Study was to inventory and map existing site conditions. Three parcels comprise the

Robinson Duck Farm. Two large parcels comprise the bulk of the former duck farm property, and a third, smaller parcel is located east of the entrance road, which is the site of a former church. There are also seven out-parcels that were not part of this study. A broader explanation of the parcels can be found in Chapter 2 of the report.

Once the inventory of the site was completed, several information sources and methods were used to prepare the mapping for the project. These included:

- Aerial Photography - 2007 high resolution aeriels were used as the starting point for the project base map.
- Topography - topographic mapping, compiled with the use of LIDAR, was supplied by the Suffolk County Department of Planning.
- Property lines were taken from the Suffolk County Tax Maps.
- Cultural and Historic Features were mapped using GPS survey locator.
- Tidal Wetland/Freshwater Wetland Maps were obtained from the NYSDEC.
- Upland Habits were determined using The Ecological Communities of New York State (Edinger, et al., 2002)

Using The Ecological Communities of New York State along with several site visits, the following communities were identified on the site:

- Oak-Pitch Pine Forest
- Heathland
- Successional Old Field
- Tidal Wetland
- Freshwater Wetland
- Cultural and Historic Features

Figure 1-1 shows the locations of each of the above habitats.

In accordance with the scope of work, the inventory was required to include an assessment of the existing conditions of the habitats throughout the property. During several field visits it was determined that the various habitats listed above were in poor condition. The following is an assessment of the individual communities on the property.

- Oak–Pitch Pine Forest- Consists mostly of forest fragments that are degraded, having been invaded by many non-native trees, vines and herbs. There is little to no

recruitment of the native species to this habitat and it is questionable as to whether or not these fragments can be saved as native woodlands.

- Heathland- Located in the area of the former duck farm pens and feeding areas, the heathland area is the best natural functioning community in the park. However, there is evidence of invasive species, such as mugwort and russian olive. At this point the invasive species incursion has not reached a critical stage.
- Successional Old Field- This community is found in the area of the old farm fields. Sometime during the 1990s, invasive mugwort began to appear and eventually out-compete the native grasses on a significant portion of the old field area. Also, a stand of young cherry trees is being out-competed by *Ailanthus* (tree-of-heaven), a highly invasive species.
- Tidal Wetland- There is one small tidal lagoon on the site located adjacent to former duck swim pond areas. Presently, the lagoon has limited open water and a heavily invaded *Phragmites australis* (common or giant reed) fringe.
- Freshwater Wetland- The freshwater wetlands on the site are heavily invaded with *Phragmites*. Due to this, the freshwater wetland has become a highly degraded, non-native plant community with little habitat value.
- Cultural and Historic Features- Interspersed throughout the property are cultural and historic features that are essentially insignificant in terms of habitat. However, with the removal of several of these structures, there will be an increase in the available space for the creation of new habitats.

### III. Past Management Practices

This 87 acre property is located in the hamlet of South Haven in the Town of Brookhaven. It was purchased by Suffolk County in 1991 as part of the County's 1986 Open Space Preservation Program. This program authorized the acquisition of properties "to preserve our precious water supply, wetlands, and woodlands". For many years previous to the County's acquisition, the land was a commercial duck farm, raising and selling hundreds of thousands of ducks for the food trade. The property included such structures as barns, equipment areas, swim ponds for the ducks, and extensive handling facilities. Also, many acres of the farm were used for raising corn, the main food supply for the ducks. Consequently, the landscape was degraded in expected ways, with soils

being modified, waste disposal sites scattered near the farm operation areas, and a row of eroding sand berms constructed adjacent to the Carmans River. Little of the historic Long Island vegetation is still present on the site, and many non-native invasive plant species are growing throughout the property, offering little in the way of habitat or food for the extensive local birdlife. There are invasive species, such as Norway maples and *Ailanthus* trees in the scattered woodlots, as well as alien shrubs. The sunny areas have a large extent of mugwort and giant reed (*Phragmites*), which resists the ability of native species to become established.

About 10 years after farm operations ended, some attempts were made to burn and plow under the weeds in the field, on the western portion of the property, and to plant some native grasses. Some mowing was done in subsequent years, but the fields are now covered predominantly with the weedy mugwort. The wetter soils near the old swim ponds have a heavy infestation of giant reed and this is spreading.

Although the historic vegetation of this area is an oak-pitch pine forest, little of this vegetation is now present on this land. The surrounding federally managed land of Wertheim National Wildlife Refuge has this habitat. Actions at the Refuge will influence the fate of the County property as seeds and animals disperse into the former duck farm. The U.S. Fish and Wildlife Service (USFWS) has significantly reduced *Phragmites* coverage by burning and chemically treating stands near the river.

#### IV. Concept Restoration Plan

The current site conditions include three residential structures, abandoned farm buildings, small woodlands and fields which contain many non-native, invasive plants; and wading ponds of the former operation, which are silting in and isolated from the Carmans River by man-made berms or dikes. The recommended habitat restoration for this property is a set of habitat types from grassland to forest to freshwater ponds. Having a variety of habitats increases the chance for high native biodiversity by giving a selection of food items, protection from enemies and resilience to climate change for resident species. Also, a diverse series of habitats is more interesting to people visiting the new park,

allowing them to see and learn about the differences among the various habitat types. Figure 1-2 shows the proposed conditions.

The old corn field, now predominantly covered by mugwort weeds, can become a diverse meadow of native grasses and wildflowers. In selecting species to plant, special attention should be given to wildflowers that support different native butterflies and grassland bird species. After the mugwort is removed, the soil chemistry may have to be modified, then seeds added, and shrub species planted at the edges. Small clusters of rocks and old logs are recommended near the edges to supply habitat for small mammals, insects, and other small animals. Having an edge of early successional shrubs and small trees is useful to supply cover and food for wildlife. Presently, this type of habitat is almost completely missing on-site. The central woodland near the cemetery is heavily covered by invasive trees and shrubs. These must be removed with care in order to retain the scattered native oaks. Young native trees and shrubs should then be planted under the remaining canopy. These young native trees and shrubs will be limited to the northern end of the zone while the beach heather is located in the southern portion of this zone. Periodic removal of any small woody recruits in this zone is desirable. This area may have to be fenced to minimize deer damage of the young plants.

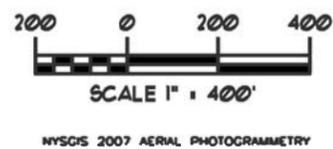
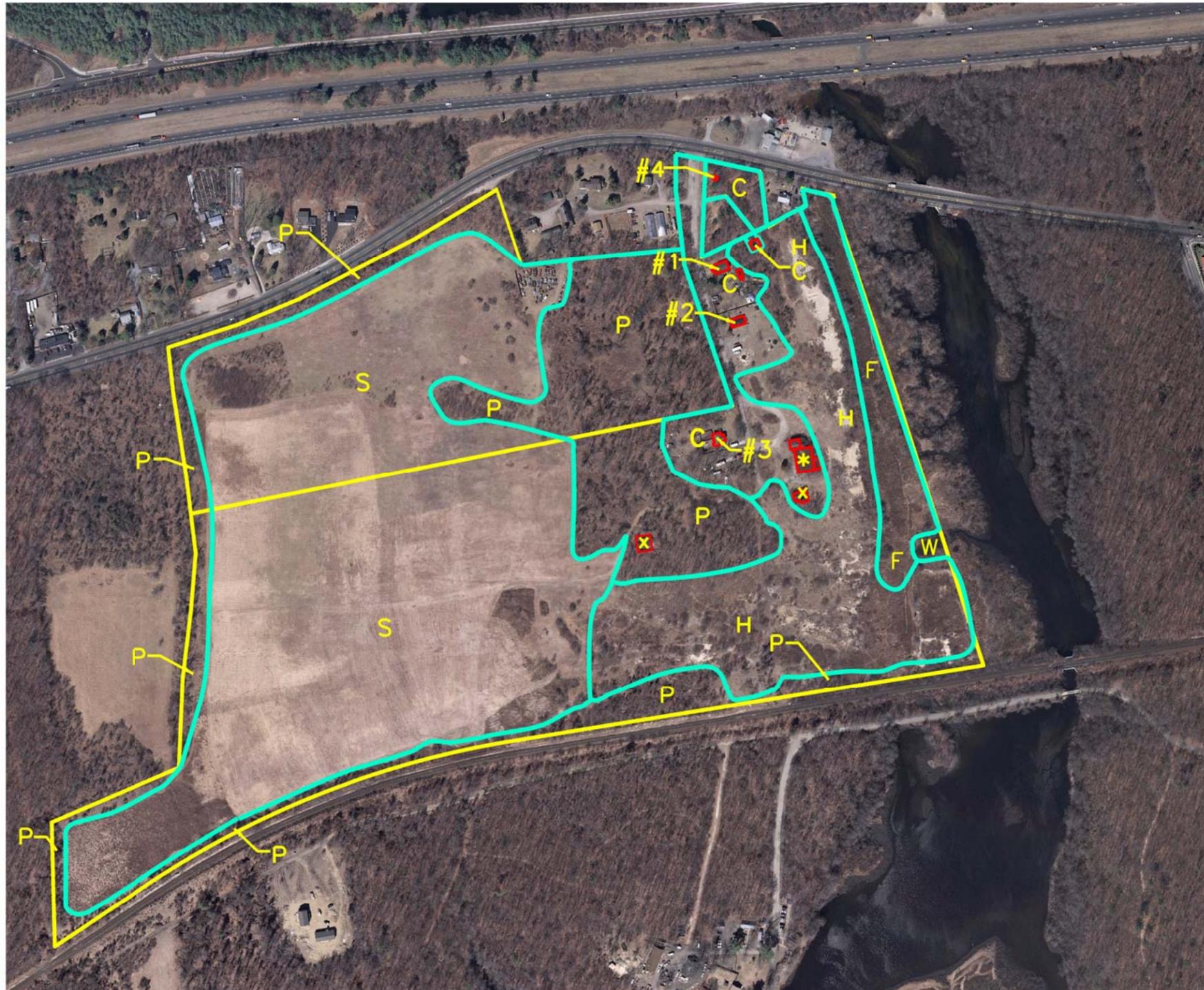
The southeast section of the duck farm has scattered beach heather plants and some seaside goldenrod on open sandy soils. This is a very interesting and unusual habitat type. Scattered invasives must be removed and the other complementary species, such as bayberry, shadblow, and wild black cherry should be added to enhance this habitat. The old sand dikes at the eastern end of the property may be removed. A few however may stay to supply viewing points of the river's wildlife. The heavy infestation of common reed (*Phragmites*) must be removed. The plants can be dug out, cut, and may need to be treated with herbicide occasionally, as well. The new landform must then be stabilized with native wetland herbs and shrubs. Coordination with the USFWS, which shares this boundary with the duck farm, would be most beneficial to both jurisdictions.

Additional possibilities for this site would be to grow small native plants on site in a nursery setting to minimize restoration costs and relocate native plants out of the large

invasive stands. A small part of the property could also be used to provide a stockpile of dead wood salvaged from the site and stone which would then be placed in the habitats for use by insects and small mammals.

The ecological rewards of doing this restoration are many. It will restore some of the natural habitats on this site, and thus bring back ecological functioning to the landscape, and help minimize management costs. Potential climate change can be better addressed by adding more species which enhances the resiliency of the ecological communities found nearby. Table 4-1 of the Park Management and Habitat Restoration Report contains unit cost estimates for the preferred restoration alternatives identified for each habitat type.

In addition to the ecological studies and analysis described herein, the project included “due diligence” investigations for the presence of site contamination resulting from prior uses. These due diligence investigations produced an Inventory of Environmental Conditions, presented in Appendix 3, and a Phase II Environmental Site Analysis, presented in Appendix 4 of the Park Management and Habitat Restoration Report.



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\* excerpted from (F.O.I.L.) the provisions of the Freedom of Information Law (Public Officers Law Article 6 Section 84-90) by section 87.2g

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- LINE LEGEND**
- - PROPERTY LINE
  - - HABITAT BOUNDARIES
  - - BUILDINGS
- FEATURE LEGEND**
- C - CULTURAL FEATURES
  - F - FRESHWATER WETLAND
  - S - SUCCESSIONAL OLD FIELD
  - H - HEATHLAND
  - P - OAK-PITCH PINE FOREST
  - W - TIDAL WETLAND
  - # - HISTORICAL STRUCTURE
  - \* - BUILDING TO BE PARTIALLY DEMOLISHED
  - X - BUILDING TO BE DEMOLISHED
  - # 1-3 HISTORIC HOUSES
  - # 4 APPROXIMATE LOCATION OF CHURCH STAIRS

Client:  
 Suffolk County Department  
 of Planning

Project:  
 ROBINSON DUCK FARM  
 COUNTY PARK  
 HABITAT RESTORATION  
 FEASIBILITY STUDY

No.	Date	Revision	Aprvd.

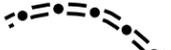
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**EXISTING CONDITIONS**

Date: OCT. 12, 2009	Drawn By: KAH
Scale: AS SHOWN	Checked By: JRG

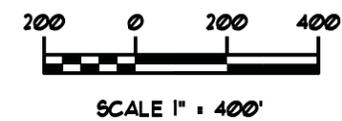
Drawing Number:  
**FIGURE 1-1**

Project Number: 2009011



-  **RESTING SHELTER LOCATION**  
 PLACED AT VISTA LOCATIONS. MAY CONTAIN SEATING & INTERPRETIVE/ KIOSK INFORMATION
-  **PERMANENT PEDESTRIAN TRAIL**
-  **SEASONAL PEDESTRIAN TRAIL**
-  **ENHANCED SWALE AREA**  
 ALLOWS FOR PERIODIC VARIANCE OF SOIL MOISTURE CONDITIONS & SURVIVAL OF RELATED MEADOW VEGETATION
-  **ADJUSTED LANDFORM**  
 ENHANCES HABITAT DIVERSITY & PROVIDES OVERLOOK OPPORTUNITIES
-  **GATHERED ROCK/WOOD PILES**  
 ENHANCES HABITAT DIVERSITY  
 PLACED ADJACENT TO TRAIL TO AVOID INTERFERENCE WITH SITE MAINTENANCE ACTIVITIES

NOTE; PRELIMINARY DESIGN IS CONCEPTUAL AND SUBJECT TO CHANGE



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Client:  
 Suffolk County Department of Planning

Project:  
 ROBINSON DUCK FARM COUNTY PARK HABITAT RESTORATION FEASIBILITY STUDY

No.	Date	Revision	Aprvd.

Drawing Title:  
**PROPOSED CONDITIONS**

Date: JANUARY, 2010	Drawn By: KAH
Scale: AS SHOWN	Checked By: JRG

Drawing Number:  
**FIGURE 1-2**

Project Number: 2009011