

Memo

To: Chris Gajeski, The Louis Berger Group Inc
1001 Elm Street Suite 204
Manchester NH 03101

From: Melissa Coppola, NH Natural Heritage Bureau
Date: 1/19/2007 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: 7137
Project type: Restoration feasibility study
cc: Kim Tuttle

Town: Hampton, Hampton Falls
Location: JI 1750: Taylor River

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments:

Natural Community	State ¹	Federal	Notes
Brackish marsh	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
High salt marsh	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Low salt marsh	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Saline/brackish intertidal flat	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Saline/brackish subtidal channel/bay bottom	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.



Memo



NH NATURAL HERITAGE BUREAU

Tidal creek bottom

Threats to these communities are primarily alterations to water level or flow regimes, and increased input of nutrients and pollutants in storm runoff.

Plant species

Salt-loving Spike-rush (*Eleocharis uniglumis*)*

State¹ T -- Federal --

Notes
Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.

Salt-marsh Gerardia (*Agalinis maritima*)

T --

Notes
A wildflower that grows in very shallow, briefly flooded forb pannes in the high salt marsh. Threats are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat), activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.

Slender Blue Flag (*Iris prismatica*)

T --

Notes
Since this plant grows at wetland edges (marshes, wet meadows, seashore), it would be threatened by changes in local water levels or shoreline development.

Yellow Thistle (*Cirsium horridulum*)

E --

Notes
This species usually occurs on uplands adjacent to salt marshes and is threatened by habitat loss due to development.

Vertebrate species

Banded Sunfish (*Emneacanthus obesus*)*

State¹ -- Federal --

Notes
Contact the NH Fish & Game Dept (see below).

Saltmarsh Sharp-tailed Sparrow (*Ammodramus caudacutus*)

-- --

Notes
Contact the NH Fish & Game Dept (see below).

Willet (*Catoptrophorus semipalmatus*)

-- --

Notes
Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. For some purposes, including legal requirements for state wetland permits, the fact that no species of concern are known to be present is sufficient. However, an on-site survey would provide better information on what species and communities are indeed present.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
PO Box 1856
Concord NH 03302-1856

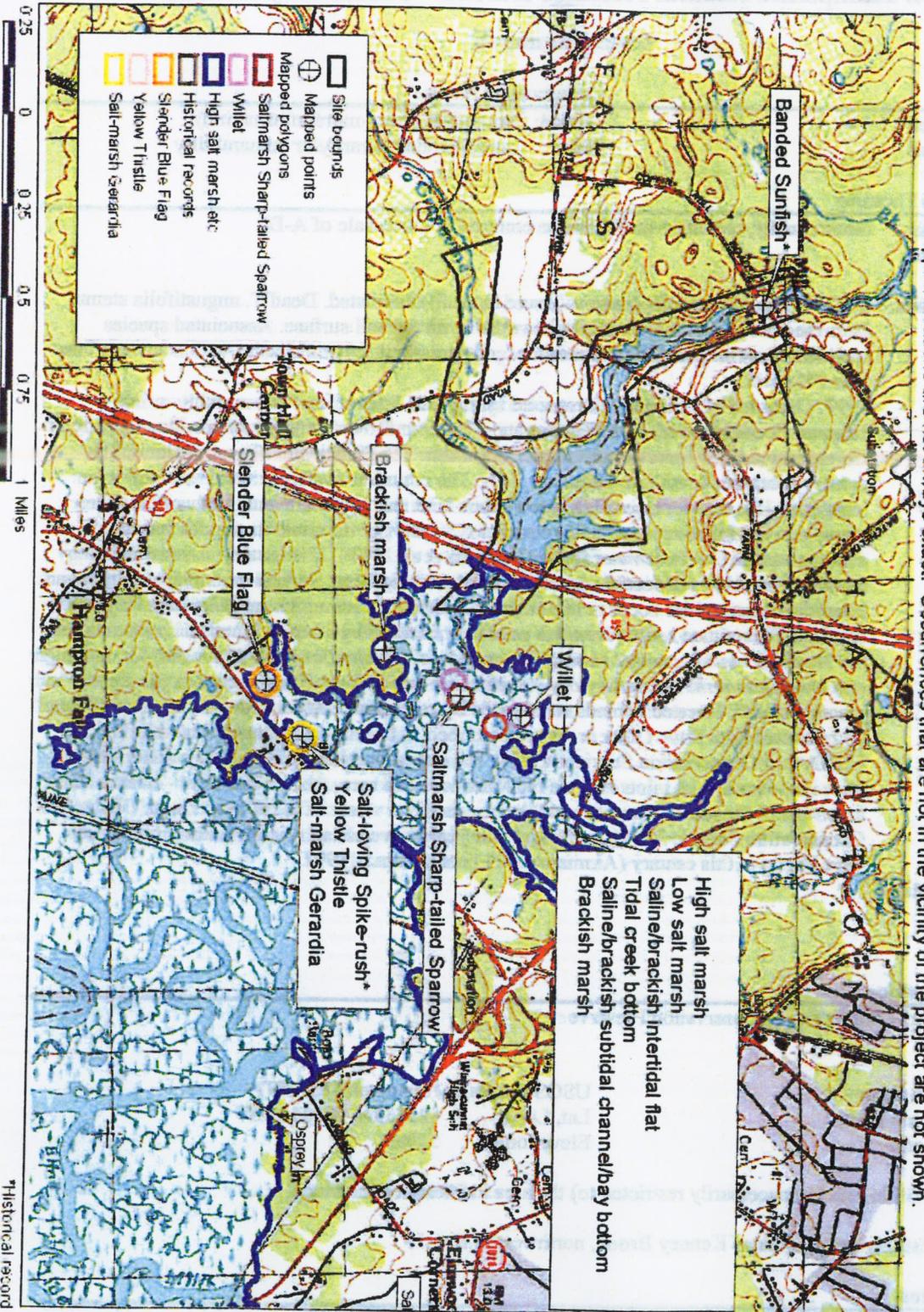
NHB: 7137



NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



1 24003

Valid for one year from this date

19 Jan 2007

New Hampshire Natural Heritage Bureau - Community Record

Brackish marsh

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Imperiled due to rarity or vulnerability

Description at this Location	
Conservation Rank:	Good quality, condition and lanscape context ('B' on a scale of A-D).
Comments on Rank:	

Detailed Description: 1997: *Typha angustifolia* (narrow-leaved cat-tail) dominated. Dead *T. angustifolia* stems from the previous year were thick above the hydrated soil surface. Associated species included *Spartina patens* (salt-meadow cord-grass) and several species with a cover of less than 1% each.

General Area: 1997: Occurred in a cove with restricted spring-tide "sheet flow" (bi-monthly or less frequent flooding event). The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Subtidal communities are *tidal creek bottom* and Undifferentiated *saline/brackish subtidal channel/bay bottom*. Intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and high and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments:
Management
Comments:

Comments: Location	
Survey Site Name:	Marsh Lane Conservation Preserve
Managed By:	

County: Rockingham	USGS quad(s): Hampton (4207087)
Town(s): Hampton Falls	Lat, Long: 425539N, 0705132W
Size: 1.7 acres	Elevation: 5 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Estuary near mouth of Kenney Brook, northwest of Rte. 1.

Dates documented	
First reported: 1997-10-08	Last reported: 1997-10-08

Nichols, Bill. 1997. Field survey to Hampton Salt Marsh on October 8.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

Project Name	County	Town	Date
Blackish Marsh	Rockingham	Hampton Harbor	1997
Location at this location	Good quality, condition and landscape context (B+ on a scale of A-D). Rank is for larger area visited (Taylor River). Other sites B- (three sites) or C (Blackish Marsh).		
Conservation Status	Global: Not listed (need more information) State: Impaired due to early or vulnerability		
Legal Status	Federal: Not listed State: Not listed		
Detailed Description	1997: A characteristic mix of graminoids includes <i>Spartina patens</i> var. <i>patens</i> (marsh creeping bent-grass), <i>Spartina patens</i> (salt-marsh cord-grass), <i>Juncus roemerianus</i> (salt marsh rush), <i>Solidago sempervirens</i> (southern goldenrod), <i>Dicellaetha spicata</i> (spike-grass), <i>Juncus roemerianus</i> var. <i>virginicus</i> (short rush), <i>Elymus repens</i> (quack-grass), <i>Spartina patens</i> (fresh water cord-grass, sough-grass), <i>Carex lasiocarpa</i> (slender salt sedge), <i>Distichlis spicata</i> (twent grass), <i>Scirpus americanus</i> (low salt sedge), <i>Spartina patens</i> (salt-marsh cord-grass) and several other less frequent species. At the school site, <i>Spartina patens</i> (marsh cord-grass) and <i>Juncus roemerianus</i> (salt-marsh rush) are the dominant species. The area is dominated by <i>Juncus roemerianus</i> (salt-marsh rush) in the middle with <i>Quercus bicolor</i> (swamp white oak), <i>Taxodium radicans</i> (climbing poison ivy), and <i>Rhus typhina</i> (winged locust).		
General Area	1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6300 acres of salt marsh in the area. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an irregular line drawn across Hampton Harbor inlet and upstream and inland to where ocean-derived salts are lost through tidal flow. The period of average annual low freshwater flow is equal to 0.5 years per thousand during the period of average annual low freshwater flow (Cowan et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several estuarine habitats and intertidal communities occur in this estuary. Examples include salt marsh, <i>Spartina patens</i> and <i>Juncus roemerianus</i> salt marsh, and <i>Spartina patens</i> and <i>Juncus roemerianus</i> salt marsh. <i>Spartina patens</i> and <i>Juncus roemerianus</i> salt marsh occur at the site as "salt marsh islands", forested islands surrounded by salt marsh. Most of the estuary is unaffected by reduced tidal flow. Other areas are described as having an reduced tidal flow by the USDA Soil Conservation Service (1994). The largest portion of the estuary determined to have inadequate tidal flow includes the Meadow Pond area, the Taylor River - Black River area west of the rail road track, and the Brown River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Anonymous, A.P. pers. comm., 1997).		
General Comments	1997: Tidal flow is reduced by salt water only during spring tides and storm surge. Support a greater diversity of plants and generally flooded less frequently than the coastal salt marsh. Elevationally higher, received more freshwater input, and experienced less frequent tidal flooding than the high salt marsh. Occasionally occurs along the upper margins of the high salt marsh where sufficient fresh water runoff or groundwater discharge flows into the marsh surface. This hydrologic regime supports brackish marsh species and other species most often found in fresh or salt marshes but tolerant of brackish conditions and able to successfully compete in this environment.		
Management	Comments:		
Contact: Location	Sandy Site Home - Hampton Harbor		
Managed by:	ASNH to Properties, Inc. - Pelton		
USGS project:	Hampton (410787)		

New Hampshire Natural Heritage Bureau - Community Record

Brackish marsh

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and lanscape context ('B' on a scale of A-D).
Comments on Rank: Rank is for largest area visited (Taylor River). Others were B- (three sites) or C (Seabrook Salt Marsh).

Detailed Description: 1997: A characteristic mix of graminoids includes *Agrostis stolonifera* var. *palustris* (marsh creeping bent-grass), *Spartina patens* (salt-meadow cord-grass), *Juncus gerardii* (salt marsh rush), *Solidago sempervirens* (seaside goldenrod), *Distichlis spicata* (spike-grass), *Juncus arcticus* var. *littoralis* (shore rush), *Elytrigia repens* (quack-grass), *Spartina pectinata* (fresh-water cord-grass, slough-grass), *Carex paleacea* (chaffy salt sedge), *Hierochloa odorata* (sweet grass), *Aster novi-belgii* (New York aster), *Scirpus pungens* (three-square rush), and several other less frequent species. At the Seabrook School area, ephemeral runoff channel/stream entering from west; area dominated by *Lythrum salicaria* (purple loosestrife). Small elevated knoll in middle with *Quercus bicolor* (swamp white oak), *Toxicodendron radicans* (climbing poison ivy), and *Rosa virginiana* (Virginia rose).

General Area: 1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Exemplary subtidal communities are *tidal creek bottom* and undifferentiated *saline/brackish subtidal channel/bay bottom*. Exemplary intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and high and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments: 1997: Tidally flooded by salt water only during spring tides and storm surges. Supports a greater diversity of plants and generally flooded less frequently than the robust forb brackish marsh. Elevationally higher, received more freshwater input, and experienced less frequent tidal flooding than the high salt marsh. Occasionally occurs along the upper margins of the high salt marsh where sufficient fresh water runoff or groundwater discharge flows onto the marsh surface. This hydrologic regime supports brackish marsh species and other species most often found in fresh or salt marshes but tolerant of brackish conditions and able to successfully compete in this environment.

Management Comments:

Comments: Location

Survey Site Name: Hampton Harbor
Managed By: ASNH to Properties, Inc. - Pelton

County: Rockingham

USGS quad(s): Hampton (4207087)

Town(s): Hampton
Size: 4634.2 acres

Lat, Long: 425407N, 0704957W
Elevation: 5 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. 1997: Five areas visited. Wrights Island (park at Seabrook Sewage Treatment Plant), Farm Brook (drive to east end of Depot Road and park in lot), two areas at Seabrook School Salt Marsh (park behind the Seabrook Elementary/Middle School off of Walton Road), and Taylor River (along the northern portions of the Taylor River Estuary from Drakes Creek to Tide Mill Creek).

Dates documented

First reported: 1997-07-05 Last reported: 1997-10-06

Nichols, Bill. 1997. Field survey to Blackwater River Salt Marsh on July 5.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

New Hampshire Natural Heritage Bureau - Community Record

High salt marsh

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rare or uncommon

Description at this Location

Conservation Rank: Excellent quality, condition and lanscape context ('A' on a scale of A-D).
 Comments on Rank: These ranks are for the entire estuary.

Detailed Description: 1997: In addition to *Spartina patens* (salt-meadow cord-grass) and *Juncus gerardii* (salt marsh rush), other common plants on the high marsh included smooth cord-grass (short form) and *Distichlis spicata* (spike-grass). *D. spicata* formed pure stands in wetter, more poorly drained areas, or mixed with *S. patens*, growing at similar elevations on the high marsh. *J. gerardii* dominated landward of salt meadow-grass in narrow vegetative zones with decreased tidal flooding and soil water salinity, beginning at about mean spring high water. This zone had the highest species richness within the high marsh and included *Solidago sempervirens* (seaside goldenrod), *Panicum virgatum* (switch-grass), *Hierochloe odorata* (sweet grass), *Carex hormathodes* (necklace sedge), *Festuca rubra* (red fescue), *Aster novi-belgii* (New York aster), *Elytrigia repens* (quack-grass), *Spartina pectinata* (fresh-water cord-grass), and *Potentilla anserina* (silverweed).

General Area: 1997: At Hampton Harbor, the mean tidal range is 8.3 feet with spring tides averaging 9.5 feet. Here, the high marsh rises from ca. 4 feet above mean sea level at its lower end to 5 feet above mean sea level at the landward limit of the salt marsh rush zone. The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Subtidal communities include the undifferentiated *saline/brackish subtidal channel/bay bottom* and *tidal creek bottom*. Other intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments:

Management 1997: Marsh ditched heavily; greenhead boxes present.

Comments:

Comments: Location

Survey Site Name: Hampton Harbor
 Managed By: ASNH to Properties, Inc. - Pelton

County: Rockingham USGS quad(s): Hampton (4207087)
 Town(s): Hampton Lat, Long: 425407N, 0704957W
 Size: 4634.2 acres Elevation: 4 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs behind barrier beaches, along inland bays, and other areas protected from high-energy wave action.

Dates documented

First reported: 1997-07-05 Last reported: 1997-10-08

Nichols, Bill. 1997. Field survey to Blackwater River Salt Marsh on July 5.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

Location	Survey Site Name	Managed by	County	Town(s)	Size	Precision	Directions	Dates Documented
Blackwater River Estuary	Blackwater River Estuary	ASNH to Proprietor, Inc. - Feltor	Rockingham	Hampton	403+3 acres	Within (but not necessarily restricted to) the area indicated on the map.	Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs behind barrier beaches, along inland bays, and other areas protected from high-energy wave action.	1997-07-05 1997-10-08

New Hampshire Natural Heritage Bureau - Community Record

Low salt marsh

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rare or uncommon

Description at this Location	
Conservation Rank:	Excellent quality, condition and lanscape context ('A' on a scale of A-D).
Comments on Rank:	These ranks are for the entire estuary.

Detailed Description: 1997: No details.

General Area: 1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Subtidal communities include the undifferentiated *saline/brackish subtidal channel/bay bottom* and *tidal creek bottom*. Other intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and *high salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments:
Management
Comments:

Comments: Location	
Survey Site Name:	Hampton Harbor
Managed By:	ASNH to Properties, Inc. - Pelton

County: Rockingham	USGS quad(s): Hampton (4207087)
Town(s): Hampton	Lat, Long: 425407N, 0704957W
Size: 4634.2 acres	Elevation: 4 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs behind barrier beaches, along inland bays, and other areas protected from high-energy wave action.

Dates documented	
First reported:	1997-07-05
Last reported:	1997-10-08

Nichols, Bill. 1997. Field survey to Blackwater River Salt Marsh on July 5.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

New Hampshire Natural Heritage Bureau - Community Record

Saline/brackish intertidal flat

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rare or uncommon

Description at this Location

Conservation Rank: Excellent quality, condition and lanscape context ('A' on a scale of A-D).
Comments on Rank: Ranks are for an area at Seabrook School Salt Marsh.

Detailed Description: 1997: No details.

General Area: 1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Subtidal communities include the undifferentiated *saline/brackish subtidal channel/bay bottom* and *tidal creek bottom*. Other intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, and high and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments: 1997: Extensive areas of this community type were found within the Blackwater - Hampton River Estuary. Intertidal sand and mud flats are gently sloping, sparsely vegetated, habitats. The substrate, exposed completely at extra low spring tide, ranges in composition from sands to muds and silts. Benthic diatoms and other microalgae occurring in this environment are important contributors to the primary productivity of the total estuarine system (Sickley 1989). Macroalgae is typically uncommon across the exposed substrate. Characteristic invertebrates found in New Hampshire's intertidal mudflats include polychaete worms (including *Nereis virens*, *Nephtys caeca*, *Clymenella tortquata*, and *Scoloplos* spp.) and mollusks (including soft-shelled clam [*Mya arenaria*], Baltic *Macoma* [*Macoma balthica*], gem shell [*Gemma gemma*], and swamp *Hydrobia* [*Hydrobia minuta*]) (NAI 1973). Arthropods are also well represented and include green crabs (*Carcinus maenus*), rock crabs (*Cancer irroratus*), flat-clawed hermit crabs (*Pagurus pollicaris*), and horseshoe crabs (*Limulus polyphemis*). During the diurnal (twice daily) tidal flooding several species of fish and other aquatic species feed on the benthos and epibenthic algae. This community also provides important foraging habitat for shorebirds and other animals when the intertidal flat is exposed. The diverse variety of primary foods (microalgae, phytoplankton, and detritus) available to consumers supports the high productivity found on intertidal flats. The substrate is composed of sand or silt and clay rich in organic matter. Vascular plants are sparse to more typically absent.

Management Comments:

Comments: Location

Survey Site Name: Hampton Harbor
Managed By: ASNH to Properties, Inc. - Pelton

New Hampshire Natural Heritage Bureau - Community Record

Saltonstich Interstitial List

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rank or assessment

Comments on Rank	Comments on Rank
Rank is for an area at Seabrook School 2nd Marsh.	Excellent quality, condition and landscape context ('A' on a scale of A-D).

Detailed Description: 1997: No details.
General App: 1997: The Blackwater - Hampton River Estuary occupies the majority of the estimated 6500 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Seabrook, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowan et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several mangrove wetlands and intertidal communities occur in the estuary. Intertidal communities include the well-developed salt-marsh wetlands, salt-marsh mudflats, and salt-marsh meadows. Other intertidal communities are beach ridges, coastal dune wetlands, and high and low salt marsh. Mangrove dry-forest communities occur at the site as "salt marsh islands", located upstream surrounded by salt marsh. Most of the estuary is protected by restricted tidal flow. Other areas are described as having an estuarine tidal inlet by the USDA Soil Conservation Service (1994). The largest portion of the estuary identified to have intertidal tidal inlets includes the Meadow Pond area, the Taylor River - Dexter River area west of the rail road track, and the Brown River west of the rail road track (USDA Soil Conservation Service 1994). In the last few years, several salt marsh restoration projects have begun in this estuary (Amman, A.P. pers. comm., 1997).

General Comments: 1997: Extensive areas of this community type were found within the Blackwater - Hampton River Estuary. Intertidal mud and sand flats are sparsely vegetated, halophytes. The substrate exposed completely at low spring tide, water in comparison from mud and silt. Benthic diatoms and other microalgae occurring in the environment are important contributors to the primary productivity of the tidal estuarine system (Skelley 1999). Macroalgae is typically uncommon across the exposed substrate. Characteristic intertidal species found in New Hampshire's intertidal habitats include polychaete worms (including *Nereis virens*, *Nephtys caeca*, *Clymenura* spp., and *Scoloplos* spp.) and mollusks (including soft-shelled clam [*Mya arenaria*], Baltic Macoma [*Macoma balthica*], gem shell [*Gemma gemma*], and swamp Hydrobia [*Hydrobia ulvae*] (NAI 1973)). Arthropods are also well represented and include green crabs (*Caridea menina*), rock crabs (*Cancer borealis*), flat-clawed hermit crabs (*Pagurus pollicaris*), and horseshoe crabs (*Limulus polyphemus*). During the diurnal (twice daily) tidal flooding several species of fish and other aquatic species feed on the benthos and estuarine algae. This community also provides important foraging habitat for shorebirds and other animals when the intertidal flat is exposed. The diverse variety of primary foods (bacterioplankton, phytoplankton, and detritus) available to consumers supports the high productivity found on intertidal flats. The substrate is composed of sand or silt and clay rich in organic matter. Vascular plants are sparse to none typically absent.

Management Comments:
Conservation Practices:
 Survey Site Name: Hampton Harbor
 Managed by: NHHS to Hampton Inc. - Yelton

County: Rockingham
Town(s): Hampton
Size: 4634.2 acres

USGS quad(s): Hampton (4207087)
Lat, Long: 425407N, 0704957W
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs between estuarine marshes or other coastal communities landward and subtidal communities seaward and includes tidal creek channels exposed at low tide.

Dates documented

First reported: 1997-07-05 Last reported: 1997-10-08

Nichols, Bill. 1997. Field survey to Blackwater River Salt Marsh on July 5.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

County	Town(s)	Size	USGS quad(s)	Lat, Long	Elevation	Precision	Directions	Dates documented
Rockingham	Hampton	4634.2 acres	Hampton (4207087)	425407N, 0704957W		Within (but not necessarily restricted to) the area indicated on the map.	Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs between estuarine marshes or other coastal communities landward and subtidal communities seaward and includes tidal creek channels exposed at low tide.	1997-07-05 1997-10-08

New Hampshire Natural Heritage Bureau - Community Record

Saline/brackish subtidal channel/bay bottom

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rare or uncommon

Description at this Location

Conservation Rank:	Excellent quality, condition and lanscape context ('A' on a scale of A-D).
Comments on Rank:	Ranks are for an area at Seabrook School Salt Marsh.

Detailed Description: 1997: No details.

General Area: 1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Another subtidal community is *tidal creek bottom*. Intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and high and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments: 1997: These communities perform important ecological functions including supporting fish populations, providing refuge for fish and invertebrates that retreat from intertidal flats and estuarine marshes at low tide, and serving as a spawning and nursery area for numerous species of aquatic animals (Short 1992). Salinities in coastal areas remain close to 30 ppt year-round (Short 1992). Substrates varied at different locations and included mud, sand, gravel, cobble, or rock. Vascular plants were typically absent or sparse. Seaweeds are an important component of this habitat and the surrounding environment.

Management Comments:

Comments: Location

Survey Site Name: Hampton Harbor
 Managed By: ASNH to Properties, Inc. - Pelton

County: Rockingham	USGS quad(s): Hampton (4207087)
Town(s): Hampton	Lat, Long: 425407N, 0704957W
Size: 4634.2 acres	Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs in permanently flooded saline tidal channels and bays.

Dates documented

First reported: 1997-07-05	Last reported: 1997-10-08
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New Hampshire Natural Heritage Bureau - Community Record

Tidal creek bottom

Legal Status	Conservation Status
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Rare or uncommon

Description at this Location

Conservation Rank: Excellent quality, condition and lanscape context ('A' on a scale of A-D).
 Comments on Rank: Ranks are for an area at Seabrook School Salt Marsh.

Detailed Description: 1997: The substrate was composed of mud rich in organic matter. Vascular plants were sparse but included *Ruppia maritima* (widgeon-grass).

General Area: 1997: The Blackwater - Hampton River Estuary contains the majority of the estimated 6200 acres of salt marsh in the state. The Blackwater River portion of the estuary continues south into Salisbury, MA. The estuarine system extends seaward to an imaginary line drawn across Hampton Harbor Inlet and upstream and landward to where ocean-derived salts are less than or equal to 0.5 parts per thousand during the period of average annual low freshwater flow (Cowardin et al. 1979). This estuary is surrounded by moderate levels of residential and commercial development. Several exemplary subtidal and intertidal communities occur in this estuary. Another subtidal community is the undifferentiated *saline/brackish subtidal channel/bay bottom*. Intertidal communities are *brackish marsh*, *coastal shoreline strand/swale*, *saline/brackish intertidal flat*, and high and *low salt marsh*. Exemplary dry Appalachian oak-hickory forest occurs at the site as "salt marsh islands", forested uplands surrounded by salt marsh. Most of the estuary is unaffected by restricted tidal flow. Other areas are described as having an adequate tidal inlet by the USDA Soil Conservation Service (1994). The largest portions of the estuary determined to have inadequate tidal inlets include the Meadow Pond area, the Taylor River - Drakes River area west of the rail road track, and the Browns River west of the rail road track (USDA Soil Conservation Service 1994). In the last four years, several salt marsh restoration projects have begun in this estuary (Ammann, A.P. pers. comm., 1997).

General Comments: 1997: Tidal creeks provide habitat for stickleback (*Pungitius pungitius*, *Gasterosteus aculeatus*, and *Apeltes quadracus*), mummichog (*Fundulus heteroclitus*), and several other species of fish (Short 1992) and foraging ground for migratory and year round bird species and other animals. As the salt marsh replaces accreting intertidal flats seaward, tidal creeks develop along former intertidal flat drainage channels. Landward, as the high salt marsh develops above mean high water, tidal flooding frequency decreases, reducing drainage flow in the creeks. This tends to cause the upstream end of the tidal creek to fill in as sediment deposition occurs at a greater rate than erosion (Redfield 1972). The banks of tidal creeks were nearly vertical and often slump, supporting a narrow band of *Spartina alterniflora* (smooth cord-grass) (see low salt marsh description).

Management
 Comments:

Comments: Location

Survey Site Name: Hampton Harbor
 Managed By: ASNH to Properties, Inc. - Pelton

County: Rockingham	USGS quad(s): Hampton (4207087)
Town(s): Hampton	Lat, Long: 425407N, 0704957W
Size: 4634.2 acres	Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Large area more or less framed by Rte. 1 to the west, Rte. 101 to the north, Rte. 1A to the east, and the Massachusetts state line to the south. Occurs in permanently flooded creek-bottoms draining

water from the high and low salt marsh into the main channel or bay.

Dates documented

First reported: 1997-07-05 Last reported: 1997-10-08

Nichols, Bill. 1997. Field survey to Blackwater River Salt Marsh on July 5.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

New Hampshire Natural Heritage Bureau - Plant Record

Salt-marsh *Gerardia* (*Agalinis maritima*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Threatened	State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Not ranked
Comments on Rank:	Sub-population of a large "A-" population.

Detailed Description: 1997: 51-100 fruiting ramets in a 1-5 square meter area.
 General Area: 1997: Salt marsh. Associated plant species include *Triglochin maritimum* (arrow-grass), *Juncus gerardii* (salt marsh rush), and *Salicornia europaea* (common glasswort).

General Comments:

Management

Comments:

Comments: Location

Survey Site Name:	Kenney Brook		
Managed By:	Chase Lot		

County:	Rockingham	USGS quad(s):	Hampton (4207087)
Town(s):	Hampton Falls	Lat, Long:	425527N, 0705115W
Size:	2.8 acres	Elevation:	3 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: From Hampton Beach head northwest on Rte 101. Take Rte 1 south and park at Marsh Lane Conservation Preserve on the west side of Rte 1. Located near the confluence of Kenney Brook and the Taylor River.

Dates documented

First reported:	1997-09-12	Last reported:	1997-09-12
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Nichols, Bill. 1997. Field survey to Hampton Salt Marsh on September 12.

Nichols, William F. 2000. Ecological Assessment of Selected Towns in New Hampshire's Coastal Zone. Prepared by NH Natural Heritage Inventory. Concord, NH.

New Hampshire Natural Heritage Bureau - Plant Record

Yellow Thistle (*Cirsium horridulum*)Legal Status

Federal: Not listed
 State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Excellent quality, condition and lanscape context ('A' on a scale of A-D).
 Comments on Rank: WIDE-SPREAD, LARGE AREA.

Detailed Description: 1989: 150-200 PLANTS, 35 PERCENT DISPERSING SEED, 65 PERCENT BASAL LEAVES ONLY. 1982: >50 PLANTS SCATTERED OVER AN AREA CA. 50 BY 100 YARDS. MANY PLANTS ALREADY SET SEED, SOME FLOWERING OR IN BUD, SOME WITH ONLY BASAL LEAVES, NO FLOWERING STALKS. DUNLOP SPECIMEN AT NHA.

General Area: PEATY MEADOW, 0-10 FEET, FLAT, OPEN AND WET FIELD, ALSO CONTAINING VACCINIUM SPP., GAYLUSACCIA SPP., *Iris prismatica*, VIBERNUM RECOGNITUM.

General Comments: MOST SIGNIFICANT POPULATION FOR THE COASTAL ZONE. SEARCH GREATER AREA, MAY BE MORE PLANTS.

Management

Comments:

Comments: Location

Survey Site Name: Taylor River Thistle Meadow
 Managed By: Chase Lot

County: Rockingham
 Town(s): Hampton Falls
 Size: 2.8 acres

USGS quad(s): Hampton (4207087)
 Lat, Long: 425527N, 0705115W
 Elevation: 10 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: HAMPTON FALLS. TAYLOR RIVER THISTLE MEADOW, ONE-EIGHTH OF A MILE SOUTH OF THE RIVER ON WEST SIDE OF RTE 1. SCATTERED ABOVE HIGH TIDE DITCH IN OPEN AREAS BETWEEN RTE 1, KENNEY BROOK AND FIRST WEST ROAD SOUTH OF RIVER.

Dates documented

First reported: 1982
 Last reported: 1989-08-18

Sperduto, Dan. 1989. Field survey to Taylor River Thistle Meadow of 18 August.

New Hampshire Natural Heritage Bureau - Animal Record

Banded Sunfish (*Enneacanthus obesus*)

Legal Status

Federal: Not listed
 State: Not listed

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Rare or uncommon

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank:

Detailed Description: 1985: 2 age and sex unknowns seen (Obs_id 389).
 General Area: 1985: Freshwater - Stream or river (Obs_id 389).
 General Comments: 1985: Two individual Banded Sunfish (42 and 69 mm. long) sampled by electrofishing at NHFG Fishing for the Future index site RO284028. Index site is 300 ft. long (Obs_id 389).

Management
 Comments:

Comments: Location

Survey Site Name: Taylor River, Coffins Mill
 Managed By:

County: Rockingham	USGS quad(s): Exeter (4207088)
Town(s): Hampton	Lat, Long: 425633N, 0705239W
Size: .3 acres	Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1985: Taylor River at Stagecoach Road [coordinates indicate a road labelled Coffins Mill Rd on the topographic map] (Obs_id 389).

Dates documented

First reported: 1985-09-26	Last reported: 1985-09-26
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New Hampshire Natural Heritage Bureau - Animal Record

Saltmarsh Sharp-tailed Sparrow (*Ammodramus caudacutus*)

Legal Status

Federal: Not listed
 State: Not listed

Conservation Status

Global: Apparently secure but with cause for concern
 State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank:

Detailed Description: 2004: 2 nests, low nest density.

General Area:

General Comments:

Management

Comments:

Comments: Location

Survey Site Name: Drakeside Road

Managed By: Town of Hampton Marsh - Mott

County: Rockingham

Town(s): Hampton

Size: 5.7 acres

USGS quad(s): Hampton (4207087)

Lat, Long: 425550N, 0705123W

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2004

Last reported: 2004

New Hampshire Natural Heritage Bureau - Animal Record

Willet (*Catoptrophorus semipalmatus*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Not listed	State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank:

Detailed Description: 2004: Confirmed breeding, 3 nests.
 General Area:
 General Comments:
 Management
 Comments:

Comments: Location

Survey Site Name: Drakeside Road
 Managed By: Town of Hampton Marsh - Mott

County: Rockingham	USGS quad(s): Hampton (4207087)
Town(s): Hampton	Lat, Long: 425558N, 0705119W
Size: 3.8 acres	Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2004	Last reported: 2004
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