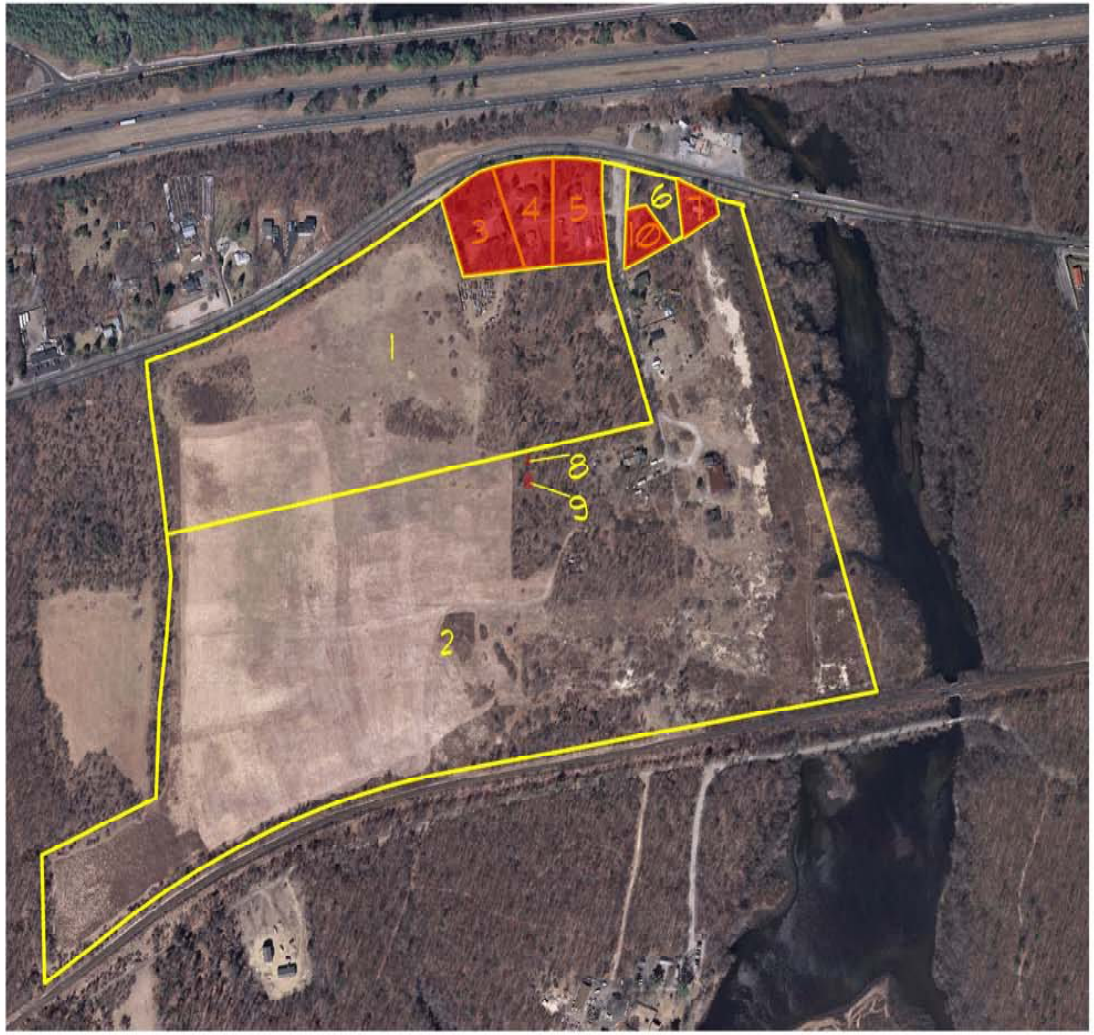
Habitat Restoration Feasibility Study at the Robinson Duck Farm County Park

October 14, 2009



200 0 200 400

SCALE 1" = 200'

NYSGIS 2007 AERIAL PHOTOGRAMMETRY

NORTH

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Real Property Taxmap parcel linework used with permission of Suffolk County Real Property Tax Service Agency (R.P.T.S.A.). This rendering is a DRAFT MAP in that 1) the data displayed is an interagency or intra agency work* produced for the purpose of identifying and correcting data. It is not a final agency determination. It is not statistical or factual compilation of data. In some cases correct data has been left out and questionable or inaccurate data has been exaggerated to help identify errors. In short, this is a DRAFT MAP produced in an effort to aid in the correction of data and is not held out as being complete or accurate in any way.

* 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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Construction Engineers & Inspectors
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

- OUTPARCELS
- PROPERTY LINE

#	TAX MAP #	ACRES
1	0200-84900-0300-011000	24.1
2	0200-87000-0100-001005	62.2
3	0200-84900-0300-008000	1.4
4	0200-84900-0300-010004	1.2
5	0200-84900-0300-010003	1.3
6	0200-84900-0300-004002	0.6
7	0200-84900-0300-007002	0.3
8	0200-87000-0100-001003	0.01
9	0200-87000-0100-001004	0.04
10	0200-84900-0300-005000	0.4

Client:
Suffolk County Department of Planning

Project:
ROBINSON DUCK FARM
COUNTY PARK
HABITAT RESTORATION
FEASIBILITY STUDY

No.	Date	Revision	Apvd

Drawing Title:
BASE MAP

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

Drawing Number:

Project Number: 2009011

200 0 200 400

SCALE 1" = 200'

CONTOUR INTERVAL = 1 FOOT

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PROPERTY LINE

Client:
Suffolk County Department of Planning

Project:
ROBINSON DUCK FARM
COUNTY PARK
HABITAT RESTORATION
FEASIBILITY STUDY

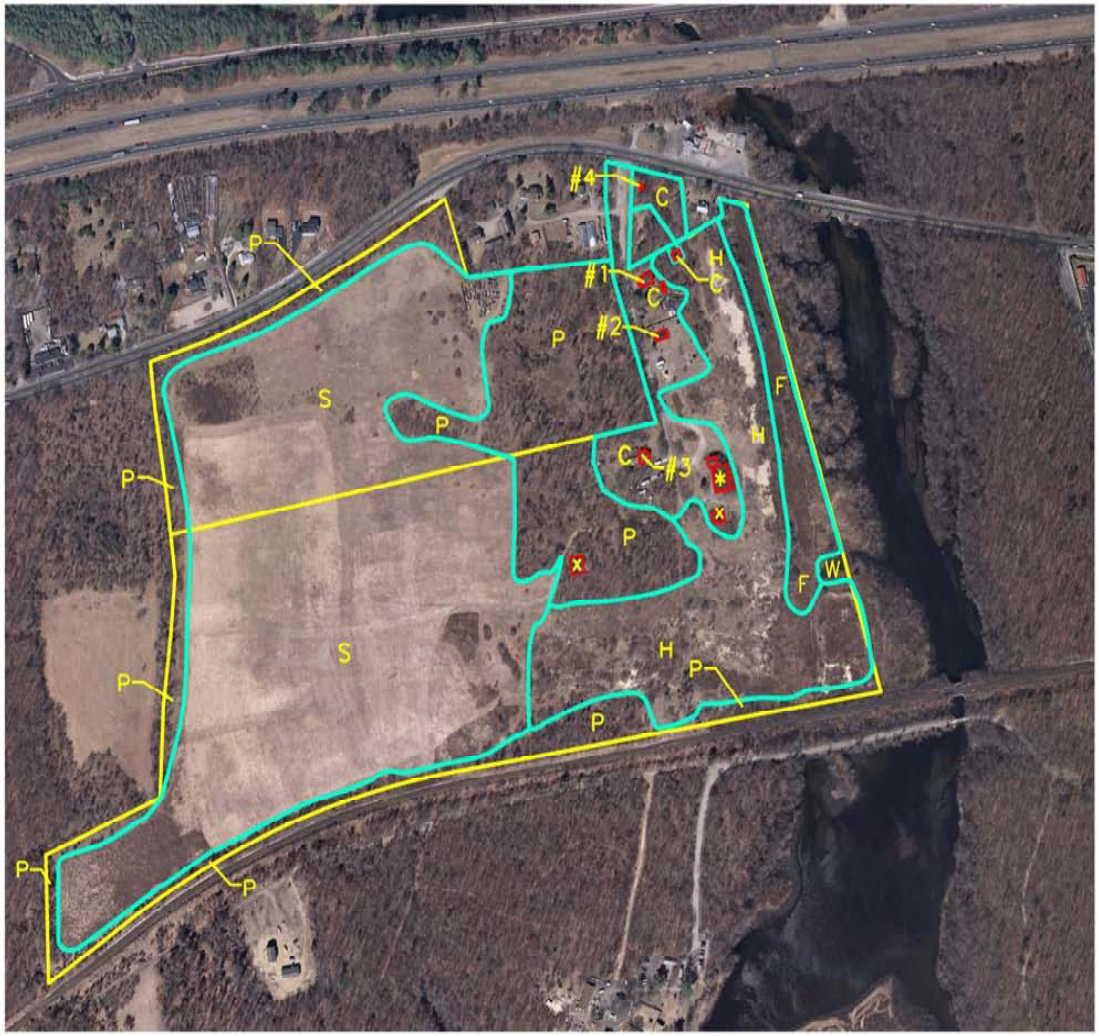
No.	Date	Revision	Apvd

Drawing Title:
TOPOGRAPHIC MAP

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

Drawing Number:

Project Number: 2009011



200 0 200 400

SCALE 1" = 200'

NYSGIS 2007 AERIAL PHOTOGRAMMETRY

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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 - PITCH PINE-OAK FOREST
W - TIDAL WETLAND
- HISTORICAL STRUCTURE
* - BUILDING TO BE PARTIALLY DEMOLISHED
X - BUILDING TO BE DEMOLISHED

Client:
Suffolk County Department of Planning

Project:
ROBINSON DUCK FARM
COUNTY PARK
HABITAT RESTORATION
FEASIBILITY STUDY

No.	Date	Revision	Apvd.

Drawing Title:
HABITAT MAP

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

Drawing Number:

Project Number: 2009011

Task 3 – Phase II Environmental Site Analysis

Based upon Task 2 – Identify Environmental Issues, the following concerns were noted:

- Sampling of the former duck pond area sediments revealed elevated levels of Semi-Volatile Organic Compounds (SVOCs), metals, nitrogen, and phosphorus;
- The three residential buildings have fuel oil aboveground storage tanks (ASTs) located in the basement;
- The northern farm building was identified to potentially have an onsite sanitary system;
- The southern farm building was identified to potentially have a former garage / maintenance use. Potential underground storage tank (UST) piping was also identified;

Task 3 – Phase II Environmental Site Analysis

- Suspected leaching structures were identified northwest of the north farm building. These structures appeared partially collapsed and pose a potential safety hazard;
- Former leaching structures were identified east of the former aircraft hangar. These structures are open and pose a potential safety hazard;
- A former coal storage area was identified;
- The field located on the western portion of the subject historically was used as a farm field;
- A trash / debris pile was located in the wooded area between the residential homes and the former farm field;

PWGC evaluated the identified environmental issues with respect to the site restoration options when finalizing the Phase II scope. Based upon this review, it was determined that the following issues would not require assessment at this time as they will not effect the Habitat Restoration Feasibility Study and would be addressed during the site development phase:

- The potential onsite sanitary system associated with the northern farm building;
- The former coal storage area;
- The trash / debris pile located in the wooded area between the residential homes and the former farm field.

Phase II

- In order to address the outstanding issues, a Phase I was performed. Findings of the Phase II by issue as follows.

Suspected Leaching Structures, Northwest of North Farm Building

- Excavation of area revealed foundation of former building. No leaching structures noted. No sampling was warranted. No further action recommended.

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

View of test pit showing concrete an piping of old building.

Southern Farm Building

Further inspection revealed no indication that minor staining within building impacted subsurface. Piping observed adjacent to building revealed no indication of a tank. No sampling was warranted. No further action recommended.

Location of the southern farm building

View of test pit adjacent to building.

Three Residential Buildings

Tanks found to be in good condition. No signs of leaks noted. No sampling was warranted. No further action recommended.

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

View of typical tank encountered in residential buildings.

Former Leaching Structures, East of Former Hangar

Both leaching pools excavated and sampled. Laboratory results within allowable levels. No further sampling / action warranted.

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

View of the leaching pools during excavation

Former Agricultural Field

Two test pits performed. Samples revealed potentially elevated levels of arsenic. Nitrate, nitrogen, and phosphorus also detected higher than typical background levels. Further assessment will likely be required.

Location of former agricultural fields

View of the soils observed in the test pit.

Former Duck Swim Pond

Four sediment samples from swim pond area were collected. Elevated levels of several metals compounds detected. In addition nitrate, nitrogen, and phosphorus were also elevated.

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

View of typical sediments encountered in former swim pond area.

Conclusions – Farm Field

Further assessment of arsenic levels as well as nitrate, nitrogen, and phosphorus is recommended for the former farm field.

These concentrations will need to be considered during the habitat restoration of the former farm field.

Conclusions – Former Swim Ponds

Elevated concentrations of several metals compounds as well as nitrate, nitrogen, are present.

These concentrations will need to be considered during the habitat restoration of the former swim pond area.

Care will be required to avoid release of such sediments into the Carmans River.

Soils from this area, if removed, may require special handling for disposal purposes.

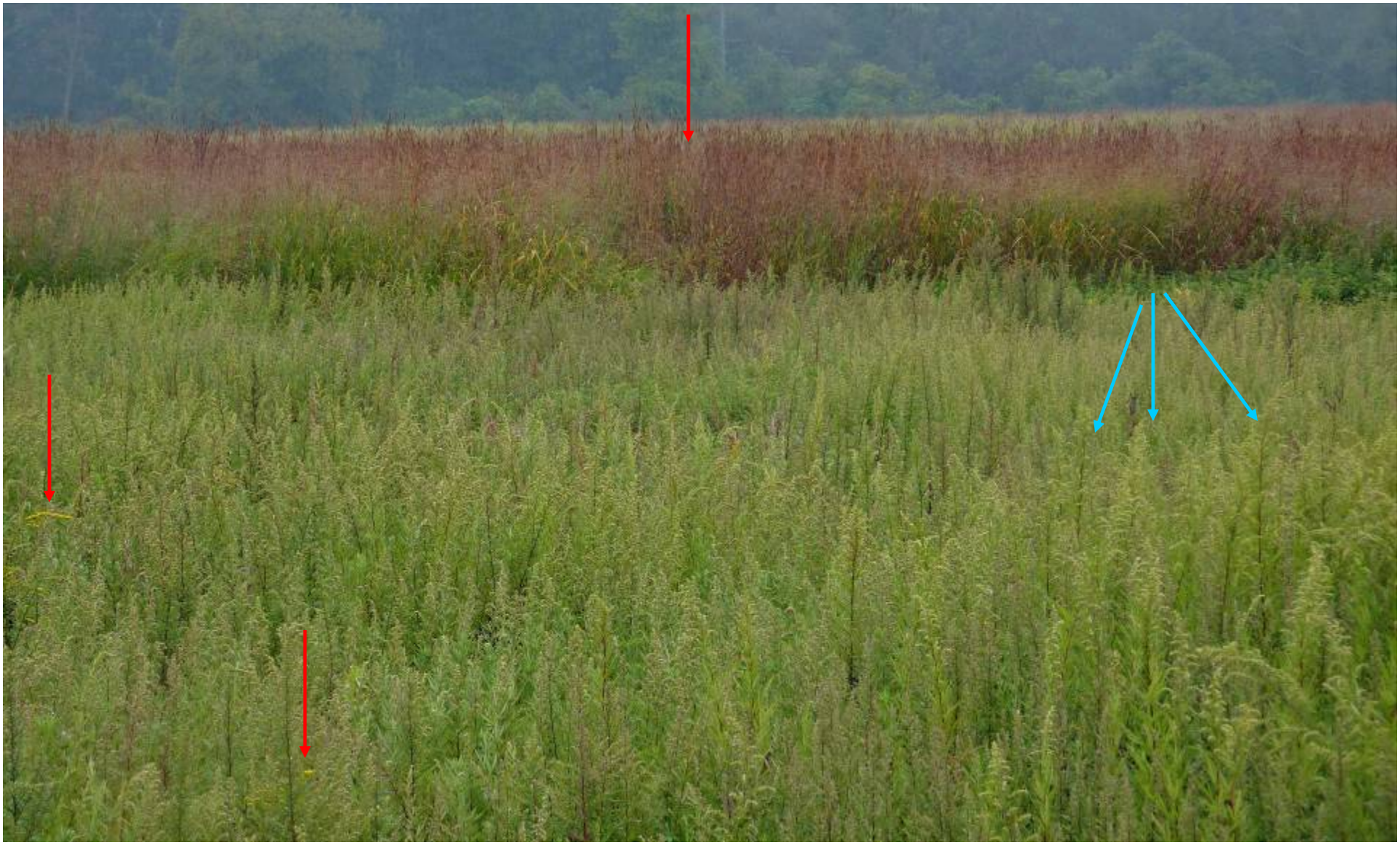
Successional Old Field

Dominant cover of mugwort in foreground

Red-tinged native grass in background

Red = native perennials/grass Blue = mugwort

Successional Old Field



Red = native perennials Blue = mugwort

Successional Old Field

Successional Old Field

Option 1

- Mow, treat with herbicide, burn, and seed old field to remove invasive plants such as mugwort. Possibly remove topsoil containing mugwort rhizomes.
- Add soil amendments to decrease pH and limit nitrogen availability
- Restore native meadow vegetation
- Establish shrublands near eastern edges

Option 2

- Continue mowing but change the mowing schedule to decrease mugwort populations.
- Add grassland seed mixes to enhance native meadow vegetation.

Option 3

- Allow areas of field revert to successional forest (must monitor for invasive species)

NOTE: Addition of microhabitat structure (rock piles, logs) that will increase animal biodiversity is recommended along selected perimeter areas

Tidal and Freshwater Wetlands

Tidal and Freshwater Wetlands

Artificial berms with common reed

Option 1

- Remove some/all dikes
- Dredge to remove common reed (*Phragmites*) rhizomes
- Cut and treat with herbicide and/or fire
- Restore native vegetation and stabilize banks

Tidal and Freshwater Wetlands

Option 2

- Maintain and restore dikes to create resting ponds adjacent to the tidal zones.
- Create connections among the smaller ponds
- Cut and treat with herbicide and/or fire to remove common reed (*Phragmites*)
- Restore native vegetation and stabilize banks of the dikes

Option 3

- Removal of common reed (*Phragmites*) by excavation.
  Follow steps in Option 1 or Option 2.

Option 4

- Removal of common reed (*Phragmites*) through repeat mowing.
  Follow steps in Option 1 or Option 2.

*NOTE: all common reed (*Phragmites*) control and management must be closely coordinated with Federal land management staff due to the shared border by USFWS and Suffolk County along the Carmans River.

Pitch Pine-Oak Forest

Note: much degraded, little of original character is present.

Invasive species are predominant.

Pitch Pine-Oak Forest

Dense, heavy, invasive vines

Dominated by black locust and tree-of-heaven

Pitch Pine-Oak Forest

Pitch Pine-Oak Forest

Option 1

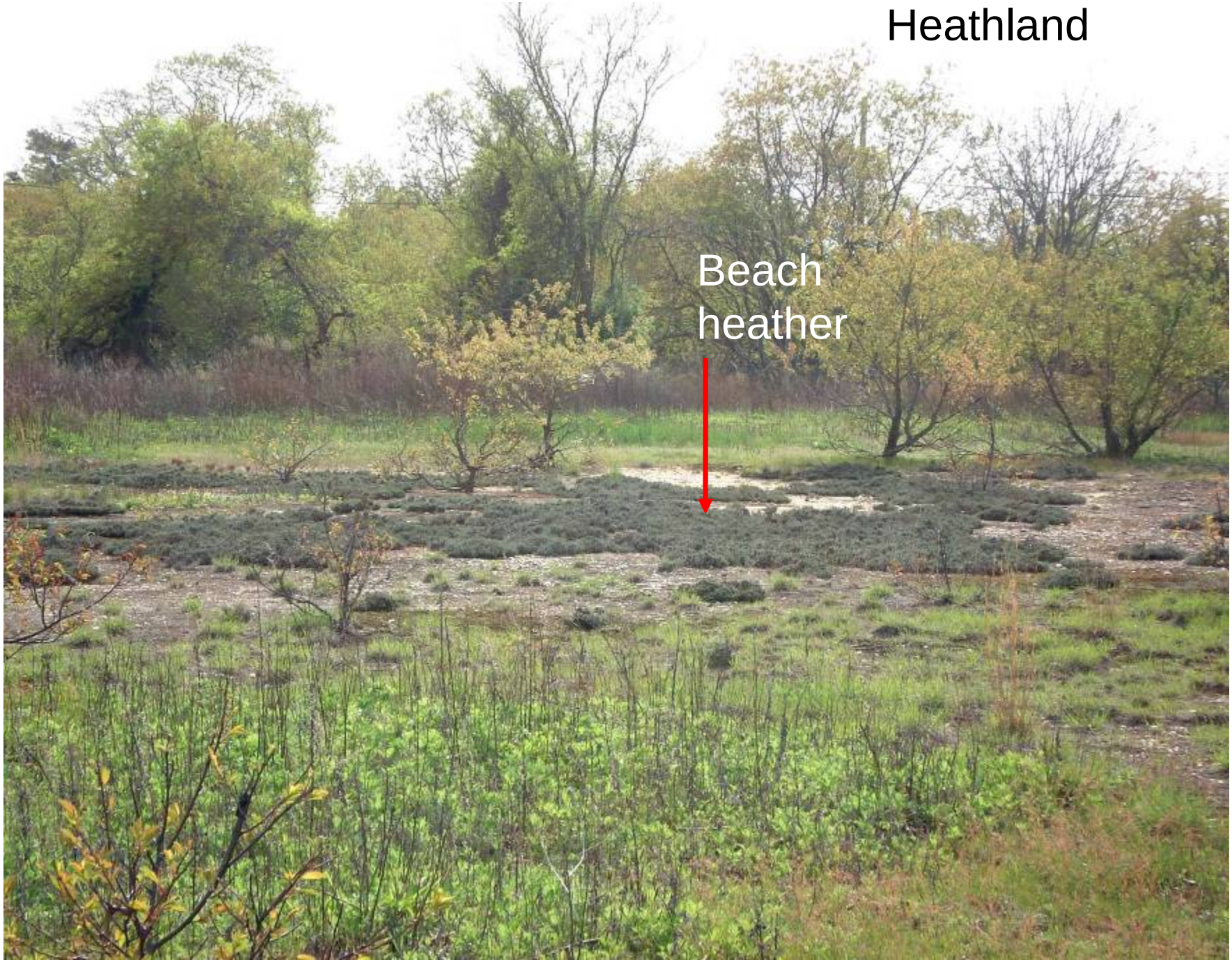
- Remove invasive species (vines, shrubs, herbs, most trees)
- Plant shrubs and canopy trees native to pitch pine-oak forest

Option 2

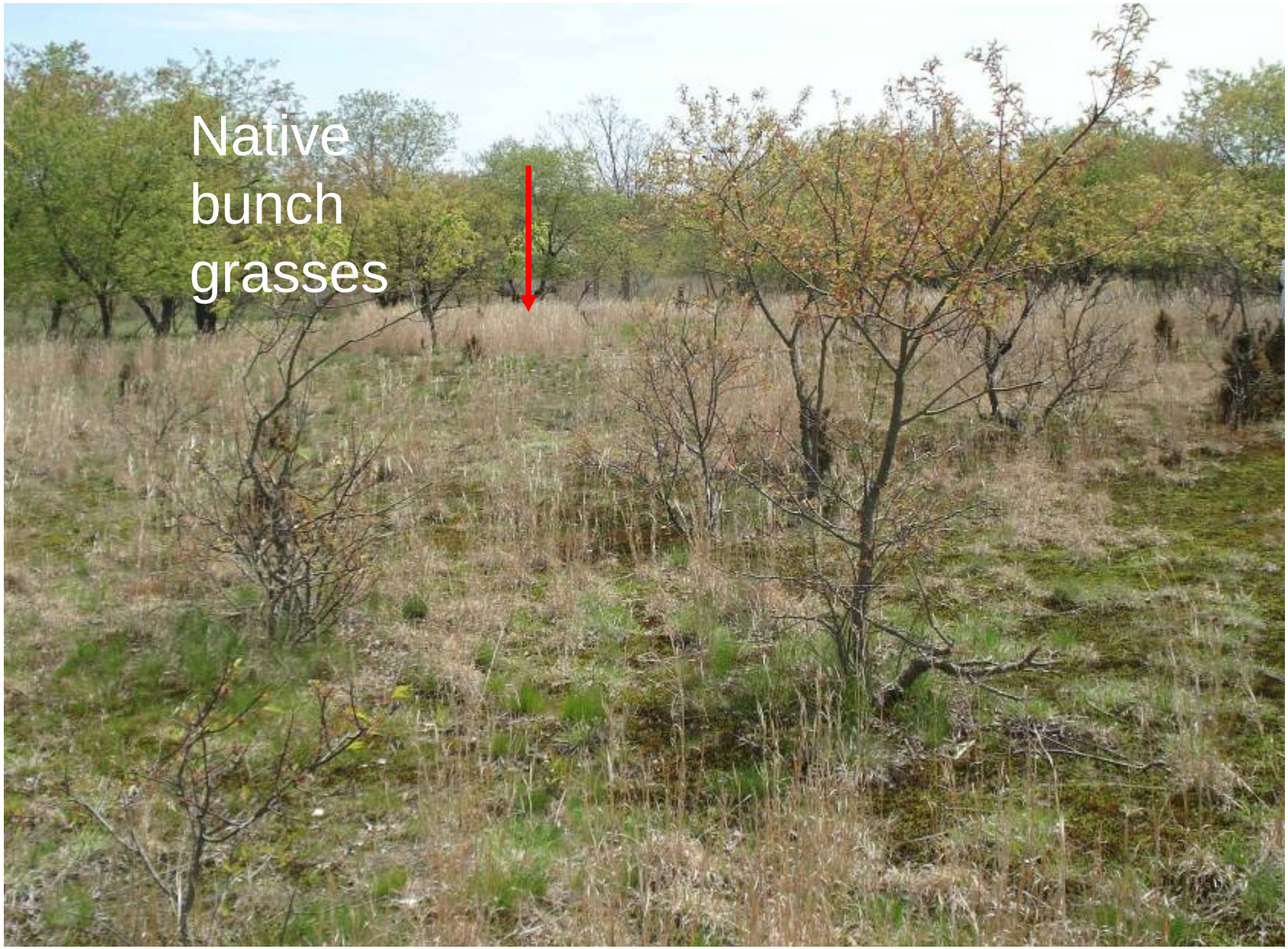
- Remove invasive species in degraded forests

Option 3

- Along the southwest border of RDF adjacent to federal land, remove invasive species and install native shrubs and tree seedling.


Heathland
Beach
heather

Heathland



Heathland

Option 1

- Facilitate further establishment of beach heather
- Limit disturbance
- Remove encroaching invasive species
- Plant surrounding areas with native grasses and shrubs

Option 2

- Remove sandy dune areas as necessary during wetland restoration process
- Re-grade sandy areas
- Restore riparian zone vegetation

Option 3

- No management except limiting disturbance

Additional Recommendations

- Create on site either a nursery or refuge zone for native plant collection.

- Designate an area on the site near area used for maintenance equipment storage for dead wood and other restoration materials that can serve to create habitat complexity for small mammals, reptiles, amphibians, insects, and other macroinvertebrates.