

# Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

## Sudbury, Massachusetts

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# 1

## Introduction

Following the Massachusetts Department of Environmental Protection's ("MassDEP") "Wildlife Habitat Protection Guidance for Inland Wetlands ("the Guidance")<sup>1</sup> the Sudbury Wetlands Administration Bylaw<sup>2</sup> ("Bylaw"), and the Sudbury Wetlands Administration Bylaw Regulations<sup>3</sup> ("Bylaw Regulations"), Appendix B: Detailed Wildlife Habitat Evaluations forms ("WHE") were completed for individual Wetland Impact Areas ("WIAs") in support of a Notice of Intent ("NOI") submission on behalf of the co-applicants, the Massachusetts Department of Conservation and Recreation ("DCR") and NSTAR Electric Company d/b/a Eversource Energy ("Eversource"). The WHE evaluated WIAs that are jurisdictional under both the MassDEP Wetlands Protection Act ("MWPA") and the Bylaw Regulations.

The "Project" includes completing a portion of the regional Massachusetts Central Rail Trail ("MCRT") and constructing a new 115-kilovolt ("kV") underground electric transmission line ("the underground transmission line"). For a detailed Project description, please see Section 2 in the NOI narrative. Both the underground transmission line and the MCRT qualify as limited projects according to the Wetlands Protection Act Regulations<sup>4</sup> ("the Regulations") at 310 CMR 10.53(3)(d) and 10.53(6), respectively. The "Project Locus" in Sudbury is approximately 4.3 miles long and includes the entire width of the MBTA ROW from the Hudson/Sudbury municipal border to the Sudbury Substation off Route 20. The MBTA ROW width is variable but averages 82 feet wide in most locations and travels past residential areas, commercial developments, wooded areas, and roadways. It is important to note that this WHE only evaluated Project-related impacts to wetland resource areas within the MBTA ROW and not the Sudbury Substation because it is already constructed and does not contain natural habitat.

The boundaries of wetland resource areas in the Project Locus were approved by the Sudbury Conservation Commission with an Order of Resource Area Delineation ("ORAD")

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<sup>1</sup> Massachusetts Department of Environmental Protection. Wildlife Habitat Protection Guidance for Inland Wetlands (2006). <http://umasscaps.org/pdf/wldhab.pdf>

<sup>2</sup> Article XXII Wetlands Administration Bylaw. Accessed February 26, 2019. <https://s3-us-west-2.amazonaws.com/cdn.sudbury.ma.us/wp-content/uploads/sites/273/2015/01/ARTICLE-XXII-WETLANDS-ADMINISTRATION.pdf?version=7c07334911d90a7ef9dce506686542d9>

<sup>3</sup> Sudbury Wetlands Administration Bylaw Regulations, Revised September 25, 2017. Accessed February 26, 2019. <https://s3-us-west-2.amazonaws.com/cdn.sudbury.ma.us/wp-content/uploads/sites/272/2017/10/Wetlands-Bylaw-Regulation-Amendment-170925.pdf?version=18d2af56918f837c61fd50801a467313>

<sup>4</sup> Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00). Effective October 24, 2014. <https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations>

that was issued on August 27, 2018 (MassDEP File No. 301-1227). Project-related impacts were minimized to the maximum extent practicable; however, certain impacts to Bank (310 CMR 10.54), Bordering Vegetated Wetlands ("BVW") (310 CMR 10.55), Land Under Water Bodies and Waterways (310 CMR 10.56), Bordering Land Subject to Flooding ("BLSF") (310 CMR 10.57 (1)(a)), Riverfront Area ("RFA") (310 CMR 10.58), and Sudbury's locally regulated RFA (Sections 2.5 and 7.10 of Bylaw Regulations) and, as defined in Section 9 of the Sudbury Bylaw, Adjacent Upland Resource Area ("AURA"), are unavoidable, as described in the accompanying NOI filing (see Attachment A for figures). AURA is defined in the Sudbury Wetlands Administration Bylaw as "all lands within 100 feet of wetland resource areas... except for perennial streams and rivers for which the upland resource area extends 200 feet from the top of bank, and except for vernal pools, ponds under 10,000 square feet in area, and isolated land subject to flooding." The Project is not located within Isolated Land Subject to Flooding (310 CMR 10.57(1)(b)) or Vernal Pool Habitat (310 CMR 10.04) in Sudbury. The only MWPA perennial streams within the Project Locus in Sudbury are Hop Brook (two crossing locations at Bridge 127 and 128) and Dudley Brook. The RFAs associated with these streams are jurisdictional under the MWPA. The remaining streams are considered perennial under the Bylaw Regulations only and the RFAs associated with these streams are not jurisdictional under the MWPA.

To evaluate these impacts, 21 WIAs (WIAs S1-S21) were identified and a Detailed WHE ("Appendix B") was completed at each WIA, which is the most rigorous and comprehensive type of WHE required under MWPA and the Bylaw Regulations. Of the 21 WIAs, eleven (S1, S2, S7, S8, S9, S11, S12, S13, S14, a portion of S15, and S21) are within Sudbury's jurisdiction only because they are either AURA and/or are Sudbury RFA only. Table 3 provides a list of the WIAs, their size and resource area/jurisdiction. All RFA impacts, regardless of whether they are MWPA jurisdictional, were evaluated even though it is not required under 310 CMR 10.58(5) or the Guidance.

## **1.1 Regulatory Background**

### **1.1.1 Wetlands Protection Act and its Implementing Regulations**

In 1986, the Massachusetts Legislature established that wetlands can provide wildlife habitat and added "wildlife habitat" as an interest under the Massachusetts Wetlands Protection Act, M.G.L. c131 § 40<sup>5</sup>, ("MWPA" or "the Act"), and the Regulations at 310 CMR 10.00. In the Act, wildlife habitat is defined as "those areas subject to M.G.L. c 131 § 40 which due to their plant community composition and structure, hydrologic regime or other characteristics, provide important food, shelter, migratory or overwintering areas, or breeding areas for wildlife."

In 1987, MassDEP revised the Regulations to incorporate protection of wildlife habitat as a wetlands interest protected by the Act. Accordingly, standards and procedures to protect important wildlife habitat functions in wetland resource areas were added to the Regulations

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<sup>5</sup> Massachusetts Wetlands Protection Act (M.G.L. c. 131 §40). <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIX/Chapter131/Section40>

at 310 CMR 10.60. MassDEP outlined the interpretation of the statutory language (especially the statutory definition of “wildlife habitat”) as well as the legislative intent in the Preface to the 1987 Regulatory Revisions related to the Protection of Wildlife Habitat (“the Preface”).<sup>6</sup> Key elements of the Preface explain important premises that helped form the basis for the regulatory changes. A summary of the premises that are important to consider when identifying and assessing important wildlife habitat value and possible adverse effects as part of a planned project are:

- › The mere presence of wildlife in a resource area is not enough to establish habitat value. Instead, it is the presence of plant community, hydrologic regime, or other characteristics that is determinative. The statute protects habitat value not wildlife per se.
- › The presence of basic characteristics that can provide wildlife habitat does not establish that a wetland resource area is significant to wildlife habitat. As per the regulatory guidance from MassDEP in the Preface, in order for a wetland resource area to be considered significant to wildlife habitat, certain features must be present and they must “provide *important* (emphasis added) food, shelter, migratory or overwintering areas or breeding areas for wildlife”.
- › The Department believes the Legislature meant to protect wetland habitat which is important to wildlife from a regional or statewide perspective.

In 2006, MassDEP developed a guidance document that details the process by which WHEs are completed. According to the Guidance, the objectives of a WHE are to document the presence of “important wildlife habitat features” within wetland resource areas that will be affected by a project and identify potential adverse impacts to these specific “important wildlife habitat features” that could result from the construction and maintenance of a proposed project.

#### **1.1.1.1 No Adverse Effect Standard**

According to 310 CMR 10.60(1), to the extent that a proposed project will alter wildlife habitat beyond established thresholds for each respective wetland resource area, such alterations may be permitted only if they will have no adverse effects on wildlife habitat. Adverse effects on wildlife habitat are the alteration of any habitat characteristic listed in 310 CMR 10.60(2), “insofar as such alteration will, following two growing seasons of project completion and thereafter (or, if a project would eliminate trees, upon the maturity of replanted saplings) substantially reduce its capacity to provide the important wildlife habitat functions listed in 310 CMR 10.60(2).” The Guidance continues, stating, “it is not adequate to conclude that a project will result in an adverse effect only because alterations to wildlife habitat are proposed. The alterations become “adverse” when they *substantially* (emphasis added) reduce the site’s capacity to provide important wildlife habitat functions (e.g., shelter, food, breeding areas) and consequently reduce the site’s capacity to support wildlife.” The Guidance also states, “simply put, no adverse effect does not mean no alteration.”

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<sup>6</sup> Preface to Wetlands Regulations Relative to the Protection of Wildlife Habitat 1987 Regulatory Revisions. Pages 14-22.  
<https://www.mass.gov/files/documents/2016/08/ri/310cmr10b.pdf>

To demonstrate that a project will meet the no adverse effect standard, the Guidance states that it must be demonstrated that either:

- › A site lacks any important habitat features listed in Appendix A or B; or
- › Important habitat features exist but adverse effects will be avoided because the project will not substantially reduce the capacity of the site to provide the important wildlife habitat functions.
  - Adverse effects can be avoided by restoration, replication, or other mitigation.
  - Applicants can also demonstrate that alterations will have a negligible effect on important habitat features. This can occur when an important habitat feature is very common on the site so that the amount of habitat feature lost is insignificant to what will remain on the site.

### 1.1.1.2 Wildlife Habitat Evaluation Impact Thresholds

Typically, the Regulations require that a WHE be conducted when a proposed project will alter certain wetland resource areas (Bank, Land Under Water, or Bordering Land Subject to Flooding) beyond established thresholds identified in the Regulations [310 CMR 10.60(1)].

For Project-related wetland resource impacts, Table 1 below lists the regulatory threshold values below which impacts are deemed not to impair wildlife habitat and do not require completion of WHE. Project wetland resource related impacts that would result from the proposed Project are also identified in Table 1.

**Table 1 Wildlife Habitat Evaluation Thresholds per Resource Area**

Resource Area	Regulation Threshold (below which deemed not to impair wildlife habitat) <sup>1</sup>	Proposed Project Impacts (Total) <sup>2</sup>
Bank – 10.54(4)(a)5	10% or 50 linear feet (whichever is less)	246 linear feet
Land Under Water Bodies and Waterways – 10.56(4)(a)4	10% or 5,000 square feet (whichever is less)	1,146 square feet
Bordering Land Subject to Flooding – 310 CMR 10.57(4)(a)3, (2)(a)5&6, (4)(a)3	10% or 5,000 square feet (whichever is less), except for work that would adversely affect vernal pool habitat	10,435 square feet
MWPA Riverfront Area <sup>3</sup> – 310 CMR 10.58(5)	No threshold - however, different review requirements apply depending on whether the riverfront is undisturbed (310 CMR 10.58(4)) (and the size of impact), previously developed (310 CMR 10.58(5)) or if the activity is grandfathered or exempted from requirements for the riverfront area (310 CMR 10.58(6)).	156,466 square feet

Bordering Vegetated Wetland 310 CMR 10.55(4)(b)	No threshold - impacts must be replicated in a manner that will function similar to the area that will be lost*	613 square feet
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1. Source: MassDEP's Wildlife Habitat Protection Guidance for Inland Wetlands, Table 1

2. Source: VHB

3. Proposed impacts in this table are for MWPA RFA only and do not include Sudbury's local RFA. However, all RFA impacts, including Sudbury jurisdiction only, were evaluated in this WHE.

The Guidance further details when and what type of WHE should be completed based on wetland resource area impacts. Table 2 below identifies resource types impacted by the Project, the alteration limits that determine which level of a WHE is required (i.e., Appendix A or Appendix B) and the impact levels at which the no adverse effect/no impairments standard applies.

**Table 2 Wetland Resource Areas Impact by the Project and Level of WHE Required Based on Alteration**

Resource Area	Simple WHE (Appendix A) Required	Detailed WHE (Appendix B) Required	No Adverse Effect/No Impairment Required
Bank	For alterations above thresholds	When triggered by Appendix A	For alterations above thresholds
LUWW	For alterations above thresholds	When triggered by Appendix A	For alterations above thresholds
BLSF (presumed significant to wildlife habitat)	For alterations above thresholds	When triggered by Appendix A or for any impacts to certified or documented vernal pool habitat	For alterations above thresholds or for any impacts to certified/documented vernal pool habitat
Previously Developed RFA	Appendix A and Appendix B are not required for previously developed RFA		
BVW	For alterations less than 5,000 square feet	When triggered by Appendix A, for alterations greater than 5,000 square feet or for any size impact in Habitat of Potential Regional or Statewide Importance or certified or documented vernal pool habitat	For all alterations

Source: MassDEP's Wildlife Habitat Protection Guidance for Inland Wetlands, Table 2

The Project will result in impacts to MWPA jurisdictional BVW, Bank, LUWW, BLSF, and RFA. However, it is important to note that 310 CMR 10.57(1)(a)(3) states that railroad tracks,

including embankment and ballast, have effectively eliminated wildlife habitat functions. In addition, although LUWW impacts do not exceed the threshold and a WHE is not required for previously developed RFA and there are no performance standards at 310 CMR 10.58(5) for wildlife habitat. Regardless, all WIAs, including BLSF, RFA, and LUWW, were evaluated. To evaluate these impacts, 21 WIAs (WIAs S1-S21) were identified and a Detailed WHE ("Appendix B") was completed at each WIA.

### 1.1.2 Sudbury Wetlands Administration Bylaw and its Implementing Regulations

The Town of Sudbury's Bylaw and Bylaw Regulations also may require a WHE at the discretion of the municipality, and Section 7.4 of the Bylaw Regulations states, "For the purposes of this Bylaw the Wildlife Habitat Evaluation shall use Appendix B of the DEP *Wildlife Habitat Protection Guidance*." According to Section 7.3 of the Bylaw Regulations, "all wildlife habitat functions are presumed to exist in all resource areas, and therefore, all resource areas are presumed significant for wildlife habitat interests and values." According to the Bylaw Regulations, a WHE is vital to confirm the presence or absence of wildlife features within the WIAs on the project site (i.e., Project Locus). Similar to the MWPA and the Guidance, the Bylaw Regulations state "no project may have a significant adverse project/site-specific impact or an adverse cumulative impact on wildlife for more than two growing seasons."

The Bylaw Regulations define a significant project-specific impact as "an impact caused by work or other activities in a resource area that would under reasonable assumptions (a) result in a measurable decrease in the capacity of *the site* to provide wildlife habitat functions such as (but not limited to) food, shelter, breeding space, or inter-habitat/intra-habitat movement, or (b) impair, damage, destroy, or reduce in value for wildlife purposes certain specific habitat features." The Bylaw Regulations goes on to say that "the relative abundance of those features off the project site is irrelevant to the determination of site-specific impact."

Under the Bylaw Regulations, a significant cumulative adverse project-specific impact is "when work or other activities in a resource area would under reasonable assumptions (a) result in a measurable decrease in the collective capacity of *the site, the neighborhood, the town, or the watershed (collectively known as the vicinity)* to provide wildlife habitat functions such as (but not limited to) food, shelter, breeding space, or inter-habitat/intra-habitat movement, or (b) impair, damage, destroy, or reduce in value for wildlife purposes certain specific habitat features."

## 1.2 Project Wildlife Habitat Evaluation Contents

Information provided in this WHE includes the following:

- › A summary of the WHE methodology employed (Section 2);
- › Descriptions of the types of impacts to WIAs that will result from the Project (Section 3);



- › A summary of wildlife habitat conditions and important habitat features found within Impact Areas (Section 3);
- › An analysis of potential adverse effects resulting from the Project as defined in the MWPA and the Bylaw Regulations (Section 3); and
- › Proposed restoration and mitigation measures to offset unavoidable impacts to important habitat features, as necessary (Section 3).

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# 2

## Evaluation Methodology

The WHE for the Project was completed following the approach described in the Guidance and using Appendix B: Detailed Wildlife Habitat Evaluation Forms from that document, as is required by the MWPA Regulations and Section 7.4 of the Sudbury Bylaw Regulations. Fundamental with the use of DEP's Appendix B form, the approach for the WHE completed under the Bylaw follows DEP's Guidance.

Important wildlife habitat features were evaluated at a total of 21 WIAs occurring within Bank, LUWW, BVW, BLSF, RFA (both MWPA and Bylaw regulated), and AURA within the Project Locus. As discussed within Section 1, several of the WIAs are locally-regulated WIAs only (that is, only in AURA and/or locally regulated RFA). A combination of desktop review and field investigations were employed to complete a Detailed WHE at each proposed WIA. Wildlife Habitat Evaluation Figures depicting the location of each WIA are included in Attachment A. Appendix B: Detailed Wildlife Habitat Evaluation Forms, photographs, and vegetation lists for each WIA are in Attachment B. The resumes of field scientists responsible for completing the WHE are provided in Attachment C and detailed WHE tables are included in Attachment D.

### 2.1 Prior to Initiation of WHE

Prior to initiating the WHE and as part of the design phase for the Project, the limits of the Project Locus on the MBTA ROW were defined as the entire width of the MBTA ROW and it was determined that the WHE would only evaluate WIAs within the MBTA ROW. Engineering design efforts identified the limits of disturbance using available site plans that included the limits of the Project Locus and boundaries of wetland resource areas approved by the Sudbury Conservation Commission in an ORAD. The proposed limits of work associated with the Project were established to maximize use of the existing previously developed areas associated with the former railroad operations within the Project Locus. During this process, the limits of grading and associated disturbance were adjusted and refined to avoid and minimize wetland resource impacts as much possible within the confines of the Project Locus. WIAs were identified as areas where the limit of disturbance and wetland resource areas overlap within the MBTA ROW. The locations of those WIAs are shown on the figures provided in Attachment A.

Using the Project Locus boundaries, limits of work developed through the design process, and the wetland resource area boundaries approved by the Sudbury Conservation

Commission, GIS shapefiles were developed showing the individual WIAs. Those shapefiles were used during field and desktop evaluations of important wildlife habitat features in the 21 WIAs in Sudbury. Table 3 lists the WIAs, their locations, and affected resource areas.

## 2.2 Field Evaluation

Field investigations were primarily used to complete the following components of the Appendix B Detailed WHE Form:

- › Part 2, I General Description;
- › Part 2, II Site Description (excluding soils);
- › Part 2, III Important Habitat Features; and
- › Part 2, V Habitat Degradation.

Field investigations for each WIA in Sudbury were completed by field scientists from April through October 2019. To accurately locate each WIA and to collect data (including photographs), a Trimble R1 GNSS receiver was employed in conjunction with cell phones, WIA shapefiles and Esri's ArcGIS Collector application.

Documented observations include wetland characteristics, important wildlife habitat features, vegetation including the presence of invasive species, biophysical characteristics, and habitat degradation. The evaluation included noting whether important wildlife habitat features were present beyond the WIA but within the Project Locus to determine whether the Project will result in an adverse effect to wildlife habitat in accordance with Section V.B.2.b in the Guidance and Section 7.3 of the Bylaw Regulations. The diameter at breast height ("dbh") was evaluated by using a dbh measuring tape and the distance of nests (if present) and mammal dens was determined using a digital rangefinder. Photographs were taken at each WIA to document existing conditions.

Specific important wildlife habitat features and site contextual considerations that were evaluated at each WIA during the field investigations included:

- › Food Availability;
- › Shrub Thickets or Streambed with Abundant Earthworms;
- › Shrub and/or Herbaceous Vegetation Suitable for Veery Nesting;
- › Standing Dead Trees and Cavities;
- › Small Mammal Burrows;
- › Depressions that May Serve as Seasonal (Vernal/Autumnal) Pools;
- › Standing Water Present At least Part of the Growing Season;
- › Sphagnum Hummocks or Mats, Moss-Covered Logs or Saturated Logs, Overhanging or Directly Adjacent to Pools of Standing Water;
- › Cover, Perches, Basking, Denning, and Nesting Habitat;
- › Important Habitat Characteristics Associated with Streams;
- › Wildlife Dens and Nests;

- › Emergent Wetlands; and
- › Habitat Degradation.

The soil inventory on the Appendix B form (Part 2, II Site Description, C. Inventory (Soils)) was completed in part by reviewing the U.S. Department of Agriculture (USDA) Web Soil Survey<sup>7</sup> mapping for each WIA. Onsite observations were made to confirm, or update soil descriptions provided on the USDA web site.

## 2.3 Desktop Review and Evaluation

A desktop review of each WIA was undertaken to complete Part 2, Section IV, Landscape Context, of the Appendix B, Detailed WHE field form. In completing these reviews, available MassGIS data layers and WIA shapefiles were used. Landscape Context includes Habitat Continuity which identifies whether an individual WIA is part of:

- › An emergent marsh, and if so, the size in acres;
- › A wetland complex, and if so, the size in acres; and
- › Contiguous forested habitat that could serve as habitat for forest interior nesting birds, grassland nesting birds, or special habitat such as a gallery floodplain forest.

Landscape Context also evaluates Habitat Connectivity. To characterize the connectivity relationship of the WIAs to surrounding habitats, five categories of habitat connectivity were considered based on the Guidance. These include:

1. No direct connections to adjacent areas of wildlife habitat (little connectivity function);
2. Connectors numerous or WIA is imbedded in a large area of natural habitat (limited connectivity function);
3. WIA contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function);
4. WIA serves as part of a sole connector to adjacent areas of habitat (important for connectivity function); and
5. WIA serves as the only connector to adjacent areas of habitat (very important for connectivity function).

In addition to information reviewed to complete Section IV for the field form, MassDEP's Important Habitat Map<sup>8</sup> for the Town of Sudbury and MassGIS Natural Heritage and Endangered Species Program Priority and Estimated Habitat maps were reviewed to determine if any of the WIAs occurred within "Habitat of Potential Regional or Statewide Importance" or mapped rare species habitat respectively.

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<sup>7</sup> USDA NRCS Web Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

<sup>8</sup> MassDEP Important Habitat Maps, [http://umasscaps.org/data\\_maps/massdep-maps.html](http://umasscaps.org/data_maps/massdep-maps.html)

## **2.4 Evaluation of Potential Adverse Effects and Proposed Restoration and Mitigation**

Once each WIA was evaluated using the Appendix B forms, the proposed impacts were evaluated to determine potential adverse effects in accordance with Section V of the Guidance and Section 7.3 of the Bylaw Regulations. If an important wildlife habitat feature was identified within a WIA, adverse effects were avoided by either proposing restoration under Section V.B.2.b.ii or, as per Section V.B.2.b.iii, demonstrating that the alteration(s) will be negligible because the amount of the feature that will be lost within the WIA is insignificant to that which will remain on the Project Locus. This is consistent with Section 7.3 of the Bylaw Regulations which states, "no project may have a significant adverse project/site-specific impact or an adverse cumulative impact on wildlife habitat for more than two growing seasons."

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# 3

## Wildlife Habitat Evaluation Results

The information in this section includes detailed accounts for the 21 WIAs associated with the Project in Sudbury (see Table 3 for details). WIAs S1, S2, S7, S8, S9, S11, S12, S13, S14, a portion of S15, and S21 are locally jurisdictional WIAs only because they are within Sudbury's RFA and/or AURA. The remaining WIAs are jurisdictional under the MWPA and Bylaw Regulations. Details provided below include important wildlife habitat features identified, discussion of potential adverse impacts to wildlife habitat resulting from the Project (if any), and discussion of proposed restoration and mitigation measures to offset impacts (if any). Table 3 below provides a summary of important wildlife features documented in each of the WIAs. Figures depicting the location of each WIA are in Attachment A of this document. Completed Appendix B: Detailed Wildlife Habitat Forms, vegetation lists, and representative photographs for the WIAs are provided in Attachment B of this document. Resumes for the personnel who completed the WHE are in Attachment C and tables summarizing all field observations including the presence or absence of individual wildlife habitat features within each WIA are provided in Attachment D.

Sections 3.1 through 3.15 below provide a detailed discussion regarding the important wildlife habitat features and existing site conditions documented within each WIA. As described in the following subsections, there is an abundance of important wildlife habitat features beyond the proposed limits of work associated with the Project within the remainder of the Project Locus (Sudbury Bylaw Regulations project site). These important habitat features are also present within areas beyond the Project Locus in quantities such that the minor losses attributed to the Project will not have an adverse effect on wildlife habitat (see Section V.B.2.b.iii of the Guidance and Section 7.3 of the Bylaw Regulations). Regardless of these findings, the Project incorporates restoration measures within areas disturbed from the Project to replace some of the lost important wildlife habitat features within the proposed limits of work and to supplement important wildlife habitat features on the Project Locus. Restoration and mitigation measures proposed for important wildlife habitat features within the proposed limits of work for the Project include:

- › Removing the existing rails and ties, which are an impediment to wildlife movement;
- › Reinstalling standing dead trees that will be removed during construction;
- › Creating brush piles to replace large woody debris on the ground;



- › Restoring all disturbed areas with an herbaceous seed mix consisting of native species to promote growth of herbaceous vegetation; and
- › Planting tree, shrub, and aquatic species at both Hop Brook crossings to replace those that will be removed in the crane mat locations.

The presence of Habitat of Potential Regional and Statewide Importance ("Important Wildlife Habitat") and mapped Priority and Estimated Habitat for State-listed Rare, Threatened, and Endangered Species ("rare species habitat") was evaluated as part of the WHE completed for the Project. Based on the latest Important Habitat Map for the Town of Sudbury (MassGIS online version, August 2017), none of the WIAs are within any areas of mapped Important Habitat.

According to the most recently published edition of the Massachusetts Natural Heritage Atlas (MassGIS online version, August 2017)<sup>9</sup>, the Project in Sudbury passes through mapped Priority and Estimated Habitat from the location where the Hudson, Sudbury, and Marlborough municipal boundaries meet to a location approximately 85 feet east of Hop Brook. Along this length, there are six WIAs (WIAs 1-6) within mapped Priority or Estimated Habitat.

To avoid a rare species "take" under the Massachusetts Endangered Species Act ("MESA") (321 CMR 10.00), the Natural Heritage and Endangered Species Program ("NHESP") was consulted on a regular basis during the Project design phase. Based on those consultations, to avoid a state-listed species "take," protection plans were developed. Those protection plans along with other supporting information were submitted to NHESP in a MESA Checklist to obtain a "take / no take" determination from that agency. On October 19, 2018, and May 17, 2019, NHESP rendered conditional "no take" determinations for both the Eversource and DCR phases of the Project, respectively (see Attachment G in the NOI). Accordingly, based on the Regulations, the work proposed in Sudbury will have no adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified in the procedures established under 310 CMR 10.59.

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<sup>9</sup> Habitat of Potential Regional or Statewide Importance, Town of Sudbury, MA.  
[http://www.umass.edu/landeco/research/caps/data/dep/maps/CAPS\\_DEP\\_SUDBURY.pdf](http://www.umass.edu/landeco/research/caps/data/dep/maps/CAPS_DEP_SUDBURY.pdf)

Table 3      Summary of Important Wildlife Habitat Features within Wetland Impact Areas within the Project in Sudbury

Impact Area	Stationing <sup>1</sup>	Total Area of Impacts (square feet)	Jurisdiction (MWPA/Bylaw) <sup>2</sup>	Wetland Resource Area Type (Area of Impact in Square Feet) <sup>3</sup>	Associated BVW and/or Stream	Important Wildlife Habitat Features <sup>4</sup>	Important Upland/Wetland Food Plants	Standing Dead Trees (Snags)	Cavities in Trunks or Limbs of Trees	Small Mammal Burrows	Dense Herbaceous Cover	Large Woody Debris on the Ground	Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at or within 1 meter above Water's Surface	Live or Dead Standing Vegetation Overhanging Water or Offering Good Visibility of Open Water	Standing Water Present At least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-breeding Amphibians, Turtles, and/or Foraging Waterfowl	Project Area is Within 100' of Beaver, Mink, or Otter Den, Bank Swallow
S1	367+00-370+70	8,328	Bylaw	AURA (8,328)	Wetland 45 and Approximate Wetland		X				X					
S2	375+00-376+50	3,253	Bylaw	AURA (3,253)	Approximate Wetland		X									
S3	395+75-399+10	7,893	MWPA	MWPA RFA (7,893) and AURA (5,788)	Wetland 44 and Hop Brook		X	X				X		X		
S4	399+10-400+10	3,746	MWPA	MWPA RFA (3,746), BLSF (37), and AURA (3,746)	Wetland 44 and Hop Brook		X					X		X		
S5	400+60-401+65	4,168	MWPA	MWPA RFA (4,168), BLSF (262), and AURA (4,168)	Wetland 44 and Hop Brook		X	X				X	X <sup>5</sup>	X		X <sup>6</sup>
S6	401+65-403+50	4,283	MWPA	MWPA RFA (4,283) and AURA (2,928)	Wetland 44 and Hop Brook		X	X				X		X		
S7	405+00-416+40	29,721	Bylaw	AURA (29,721)	Wetlands 39-43		X	X				X				
S8	515+00-522+90	21,087	Bylaw	Bylaw RFA (14,677) and AURA (17,647)	Wetlands 36-38 and Unnamed Stream		X	X	X	X	X	X				
S9	523+00-530+90	19,120	Bylaw	Bylaw RFA (10,018) and AURA (19,175)	Wetlands 33-35 and Unnamed Stream		X	X		X		X				
S10	533+60-543+90	24,865	MWPA	MWPA RFA (24,272) and AURA (23,334)	Wetlands 30 and 31 and Dudley Brook		X	X	X	X		X				
S11	558+10-564+20	14,482	Bylaw	Bylaw RFA (11,515) and AURA (14,482)	Wetlands 27-29 and Unnamed Stream		X	X			X	X				

Impact Area	Stationing <sup>1</sup>	Total Area of Impacts (square feet)	Jurisdiction (MWPA/Bylaw) <sup>2</sup>	Wetland Resource Area Type (Area of Impact in Square Feet) <sup>3</sup>	Associated BVW and/or Stream	Important Wildlife Habitat Features <sup>4</sup>	Important Upland/Wetland Food Plants	Standing Dead Trees (Snags)	Cavities in Trunks or Limbs of Trees	Small Mammal Burrows	Dense Herbaceous Cover	Large Woody Debris on the Ground	Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at or within 1 meter above Water's Surface	Live or Dead Standing Vegetation Overhanging Water or Offering Good Visibility of Open Water	Standing Water Present At least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-breeding Amphibians, Turtles, and/or Foraging Waterfowl	Project Area is Within 100' of Beaver, Mink, or Otter Den, Bank Swallow
S12	576+10-588+00	10,051	Bylaw	AURA (10,051)	Wetland 25		X			X	X	X				
S13	585+25-599+90	36,545	Bylaw	Bylaw RFA (25,319) and AURA (33,564)	Wetlands 24 and 24A and Unnamed Stream/Stormwater Ditch		X			X		X				
S14	600+50-602+25	4,986	Bylaw	Bylaw RFA (4,986) and AURA (1,554)	Unnamed Stream/Station Road Drainage Ditch		X	X								
S15	602+50-711+30	25,375	Bylaw/MWPA <sup>7</sup>	Bylaw RFA (11,759), MPWA RFA (13,630), BLSF (1,791), and AURA (25,375)	Wetlands 20-22 and Unnamed Stream/Station Road Drainage Ditch		X	X				X				
S16	711+70-724+40	32,745	MWPA	MWPA RFA (32,745), BLSF (877) BVW (31) and AURA (32,285)	Wetlands 15-19 and Hop Brook		X	X	X			X		X		
S17	724+40-725+05	2,718	MWPA	MWPA RFA (2,122), BLSF (1,738), AURA (1,947), LUWW (596), BVW (178), and Bank (124 linear feet)	Wetlands 15 and 16 and Hop Brook		X	X					X	X	X	
S18	725+70-726+30	2,828	MWPA	MWPA RFA (2,277), BLSF (2,154), AURA (2,160), LUWW (550), BVW (118), and Bank (122 linear feet)	Wetlands 12 and 14 and Hop Brook		X	X			X		X <sup>8</sup>	X	X	
S19	726+30-753+15	71,713	Bylaw/MWPA	Bylaw RFA (222), MWPA RFA (61,552), AURA	Wetlands 5, 6, 7, 8, 9, 11, 12, and 14 and Hop Brook		X	X						X		

Impact Area	Stationing <sup>1</sup>	Total Area of Impacts (square feet)	Jurisdiction (MWPA/Bylaw) <sup>2</sup>	Wetland Resource Area Type (Area of Impact in Square Feet) <sup>3</sup>	Associated BVW and/or Stream	Important Wildlife Habitat Features <sup>4</sup>	Important Upland/Wetland Food Plants	Standing Dead Trees (Snags)	Cavities in Trunks or Limbs of Trees	Small Mammal Burrows	Dense Herbaceous Cover	Large Woody Debris on the Ground	Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at or within 1 meter above Water's Surface	Live or Dead Standing Vegetation Overhanging Water or Offering Good Visibility of Open Water	Standing Water Present At least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-breeding Amphibians, Turtles, and/or Foraging Waterfowl	Project Area is Within 100' of Beaver, Mink, or Otter Den, Bank Swallow
				(71,713), BLSF (3,576), Bylaw IVW (303)												
S20	760+60-766+45	16,668	MWPA	AURA (16,668) and BVW (286)	Wetlands 3, 3A, and 4		X	X			X	X				
S21	767+00	172	Bylaw	AURA (172)	Wetland 1		X									

Source: VHB

- Please refer to Attachment B in the NOI for Project plans and Attachment A of this WHE for the Wildlife Habitat Evaluation Impact Area figures for stationing.
- WIAs that are listed as Bylaw are only jurisdictional under the Sudbury Bylaw Regulations. WIAs that are listed as MWPA are jurisdictional under both the MPWA and the Sudbury Bylaw Regulations.
- RFA overlaps with other wetland resource areas and some WIAs contain multiple wetland resource areas.
- Important Wildlife Habitat Features are those discussed in the Guidance and listed on the Appendix B: Detailed Wildlife Habitat Evaluation forms.
- S5 contained two fallen logs within one meter above the water’s surface.
- S5 had one small potential turtle nesting area.
- S15 is within Sudbury Bylaw jurisdiction only from approximately Station 600+55-705+30 and is within Sudbury Bylaw and MWPA jurisdiction from approximately Station 705+30 to 711+40.
- S18 had a few small logs that overhung the water

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### 3.1 Wetland Impact Area S1

WIA S1 is located within Priority and Estimated Habitat and is a Sudbury jurisdictional WIA only because it consists of AURA. The AURA is associated with Wetland 45 that is south of the limit of grading and a vernal pool<sup>10</sup> that is approximately 76 feet north of the WIA. The WIA is generally situated between the Sudbury Valley Trustees ("SVT") Memorial Forest to the south and the Assabet River National Wildlife Refuge to the north. It extends from approximately Station 367+00 to 370+70, just east of the Hudson/Sudbury/Marlborough corporate limits. In this location the railroad track was mostly built on fill and is higher than the adjacent areas.

The WIA encompasses areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide and 370 feet long. There is a total of 8,328 square feet of proposed AURA impact. Most of the impacts will occur along the elevated railroad bed that includes the inactive track, fill material, and ballast. Impacts at this location would result from vegetation removal, site grading, installation of the underground transmission line, and paving the MCRT. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within the Impact Area. An established trail identified as "S-3" on the Sudbury Valley Trustees' Memorial Forest Trail Map is located approximately 20 to 35 feet to the north of the MBTA ROW on U.S Fish and Wildlife land.

The location where impacts will occur is upland and is vegetated primarily with trees, saplings, shrubs, and some limited herbaceous growth. Dominant Plants include eastern white pine (*Pinus strobus*), glossy false buckthorn (*Frangula alnus*), and Pennsylvania sedge (*Carex pensylvanica*).

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks), ballast, and a well-worn foot trail north and parallel to the train track. The area is heavily traveled by people walking with or without their dogs, mountain bikers, and horseback riders.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S1. Restoration measures were incorporated into the Project in this location where appropriate, which includes planting lowbush blueberry to offset the removal of food plants and restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix that will provide dense herbaceous cover. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

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<sup>10</sup> All wetland areas identified as vernal pools on the Project have been documented following the requirements identified in the Sudbury Wetland Bylaw. In addition, the occurrence and the location of these vernal pools have been accepted as part of the ORAD issued for the Project (DEP File #301-1227).

### **3.1.1 Important Wildlife Habitat Features Identified, Adverse Effects Analysis, and Proposed Restoration**

WIA S1 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S1, two important wildlife habitat features were identified:

- › Upland/Wetland Food Plants; and
- › Dense Herbaceous Cover.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.1.1.1 Upland/Wetland Food Plants**

Within WIA S1, there are several upland plant species (hard mast [e.g., oaks] and fruit/berry producers) that can provide food for wildlife. These species include black oak (*Quercus velutina*), bristly dewberry (*Rubus hispida*), and late lowbush blueberry (*Vaccinium angustifolium*). Glossy false buckthorn, an invasive plant species that can also provide a source of food to wildlife, was also seen there.

##### ***Adverse Effects Analysis and Proposed Restoration***

Individually, none of the food plants noted within the WIA S1 are particularly unique or abundant to the WIA. All these species can be found outside of the WIA in the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides and will not result in an adverse effect. Regardless of the no adverse effect determination, the Project will include planting woody species within this WIA including lowbush blueberry (*Vaccinium angustifolium*), which is a food plant.

#### **3.1.1.2 Dense Herbaceous Cover**

There is an insignificant amount of (approximately 50 square feet) of Pennsylvania sedge (*Carex pensylvanica*) in this WIA. The Pennsylvania sedge continues south of the WIA within the Project Locus (MBTA ROW) to the south of the WIA and outside of the Project Locus in much greater abundance than what is currently present within the WIA.

##### ***Adverse Effects Analysis and Proposed Restoration***

Dense herbaceous vegetation can provide cover, food, and nesting habitats for a variety of small mammals, amphibians, reptiles, and bird species. Construction activities associated with the Project will remove this insignificant amount of dense herbaceous vegetation where it presently grows. However, removing this small area of dense herbaceous cover will not adversely affect the wildlife habitat functions it provides due to its size and because

additional, larger areas of dense herbaceous vegetation are present beyond the WIA and within the Project Locus (i.e., project site in the Bylaw Regulations).

Irrespective of this no adverse effect determination, the Project includes restoring all areas within the Project Site that will not be paved for the 10-foot-wide MCRT with a seed mix consisting of native herbaceous species. Within this WIA, it includes approximately 4,713 square feet of restoration with native species. Consequently, the seeding with a native herbaceous seed mix will greatly offset that which will be lost, thereby providing additional habitat value for wildlife and will not result in an adverse effect. Please refer to Planting Schedule B: Priority Habitat on sheet 131 in the plans in Attachment B of the NOI for the planting schedule.

### 3.2 Wetland Impact Area S2

WIA S2 is within Priority and Estimated Habitat and is a Sudbury jurisdiction WIA because it is AURA. A vernal pool is located approximately 68 feet north of the MBTA ROW within the Assabet River National Wildlife Refuge. In this area the railroad track was likely a result of cut and is lower than the adjacent areas.

The WIA is located within areas that were previously developed from the historic construction and operation of the rail line. The WIA extends from approximately Station 375+00 to 376+50 and is approximately 25 feet wide by 150 feet long. There is a total of 3,253 square feet of proposed AURA impact resulting from vegetation removal, site grading, installation of the underground transmission line, and paving the MCRT. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within the Impact Area. An established trail marked as "S-3" on SVTs Memorial Forest Trail Map is located approximately 20 to 35 feet to the north of the MBTA ROW in this location.

Vegetation throughout this WIA is not very diverse. Dominant species include gray birch (*Betula populifolia*), eastern white pine, mixed tree oaks (*Quercus* spp.), glossy false buckthorn, and black huckleberry.

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail north and parallel to the train tracks. Observations made during site visits include moderate foot traffic by people, people walking dogs, horseback riders and people riding bikes. Tire tracks indicating use by individuals riding dirt bikes (motorcycles) in the area were also seen.

In summary, the Project will not result in a substantial reduction of or an adverse effect to important wildlife habitat features found in WIA S2. Restoration measures were incorporated into the Project in this location where appropriate, which includes planting black huckleberry to offset the removal of food plants and restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover. Within this WIA, it includes 1,998 square feet of restoration with native species. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.



### **3.2.1 Important Wildlife Habitat Features Identified, Adverse Effects Analysis, and Proposed Restoration**

WIA S2 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S2, one important wildlife habitat feature was identified:

› Upland/Wetland Food Plants

Below is a discussion this feature followed by an adverse effect analysis and any proposed restoration measures.

Within WIA S2, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include tree oaks, black huckleberry, and whiplash dewberry (*Rubus flagellaris*). Glossy false buckthorn, an invasive plant species that can also provide a source of food to wildlife, was also seen there.

#### ***Adverse Effects Analysis and Proposed Restoration***

Individually, none of the food plants noted within the WIA S2 are unique to the WIA and all these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the Project Locus and surrounding area to provide the important wildlife habitat value that this feature provides. Regardless of the no adverse effect determination, the Project will include planting black huckleberry (*Gaylussacia baccata*) within this WIA, which is a food plant.

### **3.3 Wetland Impact Areas S3, S4, S5, and S6**

WIAs S3, S4, S5, and S6 are discussed together because they are associated with the Hop Brook wetland complex west of Dutton Road. These WIAs are located within and in close proximity to Wetland 44, which is a large palustrine emergent marsh associated with Hop Brook. The WIAs are also located within Priority and Estimated Habitat.

In this location the railroad track was built on fill and is higher than the adjacent wetland areas. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within these Impact Areas. The channel of Hop Brook crosses the Project from approximately Station 400+25 to 400+60 and flows in a northerly direction beneath an existing steel girder railroad bridge. A new pedestrian bridge was added to the existing substructure in recent history.

The proposed Project footprint in this area averages 18 to 22 feet in width and is approximately 782 feet in length. WIA S3 extends from approximately Station 395+75 to 399+10; WIA S4 extends from approximately Station 399+10 to 400+10; WIA S5 extends from approximately Station 400+60 to 401+60; and WIA S6 extends from approximately Station 401+60 to 403+50.

Timber (crane) mats will be temporarily placed within a portion of WIA S4 on the westside of Hop Brook from approximately Station 399+10 to 399+95. The Project limits within this crane mat area are approximately 40 feet wide (north to south) and 85 feet long (east to west). Timber mats will also be temporarily placed on the east side of Hop Brook within a portion of WIA S5 from approximately Station 400+65 to 401+60. The Project limits within this crane mat area are approximately 40 feet wide (north to south) in this location and 95 feet long (east to west).

Most of the impacts in this area will occur along the elevated railroad bed that includes the inactive railroad track, fill material, and ballast. Work that will result in disturbance to wetland resource areas include vegetation removal, site grading, rehabilitation of the Hop Brook bridge (Bridge 128), temporary placement of timber mats, installing the underground transmission line and paving the MCRT. In locations where the timber mats are proposed it will be necessary to remove all woody vegetation, possibly including tree stumps, to ensure that the mats are installed properly to ensure a safe, stable, and level work platform for the crane that will be used in this location. The timber mats are required to facilitate rehabilitating the Hop Brook bridge and will result in temporary impacts to AURA, BLSF, and RFA, that will be restored once rehabilitation of the bridge is complete and the timber mats are removed.

WIAs S3 and S6 are west and east of Hop Brook respectively, beyond the limits of the crane mats. WIA S3 includes approximately 7,893 square feet of MWPA RFA impacts and 5,788 square feet of AURA impacts. WIA S6 includes approximately 4,283 square feet of MWPA RFA impacts and 2,928 square feet of AURA impacts. In general, WIAs S3 and S6 are similar. Along both the north and south sides of these areas the vegetation is primarily woody consisting of trees, saplings and shrubs. Herbaceous vegetation is also present here in scattered locations including in the central portion of the Project where the railroad track is situated. Dominant vegetation within S3 includes red maple (*Acer rubrum*), Morrow's honeysuckle, and eastern white pine, and dominant vegetation within S6 includes red maple, Pennsylvania sedge, Morrow's honeysuckle, eastern white pine, and black oak.

WIAs S4 and S5 are located immediately west and east of Hop Brook respectively. WIA S4 includes approximately 37 square feet of BLSF impacts, and 3,746 square feet of MWPA RFA impacts, and 3,746 square feet of AURA impacts. WIA S5 includes approximately 262 square feet of BLSF impacts, 4,168 square feet of MWPA RFA impacts, and 4,168 square feet of AURA impacts. These WIAs occur in areas where the Project footprint is expanded to accommodate the temporary placement of crane mats to support the rehabilitation of the existing bridge. Dominant vegetation in S4 includes red maple, eastern white pine, Morrow's honeysuckle, and black cherry (*Prunus serotina*). Dominant vegetation in S5 includes red maple, glossy false buckthorn, Pennsylvania sedge, Morrow's honeysuckle, eastern white pine, and false lily-of-the-valley (*Maianthemum canadense*).

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail north and parallel to the train track. Observations made during site visits include moderate foot traffic by people, people walking dogs, horseback riders and people riding bikes. Tire tracks indicating use by individuals riding dirt bikes (motorcycles) in the area were also observed.

In summary, the Project will not result in a substantial reduction of important wildlife habitat features found in WIAs S3, S4, S5, and S6. Restoration measures were incorporated into the Project in these locations where appropriate, which includes plantings to offset some loss of food plants, reinstalling removed standing dead trees, creating brush piles to replace the loss of large woody debris on the ground, plantings to offset the loss of vegetation overhanging open water and providing good visibility of open water, replacing the two fallen logs that overhang 1m or less above the water surface, and restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.3.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIAs S3, S4, S5, and S6 were evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within this group of WIAs seven important wildlife habitat features were identified. These include:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Tree Cavities in Trunks or Limbs;
- › Large Woody Debris on the Ground;
- › Rocks, Crevices, Fallen Logs. Overhanging Branches or Hummocks at or Within 1m Above the Water's surface; and
- › Live or Dead Standing Vegetation Overhanging or Offering Good Visibility of Open Water and Overhanging Branches within One Meter Above the Water's Surface;
- › Exposed Areas of Well-Drained, Sandy Soil Suitable for Turtle Nesting.

The following subsections detail the important wildlife habitat features found in WIAs S3, S4, S5, and S6 followed by an adverse effect analysis and any proposed mitigation measures.

#### **3.3.1.1 Upland/Wetland Food Plants**

Within WIAs S3, S4, S5, and S6 there is a variety of upland plant species that provide wildlife value as source of food for a variety of species. These species include black oak, white oak (*Quercus alba*), black cherry, late lowbush blueberry, and Canada serviceberry (*Amelanchier canadensis*). Glossy false buckthorn and Morrow's honeysuckle, both invasive plant species that can also provide a source of food to wildlife, were also observed.

#### ***Adverse Effects Analysis and Restoration***

Although food plants will be removed within these WIAs, none of them are abundant and these same species are present in greater abundance on areas of the berm that will not be

affected by the Project and within the Project Locus. As mitigation for the loss of vegetation within the locations where crane mats will be placed, tree and shrub species will be planted in equivalent quantities to replace those being lost. Woody plantings within these areas that are food sources to wildlife will include serviceberry, black oak, black huckleberry, winterberry (*Ilex verticillata*), and highbush blueberry (*Vaccinium corymbosum*). All disturbed areas except for the 10-foot-wide paved MCRT will be seeded with herbaceous seed mixes that will provide additional value to wildlife as sources of food. Details regarding plantings and seed mixes are provided on sheet 131 of the plans provided in Attachment B of the NOI. Because of the surrounding food plants that will not be disturbed and the supplemental woody plantings and seed mixes, the Project will not reduce the capacity of upland/wetland plants in the area of the Project to provide food for wildlife or result in an adverse effect to wildlife habitat either on a local or regional scale.

### **3.3.1.2 Standing Dead Trees**

The following standing dead trees were identified within WIAs S3, S5, and S6 during the WHE site visits:

- › WIA S3 had one standing dead tree that is within the 6- to 12-inch diameter at breast height ("dbh") range;
- › WIA S5 had eight standing dead trees that were within the 6- to 12-inches dbh and two standing dead trees that were within the 18- to 14-inches dbh; and
- › WIA S6 has two standing dead trees that were within the 6 to 12-inches dbh.

#### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

### **3.3.1.3 Tree Cavities in Trunks or Limbs**

One tree was observed to contain one cavity at the base of the tree that is within the 6- to 12-inch dbh range within S5. Construction activities in this area will require that the tree containing this cavity be removed. However, birds are unlikely to use a cavity that is at the base of a tree.

#### ***Adverse Effects Analysis and Restoration***

One cavity was observed within WIA S5 but by the nature of forested area on the Project Locus near the WIA, opportunities exist for other such tree cavities. The loss of the tree with the cavity in this WIA is negligible and will not result in an adverse effect to wildlife habitat due to cavities that will remain on Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

#### **3.3.1.4 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground throughout WIAs S3, S4, S5, and S6. However, none of it is substantial (e.g., large trees, logs or large brush piles). There is larger and more abundant large woody debris on the ground outside of the WIA on the Project Locus and beyond.

##### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in WIAs S3-S6, the amounts of this material are not substantial. Areas in the vicinity of these WIAs on the Project Locus and beyond contain an abundant amount of this important wildlife habitat feature. Overall, the loss of the minor amounts of large woody debris in these WIAs is negligible compared to the amount of this feature in the surrounding area and will not result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris in greater amounts on the Project Locus outside of the limits of work and in the immediate area beyond the Project Locus. Accordingly, the loss of large woody debris in the WIA is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

Regardless of the no adverse effect determination, brush piles will be created within the vicinity of these WIAs. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of these WIAs at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the vegetation clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration of the loss of this habitat feature.

#### **3.3.1.5 Live or Dead Standing Vegetation Overhanging or Offering Good Visibility of Open Water**

WIAs S3, S4, S5, and S6 contain live or dead standing woody vegetation that will be removed during construction that either overhangs or provides visibility of open water in Hop Brook and the associated marsh. In WIAs S3 and S6, vegetation that provides this habitat value is generally located in thin strips at the outer limits of work and includes small trees, saplings, and tall shrubs. Beyond the limits of work in WIAs S3 and S6. (north and south), similar vegetation will remain in greater amounts to that which will be removed and will continue to provide this important wildlife habitat feature. In WIAs S4 and S5, because of the need to place crane mats for safe use of cranes needed to work on the bridge across Hop Brook, all the woody vegetation that currently resides beneath the mat footprints will be removed. The approximate total number of trees, tall shrubs, and dead standing trees that overhang or provide a view of open water that will be removed in each WIA is:

- › S3 has approximately 12 trees;
- › S4 has approximately 29 live trees, 4 snags, and abundant shrubs;

- › S5 has approximately 35 live trees and 10 snags ; and
- › S6 has approximately 5 trees.

#### ***Adverse Effects Analysis and Restoration***

Following the removal of the woody vegetation in WIAs S3 and S6, undisturbed areas on the elevated railroad berm beyond the limit of work will continue to have tall woody, living and dead vegetation providing views to open water in quantities much greater than what will be removed. Overall the loss of these features in WIAs S3 and S6 are not expected to result in an adverse effect to wildlife habitat either in the immediate area of the site or the region. This conclusion is based on the observation that similar features will remain on the Project Locus in the immediate vicinity of those WIAs. Accordingly, the loss of live or dead standing vegetation overhanging or offering good visibility of open water in these WIAs is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

As restoration for the loss of this important wildlife habitat feature within WIAs S3 through S6, tree and shrub species will be planted in equivalent quantities to those being lost. As shown on sheet 131 in the plans provided in Attachment B of this NOI, 45 trees and 30 shrubs will be planted from Station 397+70 to 400+10 (S3 and S4) and 40 trees and 40 shrubs will be planted from Station 400+60 to 401+60 (S5 and S6). All plantings will be installed in a naturalized condition to provide wildlife habitat and will not be planted in a linear manner. Once mature, these woody species will offer views to and perches over open water in the adjacent marsh at a value that will, at a minimum, be equal to what will be lost. Based on proposed mitigation, removal of live or dead standing vegetation within these WIAs will not reduce the capacity of the area to provide this important wildlife habitat feature and not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### **3.3.1.6 Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at, or within 1m above the water surface**

WIA S5 contains two fallen logs that are within one meter above the water's surface. These features, which potentially provide basking habitat for turtles or feeding perches for green herons, will be lost during construction from the placement of timber mats that will be needed for crane use in this area.

#### ***Adverse Effects Analysis and Restoration***

Following construction in the area, these features will be replicated in the same general location using logs that will be generated by Project tree clearing activities. Based on proposed mitigation within these WIAs, the Project will not reduce the capacity of the area to provide this important wildlife habitat feature and is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.3.1.7 Exposed Areas of Well-Drained, Sandy Soil Suitable for Turtle Nesting**

On the south side of WIA S5 there is one small patch of open sand and loose gravel that is approximately 200 square feet at the water's edge that will be temporarily disturbed by the placement of crane mats. This wildlife habitat feature appears to be suitable for turtle nesting; however, observed foot traffic in this area by people and dogs accessing the water's edge act to limit its value as turtle nesting habitat.

#### ***Adverse Effects Analysis and Restoration***

Although there is a small amount of turtle nesting habitat present in S5, the size and quality are not significant. Areas in the vicinity of the WIA contain larger and more suitable nesting habitat, particularly the sand pit area southwest on SVT property. Overall, the loss of this small area of turtle nesting habitat in the WIA is not expected to result in an adverse effect to wildlife habitat. This conclusion is based on observations of the current use of the turtle nesting area (for example, people and dogs using it to access Hop Brook) and the presence of turtle nesting habitat within the vicinity of the WIA.

## **3.4 Wetland Impact Area S7**

WIA S7 is a Sudbury jurisdictional WIA because it is AURA that is associated with five wetlands (Wetlands 39-43) and vernal pools (Vernal Pools 9-13) on both sides of the elevated railroad berm. The area extends from approximately Station 405+00 to 416+40 between Hop Brook and Dutton Road. In this location the railroad track was primarily built on fill and is higher than the adjacent areas.

The WIA primarily encompasses areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide and 1,040 feet long. There is approximately 29,721 square feet of proposed AURA impacts that would result from vegetation removal, site grading, installing the underground transmission line, and paving the MCRT. Most of the impacts will occur along the elevated railroad bed that includes the inactive track, fill material, and ballast. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within the WIA. The area is heavily traveled by people walking with or without their dogs, mountain bikers, and horseback riders. The WIA also abuts established trails associated with the Memorial Forest and is maintained by the SVT. One trail is shown as "Blueberry Trail" and the other is unnamed on SVT's trail map. Other disturbances include proximity to Dutton Road, which is approximately 40 feet east of the WIA; an adjacent horse farm where horseback riders come directly out onto the tracks and footpath; and surrounding single-family residences.

The location where impacts will occur is upland and is sparsely vegetated primarily with trees, saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing in this area include eastern white pine, tree oaks, black huckleberry, and glossy false buckthorn.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S7. Restoration measures were

incorporated into the Project in this location where appropriate, which includes reinstalling standing dead trees that will be removed, creating brush piles, and restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.4.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S7 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S7, three important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed mitigation measures.

#### **3.4.1.1 Upland/Wetland Food Plants**

Within WIA S7, there are upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife, including tree oaks and black huckleberry. Glossy false buckthorn an invasive plant species that can also provide a source of food to wildlife was also seen there.

#### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S7 are particularly unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in greater quantities in areas near locations where loss of some food plants from the Project will occur, Project-related losses are negligible and will not result in an adverse effect or reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. Restoration or mitigation is not proposed at this location for food plants and the no adverse effect standard is met.

#### **3.4.1.2 Standing Dead Trees**

In WIA 7, a total of 7 standing dead trees with a dbh ranging from 6- to 12-inches will be removed as part of construction activities. None of the trees appeared to contained cavities.



### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

#### **3.4.1.3 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground throughout the WIA. However, none of it is substantial (for example, large trees, logs or large brush piles). There is larger and more abundant large woody debris on the ground outside of the WIA on the Project Locus and beyond.

### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S7, the amount of this material is not significant. Areas in the vicinity of the WIA on the Project Locus and beyond contain an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the Project Locus. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the vegetation clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as mitigation of the loss of this habitat feature.

## **3.5 Wetland Impact Area S8**

WIA S8 is a Sudbury jurisdictional WIA because it is AURA and RFA based on Sudbury's Bylaw only. It is associated with an unnamed stream and Wetlands 36, 37, and 38 and extends from approximately Station 515+00 to 522+90 between Dutton Road and Peakham Road. In this location the railroad track was built on fill and is higher than the adjacent areas.

The WIA is located within areas that were previously developed from the historic construction and operation of the rail line and is mostly 25 feet wide. There is approximately 14,677 square feet of Bylaw RFA impacts and 17,647 square feet of AURA impacts. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line and paving of the MCRT. The railroad tracks and ties are still present, there is a well-defined footpath immediately south of the tracks within the WIA, and single-family residences are within the immediate vicinity.

The location where impacts will occur is upland and is vegetated primarily with saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing include red maple, tree oaks, American elm (*Ulmus americana*), glossy false buckthorn, Asian bittersweet (*Celastrus orbiculatus*), and spotted henbit (*Lamium maculatum*).

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail south and parallel to the train track. Observations made during site visits include foot traffic by people, and people walking dogs.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S8. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.5.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S8 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S8, six important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Tree Cavities in Trunks or Limbs;
- › Small Mammal Burrows;
- › Dense Herbaceous Cover; and
- › Large Woody Debris on the Ground;

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.5.1.1 Upland/Wetland Food Plants**

Within WIA S8, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include black cherry, tree oaks, and whiplash dewberry, glossy false buckthorn, Japanese barberry (*Berberis thunbergii*) Asian bittersweet, winged euonymus (*Euonymus alatus*) and Morrow's honeysuckle.

### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S8 are unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in greater quantities in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. Restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.5.1.2 Standing Dead Trees**

In WIAs 8, a total of four dead trees with a dbh ranging from 6- to 12-inches will be removed. None of the trees appeared to contain cavities.

### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

#### **3.5.1.3 Tree Cavities in Trunks or Limbs**

One cavity was seen in a black cherry tree within WIA S8. The cavity was estimated to be less than 6 inches in diameter and was likely created by a woodpecker. Construction activities in this area will require that the tree containing this cavity be removed.

### ***Adverse Effects Analysis and Restoration***

One cavity was observed within the WIA but by the nature of forested area on the Project Locus near the WIA, opportunities exist for other tree cavities. The loss of the tree with the one cavity in this WIA will not result in an adverse effect to wildlife habitat due to the cavities that will remain on Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

#### **3.5.1.4 Small Mammal Burrows**

One potential small mammal burrow was seen in the foot path that parallels the railroad track at approximately Station 517+25. The hole was about 2- to 3-inches in diameter and was found in an area that was open and exposed. The burrow was in soil material that was likely brought there for construction of the railroad bed and was dense and compacted.

### ***Adverse Effects Analysis and Restoration***

Construction of the Project will result in the loss of the one small mammal burrow that was seen within WIA 8. Many chipmunks were observed along the entire Project Locus and it is assumed that small mammal burrows are ubiquitous within the surrounding wooded areas that are outside of the limits of work but within the Project Locus (also beyond the limits of the Project Locus). Very few small mammal burrows were identified during the WHE because

the Project is primarily limited to the railroad embankment which consists of compacted soils, railroad ballast, railroad ties, and tracks. The lack of similar burrows in this location and in general along the entire railroad bed associated with this Project would suggest that this material is not especially suited for small mammal burrow development, possibly because of its compacted nature or the nature of the material used to build the railroad bed. Overall, the loss of the one burrow will not have a significant effect to small mammals either on a local or regional level and will not result in an adverse effect to wildlife habitat.

#### **3.5.1.5 Dense Herbaceous Cover**

WIA 8 contains a large patch of spotted henbit, a non-native herbaceous plant species, growing across the railroad track near Station 522+70. Construction of the Project will require that this feature be removed.

##### ***Adverse Effects Analysis and Restoration***

Dense herbaceous vegetation can provide cover, food, and nesting habitats for a variety of small mammals, amphibians, reptiles, and bird species. Construction activities associated with the Project will remove this insignificant amount of dense herbaceous vegetation where it presently grows. However, removing this small area of dense herbaceous cover will not adversely affect the wildlife habitat functions it provides due to its size and because additional, larger areas of dense herbaceous vegetation are present beyond the WIA and within the Project Locus (i.e., project site in the Bylaw Regulations).

Irrespective of this no adverse effect determination, the Project includes restoring all areas within the Project Site that will not be paved for the 10-foot-wide MCRT with a seed mix consisting of native herbaceous species. Within this WIA, it includes approximately 13,266 square feet of restoration with native species. Consequently, the seeding with a native herbaceous seed mix will greatly offset that which will be lost, thereby providing additional habitat value for wildlife and will not result in an adverse effect. Please refer to Planting Schedule B: Priority Habitat on sheet 131 in the plans in Attachment B of the NOI for the planting schedule.

#### **3.5.1.6 Large Woody Debris on the Ground**

A large quantity of large woody debris is present in WIA 8. This material is also located outside of the WIA within the Project Locus and beyond. Most of this material appears to have been purposely placed. Some of it has been cut, probably with a chain saw, and has been stacked between the train tracks. In other locations the woody material has been stacked in linear piles generally parallel to the tracks. All of this material, though not naturally occurring, has some value for wildlife. Construction activities here will require removing this material from the limits of work. That which is beyond the limits of work will remain.

##### ***Adverse Effects Analysis and Restoration***

A large amount of this material on the Project Locus that will remain untouched by construction activities, therefore the loss of large woody debris in the WIA is not expected to

have an adverse effect on the availability of important wildlife habitat either on a local or regional scale. Consequently, restoration or mitigation for the loss of large woody debris on the ground in WIA 8 is not planned and the no adverse effect standard is met.

Regardless of the no adverse effect determination, brush piles will be created within the Project Locus. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the vegetation clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration of the loss of this habitat feature.

### 3.6 Wetland Impact Area S9

WIA S9 is a Sudbury jurisdictional WIA only because it is AURA and RFA based on Sudbury's Bylaw only. It is associated with Wetlands 33 through 35, Vernal Pools 7 and 8, and an unnamed stream on both sides of the raised railroad embankment. It is just east of WIA S8 and extends from approximately Station 523+00 to 530+90. The majority of the WIA is located west of Peakham Road, with a small portion of AURA east of Peakham Rd. In this location the railroad track was primarily built on fill and is higher than the adjacent areas.

The WIA is within areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide. There is 10,018 square feet of Bylaw RFA impact and 19,175 square feet of AURA impact. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line and paving of the MCRT. The railroad tracks and ties are still present and there is a well-defined footpath immediately south of the tracks within the WIA. In addition, single-family residences and roadways are within the immediate vicinity.

The location where impacts will occur is upland and is vegetated primarily with trees, saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing include in this area include eastern white pine, red maple, glossy false buckthorn, Asian bittersweet, and wild sarsaparilla (*Aralia nudicaulis*).

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail south and parallel to the train track. Observations made during site visits include foot traffic by people and people walking dogs.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S9. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide a dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide

important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.6.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S9 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S9, four important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Small Mammal Burrows; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration or mitigation measures.

#### **3.6.1.1 Upland/Wetland Food Plants**

Within WIA S9, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include black cherry, tree oaks, black huckleberry, and lowbush blueberry. Glossy false buckthorn, Japanese barberry, Asian bittersweet, and winged euonymus, invasive plant species that can also provide a source of food to wildlife, were also observed within the WIA.

##### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S9 are particularly unique to the WIA or the surrounding area and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. Restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.6.1.2 Standing Dead Trees**

In WIAs 9, a total of three standing dead trees with a dbh ranging from 6 – to 12-inches will be removed. None of the trees appeared to contain cavities.

##### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

### **3.6.1.3 Small Mammal Burrows**

One small mammal burrow was observed in soil material that was likely brought there for construction of the railroad bed.

#### ***Adverse Effects Analysis and Restoration***

Construction of the Project will result in the loss of the one small mammal burrow that was observed within WIA S9. Many chipmunks were observed along the entire Project Locus and it is assumed that small mammal burrows are ubiquitous within the surrounding wooded areas that are outside of the Project limits but within the Project Locus (also beyond the limits of the Project Locus). Very few small mammal burrows were identified during the WHE because the Project is primarily limited to the railroad embankment which consists of compacted soils, railroad ballast, railroad ties, and tracks. The lack of similar burrows in this location and in general along the entire railroad bed associated with this Project would suggest that this material is not especially suited for small mammal burrow development possibly by its compacted nature or the nature of the material used to build the railroad bed. Overall, the loss of one burrow will not have a significant effect to small mammals either on a local or regional level and will not result in an adverse effect to wildlife habitat.

### **3.6.1.4 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground throughout the WIA. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant large woody debris on the ground outside of the WIA on the Project Locus and beyond. Although this material was not enumerated, it is more abundant than within the WIA.

#### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S9, the amount of this material is not significant. Areas in the vicinity of the WIA on the Project Locus and beyond contained an abundant amount of this important wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the Project Locus. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration for the loss of this habitat feature.

### 3.7 Wetland Impact Area S10

WIA S10 is MWPA RFA and Sudbury AURA primarily associated with Dudley Brook and Wetlands 30 and 31 on both sides of the railroad embankment. The area is located east of Peakham Road from approximately Station 533+60 to 543+90. In this location the railroad track was built on fill and is higher than the adjacent areas.

The WIA is within areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide. There is a total of approximately MWPA 24,272 square feet of RFA impacts and 23,334 square feet of AURA impacts. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT.

The railroad tracks and ties are still present and at the western end of the WIA there is a footpath immediately south of the tracks that switches to the north side partway through the WIA; at this point the footpath becomes wider and more well-defined as it continues to the east.

The location where impacts will occur is upland and is vegetated primarily with trees, saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing include in this area include eastern white pine, red maple, Pennsylvania sedge, eastern poison Ivy (*Toxicodendron radicans*), Virginia creeper (*Parthenocissus quinquefolia*) glossy false buckthorn, and Asian bittersweet.

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail that parallels the train tracks. Observations made during site visits include foot traffic by people and people walking dogs.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S10. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide a dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### 3.7.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration

WIA S10 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S10, five important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Tree Cavities in Trunks or Limbs;



- › Small Mammal Burrow; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.7.1.1 Upland/Wetland Food Plants**

Within WIA S10, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include black cherry, tree oaks, black huckleberry, and lowbush blueberry. Glossy false buckthorn, Japanese barberry, Asian bittersweet, and winged euonymus, invasive plant species that can also provide a source of food to wildlife, was also observed within the WIA.

##### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S10 are particularly unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in greater quantities in areas near the locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. Restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.7.1.2 Standing Dead Trees**

In WIA S10, a total of two standing dead trees with a dbh of 6- to 12-inches will be removed. None of the tree appeared to contain cavities.

##### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

#### **3.7.1.3 Tree Cavities in Trunks or Limbs**

One 10-inch dbh red maple was observed to contain one cavity that likely formed after a branch broke off. Construction activities in this area will require that the tree containing this cavity be removed.

##### ***Adverse Effects Analysis and Restoration***

One tree with a cavity was observed within the WIA but, by the nature of forested area on the Project Site near the WIA, opportunities exist for other such tree cavities. The loss of the tree with the cavities in this WIA will not result in an adverse effect to wildlife habitat due to

cavities that will remain on Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

#### **3.7.1.4 Small Mammal Burrow**

One small mammal burrow was observed in soil material that was likely brought there for construction of the railroad bed.

##### ***Adverse Effects Analysis and Restoration***

Construction of the Project will result in the loss of the one small mammal burrow that was seen within WIA S10. The material where the burrow was found is generally dense and compacted.

Many chipmunks were observed along the entire Project Locus and it is assumed that small mammal burrows are ubiquitous within the surrounding wooded areas that are outside of the Project limits but within the Project Locus (also beyond the limits of the Project Locus). Very few small mammal burrows were identified during the WHE because the Project is primarily limited to the railroad embankment which consists of compacted soils, railroad ballast, railroad ties, and tracks. The lack of similar burrows in this location and in general along the entire railroad bed associated with this Project would suggest that this material is not especially suited for small mammal burrow development possibly by its compacted nature or the nature of the material used to build the railroad bed. Overall, the loss of one burrow will not have a significant effect to small mammals either on a local or regional level and will not result in an adverse effect to wildlife habitat.

#### **3.7.1.5 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground in WIA S10. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant coarse woody debris on the ground outside of the WIA on the Project Locus and beyond.

##### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S10, the amount of this material is not significant. Areas in the vicinity of the WIA on the Project Locus and beyond contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination regarding the loss of large woody debris found in limited amounts in the WIA, brush piles will be created within the Project Locus. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody

debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes in detail the creation of brush pile as restoration of the loss of this habitat feature.

### **3.8 Wetland Impact Area S11**

WIA S11 is a Sudbury jurisdictional WIA only because it is AURA and RFA based on Sudbury's Bylaw only. It is associated with an unnamed stream and Wetlands 27, 28, and 29 on both sides of the railroad tracks. It is east of Horse Pond Road and extends from approximately Station 558+10 to 564+20. In this location the railroad track was built on fill and is higher than the adjacent areas.

The WIA is within previously developed areas from the historic construction and operation of the rail line and is mostly 22 feet wide. There is 11,515 square feet of Bylaw RFA impact and 14,482 square feet of AURA impact. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within the WIA. There are single-family residences and roadways within the vicinity, particularly Horse Pond Road which is approximately 230 feet west of the WIA.

The location where impacts will occur is upland and is vegetated primarily with saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing include in this area include white pine, red oak, glossy false buckthorn, eastern poison Ivy, and Asian bittersweet.

Forms of past and current human activities noted within and near the WIA here include derelict railroad infrastructure (railroad ties and tracks) and a well-worn foot trail located to the north of the train tracks. Observations made during site visits include foot traffic by people and people walking dogs.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S11. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### **3.8.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S11 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S11, four important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Dense Herbaceous Cover; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.8.1.1 Upland/Wetland Food Plants**

Within WIA S11, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include black cherry, red oak, whiplash dewberry and lowbush blueberry; however, only red oak was noted as dominant. Glossy false buckthorn, and Asian bittersweet, invasive plant species that can also provide a source of food to wildlife, were also observed within the WIA.

##### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S11 are unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides and as such, the no adverse effect standard is met.

#### **3.8.1.2 Standing Dead Trees**

In WIA S11, there is one standing dead tree with a dbh within the 6- to 12-inch range that will be removed. This tree did not appear to contain cavities.

##### ***Adverse Effects Analysis and Restoration***

All standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

#### **3.8.1.3 Dense Herbaceous Cover**

There is a small patch approximately 100 square feet in size (5' x 20') of Pennsylvania sedge growing within the limits of disturbance. Construction of the Project will require that this feature be removed.

##### ***Adverse Effects Analysis and Restoration***

Dense herbaceous vegetation can provide cover, food, and nesting habitats for a variety of small mammals, amphibians, reptiles, and bird species. Construction activities associated with the Project will remove this insignificant amount of dense herbaceous vegetation where

it presently grows. However, removing this small area of dense herbaceous cover will not adversely affect the wildlife habitat functions it provides due to its size and because additional, larger areas of dense herbaceous vegetation are present beyond the WIA and within the Project Locus (i.e., project site in the Bylaw Regulations).

Irrespective of this no adverse effect determination, the Project includes restoring all areas within the Project Site that will not be paved for the 10-foot-wide MCRT with a seed mix consisting of native herbaceous species. Within this WIA, it includes approximately 8,403 square feet of restoration with native species. Consequently, the seeding with a native herbaceous seed mix will greatly offset that which will be lost, thereby providing additional habitat value for wildlife and will not result in an adverse effect. Please refer to seed mix on sheet 131 in the plans in Attachment B of the NOI for the planting schedule.

#### **3.8.1.4 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground in WIA 11; however, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant coarse woody debris on the ground outside of the WIA on the Project Locus and beyond.

##### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S11, the amount of this material is not significant. Areas in the vicinity of the impact area on the Project Locus and beyond, contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the Project Locus. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration of the loss of this habitat feature.

### **3.9 Wetland Impact Area S12**

WIA S12 is AURA associated with Wetland 25, which is on the northern side of the railroad tracks. The area extends from approximately Station 576+10 to 580+00 and is north of the Meadow Walk development. In this location the railroad track was built on fill and is higher than the adjacent areas.

The WIA is within areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide. There is a total of approximately 10,051 square feet of AURA impacts. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT. The railroad tracks and ties are still present and at the western end of the WIA there is a footpath immediately north of the tracks within the WIA. The WIA is also within close proximity to surrounding multi-family residences (townhomes) and the commercial portion of the Meadow Walk development including Whole Foods.

The location where impacts will occur is upland and is vegetated primarily with saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing in this area include eastern white pine, red oak, glossy false buckthorn, hay-scented fern (*Dennstaedtia punctilobula*), eastern poison Ivy and Asian bittersweet.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S12. Restoration measures were incorporated into the Project in this location where appropriate, which includes restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide dense herbaceous cover and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.9.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S12 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S12, four important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Small Mammal Burrows;
- › Dense Herbaceous Cover; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.9.1.1 Upland/Wetland Food Plants**

Within WIA S12, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife including black cherry and red oak. Glossy false buckthorn, Asian bittersweet, and Morrow's honeysuckle, invasive plant species that can also provide a source of food to wildlife were also seen there.

### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S12 are unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides and restoration is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.9.1.2 Small Mammal Burrows**

One small mammal burrow was seen at approximately station 578+50 in soil material that was likely brought there for construction of the railroad bed.

### ***Adverse Effects Analysis and Restoration***

Construction of the Project will result in the loss of the one small mammal burrow that was observed within WIA S12. The material where the burrow was found is generally dense and compacted.

Many chipmunks were observed along the entire Project Locus and it is assumed that small mammal burrows are ubiquitous within the surrounding wooded areas that are outside of the limits of work but within the Project Locus (also beyond the limits of the Project Locus). Very few small mammal burrows were identified during the WHE because the Project is primarily limited to the railroad embankment which consists of compacted soils, railroad ballast, railroad ties, and tracks. The lack of similar burrows in this location and in general along the entire railroad bed associated with this Project would suggest that this material is not especially suited for small mammal burrow development possibly by its compacted nature or the nature of the material used to build the railroad bed. Although mitigation for this one small mammal burrow is not proposed, it will not adversely affect small mammals on either a local or regional level and the no adverse effect standard is met.

#### **3.9.1.3 Dense Herbaceous Cover**

There is a small patch approximately 120 square feet in size (2' x 60') of Pennsylvania sedge growing within the limits of disturbance. Construction of the Project will require that this feature be removed.

### ***Adverse Effects Analysis and Restoration***

Dense herbaceous vegetation can provide cover, food, and nesting habitats for a variety of small mammals, amphibians, reptiles, and bird species. Construction activities associated with the Project will remove this insignificant amount of dense herbaceous vegetation where it presently grows. However, removing this small area of dense herbaceous cover will not adversely affect the wildlife habitat functions it provides due to its size and because additional, larger areas of dense herbaceous vegetation are present beyond the WIA and within the Project Locus (i.e., project site in the Bylaw Regulations).

Irrespective of this no adverse effect determination, the Project includes restoring all areas within the Project Site that will not be paved for the 10-foot-wide MCRT with a seed mix consisting of native herbaceous species. Within this WIA, it includes approximately 6,382 square feet of restoration with native species. Consequently, the seeding with a native herbaceous seed mix will greatly offset that which will be lost, thereby providing additional habitat value for wildlife and will not result in an adverse effect. Please refer to seed mix on sheet 131 in the plans in Attachment B of the NOI for the planting schedule.

#### **3.9.1.4 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground in WIA 12. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant large woody debris on the ground outside of the WIA on the Project Locus and beyond. Although this material was not enumerated, it is more abundant than within the WIA.

##### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S12, the amount of this material is not significant. Areas in the vicinity of the WIA on the Project Locus and beyond, contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the immediate vicinity of this WIA. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration of the loss of this habitat feature.

### **3.10 Wetland Impact Area S13**

WIA S13 is a Sudbury jurisdictional WIA because it is AURA and Sudbury Bylaw RFA only. It is associated with an unnamed stream and apparent stormwater ditch that runs parallel to the tracks, as well as Wetlands 24 and 24A which are north of the railroad tracks. It is west of Union Avenue and extends from approximately Station 585+25 to 599+90. A commercial development is located immediately south of the WIA. In this location the railroad track is at the same elevation as adjacent areas.

The WIA is within areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide. There is 25,319 square feet of Bylaw RFA impact and 33,564 square feet of AURA impact. Impacts at this location would result from



vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT. The railroad tracks and ties are still present and there is a well-defined footpath immediately north of the tracks within the WIA.

The location where impacts will occur is upland and is vegetated primarily with saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing in this area include white pine, red oak, glossy false buckthorn, hay-scented fern (*Dennstaedtia punctilobula*), eastern poison Ivy and Asian bittersweet.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S13. Restoration measures were incorporated into the Project in this location where appropriate, which includes restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide a dense herbaceous cover and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.10.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S13 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S13, three important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Small Mammal Burrows; and
- › Large Woody Debris on the Ground.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.10.1.1 Upland/Wetland Food Plants**

Within WIA S13, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include black cherry and red oak. Glossy false buckthorn, Asian bittersweet, and Morrow's honeysuckle, invasive plant species that can also provide a source of food to wildlife, were also observed within the WIA.

#### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S13 are particularly unique to the WIA and all of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides and as such, neither restoration or mitigation is proposed at this location for this habitat feature and the no adverse effect standard is met.

### **3.10.1.2 Small Mammal Burrows**

One small mammal burrow was observed at approximately station 593+80 in soil material that was likely brought there for construction of the railroad bed.

#### ***Adverse Effects Analysis and Restoration***

Construction of the Project will result in the loss of the one small mammal burrow that was seen within WIA 13. The material where the burrow was found is generally dense and compacted.

Many chipmunks were observed along the entire Project Locus and it is assumed that small mammal burrows are ubiquitous within the surrounding wooded areas that are outside of the Project limits but within the Project Locus (also beyond the limits of the Project Locus). Very few small mammal burrows were identified during the WHE because the Project is primarily limited to the railroad embankment which consists of compacted soils, railroad ballast, railroad ties, and tracks. The lack of similar burrows in this location and in general along the entire railroad bed associated with this Project would suggest that this material is not especially suited for small mammal burrow development possibly by its compacted nature or the nature of the material used to build the railroad bed. Overall the loss of the one burrow is not expected to have a significant effect to small mammals either on a local or regional level and will not result in an adverse effect to wildlife habitat.

### **3.10.1.3 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground in WIA S13. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant coarse woody debris on the ground outside of the WIA on the Project Locus and beyond.

#### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S13, the amount of this material is not significant. Areas in the vicinity of the WIA on the Project Locus and beyond contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the immediate vicinity of this WIA. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as mitigation of the loss of this habitat feature.

### 3.11 Wetland Impact Area S14

WIA S14 is a Sudbury jurisdictional WIA because it is AURA and Sudbury Bylaw RFA only. It is associated with an unnamed stream/drainage ditch that runs parallel to Station Road and is to the north of the Project limits. The area extends from approximately Station 600+50 to 602+25 and is west of Union Avenue. In this location the railroad track is at the same elevation as the adjacent areas.

The WIA is located within areas that were previously developed from the historic construction and operation of the rail line as well as Union Avenue. There is a total of approximately 4,986 square feet of Bylaw RFA impacts and 1,544 square feet of AURA impacts from vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT. The railroad tracks and ties are still present within the wooded portion of the WIA, with the remaining area consisting of lawn. There is noise disturbance from surrounding commercial properties and Union Avenue.

Dominant vegetation in the wooded portion of the impact area is dominated by white pine, red oak, common wormwood (*Artemisia vulgaris*), glossy false buckthorn and Asian bittersweet. The lawn area is dominated by native and non-native grasses and various herbaceous species.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S14. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed and restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix which will provide a dense herbaceous cover. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### 3.11.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration

WIA S14 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S14 two important wildlife habitat features were identified:

- › Upland Food Plants; and a
- › Standing Dead Tree.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed mitigation measures.

##### 3.11.1.1 Upland/Wetland Food Plants

Within WIA S14, red oak, an upland plant species that can provide food for wildlife (hard mast and fruit/berry producers), is present. Glossy false buckthorn and Asian bittersweet,

invasive plant species that can also provide a source of food to wildlife, were also seen observed within the WIA.

#### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S14 are particularly unique to the WIA. Most of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. Restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.11.1.2 Standing Dead Trees**

In WIA 14, there is one standing dead tree with a dbh range of 12- to 18-inches that will be removed. This tree did not appear to contain cavities.

#### ***Adverse Effects Analysis and Restoration***

The standing dead tree that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

### **3.12 Wetland Impact Area S15**

WIA S15 is a Sudbury WIA only from approximately Station 602+50 to 705+30 and is a MWPA and Sudbury WIA from Station 705+30 to 711+30. It includes BLSF, LUWW, RFA, AURA, and Bank associated with the unnamed stream/stormwater ditch that parallels Station Road, Hop Brook, and Wetlands 20, 21, and 22. The WIA is parallel to Station Road between Union Avenue and Route 20/Boston Post Road and extends from approximately Station 602+40 to 711+30. In this location the railroad track at the same elevation as the commercial property to the south but is higher than the ditch.

The WIA is within areas that were previously developed from the historic construction and operation of the rail line as well as commercial operations on both sides of the MBTA ROW such as Sudbury Lumber and Station Road Auto Body & Garage. In this location there is 1,791 square feet of BLSF impacts, 11,759 square feet of Bylaw Regulations RFA impacts, 13,630 square feet of MWPA RFA impacts, and 25,375 square feet of AURA impacts. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line, and paving of the MCRT. The railroad tracks and ties are still present and there is noise disturbance from surrounding commercial properties and Union Avenue.

The location where impacts will occur is upland and is vegetated primarily with trees, saplings, shrubs, and some limited herbaceous growth. Dominant plants observed growing include in this area include red maple, black oak, glossy false buckthorn, and poison ivy.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S15. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix that will provide dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.12.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S15 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S15 three important wildlife habitat features were identified:

- › Upland/Wetland Food Plants;
- › Standing Dead Trees; and
- › Large Woody Debris.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration or mitigation measures.

#### **3.12.1.1 Upland/Wetland Food Plants**

Within WIA S15, there are several upland plant species (hard mast and fruit/berry producers) that can provide food for wildlife. These species include tree oaks, common winterberry, black cherry, and grape (*Vitis* sp.). Glossy false buckthorn, Japanese barberry, autumn olive (*Elaeagnus umbellata*), Morrow's honeysuckle, and Asian bittersweet, invasive plant species that can also provide a source of food to wildlife, were also observed within the WIA.

#### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S15 are unique to the WIA. Most of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides.

Restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

### **3.12.1.2 Standing Dead Trees**

In WIA S15, nine standing dead trees with a dbh range of 6- to 12-inches and four with a dbh range of 12- to 16-inches will be removed. These trees did not appear to contain cavities.

#### ***Adverse Effects Analysis and Restoration***

The standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

### **3.12.1.3 Large Woody Debris on the Ground**

There is limited scattered large woody debris on the ground in WIA 15. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant large woody debris on the ground outside of the WIA on the Project Locus and beyond.

#### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S15, the amount of this material is not substantial and areas in the vicinity of the WIA on the Project Locus and beyond contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the immediate vicinity of the WIA. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as restoration of the loss of this habitat feature.

## **3.13 Wetland Impact Areas S16, 17, 18, and 19**

WIAs S16, S17, S18, and S19 are discussed together because they are associated with the Hop Brook wetland complex located from Station 711+70 to 753+15, east of Route 20/Boston Post Road. These WIAs are located within and in close proximity to Wetlands 15-19 and Hop Brook.

Within these WIAs, the terrain varies from sections where the railroad track was built on fill and is higher than the adjacent areas to areas where the railroad is at the same elevation.

The railroad tracks and ties are still present. The channel of Hop Brook crosses the Project from approximately Station 725+10 to 725+50 and flows in a southerly direction beneath an existing steel girder railroad bridge that is currently partially submerged.

The proposed Project footprint in this area averages 18 to 22 feet in width and is approximately 4,135 feet in length. WIA S16 extends from approximately Station 711+70 to 724+40, WIA S17 extends from approximately Station 724+40 to 725+05, WIA S18 extends from approximately 725+70 to 726+30, and S19 extends from approximately 726+30 to 753+15.

Crane mats will be temporarily placed within a portion of WIA S17 on the west side of Hop Brook from approximately Station 724+40 to 724+95. The Project limits within this crane mat area are approximately 40 feet wide (north to south) and 50 feet long (east to west). Timber mats may also be temporarily placed on the east side of Hop Brook within a portion of WIA S18 from approximately Station 725+70 to 726+30. The Project limits within this crane mat area are approximately 40 feet wide (north to south) in this location and 60 feet long (east to west).

Most of the impacts in this area will occur along the elevated railroad bed that includes the inactive railroad track, fill material, and ballast. Work that will result in disturbance to wetland resource areas include vegetation removal, site grading, replacement of the Hop Brook bridge (Bridge 127), temporary placement of crane mats, installing the underground transmission line, and paving the MCRT. In locations where the crane mats are proposed, it will be necessary to remove all woody vegetation, possibly including tree stumps, to ensure that the mats are installed properly to ensure a safe, stable, and level work platform for the crane that will be used in this location. The timber mats are required to facilitate replacement of the Hop Brook bridge and will result in temporary impacts to LUWW, BVW, AURA, BLSF, and RFA that will be restored once replacement of the bridge is complete and the timber mats are removed. For details regarding crane mat restoration, please refer to Planting Schedule A: Crane Mat Restoration Areas on sheet 131 of the plans included in Attachment B of the NOI.

WIAs S17 and S18 are located immediately west and east of Hop Brook respectively. WIA S17 includes approximately 178 square feet of BVW impact, 596 square feet of LUW impact, 1,738 square feet of BLSF impact, 2,122 square feet of MWPA RFA impact, 124 linear feet of Bank impacts, and 1,947 square feet of AURA impact. WIA S18 includes approximately 118 square feet of BVW impact, 550 square feet of LUW impact, 2,154 square feet of BLSF impact, 2,277 square feet of MWPA RFA impact, 122 linear feet of Bank impacts and 2,160 square feet of AURA impact. These WIAs occur in areas where the Project footprint is expanded to accommodate the temporary crane mats needed to replace the existing bridge. Dominant vegetation within WIA17 includes glossy false buckthorn, black oak, and highbush blueberry (*Vaccinium corymbosum*). Dominant vegetation within S18 includes gray birch, velvet sedge (*Carex vestita*), glossy false buckthorn, and eastern white pine.

WIAs S16 and S19 are located west and east of Hop Brook respectively, beyond the limits of the crane mats. WIA S16 includes approximately 31 square feet of BVW impact, 877 square feet of BLSF impact, of 32,745 square feet of MWPA RFA impact, and 32,285 square feet of

AURA impact. WIA S19 includes approximately 3,576 square feet of BLSF impact, 61,522 square feet of MWPA RFA impact, 222 square of Bylaw RFA impact, 71,713 square feet of AURA impact, and 303 square feet of Bylaw IVW impact. Dominant vegetation in S16 includes Norway maple (*Acer platanoides*), glossy false buckthorn, and eastern poison ivy. Dominant vegetation in S19 includes red maple, Pennsylvania sedge, Asian bittersweet, glossy false buckthorn, and eastern white pine.

Forms of past and current human activities noted within and near these WIAs here include derelict railroad infrastructure (railroad ties and tracks). Observations made during site visits include moderate foot traffic by people.

In summary, the Project will not result in a substantial reduction of wildlife habitat for any of the important wildlife habitat features found in WIAs S16 – S19. Restoration measures were incorporated into the Project in these locations where appropriate and include measures such as plantings to offset the loss of food plants, reinstalling standing dead trees that will be removed during construction, creating brush piles to replace the loss of some large woody debris on the ground, and plantings to offset the loss of vegetation overhanging open water and providing good visibility of open water. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.13.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIAs S16, S17, S18, and S19 were evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features.

Within this group of WIAs seven important wildlife habitat features were identified. These include;

- › Important Upland/Wetland Food Plants;
- › Standing Dead Trees;
- › Tree Cavities in Trunks or Limbs;
- › Large Woody Debris on the Ground;
- › Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at or Within 1m Above the Water's Surface;
- › Live or Dead Standing Vegetation Overhanging or Offering Good Visibility of Open Water; and
- › Standing Water Present At least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-Breeding Amphibians, Turtles, or Foraging Waterfowl.

The following subsections detail the important wildlife habitat features found in WIAs S16, S17, S18, and S19.



### 3.13.1.1 Upland/Wetland Food Plants

Within WIAs S16, S17, S18, and S19 there is a variety of upland plant species that provide wildlife value as source of food for a variety of species. These species include tree oaks, black cherry, Allegheny blackberry (*Rubus allegheniensis*), highbush blueberry, Canada service berry, common winterberry, whiplash dewberry, and grapes. Glossy false buckthorn, Japanese barberry, autumn olive, Asian bittersweet and Morrow's honeysuckle, invasive plant species that can also provide a source of food to wildlife were also seen there.

#### ***Adverse Effects Analysis and Restoration***

While none of these plants are individually abundant in the areas where work is planned, when regarded as a group they can provide value to wildlife. Although food plants will be removed within these WIAs, these same species are present in abundance on areas of the berm that will not be affected by the Project and around the perimeter of the marsh beyond the limits of the Project Locus. In addition, as restoration for the total loss of vegetation within the locations where crane mats will be placed in WIAs 17 and 18, tree and shrub species will be planted in equivalent quantities to replace those being lost. These species will be native to New England and that are known to be valuable sources of wildlife food. Furthermore, all disturbed areas except for the 10-foot-wide paved MCRT will be seeded with herbaceous seed mixes that will provide additional value to wildlife as sources of food. Details regarding plantings and seed mixes are provided on sheet 131 in the plans in Attachment B of the NOI. Because of the surrounding food plants that will not be disturbed and the supplemental woody plantings and seed mixes, the Project will not reduce the capacity of upland/wetland plants in the area of the Project to provide food for wildlife or result in an adverse effect to wildlife habitat either on a local or regional scale.

### 3.13.1.2 Standing Dead Trees

WIAs 16 through 19 had the following standing dead trees:

- › WIA S16 had 8 trees that ranged from 6- to 12-inches dbh and 2 trees that ranged from 12- to 18-inches dbh;
- › WIA S17 had 6 trees that ranged from 6- to 12-inches dbh;
- › WIA S18 had 1 tree that ranged from 6- to 12-inches dbh; and
- › WIA S19 had 12 trees that ranged from 6- to 12-inches dbh and 1 tree that ranged from 12- to 18-inches dbh.

None of the trees appeared to contain cavities.

#### ***Adverse Effects Analysis and Restoration***

The standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

### **3.13.1.3 Tree Cavities in Trunks or Limbs**

WIAs S16, S17, and S19 had the following cavities:

- › S16 had 16 cavities, most of which were under six inches;
- › S17 had eight cavities, most of which were six inches or less; and
- › S19 had eight cavities, most of which were six inches or less.

All the cavities for S16 and S19 were noted to be near the edge of the limit of work. Construction activities in this area will require that the tree containing this cavity be removed.

#### ***Adverse Effects Analysis and Restoration***

Although cavities were identified within WIAs S16, S17, and S19, the nature of forested area on the Project Locus near the WIAs present opportunities for other tree cavities to exist. The loss of the trees with the cavities in these WIAs will not result in an adverse effect to wildlife habitat due to cavities that will remain on Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

### **3.13.1.4 Large Woody Debris on the Ground**

Scattered large woody debris on the ground is present within WIAs 16 -19. This material will be removed to accommodate grading that is necessary to complete the Project. The amount of this material is limited and scattered throughout the Impact Areas. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant coarse woody debris on the ground outside of the Impact Area on the Project Locus and beyond.

#### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in the WIAs, the amount of this material is not substantial and areas in the vicinity of the impact area on the Project Locus and beyond contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIAs is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the Project Locus. Based on Natural Resources Conservations Service guidance for the creation of brush piles, brush piles will be created along the length of the WIAs on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as mitigation of the loss of this habitat feature.

### **3.13.1.5 Live or Dead Standing Vegetation Overhanging or Offering Good Visibility of Open Water**

WIAs S16, S17, S18, and S19 contain live or dead standing woody vegetation that will be removed during construction that either overhangs or provides visibility of open water in Hop Brook and the associated marsh. In WIAs S16 and S19, vegetation that provides this habitat value is generally located in thin strips at the outer limits of work and includes small trees, saplings, and tall shrubs. Beyond the limits of work in WIAs S16 and S19, similar vegetation will remain in greater amounts to that which will be removed and will continue to provide this important wildlife habitat feature. In WIAs S17 and S18, because of the need to place crane mats for safe use of cranes needed to work on the bridge across Hop Brook, all the woody vegetation that currently resides beneath the mat footprints will be removed. The approximate total number of trees, tall shrubs, and dead standing trees that overhang or provide a view of open water that will be removed in each WIA is:

- › S16 has approximately 9 trees;
- › S17 has approximately 25 trees and abundant shrubs;
- › S18 has approximately 8 trees and few shrubs; and
- › S19 has approximately 29 trees and abundant shrubs.

#### ***Adverse Effects Analysis and Restoration***

Following the removal of tall woody vegetation in WIAs 16 and 19, undisturbed areas on the elevated railroad berm beyond the limits of work will continue to have tall woody vegetation providing views to open water in quantities much greater than what will be removed. Overall the loss of these features in WIAs S16 and S19 are not expected to result in an adverse effect to wildlife habitat either in the immediate area of the site or the region. This conclusion is based on the observation that similar features will remain on the Project Locus in the immediate vicinity of those WIAs. Accordingly, the loss of live or dead standing vegetation overhanging or offering good visibility of open water in these WIAs is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

As restoration for the loss of this important wildlife habitat feature within WIAs S16 through S19, tree and shrub species will be planted in equivalent quantities to those being lost. As shown on sheet 131 in the plans provided in Attachment B of this NOI, 34 trees and 45 shrubs will be planted from Station 723+70 to 725+05 (S16 and S17), and 12 trees and 30 shrubs will be planted from Station 725+70 to 726+30 (S18), and 32 trees and 60 shrubs will be planted from Station 726+30 to 729+00 (S19). All plantings will be installed in a naturalized condition to provide wildlife habitat and will not be planted in a linear manner. Once mature, these woody species will offer views to and perches over open water in the adjacent marsh at a value that will, at a minimum, be equal to what will be lost. Based on proposed restoration, removal of live or dead standing vegetation within these WIAs will not reduce the capacity of the area to provide this important wildlife habitat feature and not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### **3.13.1.6 Rocks, Crevices, Fallen Logs, Overhanging Branches, or Hummocks at or Within 1m Above the Water's Surface**

WIA S17 had approximately 10 tall shrubs with branches that overhung the water and WIA S18 had approximately three fallen logs that are within one meter above the water's surface. These features will be lost during construction by the placement of timber mats that will be needed for crane use in this area.

##### ***Adverse Effects Analysis and Restoration***

Following construction in the area, these fallen logs in S18 will be replicated in the same general location using logs that will be generated by Project vegetation clearing activities. In addition, as discussed in Section 3.13.1.5, several trees and shrubs will be planted within S17 as restoration. Based on proposed restoration within these WIAs, the Project will not reduce the capacity of the area to provide this important wildlife habitat feature and is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

#### **3.13.1.7 Standing Water Present for at Least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-Breeding Amphibians, Turtles, or Foraging Waterfowl**

WIAs S17 and S18 contain standing water during seasonal high water that can be used by breeding and non-breeding amphibians, turtles, and foraging waterfowl. This important wildlife habitat feature will only be temporarily impacted from the placement of crane mats to facilitate the replacement of Bridge 127.

##### ***Adverse Effects Analysis and Restoration***

Once the bridge is reconstructed, the crane mats will be removed, and the area will be restored to its current condition. Based on the proposed restoration, the Project will not reduce the capacity of the area to provide this important wildlife habitat feature and is not expected to have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.14 Wetland Impact Area S20**

WIA S20 is AURA associated with Wetlands 3, 3A and 4 on either side of the railroad tracks. The area is between Landham Road and the Sudbury Substation and extends from approximately Station 760+60 to 766+45. In this location the railroad track was primarily built on fill and is slightly higher than the adjacent areas.

The WIA is located within areas that were previously developed from the historic construction and operation of the rail line and is mostly 22 feet wide. There is 286 square feet of BVW impacts and 16,668 square feet of AURA impacts. Impacts at this location would result from vegetation removal, site grading, installing the underground transmission line, paving of the MCRT, and construction the wetland replication area. The railroad tracks and ties are still present and the area directly adjacent to the tracks is dominated by invasive

species, particularly glossy false buckthorn and Asian bittersweet. The WIA has scattered refuse/garbage such as disposed tires throughout.

The majority of the WIA has a relatively closed canopy. Herbaceous vegetation is also present throughout the Impact Area and becomes more dominant between Stations 760+60 and 761+80 where the canopy opens up. In this section, the portion of the Impact Area over the tracks is relatively open with little to no canopy cover and the vegetation beyond the tracks consist of very thick multiflora rose (*Rosa multiflora*). Dominant plant species here include red oak, glossy false buckthorn, multiflora rose and Asian bittersweet.

In summary, the Project will not result in a substantial reduction or result in an adverse effect of important wildlife habitat features found in WIA S20. Restoration measures were incorporated into the Project in this location where appropriate, which includes reinstalling all standing dead trees that will be removed, restoring all disturbed areas outside of the 10-foot-wide paved MCRT with a native seed mix that will provide dense herbaceous cover, and creating brush piles. Overall, following construction and the implementation of restoration measures, the Project will not reduce the capacity of the area to provide important wildlife habitat features or have an adverse effect on the availability of important wildlife habitat either on a local or regional scale.

### **3.14.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S20 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S20 five important wildlife habitat features were identified:

- › Upland Food Plants;
- › Standing Dead Trees;
- › Dense Herbaceous Vegetation;
- › Large Woody Debris; and
- › Standing Water Present At least Part of the Growing Season.

Below is a discussion of each feature that was identified and evaluated within the WIA followed by an adverse effect analysis and any proposed restoration measures.

#### **3.14.1.1 Upland/Wetland Food Plants**

Within WIA S20, there are several upland plant species (hard mast and fruit/berry producers) that, although not dominant, can provide food for wildlife. These species include tree oaks, silky dogwood (*Cornus amomum*), common winterberry, black cherry, Virginia creeper () and grape. Glossy false buckthorn, Morrow's honeysuckle, multiflora rose and Asian bittersweet, invasive plant species that can also provide a source of food to wildlife, were also observed within the WIA.

### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S20 are particularly unique to the WIA. Most of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides. As such, restoration or mitigation is not proposed at this location for this habitat feature and the no adverse effect standard is met.

#### **3.14.1.2 Dense Herbaceous Vegetation**

Dense herbaceous vegetation potentially providing habitat cover for a variety of small mammals and some reptiles and amphibians was noted within WIA S20. In this WIA dense herbaceous vegetation included a dense mix of species that also includes Virginia creeper. Construction of the Project will require that this feature be removed.

### ***Adverse Effects Analysis and Restoration***

Dense herbaceous vegetation can provide cover, food, and nesting habitats for a variety of small mammals, amphibians, reptiles, and bird species. Construction activities associated with the Project will remove this insignificant amount of dense herbaceous vegetation where it presently grows. However, removing this small area of dense herbaceous cover will not adversely affect the wildlife habitat functions it provides due to its size and because additional, larger areas of dense herbaceous vegetation are present beyond the WIA and within the Project Locus (i.e., project site in the Bylaw Regulations).

Irrespective of this no adverse effect determination, the Project includes restoring all areas within the Project Site that will not be paved for the 10-foot-wide MCRT with a seed mix consisting of native herbaceous species. Within this WIA, it includes approximately 10,212 square feet of restoration with native species. Consequently, the seeding with a native herbaceous seed mix will greatly offset that which will be lost, thereby providing additional habitat value for wildlife and will not result in an adverse effect. Please refer to seed mix on sheet 131 in the plans in Attachment B of the NOI for the planting schedule.

#### **3.14.1.3 Large Woody Debris**

There is limited scattered large woody debris on the ground in WIA 20. However, none of it is substantial (large trees, logs or large brush piles). There is larger and more abundant coarse woody debris on the ground outside of the WIA on the Project Locus and beyond.

### ***Adverse Effects Analysis and Restoration***

Although there is some large woody debris present in S20, the amount of this material is not substantial. Areas in the vicinity of the impact area on the Project Locus and beyond contained an abundant amount of this wildlife habitat feature. Overall, the loss of the large woody debris in the WIA is not expected to result in an adverse effect to wildlife habitat either in the immediate area of the Project Locus and/or the region. This conclusion is based

on observations of undeveloped forest and the presence of large woody debris on the Project Locus outside of the limits of disturbance and in the immediate area beyond the Project Locus.

Regardless of the no adverse effect determination, brush piles will be created within the immediate vicinity of the WIA. Based on Natural Resources Conservation Service guidance for the creation of brush piles, brush piles will be created along the length of the WIA on the Project Locus at a frequency of one per 200 to 300 feet. The brush piles will be created using appropriate salvaged woody debris presently on the ground within the area of impact and/or some of the logs and slash that will be generated during the tree clearing process. Information provided in Attachment K the NOI for the Project describes the creation of brush pile as mitigation of the loss of this habitat feature.

#### **3.14.1.4 Standing Dead Trees**

In WIA 20, four standing dead trees with a dbh range of 6- to 12-inches will be removed. These trees did not appear to contain cavities.

##### ***Adverse Effects Analysis and Restoration***

The standing dead trees that will be removed during construction will be reinstalled within the immediate vicinity of the WIA to avoid resulting in a loss of this important wildlife habitat feature. Details for reinstalling the standing dead trees are provided in Attachment K of the NOI.

#### **3.14.1.5 Standing Water Present for at Least Part of the Growing Season Suitable for use by Breeding Amphibians, Non-Breeding Amphibians, Turtles, or Foraging Waterfowl**

Wetland 4, which is located to the south of the tracks at approximately Station 764+50, has standing water in it for at least part of the growing season that could potentially be utilized by non-breeding amphibians.

##### ***Adverse Effects Analysis and Restoration***

Approximately 85 square feet of this BVW will be permanently filled for grading; this area also includes four square feet of pavement for the MCRT. This area is adjacent to the proposed wetland replication and no loss of this important wildlife feature will occur. Conversely, the proposed replication will expand this wetland area and will maintain currently hydrology. As such, the Project will not result in adverse effects to this important wildlife habitat feature.

### **3.15 Wetland Impact Area S21**

WIA S21 is a small area of AURA (172 square feet) immediately adjacent to the existing gravel access road to Eversource's Sudbury Substation. The area is located at approximately Station 767+00, is approximately 50 feet long and varies in width, with the widest portion approximately 12 feet wide and the narrowest portion less than one foot. Impacts at this

location would total approximately 172 square feet and would result from minor grading to provide sufficient road width for construction vehicles to enter and exit the MBTA ROW.

The AURA is associated with BVW east of the Project Locus and is previously developed from the historic construction and operation of the rail line and construction of the gravel access road. Signs of human disturbance here include the migration of gravel into the area from the gravel access road to the Eversource substation. Vegetation dominant in this WIA include glossy false buckthorn, Morrow's honeysuckle, and Asian bittersweet.

### **3.15.1 Important Wildlife Habitat Features, Impacts, and Proposed Restoration**

WIA S21 was evaluated to determine whether important wildlife habitat features were present and if so, whether the Project would result in adverse impacts to those features. Within WIA S21 upland/wetland food plants was the only important wildlife habitat feature identified. Below is a discussion of this feature followed by an adverse effect analysis and any proposed restoration measures.

Within WIA S21, bristly blackberry (*Rubus hispidus*) is present that can provide an upland food source for wildlife Glossy false buckthorn, Morrow's honeysuckle (*Lonicera morrowii*), and Asian bittersweet, invasive plant species that can also provide a source of food to wildlife were also seen there.

#### ***Adverse Effects Analysis and Restoration***

Individually, none of the food plants noted within the WIA S20 are unique to the WIA. Most of these species can be found outside of the WIA on the Project Locus and beyond. Because of the presence of similar food plants in areas near locations where loss of some food plants from the Project will occur, Project-related losses are not expected to reduce the capacity of the area to provide the important wildlife habitat value that this feature provides and as such, mitigation is not proposed at this location for this habitat feature.

## **3.16 Landscape Context and Habitat Connectivity**

Habitat connectivity within the landscape is an important feature that takes into consideration wildlife migratory behavior and requirements. To characterize the connectivity relationship of the WIAs to surrounding habitats, five categories of habitat connectivity were considered based on the Guidance. These include:

1. No direct connections to adjacent areas of wildlife habitat (little connectivity function);
2. Connectors numerous or WIA is imbedded in a large area of natural habitat (limited connectivity function);
3. WIA contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function);
4. WIA serves as part of a sole connector to adjacent areas of habitat (important for connectivity function); and



5. WIA serves as the only connector to adjacent areas of habitat (very important for connectivity function).

From a topographic perspective, the railroad line corridor may be used by some wildlife as a corridor along its length. Across its width there are few apparent wildlife corridors with possibly the exception of corridors that include areas where streams cross the Project Locus. Animal movements across the Project Locus are likely scattered across its length by species common to the area. Because of the presence of the railroad track and ties, movements by some reptile and amphibian species may be partially restricted. Removing the tracks and ties during construction will remove this barrier and improve wildlife movement.

There are also no special features present within each of these WIAs different from adjacent areas that would provide wildlife a distinct corridor especially favorable for wildlife use or passage. From that perspective, wildlife would apparently be as likely to pass through any of the WIAs as they would through other areas not impacted along the Project. For this reason, all of the WIAs except for S15 are regarded as having limited connectivity function. S15 is in a developed area and is surrounded by roadways and commercial properties and therefore has little connectivity function.



# 4

## Summary and Conclusions

The Project Locus in Sudbury is approximately 4.3 miles long and includes the entire width of the MBTA ROW from the Hudson/Sudbury municipal border to the Sudbury Substation off Route 20. The Project Locus width is variable but averages 82 feet wide in most locations and travels past residential areas, commercial developments, wooded areas, and roadways. It is important to note that this WHE only evaluated Project-related impacts to wetland resource areas within the MBTA ROW and not the Sudbury Substation because it is already constructed and does not contain natural habitat.

The Project will result in impacts to BVW, Bank, LUWW, BLSF, RFA that is jurisdictional under both the MWPA and Bylaw Regulations, RFA that is jurisdictional under the Bylaw Regulations only, and Sudbury's local AURA and IVW. However, it is important to note that 310 CMR 10.57(1)(a)(3) states that railroad tracks, including embankment and ballast, have effectively eliminated wildlife habitat functions. In addition, although LUWW impacts do not exceed the threshold and a WHE is not required for previously developed RFA and there are no performance standards at 310 CMR 10.58(5) for wildlife habitat. Regardless, all WIAs, including BLSF, RFA, and LUWW, were evaluated. To evaluate these impacts, 21 WIAs (WIAs S1-S21) were identified and a Detailed WHE ("Appendix B") was completed at each WIA, which is the most rigorous and comprehensive type of WHE required under MWPA and the Bylaw Regulations. Of the 21 WIAs, S1, S2, S7, S8, S9, S11, S12, S13, S14, a portion of S15, and S21 are within Sudbury's jurisdiction only.

Each of the 21 WIAs in Sudbury was visited throughout 2019 to make field observations and document the presence of important wildlife habitat features that would be impacted by Project activities (see Table 3 in Section 3). As described in Section 3, there is an abundance of important wildlife habitat features beyond the actual construction footprint of the Project on the remainder of the Project Locus. These features are also present within areas beyond the Project Locus in quantities such that the minor losses attributed to the Project will not have an adverse effect on wildlife habitat in the local area or region. Regardless of these findings, the Project incorporates restoration measures on the Project Locus to replace some of the lost important wildlife habitat features within the construction footprint and to supplement important wildlife habitat features in the area. Restoration and mitigation measures proposed for important wildlife habitat features within the construction footprint for the Project include:

- › Removing the existing rails and ties, which are an impediment to wildlife movement;
- › Reinstallation all standing dead trees that will be removed during construction;
- › Creating brush piles to replace coarse dead wood on the ground;
- › Restoring all disturbed areas with an herbaceous seed mix consisting of native species to promote growth of herbaceous vegetation; and
- › Planting tree, shrub, and aquatic species within both Hop Brook crossings to replace those that will be removed in the crane mat locations.

For all proposed plantings, species have been selected to provide sources of food for wildlife and to promote replacement of trees and shrubs overhanging water and offering good views of open water in the area.

As demonstrated in Section 3, the Project will have no adverse effects on important wildlife habitat, as determined by procedures contained in 310 CMR 10.60, the Guidance, and Sudbury's Bylaw Regulations. The completed WHE demonstrates that although certain important habitat features exist within the WIAs, adverse effects will be avoided because the Project will not substantially reduce the capacity of the Project Locus or the affected resource areas to provide the important wildlife habitat functions listed in 310 CMR 10.60(2) including food, shelter, migratory and breeding areas. As described in the Preface to the 1987 Revisions to the Massachusetts Wetlands Regulations, this "no substantial reduction" standard is met where "important wildlife habitat functions are substantially restored" during Project construction, or it is otherwise demonstrated that "the proposed alterations will have no adverse effects on wildlife habitat" because the important features identified in a particular study area (such as snags, food sources, large woody debris, etc.) are common to the site, so that the number of habitat features lost, as a result of construction of the Project, are insignificant when compared to the amount of similar habitat that will remain within or adjacent to the Project Locus.

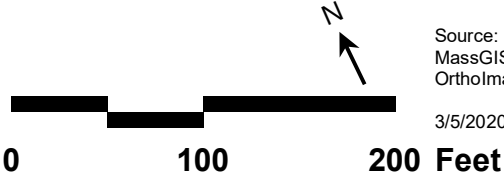
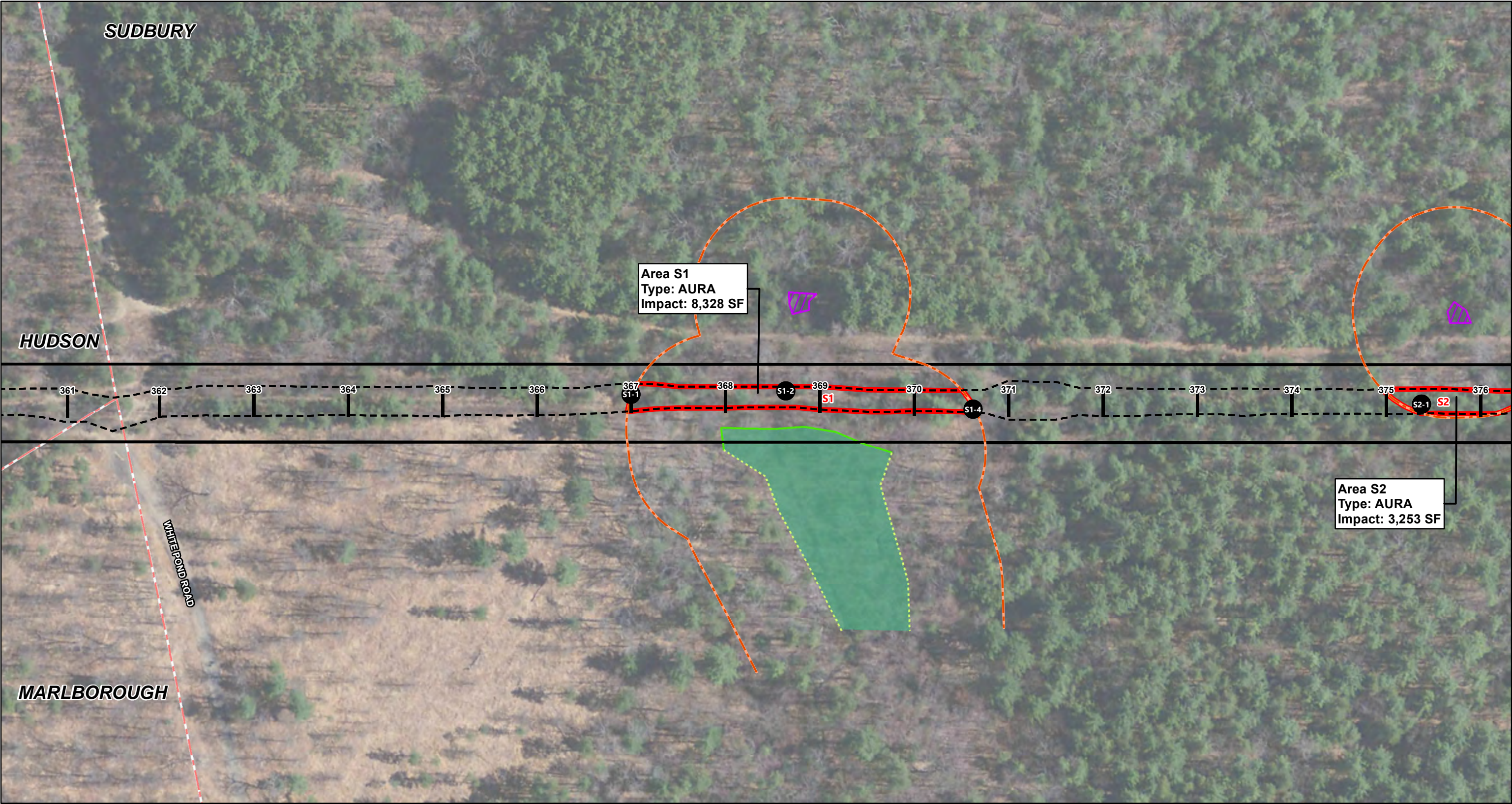
In conclusion, within the proposed limits of work, certain important wildlife habitat features have been identified and evaluated consistent with the approach detailed in the MWPA, the Guidance, and the Bylaw Regulations. Restoration for important wildlife habitat features that were identified within WIAs is being provided to supplement remaining habitat on the Project Locus and to replace features that will be lost. In the Guidance, it is explained that by ensuring that important habitat features are identified, and adverse impacts are avoided or minimized and restored and mitigated, the goal of no adverse effect will be met.

Accordingly, the Project has been designed to meet the requirements described in the Guidance and the Bylaw Regulations and will not have an adverse effect on important wildlife habitat either locally or in the region. In addition, the Bylaw Regulations state that "no project may have a significant project/site-specific impact or adverse cumulative impact on wildlife habitat for more than two growing seasons." As demonstrated throughout this WHE, the Project will not result in a significant project/site-specific or cumulative impact on wildlife habitat due to the proposed restoration measures and the prevalence of the important wildlife habitat features beyond the limit of work.

## **Attachment A – Wildlife Habitat Evaluation Figures**

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Source:  
MassGIS, 2015  
OrthoImagery, VHB  
3/5/2020

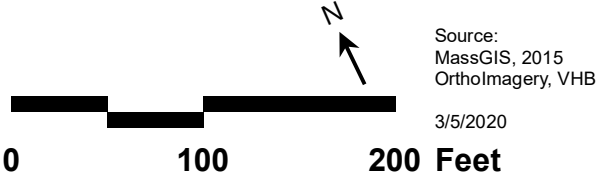


**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**





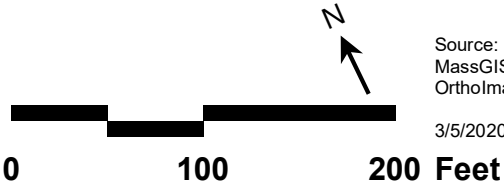
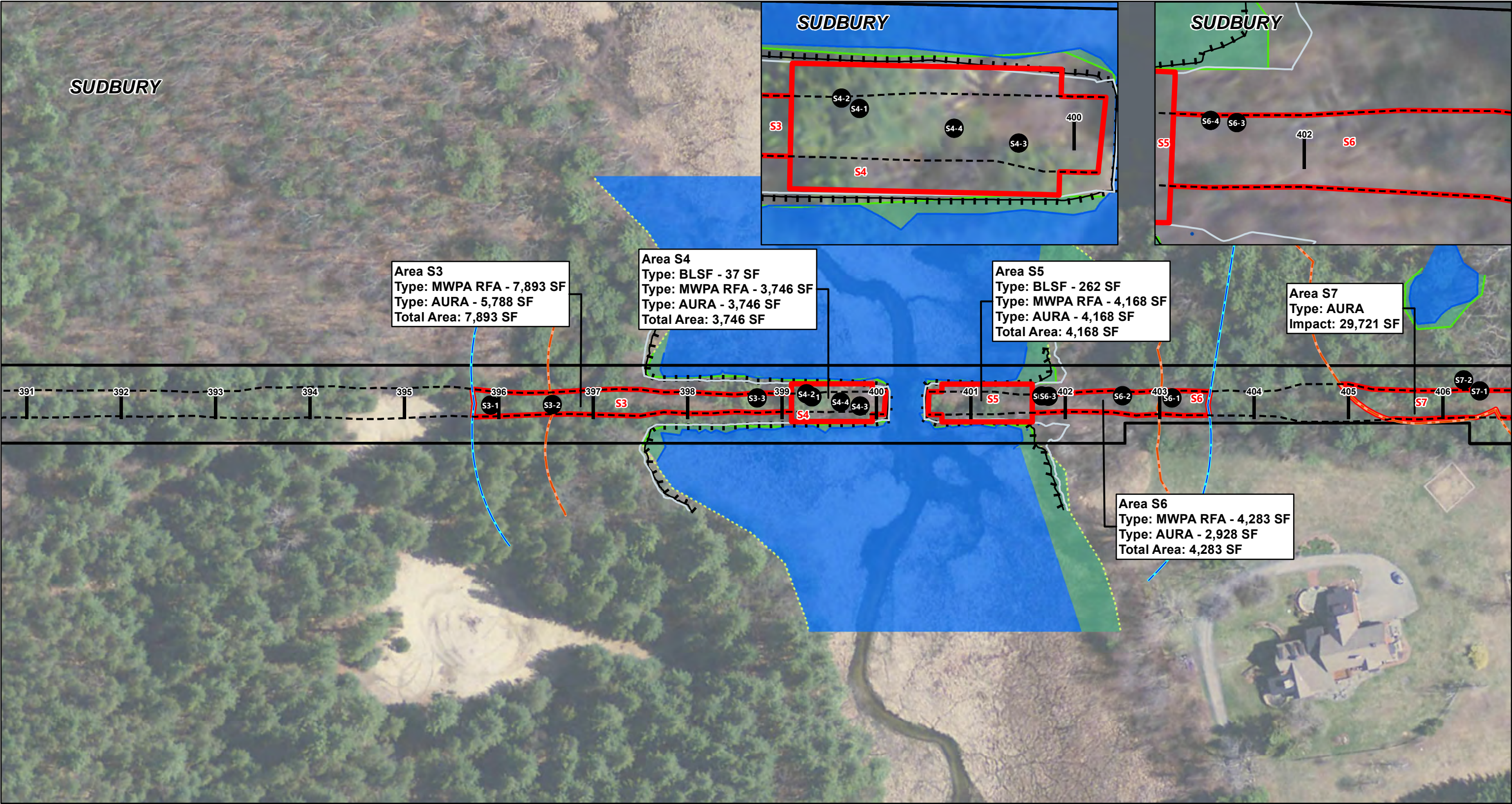


Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts







Source:  
MassGIS, 2015  
Orthoimagery, VHB  
3/5/2020



**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**





- 
- Source:  
MassGIS  
OrthoImagery  
3/5/2020

**EVERSOURCE**  
ENERGY

## Wildlife Habitat Evaluation Impact Areas Sudbury, Massachusetts

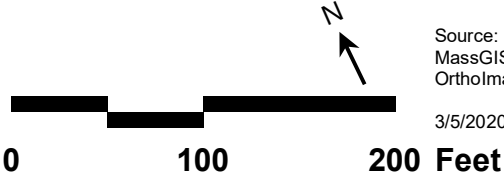




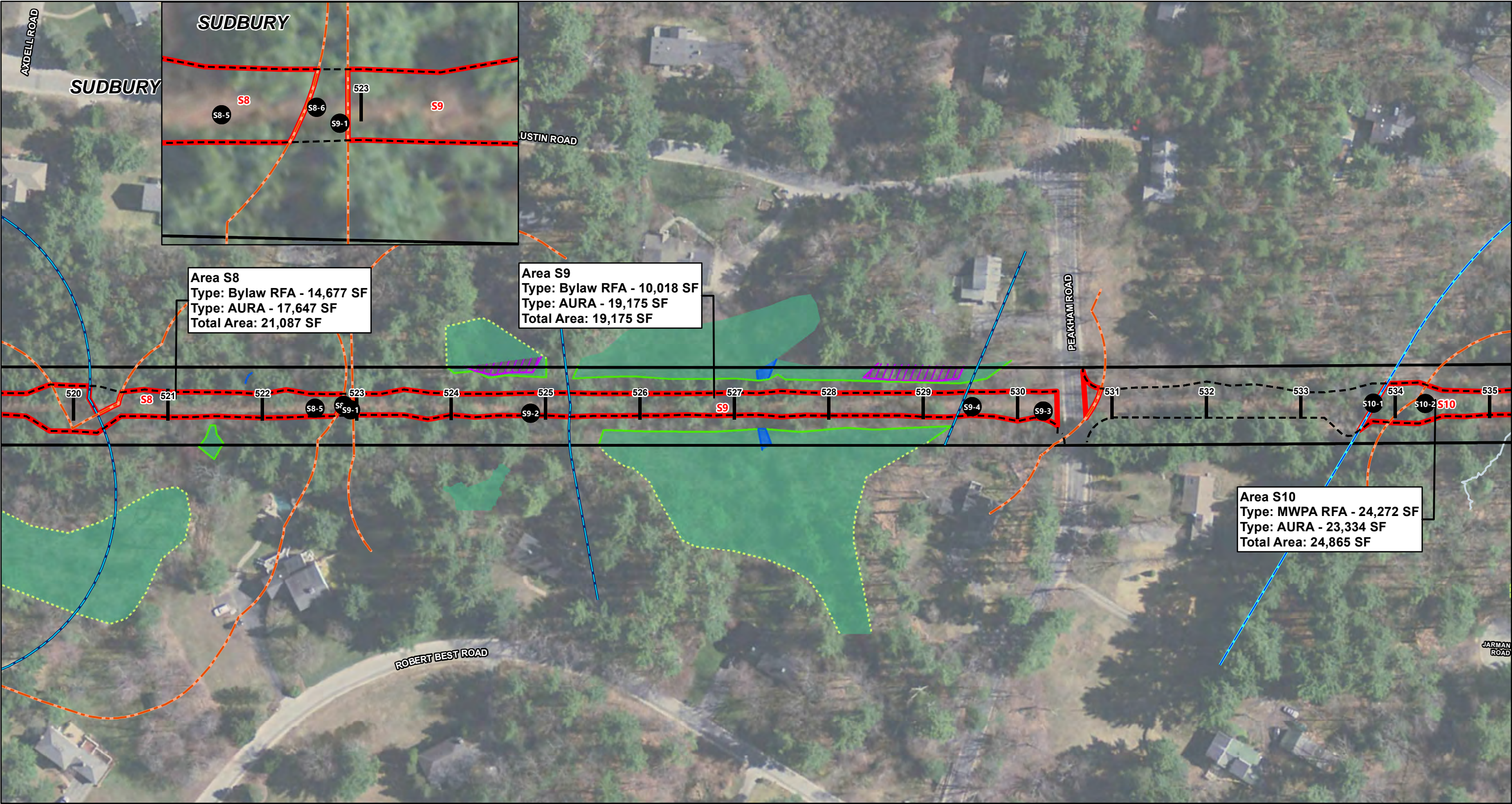
**EVERSOURCE**  
ENERGY

**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**





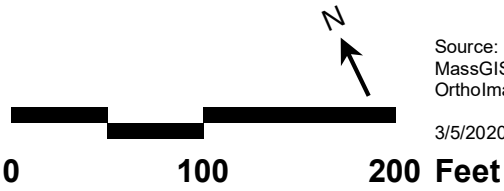


- |                                      |                                |   |
|--------------------------------------|--------------------------------|---|
| — MBTA ROW Boundary                  | — Delineated Wetland Edge      | — 100' Adjacent Upland Resource Area        |
| - - - Limit of Grading               | - - - Approximate Wetland Edge | — 200-ft Sudbury RFA                        |
| [ ] Town Boundaries                  | — Delineated Top of Bank       | — 200-ft MWPA RFA                           |
| — Bordering Land Subject to Flooding | — Delineated Vernal Pool Edge  | [ ] Wildlife Habitat Evaluation Impact Area |
| — 10-year Floodplain                 | — Perennial Stream             | # Photo Location                            |
|                                      | Wetland Area                   |   |
|                                      | Land Under Water               |   |
|                                      | Wetland Replication Area       |   |
|                                      | Vernal Pool Area               |   |



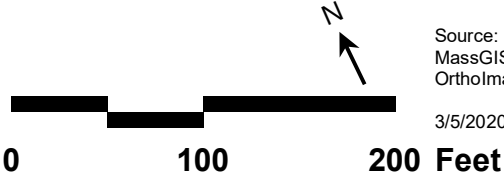
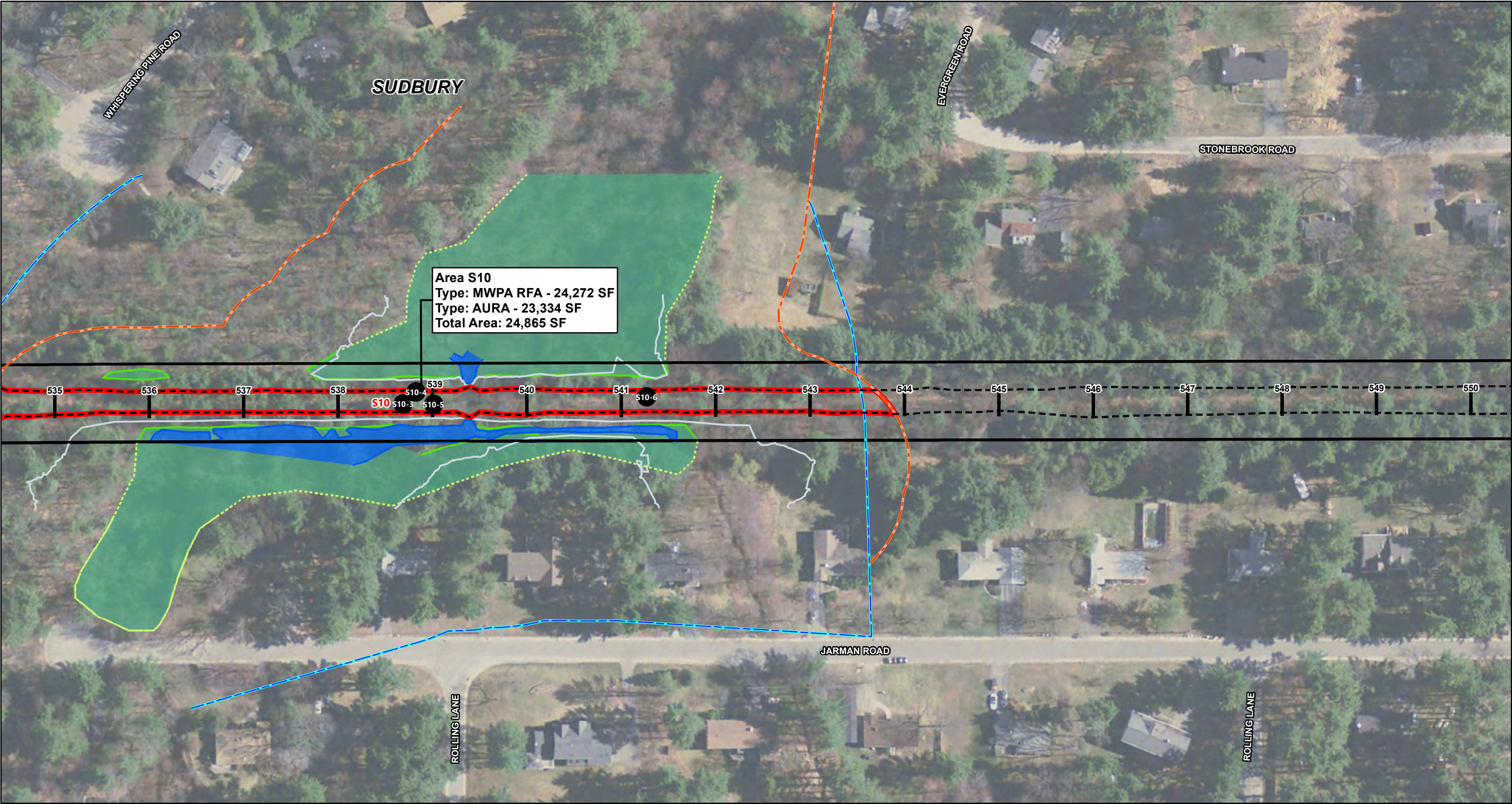
**Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**



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Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts

Source:  
MassGIS, 2015  
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3/5/2020





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- Source: MassGIS OrthoImagery
- 3/5/2020

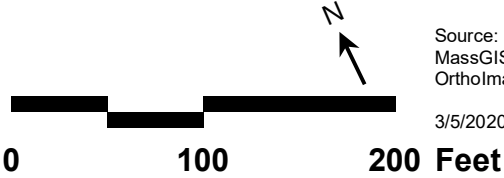
**EVERSOURCE**  
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## Wildlife Habitat Evaluation Impact Areas Sudbury, Massachusetts

Sheet 8 of 15







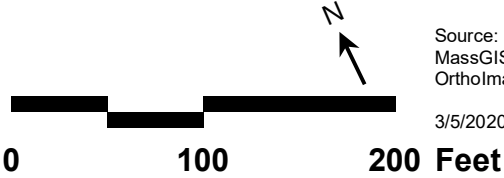
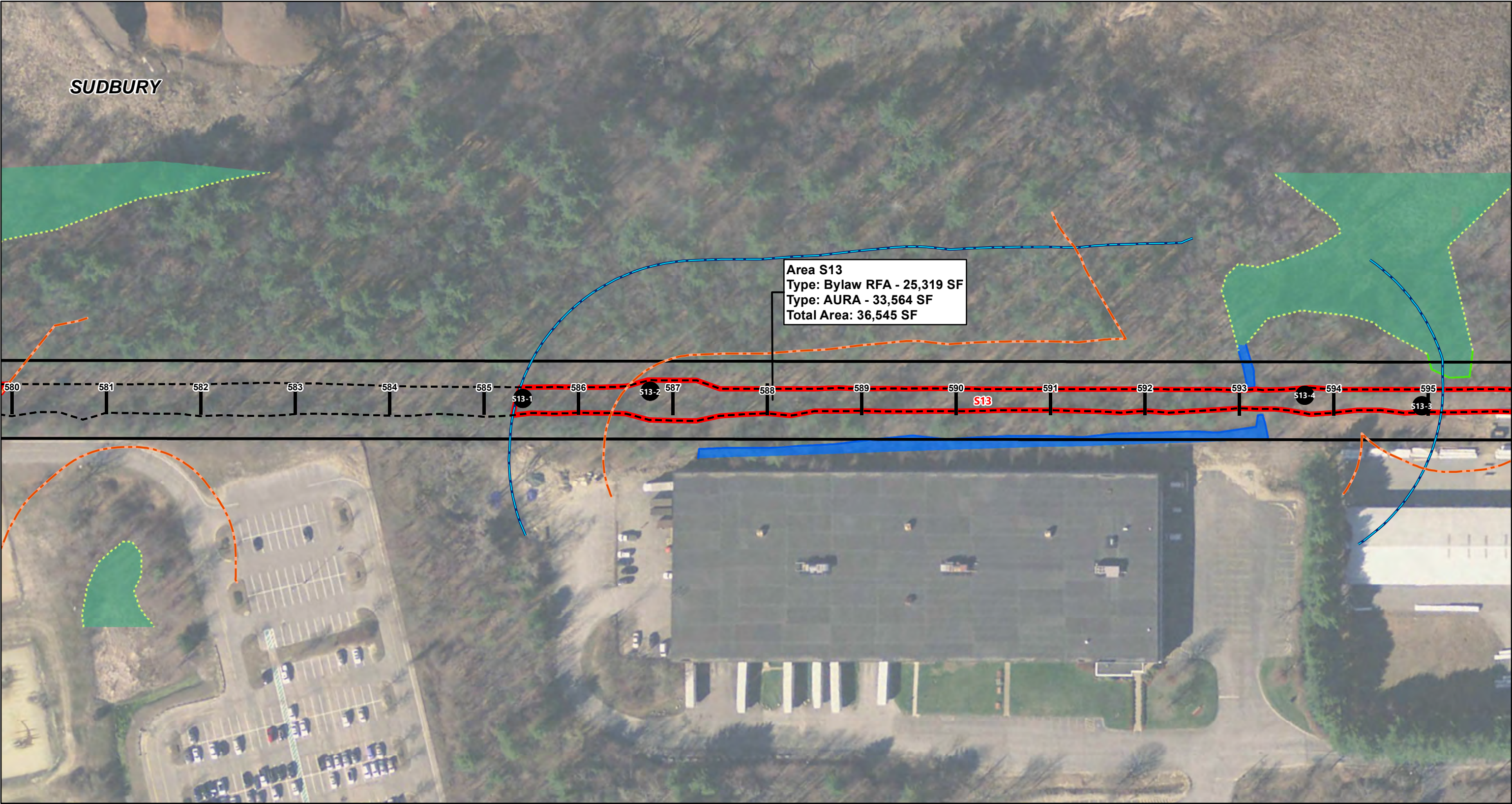
Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts

Source:  
MassGIS, 2015  
OrthoImagery, VHB  
3/5/2020







Source:  
MassGIS, 2015  
Orthoimagery, VHB  
3/5/2020

**EVERSOURCE**  
ENERGY

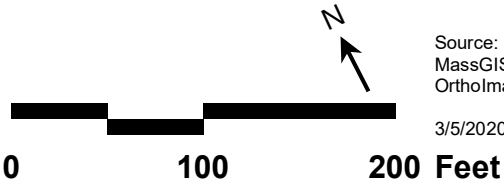
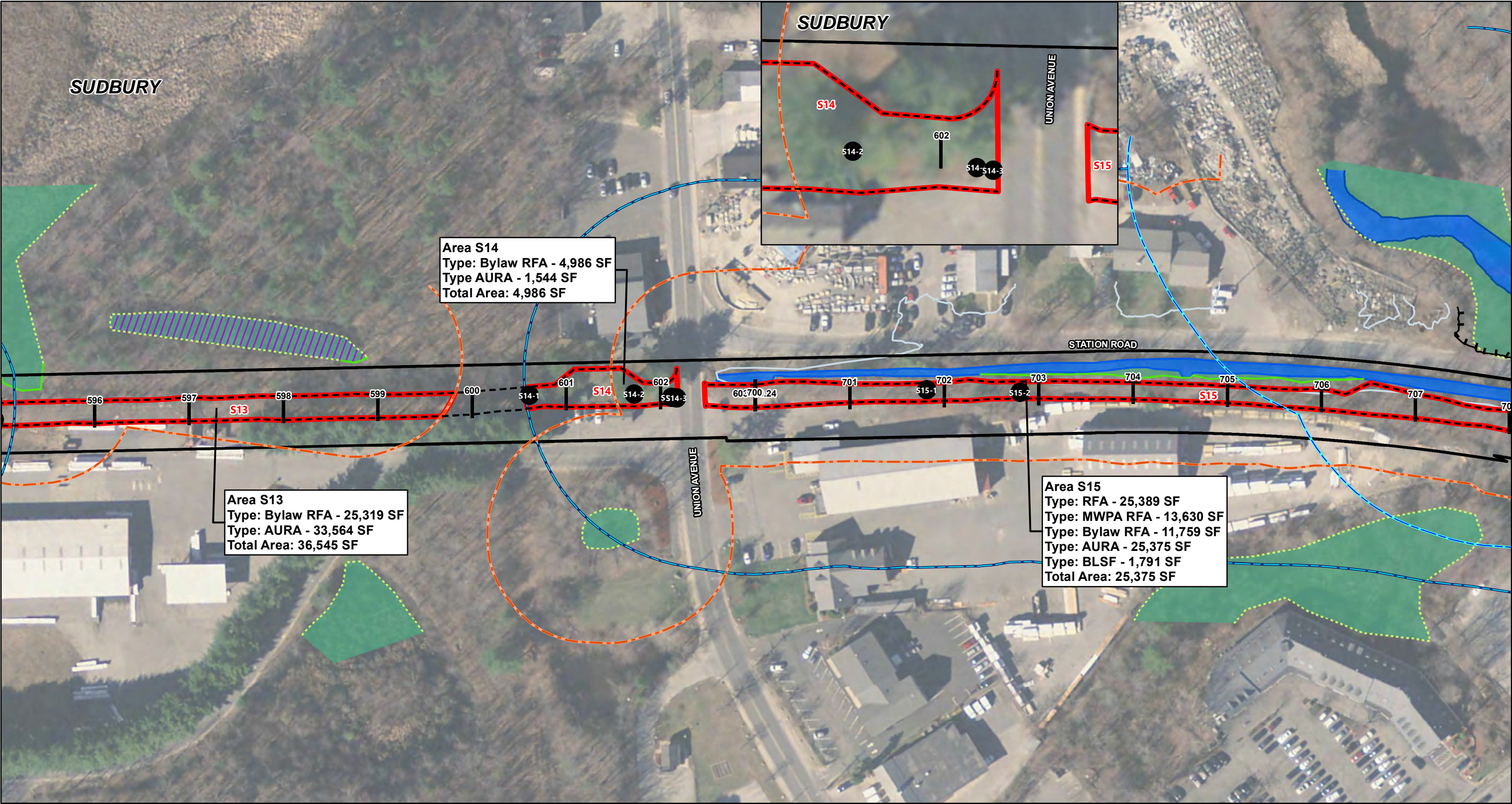
**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**

Sheet 10 of 15







Source:  
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Orthoimagery, VHB  
3/5/2020

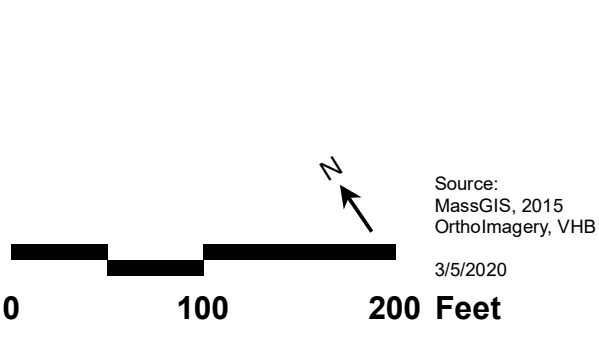
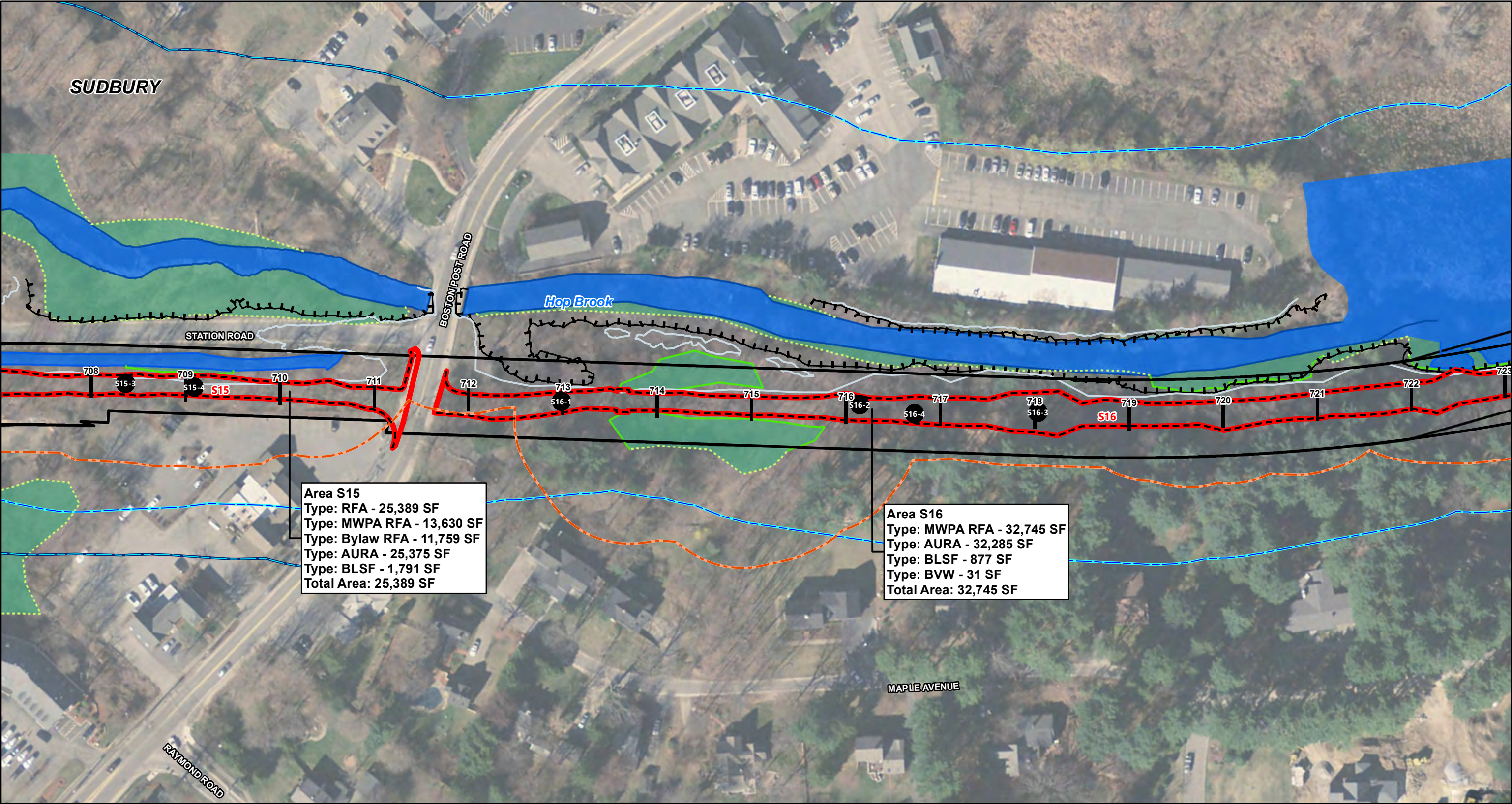


**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

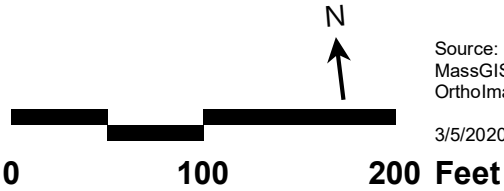
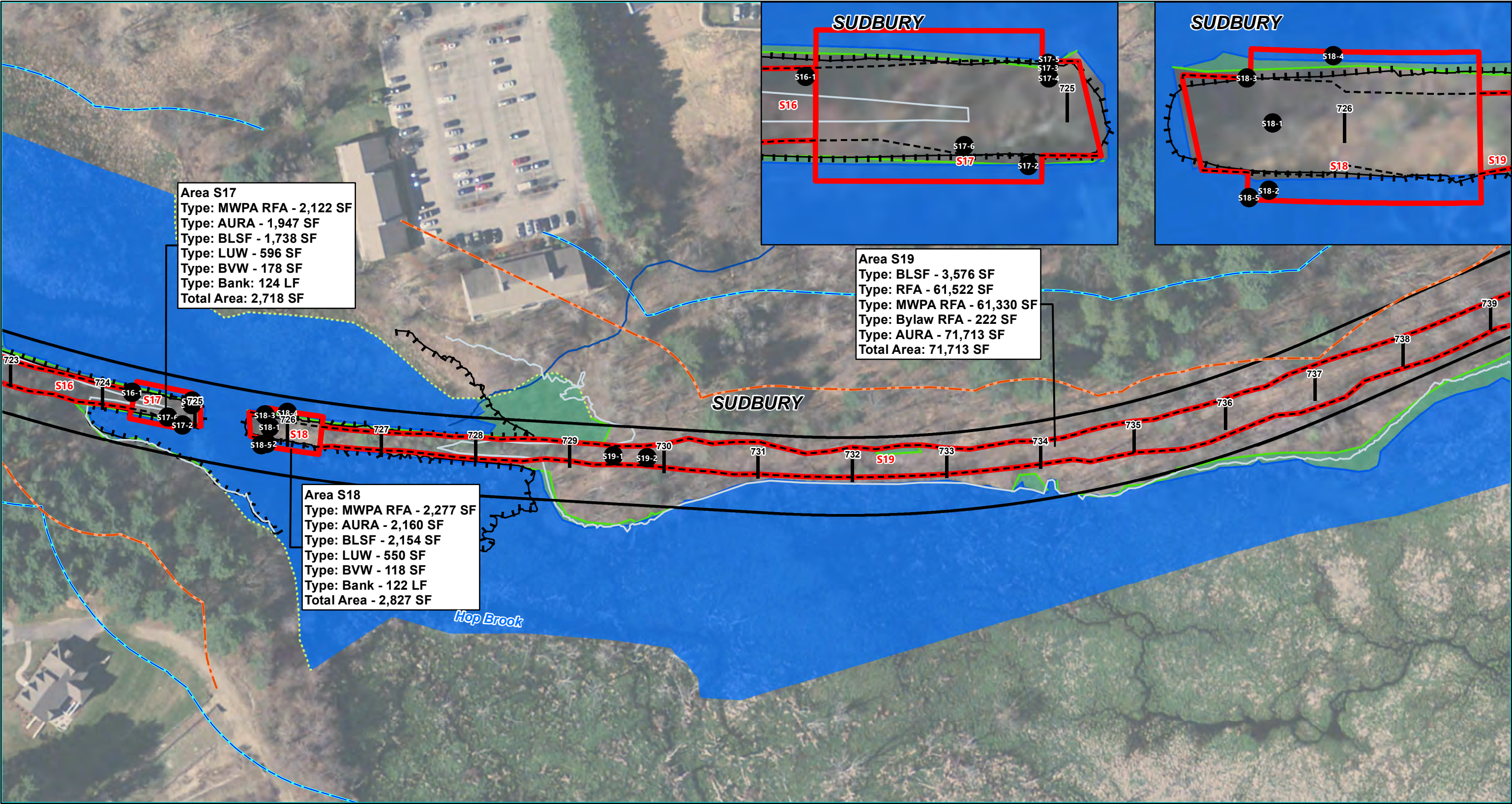
**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**











Source:  
MassGIS, 2015  
Orthoimagery, VHB  
3/5/2020

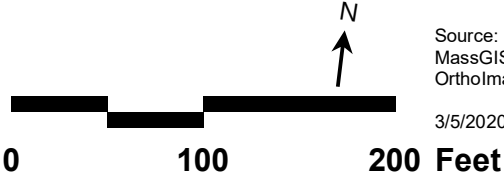
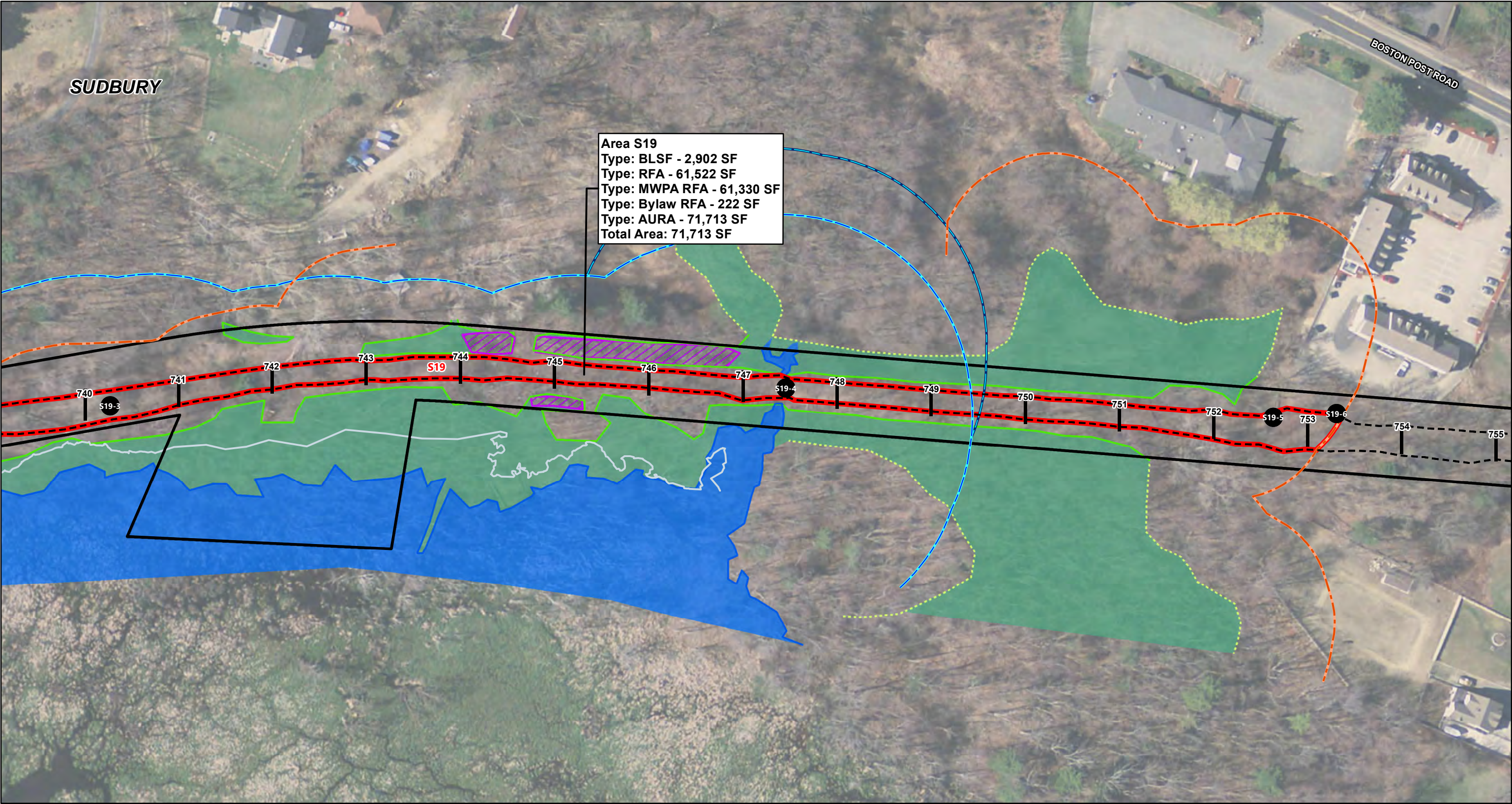


Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts







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MassGIS, 2015  
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3/5/2020

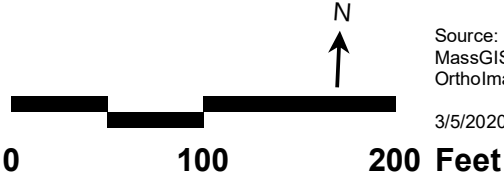
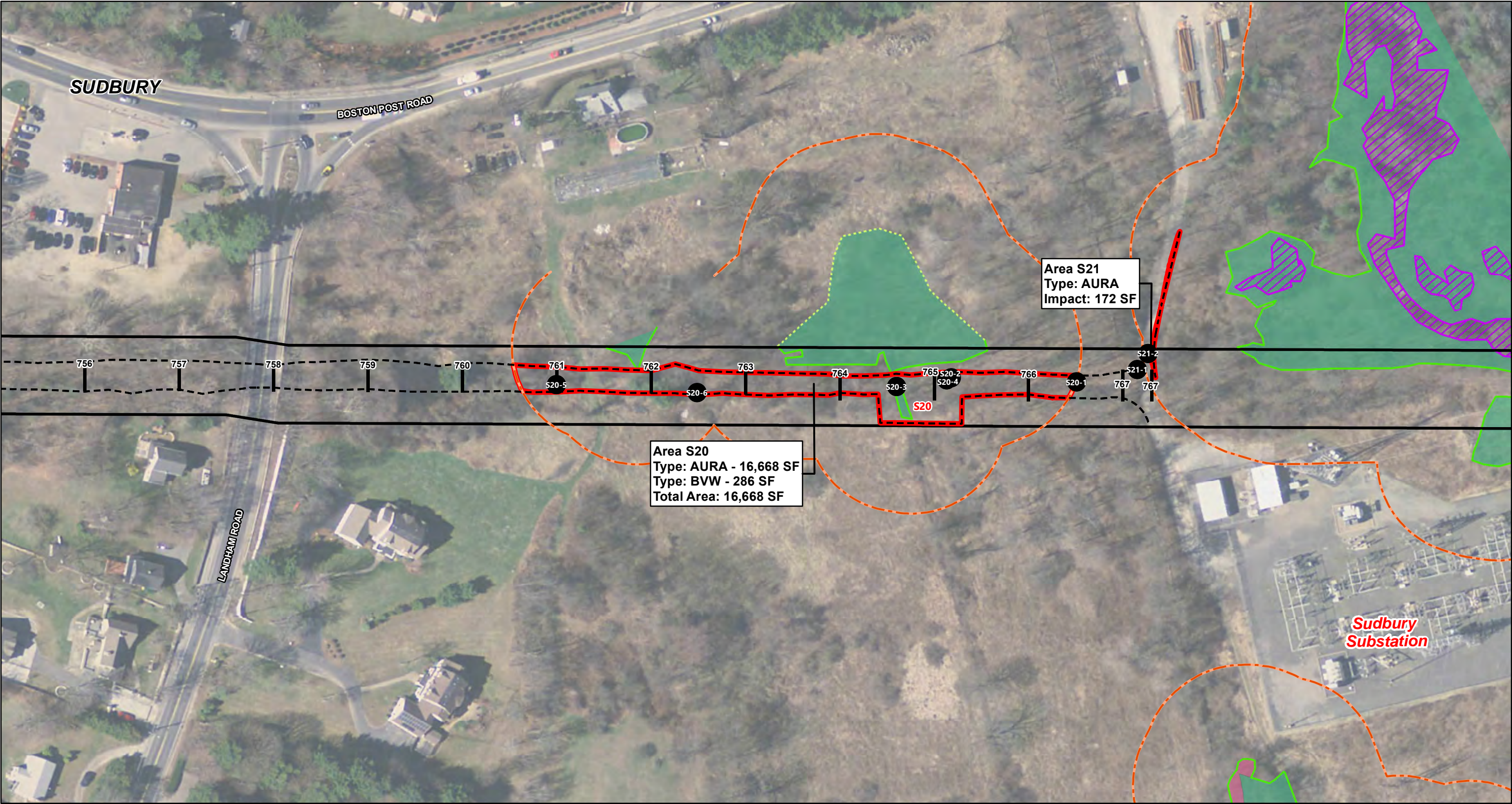


**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**







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3/5/2020



**Sudbury-Hudson Transmission Reliability and  
Mass Central Rail Trail Project**

**Wildlife Habitat Evaluation Impact Areas  
Sudbury, Massachusetts**





## **Attachment B – WHE Forms, Vegetation Lists, and Photos**

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## Wetland Impact Area S1

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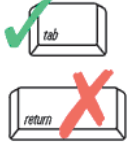
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

8,328 square feet

4/17/19 and 11/1/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw S1 - AURA			8,328	8,328
2.				
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF \*\*Partially Overlaps \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See impact area description in attached narrative

### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S1 - AURA Impact Area from approximately Station 367+00 to 370+70

Impact Area (number/name)

April 17, 2019 and November 1, 2019

Date(s) of Site Visit(s) and Data Collection

50's and overcast/40's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

1/15/19

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem:

Class:

Subclass:

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

Daubenmire midpoints used for vegetative percent cover. Vegetation mostly north and south of train track. Foot path north of track and track have less vegetation.	% Cover:	85	37.5			37.5
		Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous
	Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):					
	Strata	Plant Species	Strata	Plant Species		
	See attached list					

Soils in impact area historically disturbed and filled from construction and operation of the rail line and therefore differ from the mapped soil unit

#### C. Inventory (Soils)

Carver loamy coarse sand

Soil Survey Unit

Drainage Class

Texture (upper part)

Depth

Depth to Water Table

#### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant

☐ Present

☒ Absent

Few oaks and blueberries

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant

☒ Present

☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present

☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present

☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles) Small area (approximately 6'x25' of Pennsylvania sedge located to the south of the tracks within the easterly edge of the Impact Area. The sedge continues outside of the Impact Area to the south of the Project limits.
- ☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No

(marsh and waterbirds) 2.0 acres in size? ☐ Yes ☐ No

The impact area is not part of an  
emergent marsh of any size

5.0 acres in size? ☐ Yes ☐ No

10.0 acres in size? ☐ Yes ☐ No

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least 2.5 acres in size? ☐ Yes ☐ No

(turtles, frogs, waterfowl, mammals) 5.0 acres in size? ☐ Yes ☐ No

The impact area is not part of a wetland complex of any size.

10.0 acres in size? ☐ Yes ☐ No

25.0 acres in size? ☐ Yes ☐ No

For upland resource areas is the impact area part of contiguous forested habitat at least

(forest interior nesting birds) 50 acres in size? ☐ Yes ☒ No

Although the Impact Area is embedded within a contiguous area of forested habitat that is at least 500 acres, MassDEP GIS mapping shows interior forest mapped approximately 1,000 feet to the south of the Impact Area.

100 acres in size? ☐ Yes ☐ No

250 acres in size? ☐ Yes ☐ No

500 acres in size? ☒ Yes ☐ No

(grassland nesting birds) > 1.0 acre in size? ☐ Yes ☒ No

(special habitat such as gallery floodplain forest, alder thicket, etc.) > 1.0 acre in size? ☐ Yes ☒ No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Recreational use: evidence/ observations of people (walking and on bikes), dogs and horses and a well-defined foot path within the Impact Area on the north side of the tracks. Other established trails within the immediate vicinity.

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Dense herbaceous veg	Approximately 50 SF	Some areas abundant	See note below
Upland food plants	Scattered and limited	Some areas abundant	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S1  
Survey Date: 4/17/19 and 11/1/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X				FAC	N	
<i>Betula populifolia</i>	Gray Birch	X	X	X		FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X†		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†			FAC	I	X
<i>Pinus rigida</i>	Pitch Pine	X				FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†	X†		FACU	N	
<i>Pteridium aquilinum</i>	Northern Braken Fern			X		FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Rubus hispidus</i>	Bristly Dewberry			X		FACW	N	
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** - Looking east down the at the beginning of the Impact Area near Station 367+00. The well-defined foot path that is to the north of the tracks is visible.



**Photo 2** – Representative picture of scattered saplings/woody debris on the ground within the Impact Area near Station 368+70

**Impact Area S1 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Representative picture of large woody debris on the ground outside the Impact Area near Station 369+90



**Photo 4** – Looking at the narrow area of dense herbaceous vegetation (Pennsylvania sedge) near Station 370+70. The southern boundary of the Impact Area is demarcated by the pink pin flag that is visible in the southern portion of the photo. As can be observed, the dense herbaceous vegetation continues south outside of the Impact Area within and beyond the MBTA ROW.

**Impact Area S1 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S2

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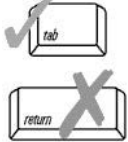


# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

3,253 square feet

4/17/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw S2 - AURA			3,253	3,253
2.				
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S2 - AURA Impact Area from approximately Station 375+00 to 376+50

Impact Area (number/name)

April 17, 2019

Date(s) of Site Visit(s) and Data Collection

50's and overcast

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 1, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem:

Class:

Subclass:

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	85.5	10.5	0	0	10.5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Hinckley loamy sand

Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☐ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☐ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☐ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☐ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☐ Absent

Areas of ice-free open water in winter

☐ Present ☐ Absent

Mud flats

☐ Present ☐ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☐ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☐ Absent

Bank swallow colony

☐ Present ☐ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland Food plants	Minimal, mostly overhanging branches from adjacent trees	Greater than Impact Area	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S2  
Survey Date: 4/17/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Betula populifolia</i>	Gray Birch	X†	X			FAC	N	
<i>Chimaphila maculata</i>	Striped Pipsissewa			X		UPL	N	
<i>Dendrolycopodium obscurum</i>	Princess-Pine			X		FACU	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X		FAC	I	X
<i>Gaylussacia baccata</i>	Black Huckleberry		X†			FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†	X†		FACU	N	
<i>Quercus cocconeae</i>	Scarlet Oak	X†				UPL	N	
<i>Quercus velutina</i>	Black Oak	X†				UPL	N	
<i>Rubus flagellaris</i>	Whiplash Dewberry			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** - Looking east down the at the beginning of the Impact Area near Station 375+40. The well-defined foot path that is to the north of the tracks is visible.



**Photo 2** – View east of the Impact Area near Station 376+20

**Impact Area S2 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S3



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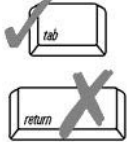
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S3 Impact Area - Sudbury, Massachusetts

Location

7,893 square feet

4/17/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. AURA**			5,788	5,788
2. MWPA RFA**			7,893	7,893
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S3 - RFA and AURA Impact Area from approximately Station 395+75 to 399+10

Impact Area (number/name)

April 17, 2019

Date(s) of Site Visit(s) and Data Collection

50's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 3, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

## Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	85.5	20.5			10.5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; “\*” designates a dominant plant species for the strata):

[illegible]

### C. Inventory (Soils)

Freetown muck/Carver loamy sand	
Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

## Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

Limited oaks

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

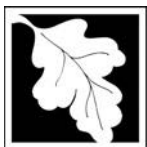
☐ Abundant      ☒ Present      ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant      ☐ Present      ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

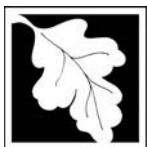
☐ Present      ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland Food Plants	Limited, Scattered	Some areas abundant	See note below
Standing Dead Trees	1 (6-12" dbh)	Some areas abundant	See note below
Woody Veg Offering View	12 trees, 1 snag	Some areas abundant	See note below
of open water			

Vegetation found within Wetland Impact Area\*

Impact Area S3  
Survey Date: 4/17/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X	X †			FAC	N	
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X	X		FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X †	X †		FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X †				FACU	N	
<i>Prunus serotina</i>	Black Cherry	X	X	X		FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Ulmus americana</i>	American Elm	X		X		FACW	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** - Looking east down the at the beginning of the Impact Area near Station 395+90. The well-defined foot path that is to the north of the tracks is visible.



**Photo 2** – View east down the center of the tracks within the Impact Area near Station 396+60

**Impact Area S3 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**



**Photo 3** – Looking west down the rail line within the Impact Area near Station 398+75. The well-defined foot path is visible in the right side of the photograph.

**Impact Area S3 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY







**Photo 4** – View of one snag that is within the Impact Area near

**Impact Area S3 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

 **vhb**

## Wetland Impact Area S4

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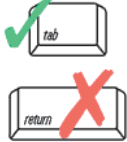
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S4 Impact Area - Sudbury, MA

Location

3,746 SF Crane mat area

4/17/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. BLSF**			37	37
2. MWPA RFA***			3,746	3,746
3. Bylaw AURA***			3,746	3,746
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF \*\*Partially Overlaps \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached Sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S4 - BLSF, RFA, and AURA from approximately Station 399+10 to 400+10 Crane Mat Area

Impact Area (number/name)

April 17, 2019

Date(s) of Site Visit(s) and Data Collection

50's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 3, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

Daubenmire  
midpoints used for  
vegetative percent  
cover. Vegetation  
mostly north and  
south of train track.  
Foot path north of  
track and track  
have less  
vegetation

% Cover:	85.5	38.0			38.0
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous
Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):					
Strata	Plant Species	Strata	Plant Species		
See attached plant list					

Soils in impact  
area historically  
disturbed and  
filled from  
construction and  
operation of the  
railroad line and  
therefore differ  
from the mapped  
soil unit

#### C. Inventory (Soils)

Mapped as Freetown Muck	N/A
Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Some oaks and  
black cherry

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Minor and insignificant amount

Approx. 29  
Trees > 6" dbh  
and 4 snags  
< 6" dbh.  
Included north  
and south side  
of area  
evaluated.  
Tall shrubs also  
abundant.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Recreational use: evidence/ observations of people (walking and on bikes), dogs and horses and a well-defined foot path within the Impact Area on the north side of the tracks. Other established trails within the immediate vicinity.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Large woody debris	Limited	Some areas abundant	See note below
Woody Veg Offering View	Present Scattered along	Some present beyond	See note below
of open water	N & S edges #29 > 6"	impact area	
			See note below

Vegetation found within Wetland Impact Area\*

Impact Area S4  
Survey Date: 4/17/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X †	X			FAC	N	
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X	X		FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X †	X †		FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X †				FACU	N	
<i>Prunus serotina</i>	Black Cherry	X	X †			FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

- OBL:** Obligate
- FACW:** Facultative Wetland
- FAC:** Facultative
- FACU:** Facultative Upland
- UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.

- N:** Native
- I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))





**Photo 1** - Looking east down the Impact Area towards the foot bridge near Station 399+35. The well-defined foot path that is to the north of the tracks is visible.



**Photo 2** – View east at vegetation overhanging water within the northern edge of the Impact Area near Station 399+30

**Impact Area S4 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the rail line within the Impact Area near Station 399+85. The well-defined foot path is visible in the right side of the photograph.



**Photo 4** – View east of vegetation overhanging water within the southern edge of the Impact Area near Station 399+60.

**Impact Area S4 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S5

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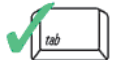
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S5 Impact Area - Sudbury, MA

Location

4,168 SF Crane mat area

5/1/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. BLSF**			262	262
2. MWPA RFA***			4,168	4,168
3. Bylaw AURA***			4,168	4,168
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF    \*\*Partially Overlaps    \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached Sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S5 - BLSF, RFA, and AURA from approximately Station 400+60 to 401+65

Impact Area (number/name)

May 1, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 3, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

Daubenmire midpoints used for vegetative percent cover. Vegetation mostly north and south of train track. Foot path north of track and track have less vegetation.

% Cover:	63.0	38.0		38.0	
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous
Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):					
Strata	Plant Species	Strata	Plant Species		
See attached plant list					

Soils in impact area historically disturbed and filled from construction and operation of the railroad line and therefore differ from the mapped soil unit

#### C. Inventory (Soils)

Mapped as Freetown Muck

N/A

Soil Survey Unit

Drainage Class

Texture (upper part)

Depth

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant

☐ Present

☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant

☒ Present

☐ Absent

Some present - black cherry, service berry

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present

☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present

☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>8</u>	<u>2</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

1 base of tree

6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0

12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0

>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☒ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter

☐ mink

☐ porcupine

☐ bear

☐ bobcat

☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present

☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians

☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles

☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present

☒ Absent

Minor and insignificant amount

Two fallen logs

35 Trees > 6" dbh and 10 snags. Included north and south side of area evaluated





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☒ Present ☐ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver

On southern side of impact area. Compromised by foot traffic and dogs. Approx. 10'x20'.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Recreational use: evidence/ observations of people (walking and on bikes), dogs and horses and a well-defined foot path within the Impact Area on the north side of the tracks. Other established trails within the immediate vicinity.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Large woody / Coarse debris	Scattered/Limited	Some areas abundant	See note below
Woody Veg Offering View	35 trees, 10 snags along	Some present beyond	See note below
of open water	N & S edges	impact area	
Potential turtle nesting hab.	200 sf (estimate)	Significantly more on SVT	See note below
Woody veg. 1M over water	1 log	Some areas abundant	See note below
Standing dead trees	6"-12"(6) 12"-18"(2)	Some areas abundant	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S5  
Survey Date: 5/1/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X †	X			FAC	N	
<i>Achillea millefolium</i>	Common yarrow			X		FACU	I	
<i>Amelanchier canadensis</i>	Canada Service-Berry		X	X		FAC	N	
<i>Athyrium angustum</i>	Northern Lady Fern			X		FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X †		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X †	X		FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X †			FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X †		FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X †	X			FACU	N	
<i>Prunus serotina</i>	Black Cherry	X	X			FACU	N	
<i>Salix nigra</i>	Black Willow	X	X			OBL	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	

\* This list only contains species that comprise 10% or more of cover.

† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.

- OBL:** Obligate
- FACW:** Facultative Wetland
- FAC:** Facultative
- FACU:** Facultative Upland
- UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural

- N:** Native
- I:** Introduced



**Photo 1** – Small mammal burrow within Impact Area near Station 401+45



**Photo 2** – Cavity at the base of a tree within WIA S5

**Impact Area S5 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

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**Photo 3** – Trees providing an open view of water within WIA S5. The well-defined foot path is visible in the right side of this photograph.



**Photo 4** – Picture of potential nesting area adjacent to the Fort Meadow Brook bridge. Dogs were observed using this area to enter and swim within Hop Brook.

**Impact Area S5 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

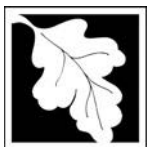
**EVERSOURCE**  
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## Wetland Impact Area S6



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Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S6 Impact Area - Sudbury, MA

Location

4,283 SF Crane mat area

5/1/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. MWPA RFA**			4,283	4,283
2. Bylaw AURA**			2,928	2,928
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached Sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S6 - RFA and AURA from approximately Station 401+65 to 403+50

Impact Area (number/name)

May 1, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 3, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

## Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	63.0	38.0			38.0
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; “\*” designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached plant list			

### C. Inventory (Soils)

Mapped as Freetown Muck	N/A
Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

## Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

### Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant      ☒ Present      ☐ Absent

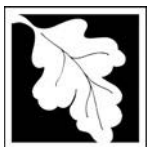
Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

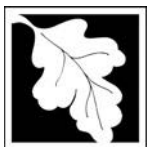
Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

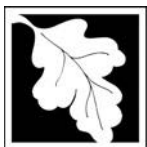
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Large woody debris	Limited/scattered	Some areas abundant	See note below
Woody Veg Offering View	5 Present scattered along	Some present beyond	See note below
of open water	S edge	impact area	
Standing dead trees	6"-12"(2)	Some areas abundant	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S6  
Survey Date: 5/1/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X†				FAC	N	
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X†		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†	X†	FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X			FACU	I	X
<i>Pinus strobus</i>	Eastern White Pine	X†	X			FACU	N	
<i>Quercus alba</i>	Northern White Oak	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X†				UPL	N	
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** – Looking east down the Impact Area near Station 403+15. The well-defined foot path is visible in the left side of this photograph.



**Photo 2** – Looking west down the Impact Area near Station 402+60 with the well-defined foot path on the right.

**Impact Area S6 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Large woody debris within and extending outside of the Impact Area near Station 401+80



**Photo 4** – Another view of large woody debris within and extending outside the Impact Area near Station 401+75

**Impact Area S6 (BLSF, RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

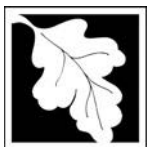
**EVERSOURCE**  
ENERGY

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## Wetland Impact Area S7



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Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

29,721 square feet

5/1/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA			29,721	29,721
2.				
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached sheet with the description of the site.

### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S7 - AURA Impact Area from approximately Station 405+00 to 416+40

Impact Area (number/name)

May 1, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 3, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover: 85.5 10.5 3.0 10.5  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Hinckley loamy sand/Freetown muck

Soil Survey Unit

Drainage Class

Texture (upper part)

Depth

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

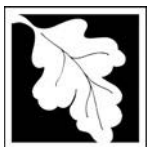
Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>7</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

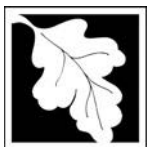
Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

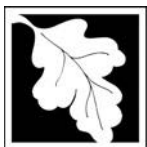
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Large Woody Debris	Limited/Scattered	Scattered	See note below
Standing Dead Trees	7 (6-12")	Greater than Impact Area	See note below
Upland Food Plants	Minimal, scattered	Greater than Impact Area	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S7  
Survey Date: 5/1/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple		X			FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Chimaphila maculata</i>	Striped Pipsissewa					UPL	N	
<i>Clethra alnifolia</i>	Coast Sweet-Pepperbush		X	X		FAC	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Gaylussacia baccata</i>	Black Huckleberry		X			FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X	X		FACU	N	
<i>Quercus alba</i>	Northern White Oak	X				FACU	N	
<i>Quercus cocconeae</i>	Scarlet Oak	X†				UPL	N	
<i>Quercus rubra</i>	Northern Red Oak	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X†	X			UPL	N	
<i>Smilax glauca</i>	Sawbrier				X†	FACU	N	
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural  
**N:** Native  
**I:** Introduced



**Photo 1** - Looking east at a piece of large woody debris within the Impact Area near Station 406+40.  
The well-defined foot path that is to the north of the tracks is visible.



**Photo 2** – View of additional large woody debris on the ground outside of the Impact Area near  
Station 406+20

**Impact Area S7 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the Impact Area near Station 411+20. The Impact Area is open with a well-defined foot path to the north of the tracks and is heavily used for recreation.



**Photo 4** – Alternate view looking west down the Impact Area near Station 413+80

**Impact Area S7 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S8

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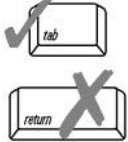
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

21,087 SF

5/31/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw RFA**			14,677	14,677
2. Bylaw AURA**			17,647	17,647
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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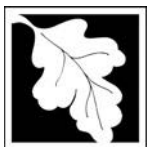
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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S8 - AURA and RFA from approximately Station 515+00 to 522+90

Impact Area (number/name)

5-31-2019

Date(s) of Site Visit(s) and Data Collection

Partly sunny, 70s

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira

September 16, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem:

Class:

Subclass:

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative above

Vegetation Description

See narrative and attached plant list.

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	85.5	63.0	3.0		38.0
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Mapped as mostly Windsor loamy sand	N/A
Soil Survey Unit	Drainage Class
N/A disturbed /railroad ballast and fill material	N/A
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

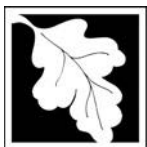
☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>1 (black cherry)</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

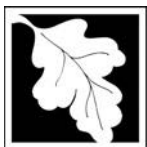
Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

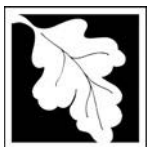
Den(s) present of

☐ Otter

☐ Mink

☐ Beaver





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

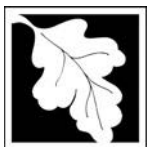
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Important upland food	Scattered	Some areas abundant	See note below
Standing dead trees		Some areas abundant	See note below
Dense herbaceous cover		Some areas abundant	See note below
Large woody debris		Some areas abundant	See note below
Tree cavities	1	Present	See note below
Small mammal burrow	1	Present	See note below

# Vegetation found within Wetland Impact Area\*

Impact Area S8

Survey Date: 5/31/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer platanoides</i>	Norway Maple	X				UPL	I	X
<i>Acer rubrum</i>	Red Maple	X†		X		FAC	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit			X		FAC	N	
<i>Athyrium angustum</i>	Northern Lady Fern			X		FAC	N	
<i>Berberis thunbergii</i>	Japanese Barberry		X			FACU	I	X
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Chelidonium majus</i>	Greater Celandine			X		UPL	I	
<i>Circaea canadensis</i>	Broad-Leaf Enchanter's-Nightshade			X		FACU	N	
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern			X		FACW	N	
<i>Euonymus alatus</i>	Winged Euonymus, Burning Bush		X			UPL	I	X
<i>Frangula alnus</i>	Glossy False Buckthorn		X†			FAC	I	X
<i>Fraxinus americana</i>	White Ash		X			FACU	N	
<i>Geranium maculatum</i>	Spotted Crane's-Bill			X		FACU	N	
<i>Impatiens capensis</i>	Spotted Touch-Me-Not			X		FACW	N	
<i>Lamium maculatum</i>	Spotted Henbit			X†		UPL	I	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X			FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Onoclea sensibilis</i>	Sensitive Fern			X		FACW	N	
<i>Parthenocissus quinquefolia</i>	Virginia-Creeper				X	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X	X	X		FACU	N	
<i>Prunus serotina</i>	Black Cherry	X	X	X		FACU	N	
<i>Quercus alba</i>	Northern White Oak	X†	X			FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X†				FACU	N	
<i>Quercus velutina</i>	Black Oak		X			UPL	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Rubus flagellaris</i>	Whiplash Dewberry			X		FACU	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy				X	FAC	N	
<i>Ulmus americana</i>	American Elm	X†	X			FACW	N	

\* This list only contains species that comprise 10% or more of cover.

† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.

Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**Vegetation found within Wetland Impact Area\***

**Impact Area S8**  
**Survey Date: 5/31/2019**

## Impact Area S8

**Survey Date: 5/31/2019**

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			

**OBL:** Obligate

**FACW:** Facultative Wetland

**FAC:** Facultative

**FACU:** Facultative Upland

**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural

**N:** Native

- : Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005.





**Photo 1** – Looking west down the Impact Area near Station 516+50. A well-defined foot path is located to the south of the tracks.



**Photo 2** – Photo of a cavity within a black cherry tree within the Impact Area near Station 516+85

**Impact Area S8 (AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY







**Photo 3** – Small mammal burrow within the Impact Area near Station 517+25



**Photo 4** – Large woody debris within the Impact Area near Station 517+90

**Impact Area S8 (AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – Dense herbaceous vegetation within the Impact Area near Station 522+70



**Photo 6** – Looking west at the Impact Area from approximately Station 522+90

**Impact Area S8 (AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S9

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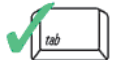
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

S9 - 19,175 sf total

5/31/2019

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw RFA**			10,018	10,018
2. Bylaw AURA**			19,175	19,175
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF    \*\*Partially Overlaps    \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See attached narrative

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts mostly between Dutton & Peakham Roads. Some extends east of the later road.

Project Location (from NOI page 1)

S9 - AURA and RFA from approximately Station 523+00 to 530+90

Impact Area (number/name)

5/31/2019

Date(s) of Site Visit(s) and Data Collection

Partly cloudy, 70s

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira

6/14/2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_ Subclass: \_\_\_\_\_

Hydrology/Water Regime N/A Upland

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See attached narrative

Vegetation Description

See narrative and attached plant list.

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Daubenmire  
midpoints used for  
vegetative percent  
cover

#### B. Inventory (Plant community)

% Cover: 63.0 38.0 10.5 20.5  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

Soils historically  
disturbed and filled  
from construction  
and operation of the  
rail line and therefore  
differ from the  
mapped soil unit

#### C. Inventory (Soils)

Mapped as Hinckley Loamy Sand N/A

Soil Survey Unit Drainage Class  
N/A Disturbed /Railroad Ballast and fill material N/A

Texture (upper part) Depth  
N/A

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Oaks dominant in  
tree stratum. Black  
cherry and  
invasive glossy  
false buckhorn  
also provide  
sources of wildlife  
food.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Only one clearly noted. Impact area is mostly of railroad ballast that is likely not favorable to small mammals.

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles) Scattered

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

For upland resource areas is the impact area part of contiguous forested habitat at least

(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

Dumping consists of a large # of logs and woody debris that has been stacked on the impact area including within the old railroad tracks.

#### Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)

Peakham Road at the eastern end of the Impact Area

- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

A well-defined foot path is located to the south of the tracks

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Important upland food	oaks, blk cherry, lbush BB	Some areas abundant	See note below
Standing dead trees	3 (6"-12")	Some areas abundant	See note below
Large woody debris	Limited and scattered	Some areas abundant	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S9  
Survey Date: 5/31/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer platanoides</i>	Norway Maple	X				UPL	I	X
<i>Acer rubrum</i>	Red Maple		X †			FAC	N	
<i>Aralia nudicaulis</i>	Wild Sarsaparilla		X †	X		FACU	N	
<i>Athyrium angustum</i>	Northern Lady Fern			X		FAC	N	
<i>Berberis thunbergii</i>	Japanese Barberry		X			FACU	I	X
<i>Betula lenta</i>	Sweet Birch		X			FACU		
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X †	UPL	I	X
<i>Chimaphila maculata</i>	Striped Pipsissewa			X		UPL	N	
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X		UPL	N	
<i>Euonymus alatus</i>	Winged euonymus, burning bush		X			UPL	I	X
<i>Frangula alnus</i>	Glossy False Buckthorn		X †			FAC	I	X
<i>Gaylussacia baccata</i>	Black Huckleberry		X			FACU	N	
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Parthenocissus quinquefolia</i>	Virginia-Creeper				X	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X †	X †	X †		FACU	N	
<i>Prunus serotina</i>	Black Cherry			X		FACU	N	
<i>Quercus alba</i>	Northern White Oak			X		FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy				X	FAC	N	
<i>Ulmus americana</i>	American Elm			X		FACW	N	
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced



**Photo 1** – Looking east down the Impact Area near Station 522+95. A well-defined foot path is located to the south of the tracks.



**Photo 2** – Photo of a standing dead tree within the Impact Area near Station 524+85

**Impact Area S9 (RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the Impact Area near Station 530+30



**Photo 4** – Limited large woody debris within the Impact Area near Station 529+50

**Impact Area S9 (RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – Snags leaning into the Impact Area near Station 527+90



**Photo 6** – Looking east at Peakham Road from the eastern edge of the Impact Area near Station 530+30

**Impact Area S9 (RFA and AURA) in  
Sudbury, MA**

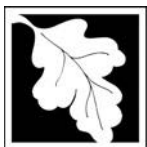
Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S10

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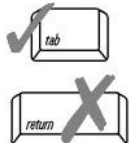
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

24,865 SF

5/31/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. MWPA RFA**			24,272	24,272
2. Bylaw AURA**			23,334	23,334
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See attached narrative

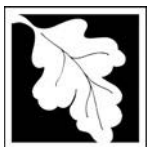
### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts mostly between Dutton & Peakham Roads. Some extends east of the later road.

Project Location (from NOI page 1)

S10 - AURA and RFA from approximately Station 533+60 to 543+90

Impact Area (number/name)

May 31, 2019

Date(s) of Site Visit(s) and Data Collection

Partly sunny, 70s

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira

September 16, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System:	N/A Upland	Subsystem:	N/A
Class:	N/A	Subclass:	N/A

##### Hydrology/Water Regime

- |   |   |
|---|---|
| <input type="checkbox"/> Permanently flooded      | <input type="checkbox"/> Saturated              |
| <input type="checkbox"/> Intermittently exposed   | <input type="checkbox"/> Temporarily flooded    |
| <input type="checkbox"/> Semi-permanently flooded | <input type="checkbox"/> Intermittently flooded |
| <input type="checkbox"/> Seasonally flooded       | <input type="checkbox"/> Artificially flooded   |

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

- "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))
- "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See attached narrative

Vegetation Description

See narrative and attached plant list

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover: 63.0 38.0 3.0 20.5  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Mapped as Windsor loamy Sand	N/A
Soil Survey Unit	Drainage Class
N/A Disturbed /Railroad Ballast and fill material	N/A
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>1 - 10" red maple, with one cavity</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

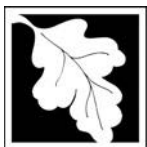
☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

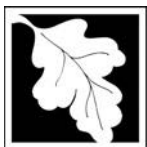
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

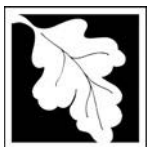
#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Important upland food	Scattered	Some areas abundant	See note below
Standing dead trees	2 (6"-12")	Some areas abundant	See note below
Large woody debris and brush piles	Abundant and scattered	Some areas abundant	See note below
Trees with cavities	1 tree with 6 cavities	Some areas abundant	See note below

# Vegetation found within Wetland Impact Area\*

Impact Area S10  
Survey Date: 5/31/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer platanoides</i>	Norway Maple	X				UPL	I	X
<i>Acer rubrum</i>	Red Maple	X†	X	X		FAC	N	
<i>Berberis thunbergii</i>	Japanese Barberry		X			FACU	I	X
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X†		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Cypripedium acaule</i>	Pink Lady's-Slipper			X		FACW	N	
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X		UPL	N	
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern			X		FACW	N	
<i>Euonymus alatus</i>	Winged euonymus, burning bush			X		UPL	I	X
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Gaylussacia baccata</i>	Black Huckleberry		X			FACU	N	
<i>Impatiens capensis</i>	Spotted Touch-Me-Not			X		FACW	N	
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Parthenocissus quinquefolia</i>	Virginia-Creeper				X†	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†			FACU	N	
<i>Prunus serotina</i>	Black Cherry		X	X		FACU	N	
<i>Quercus alba</i>	Northern White Oak	X	X			FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X†		FAC	N	
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry			X		FACU	N	
<i>Vaccinium corymbosum</i>	Highbush Blueberry		X			FACW	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced



**Photo 1** – Looking east down the Impact Area near Station 533+80. A well-defined foot path is located to the south of the tracks.



**Photo 2** – Limited large woody debris on the ground within the Impact Area near Station 534+30

**Impact Area S10 (RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Small mammal burrow within the Impact Area near Station 538+70



**Photo 4** – Small tree cavity within a red maple that is within the Impact Area near Station 538+80

**Impact Area S10 (RFA and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – Looking east down the Impact Area with an open understory near Station 539+00



**Photo 6** – Large woody debris on the ground within the Impact Area near Station 541+20

**Impact Area S10 (RFA and AURA) in  
Sudbury, MA**

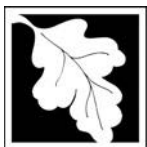
Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S11

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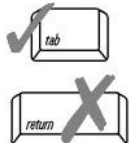
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

14,482 square feet (RFA completely overlaps with AURA)

6/6/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw RFA**			11,515	11,515
2. Bylaw AURA**			14,482	14,482
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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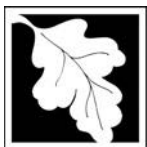
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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S11 - RFA and AURA Impact Area from approximately Station 558+10 to 564+20

Impact Area (number/name)

June 6, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

6/25/2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

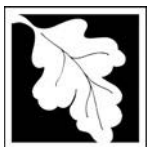
See narrative and attached plant list

Vegetation Description

See narrative

Physical Description





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover: 62.5 37.5 2.5 0 62.5  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Windsor loamy sand/Freetown muck

Soil Survey Unit

Drainage Class

Texture (upper part)

Depth

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

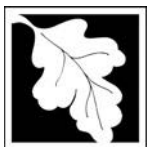
☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

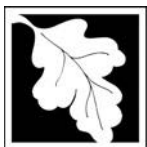
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

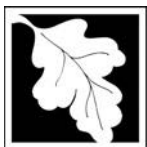
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Large woody/coarse debris	Scattered	Scattered	See note below
Standing Dead Trees 6-12"	1	Greater than Impact Area	See note below
Upland Food Plants	Scattered	Greater than Impact Area	See note below
Dense herb.vegetation	1 small area (5'x20')	Greater than Impact Area	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S11  
Survey Date: 6/6/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X	X			FAC	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Athyrium angustum</i>	Northern Lady Fern			X		FAC	N	
<i>Betula populifolia</i>	Gray Birch		X			FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Circaea canadensis</i>	Broad-Leaf Enchanter's-Nightshade			X		FACU	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Impatiens capensis</i>	Spotted Touch-Me-Not			X		FACW	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†			FACU	N	
<i>Prunus serotina</i>	Black Cherry	X	X			FACU	N	
<i>Quercus Rubra</i>	Northern Red Oak	X†				FACU	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Rubus flagellaris</i>	Whiplash Dewberry			X		FACU	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X†		FAC	N	
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.

† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.

**N:** Native  
**I:** Introduced



**Photo 1** - Looking east down the Impact Area at the well-defined foot path near Station 558+20



**Photo 2** – Small area of Pennsylvania sedge within the Impact Area near Station 558+90

**Impact Area S11 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking east down Impact Area and center of tracks in area dominated by glossy buckthorn near Station 559+15



**Photo 4** – Looking east down Impact Area after the stream crossing where the shrub layer begins to open up; near Station 560+90

Impact Area S11 (RFA and AURA) in Sudbury, MA

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – Looking at the snag within the Impact Area that will be removed with a residence in close proximity in the background near Station 562+80



**Photo 6** – Very limited woody debris on the ground near Station 563+40

**Impact Area S11 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**



## Wetland Impact Area S12

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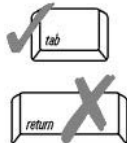
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

10,051 square feet

6/6/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA			10,051	10,051
2.				
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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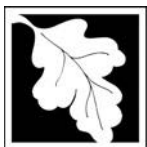
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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S12 - AURA Impact Area from approximately Station 576+10 to 580+00

Impact Area (number/name)

June 6, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

6/25/19

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

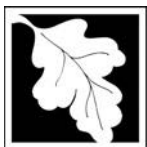
Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	85.0	37.5	0	0	62.5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Deerfield loamy fine sand	N/A
Soil Survey Unit	Drainage Class
N/A	
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant      ☒ Present      ☐ Absent

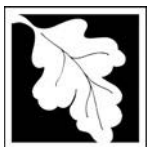
Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

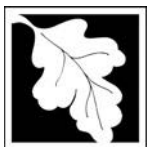
Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

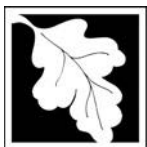
Is the impact area part of an emergent marsh at least 1.0 acre in size? ☐ Yes ☒ No

(marsh and waterbirds) 2.0 acres in size? ☐ Yes ☐ No

5.0 acres in size? ☐ Yes ☐ No

10.0 acres in size? ☐ Yes ☐ No

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Large woody/coarse debris	Scattered	Scattered	See note below
Small Mammal Burrow	1	Ubiquitous	See note below
Upland Food Plants	Scattered	Greater than Impact Area	See note below
Dense herb.vegetation	1 small area (2'x60')	Greater than Impact Area	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S12

Survey Date: 6/6/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X				FAC	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X†		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X		FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X			FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley			X		FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†			FACU	N	
<i>Prunus serotina</i>	Black Cherry		X			FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X†				FACU	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X†		FAC	N	

\* This list only contains species that comprise 10% or more of cover.

† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.

- OBL:** Obligate
- FACW:** Facultative Wetland
- FAC:** Facultative
- FACU:** Facultative Upland
- UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.

- N:** Native
- I:** Introduced



**Photo 1** - Looking east down the Impact Area at the well-defined foot path near Station 576+90



**Photo 2** – Looking west down the Impact Area near Station 579+70; the well-defined foot path is visible

**Impact Area S12 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Small mammal burrow that was identified within the Impact area near Station 578+50; the pen is in the picture to provide a reference of scale



**Photo 4** – View of the thin strip of Pennsylvania sedge; photo was taken near Station 577+90

**Impact Area S12 (AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – Large woody debris on the ground within the Impact Area and continuing outside the Impact Area near Station 576+60

Impact Area S12 (AURA) in Sudbury, MA

Wildlife Habitat Evaluations Photographs

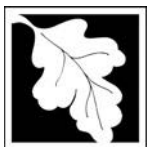
**EVERSOURCE**  
ENERGY

 **vhb**

## Wetland Impact Area S13



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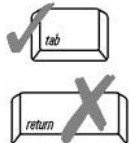
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

36,545 square feet

6/6/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA**			33,564	33,564
2. Bylaw RFA**			25,319	25,319
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S13 - RFA and AURA Impact Area from approximately Station 585+25 to 599+90

Impact Area (number/name)

June 6, 2019

Date(s) of Site Visit(s) and Data Collection

60's and partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

6/25/19

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

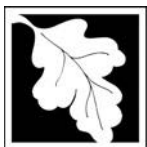
Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	85.0	37.5	10.5	0	62.5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Deerfield loamy fine sand

Soil Survey Unit

Drainage Class

Texture (upper part)

Depth

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

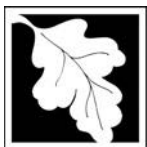
☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

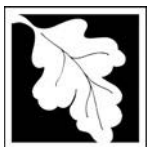
☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

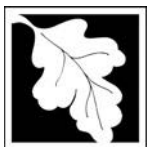
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Large woody debris	Scattered	Scattered	See note below
Small Mammal Burrow	1	Ubiquitous	See note below
Upland Food Plants	Scattered	Greater than Impact Area	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S13  
Survey Date: 6/6/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X				FAC	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X†		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn			X†	X†	FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle			X		FACU	I	X
<i>Maianthemum canadense</i>	False Lily-of-the-Valley				X	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X†	X†			FACU	N	
<i>Prunus serotina</i>	Black Cherry		X			FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X†				FACU	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X†		FAC	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural  
**N:** Native  
**I:** Introduced





**Photo 1** - Looking east down the Impact Area at the well-defined foot path near Station 585+40



**Photo 2** – Snag and one piece of large woody debris on the ground along the edge of the Impact Area near Station 586+85

**Impact Area S13 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – View of the commercial development located to the immediate south of the Impact Area near Station 594+95



**Photo 4** – View of a small mammal burrow near the edge of the remnant tracks near Station 593+80

**Impact Area S13 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## Wetland Impact Area S14

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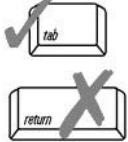
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

4,986 square feet

6/6/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA**			1,544	1,544
2. Bylaw RFA**			4,986	4,986
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

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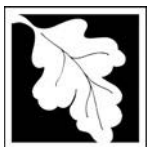
### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S14 - RFA and AURA Impact Area from approximately Station 600+50 to 602+25

Impact Area (number/name)

June 6, 2019

Date(s) of Site Visit(s) and Data Collection

upper 70's, partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

Katie Kinsella

6/25/19

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A - Upland Area

Subsystem: N/A

Class: N/A

Subclass: N/A

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

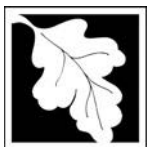
Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	37.5	37.5	0	0	85
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached list			

#### C. Inventory (Soils)

Udorthents-Urban land complex

Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant      ☒ Present      ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant      ☐ Present      ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

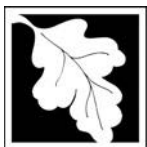
☐ Present      ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

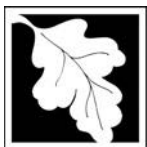
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

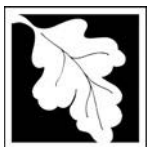
#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Standing Dead Tree	1	Greater than Impact Area	See note below
Important upland food	Minimal, oaks	Greater than Impact Area	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S14  
Survey Date:

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Artemisia vulgaris</i>	Common Wormwood			X <sup>†</sup>		UPL	I	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X <sup>†</sup>	UPL	I	X
<i>Frangula alnus</i>	Glossy False Buckthorn			X <sup>†</sup>		FAC	I	X
<i>Pinus strobus</i>	Eastern White Pine	X <sup>†</sup>				FACU	N	
<i>Populus tremuloides</i>	Quaking Aspen	X				FAC	N	
<i>Quercus rubra</i>	Northern Red Oak		X <sup>†</sup>			FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings.  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced



**Photo 1** - Looking east down the Impact Area towards Union Avenue and the open grassy area near Station 600+55



**Photo 2** – Snag within the Impact Area near Station 601+80

Impact Area S14 (RFA and AURA) in Sudbury, MA

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking north at Union Avenue from the western edge of the Impact Area near Station 602+20



**Photo 4** – Looking west at the open, grassy area within the Impact Area near Station 602+10

**Impact Area S14 (RFA and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**



## Wetland Impact Area S15

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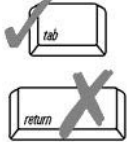
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S15 Impact Area - Sudbury, MA

Location

25,375 sf

10/16/2019

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. BLSF**			1,791	1,791
2. MWPA RFA***			13,630	13,630
3. Bylaw RFA***			11,759	11,759
4. Bylaw AURA***			25,375	25,375
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

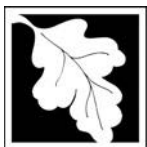
See the attached sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S15 - 602+50 to 711+30

Impact Area (number/name)

10/16/2019

Date(s) of Site Visit(s) and Data Collection

Mostly cloudy, 40s

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira

11/8/2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: N/A

Class: N/A

Subclass: N/A

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

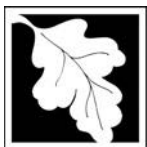
Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover: 85.5 63 10.5 38.0  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached plant list			

#### C. Inventory (Soils)

Udorthents- Urban land complex, Freetown Muck	N/A
Soil Survey Unit	Drainage Class
N/A	N/A
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

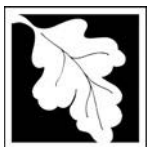
Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>9</u>	<u>4</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

- ☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)
- ☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
- ☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
- ☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)
- ☐ Rock piles, crevices, or hollow logs suitable for:
- |                                |                               |                                    |                               |                                 |   |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
| <input type="checkbox"/> otter | <input type="checkbox"/> mink | <input type="checkbox"/> porcupine | <input type="checkbox"/> bear | <input type="checkbox"/> bobcat | <input type="checkbox"/> turkey vulture |
|--------------------------------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|---|
- ☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

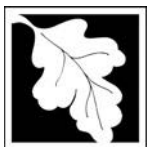
☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

- |  |   |
|--|---|
| <input type="checkbox"/> Breeding amphibians | <input type="checkbox"/> Non-breeding amphibians (foraging, re-hydration) |
| <input type="checkbox"/> Turtles             | <input type="checkbox"/> Foraging waterfowl                               |

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☐ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

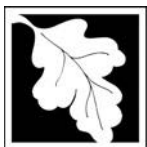
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☒ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☒ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☒ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland food plants	Scattered	Some areas abundant	See note below
Large woody debris	Limited	Some areas abundant	See note below
Dead standing trees	9 (6"-12"), 4 (12"-18")	Some areas abundant	See note below



# Vegetation found within Wetland Impact Area\*

Impact Area S15  
Survey Date: 10/16/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer platanoides</i>	Norway Maple	X	X			UPL	I	X
<i>Acer rubrum</i>	Red Maple	X†				FAC	N	
<i>Ailanthus altissima</i>	Tree-of-Heaven	X				UPL	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Berberis thunbergii</i>	Japanese Barberry		X			FACU	I	X
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X†		UPL	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X	UPL	I	X
<i>Chimaphila maculata</i>	Striped Pipsissewa			x		UPL	N	
<i>Elaeagnus umbellata</i>	Autumn Olive		X			UPL	I	X
<i>Fagus grandifolia</i>	American Beech	X				FACU	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Ilex verticillata</i>	Common Winterberry		X			FACW	N	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X			FACU	I	X
<i>Onoclea sensibilis</i>	Sensitive Fern			X		FACW	N	
<i>Parthenocissus quinquefolia</i>	Virginia-Creeper				X	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X	X			FACU	N	
<i>Populus tremuloides</i>	Quaking Aspen		X			FAC	N	
<i>Prunus serotina</i>	Black Cherry	X	X			FACU	N	
<i>Quercus alba</i>	Northern White Oak	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X†				UPL	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Solidago rugosa</i>	Wrangled -Leaf Goldenrod			X		FAC	N	
<i>Solidago spp.</i>	Goldenrods			X		-	N	
<i>Symphyotrichum novae-angliae</i>	New England American-aster			X		FACW	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy				X†	FAC	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	
<i>Vitis sp.</i>	Grape				X	-	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

Vegetation found within Wetland Impact Area\*

Impact Area S15  
Survey Date: 10/16/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.

**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** – Looking east down the Impact Area near Station 701+85



**Photo 2** – Looking east down the Impact Area within the Impact Area near Station 702+70

**Impact Area S15 (RFA, BLSF, LUWW, and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

 **vhb**





**Photo 3** – Large woody debris on the ground within the Impact Area near Station 708+40



**Photo 4** – Looking east within the Impact Area with two sets of railroad tracks visible near Station 709+10

**Impact Area S15 (RFA, BLSF, LUWW, and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## **Wetland Impact Area S16**



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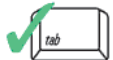
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S16 Impact Area - Sudbury, MA

Location

32,745 SF

5/8/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. BLSF**			877	877
2. MWPA RFA**			32,745	32,745
3. Bylaw AURA**			32,285	32,285
4. BVW		31		31
5.				
6.				
7.				

\*Riverfront Area/BLSF

\*\*Impacts overlap. BLSF, BVW, and AURA are entirely overlapped by RFA .

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S16 - BLSF, RFA, and AURA from approximately Station 711+70 to 724+40

Impact Area (number/name)

May 8, 2019

Date(s) of Site Visit(s) and Data Collection

50s, partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 10, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification For BVW impact only

##### 1. For Wetland Resource Areas, complete the following:

System:	<u>P - Palustrine</u>	Subsystem:	<u>N/A</u>
Class:	<u>SS - Scrub Shrub</u>	Subclass:	<u>3 - Broad-leaved Deciduous</u>

##### Hydrology/Water Regime

<input type="checkbox"/> Permanently flooded	<input checked="" type="checkbox"/> Saturated <span style="border: 1px solid black; padding: 2px;">Seasonally Saturated</span>
<input type="checkbox"/> Intermittently exposed	<input type="checkbox"/> Temporarily flooded
<input type="checkbox"/> Semi-permanently flooded	<input type="checkbox"/> Intermittently flooded
<input type="checkbox"/> Seasonally flooded	<input type="checkbox"/> Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

- "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))
- "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

Daubenmire  
midpoints used for  
vegetative percent  
cover

% Cover: 85.5 38 10.5 38.0  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached plant list			

Soils in impact  
area historically  
disturbed and  
filled from  
construction and  
operation of the  
railroad line and  
therefore differ  
from the mapped  
soil unit

#### C. Inventory (Soils)

Scarboro mucky fine sandy loam	N/A
Soil Survey Unit	Drainage Class
N/A	N/A
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Some present - black  
cherry, oaks, and grape

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>8</u>	<u>2</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

16 (most cavities are small, < 6")

6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0

12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0

>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

Moderately abundant

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

9 along berm

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

Sign of human use on path adjacent to train track. Western end of Impact Area is immediately adjacent to Boston Post Road. Single-family residences and commercial properties in immediate vicinity.

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland food plants	Scattered	Some areas abundant	See note below
Large woody debris	Limited	Some areas abundant	See note below
Dead standing trees	8 (6"-12"), 2(12"-18")	Some areas abundant	See note below
Cavities in Trees	Approx. 16 at outer limits of work	Common and scattered	See note below
Woody Veg Providing	9 at outer limits of work	Common	See note below
Views of Open Water			

Vegetation found within Wetland Impact Area\*

Impact Area S16  
Survey Date: 5/18/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer platanoides</i>	Norway Maple	X	X †			UPL	I	X
<i>Acer rubrum</i>	Red Maple	X †				FAC	N	
<i>Berberis thunbergii</i>	Japanese Barberry			X		FACU	I	X
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Chelidonium majus</i>	Greater Celandine			X		UPL	I	
<i>Frangula alnus</i>	Glossy False Buckthorn		X †	X †		FAC	I	X
<i>Fraxinus americana</i>	White Ash		X	X		FACU	N	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle			X		FACU	I	X
<i>Pinus strobus</i>	Eastern White Pine	X †				FACU	N	
<i>Prunus serotina</i>	Black Cherry		X			FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Rubus flagellaris</i>	Whiplash Dewberry				X	FACU	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy				X †	FAC	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	
<i>Vitis sp.</i>	Grape				X	-	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))





**Photo 1** – Looking east down the Impact Area near Station 713+00



**Photo 2** – Large woody debris on the ground within the Impact Area near Station 716+15

**Impact Area S16 (RFA, BLSF, BVW, and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the Impact Area near Station 718+25



**Photo 4** – View of a standing dead tree within the Impact Area near Station 716+70

**Impact Area S16 (RFA, BLSF, BVW, and AURA) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**

## **Wetland Impact Area S17**

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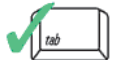
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S17 Impact Area - Sudbury, MA

Location

2,718 SF Crane mat area

5/8/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. MWPA RFA**			2,122	2,122
2. Bylaw AURA**			1,947	1,947
3. BLSF***			1,738	1,738
4. LUWW	596			596
5. BVW**		178		178
6. Bank	124 LF			124
7.				

\*Riverfront Area/BLSF \*\* Partially Overlaps \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached sheet with the description of the site.

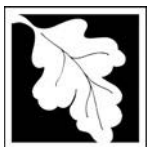
## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S17 - Sta 724+40 to 725+05

Impact Area (number/name)

May 8, 2019

Date(s) of Site Visit(s) and Data Collection

50s, partly cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

May 10, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: P - Palustrine

Subsystem: N/A

Class: E - Emergent

Subclass: 1 - Persistent/2 - Non-persistent

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☒ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

## Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	63.0	63.0			38.0
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; “\*” designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached plant list			

### C. Inventory (Soils)

Mapped as Scarboro mucky fine sand	N/A
Soil Survey Unit	Drainage Class
N/A	N/A
Texture (upper part)	Depth
N/A	
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

## Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant      ☒ Present      ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>6</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

8 (cavities mostly small, 6" or less)

0 6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0

0 12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0

0 >18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☒ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

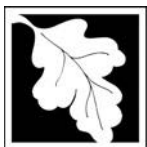
Standing water present at least part of the growing season, suitable for use by

☒ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☒ Turtles ☒ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

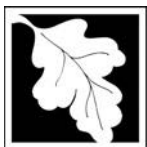
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

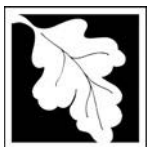
#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Standing dead trees	6"-12"(6)	Some areas abundant	See note below
Woody Veg Offering View	Present Scattered along	Some present beyond	See note below
of open water	N&S, 21 trees 6"-12" dbh	impact area	
	4 trees 12"-18" dbh		
	Numerous shrubs 6'+ tall		
Trees with Cavities	8 (small cavities 6" or less)	Scattered but relatively common	See note below
Woody Veg 1m Over Water	Mostly tall shrubs N side	Common along berm	See note below
Standing Water	596 SF	Extends along berm	Temporary impact; see note below

Vegetation found within Wetland Impact Area\*

Impact Area S17  
Survey Date: 5/18/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X				FAC	N	
<i>Amelanchier canadensis</i>	Canada Service-Berry		X			FAC	N	
<i>Carex vestita</i>	Velvet Sedge			X				
<i>Elaeagnus umbellata</i>	Autumn Olive			X		UPL	I	X
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Onoclea sensibilis</i>	Sensitive Fern			X		FACW	N	
<i>Pinus strobus</i>	Eastern White Pine	X	X	X		FACU	N	
<i>Quercus alba</i>	Northern White Oak			X		FACU	N	
<i>Quercus cocconeae</i>	Scarlet Oak	X	X			UPL	N	
<i>Quercus velutina</i>	Black Oak	X†				UPL	N	
<i>Vaccinium corymbosum</i>	Highbush Blueberry		X†			FACW	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** – Looking east at the Impact Area near Station 724+40



**Photo 2** – Looking east down southern bank near Station 724+90. Crane mats will be temporarily placed along the bank and within BVW and LUWW.

**Impact Area S17 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the northern bank near Station 724+95. Crane mats will be temporarily placed along the bank and within BVW and LUWW.



**Photo 4** – Looking west down the Impact Area near Station 724+90

**Impact Area S17 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
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**Photo 5** – Looking at vegetation overhanging water within the Impact Area near Station 724+95



**Photo 6** – Looking west at a foot path that is to the south of the tracks within the Impact Area near Station 724+70

**Impact Area S17 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
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## Wetland Impact Area S18

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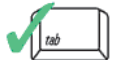
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S18 Impact Area - Sudbury, MA

Location

2,827 SF Crane mat area

10/16/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. MWPA RFA**			2,277	2,277
2. Bylaw AURA**			2,160	2,160
3. BLSF**			2,154	2,154
4. LUWW**	550			550
5. BVW**		118		118
6. Bank	122 LF			122 LF
7.				

\*Riverfront Area/BLSF \*\*Partially Overlaps \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

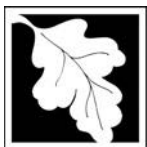
See the attached sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S18 - Station 725+70 to 726+30

Impact Area (number/name)

October 16, 2019

Date(s) of Site Visit(s) and Data Collection

50s, cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

October 18, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: P - Palustrine

Subsystem: N/A

Class: E - Emergent

Subclass: 1 - Persistent/2 - Non-persistent

##### Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☒ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description





## Appendix B: Detailed Wildlife Habitat Evaluation

B. Inventory (Plant community)

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; “\*” designates a dominant plant species for the strata):

### C. Inventory (Soils)

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

## Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

### Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

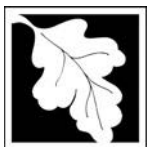
☐ Abundant      ☒ Present      ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present                  ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

<u>0</u>
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
<u>0</u>
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)
<u>0</u>
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☒ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☒ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☒ Turtles ☒ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

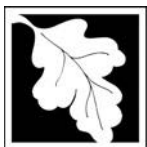
☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

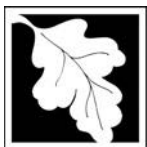
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Standing dead trees	6"-12"(2)	Some areas abundant	See note below
Woody Veg Offering View	Present Scattered along	Some present beyond	See note below
of open water	N&S side; 6"-12"(6),	impact area	
	12"-18"(2), few tall shrubs		
Dense herbaceous veg	Carex sp. on N&S sides	Some areas abundant	See note below
Standing water	551 SF	More along berm	See note below
Woody Veg 1m Over Water	3	Few along berm	See note below

Vegetation found within Wetland Impact Area\*

Impact Area S18  
Survey Date: 10/16/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X				FAC	N	
<i>Betula populifolia</i>	Gray Birch	X	X †	X		FAC	N	
<i>Carex vestita</i>	Velvet Sedge			X †				
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X		UPL	N	
<i>Dichanthelium clandestinum</i>	Deer-Tongue Rosette-Panicgrass			X		FACW	N	
<i>Euthamia graminifolia</i>	Grass-Leaved Goldenrod			X		FAC	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X	X †		FAC	I	X
<i>Phalaris arundinacea</i> FACW	Reed Canary Grass			X		FACW	I	X
<i>Pinus strobus</i>	Eastern White Pine	X †	X †	X		FACU	N	
<i>Prunus serotina</i>	Black Cherry	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Solidago rugosa</i>	Canada Goldenrod			X		FAC	N	
<i>Solidago canadensis</i>	Goldenrods			X		FACU	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	
<i>Vaccinium corymbosum</i>	Highbush Blueberry		X			FACW	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.

**N:** Native  
**I:** Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** – Looking east at the Impact Area near Station 725+65. Some live standing vegetation providing a view of open water is visible in this photograph



**Photo 2** – A small mammal burrow is present on the southern side of the rail line within the Impact Area near Station 725+65

**Impact Area S18 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Looking west down the northern bank near Station 725+60. Crane mats will be temporarily placed along the bank and within BVW and LUWW.



**Photo 4** – A small mammal burrow is present on the northern side of the rail line within the Impact Area near Station 726+00

**Impact Area S18 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY







**Photo 5** – Looking west down the southern bank near Station 725+60. Crane mats will be temporarily placed along the bank and within BVW and LUWW.

**Impact Area S18 (RFA, BLSF, BVW, LUW, Bank and AURA) in Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY





## Wetland Impact Area S19

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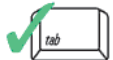
Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands Program

# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S19 Impact Area - Sudbury, MA

Location

71,713 sf

10/16/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. MWPA RFA**			61,330	61,330
2. Bylaw RFA**			222	222
3. BLSF**			3,576	3,576
4. AURA***			71,713	71,713
5. Bylaw IVW		303		303
6.				
7.				

\*Riverfront Area/BLSF \*\*Partially Overlaps \*\*\*Completely Overlaps

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See the attached sheet with the description of the site.

## Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S19 - Station 726+30 to 753+15

Impact Area (number/name)

October 16, 2019

Date(s) of Site Visit(s) and Data Collection

50s, cloudy

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

October 18, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: N/A

Class: N/A

Subclass: N/A

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover: 85.5 63.0 10.5 38.0  
Trees (> 20') Shrubs (< 20') Woody vines Mosses Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
<u>See attached plant list</u>			

#### C. Inventory (Soils)

Scarboro MFS, Freetown Muck, Hollis, Charlt

N/A

Soil Survey Unit

Drainage Class

N/A

N/A

Texture (upper part)

Depth

N/A

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

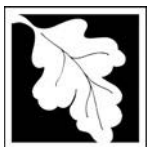
Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>12</u>	<u>1</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

8 (most cavities small, 6" or less)

0 6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0

0 12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0

0 >18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

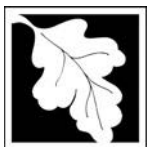
Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

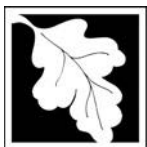
Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☐ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland /wetland food plants	Scattered	Some areas abundant	See note below
Standing dead trees	12 - 6"-12", 1 - 12"-18"	Some areas abundant	See note below
Woody Veg Offering View	Present Scattered	Some present beyond	See note below
of open water	Apx 29 trees, abundant tall shrubs	impact area	
Large woody debris	Scattered and abundant	Some areas abundant	See note below
Trees with Cavities	8	Some areas abundant	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S19  
Survey Date: 10/16/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Acer rubrum</i>	Red Maple	X†				FAC	N	
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Berberis thunbergii</i>	Japanese Barberry		X			FACU	I	X
<i>Betula populifolia</i>	Gray Birch		X			FAC	N	
<i>Carex pensylvanica</i>	Pennsylvania Sedge			X†		UPL	N	
<i>Catalpa speciosa</i>	Northern Catalpa	X				FACU	I	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X†	UPL	I	X
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern			X		UPL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X†	X†		FAC	I	X
<i>Ilex verticillata</i>	Common Winterberry		X			FACW	N	
<i>Latuca sp.</i>	Wild Lettuce			X		-	N	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X			FACU	I	X
<i>Onoclea sensibilis</i>	Sensitive Fern			X		FACW	N	
<i>Pilea pumila</i>	Canada Clearweed			X		FACW	N	
<i>Pinus strobus</i>	Eastern White Pine	X†				FACU	N	
<i>Populus tremuloides</i>	Quaking Aspen	X				FAC	N	
<i>Pteridium aquilinum</i>	Northern Braken Fern			X		FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X				FACU	N	
<i>Quercus velutina</i>	Black Oak	X				UPL	N	
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Rubus allegheniensis</i>	Allegheny Blackberry		X			FACU	N	
<i>Solidago rugosa</i>	Wrinkled -Leaf Goldenrod			X		FAC	N	
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	
<i>Ulmus americana</i>	American Elm	X				FACW	N	
<i>Vitis sp.</i>	Grape				X	-	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))  
**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

Vegetation found within Wetland Impact Area\*

Impact Area S19  
Survey Date: 10/16/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
N: Native  
I: Introduced

<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** - Looking east down the Impact Area near Station 729+50



**Photo 2** – Small mammal burrow within the Impact Area near Station 729+80

**Impact Area S19 (RFA, AURA, and BLSF) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 3** – Large woody debris on the ground within the Impact Area near Station 740+20



**Photo 4** – Looking west down the Impact Area near Station 747+50

**Impact Area S19 (RFA, AURA, and BLSF) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**





**Photo 5** – View of commercial property to the north the Impact Area near Station 752+60



**Photo 6** – Looking west at the eastern end of the Impact Area near Station 753+15

**Impact Area S19 (RFA, AURA, and BLSF) in  
Sudbury, MA**

Wildlife Habitat Evaluations Photographs

**EVERSOURCE**  
ENERGY

**vhb**



## Wetland Impact Area S20

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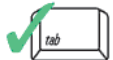


# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

Sudbury, Stow, Marlborough, Hudson

Location

16,668 square feet

6/23/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA			16,668	16,668
2. BVW		286		286
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See impact area description in attached narrative

### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S20 - AURA and BVW Impact Area from approximately Station 760+60 to 766+45

Impact Area (number/name)

June 23, 2019

Date(s) of Site Visit(s) and Data Collection

80's and mostly sunny

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

June 25, 2019

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System:	P - Palustrine	Subsystem:	None
Class:	SS - Scrub Shrub	Subclass:	1 - Broad-leaved Deciduous

Hydrology/Water Regime

- |  |   |
|--|---|
| <input type="checkbox"/> Permanently flooded           | <input type="checkbox"/> Saturated              |
| <input type="checkbox"/> Intermittently exposed        | <input type="checkbox"/> Temporarily flooded    |
| <input type="checkbox"/> Semi-permanently flooded      | <input type="checkbox"/> Intermittently flooded |
| <input checked="" type="checkbox"/> Seasonally flooded | <input type="checkbox"/> Artificially flooded   |

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

- "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))
- "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed/disturbed so neither upland classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	62.5	37.5	0	0	97.5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Vegetation list attached			

#### C. Inventory (Soils)

Windsor loamy sand/Udorthents urban land complex

Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

0  
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0  
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0  
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☐ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☐ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☐ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☐ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☐ Absent

Areas of ice-free open water in winter

☐ Present ☐ Absent

Mud flats

☐ Present ☐ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☐ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☐ Absent

Bank swallow colony

☐ Present ☐ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Dense herbaceous veg	Approximately 50 SF	Greater than Impact Area	See note below
Large woody/coarse debris	Scattered	Scattered	See note below
Dead standing trees	4	Greater than Impact Area	See note below
Upland food plants	Scattered	Greater than Impact Area	See note below



Vegetation found within Wetland Impact Area\*

Impact Area S20  
Survey Date: 6/23/2019

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Alliaria petiolata</i>	Garlic-Mustard			X		FACU	I	X
<i>Betula populifolia</i>	Gray Birch	X				FAC	N	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X †	UPL	I	X
<i>Euthamia graminifolia</i>	Grass-Leaved Goldenrod			X		FAC	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X †	X †		FAC	I	X
<i>Fraxinus americana</i>	White Ash	X				FACU	N	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle			X+		FACU	I	X
<i>Parthenocissus quinquefolia</i>	Virginia Creeper				X	FACU	N	
<i>Pinus strobus</i>	Eastern White Pine	X				FACU	N	
<i>Quercus rubra</i>	Northern Red Oak	X †				FACU	N	
<i>Rosa multiflora</i>	Rambler Rose		X	X		FACU	I	X
<i>Rubus allegheniensis</i>	Allegheny Blackberry		X			FACU	N	
<i>Solidago rugosa</i>	Wringled -Leaf Goldenrod			X		FAC	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X		FAC	N	
<i>Vitis sp.</i>	Grape				X	-	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
**FAC:** Facultative  
**FACU:** Facultative Upland  
**UPL:** Upland

<sup>2</sup>The Vascular Plants of Massachusetts: A County Checklist, The Vascular Plants of Massachusetts A County Checklist, First Revision, 2011. Published by Natural Heritage and Endangered Species Program. 269 pp.  
**N:** Native  
**I:** Introduced


<sup>3</sup>The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts (with annotated list).Massachusetts Invasive Plant Advisory Group. 2005. ([https://massnrc.org/mipag/docs/MIPAG\\_FINDINGS\\_FINAL\\_042005.pdf](https://massnrc.org/mipag/docs/MIPAG_FINDINGS_FINAL_042005.pdf))



**Photo 1** - Looking west down the ROW at the eastern end of the Impact Area near Station 766+50



**Photo 2** – Representative picture of a snag within the Impact Area near Station 765+20

	<p><b><u>Impact Area S20 (AURA and BVW ) in Sudbury, MA</u></b></p> <p>Wildlife Habitat Evaluations Photographs</p>	<p><b>EVERSOURCE</b> ENERGY</p> <p> <b>vhb</b></p>
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**Photo 3** – BVW with standing water at the time of the evaluation that is within the Impact Area near Station 764+60



**Photo 4** – Minimal large woody debris on the ground inside the Impact Area near Station 765+10

	<p><b><u>Impact Area S20 (AURA and BVW ) in Sudbury, MA</u></b></p> <p>Wildlife Habitat Evaluations Photographs</p>	<p><b>EVERSOURCE</b> ENERGY</p> <p> <b>vhb</b></p>
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**Photo 5** – Looking west at dense herbaceous woody vegetation inside the Impact Area near Station 761+00



**Photo 6** – Looking at refuse/a disposed tire within the Impact Area near Station 762+50

	<p><b><u>Impact Area S20 (AURA and BVW ) in Sudbury, MA</u></b></p> <p>Wildlife Habitat Evaluations Photographs</p>	<p><b>EVERSOURCE</b> ENERGY</p> <p> <b>vhb</b></p>
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## Wetland Impact Area S21



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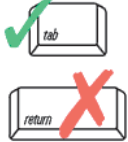


# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Sudbury-Hudson Transmission Reliability Project

Project Name

S21 Impact Area - Sudbury, MA

Location

172 square feet

6/23/19

Size of Area Being Impacted

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Bylaw AURA			172	172
2.				
3.				
4.				
5.				
6.				
7.				

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See impact area description in attached narrative

### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

Sudbury, Massachusetts

Project Location (from NOI page 1)

S21 Sta 767+00

Impact Area (number/name)

6/23/19

Date(s) of Site Visit(s) and Data Collection

Mostly sunny, 80s

Weather Conditions During Site Visit (if snow cover, include depth)

John Vieira and Katie Kinsella

6/25/19

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: N/A Upland Area

Subsystem: N/A

Class: N/A

Subclass: N/A

Hydrology/Water Regime

☐ Permanently flooded

☐ Saturated

☐ Intermittently exposed

☐ Temporarily flooded

☐ Semi-permanently flooded

☐ Intermittently flooded

☐ Seasonally flooded

☐ Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

N/A - Impact Area is mostly railroad track bed / disturbed so neither classification system applies

Community Name

See narrative and attached plant list

Vegetation Description

See narrative

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:	63.0	85.5	10.5		38.0
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
See attached plant list			

#### C. Inventory (Soils)

Mapped as Udorthents

N/A

Soil Survey Unit

Drainage Class

N/A

N/A

Texture (upper part)

Depth

N/A

Depth to Water Table

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant      ☐ Present      ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant      ☒ Present      ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present      ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present      ☒ Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh

Number of Tree Cavities in trunks or limbs of:

0  
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0  
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0  
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent





# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☐ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☐ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☐ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☐ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☐ Absent

Areas of ice-free open water in winter

☐ Present ☐ Absent

Mud flats

☐ Present ☐ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☐ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☐ Absent

Bank swallow colony

☐ Present ☐ Absent

Nest(s) present of

☐ Bald Eagle

☐ Osprey

☐ Great Blue Heron

Den(s) present of

☐ Otter

☐ Mink

☐ Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- ☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- ☐ 200' of Great Blue Heron or osprey nest(s)
- ☐ 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (pied-billed grebe) ☐ Present ☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren) ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm ☐ Present ☒ Absent

Flooded > 25 cm (least bittern, common moorhen) ☐ Present ☒ Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	10.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	25.0 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	100 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	250 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	500 acres in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(grassland nesting birds)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### B. Connectivity with adjoining natural habitats

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☒ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

#### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways
- ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12" dbh	4	12	8
Upland food plants	Scattered	Some areas abundant	See note below

# Vegetation found within Wetland Impact Area\*

Impact Area S21  
Survey Date: 6/23/19

Scientific Name <sup>1</sup>	Common Name <sup>1</sup>	Stratum				Wetland Indicator Status <sup>1</sup>	Native or Introduced <sup>2</sup>	Invasive <sup>3</sup>
		Tree	Sapling-Shrub	Herb	Vine			
<i>Catalpa speciosa</i>	Northern Catalpa		X			FACU	I	
<i>Celastrus orbiculatus</i>	Asian Bittersweet				X †	UPL	I	X
<i>Circaea lutetiana</i>	Broadleaf Enchanter's Nightshade			X		NL	N	
<i>Frangula alnus</i>	Glossy False Buckthorn		X †			FAC	I	X
<i>Lonicera morrowii</i>	Morrow's Honeysuckle		X †			FACU	I	X
<i>Rosa multiflora</i>	Rambler Rose		X			FACU	I	X
<i>Rubus hispidus</i>	Bristly Blackberry				X	FACW	N	
<i>Solidago canadensis</i>	Canada Goldenrod			X		FACU	N	
<i>Toxicodendron radicans</i>	Eastern Poison Ivy			X		FAC	N	
<i>Vitis sp.</i>	Grape			X		FACU	N	

\* This list only contains species that comprise 10% or more of cover.  
† Represents plant species dominate within the wetland impact area.

<sup>1</sup> Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. (Massachusetts List) Published 28 April 2016. ISSN 2153 733X ([http://wetland-plants.usace.army.mil/nwpl\\_static/data/DOC/lists\\_2016/States/pdf/MA\\_2016v1.pdf](http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/States/pdf/MA_2016v1.pdf))

**OBL:** Obligate  
**FACW:** Facultative Wetland  
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**Photo 1** - Looking across the Substation access road at the Impact Area near Station 767+20



**Photo 2** – Looking at gravel and garbage within the western edge of the Impact Area near Station 767+40

	<p><b><u>Impact Area S21 (AURA) in Sudbury, MA</u></b></p> <p>Wildlife Habitat Evaluations Photographs</p>	<p><b>EVERSOURCE</b> ENERGY</p> <p></p>
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## **Attachment C - Resumes**

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## **John Vieira Jr., PWS, NHCWS**

Senior Project Manager/Senior Ecologist

Mr. Vieira is a senior scientist and project manager with more than 39 years of experience who joined VHB/Vanasse Hangen Brustlin, Inc., in February 2009. His experience includes wetland ecology, conservation biology, natural resource planning, impact statement preparation, and environmental regulatory analysis. He has worked both in the public and private sectors. In the public sector, he worked as a biologist with the US Army Corps of Engineers managing ecological field studies on federal flood control projects throughout New England. In the private sector, he has worked for a variety of clients throughout the Northeast designing and implementing scientific investigations. Special areas of expertise include wetland delineation and functional assessment, wildlife habitat evaluation, rare species surveys, vegetation community mapping, vernal pool identification, and reptile and amphibian ecology. Environmental permitting experience includes the full range of federal, state, and local environmental regulations. This includes projects involving the Federal Energy Regulatory Commission, the US Army Corps of Engineers (USACE), the US Environmental Protection Agency (EPA), and a variety of state and local regulatory agencies.

A representative sample of Mr. Vieira's experience includes the following:

### **Eversource / Sudbury to Hudson**

Mr. Vieira acts as senior scientist for the project and has been involved with many aspects of this complicated and contentious project. He has been responsible for managing and leading numerous field studies that included mapping wetlands, mapping and documenting vernal pools (over 3 years), completing wildlife habitat studies, and completing comprehensive rare turtle telemetry studies. As part of his responsibilities he regularly contributed to various permitting efforts that include submissions to the Energy Facility Siting Board (EFSB), Local Conservation Commissions (Sudbury, Hudson, and Stow), the Massachusetts Environmental Policy Act (MEPA), and the Natural Heritage and Endangered Species Program (NHESP). During the EFSB evidentiary hearings, John provided guidance to Eversource witnesses on technical and regulatory matters. He was also instrumental in regularly coordinating rare species studies with NHESP and obtaining a "no-take" determination from that agency. Presently he continues to track and monitor the presence of rare reptile species on and adjacent to Project site using radio telemetry techniques.

### **National Grid / Scobie to Tewksbury**

John acted as Project Manager for the project. His responsibilities included managing and leading wetland delineation and wildlife habitat and rare species field studies along the Project in Massachusetts and New Hampshire. He also contributed to EFSB, MEPA, Massachusetts Endangered Species Act (MESA), and Local Conservation (Tewksbury, Andover, and Dracut) permitting efforts. John was also responsible for regularly providing environmental training to Project contractors and managing a team of environmental monitors.

**Mr. Vieira is wetland scientist and senior project manager/ecologist with more than 39 years of experience. His experience includes facility siting, planning, permit work, and compliance inspection services for a wide variety of energy, land development, and transportation clients.**

### **Eversource / Line 125 Realignment**

Mr. Vieira was the lead ecologist for the project and was responsible for managing and leading numerous field studies to identify and map a variety of rare plant and animal species on the Project right-of-way (ROW) in Orleans, Eastham, and Wellfleet, Massachusetts. His expertise with rare species and excellent working relationship with NHESP allowed for smooth coordination with that agency allowing the Project to move forward without extensive permitting. He also worked to develop site-specific constraint mapping for on-site use by Project contractors. To further ensure smooth completion of the Project, John provided regular "rare species" training to contractors and worked with on-site environmental monitors overseeing the project. He was also responsible for implementing and completing wetland field studies that delineated and mapped freshwater and coastal wetlands on the Project site.

### **National Grid / East Main Street Substation Expansion & Supply Line Project**

John was Project Manager for implementing environmental field studies and permitting of a substation expansion and new 0.3-mile, 115 kV electric transmission line project in Westborough, Massachusetts. Key environmental reviews and permits for the project included a MEPA Environmental Notification Form, wetland permits subject to the Massachusetts Wetland Protection Act (MWPA) from the Westborough Conservation Commission, Federal Clean Water Act individual permits (Sections 401 and 404) from the USACE and Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Department of Public Utilities (DPU) Section 72 Certificate, and EPA Construction General Permit. Responsibilities also included public hearing presentations, expert witness testimony, wetland mitigation negotiations, preparation of the project Storm Water Pollution Prevention Plan (SWPPP), and management of environmental permit compliance inspections during active construction.

### **National Grid / Z126 115 kV Transmission Line and A127/B128 Reconductoring**

John was Project Manager for implementing environmental field studies, wildlife habitat evaluations, and permitting of a new 7-mile, 115 kV electric transmission line project in Millbury, Auburn, Leicester, and Worcester, Massachusetts. Key environmental reviews and permits for the project included a MEPA Environmental Notification Form and Environmental Impact Report, wetland permits subject to the MWPA from the Auburn and Millbury Conservation Commissions, Federal Clean Water Act individual permits (Sections 401 and 404) from the USACE and MassDEP, Massachusetts DPU Section 72 Certificate, and EPA Construction General Permit. Responsibilities also included public hearing presentations, expert witness testimony, wetland mitigation negotiations, preparation of the project SWPPP, and management of environmental permit compliance inspections during active construction.



### **National Grid / A127/B128 and Webster Street Tap 115 kV Reconductoring Project**

John was Project Manager for implementing field studies and permitting for a 9-mile, 115 kV electric transmission line project located in Millbury, Auburn, Leicester, and Worcester, Massachusetts. Key environmental reviews and permits for the project included individual wetland permits subject to the Federal Clean Water Act (Sections 401 and 404) from the USACE and MassDEP and EPA Construction General Permit. Responsibilities also included public hearing presentations, preparation of the project SWPPP, and management of environmental permit compliance inspections during active construction.

### **NSTAR / ROW 13 Tree Clearing Project**

Mr. Vieira was the Project Manager responsible for permitting and implementing field studies for NSTAR's ROW 13 Tree Clearing Project located in Uxbridge, Mendon, and Bellingham, Massachusetts. Work associated with this project occurred within mapped habitats of 4 NHESP listed species that include eastern box turtle (*Terrapene carolina*), wood turtle (*Glyptemys insculpta*), marbled salamander (*Ambystoma opacum*), and American brook lamprey (*Lamptera appendix*). NHESP determined the project would result in a "take" of eastern box turtle requiring a Conservation and Management Permit (CMP) and MEPA review. Mr. Vieira identified a marble salamander breeding pool, completed habitat evaluations for each of the listed species and obtained a CMP. One condition of the CMP required capture and telemetric tracking of eastern box turtle (wood turtle subsequently included) and determination of hibernacula prior to work activities during the winter of 2014. Upon completion of this project 18 eastern box turtles and 6 wood turtles were successfully recaptured and transmitters removed.

### **Massachusetts Municipal Wholesale Electric Company**

Mr. Vieira assisted MMWEC in identifying a site for a new electric generating plant on their Stony Brook Facility in Ludlow, Massachusetts. Specific concerns on the site included vernal pool and wetland impacts and the known occurrence of two state-protected species, blue-spotted salamander (*Ambystoma laterale*) and climbing fern (*Lygodium palmatum*). Responsibilities included the design and implementation of surveys for protected species including a trapping program for blue-spotted salamanders, wetland delineation, vegetation community mapping, development of mitigation strategies, permitting and expert testimony before the EFSB.

### **National Grid / New England East-West Solutions (NEEWS) Project**

Mr. Vieira was responsible for coordinating and implementing ongoing protected species studies and coordinating project review with MA NHESP for a 15.2-mile, 345-kv electric transmission line project in Millbury, Massachusetts, and West Farnum (North Smithfield), Rhode Island. As part of these responsibilities he also participated in preliminary surveys for two MA-protected plant species, papillose

nut-sedge (*Scleria pauciflora*) and tall nut sedge (*Scleria triglomerata*), and completed a habitat assessment for wood turtle (*Glyptemys insculpta*).

### **Noble Environmental Energy / Wethersfield Windpark, 230 kV Transmission Line Project**

Mr. Vieira was responsible for managing and implementing environmental field studies for a 5.5-mile, 230 kV electric transmission line in Wethersfield and Orangeville, New York, for Noble's 84-turbine, 126 MW Windpark. Field studies included identification of project route alternatives, wetland delineation, vernal pool identification, rare species surveys for vernal pool-dependent species such as Jefferson salamander (*Ambystoma jeffersonianum*), and identification and mapping of ROW access roads. Mr. Vieira was also responsible for developing NY Public Service Commission (PSC) application documents for the facility under Article VII of the New York State Public Service Law and USACE section 404 permit process. Mr. Vieira was also responsible for providing expert testimony during the PSC evidentiary hearings and developed a mitigation strategy to offset potential impacts to Jefferson salamander and vernal pool habitat, and developed a long term vegetation management plan and major elements of the Environmental Management and Construction Plan (EM&CP) for the project.

### **DCR / Myles Standish State Forest, Trails and Resource Management Plan and Natural Resource Inventory**

Mr. Vieira was the Project manager for the development of a Trails and Resource Management Plan for Myles Standish State Forest. Responsibilities included research of existing natural resource information to identify information and site data gaps; implementation of field surveys to map vegetation communities, identify vernal pools, and locate rare species and their habitats; development of a zoning map designed to identify and protect sensitive habitats; and development of Trails and Resource Management Plan that also provided recommendations for changes to the existing trail network in the forest.

### **Block Island Airport Master Plan Revision Project**

Mr. Vieira acted as Project Manager assisting the airport engineer in updating the airport master plan and developing the Environmental Assessment for the plan. Responsibilities included identification and assessment of wetlands and natural plant communities, sensitive habitats including globally ranked morainal grasslands, and rare species habitat at the Airport. Rare species of concern at the airport included New England blazing star (*Liatris scariosa* var. *novae-angliae*) and the federally endangered American burying beetle (*Nicrophorus americanus*). Other responsibilities included discussions and consultations with the local environmental groups, attendance of Technical Advisory Committee meetings, and assessment of potential impacts.

### **Nantucket Memorial Airport Improvement Project**

Mr. Vieira was responsible for the coordination and implementation of rare species surveys. Rare species included sandplain flax (*Linum intercursum*), lion's foot (*Nabalus serpentarius*), sandplain blue-eyed grass (*Sisyrinchium fuscatum*), Nantucket shadbush (*Amelanchier nantucketensis*), purple needlegrass (*Aristida purpurascens*), broom crowberry (*Corema conradii*), and bushy rockrose (*Crocanthemum dumosum*). He also developed a vegetation community map for the airport and prepared a Rare Species Conservation Permit Application for rare species impacts potentially caused by proposed airport improvements.

### **Barnstable County Jail and House of Correction**

Mr. Vieira prepared sections in the Draft and Final Environmental Impact Reports for a new County Jail and House of Corrections on the Massachusetts Military Reservation. Rare species of concern included eastern box turtle and several moth species endemic to pine barren communities. As part of the Environmental Impact Reports, Mr. Vieira developed a conservation plan to offset potential impacts to eastern box turtle (*Terrapene carolina*). In support of the Environmental Impact Reports Mr. Vieira conducted on-site field studies to locate eastern box turtle and to characterize site vegetation for potential suitability for rare moth species.

### **Swansea Desalination Project**

Mr. Vieira was responsible for wetland delineation and the development and implementation of a rare plant survey designed to locate the presence of 5 state-protected freshwater tidal plant species. These species included Long's bitter-cress (*Cardamine longii*), river arrowhead (*Sagittaria subulata*), salt reedgrass (*Spartina cynosuroides*), and pygmyweed (*Tillaea aquatica*). Based on a report that Mr. Vieira developed describing rare plant survey results, NHESP determined that the project would not result in a "take" of rare plant species.

### **Williams College**

Mr. Vieira was the Project Manager responsible for designing and implementing rare plant surveys on two sites where Williams College planned construction activities. Rare plants that were searched for and located included hairy-fruited sedge (*Carex trichocarpa*) and crooked-stem aster (*Symphyotrichum prenanthoide*). Mr. Vieira prepared reports describing survey results documenting the location of rare plant species for submission to NHESP.

### **Worcester County Horticultural Society**

Mr. Vieira was the Project Manager for the development of a half-acre wildlife pond at the Tower Hill Botanic Garden. He had many responsibilities, including regulatory reconnaissance, wetland delineation, project feasibility evaluation, and environmental permitting. As part of this project Mr. Vieira completed a survey for adder's-tongue fern (*Ophioglossum pusillum*) and helped to resolve a project conflict caused by inaccuracies in NHESP's Priority Habitat map of the project site.

**Former  
Employment**

BSC, Worcester, MA  
Epsilon Associates, Maynard, MA  
Earth Tech, Concord, MA  
Associated Environmental Scientists, West Springfield, MA  
US Army Corps of Engineers, Water Quality Laboratory, Hubbardston, MA

**Education**

Graduate Studies, Wildlife Biology and Landscape Architecture, University of  
Massachusetts  
BS, Biology, University of Massachusetts, Dartmouth

**Affiliations**

Conservation Commission, Princeton, MA  
Society of Wetland Scientists  
Association of Massachusetts Wetland Scientists (Charter Member)  
New Hampshire Association of Natural Resource Scientists

**Registrations  
and  
Certifications**

New Hampshire Certified Wetland Scientist, NH Joint Board of Licensure and  
Certification, 2000, NHCWS 143  
Professional Wetland Scientist, Society of Wetland Scientists, 1995, PWS 000858  
Certified in Habitat Evaluation Procedures (HEP), U.S. Fish and Wildlife Service, 1984

# Katie Kinsella

Senior Environmental Scientist

## Education

MS, Resource Management  
and Conservation, Antioch  
University New England,  
2016

BS, Environmental Studies,  
Stockton University, 2004

## Registrations/Certifications

Professional Wetland  
Scientist (reg. #2477)

## Affiliations/Memberships

Association of State Wetland  
Managers

New Hampshire Association  
of Natural Resource Scientists

**Katie is a Senior Environmental Scientist working in the Massachusetts Energy Group. She is a professional wetland scientist and has experience with wetlands delineation, mitigation, and permitting; rare, threatened and endangered species habitat evaluations and directed species surveys; and environmental permitting and evaluation on the state and federal level. She is also experienced in GPS and GIS and integrates both into projects for data collection and analysis.**

*14 years of professional experience*

## Employment History

- VHB, Senior Environmental Scientist, 2017-Present
- Sovereign Consulting, Inc, Senior Environmental Scientist/Project Manager, 2013-2017
- T&M Associates, Senior Environmental Scientist / Task Manager, 2010-2013
- Michael Baker Jr. Corp., Environmental Scientist, 2010
- Trident Environmental Consultants, Senior Environmental Scientist/Biologist/Project Manager, 2004-2010

## Grawtown Road Bridge Replacement, Ocean County, New Jersey

As Supervisory Environmental Scientist, Katie identified all environmental constraints and conducted a rare, threatened, and endangered species habitat. She worked with both NJDEP and Pinelands Commission to prepare, submit and receive all required permit authorizations. This work was performed prior to joining VHB. (2016-2017)

## Commercial Development, New Jersey

As Project Manager and Supervisory Environmental Scientist, Katie provided lead and backup support for threatened and endangered species surveys performed on an approximately 1,200-acre site in New Jersey. The project involved coordination with the U.S. Fish and Wildlife Service (USFWS), Pinelands Commission, and New Jersey Endangered and Nongame Species Program. Katie was responsible for preparing and submitting all survey protocols and reports to the applicable agencies, as well as obtaining all necessary scientific collecting permits. In addition, she performed the initial habitat assessment to identify the targeted species and performed subsequent field surveys for various species. This work was performed prior to joining VHB. (2007-2009)

## Habitat Surveys, Commercial Development, Pennsylvania

As Project Manager and Supervisory Environmental Scientist, Katie provided lead and backup support for Indiana bat (*Myotis sodalis*) and bog turtle (*Glyptemys muhlenbergii*) surveys performed on an approximately 280-acre former vacation property in Pennsylvania. The project involved coordination with the U.S. Fish and Wildlife Service (USFWS), Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission. Katie was responsible for preparing and submitting all survey protocols and final survey reports to the applicable agencies, as well as obtaining the necessary scientific collecting permits. In addition, she performed field survey for various species and collected habitat data and detailed inventory lists for the site. This work was performed prior to joining VHB. (2009)



### **Hurricane Irene Emergency Repairs, Union County, NJ**

As Task Manager and Supervisory Environmental Scientist, Katie delineated the extent of freshwater wetlands, riparian corridors, and waterways in an area surrounding a stream where a roadway and bridge had failed due to flooding from Hurricane Irene. The stream had undermined and scoured the roadway, and it had eroded the footings of the bridge causing it to become structurally unsound and lose its bearing capacity. Katie coordinated detailed information with the NJDEP to obtain emergency permit authorizations to allow for the immediate stabilization and repair of the roadway and bridge, which included placing grout beneath the footings to restore load bearing capacity. This prevented further damage and collapse of the roadway and allowed vehicles to utilize the structure. Katie also prepared and submitted follow-up permit applications and planting plans to restore and stabilize the area from future erosion and scouring. This work was performed prior to joining VHB. (2011)

### **Indiana Bat Survey for a Proposed Runway Expansion at a County Airport**

As Environmental Scientist, Katie provided threatened and endangered species support by conducting mist net surveys with areas surrounding a proposed runway expansion and sight line clearing for a county airport. The project was successful in capturing, identifying, and banding an Indiana Bat. This work was performed prior to joining VHB. (2009)

### **Large-Scale Improvements to a County College, New Jersey**

As Task Manager and Supervisory Environmental Scientist, Katie evaluated environmental impacts and regulatory requirements associated with large-scale improvements to a county college in New Jersey. Various permit applications and supplemental documents including a Freshwater Wetlands Individual Permit, Flood Hazard Individual Permit, Functional Value Analysis for Impacts to A Special Water Resource Protection Area Buffer, alternative analysis, and a mitigation proposal were submitted to the NJDEP. This work was performed prior to joining VHB. (2010-2013)

### **Large-Scale Wind Turbine Development, Carbon County, PA**

As Task Manager and Supervisory Environmental Scientist, Katie delineated the extent of freshwater wetlands, riparian corridors, and waterways on an approximately 4,500-acre site in support of a large-scale wind turbine development on a mountain in Pennsylvania. In addition to being the sole delineator, Katie trained interns and junior staff while on site, coordinated with subconsultants for various services, reviewed and provided guidance to design engineers, consulted with regulatory agencies, and prepared permit documentation. This work was performed prior to joining VHB. (2012)

### **Master Service Agreement, Utility Company, MD, DE, PA, VA and NJ**

Katie served as Project Manager and Senior Environmental Scientist in support of a Master Service Agreement for a major utility company throughout New Jersey, Delaware, Maryland, Pennsylvania, and Virginia. Her responsibilities included developing proposals, delineating wetlands, supervising junior staff, coordinating subconsultant work, agency consultation, and submitting and preparing various permit applications to regulatory agencies. This work was performed prior to joining VHB. (2013-2017)

### **New Truck Bypass Construction, Middlesex County, NJ**

As Task Manager and Supervisory Environmental Scientist Katie delineated the extent of freshwater wetlands, riparian corridors, and waterways for a new truck bypass through environmentally sensitive habitat. She worked closely with design engineers and

provided direction and support to ensure that the project remained in compliance with various regulations. Permit applications were prepared and submitted to NJDEP for approval. The truck bypass route was a plan that the municipality had in place since 1981 and had various consultants working on it but failed to obtain approvals due to the complexity of the project and level of environmentally sensitive habitat. The project was approved and will divert heavy traffic from an industrial area onto a major highway to alleviate traffic queuing and safety hazards on local roads. This work was performed prior to joining VHB. (2012-2013)

### **Superstorm Sandy Restoration and Construction Projects**

Prior to joining VHB, as Task Manager and Supervisory Environmental Scientist, Katie led several restoration and emergency construction projects following the coastal destruction in New Jersey that resulted from Superstorm Sandy. (2012-2013) A representative sample includes:

- An evaluation of the beach and dune systems following Superstorm Sandy in a coastal-lying municipality was conducted to identify damage. A borough-wide permit application was submitted to NJDEP to remove debris from the oceanfront, restore the dune system, stabilize the dunes by planting vegetation. Katie also coordinated with the U.S. Fish and Wildlife Service (USFWS) to ensure that the restoration activities would not adversely impact seabeach amaranth (*Amaranthus pumilus*).
- Katie coordinated with the design engineers and NJDEP to facilitate reconstruction of the Point Pleasant Boardwalk.
- Katie prepared various permit applications for several roadways, bulkhead, and pump stations that were destroyed during Superstorm Sandy.
- Katie coordinated all efforts to identify temporary debris management areas for several municipalities in Ocean and Monmouth Counties to secure NJDEP Solid Waste Permits. Permitting efforts included identifying suitable sites outside of environmentally sensitive areas; coordinating with local sheriff offices, municipal officials, engineers, and offices of emergency management; preparation of site mapping; determination of storage capacities; and closing out sites with state and local government agencies.
- Katie coordinated all emergency permitting with NJDEP, U.S. Army Corps of Engineers, National Marine Fisheries Service, and U.S. Fish and Wildlife Service to expedite the complete reconstruction of the Atlantic Highlands Municipal marina. She also coordinated with the design engineers to expedite preparation of construction plans while minimizing environmental impacts and maintaining regulatory compliance.
- Katie prepared several Superstorm Sandy inventory submissions for various municipalities throughout Ocean and Monmouth Counties in accordance with the Administrative Order released by Governor Christie. The Administrative Order allowed government agencies to submit a detailed inventory for in-kind replacement of damaged infrastructure to expedite the approval process and obtain FEMA funding. Katie coordinated with municipalities and NJDEP to submit and expedite the approval process.

**Threatened and Endangered Species Surveys for Federally and State Protected Species at a Former Vacation Resort – Resort/Commercial Development, Monroe County, PA**

As Environmental Scientist, Katie provided lead and backup support for threatened and endangered species surveys, including the bog turtle (*Glyptemys muhlenbergii*) and Indiana bat (*Myotis sodalis*) throughout an approximately 280-acre former vacation resort. The project involved coordination with the U.S. Fish and Wildlife Service (USFWS), Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission. Katie was responsible for preparing and submitting all survey protocols and final survey reports to the applicable agencies, as well as obtaining the necessary scientific collecting permits. In addition, she performed field survey for various species and collected habitat data and detailed inventory lists for the site. This work was performed prior to joining VHB. (2008)

**Wetland Delineation, Coordination of Permitting Compliance and Submission of Applications for a Large-Scale Solar Array Development**

Katie delineated an approximately 700-acre site for a solar array facility. She identified all environmental constraints and provided consultation support to the design engineers to avoid or minimize environmental impacts. She also prepared and submitted various permit applications to the NJDEP. In addition, Katie coordinated efforts for a Threatened and Endangered Species Habitat Suitability Assessment for various species throughout the project limits. This work was performed prior to joining VHB. (2010-2011)

**Professional Development Activities**

Wetland Delineation and Jurisdiction in Agricultural Settings, NH Association of Natural Resource Scientists, 2016

Evaluating Wetland Condition Using the Ecological Integrity Assessment Method, NH Natural Heritage Bureau, 2015

Pinelands Short Courses, Pinelands Preservation Alliance, 2015

Bog Turtle Phase I Habitat Assessment Training, Pennsylvania Department of Transportation, 2014

Hydrology of Wetlands, Rutgers Continuing Education Program, 2012

NEPA and Transportation Decision-Making, National Highway Institute, 2012

Regional Supplement Training–Atlantic and Gulf Coastal Plain, U.S. Army Corps of Engineers, 2010

Advanced Wetlands Delineation, Rutgers Continuing Education Program, 2006

Threatened/Endangered Plants of the New Jersey Pineland, Pinelands Preservation Alliance, 2005

## **Attachment D – Wildlife Habitat Evaluation Tables**

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## Food Availability

Habitat Impact Area	Wetland / Aquatic Food	Upland / Wetland Food	Earthworm Habitat
1	A	P	A
2	A	P	A
3	A	P	A
4	A	P	A
5	A	P	A
6	A	P	A
7	A	P	A
8	A	P	A
9	A	P	A
10	A	P	A
11	A	P	A
12	A	P	A
13	A	P	A
14	A	P	A
15	A	P	A
16	A	P	A
17	A	P	A
18	A	P	A
19	A	P	A
20	A	P	A
21	A	P	A

### Legend:

A = Absent

P = Present

Nests, Perches, Basking, Cover, and Foraging

Habitat Impact Area	Veery Nesting Habitat	Number of Dead/Live Trees Over 30" DBH	Number/ Density of Standing Dead Trees				Number of tree cavities in trunks of limbs			Small Mammal Burrows	Dense Herbaceous Cover	Large Woody Debris on the Ground	Rocks Crevaces Logs Roots and/or Hummocks Under Water	Rocks Crevaces Logs Roots and/or Hummocks 1m Above Water	Rock Piles, Crevaces, Hollow Logs as Dens for*						Live/Dead Standing Vegetation Overhanging Water	Depression with Potential to be Vernal Pools*	Standing Water During Part of Growing Season for Breeding Amphibians	Standing Water During Part of Growing Season for Non-Breeding Amphibian	Standing Water During Part of Growing Season for Turtles	Standing Water During Part of Growing Season for Foraging Waterfowl	Sphagnum Hummocks/Mats and/or Moss Covered Logs Overhanging/Adjacent to Standing Water
			6-12" dbh	12-18" dbh	18-24" dbh	>24" dbh	6-12" dbh	12-18" dbh	>18" dbh						Otter	Mink	Porcupine	Bear	Bobcat	Turkey Vulture							
1	A	0	0	0	0	0	0	0	0	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
2	A	0	0	0	0	0	0	0	0	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
3	A	0	1	0	0	0	0	0	0	A	A	P	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
4	A	0	0	0	0	0	0	0	0	A	A	P	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
5	A	0	8	2	0	0	1	0	0	A	A	P	A	P	A	A	A	A	A	A	P	A	A	A	A	A	A
6	A	0	2	0	0	0	0	0	0	A	A	P	A	P	A	A	A	A	A	A	P	A	A	A	A	A	A
7	A	0	7	0	0	0	0	0	0	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
8	A	0	4	0	0	0	1	0	0	P	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
9	A	0	3	0	0	0	0	0	0	P	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	A	0	2	0	0	0	1	0	0	P	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	A	0	1	0	0	0	0	0	0	A	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12	A	0	0	0	0	0	0	0	0	P	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
13	A	0	0	0	0	0	0	0	0	P	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
14	A	0	0	1	0	0	0	0	0	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
15	A	0	9	4	0	0	0	0	0	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
16	A	0	8	2	0	0	16	0	0	A	A	P	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
17	A	0	6	0	0	0	8	0	0	A	A	A	A	P	A	A	A	A	A	A	P	A	P	P	P	P	A
18	A	0	1	0	0	0	0	0	0	A	P	A	A	P	A	A	A	A	A	A	P	A	P	P	P	P	A
19	A	0	12	1	0	0	8	0	0	A	A	P	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
20	A	0	4	0	0	0	0	0	0	A	P	P	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
21	A	0	0	0	0	0	0	0	0	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

Legend:

A = Absent

P = Present

## Important Habitat Characteristics Associated with Streams

Habitat Impact Area	Medium/Large flat rocks within stream	Flat rocks and logs on Bank or within exposed portion of streambed	Fine Silt/Clay Under Water Banks	Undercut or Overhanging Banks	Vertical Sandy Banks	Areas of Ice-free Water in Winter	Mudflats	Exposed Areas of Well-Drained Soils
1	A	A	A	A	A	A	A	A
2	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	A
5	A	A	A	A	A	A	A	P
6	A	A	A	A	A	A	A	A
7	A	A	A	A	A	A	A	A
8	A	A	A	A	A	A	A	A
9	A	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A
13	A	A	A	A	A	A	A	A
14	A	A	A	A	A	A	A	A
15	A	A	A	A	A	A	A	A
16	A	A	A	A	A	A	A	A
17	A	A	A	A	A	A	A	A
18	A	A	A	A	A	A	A	A
19	A	A	A	A	A	A	A	A
20	A	A	A	A	A	A	A	A
21	A	A	A	A	A	A	A	A

### Legend:

A = Absent

P = Present

## Wildlife Dens and Nests

Habitat Impact Area	Turtle Nesting Sites	Bank Swallow Colony*	Nests Within Impact Area			Dens Within Impact Area			Project Area is within 100 feet of Beaver, Mink, Otter Dens, Bank Swallow Colony, or Turtle Nesting Site	Project Area is within 200 feet of a Great Blue Heron or Osprey Nests	Project Area is within 1,400 feet of Bald Eagle Nest
			Bald Eagle	Osprey	Great Blue Heron	Otter	Mink	Beaver			
1	A	A	A	A	A	A	A	A	A	A	A
2	A	A	A	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	A	A	A	A
5	A	A	A	A	A	A	A	A	A	A	A
6	A	A	A	A	A	A	A	A	A	A	A
7	A	A	A	A	A	A	A	A	A	A	A
8	A	A	A	A	A	A	A	A	A	A	A
9	A	A	A	A	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A	A	A	A
13	A	A	A	A	A	A	A	A	A	A	A
14	A	A	A	A	A	A	A	A	A	A	A
15	A	A	A	A	A	A	A	A	A	A	A
16	A	A	A	A	A	A	A	A	A	A	A
17	A	A	A	A	A	A	A	A	A	A	A
18	A	A	A	A	A	A	A	A	A	A	A
19	A	A	A	A	A	A	A	A	A	A	A
20	A	A	A	A	A	A	A	A	A	A	A
21	A	A	A	A	A	A	A	A	A	A	A

### Legend:

A = Absent

P = Present

## Emergent Wetlands

Habitat Impact Area	Seasonally Flooded During Growing Season		Persistent Emergent Vegetation Seasonally Flooded During Growing Season		Cattail Emergent Wetland Seasonally Flooded During Growing Season		Fine-leaved Emergent Wetland Vegetation Seasonally Flooded During Growing Season	
	5cm	25cm	5cm	25cm	5cm	25cm	5cm	25cm
1	A	A	A	A	A	A	A	A
2	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	A
5	A	A	A	A	A	A	A	A
6	A	A	A	A	A	A	A	A
7	A	A	A	A	A	A	A	A
8	A	A	A	A	A	A	A	A
9	A	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A
13	A	A	A	A	A	A	A	A
14	A	A	A	A	A	A	A	A
15	A	A	A	A	A	A	A	A
16	A	A	A	A	A	A	A	A
17	A	A	A	A	A	A	A	A
18	A	A	A	A	A	A	A	A
19	A	A	A	A	A	A	A	A
20	A	A	A	A	A	A	A	A
21	A	A	A	A	A	A	A	A

### Legend:

A = Absent

P = Present



## Landscape Context and Habitat Continuity

Habitat Impact Area	Portion of Impact Area Emergent Marsh				Portion of Impact Area Part of Wetland Complex				Portion of Impact Area Part of Contiguous Forest				Includes Grassland Habitat > 1 acre	Special Habitat
	1.0 acre	2.0 acres	5.0 acres	10.0 acres	2.5 acres	5.0 acres	10.0 acres	25.0 acres	50 acres	100 acres	250 acres	500 acres		
1	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
2	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
3	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
6	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7	N	N	N	N	N	N	N	N	N	N	N	N	N	N
8	N	N	N	N	N	N	N	N	N	N	N	N	N	N
9	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N
17	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N
18	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N
19	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20	N	N	N	N	N	N	N	N	N	N	N	N	N	N
21	N	N	N	N	N	N	N	N	N	N	N	N	N	N

**Legend:**

Y = Yes

N = No

## Connectivity with Adjacent Habitats

Habitat Impact Area	Little Connectivity Function to Adjacent Habitat	Limited Connectivity to Adjacent Habitat	Somewhat Important for Connectivity to Adjacent Habitat	Important for Connectivity to Adjacent Habitat	Very Important for Connectivity
1	N	Y	N	N	N
2	N	Y	N	N	N
3	N	Y	N	N	N
4	N	Y	N	N	N
5	N	Y	N	N	N
6	N	Y	N	N	N
7	N	Y	N	N	N
8	N	Y	N	N	N
9	N	Y	N	N	N
10	N	Y	N	N	N
11	N	Y	N	N	N
12	N	Y	N	N	N
13	N	Y	N	N	N
14	N	Y	N	N	N
15	Y	N	N	N	N
16	N	Y	N	N	N
17	N	Y	N	N	N
18	N	Y	N	N	N
19	N	Y	N	N	N
20	N	Y	N	N	N
21	N	Y	N	N	N

### Legend:

Y = Yes

N = No

## Habitat Degredation

Habitat Impact Area	Significant Chemical Contamination	Significant Dumping	Significant Erosion / Sedimentation	Significant Invasives	Highway / Road Disturb.	Only Resource Area In Vacinity	Other Human Disturbance
1	A	A	A	A	A	A	P
2	A	A	A	A	A	A	P
3	A	A	A	A	A	A	P
4	A	A	A	P	A	A	P
5	A	A	A	P	A	A	P
6	A	A	A	P	A	A	P
7	A	A	A	A	P	A	P
8	A	P	A	P	A	A	P
9	A	P	A	P	P	A	P
10	A	P	A	P	P	A	P
11	A	A	A	P	P	A	P
12	A	A	A	P	P	A	P
13	A	A	A	P	P	A	P
14	A	A	A	P	P	A	P
15	A	P	A	P	P	P	P
16	A	A	A	P	P	A	P
17	A	A	A	P	A	A	P
18	A	A	A	P	A	A	P
19	A	A	A	P	A	A	A
20	A	A	A	P	P	A	P
21	A	A	A	P	A	A	P

### Legend:

A = Absent

P = Present