



# Public Service of New Hampshire Seacoast Reliability Project

Madbury, Durham, Newington & Portsmouth, NH

## Rare, Threatened, and Endangered Species and Exemplary Natural Community Report

**CONFIDENTIAL  
INFORMATION  
REMOVED**

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## Executive Summary

Normandeau Associates (“Normandeau”) performed assessments for rare, threatened and endangered (“RTE”) species and exemplary natural communities potentially occurring within the approximately 152-acre study area in the existing Project Area. Assessments were conducted based on records of RTE species and exemplary natural communities received from the New Hampshire Natural Heritage Bureau (“NHNHB”) in 2013 and 2014, and U.S. Fish and Wildlife Service (“USFWS”) and National Marine Fisheries Service (“NMFS”) in 2014. Collectively, the agencies provided records for 33 listed species with a total of 41 occurrences. Field surveys were performed for most of the listed RTE plant species and natural communities, invertebrate species and one wildlife species. The rest of the wildlife and fish were either assumed to be present based on their known distributions, or assumed to be absent based on the historic nature of the NHNHB records and/or the lack of suitable habitat for them within the Project Area.

One state-listed plant species was observed within the Project Area, the state-Endangered crested sedge. Four exemplary natural communities or natural community systems were confirmed within the Project Area in Little Bay: *High salt marsh*, *Salt marsh system*, *Sparsely vegetated intertidal system* and *Subtidal system*.

The ringed boghaunter, a state Endangered dragonfly, occurs in a sedge meadow near the Project Area. Some marginally suitable larval habitat for this species was identified during a field survey, but no exuvia were observed.

Two federally listed fish species, shortnosed sturgeon (Endangered) and Atlantic sturgeon (Threatened), may use the Project Area in Little Bay as feeding habitat. Neither species is known to breed in New Hampshire, but adults could occasionally feed in Great Bay, including the Project Area. Short-nosed sturgeon is considered extirpated in New Hampshire. Three state-listed Special Concern fish species, American eel, swamp darter and banded sunfish, are known to occur upstream and downstream of several streams crossing the Seacoast Reliability Project (“SRP”) corridor, including the Oyster River. These species are assumed to periodically use the Project Area.

Three state-listed reptiles, northern black racer (Threatened), Blanding’s turtle (Endangered), and spotted turtle (Threatened), and two state listed bird species, bald eagles (Threatened), and osprey (Special Concern) are likely to occur in the Project Area based on their relatively large home ranges and use of varied habitats. Two listed mammals, northern long-eared bat (Federally threatened; state threatened) and New England cottontail (state Endangered species) have habitat potential within the Project Area. New England cottontail is also under consideration for federal listing.

In general, impacts to protected species will be avoided and minimized through Best Management Practices (“BMPs”) during construction. BMP examples include pre-construction surveys to ensure the absence of nesting bald eagles and osprey (if either species is breeding within or near the Project Area, time-of-year restrictions may apply); cable installation in the fall to minimize impacts to marine species; surveys during

construction to clear the work area of turtles and snakes; handcutting in the vicinity of the ringed boghaunter habitat; tree clearing between October and April to avoid impacting northern long-eared bats; and minimization of clearing preferred shrubby areas in high priority New England cottontail habitat.

Unavoidable temporary impacts to the fringing salt marsh will be restored following burial of the cable. Restoration techniques will include salvaging the intact peat prior to trenching for replacement after the cables are buried.

The intertidal flats and subtidal bottom will be allowed to restore and recolonize naturally after completion of the cable installation. The jetplow process will disturb sediments while laying the cable, but the water pressure of the jets and the speed of the plow will be controlled to maximize the return of sediments to the trench and minimize sediments going into suspension in the water column. The currents within the channel and wave and ice action on the tidal flats are expected to restore existing bottom contours in the vicinity of the trenches, followed by recolonization of benthic infauna and shellfish after completion of construction.

Monitoring of all impacted RTE habitats will occur both during and after construction to assess the success of the habitat restoration.



## **1.0 Introduction**

Public Service Company of New Hampshire d/b/a Eversource Energy (“PSNH”) is proposing to construct a new 13-mile 115 kilovolt (“kV”) transmission line between the existing Madbury and Portsmouth substations. The Seacoast Reliability Project would be located in the Towns of Madbury, Durham and Newington as well as the City of Portsmouth, in Strafford and Rockingham Counties, New Hampshire. The new 115 kV transmission line will be approximately 12.9 miles long, including a 0.9 mile crossing under Little Bay. The proposed route parallels Pan Am Railroad tracks for approximately 4 miles in Madbury and Durham. The majority of line will be constructed within existing electric corridors, with minor adjustments to Project Area widths in several locations. The Project Area ranges from 40 to 130 feet wide, but is predominantly 100 feet wide. The cable crossing in Little Bay will affect a corridor approximately 100 feet wide lies within a chartered Cable Area approximately 1000 feet wide. For most of the length of the SRP, a mowed area approximately 60 feet in width has been maintained by PSNH in support of the existing electric distribution line. The edges of the existing corridor are unmaintained and frequently support forest (20 feet on either side) which will need to be cleared for the SRP.

The majority of the SRP will be constructed aboveground on overhead structures between 65 and 120 feet in height above ground. Underground sections are proposed in Durham crossing Main St, on either shore of Little Bay, and in the road at Gundalow Landing. The cable will be buried 3.5-8 feet under Little Bay using jetplow technology. For this crossing, the transmission line will necessarily be split into three cables to maintain the required transmissivity for the Reliability Project. East of Little Bay, the line will remain underground until it crosses Little Bay Road in Newington, after which it will emerge to cross overland until it terminates at the Portsmouth substation. In most locations, the existing distribution line will be co-located on the new structures and the existing distribution structures will be removed. In several locations, the existing distribution line will remain and the new structures will carry the new transmission cables only. A short portion of an existing transmission line will need to be relocated to accommodate the new SRP alignment at Crossings at Fox Run Mall in Newington. Substation improvements in Madbury and Portsmouth will be confined to the existing substation footprints. No other substation modifications are proposed.

Normandeau was contracted by PSNH to assess the SRP Project Area for the potential presence of RTE species and exemplary natural communities. The evaluations that were conducted involved:

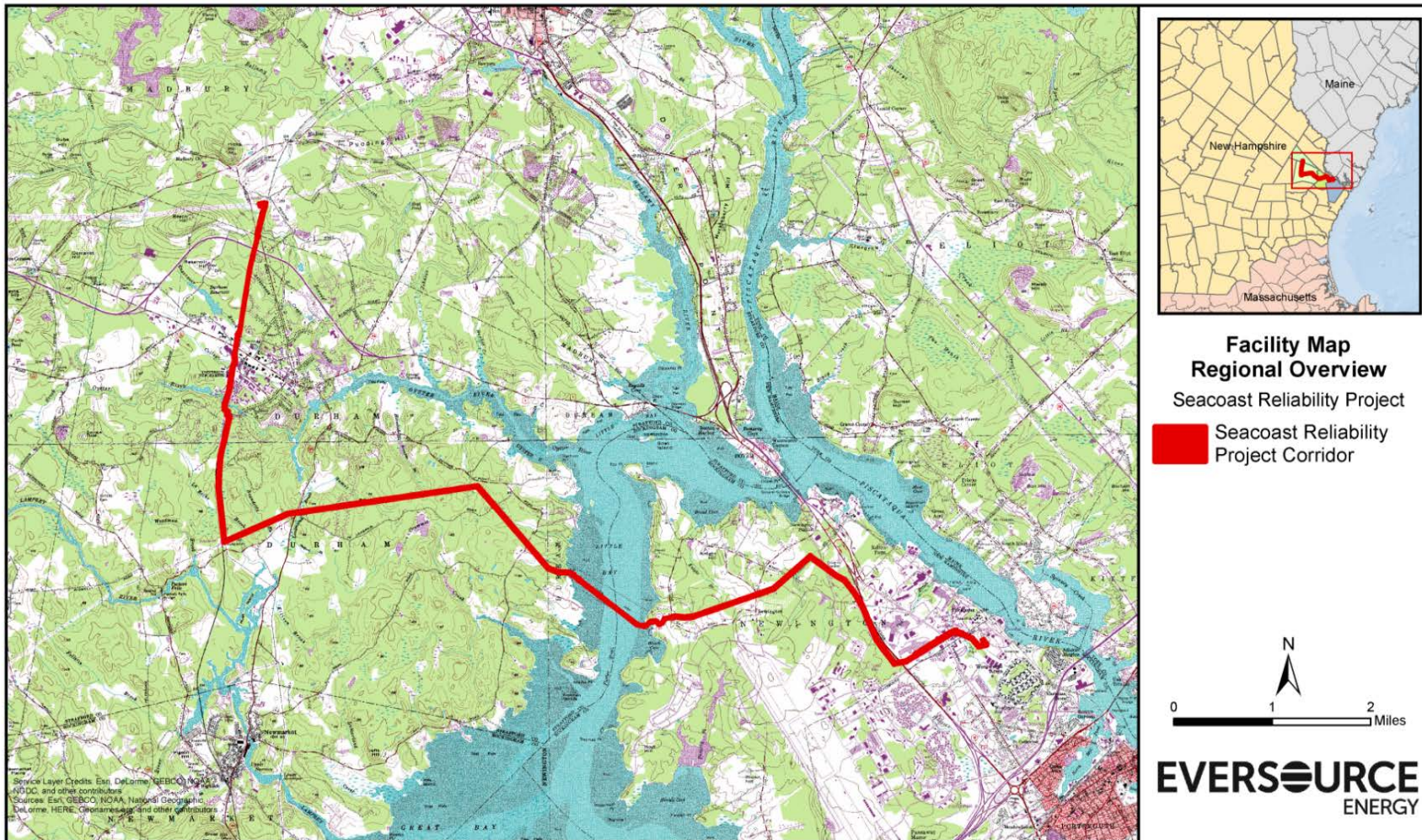


Figure 1-1. Regional Overview of the Seacoast Reliability Project

- (1) consultation with the New Hampshire NHNHBB, New Hampshire Fish and Game Department (“NHFG”), USFWS and NMFS to obtain a list of RTE species and exemplary communities occurring or potentially occurring in the vicinity of the site,
- (2) review of Geographic Information Systems (“GIS”) data (such as aerial photographs, topographic maps, soils data, field delineated wetlands/streams, etc.) to assess potential habitats within the Project Area, and
- (3) field surveys for RTE species, communities or potential habitat, as applicable.

In 2013, NHNHBB provided Normandeau with a list of RTE species and exemplary natural communities documented in the vicinity of the Project Area (NHNHBB 2013; Appendix A). This list included seven plant species, four natural communities, seven vertebrate species, and one invertebrate. Normandeau biologists evaluated these species and communities during 2013 and early 2014, through field and/or desktop studies. In September 2014, Normandeau requested updated NHNHBB data for the site. The updated list, which includes an addendum (NHNHBB 2014a, b; Appendix A) contained an additional two plant species, two natural communities, and eight vertebrate species. Normandeau evaluated the potential of these species to occur within the Project Area using available data and ground surveys in 2015. Normandeau subsequently requested an updated list in October 2015, also provided in Appendix A. The update confirmed the previous lists, although several species were dropped because they were on the edge of the project review area. Since Normandeau had already completed the assessments, the information for all species is included.

Table 1-1 lists the RTE species and exemplary natural community element occurrences mapped in the vicinity of the site for state and federal agencies. For each of the listed occurrences, Table 1-1 summarizes its listing status, known location, preferred habitat, date of last observation, the approximate distance of the mapped occurrence from the Project Area, and the date and results of Normandeau’s survey for the species or community.

The following sections describe the evaluations conducted for the plant, natural community, wildlife, fish and invertebrate species mapped in the vicinity of the Project Area.

Table 1-1. Rare, threatened and endangered species and plant communities mapped within 0.5 miles of the SRP Project Area.

Species or Community	Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
<b>Plants</b>					
Black Maple ( <i>Acer nigrum</i> )	T	floodplain forests, rich mesic forests, often in moist high pH soils (FACU)	1996	within ~ 500 ft of corridor	Searched 9/24/13. Not observed within SRP Project Area.
Bulbous Bitter- cress ( <i>Cardamine bulbosa</i> )	E	swamps, stream shores, ditches (OBL) (permanently wet, seepy, or submerged soil)	1996	mapped immediately south of corridor, partially in corridor	Searched 5/20/14. Not observed within SRP Project Area.
Crested Sedge ( <i>Carex cristatella</i> )	E	mesic to hydric soils of meadows, marshes, open swamps, stream banks (FACW). (Univ. of New Hampshire)	1946/ historical; current condition unknown	along E edge of corridor; partially inside corridor	Searched 9/25/13 and 7/22/15. Not observed within SRP corridor. Area is currently developed, UNH campus area.
Crested Sedge ( <i>Carex cristatella</i> )	E	(Mill Road South)	1943/ historical; current condition unknown	along E edge of corridor; partially inside corridor	Searched 9/25/13, 10/30/13, 7/22/15, and 7/24/15. Observed within SRP corridor in four locations in Durham.
Engelmann's Quillwort ( <i>Isoetes engelmannii</i> )	E	Shallow waters of lakes and rivers; sometimes emergent (muddy bottom of old reservoir; in 1 ft of water)	1947/ historical; current condition unknown	approx. 500 ft west of corridor (lots of development here now)	Searched 9/25/13. Not observed in SRP corridor and no suitable habitat observed.
Great Bur-reed ( <i>Sparganium eurycarpum</i> )	T	Shorelines and shallow circumneutral to basic still or slow moving water	2007	Immed. N of corridor	Searched 9/24/13. Not observed within SRP corridor.
Greater Fringed-gentian ( <i>Gentianopsis crinita</i> )	T	Wet meadows, woods, stream borders (OBL)	1978/ historical; current condition unknown	mapped in corridor	Searched 9/25/13 and 10/30/13. Not observed within SRP corridor. Area is currently developed, UNH campus area.

(continued)

Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
Rigid Sedge ( <i>Carex tetanica</i> )	Tracked but not listed	Calcareous/ circumneutral fens, wet meadows, graminoid marshes, moist to wet woods (FACW)	1942/ historical; current condition unknown	within ~ 2000 ft of corridor (now highly developed)	Searched 9/25/13 and 6/30/15. Not observed within SRP corridor. Area is currently developed, UNH campus area.
Marsh Elder ( <i>Iva frutescens</i> )	T	Salt marshes, at the limit of normal high tide	2004	approx. 3,000 feet north of corridor	Searched on 9/10/14. Not observed within SRP corridor.
Small whorled pogonia ( <i>Isotria medeoloides</i> )	T, T*	Deciduous or mixed forest, with appropriate soils and slopes	Not provided by NHNHB	approx. 0.5 mile northwest of corridor	Searched on 6/30/15. Two areas of marginally suitable habitat within the corridor were surveyed based on habitat guidance from USFWS, but species was not found.
<b>Communities</b>					
Hemlock - beech - oak- pine forest	Tracked but not listed	N/A	2006	along western edge of corridor	Searched 9/25/13. Not observed within SRP corridor. Area is currently developed, UNH campus area.
Red maple - sensitive fern swamp	Tracked but not listed	N/A	2006	mapped immed south of corridor; may extend into corridor	Searched 5/20/14. Not observed within SRP corridor.
Red maple - sensitive fern swamp	Tracked but not listed	N/A	1990/ historical; current condition unknown	within few thousand feet south of corridor	Searched 5/20/14. Not observed within SRP corridor.
Salt marsh system	Tracked but not listed	N/A	2010	occurs intermittently along the margins and shores of Great Bay.	9/10/14 and 4/22/15. Field delineated boundaries of fringing marsh on eastern and western shores of Little Bay

(continued)



Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
<i>High salt marsh</i>	Tracked but not listed	N/A	2008	within approx. 1500 feet of corridor	9/10/14. Field delineated small high marsh on western shore of Little Bay.
<i>Sparsely vegetated intertidal system</i>	Tracked but not listed	N/A	2010	crosses Project Area	Delineated boundaries using aerial photography and bathymetry.
<i>Subtidal system</i>	Tracked but not listed	N/A	2010	crosses Project Area	Delineated boundaries using aerial photography and bathymetry.
<b>Invertebrates</b>					
Ringed Boghaunter ( <i>Williamsonia lintneri</i> )	E	Sphagnum peatlands and surrounding upland or mesic forests. Breeding and larvae in dwarf shrub fens, graminoid fens, sphagnum filled pools or basins	2008	immed. N of Project Area	Searched for appropriate habitat on 5/20/14. Wetland DW40 identified as marginal habitat. No adults or exuvia observed.
<b>Fish</b>					
Short-nosed Sturgeon ( <i>Acipenser brevirostrum</i> )	Ext, E*	Freshwater, estuarine, marine (Little Bay)	1971	Within Great Bay Estuary	No survey conducted; presence is assumed and impacts will be avoided with BMPs
Atlantic Sturgeon ( <i>Acipenser oxyrinchus oxyrinchus</i> )	T*	Marine, estuarine (Little Bay)	Andecdotal	Within Great Bay Estuary	No survey conducted; presence is assumed and impacts will be avoided with BMPs
American Eel ( <i>Anguilla rostrata</i> )	SC	Marine, estuarine, freshwater (Oyster River)	1998	within 0.5 miles east of corridor	No survey conducted; presence is assumed and impacts will be avoided with BMPs

(continued)

Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
American Eel ( <i>Anguilla rostrata</i> )	SC	Described above (Lamprey River)	2003	within 0.5 miles southwest of corridor	No surveys conducted. presence is assumed. Lamprey River is outside of project Project Area, but species may use LaRoche Brook. No direct impacts and indirects will be avoided using BMPs.
Banded Sunfish ( <i>Enneacanthus obesus</i> )	SC	Vegetated areas of lakes, ponds and backwaters of lowland streams; tolerate acid water (Oyster River)	2007	Approx 300' south of SRP corridor	No survey conducted; presence is assumed. No direct impacts, habitat impacts will be avoided with BMPs
Swamp Darter ( <i>Etheostoma fusiforme</i> )	SC	Weedy, freshwater swamps, ponds, and slow-moving streams. Usually muddy bottoms with a layer of detritus, and plenty of aquatic vegetation. Occasionally open sandy bottoms. Tolerates low oxygen levels and acidic conditions. (Oyster River)	2005	approx. 1 mile downstream, and within ~500 ft upstream of corridor	No surveys conducted; presence is assumed. No direct impacts, habitat impacts will be avoided with BMPs
<b>Reptiles</b>					
Eastern Hognose Snake ( <i>Heterodon platirhinos</i> )	E	Sandy soils, open woodlands	1960s/ historical; current condition unknown	Approximately 4000' south of corridor	Not observed during routine surveys; no known locations of this species in seacoast region
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	Variety of habitats including dry brushy pastures, powerline corridors, rocky ledges, and woodlands (grassy roadside) (Beards Creek)	2011	mapped in corridor	Surveys conducted 10-31-13 and 4-2215 . Not observed but habitat is suitable, presence is assumed and impacts will be avoided with BMPs
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	(Packers Falls/Bennet Rd)	2013	approx. 0.5 mile southwest of corridor	Not observed during routine surveys, presence is assumed and impacts will be avoided with BMPs

(continued)

Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	Wetlands with permanent shallow water and emergent vegetation, vernal pools, may use slow rivers and streams for travel between wetlands; terrestrial habitats for nesting and travel among wetlands (Crommet Creek)	1997	Approximately 1000' south of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	Described above	2006	Approximately 1000' south of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
Spotted Turtle ( <i>Clemmys guttata</i> )	T	marshes, vernal pools, wet meadows, swamps, ponds, and slow-moving streams and rivers, terrestrial habitat (small wetland near Langmaid Rd)	1993-1998/ historical; current condition unknown	Approximately 500' south of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
Spotted Turtle ( <i>Clemmys guttata</i> )	T	Described above (S. of Crommet Creek, Dame Rd)	2012	long linear polygon crosses corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
Spotted Turtle ( <i>Clemmys guttata</i> )	T	Described above (La Roche Brook/UNH Foss Farm West)	2002	Approximately 1000' west of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
Spotted Turtle ( <i>Clemmys guttata</i> )	T	Described above (Hicks Hill)	2006	approx. 0.5 mile northwest of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs
<b>Birds</b>					
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T	Large bodies of water containing abundant fish, large trees for nesting, perching and roosting (Wilcox Point)	2011	within 1 mile south of corridor	Not observed during routine surveys; presence is assumed and impacts will be avoided with BMPs

(continued)



Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T	(Great Bay Megasite, Cedar Point, Woodman Point)	1993	Presumed north of corridor (not shown on map)	Adult observed over Great Bay; impacts will be avoided with BMPs
Osprey ( <i>Pandion haliaetus</i> )	SC	Elevated nest sites near water with abundant fish	2010	within 0.5 mile south of corridor	No nests on existing structures. Nest survey prior to construction season to confirm presence/absence
Golden-winged Warbler ( <i>Vermivora chrysoptera</i> )	SC	Brushy open areas, especially clearings in deciduous woodlands with saplings, forbs, grasses	1984/ historical; current condition unknown	within 0.5 mile south of corridor	Not observed during routine surveys; NHNHB records are historic,
Least Bittern ( <i>Ixobrychus exilis</i> )	SC	Freshwater wetlands with tall, dense vegetation	1995	approx. 0.5 mile north of corridor	No survey conducted; records are not current, not within SRP corridor and habitat within corridor is marginal.
Roseate Tern	E, E*	Nests in small numbers on offshore islands, is observed feeding off NH seacoast	No records in Great Bay	East to open ocean	No survey conducted; may occasionally feed in Great Bay, though no observations of such
Sedge Wren ( <i>Cistothorus platensis</i> )	E	wetlands dominated by sedges and grasses with shrub cover (wet hayfields, spagnum moss bogs, pond margins); Don't use wetlands with sparse cover or ones dominated by cattails (wet meadow/field)	2001	Approximately 1000' west of corridor	No survey conducted; records are not current, not within corridor and habitat within corridor is marginal.
Upland Sandpiper ( <i>Bartramia longicauda</i> )	E	Open habitats with low vegetation/ large grassy areas	2002	approx. 0.5 mile south of corridor	No survey conducted; the SRP corridor does not provide suitable habitat for this species

(continued)

Table 1-1. (Continued)

Species or Community	State Status <sup>1</sup>	Preferred Habitat <sup>2</sup>	Last Observed	Proximity of Record to SRP Project Area	Survey Results
<b>Mammals</b>					
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	T, T*	Various forest types that include trees and snags with suitable roosting structures (crevices, hollows, loose bark)	n/a - no NHB record	n/a - no NHB record	No survey conducted; suitable summer habitat is present throughout the corridor
New England Cottontail ( <i>Sylvilagus transitionalis</i> )	E	Dense shrubs and regenerating clear cuts	n/a - no NHB record	n/a - no NHB record	No survey conducted; 2014-2015 NHFG survey did not find this species. Parcels directly adjacent to the corridor are actively managed to benefit this species.

Notes:

1. E-State Endangered  
T- State Threatened  
SC-State Special Concern  
Ext - Extirpated  
\*-Federal status
2. N/A – Not applicable  
FACU –facultative upland species  
OBL – obligate wetland species  
FACW- facultative wetland species

## 2.0 Results

### 2.1 Plants and Natural Communities

According to data Normandeau received from NHNHB in 2013 and 2014 (NHNHB 2014a,b; Appendix A), nine RTE plant species and six exemplary natural communities are on record as occurring in the vicinity of the Project Area (Table 1).

During 2013 through 2015, Normandeau botanists searched for all RTE plant species and exemplary communities listed in Table 1 in targeted areas of the SRP Project Area. Areas of the Project with appropriate habitat and located within approximately half mile, or in some cases up to one mile of NHNHB records for state-listed species or communities were surveyed. Locations proximal to mapped natural communities were visited to determine whether the communities extend into the Project Area.

Only one state-listed plant species, crested sedge, *Carex cristatella*, was found within the SRP Project Area. In addition, four exemplary natural communities or natural community systems were identified within the Project Area: *High salt marsh (shallow peat variant)*, *Salt marsh system*, *Sparsely vegetated intertidal system* and *Subtidal system*.

The RTE plant species and natural communities that were surveyed for are described below.

#### Black Maple

A population of the state-threatened black maple (*Acer nigrum*) is mapped south of, and within approximately 500 feet of the the Project Area in Durham (NHNHB 2014b; Appendix A; Table 1). This species is typically found in rich mesic forests and riparian forests, often in locations with high-pH bedrock (Haines 2011). The plants mapped near the Project Area, which were last observed in 1996, typically occur in semi-rich mesic forest, circumneutral talus forest, semi-rich dry-mesic Appalachian oak-hickory forest, hardwood forested seep, semi-rich oak-hickory-sugar maple forest, and streamside swamp (NHNHB 2014b). On September 24, 2013 a Normandeau botanist searched for this species within half a mile of the mapped population. No plants of black maple or its close congener, sugar maple (*Acer saccharum*), were observed.

#### Bulbous Bitter-cress

The state endangered bulbous bitter-cress (*Cardamine bulbosa*) is a spring-flowering species that typically occurs in wet woods (Magee and Ahles 2007). This species is mapped immediately south and west of the Project Area and partly within the Project Area in Newington (NHNHB 2014a; Appendix A; Table 1). The population in this area was last observed in 1996 (NHNHB 2014a). A Normandeau botanist searched the Project Area within half a mile of this population on May 20, 2014 (excluding developed areas); however, this species was not found.

### Crested Sedge

Two historic records exist for the state endangered crested sedge (*Carex cristatella*) in the vicinity of the Project Area in Durham (NHNHB 2014a; Appendix A; Table 1). Both populations are mapped immediately east of, and partly within, the Project Area. One population, last observed in 1946, is mapped on the University of New Hampshire (“UNH”) campus, in an area that is currently developed. The second population, last observed in 1943, is mapped further south, in a less developed area. Crested sedge occurs in mesic to hydric soils of meadows, marshes, open swamps and stream banks (Haines 2011). The best time to identify this species is during summer (July 4 – August 4 [Seymour 1969]).

A Normandeau botanist conducted initial surveys for this species on September 25 and October 30, 2013 in Project Areas within approximately half mile of the mapped populations. Additional surveys were conducted on July 22 and 24, 2015 within approximately 1 mile of the historic populations. During the July surveys, Normandeau personnel observed and delineated four patches of this plant species in the Project Area south of the historic populations (Confidential Figure 2-1). The patches are located within an approximately 0.6 mile stretch of corridor in the Town of Durham; they occur within the cleared portions of the corridor under the existing distribution line. A voucher specimen was collected on August 21, 2015 and submitted to NHNHB on October 1, 2015. In addition, a Rare Species Occurrence Record field form (Special Plant form) was completed and submitted to NHNHB.

### Engelmann’s Quillwort

According to NHNHB, an historic (1947) record for the state endangered Engelmann’s quillwort (*Isoetes engelmannii*) is located approximately 500 feet west of the Project Area in Durham (NHNHB 2014b; Appendix A; Table 1). Engelmann’s quillwort was observed on the muddy bottom of an old reservoir, in 1 foot of water. Much development has occurred in the general vicinity and the current condition of the population is unknown. This species is usually found submerged in shallow water of lakes and rivers; it is sometimes emergent (Haines 2011). On September 25, 2013 a Normandeau botanist searched the Project Area within half a mile of the historic record. Engelmann’s quillwort was not observed and no appropriate habitat was found.

### Great Bur-reed

A population of the state threatened great bur-reed (*Sparganium eurycarpum*), last observed in 2007, is mapped immediately north of the Project Area in Durham (2014a; Appendix A; Table 1). Great bur-reed is known to occur along shorelines and in shallow, circumneutral to basic, still or slow-moving water (Haines 2011). On September 24, 2013, a Normandeau botanist searched the Project Area within half mile of the mapped population; however, this species was not observed and little or no appropriate habitat was found.

**CONFIDENTIAL – REMOVED FROM REPORT**

Figure 2-1. Locations of crested sedge observed within the SRP corridor.

### Greater Fringed-gentian

Greater fringed-gentian (*Gentianopsis crinita*) is a state threatened species found in fields, meadows, roadsides, and clearings (Haines 2011). Its flowering period is generally from mid to late August through October (Seymour 1969). According to NHNHB, an historic population of greater fringed gentian is mapped in the vicinity of the Project Area in Durham (NHNHB 2014a; Appendix A; Table 1). The population was last observed in 1978. On September 25 and October 30, 2013, a Normandeau botanist conducted surveys for this species in the Project Area within half a mile of the historic population, but this species was not found.

### Rigid Sedge

An historic (1942) population of rigid sedge (*Carex tetanica*) is mapped approximately 2,000 feet east of the Project Area in Durham, in an area that is currently developed (UNH campus) (NHNHB 2014a; Appendix A; Table 1). Rigid sedge is believed to be extirpated in the state. This species occurs in meadows, moist to wet woods and bogs (usually calcareous) and is most easily identified from May to July (Magee and Ahles 2007). On September 25, 2013 and June 30, 2015, a Normandeau botanist searched for rigid sedge within a half mile of the mapped population; however this species was not found.

### Marsh Elder

The state threatened marsh elder (*Iva frutescens*) occurs in salt marshes, usually near the limit of high tide (Haines 2011). According to NHNHB, a population of marsh elder is located in Durham, approximately 3,000 feet north of the project ROW (NHNHB 2014a; Appendix A; Table 1). On September 10, 2014, a Normandeau botanist searched appropriate habitat for this species within the Project Area, but this species was not found.

### Small Whorled Pogonia

Small whorled pogonia (*Isotria melelroides*) is a state and federally threatened species mapped within one-half mile of the Project Area in Madbury (NHNHB 2014a; Appendix A; Table 1). USFWS was consulted and two sites with potentially appropriate habitat for the sensitive plant species were identified within the Project Area based on soils data and aerial photography. A Normandeau botanist searched these sites on June 30, 2015, but this species was not found.

### Hemlock - Beech - Oak - Pine Forest

According to data from NHNHB, an exemplary *Hemlock – beech – oak – pine forest* is mapped immediately west of the Project Area in Durham (NHNHB 2014a; Appendix A; Table 1). This community type has a state ranking of S5 (demonstrably widespread and secure) and is one of the most common upland forest communities in southern and central parts of the state (NHNHB 2015). The community mapped in the vicinity of the Project Area is considered to be of good quality ('B' on a scale of A-D) and was last observed in 2006 (NHNHB 2014a; Appendix A). On September 25, 2013, a Normandeau botanist surveyed the Project Area in the vicinity of

this mapped natural community. The community occurs within College Woods, a recreational hiking area and is located west of Colovos Road. The SRP corridor, which extends east from Colovos Road in this area, does not overlap with the natural community.

### Red Maple - Sensitive Fern Swamp

Two exemplary *Red maple – sensitive fern swamps* are mapped in the vicinity of the Project Area in Newington (NHNHB 2014a; Appendix A; Table 1). This community type has a state ranking of S3S4 (a range rank indicating a range of uncertainty from S3 [very rare and local, local in a restricted range, or vulnerable due to other factors] to S4 [widespread and apparently secure]). It is considered to be a common type of (weakly) minerotrophic red maple swamp in central and southern New Hampshire (NHNHB 2015). The portions of the Project Area located near these mapped communities were surveyed by a Normandeau botanist on May 20, 2014, but these communities were not found to extend into the Project Area.

### Estuarine Natural Communities and Systems

Four exemplary estuarine natural communities/systems are mapped in the Project Area where it crosses Little Bay: *High salt marsh*, *Salt marsh system*, *Sparsely vegetated intertidal system*, and *Subtidal system* (NHNHB 2014a; Appendix A; Table 1). The *High salt marsh* natural community has a state ranking of S3 (very rare and local or vulnerable). Natural community systems are not generally ranked.

The *High salt marsh* occurs within a narrow fringing *Salt marsh system*, so these two community types occupy the same area within the Project. The limits of *High salt marsh* and the complete *Salt marsh system* were field located on the west shore on September 10, 2014, and on the east shore on April 22, 2015. The boundaries of the *Sparsely vegetated intertidal system* and *Subtidal system* were delineated from aerial photography and site-specific bathymetry based on the approximate elevation of Mean Lower Low Water.

## 2.2 Invertebrates

### Ringed Boghaunter

According to NHNHB (2014b; Appendix A), the state endangered ringed boghaunter dragonfly (*Williamsonia lintneri*) is mapped just north of the Project Area in Durham (Table 1). The ringed boghaunter lays its eggs and develops as larvae in sphagnum pools, acidic sedge fens and dwarf shrub fens, which are surrounded by upland forest (NHFG 2005a, MA NHESP 2012). All breeding habitats used by this species contain at least some sphagnum moss and typically hold 6 to 12 inches of water (or otherwise hold water long enough for larvae to complete development) (NHFG 2005a, MA NHESP 2012). The preferred breeding areas contain open water with some emergent vegetation; permanent standing water is not required. The adults use upland forests surrounding the breeding areas (NHFG 2005a).

On May 20, 2014 Normandeau biologists surveyed for potential ringed boghaunter habitat within a segment of the Project Area located within the mapped occurrence of this species (i.e.,

between Long Marsh Road and Sandy Brook Drive). One wetland was identified that appeared to contain marginally suitable habitat for ringed boghaunter. This wetland was located adjacent to upland forest. It contained open water at least six inches deep, some emergent graminoids, and many shrubs along the edges where emerging larvae could attach. The ringed boghaunter is typically described as occurring in *Sphagnum* pools or troughs, whereas this wetland had a mineral substrate, and *Sphagnum* was observed only along the edges of the wetland. Also, unlike typical peatlands, the shrub species in this wetland did not include heath species. Given these characteristics, this wetland appeared to be less acidic and more nutrient-enriched than usual ringed boghaunter habitat. The edges of the wetland were inspected but no dragonfly exuviae were observed. No adult ringed boghaunters were observed within the SRP woodlands. The flight period for ringed boghaunters occurs between mid-April and mid-June (Nikula et al., 2003).

### 2.3 Fish

The proposed Project, which includes the terrestrial Project Area and the Little Bay cable crossing, potentially contains habitat for multiple fish Species of Special Concern (SC) as identified by the NHFG and NMFS (Appendix A). Atlantic sturgeon and short-nosed sturgeon are federally listed species. American Eel and the freshwater species Banded Sunfish and Swamp Darter state-listed Species of Special Concern are classified as Category A or B. Species with Category A designation are considered 'Near-threatened' presently, but may become 'Threatened' in the near future if conservation actions are not taken. Sub-category A1 describes species susceptible to further decline. Sub-category A2 identifies species that are considered recovered and were recently down-listed from the state Endangered and Threatened list. Category B Species of Special Concern are described as 'Responsibility Species', with a major portion of the total global population existing with New Hampshire.

#### Shortnose Sturgeon

Shortnose sturgeon (*Acipenser brevirostrum*) is a designated federally endangered species in the Gulf of Maine that may occur in the Project Area (Pers. Comm., Edith Carson NOAA 12/2/2014). Shortnose sturgeon range from Saint John River, New Brunswick, to the Saint Johns River, Florida, and are smaller than their congener, Atlantic sturgeon, with a maximum length of around 1 meter (3 feet) (Musick 2002). Shortnose sturgeon are about as long-lived as Atlantic sturgeon with a maximum age of around 60 years, and they reach maturity in about 10-13 years in the northern part of their range. Threats to Shortnose sturgeon include construction of dams which limit access to spawning grounds, water pollution, habitat alteration, dredging and disposal activities, and development in estuaries, mudflats and marshes, and commercial exploitation (NOAA 2014).

Shortnose sturgeon are amphidromous fish meaning they spend most of their lives in freshwater but will periodically visit estuarine or salt water. They spawn in freshwater on hard substrates where they deposit demersal adhesive eggs. The larvae remain in freshwater as they mature into the juvenile stage. Keiffer and Kynard (1993) tracked the movements of shortnose sturgeon in the Merrimack River and found that they were typically found in the freshwater portion of the river at salinities less than 1.0 ppt. Post-spawning males were captured 32-31 km upstream of the mouth of the Merrimack River in Haverhill, Massachusetts, in April and larvae



were captured in the same area in May indicating that this is a spawning area. Shortnose sturgeon are opportunistic benthic foragers (Musick 2002) and primary food items in estuaries include mollusks, shrimp, and polychaete worms (Dadswell 1979).

Shortnose sturgeon have not been observed in New Hampshire since 1971 (NHFG 2005b). Populations of shortnose sturgeon exist in the Kennebec River system to the north of the Project Area and the Merrimack River to the south so it is possible that they could transit the Project Area, although they do not wander as far from their natal rivers as Atlantic sturgeon. There is no spawning, egg, or larval habitat for shortnose sturgeon in the Project Area, although it is possible that wandering shortnose sturgeon could use the area as feeding habitat. They are considered to be extirpated in New Hampshire (NHFG 2005b).

### **Atlantic Sturgeon**

The Atlantic sturgeon is designated a federally listed threatened species in the Gulf of Maine and it is possible that members of the endangered Distinct Population Segment from New York Bight could occur in the Project Area (Pers. Comm. Edith Carson, NOAA, 12/15/2014). Atlantic sturgeon are large (up to 5.5 meters), long-lived (up to 60 years) anadromous fish that range from Labrador to northern Florida (Musick 2002). Maturity occurs at 22-24 years for males and 27-28 years for females in the northern part of their range. Threats to Atlantic sturgeon include loss of spawning habitat in freshwater, bycatch mortality, loss of habitat due to locks and dams, mortality due to dredging activities, and possible ship strikes. Perhaps the greatest threat is commercial overfishing prior to a moratorium introduced in 1997 and 1998 (NOAA 2010). Because this fish matures at such a late age the beneficial results of the fishing moratorium may not be detected for more than 20 years after the cessation of fishing.

Atlantic sturgeon spawn in the tidal freshwater or slightly brackish portions of estuaries (Musick 2002). The eggs are demersal and adhesive and are attached to hard substrate. As the larvae mature, they start to disperse downstream but juveniles may remain in the natal river for several years. Keiffer and Kynard (1993) tracked the movements of juvenile Atlantic sturgeon in the Merrimack River and found that they were typically found in the estuarine portion of the river at salinities greater than 10 ppt. No Atlantic sturgeon of adult size were captured in that study.

There are anecdotal reports of Atlantic sturgeon occurring in the Great Bay complex (B. Smith NHFG Pers. Comm. 12/15/2014; NHFG 2005b) and they may transit the Project Area. The Project Area is not spawning, egg or larval habitat, although juvenile and adult Atlantic sturgeon may use the area for feeding. Atlantic sturgeon are opportunistic benthic feeders (Musick 2002) and will feed on polychaetes, isopods, decapod crustaceans, and amphipods, with bivalves and small fish making small contributions to the diet (Johnson et al. 1997).

### **American Eel**

American eel (*Anguilla rostrata*) is currently designated as a Species of Special Concern Category A1 (SC-A1) due to declines in most populations relative to historic levels, and limited access to historic spawning grounds (NHFG 2009).

The American Eel is a catadromous species found from Greenland to South America (Collette and Klein-MacPhee 2002). Spawning occurs in the winter and spring in the ocean, as does larval development. In the spring, juveniles (“elvers”) migrate into estuaries as transparent “glass eels”, where they develop into pigmented juveniles (“browns”). Elvers then continue upstream migration into freshwater to develop into adults and remain for up to 25 years as “yellow” eels before migrating back to sea to spawn as “silvers”.

Ongoing surveys in the Oyster River (yellow eels) and Lamprey River (glass eels/elvers) indicate that the Great Bay Estuary and its tributaries should be considered currently viable American eel habitat (NHFG 2013b, Enterline *et al.* 2013). From late-April through late-September 2012, a total of 4,092 glass eels and 121 browns were collected during a NHFG survey of the Lamprey River in Newmarket, New Hampshire (NHFG 2013b). Therefore, the proposed Project Area may contain both freshwater and marine habitat for American eels. The SRP crosses the Oyster River (freshwater) in Durham, New Hampshire where American eels were reported in 1985 and 1998 (NHNHB 2014). Additionally, American eels were reported in 2003 in the Lamprey River (freshwater) in Durham, New Hampshire (NHNHB 2014). The Project Area crosses LaRoche Brook, a tributary of the Lamprey River, in Durham, New Hampshire. There are no barriers that would prevent American eels access from the Lamprey River to the LaRoche Brook segment within the Project Area. The La Roche Brook segment within the Project Area can be considered to provide habitat for juvenile and adult American eels.

Although the SRP does not cross the Lamprey River, access to the Lamprey River and its tributaries from the Atlantic Ocean requires passage through the Little Bay cable corridor. The reported occurrence of American eel in the Lamprey River indicates that Little Bay had provided temporary habitat for migrating glass eels and elvers during their transition into freshwater. Assuming survival to reproductive age within the Lamprey River, Little Bay would also provide temporary habitat for adults migrating back to the ocean for spawning.

In New England, juvenile American eel migration into freshwater may occur from March through June (Greene *et al.* 2009). Glass eels progress into estuaries by drifting on flood tides and holding position near the bottom during ebb tides (McCleave and Wippelhauser 1987). Migrating elvers are mainly active at night, and may burrow into soft undisturbed bottom sediments or remain in deep waters during the day (Facey and Van den Avyle 1987). Spawning in the ocean occurs during the winter and the spring (McCleave and Kleckner. 1985), indicating that Little Bay has the potential be used by out-migrating adults in the fall and winter. Based on this, the habitat at Little Bay Project location may be considered American eel habitat during the spring for juveniles and during fall and winter for adults. The portion of the Oyster River within the Corridor may be considered year-round habitat for adult (yellow) American eels. Adult eels present in the Oyster River would have the ability to avoid the SRP crossing of the river during any temporary disturbance caused by construction activities.

The Little Bay Cable Area may also provide staging habitat for juvenile American eels (glass eels and brown elvers) as they migrate upstream (Table 2-1).

Table 2-1. Potential seasonal occurrence of American eels within the proposed SRP Project Area.

Species	Designation*	Life Stage	Spring	Summer	Fall	Winter
American Eel	SC-A1	Juveniles (Elvers)	X			
		Adults (Yellow)	X	X	X	X
		Adults (Silver)	X			X

\* New Hampshire Fish and Game Department - Nongame and Endangered Species Program (NHFG 2009).

### Banded Sunfish

The banded sunfish (*Enneacanthus obesus*) is currently designated as SC-A1B and described as a species of Northeast Regional Conservation Concern due to increasing habitat threats in southern NH. These threats include shoreline development in rapidly expanding areas that may impact the intact, vegetated shoreline habitat of which the banded sunfish is highly dependent (NHFG 2009).

The preferred habitat of the banded sunfish is weedy areas of lakes and lowland stream backwaters (Sarcola 1987). This species has been found in the Upper Oyster River (2007), Oyster River (1985, 2005), and Longmarsh Brook (2005; NHNHB 2014). In the Upper Oyster River, the habitat was vegetated margins of small streams flowing through abandoned beaver ponds. The SRP crosses Longmarsh Brook approximately 300 feet downstream of the sampling location where banded sunfish were found in 2005. Aerial imagery from 2013 indicates a vegetated shoreline habitat in the portion of Longmarsh Brook within the Project Area (ESRI 2014). The likely presence of optimal habitat combined with occurrence of the species documented nearby in the same stream indicates that banded sunfish has a high probability of occurrence within the Project Area in Longmarsh Brook. The documented species occurrence in the Upper Oyster River and Oyster River upstream and downstream of the Project Area suggests that banded sunfish has the potential to occupy the Oyster River within the Project Area if habitat conditions are adequate.

### Swamp Darter

Swamp darter (*Etheostoma fusiforme*) is currently designated as SC-A1 due to increasing habitat threats, especially fragmentation, in developing areas of southern New Hampshire (NHFG 2009). Swamp darter habitat includes soft substrates in shallow vegetated areas of lakes and ponds (NHFG 2005b). Although more abundant in ponds, the species can also be found in swift or slow streams that contain patches of dense vegetation. Stream populations are typically associated with a nearby pond population, and spawning has not been observed in streams (Schmidt and Whitworth 1979, NHFG 2005b). Swamp darters were observed in the Oyster River in 1985 and 2005 (NHNHB 2014). In 1985, three swamp darters were observed below the Oyster River Reservoir Dam, approximately 0.2 miles upstream from the Project Area. In 2005, one individual was observed approximately 1 river-mile downstream from the Project Area. Aerial imagery from 2013 indicates the Oyster River habitat within the Project Area is similar to the habitats in other portions of the Oyster River where swamp darters have been observed (ESRI et al. 2014).

## 2.4 Reptiles

### Eastern Hog-nosed Snake

Records from NHNHB indicate that the eastern hognose snake (*Heterodon platirhinos*; State Endangered) was historically (prior to 1993) recorded in the Town of Durham. This species requires sandy, gravelly soils and usually occurs in open fields, river valleys, pine forests, and upland hillsides where these types of soils are present. Toads are their preferred prey, although frogs, salamanders, small mammals, birds and invertebrates are also taken. Because toads are favored, good habitat for hog-nosed snakes also includes good breeding habitat for amphibians (wetlands, vernal pools). Hog-nosed snakes hibernate in mammal burrows, under woody debris, or under trash piles. Mating generally occurs in spring, and eggs that are deposited in June and July hatch in August and September. Females typically deposit 15-25 eggs in a depression under rocks or logs, in sandy soil, or in mulch piles. Power line corridors are known to provide suitable habitat for this species.

The nearest known, current occurrence of eastern hog-nosed snake to the Project Area is in a power line corridor in the Concord/Pembroke area. This is the eastern-most known occurrence of the species in New Hampshire. During project construction, BMPs should be implemented to prevent impacts to all special status reptiles potentially present in the Project Area, and construction of this Project may improve habitat for eastern hog-nosed snake by reducing canopy cover which will improve basking and nesting opportunities in the Project Area.

### Northern Black Racer

Records from NHNHB indicate that an adult northern black racer (*Coluber constrictor constrictor*; State Threatened) was recently observed within the project Area in Madbury, as well as in the Project vicinity in Durham. The black racer in Madbury was observed on the grassy roadside area of the Madbury Road overpass of Boston-Maine RR at the Madbury/Durham town line. The NHNHB data indicates that a black racer was first reported at this location in 2004, and last reported in 2011. It is unclear if there were additional reports in the intervening years. The Durham specimen was observed in 2013 about 0.5 miles from the Project corridor south of the Packers Falls substation.

Northern black racers are habitat generalists, but are usually terrestrial, and may use relatively sparsely vegetated areas. They use a variety of habitats including dry brushy pastures, power line corridors, rocky ledges, and woodlands. They are often found in edge habitats, such as forest edges, old fields, and wetland edges. They have large home ranges (10-20 hectares) and therefore require a relatively large patch of suitable habitat. Black racers are only active during the daytime and are most active in warm weather. At night and during cool weather they take refuge in underground burrows, rock crevices, or under cover such as boards or tin. Black racers hibernate in rock crevices or mammal burrows, and they often den communally with other black racers or with other snake species. They may use the same den for years.

Because the specimen reported from Madbury occurred within the Project corridor, a survey of this location was conducted two occasions. A Certified Wildlife Biologist® visited the Madbury Road overpass of Boston-Maine RR at the Madbury/Durham town line on October 31, 2013, and

on April 22, 2015. The October visit was primarily to assess the habitat suitability of the area for northern black racers. Although it is possible that black racers would still be basking outside their hibernacula in late October, the weather on the day of the site visit was cold (40°F) and overcast, negating the likelihood of observing snakes directly. Conversely, April 22 was a sunny day with temperatures ranging from about 58°F to 68°F degrees during the visit, which was conducted from 10:30 to 12:30. No racers were observed on either visit.

During the October visit, the biologist examined the vegetation and substrate around the overpass, and then observed the area northward along the corridor by walking to the substation along the railroad tracks. During the April visit, the biologist examined the same area, but spent the majority of the time observing the rocky embankment (described below) where snakes would be likely to bask.

The SRP abuts a railroad corridor which contains a single track laid on supporting cobble, and an adjacent access road for wheeled vehicles, consisting of hard-packed dirt, sand, and gravel. The Project Area spans wetlands and uplands, and supports dense shrub vegetation and /or regenerating hardwood forest species in both the wetland and upland areas. The embankments of the overpass area are mowed periodically, and were densely vegetated with grassy species growing about 10 inches high. At the base of the embankment, exposed large rocks placed as part of the embankment construction were partly to mostly overgrown by forbs and shrubby vegetation. Loose piles of discarded railroad ties were present at the interface of the power line and railroad corridors, about 600 feet north of the overpass.

The survey indicated that the area provides useful resources to northern black racers and any individual with a home range that includes this area would likely use this portion of the Project Area. Within the survey area relatively dense vegetation abuts the unvegetated railroad corridor creating a distinct edge. Because northern black racers are habitat generalists with an affinity for edges, the Project Area potentially offers suitable habitat for this species. The diverse mix of uplands and wetland cover types provides high quality foraging opportunities for this generalist predator. Additionally, the open, packed dirt and stones of the railroad corridor offers high quality basking opportunities for snakes while the overgrown power line corridor offers escape cover. The large rocks at the base of the overpass embankment also offer plenty of nooks and crannies for snakes to spend the night in, or to escape hot temperatures on summer days. There is also some possibility that these rocks could provide overwintering habitat. The discarded railroad ties also potentially offer suitable summer thermoregulatory or escape cover for snakes. Similar conditions occur in a number of places where the Project Area abuts the railroad Project corridor. Given that the two NHNHB records of this species bookend the section of the SRP that coincides with the rail line, it is possible that black racers may use this entire area.

### **Blanding's and Spotted Turtles**

Records from NHNHB indicate both that Blanding's turtle (*Emydoidea blandingii*; State Endangered) and spotted turtle (*Clemmys guttata*; State Threatened) were historically present in various locations in Durham near the Project, and that spotted turtles have recently been

recorded within the Project Area. All New Hampshire turtles overwinter in permanent water bodies (i.e., ponds, streams, wetlands) with preference for a certain type of water body varying by species and to some degree by availability. During their active season, Blanding's and spotted turtles are semi-aquatic, using a mix of wetland, open water and upland habitats. Both species also use upland habitats to varying degrees to forage, and to travel between wetland habitats. Additionally, they lay their eggs in upland areas in late spring and early summer, digging shallow nests where they leave their eggs unattended to develop and hatch in two to three months.

Based on their known distribution, both Blanding's and spotted turtles are likely to be present within the Project Area at some time during the year. In particular, power line corridors have the potential to provide suitable nesting habitat. Habitat quality for turtle nesting depends on vegetation density and soil type. Loose, sandy soils with sparse vegetation have the highest habitat quality for nesting turtles, allowing them to dig nests easily and minimize the shading of nests. Any area, with an open canopy and loose, relatively dry soils located within 1,000 meters of a suitable water body has the potential to be used by turtles for nesting.

Species-specific surveys were not conducted for these two species, and none were encountered during other project work. However, based on their known distribution, it should be assumed that both turtles use portions of the Project Area in Durham during portions of their life cycle. During project construction, BMPs should be implemented to prevent impacts to all special status reptiles potentially present in the Project Area. In the long term, construction of this project may enhance habitat for turtles by reducing canopy cover which may improve nesting conditions in the Project Area.

## **2.5 Birds**

### **Bald Eagle**

Records from NHNHBB indicate that bald eagles (*Haliaeetus leucocephalus*; State Threatened) are currently present near the Project Area, but have not been recorded within it. This species is present in New Hampshire year-round, and uses a wide variety of habitats that combine large bodies of water containing abundant fish, and large trees for nesting, perching and roosting. There may be marked shifts in the locations of habitats used between summer and winter. High quality habitats may be used repeatedly from year to year, but this species continues to expand its range in New Hampshire and continues to adopt new nesting and winter roosting locations. Bald eagles are reported to e-bird in and around the Great Bay area on a consistent basis, and are potentially present anywhere within the Project Area. Based on this species' known distribution, surveys were not conducted although bald eagles were incidentally observed flying over Great Bay. However, in the season prior to construction, potential nesting or roosting areas should be surveyed to determine if they are currently being used. If eagle nests are within 0.25 miles of the Project Area, timing restrictions on construction activity within the 0.25-mile radius should be implemented to prevent disturbance. The transmission lines have been designed to Avian Power Line Interaction Committee's ("APLIC") bird-safe standards to

minimize the possibility of electrocuting all types of raptors including eagles, and other large birds (APLIC 2006).

### Osprey

Records from NHNHB indicate that ospreys (*Pandion haliaetus*; Species of Special Concern) was recently recorded nesting in the vicinity of the Project. This species breeds in New Hampshire during the spring and summer, then migrates south during the colder months of the year. Ospreys use habitats that combine large bodies of water containing abundant fish, and suitable structures for nesting and perching. This species is known to be present in and around the Great Bay area, and has nested on other features in the vicinity of the Project (NHNHB 2014). Based on the small size of the existing poles, species-specific surveys were not conducted along the SRP corridor. PSNH staff and Normandeau biologists surveying the Project Area for other purposes did not report existing osprey nests. However, in the season prior to construction, the Project Area should be reviewed to determine if it is currently being used. If ospreys are present, construction activities should be modified to prevent disturbance. The transmission lines have been designed to APLIC's bird-safe standards to minimize the possibility of electrocuting all types of raptors including eagles, and other large birds (APLIC 2006).

### Golden-winged Warbler

Records from NHNHB indicate that the golden-winged warbler (*Vermivora chrysoptera*; Species of Special Concern) was historically recorded adjacent to the Project Area in Durham. This species uses semi-open park-like habitats and shrublands. Power line corridors potentially provide good quality habitat for this species (Confer et al. 2011), and expanding the SRP clearing could improve habitat conditions for this species. NHNHB does not require surveys for historic species. Because the most recent record for this species in the Project Area is from 1984, and there no current records in the vicinity of the Project, no survey was conducted for this species.

### Grasshopper Sparrow

Records from NHNHB indicate that grasshopper sparrow (*Ammodramus savannarum*; State Threatened) was recently present near the Project in Newington, but has not been recorded within it. This species requires breeding sites of at least 30 acres and prefer sites greater than 99 acres. These areas are primarily dry upland sites, composed of short native bunch grasses, minimal litter cover, patches of bare ground, scattered forbs, and short shrubs. Fence posts and shrubs are used as song perches. Bare ground is important for allowing adult birds and young to run and escape predators and to search for insects. Hayfields and other agricultural uses do not generally provide suitable vegetative structure for this species. (Vickery 1996, Mass Audubon 2013). There are no suitable habitat areas for this species within the Project Area.

### Henslow's Sparrow

Records from NHNHB indicate that Henslow's sparrow (*Ammodramus savannarum*) was historically present near the Project in Newington, but has not been recorded within it. This species is tracked by NHNHB but is not listed by State of New Hampshire. Preferred breeding

habitats in the Northeast are wet meadows with tall, dense vegetation and thick litter. Hayfields and other agricultural uses do not generally provide suitable vegetative structure for Henslow's sparrow (Herkert 2003). No survey for this species was conducted as the NHNHB records are historic and not within the Project Area.

### Least Bittern

Records from NHNHB indicate that least bittern (*Ixobrychus exilis*; Species of Special Concern) was historically present near the Project in Durham, but has not been recorded within it. This species is associated with various types of shallow and deep marsh dominated by grass-like species, including cattails, bulrushes, and sedges. Some woody or shrubby vegetation is usually also present. This species is most likely to be present in wetlands at least 12 acres in size, but will use wetlands as small as one acre (Poole et al. 2009). Ideal habitat consists of an equitable mix of open water and dense vegetation patches. No survey for this species was conducted as the NHNHB records are historic and not within the Project Area, and habitat within the Project Area is marginal.

### Roseate Tern

The northeast population of the roseate tern (*Sterna dougallii*) is listed as endangered under both federal and New Hampshire State Endangered Species Acts. Records from NHNHB indicate that this species has not been observed in the vicinity of the Project Area. This species breeds in small numbers (<100 pairs) on New Hampshire's coastal islands during the spring and summer, then migrates south during the colder months of the year. Roseate terns feed on a variety of fish and smaller invertebrates, generally hunting over open ocean, but sometimes hunting or loafing in coastal locations, including shorelines and estuaries. The Great Bay could potentially offer some foraging resources to this species. Based on e-bird reports from the last 10 years, this species is seen regularly in coastal locations in Rye and New Castle. There are no inland reports of this species, including no reports from Great Bay.

### Sedge Wren

Records from NHNHB indicate that the Sedge wren (*Cistothorus platensis*; State Endangered) was historically present near the Project in Durham, but has not been recorded within it. This species nests among dense, tall growths of sedges and grasses in wet meadows, hayfields, retired croplands, upland margins of ponds and marshes, coastal marshes, and sphagnum bogs. Sedge wrens usually avoid short, sparse, or open vegetative cover, flooded areas, and wetlands dominated by cattails (Herkert et al. 2011). This species reaches its greatest densities in the grassland regions of the upper midwest and adjacent Canada, in the early part of the breeding season. Later in the breeding season it appears in lower densities in other regions, including New England, but it is notorious for its erratic and inconsistent distribution outside its core upper midwest range (Herkert et al. 2011).

Based on its erratic and inconsistent distribution in New England, the historic nature of the records for it, and the small amount of suitable habitat, this species is unlikely to be present in the Project Area. No survey was conducted.



## Upland Sandpiper

Records from NHNHB indicate that upland sandpiper (*Bartramia longicauda*; State Endangered) was historically present near the Project in Newington, but has not been recorded within it. This species requires extensive grassland (>30 hectares) breeding sites. Habitat requirements consist of dry grasslands with low to moderate forb cover, low woody cover, moderate grass cover, moderate to high litter cover, and little bare ground (Dechant et al. 2003). Fence posts may be used song perches, but even sparse shrub cover is avoided. Regularly mowed fields (hay) do not generally provide suitable vegetative structure for this species. There is no suitable habitat for this species within the Project Area, and no surveys were conducted for it.

## 2.6 Mammals

### Northern Long-eared Bat

The northern long-eared bat (NLEB; *Myotis septentrionalis*) is state and federally threatened. Therefore, a formal consultation with the USFWS is required as part of the permitting process (See NLEB Biological Assessment, in appendices). The USFWS rules and guidance on this species is still evolving. The interim 4(d) rule published as part of the NLEB's April 2, 2015 listing allows tree clearing for expansions of transmission corridors up to 100 feet from the edge of an existing cleared Project Area, but the final rule may contain different or additional requirements. PSNH is committed to meeting the USFWS rules when finalized.

Existing information about NLEB summarized in the NHWAP indicates that this species has been recorded in Carroll, Coos, Cheshire, Grafton, Hillsborough and Rockingham counties (Preston 2015). Unpublished data also indicates that this species was detected at Great Bay NWR in 2014. Additionally, the known range of the NLEB encompasses the entire Northeast, making it almost certainly a resident throughout New Hampshire. The USFWS considers all coastal towns in New Hampshire to be known NLEB habitat.

NLEB summer roosts have been documented in forested habitats, primarily in deciduous trees under loose bark, tree hollows, and crevices, and sometimes in wooden structures such as barns (Preston 2015). In New Hampshire, data from the White Mountain National Forest (WMNF) indicated that the majority of NLEB summer roosts were in large snags, but live trees were also used. Large, tall trees/snags with intact bark and moderate levels of decay were commonly used, especially if they had hollows. Maternity roosts were almost always in hardwood trees and generally in trees that were taller than the stand average, with a preponderance of 'recently dead' trees being used (Sasse 1995). Summer habitat is considered widespread and abundant for this species across its range.

Female NLEBs form maternity colonies ranging from a few to more than 100 individuals roosting in cavities within snags or under exfoliating bark of live or dead trees. Although these colonies are generally located in closed forest locations, exposure to sunlight and consequently warmer temperatures are preferred, as warmer temperatures promote more rapid development of young. Throughout much of their range, female NLEBs typically switch roost trees every few days and may travel up to two kilometers between successive roost trees, but roosts are commonly clustered in small (less than 20 hectares) areas (Johnson et al. 2009).

These bats are non-migratory and hibernate locally in caves, rock overhangs, and mines. In summer they use forested habitats and are adapted for flight in more cluttered environments than other bat species. This allows NLEB to forage more extensively under the forest canopy than other bat species, as well as in forest openings, and only uncommonly over open water.

### **New England Cottontail**

Records from NHHNB indicate that New England Cottontail (*Sylvilagus transitionalis*; State Endangered) has not been recorded within the vicinity of Project. However, there are parcels being actively managed to create suitable habitat for New England cottontail (described below) in the Towns of Lee, Durham, and Dover. Two of the parcels being managed in Durham abut the Project Area, UNH's Foss Farm and NHFG's LaRoche Brook parcels.

The New England cottontail requires early successional habitats, and depends more upon vegetation structure (form, height, and density) rather than specific species (Litvaitis and Jakubas 2004). Preferred habitats include shrubby old fields and regenerating clear cuts. Regenerating clear cuts used by New England cottontail usually include hardwoods such as birch, aspen, and red maple; conifer regeneration does not seem to attract New England cottontail (newenglandcottontail.org 2012). Studies indicate that New England cottontails are reluctant to venture more than 5 meters (16 feet) from cover within their habitat patches (Barbour and Litvaitis 1993). Adult rabbits stay within their home range and make few long distance movements. However, sub-adult males normally make long one-way movements outside of their natal patch. Long-range movements for sub-adult females are less common. In summer, diets of the New England cottontail consist of a wide variety of herbaceous plant. During winter months, New England cottontail feeds mainly on woody browse from small trees, shrubs, and vines (Litvaitis and Jakubas 2004). New England cottontail are preyed upon by a wide variety of predators and individuals have a life expectancy of less than 2 years (newenglandcottontail.org 2012)

The SRP currently contains an existing narrow cleared corridor, abutted by a railroad corridor along the western side. Power line corridors in New England are one of the best sources of shrubby habitats in a landscape which is largely forested. Regular vegetation maintenance in these corridors creates shrubby conditions that New England cottontails require, and the extensive, linear nature of a corridor can provide connections to other patches of shrubland. The proposed SRP will widen the existing power line corridor, creating incrementally more shrub habitat. The current habitat quality offered by the existing power line corridor is likely to be improved by the additional width. PSNH currently collaborates with NHFG during maintenance on transmission corridors to improve habitat for this species, and will do so on this project.

## **3.0 Discussion**

The results of field surveys and desktop analyses indicate that the Project Area currently provides habitat for several state and federally protected species, including: 1 plant, 4 natural communities, 1 invertebrate, 5 fish, 3 reptiles, 2 birds and 2 mammals (Table 3-1). Permanent

impacts of the Project include placement of new transmission structures, removal of existing wooden poles, and vegetation clearing to remove trees to clear a maximum corridor width of 100 feet. Temporary impacts include mowing the work area, timber mats placed in work areas in wetlands and other sensitive resources to provide access for construction equipment, trenching (cut and cover) in the sections proposed for underground cable on land, and use of a jetplow to bury three cables under Little Bay.

In general, impacts to protected species will be managed through Best Management Practices during construction. Examples include pre-construction surveys to ensure the absence of nesting bald eagles and osprey (if either species is breeding within or near the Project Area, time-of-year restrictions may apply); repeated searches during construction to clear the active work area of turtles and snakes; hand cutting in the vicinity of the ringed boghaunter habitat in the unlikely case that larvae use the marginal habitat in the Project Area; and minimization of clearing preferred shrubby areas in New England cottontail habitat.

Approximately 0.02 acres of unavoidable temporary impacts to the fringing salt marsh will be restored following burial of the cable. Restoration techniques will include salvaging the intact peat prior to trenching for replacement after the cables are buried. Temporary impacts to rocky shore may also occur. The extent of impacts will depend on the most suitable approach to traversing the rocky shore, and will in turn depend on the type of ledge and the installer. Possibilities include cut and cover, and surface burial in a protective cover. The resulting impacted area will be restored to its original configuration to the extent possible. Recolonization by macroalgae on rocky substrates is expected to occur naturally.

The intertidal flats and subtidal bottom will be allowed to restore and recolonize naturally after completion of the cable installation. The jetplow process will disturb sediments while laying the cable, but the water pressure of the jets and the speed of the plow will be controlled to minimize sediments going into suspension in the water column. The currents within the channel and wave and ice action on the tidal flats are expected to restore existing bottom contours in the vicinity of the trenches, followed by recolonization of benthic infauna and ultimately shellfish after completion of construction.

Monitoring of all impacted tidal and freshwater resources will occur both during and after construction to assess the success of the habitat restoration.

SEACOAST RELIABILITY PROJECT  
 RTE SPECIES AND EXEMPLARY NATURAL COMMUNITIES REPORT

Table 3-1. Protected species and Exemplary Vegetation Communities known to, or likely to occur, in the SRP corridor.

Species	Status <sup>1</sup>	Species Management
Crested Sedge ( <i>Carex cristatella</i> )	E	Possible impacts during tree clearing, minimize by clearing in dormant season.
Salt marsh system	Tracked but not listed	Temporary impacts, restore habitat
High salt marsh	Tracked but not listed	Temporary impacts, restore habitat
Sparsely vegetated intertidal system	Tracked but not listed	Temporary impacts, restore habitat
Subtidal system	Tracked but not listed	Temporary impacts, restore habitat
Ringed Boghaunter ( <i>Williamsonia lintneri</i> )	E	Marginal habitat; hand cut along stream to avoid impacts to larvae
Short-nosed Sturgeon ( <i>Acipenser brevirostrum</i> )	Ext, E*	Not likely to be adversely affected – will avoid jetplow and can tolerate high TSS
Atlantic Sturgeon ( <i>Acipenser oxyrinchus oxyrinchus</i> )	T*	Not likely to be adversely affected – will avoid jetplow and can tolerate high TSS
American Eel ( <i>Anguilla rostrata</i> )	SC	No impacts anticipated – all streams avoided or bridged. Fall construction period will avoid silver migrants.
Banded Sunfish ( <i>Enneacanthus obesus</i> )	SC	No impacts anticipated – construction and clearing in all known habitat avoided
Swamp Darter ( <i>Etheostoma fusiforme</i> )	SC	No impacts anticipated – no construction or clearing in Oyster River
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	Survey to remove individuals from construction area; wider maintained corridor may benefit species
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	Survey to remove individuals from construction areas
Spotted Turtle ( <i>Clemmys guttata</i> )	T	Survey to remove individuals from construction areas
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T	Nest survey before construction
Osprey ( <i>Pandion haliaetus</i> )	SC	Nest survey before construction

(continued)

Table 3-1. (Continued)

Species	Status <sup>1</sup>	Species Management
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	T, T*	The current 4(d) rule issued as part of the federal listing of this species allows expansion of existing transmission corridors of 100 feet or less if there are no impacts to known maternity roosts; there are no known roosts in the Project Area.
New England Cottontail ( <i>Sylvilagus transitionalis</i> )	E	No known occurrence. Use BMPs to minimize adverse habitat impacts; work with NHFG to enhance habitat during corridors maintenance.

1. E-State Endangered  
 T- State Threatened  
 SC-State Special Concern  
 Ext - Extirpated  
 \*-Federal status

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**Appendix A (separate doc in Draft due to file size)**

Protected Species Records from NH Natural Heritage Bureau, US Fish and Wildlife Service and National Marine Fisheries Service





## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 COMMERCIAL STREET, SUITE 300  
CONCORD, NH 3301  
PHONE: (603)223-2541 FAX: (603)223-0104  
URL: [www.fws.gov/newengland](http://www.fws.gov/newengland)

Consultation Tracking Number: 05E1NE00-2015-SLI-0118

November 20, 2014

Project Name: PSNH Seacoast Reliability Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior  
Fish and Wildlife Service

Project name: PSNH Seacoast Reliability Project

## Official Species List

### Provided by:

New England Ecological Services Field Office

70 COMMERCIAL STREET, SUITE 300

CONCORD, NH 3301

(603) 223-2541

<http://www.fws.gov/newengland>

**Consultation Tracking Number:** 05E1NE00-2015-SLI-0118

**Project Type:** Transmission Line

**Project Description:** PSNH is proposing to construct a new 13-mile 115kV transmission line between their Madbury and Portsmouth substations. It will predominantly follow existing ROW. It will cross the Great Bay National Wildlife Refuge and have a submarine segment under Little Bay



United States Department of Interior  
Fish and Wildlife Service

Project name: PSNH Seacoast Reliability Project

### Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-70.9179682 43.1648082, -70.9182446 43.164808, -70.9306041 43.1475873, -70.9360124 43.1249784, -70.9348108 43.1145158, -70.9246825 43.1178352, -70.8865746 43.1217195, -70.8809107 43.1154562, -70.8697527 43.1068719, -70.8541315 43.1005426, -70.8495825 43.0992892, -70.8407419 43.1000413, -70.8269223 43.1069346, -70.8198842 43.1087518, -70.8131036 43.1045534, -70.8058938 43.0940246, -70.798684 43.0975344, -70.7898435 43.0985372, -70.7852944 43.0961556, -70.7851228 43.0956542, -70.7848825 43.0935828, -70.7904442 43.093962, -70.7957657 43.0942754, -70.8048637 43.0902013, -70.812434 43.1001008, -70.8202265 43.1058694, -70.8196256 43.1071853, -70.8196256 43.107248, -70.8208273 43.1046787, -70.8369634 43.0980985, -70.8470915 43.0942722, -70.8747353 43.1040522, -70.8882965 43.1160829, -70.9253754 43.1126995, -70.9401382 43.1071854, -70.9427046 43.1254802, -70.9378809 43.1450221, -70.933761 43.1680635, -70.9179682 43.1648082)))





United States Department of Interior  
Fish and Wildlife Service

Project name: PSNH Seacoast Reliability Project

**Project Counties:** Rockingham, NH | Strafford, NH



United States Department of Interior  
Fish and Wildlife Service

Project name: PSNH Seacoast Reliability Project

## Endangered Species Act Species List

There are a total of 2 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Roseate tern ( <i>Sterna dougallii dougallii</i> ) Population: northeast U.S. nesting pop.	Endangered		
<b>Flowering Plants</b>			
Small Whorled pogonia ( <i>Isotria medeoloides</i> )	Threatened		



United States Department of Interior  
Fish and Wildlife Service

Project name: PSNH Seacoast Reliability Project

## **Critical habitats that lie within your project area**

There are no critical habitats within your project area.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
GREATER ATLANTIC REGIONAL FISHERIES OFFICE  
55 Great Republic Drive  
Gloucester, MA 01930-2276

DEC - 2 2014

Ann E. Pembroke  
Vice President  
Normandeau Associates, Inc.  
25 Nashua Rd.  
Bedford, NH 03110

**Re: Public Service of New Hampshire  
Seacoast Reliability Project**

Dear Ms. Pembroke:

This is in response to your letter received November 24, 2014 requesting information on the presence of species listed under the Endangered Species Act by NOAA's National Marine Fisheries Service (NMFS) in the proposed project area. The proposed project involves constructing a new 115 kilovolt (kV) transmission line between the existing Madbury and Portsmouth substations. The 12.9 mile long project begins at the existing Public Service of New Hampshire (PSNH) Madbury Substation in Madbury, traverses Durham, crosses Little Bay via an underwater cable into Newington, and then continues east before ending in Portsmouth. The method of installing the underwater cable has not been decided.

The following endangered species may occur in Little Bay and Oyster River: Shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) (Distinct Population Segments [DPS]: New York Bight, Chesapeake Bay, Carolina, South Atlantic).

The following threatened species may occur in Little Bay and Oyster River: Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) (Distinct Population Segments [DPS]: Gulf of Maine).

**Conclusion**

As listed species of sturgeon may occur in Little Bay and Oyster River, and thus, within the vicinity of your proposed project, any proposed in-water work has the potential to impact these species. If your project involves dredging or sediment disturbance, we would recommend placing a turbidity curtain around the project area. This will not only contain suspended sediment within the affected area, but will also prevent sturgeon from coming in contact with any increased turbidity or mechanical activity associated with the project. We would also recommend using the Horizontal Directional Drilling (HDD) method in installing the underwater cable as it would also prevent sturgeon from coming into contact with any mechanical activity.

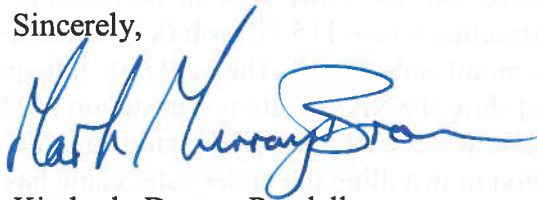


As project details become finalized, a consultation, pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended, may be necessary as any discretionary federal action, such as the approval or funding of a project by a federal agency, that may affect a listed species must undergo consultation pursuant to section 7 of the ESA of 1973, as amended. If the proposed project has the potential to affect listed species, and it is being approved, permitted or funded by a Federal agency, the lead Federal agency, or their designated non-Federal representative, is responsible for determining whether the proposed action is likely to affect the listed species. The Federal agency would submit their determination along with justification for their determination and a request for concurrence, to the attention of the ESA Section 7 Coordinator, NMFS Greater Atlantic Fisheries Regional Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, NMFS would then be able to conduct a consultation under section 7 of the ESA. Should you have any questions about these comments or about the section 7 consultation process in general, please contact Edith Carson at 978-282-8490 or by email [Edith.Carson@noaa.gov](mailto:Edith.Carson@noaa.gov).

**Essential Fish Habitat (EFH)**

NMFS Habitat Conservation Division (HCD) is responsible for conducting consultations with State and Federal agencies for proposed actions that may adversely affect EFH and other NOAA trust resources. HCD's Mike Johnson sent you an email on November 24, 2014 regarding EFH in your proposed project area. If you have any further questions regarding EFH, please contact Mike Johnson at 978-281-9130 or by email at [Mike.R.Johnson@noaa.gov](mailto:Mike.R.Johnson@noaa.gov).

Sincerely,

  
for  
Kimberly Damon-Randall  
Assistant Regional Administrator  
for Protected Resources

EC: Carson, NMFS/PRD

File Code: Section 7/Nonfisheries/Private Firms/Technical Assistance/2014/ Normandeau Public Service of NH Seacoast Reliability Project



# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Susan Hegarty, Normandeau Associates, Inc.  
25 Nashua Road  
Bedford, NH 03110

**From:** Amy Lamb, NH Natural Heritage Bureau

**Date:** 11/9/2015 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB15-3561

Town: Madbury, Durham, Newington,  
Portsmouth

Location:

Description: Eversource is proposing to construct a new 13-mile 115kV transmission line between their Madbury and Portsmouth substations. It will predominantly follow existing ROW. It will consist primarily of overhead structures, but will have an underground section at UNH in Durham and will have a submarine segment under Little Bay. This is an update request. Our previously requested data expired on 10/2/2015. NHB file ID: NHB14-3618.

cc: Kim Tuttle

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

**Comments: This review is a follow-up to NHB14-3618 (9/24/2014) and the NHB14-3618 Addendum (10/2/2014). Continued coordination with NHB and NH Fish & Game is needed as this project progresses through permitting.**

## Invertebrate Species

	State <sup>1</sup>	Federal	Notes
Ringed Boghaunter ( <i>Williamsonia lintneri</i> )	E	--	Contact the NH Fish & Game Dept (see below).

## Natural Community

	State <sup>1</sup>	Federal	Notes
Hemlock - beech - oak - pine forest	--	--	Threats include logging, introduction of invasive species, and direct destruction due to development.
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.
Red maple - sensitive fern swamp	--	--	These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff.

# Memo



Salt marsh system	--	--	Threats are primarily changes to the hydrology of the system, introduction of invasive species, and increased input of nutrients and pollutants.
Sparsely vegetated intertidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Subtidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

## Plant species

	State <sup>1</sup>	Federal	Notes
Black Maple ( <i>Acer nigrum</i> )	T	--	Threats are primarily damage to its floodplain or riverbank habitat, including changes to local hydrology, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.
bulbous bitter-cress ( <i>Cardamine bulbosa</i> )	E	--	This species occurs in forested swamps, low floodplain forest, and moist thickets.. Threats to the plants include canopy removal and destruction (draining) of its habitat.
crested sedge ( <i>Carex cristatella</i> )*	E	--	This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
Engelmann's Quillwort ( <i>Isoetes engelmannii</i> )*	E	--	Primarily vulnerable to changes to the hydrology of its wetland habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
great bur-reed ( <i>Sparganium eurycarpum</i> )	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
greater fringed-gentian ( <i>Gentianopsis crinita</i> )*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
Marsh Elder ( <i>Iva frutescens</i> )	T	--	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.
Rigid Sedge ( <i>Carex tetanica</i> )*	--	--	This plant relies on open habitat, and maintenance of the hydrology of any wetland where it occurs.
Sensitive species	T	T	Please contact NH Natural Heritage (271-2215 x 323) if project impacts could occur

# Memo



in the area shown on the map.

Vertebrate species	State <sup>1</sup>	Federal	Notes
American Eel ( <i>Anguilla rostrata</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Banded Sunfish ( <i>Enneacanthus obesus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake ( <i>Heterodon platirhinos</i> )*	E	--	Contact the NH Fish & Game Dept (see below).
Grasshopper Sparrow ( <i>Ammodramus savannarum</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Least Bittern ( <i>Ixobrychus exilis</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Osprey ( <i>Pandion haliaetus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Sea Lamprey ( <i>Petromyzon marinus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Sedge Wren ( <i>Cistothorus platensis</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle ( <i>Clemmys guttata</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Swamp Darter ( <i>Etheostoma fusiforme</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Upland Sandpiper ( <i>Bartramia longicauda</i> )	E	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = 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. An on-site survey would provide better information on what species and communities are indeed present.



# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Susan Hegarty, Normandeau Associates, Inc.  
25 Nashua Road  
Bedford, NH 03110

**From:** Melissa Coppola, NH Natural Heritage Bureau

**Date:** 9/24/2014 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB14-3618

Town: Madbury, Durham, Newington,  
Portsmouth

Location: new 13-mile 115kv transmission line

Description: PSNH is proposing to construct a new 13 mile 115kV transmission line between their Madbury and Portsmouth substations. It will predominantly follow existing right-of-way. It will cross Great Bay National Wildlife Refuge and have a submarine segment under Little Bay.

cc: Kim Tuttle, Maria Tur

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

**Comments: NHB recommends a pre-application meeting to discuss the details of the project and to address NHB and Fish and Game concerns and survey needs.**

Natural Community	State <sup>1</sup>	Federal	Notes
Hemlock - beech - oak - pine forest	--	--	Threats include logging, introduction of invasive species, and direct destruction due to development.
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.
Red maple - sensitive fern swamp	--	--	These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff.
Salt marsh system	--	--	Threats are primarily changes to the hydrology of the system, introduction of invasive species, and increased input of nutrients and pollutants.
Sparsely vegetated intertidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal

# Memo



Subtidal system -- -- flat) and increased input of nutrients and pollutants in storm runoff.  
Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

## Plant species

	State <sup>1</sup>	Federal	Notes
bulbous bitter-cress ( <i>Cardamine bulbosa</i> )	E	--	This species occurs in forested swamps, low floodplain forest, and moist thickets.. Threats to the plants include canopy removal and destruction (draining) of its habitat.
crested sedge ( <i>Carex cristatella</i> )*	E	--	This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
great bur-reed ( <i>Sparganium eurycarpum</i> )	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
greater fringed-gentian ( <i>Gentianopsis crinita</i> )*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
Marsh Elder ( <i>Iva frutescens</i> )	T	--	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.
Rigid Sedge ( <i>Carex tetanica</i> )*	--	--	This plant relies on open habitat, and maintenance of the hydrology of any wetland where it occurs.
Sensitive species	T	T	Please contact NH Natural Heritage (271-2215 x 323) if project impacts could occur in the area shown on the map.

## Vertebrate species

	State <sup>1</sup>	Federal	Notes
American Eel ( <i>Anguilla rostrata</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake ( <i>Heterodon platirhinos</i> )*	E	--	Contact the NH Fish & Game Dept (see below).
Golden-winged Warbler ( <i>Vermivora chrysoptera</i> )*	SC	--	Contact the NH Fish & Game Dept (see below).
Grasshopper Sparrow ( <i>Ammodramus savannarum</i> )	T	--	Contact the NH Fish & Game Dept (see below).

# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

Henslow's Sparrow ( <i>Ammodramus henslowii</i> )*	--	--	Contact the NH Fish & Game Dept (see below).
Least Bittern ( <i>Ixobrychus exilis</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Osprey ( <i>Pandion haliaetus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Sedge Wren ( <i>Cistothorus platensis</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle ( <i>Clemmys guttata</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Swamp Darter ( <i>Etheostoma fusiforme</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Upland Sandpiper ( <i>Bartramia longicauda</i> )	E	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = 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. Contact for federally-listed animals: Anthony Tur, US FWS, at (603) 223-2541. Contact for federally-listed species: Maria Tur, US FWS, at (603) 223-2541.

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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. An on-site survey would provide better information on what species and communities are indeed present.

# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Susan Hegarty, Normandeau Associates, Inc.  
25 Nashua Road  
Bedford, NH 03110

**From:** Melissa Coppola, NH Natural Heritage Bureau

**Date:** 10/2/2014 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB14-3618  
Addendum

Town: Madbury, Durham, Newington,  
Portsmouth

Location: new 13-mile 115kv transmission line

Description: PSNH is proposing to construct a new 13 mile 115kV transmission line between their Madbury and Portsmouth substations. It will predominantly follow existing right-of-way. It will cross Great Bay National Wildlife Refuge and have a submarine segment under Little Bay.

cc: Kim Tuttle

## ADDENDUM TO NHB14-3618

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

**Comments: NHB recommends a pre-application meeting to discuss the details of the project and to address NHB and Fish and Game concerns and survey needs.**

### Invertebrate Species

	State <sup>1</sup>	Federal	Notes
Ringed Boghaunter ( <i>Williamsonia lintneri</i> )	E	--	Contact the NH Fish & Game Dept (see below).

### Plant species

	State <sup>1</sup>	Federal	Notes
Black Maple ( <i>Acer nigrum</i> )	T	--	Threats are primarily damage to its floodplain or riverbank habitat, including changes to local hydrology, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.
Engelmann's Quillwort ( <i>Isoetes engelmannii</i> )*	E	--	Primarily vulnerable to changes to the hydrology of its wetland habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.

### Vertebrate species

	State <sup>1</sup>	Federal	Notes
Banded Sunfish ( <i>Enneacanthus obesus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = 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.

## Memo

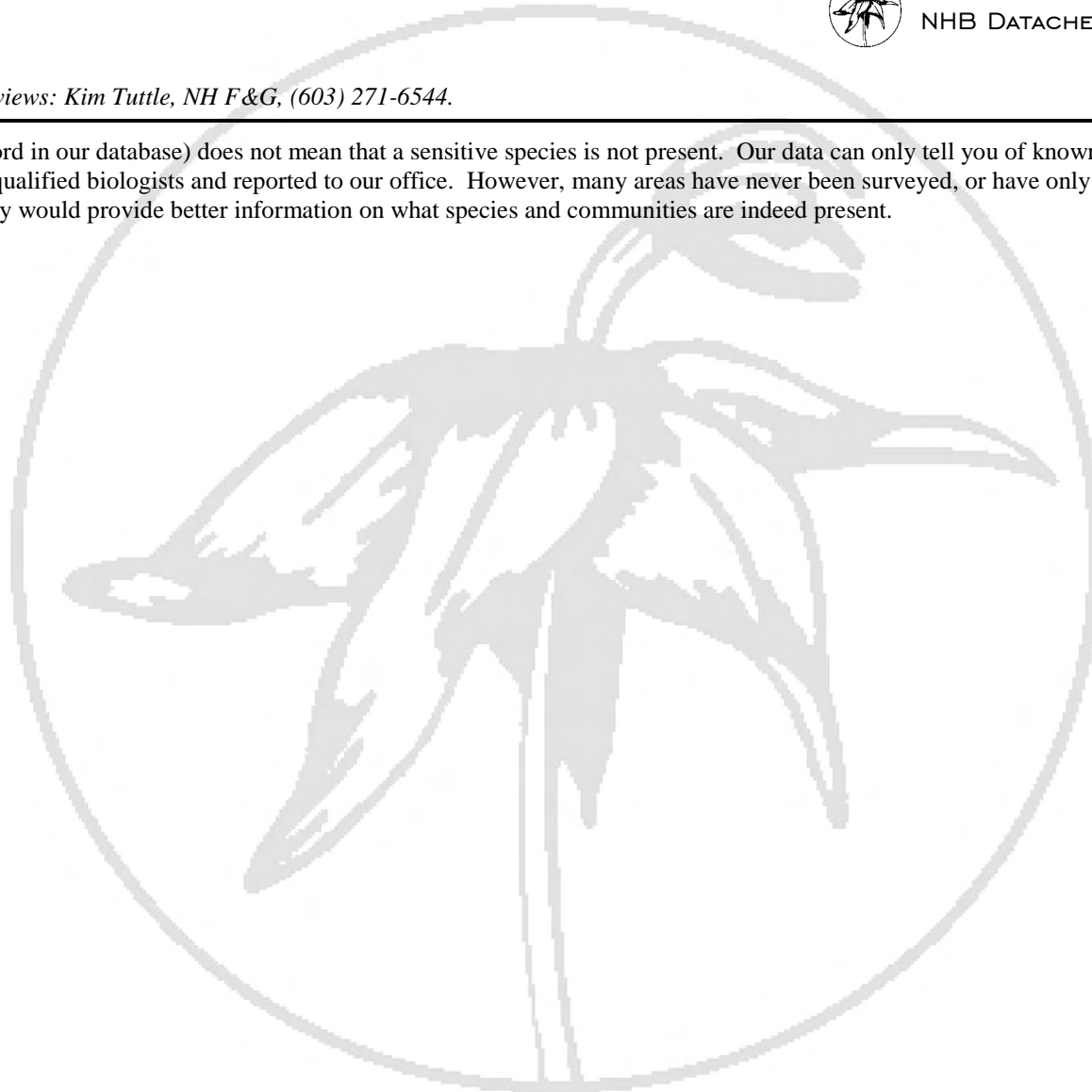


NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

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

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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. An on-site survey would provide better information on what species and communities are indeed present.



# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Sarah Allen, Normandeau Associates  
25 Nashua Rd  
Bedford, NH 03110

**From:** Melissa Coppola, NH Natural Heritage Bureau

**Date:** 8/13/2013 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB13-2434

Town: Madbury, Durham, Newington,  
Portsmouth

Location: Tax Maps: multiple

Description: PSNH is proposing to construct a new 13-mile 115kV transmission line between their Madbury and Portsmouth substations. It will predominantly follow existing ROW. It will cross the Great Bay National Wildlife Refuge and have a submarine segment under Little Bay.

cc: Kim Tuttle

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

**Comments: NHB recommends a pre-application meeting to discuss the details of the project and to address NHB and NH Fish and Game concerns.**

<b>Invertebrate Species</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
Ringed Boghaunter ( <i>Williamsonia lintneri</i> )	E	--	Contact the NH Fish & Game Dept (see below).
<b>Natural Community</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
Hemlock - beech - oak - pine forest	--	--	Threats include logging, introduction of invasive species, and direct destruction due to development.
Red maple - sensitive fern swamp	--	--	These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff.
Sparsely vegetated intertidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Subtidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations 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  
NHB DATACHECK RESULTS LETTER

<b>Plant species</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
Black Maple ( <i>Acer nigrum</i> )	T	--	Threats are primarily damage to its floodplain or riverbank habitat, including changes to local hydrology, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.
bulbous bitter-cress ( <i>Cardamine bulbosa</i> )	E	--	This species occurs in forested swamps, low floodplain forest, and moist thickets.. Threats to the plants include canopy removal and destruction (draining) of its habitat.
crested sedge ( <i>Carex cristatella</i> )*	E	--	This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
Engelmann's Quillwort ( <i>Isoetes engelmannii</i> )*	E	--	Primarily vulnerable to changes to the hydrology of its wetland habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
great bur-reed ( <i>Sparganium eurycarpum</i> )	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
greater fringed-gentian ( <i>Gentianopsis crinita</i> )*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
Rigid Sedge ( <i>Carex tetanica</i> )*	--	--	This plant relies on open habitat, and maintenance of the hydrology of any wetland where it occurs.
<b>Vertebrate species</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
American Eel ( <i>Anguilla rostrata</i> )*	SC	--	Contact the NH Fish & Game Dept (see below).
Banded Sunfish ( <i>Enneacanthus obesus</i> )	SC	--	Contact the NH Fish & Game Dept (see below).
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer ( <i>Coluber constrictor constrictor</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Sedge Wren ( <i>Cistothorus platensis</i> )	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle ( <i>Clemmys guttata</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Swamp Darter ( <i>Etheostoma fusiforme</i> )	SC	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = 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.

## Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

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

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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. An on-site survey would provide better information on what species and communities are indeed present.

