7.0 Wildlife and Fisheries

7.1 Project and Site Description

Three Rivers Solar Power, LLC is proposing to construct the project, an approximately 465-acre solar panel installation with associated substation in T16MD, Maine, an unorganized township located between Deblois and Eastbrook in Hancock County, Maine. A Site Location Map and project Plans are included in Section 1 – Development Description.

The project is within an approximately 1,115-acre area of land (area of Title, Right and/or Interest or "TRI Area") within which approximately 696-acres were re-zoned for solar development (D-CI) in 2018 by the Maine Land Use Planning Commission (LUPC). The TRI Area is located west of the West Branch of the Narraguagus River, north and east of Colson Branch, and south of Mahanon Brook. An Emera owned utility corridor runs roughly northwest/southeast through the southern end of the TRI Area. The TRI Area is mainly accessed by seasonal gravel roads from Eastbrook and Deblois.

The TRI Area is a mixture of forestland and agricultural field with several intersecting gravel agricultural and forestry access roads. The TRI area contains several topographic "hills" that are dominated by well and moderately well drained glacial till and glacial outwash sediments (NRCS mapping). The topographically lower areas are dominated by somewhat poorly to poorly drained glacial till and glacio-marine/lacustrine sediments (NRCS mapping). In the lowest topographical areas and drainages, intermittent streams flow out from larger wetlands located between the "hills", and eventually flow west, south or east to one of the larger bordering perennial streams/rivers.

The six proposed development areas are mostly located on the "hills" within the larger TRI Area and total approximately 465 acres. These six areas are labeled on the plans as Areas #1 through #6. The proposed development areas are in various states of conversion to agricultural land, for blueberry production, with Areas #1, #2 and #3 being largely completed, and Areas #4, #5, and #6 having been heavily logged.

For detailed information regarding proposed impacts to Protected Natural Resources, refer to the Maine Department of Environmental Protection Natural Resources Protection Act Individual Permit Application, submitted concurrently with this Site Law Application.

Please note that the Protected Natural Resources Report by Atlantic Resource Co, LLC, also included in Section 7 indicates that the project development area is 520-acres. This is the area that was assessed during those services, but which was subsequently revised to 465-acres during the design phase to avoid wetlands.

7.2 Resource and Wildlife Assessments

7.2.1 Protected Natural Resource Identification and Delineation

Atlantic Resource Co, LLC (ARC) conducted Protected Natural Resources identification and delineation services for the proposed project, as reported in their Protected Natural Resources Report dated August 26, 2019 (Exhibit 7-2). The purpose of the services was to:

1. Conduct a desktop review and mapping of Protected Natural Resources within the approximately 1,115-acre TRI Area;
2. Conduct identification and delineation of Protected Natural Resources in the approximately 520-acre (then) proposed development areas; and
3. Conduct a vernal pool documentation within approximately 250-feet of the proposed development areas (~260-acres). During this reconnaissance, conduct ground-truthing of Protected Natural Resources identified within 250 feet of proposed development areas during the desktop review.

This Methodology for identification and delineation of Protected Natural Resources was generally agreed to by Maria Eggett, MDEP Environmental Specialist and project manager for this project in e-mails and verbal correspondence in November of 2018, prior to commencement of services.

During the fieldwork portion of services, ARC also delineated wetlands that contain greater than 20,000 square feet of open water or emergent marsh vegetation that were within 250 feet of proposed development areas, to assist in future permitting efforts.
ARC delineated sixty-five wetlands within the proposed development areas; fifteen vernal pools (VP's), six of which were in the proposed development areas and nine within 250 feet of the proposed development areas; one Significant Vernal Pool (SVP), which was located in the southeastern portion of Area #1; and six streams within 250 feet of the proposed development areas, three of which were within 100 feet of the proposed development areas.

The observed wetlands on the site were forested, scrub-shrub (in logged areas) and emergent (in converted agricultural field that was forested prior to the conversion). The wetlands that contained the Significant Vernal Pool (regulated as Significant Wildlife Habitat), or contained a freshwater wetland with greater than 20,000 square feet of emergent marsh vegetation or open water, were classified as MDEP "Wetlands of Special Significance". The wetlands on the remainder of the site were classified as "Wetlands Not of Special Significance".

7.2.2 Resource Agency Correspondence

According to an IF&W response letter and map (Exhibit 7-1), dated January 08, 2019, there are eight species of bats that occur in Maine, three of which are protected under the Maine Endangered Species Act and five of which are listed as being of Special Concern in Maine. The IF&W response letter states that, "*While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.*" The US FWS was not contacted due to the project not requiring federal (U.S. Army Corps of Engineers) permits and there being no trees observed with greater than 3-inch DBH in the project areas, which is the generally accepted tree size above which bats may use the trees for habitat.

Also according to the IF&W response letter, "*upland sandpipers, a State Threatened species, have been documented in the barrens in the Downeast Coastal Plains region as well as within the project search area. Upland sandpipers are protected under Maine's Endangered Species Act* (and) *given the location, size, and amount of cleared area upland sandpipers may be utilizing the project area for breeding purposes. Therefore, to protect against unintended Take of breeding upland sandpipers (including territorial, incubating, low mobility fledgling birds, and eggs), MDIFW recommends a construction window of September 1 – May 1.*" An Upland Sandpiper survey was conducted by the Biodiversity Research Institute (BRI) in the summer of 2019, as reported in "A Survey of Upland Sandpipers at the Three Rivers Solar Project proposed in T16 MD BPP" (BRI Rep. No. 2019-14) dated July 31, 2019 (Information regarding Upland Sandpipers are discussed in further detail below in Section 7.2.3).

In the response letter, IF&W recommended that a 100-foot undisturbed buffer be maintained along streams, and recommends that stream crossings be avoided, if possible. There are no stream crossings or development activity proposed within 100 feet of identified streams.

According to a response letter from the Maine Natural Areas Program (MNAP), there are no rare botanical features documented specifically within the project area. Two "Rare and Exemplary Botanical Features" are documented within 4 miles of the TRI Area: Canada Mountain-Ricegrass and Domed Bog. A Rare, Threatened and Endangered Survey for botanical species was conducted by ARC and Weber Ecological Services, as reported in the "Rare, Threatened, and Endangered Plant Survey at the Three Rivers Solar Project Site, T16 MD", dated September 22, 2019 (Section 9, Exhibit 9-2).

According to the report, "*Canada Mountain Rice Grass is ranked S2 (imperiled because of rarity: 6–20 occurrences or few remaining individuals or acres or because of other factors making it vulnerable to further decline) and is listed as a Special Concern species (rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered; Maine Natural Areas Program 2013). Maine supports 8 documented Canada Mountain Rice Grass populations, excluding the occurrence at the Three Rivers Solar site. The MNAP fact sheet for this species says that the reasons for the rarity of this species are, "unclear; some locations are located in blueberry barrens which are historically not popular botanizing sites", suggesting that the species might be more common than we know because there is abundant habitat in Maine, but most of it has not been surveyed. Indeed, what appears to be an aggressive disturbance regime has resulted in the largest population of Canada Mountain Rice Grass that we have seen. The proposed solar panel installation would provide a higher likelihood of habitat maintenance and Canada Mountain Rice Grass survival than blueberry production or reforestation. In the current project design, panel rows are separated by at least 12 feet, which will allow some patches of the grass to remain undisturbed and still receive full sun following installation. There will be no ground disturbance during the solar panel installation, except placement of support posts and burying of electrical lines between the panels. The management plan for areas underneath and between the panels includes mowing, and/or continued glyphosate treatments to taller woody vegetation, which maintains the current management regime, thus, conserving Canada Mountain Rice Grass. The panels will be of sufficient height and angle that there will be some light penetration to ground level. Recent research shows that many species grow successfully under solar panels and that the presence of native vegetation can benefit native organisms and even adjacent habitats (Jossi 2018, NPR 2019). It is likely that Canada Mountain Rice Grass will persist under installed panels if a similar management regime is maintained, as is planned under the current design scenario.*"

Don Cameron, Ecologist/Botanist at the MNAP, was contacted with preliminary RTE assessment findings at the Three Rivers Solar site and is aware that the final report will be included in the Site Law Application's submission to the MDEP. Initial discussions with MNAP indicated the species may be more common in the Downeast region than previously thought. The proposed solar project would have a higher likelihood of retaining suitable habitat for the species than under commercial agriculture due primarily to the grass specific herbicides used in blueberry production.

The US FWS database, accessed August 20, 2019, indicates that two federally-listed species "*should be considered as part of an effect analysis for this project*"; the Endangered Atlantic Salmon and the Threatened Northern Long-eared Bat. Additionally, the site is within Critical Habitat of the Atlantic salmon. Since the project will not require a federal permit or use federal funding, there will not be federal review of this project. However, generally, Atlantic salmon are a concern if streams or near-stream areas are to be disturbed. There are no anticipated impacts to streams due to the project. Also, generally, bats are a concern if the site is near a known hibernacula or brooding tree, or if trees (>3-inch DBH) will be cut between about April 1 to October 15. There are no anticipated impacts to bats or bat habitat on this site.

7.2.3 Upland Sandpiper Study and Correspondence

A. Site History - The approximately 465-acre project site is part of a larger property that was purchased by the current landowner, Duane Jordan, in 2013. At that time, Mr. Jordan began the process of converting the proposed development area (the "site") to agricultural land for blueberry production. This conversion began with logging between about 2013 and 2016, and then stumping, grubbing, grading and large boulder removal from about 2016 to present, starting in the northernmost portion of the site and progressing south. At present, the conversion is not complete and the site is in different stages of conversion, from completed (northernmost portions) to only logged (southernmost portions). In approximately 2016 (i.e., 3 years after clearing began), the landowner began observing Upland Sandpipers in the northernmost portion of the site, which is the area that was converted to agricultural land first.

B. Timeline of Discussions Regarding Upland Sandpiper at Three Rivers Solar Project

January 07, 2019 – Meeting at MDEP in Bangor - Maria Eggett of MDEP related that John Perry of IF&W would be the lead IF&W biologist on this project. John related to Maria that IF&W is concerned about upland sandpiper habitat within the proposed development area, and will likely require construction timing restrictions, but will likely not require an avian study.

January 08, 2019 – IF&W T&E Species/Habitats response letter - "*Upland sandpipers, a State Threatened species, have been documented in the barrens in the Downeast Coastal Plains region as well as within the project search area. Upland sandpipers are protected under Maine's Endangered Species Act and, as such, are afforded special protection against activities that may cause "Take" (kill or cause death), "harassment" (create injury or significantly disrupt normal behavior patterns), and other adverse actions.*

Upland sandpipers nest only on the ground and use both native and cultivated vegetation for nesting sites. Given the location, size, and amount of cleared area upland sandpipers may be utilizing the project area for breeding purposes. Therefore, to protect against unintended Take of breeding upland sandpipers (including territorial, incubating, low mobility fledgling birds, and eggs), MDIFW recommends a construction window of September

1 – May 1. MDIFW is willing to work closely with the applicant to design a project that attempts to limit potential impacts to this listed species."

January 08, 2019 – E-mail from John Perry, "*Regarding State Threatened upland sandpipers – given the likely presence of the species in the project search area we are recommending a construction timing window to prevent Take of a listed species, which we have utilized at other projects. Assuming this window can be adhered to, we do not anticipate significant impacts to the species.*"

February 11, 2019 – Pre-Application Meeting at MDEP in Bangor (M. Eggett, B. Stratton (IF&W), J. Perry in attendance). IF&W feels that the agricultural conversion was conducted recently enough that the site is not a "traditional habitat", therefore, they are not considering the project as a "take" of this species habitat. However, they are concerned about construction activities potentially disrupting breeding and nesting and so are recommending a construction season of September 1 to May 1. Discussion included using "spotters" for daily monitoring during construction. It was discussed that the key is to keep the sandpipers from nesting on the site. IF&W does not feel the sandpipers will nest under panels post-construction.

As a result of this correspondence, Mr. Jordan's observations of Upland Sandpipers on the site, and Three Rivers Solar's determination that the construction timing windows could not be adhered to, Three Rivers Solar contracted biologists from Biodiversity Research Institute (BRI) to conduct a survey for Upland Sandpipers on the site. That survey confirmed that Upland Sandpipers were present on the property and that at least one pair had successfully hatched young (DeSorbo et al. 2019, Exhibit 7-3). Surveyors determined that Upland Sandpipers were detected throughout Area #1, the northern 1/3 of this area was notably less suitable for territory establishment or breeding due to the short and scarce vegetation than the less developed southern 2/3 of this area where the bulk of sandpiper activity occurred.

On September 16, 2019, representatives from Three Rivers Solar and BRI met with IF&W and MDEP to present and discuss the findings of the BRI survey. In this meeting IF&W indicated that activities meant to keep the sandpipers from nesting would be considered "harassment" and recommended mitigation for "take" of the species/habitat. Several potential options for avoidance and minimization of impacts to Upland Sandpipers using the site were discussed, as well as potential mitigation strategies, if required.

On October 9, 2019, Three River Solar conducted its pre-submission meeting with the MDEP, at which IF&W representatives were present. At that meeting, IF&W stated that IF&W did not view the proposed project as a loss of Upland Sandpiper habitat because the site had been cleared so recently. IF&W stated that it was concerned about the risk of take and harassment of Upland Sandpiper during project construction.

Based on IF&W comments, Three Rivers Solar has requested that BRI develop a construction and operation protocol that will sufficiently minimize the risk of take or harassment to Upland Sandpipers during project construction. That protocol will be submitted to MDEP for review shortly.

7.3 Protected Natural Resource Impacts

7.3.1 Direct Impacts: Significant Wildlife Habitat

Solar panels will be installed on approximately 51% of the upland area within a Significant Vernal Pool Habitat documented within Area #1, requiring a MDEP NRPA Individual Permit (submitted concurrently with this Site Law Application).

There are no proposed impacts to the Significant Vernal Pool envelope. The Significant Vernal Pool Habitat (the pool and the area within a 250' radius of the pool) has approximately 14,770 sq. ft. (~4%) of existing alteration from roads. The proposed development is approximately 179,141 sq. ft. (51%) of uplands within the Habitat area, of which approximately 48.5 sq. ft. is direct upland alteration for support posts. The total of existing and proposed alteration to the Significant Vernal Pool Habitat is 193,911 sq. ft. (~55% of 250' radius).

Direct impacts to the Significant Vernal Pool Habitat are for the support posts. Indirect impacts include shading by the solar panels; however, there will be approximately 20' between the panel rows, allowing direct sunlight to the ground. Additional indirect impacts include vegetation height maintenance; the area under the panels will be mowed to approximately 1 foot in height on a yearly or bi-yearly bases.

Since most of the impact to the habitat is indirect (shading – which the habitat area was prior to the agricultural conversion activity), the activity does not preclude the vernal pool species from moving through or using the area underneath the panels. The solar installation may cause less impact to the vernal pool habitat than use of the area for commercial agriculture.

Compensation for this anticipated loss of Significant Vernal Pool Habitat is payment into the Maine In-Lieu Fee Compensation Program of $40,721.31, as detailed in the Compensation Report in the NRPA permit application. As per MDEP guidelines, a wetland functional assessment is not required for this activity.

7.3.2 Indirect Impacts: Vegetation Height Management - The proposed project will have no direct wetland impacts. Solar panels will be installed up to the edge of delineated wetlands, but not in, on or over the wetlands. However, vegetation in wetlands that are within the proposed solar array areas will be managed for height so as not to shade the solar panels and to allow for continued panel and component maintenance below the panels.

The proposed development areas that are not already cleared of scrub-shrub woody vegetation will be cleared prior to solar panel installation. After panel installation, vegetation height under the panels, in wetlands and in uplands, will be mowed to approximately 1 foot in height on a yearly or bi-yearly basis.

This Application is for 232,865 sq.ft. (5.35 acre) of indirect wetland impact as vegetation maintenance, requiring a MDEP NRPA Tier 3 Permit. The vegetation maintenance will occur in existing scrub-shrub (PSS1E) wetlands and emergent, persistent (PEM1E) wetlands that were formerly forested (PFO) prior to logging and agricultural field conversion. The wetland vegetation maintenance will occur in MDEP classified "Wetlands Not of Special Significance". As per MDEP guidelines, neither a wetland functional assessment or compensation are required for vegetation maintenance in wetlands.

Exhibit 7-1

Three Rivers Solar Wildlife & Fisheries Agency Correspondence

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
ACTING COMMISSIONER

January 8, 2019

Aleita Burman
Burman Land & Tree Company, LLC
P.O. Box 145
Orrington, ME 04474

RE: Information Request - Three Rivers Solar Project, T16 MD BPP

Dear Lee:

Per your request received December 10, 2018, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Three Rivers Solar Project* in T16 MD BPP. Note that as project details are lacking our comments are non-specific and should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Upland sandpiper

Upland sandpipers, a State Threatened species, have been documented in the barrens in the Downeast Coastal Plains region as well as within the project search area. Upland sandpipers are protected under Maine's Endangered Species Act and, as such, are afforded special protection against activities that may cause "Take" (kill or cause death), "harassment" (create injury or significantly disrupt normal behavior patterns), and other adverse actions.

Upland sandpipers nest only on the ground and use both native and cultivated vegetation for nesting sites. Given the location, size, and amount of cleared area upland sandpipers may be utilizing the project area for breeding purposes. Therefore, to protect against unintended Take of breeding upland sandpipers (including territorial, incubating, low mobility fledgling birds, and eggs), MDIFW recommends a construction window of September 1 – May 1. MDIFW is willing to work closely with the applicant to design a project that attempts to limit potential impacts to this listed species.

Significant Wildlife Habitat

Significant Vernal Pools

At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

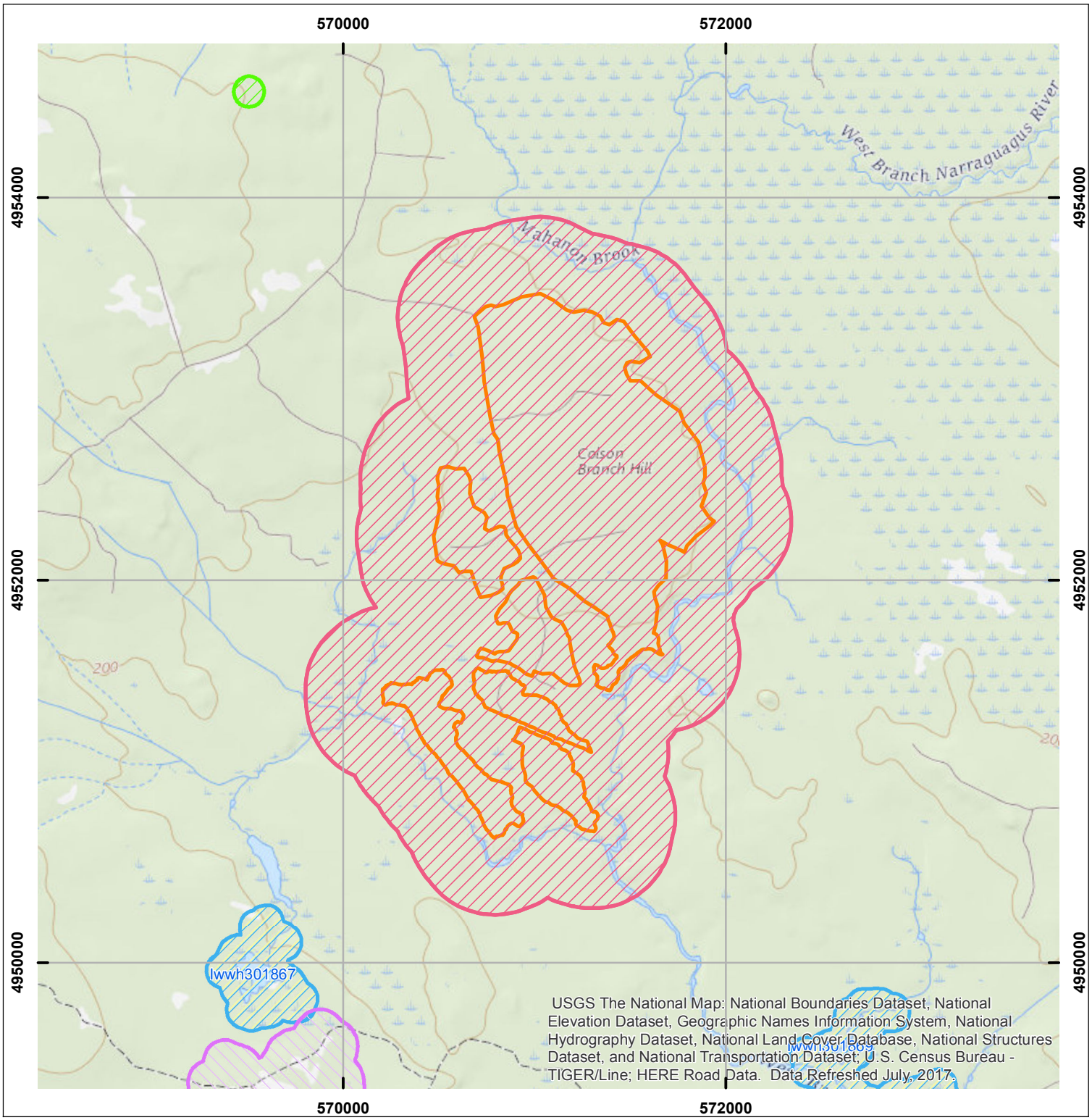
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may

occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

John Perry
Environmental Review Coordinator



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Township 16, Three Rivers Solar Project (Version 3)

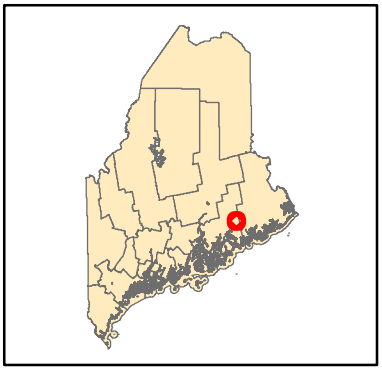
Maine Department of Inland Fisheries and Wildlife

0 0.15 0.3 0.6 0.9 1.2 Miles

Projection: UTM, NAD83, Zone 19N

Date: 12/15/2018

- ProjectPolys
- ProjectSearchAreas
- Inland Waterfowl/Wading Bird
- Significant Vernal Pools
- ETSc Environmental Review Polygons



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2019-SLI-0321
Event Code: 05E1ME00-2019-E-00608
Project Name: Three Rivers Solar

January 30, 2019

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

To Whom It May Concern:

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

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

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

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

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

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

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

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2019-SLI-0321

Event Code: 05E1ME00-2019-E-00608

Project Name: Three Rivers Solar

Project Type: POWER GENERATION

Project Description: The project is construction of a large scale solar array and substation, on about 550-acres of land.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.71936942574213N68.10210421473107W

Counties: Hancock, ME

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Atlantic Salmon *Salmo salar* Population: Gulf of Maine DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2097	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Atlantic Salmon *Salmo salar* https://ecos.fws.gov/ecp/species/2097#crithab	Final

Exhibit 7-2

Three Rivers Solar Protected Natural Resources Report

Protected Natural Resources Report

Three Rivers Solar Project

T16MD, Maine

August 26, 2019

Prepared For:

Three Rivers Solar Power, LLC
89 Main Street
Yarmouth, ME 04096

Prepared By:

Atlantic Resource Co, LLC
P.O. Box 76
Bass Harbor, ME 04653

ARC #B18-006

Table of Contents

Atlantic Resource Co, LLC

August 26, 2019

1.0 INTRODUCTION

This Report presents the findings of Protected Natural Resources services for the proposed Three Rivers Solar Power, LLC project in T16MD, Maine. The purpose of the services was to:

1. Conduct a desktop review and mapping of Protected Natural Resources within the approximately 1,115-acre area of Title, Right and/or Interest ("TRI Area");
2. Conduct identification and delineation of Protected Natural Resources in the approximately 520-acre proposed development areas; and
3. Conduct a vernal pool documentation within approximately 250-feet of the proposed development areas (~260-acres). During this reconnaissance, conduct ground-truthing of Protected Natural Resources identified within 250 feet of proposed development areas during the desktop review.

This Report supercedes Atlantic Resource Co, LLC's January 31, 2019 Protected Natural Resources Report, and includes additional data taken in the spring of 2019 "growing season" such as vernal pool documentation, wetland delineation verification, Corps Wetland Data Forms, and wetland photographs.

This Report is subject to the Limitations attached in Appendix A. Appendix B contains a Site Location Map and Protected Natural Resource Plans. Appendix C contains data spreadsheets for wetlands, vernal pools, and streams. Appendix D contains color photographs of delineated wetlands and streams. Appendix E contains U.S. Corps of Engineers Wetland Data Forms for representative delineated wetlands. Appendix F contains Maine State Vernal Pool Assessment Forms and attachments. Appendix G contains resource agency responses and database searches.

2.0 SITE LOCATION AND DESCRIPTION

The approximately 1,115-acre "TRI Area" is located in T16MD, which is an unorganized township located between Deblois and Eastbrook in Hancock County, Maine. A Site Location Map is included as Sheet B-1. The TRI Area is located west of the West Branch of the Narraguagus River, north and east of Colson Branch, and south of Mahanon Brook; in the Narraguagus River watershed. The Hydrologic Unit Code (HUC 10) for the site is 0105000210, which is New

England Region, Maine Coastal Subregion, Maine Coastal Accounting Unit, Maine Coastal, Maine Cataloguing Unit, Narraguagus River – Frontal Atlantic Ocean. The TRI area is mainly accessed by seasonal gravel roads from Eastbrook, Deblois and Route 9.

The TRI Area is undeveloped land containing a mixture of forestland and agricultural field with several intersecting gravel agricultural and forestry access roads. Most of the forestland appears to have been harvested within the past 10 years, however, some harvests appear older than that. The area contains several topographic "hills" that are dominated by well and moderately well drained glacial till and glacial outwash sediments (NRCS mapping). The topographically lower areas are dominated by somewhat poorly to poorly drained glacial till and glacio-marine/lacustrine sediments (NRCS mapping). Surface stones and boulders are common throughout. In the lowest topographical areas and drainages, intermittent streams flow out from larger wetlands located between the "hills", and eventually flow west, south or east to one of the larger bordering perennial streams/rivers. TRI Area slopes range from about 0 to 40 percent.

The six proposed development areas are mostly located on the "hills" within the larger TRI Area and total approximately 520 acres. These six areas are labeled on the plans (in Appendix B) as Areas #1 through #6. The proposed development areas are in various states of conversion to agricultural land, for blueberry production, with Areas #1, #2 and #3 being largely completed.

3.0 PROTECTED NATURAL RESOURCES SERVICES

3.1 Desktop Mapping Within TRI Area

Atlantic Resource Co, LLC (ARC) conducted a desktop review and mapping of Protected Natural Resources within the TRI Area. The results of this mapping are presented on the Overview Map included as Sheet B-2.

This effort included review of publicly available data sources such as USGS topographic mapping, USGS National Hydrography Dataset, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), Natural Resources Conservation Service (NRCS) soil survey, FEMA Flood Maps, State of Maine Office of GIS (MEGIS) data, and recent and historic aerial photography.

The NWI maps forested, scrub-shrub and emergent wetlands along the three streams/rivers that border and within the TRI Area. The NWI maps the West Branch Narraguagus River and Colson Branch as streams/rivers.

The U.S.D.A. Natural Resources Conservation Service (NRCS) Soil Survey maps Hermon-Monadnock-Peru complex, Colonel-Skerry-Brayton association, Pushaw-Swanville association, Lamoine-Scantic-Colonel complex, Colton-Hermon association and Scantic-Biddeford complex soils within the TRI Area. These soils are mostly glacial till sediments, with some glacial outwash and glacio-marine/lacustrine sediments. Brayton, Swanville, Scantic and Biddeford soils are classified as hydric soils, which are a component of wetlands.

The USGS topographic map shows the West Branch Narraguagus River, Mahanon Brook and Colson Branch. It also shows wetland areas associated with these water features.

According to the FEMA map, the TRI Area is in an "area of Minimal Flood Hazard".

The desktop mapping services also included contacting and/or accessing the databases of natural resource agencies to identify if Threatened, Endangered, Significant or Essential species and/or habitats are mapped within the area of Title, Right and/or Interest. Agencies contacted included the U.S. Fish and Wildlife Service (US FWS), Maine Department of Inland Fisheries and Wildlife (IF&W), and Maine Natural Areas Program (MNAP). Response letters and/or database searches are included in Appendix G, and a synopsis is included below.

The MNAP response letter dated December 07, 2018 states that "*according to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area.*" The MNAP lists two "Rare and Exemplary Botanical Features" documented within 4 miles of the TRI Area: Canada Mountain-Ricegrass and Domed Bog. A Rare, Threatened and Endangered Survey for botanical species was conducted by Weber Ecological Services in the summer of 2019, and is as yet to be finalized.

According to the IF&W response letter and map, dated January 08, 2019, there are eight species of bats that occur in Maine, three of which are protected under the Maine Endangered Species Act and five of which are listed as being of Special Concern in Maine. The IF&W response letter states that, "*While a comprehensive statewide inventory for bats*

has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project."

Also according to the IF&W response letter, "*upland sandpipers, a State Threatened species, have been documented in the barrens in the Downeast Coastal Plains region as well as within the project search area. Upland sandpipers are protected under Maine's Endangered Species Act* (and) g*iven the location, size, and amount of cleared area upland sandpipers may be utilizing the project area for breeding purposes. Therefore, to protect against unintended Take of breeding upland sandpipers (including territorial, incubating, low mobility fledgling birds, and eggs), MDIFW recommends a construction window of September 1 – May 1*." An Upland Sandpiper survey was conducted by the Biodiversity Research Institute (BRI) in the summer of 2019, and is as yet to be finalized.

IF&W recommends that a 100-foot undisturbed buffer be maintained along streams, and recommends that stream crossings be avoided, if possible. If stream crossings are required, IF&W makes recommendations pertaining to the crossing design.

The US FWS database, accessed on August 20, 2019, indicates that two federally-listed species "*should be considered as part of an effect analysis for this project*"; the Endangered Atlantic Salmon and the Threatened Northern Long-eared Bat. Additionally, the site is within Critical Habitat of the Atlantic salmon. If the project will require a federal permit or will use federal funding, the federal action agency will determine if there are concerns regarding the project affecting this mapped habitat.

3.2 Fieldwork in Proposed Development Areas and 250' Buffer

3.2.1 Methodology - ARC visited the site in November and December of 2018 to conduct identification and delineation of field-observable Protected Natural Resources within the proposed development areas, and to conduct a vernal pool reconnaissance and ground-truthing of the desktop review within 250 feet of the proposed development areas. ARC re-visited the site in April, May and June of 2019 to conduct a verification of the previous delineation of field-observable Protected Natural Resources (including vernal pools) within

the proposed development areas, and to conduct vernal pool documentation within 250 feet of the proposed development areas. ARC also delineated and located potential "Wetlands of Special Significance" (WOSS) including areas of >20,000 square feet of emergent marsh vegetation where they were within 250 feet of the proposed development areas, and delineated wetlands where they were within 25 feet of the gravel roads that connect the proposed development areas.

The Protected Natural Resources identification and delineation services were completed in general accordance with standards as defined by the MDEP[1] and U.S. Army Corps of Engineers[2] (Corps). Wetland identification and delineation was conducted using the 1987 Corps Wetland Delineation Manual[3] and Northeast Regional Supplement[4]. Stream identification and delineation was conducted using the MDEP Natural Resources Protection Act Statute. Vernal pool identification and documentation was conducted using MDEP Chapter 335[5], the Corps General Permit and the Maine Association of Wetland Scientists Vernal Pool Protocol[6].

The general methodology for resource identification and delineation / reconnaissance within the proposed development areas and within the 250-foot buffer areas was agreed to with the MDEP prior to the November start of work.

3.2.2 Wetland Delineation – ARC delineated sixty-five wetlands within the proposed development areas, as described on spreadsheets in Appendix C, and as located on the Protected Natural Resources Plans attached in Appendix B. Color photographs of the wetlands are attached in Appendix D. Corps Wetland Data Forms for representative wetlands are attached in Appendix E.

In general, the wetlands in Areas #1, #2, #3 are emergent or scrub-shrub wetlands located in recently converted or partially-converted agricultural fields and were previously forested. The emergent wetlands had greater than 50% hydrophytic vegetation and were dominated by species such as withe-rod (*Viburnum nudum*), bristly dewberry (*Rubus hispidus*),

[1] State of Maine, Department of Environmental Protection, Natural Resources Protection Act Statute, 38 M.R.S.A. §480-A to 480-HH, DEPLW284-W2010, Revised August 12, 2011.
[2] United States Department of the Army, General Permit, State of Maine, Effective: October 13, 2015 to October 13, 2020.
[3] Environmental Laboratory. 1987. "Corps of Engineers Wetland Delineation Manual", Technical Report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Miss.
[4] U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz.ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[5] State of Maine, Department of Environmental Protection, Chapter 335 Significant Wildlife Habitat, amended January 7, 2014.
[6] Maine Association of Wetland Scientists. Vernal Pool Technical Committee. Vermal Pool Survey Protocol. April 2014

woolgrass (*Scirpus cyperinus*), wrinkle-leaf goldenrod (*Solidago rugosa*), fowl mannagrass (*Glyceria striata*), broom sedge (*Carex scoparia*), Canada bluejoint (*Calamagrostis canadensis*), sheep laurel (*Kalmia angustifolia*), and meadowsweet (*Spiraea alba*). The shrubs listed were mostly less than 3 feet in height in the emergent wetlands. The scrub-shrub wetlands had greater than 50% hydrophytic vegetation and were dominated by speckled alder (*Alnus incana*), red maple (*Acer rubrum*), meadowsweet, bristly dewberry, withe-rod, and woolgrass, with the listed shrubs mostly greater than 3 feet in height.

In general, the wetlands in Areas #4, #5 and #6 were dominated by scrub-shrub wetlands located in harvested forestland (dominated by tree species, but less than 3 inch DBH). The scrub-shrub wetlands had greater than 50% hydrophytic vegetation and were dominated by shrub and sapling sized red maple, gray birch (*Betula populifolia*), quaking aspen (*Populus tremuloides*), meadowsweet, speckled alder, sheep laurel, winterberry (*Ilex verticillata*), and withe-rod.

Observed soils in most of the wetlands were dominated by poorly drained mineral soils that were closest to classification as Soil Indicator F3: Depleted Matrix. Each wetland had at least one Primary Hydrology Indicator observed, including A1: Surface Water, A2: High Water Table, A3: Saturation, and/or B9: Water Stained Leaves.

3.2.3 Vernal Pool Identification – ARC identified fifteen vernal pools (VP's), six in the proposed development areas and nine within 250 feet of the proposed development areas. One vernal pool, labeled P-RS-8, met MDEP classification as a Significant Vernal Pool. ARC also identified nine Maine vernal pool indicator species breeding habitats (IBA's), two in the proposed development areas and seven within 250 feet of the proposed development areas. IBA's do not meet the definition of a vernal pool under state regulations, but provide some Maine vernal pool indicator species breeding habitat (ex: skid ruts and drainage ditches). The VP's and IBA's are as described on spreadsheets in Appendix C, and are located as shown on the Protected Natural Resources Plans in Appendix B. Maine State Vernal Pool Assessment Forms and attachments including color photographs are included in Appendix F.

3.2.4 Streams and Rivers – ARC identified no streams within the proposed development areas. Six streams were identified within 250 feet of the proposed development areas, three of which were within 100 feet of the proposed development areas. The streams are

described on a spreadsheet in Appendix C, and are located as shown on the Protected Natural Resources Plans in Appendix B. Color photographs of the streams that are within 100 feet of the proposed development areas are attached in Appendix D.

3.3 Classification

ARC classified the delineated wetlands based on the Cowardin Classification system[7]. The wetlands on the site are classified as PFO1&4E or palustrine, forested, broad-leaved deciduous and needle-leaved evergreen wetlands with a seasonally flooded/saturated water regime; PSS1E or palustrine, scrub-shrub, broad-leaved deciduous wetlands with a seasonally flooded/saturated water regime; and PEM1E or palustrine, emergent (agricultural field), persistent wetlands with a seasonally flooded/saturated water regime.

The intermittent streams within 100 feet of the proposed development areas are classified as R4SB3/4 or riverine, intermittent, streambed, cobble-gravel and sand-silt bottom streams. The perennial stream within 100 feet of the proposed development areas is classified as R2UB2/3 or riverine, lower perennial, unconsolidated bottom, sand and mud bottom stream.

VP P-RS-8 and the area within 250 feet of VP P-RS-8 is classified as a Significant Vernal Pool Habitat, which is regulated by the MDEP as a Significant Wildlife Habitat. Freshwater wetlands on this site that contain this Significant Wildlife Habitat, or contain a freshwater wetland with greater than 20,000 square feet of emergent marsh vegetation or open water, are classified as MDEP “Wetlands of Special Significance”. The freshwater wetlands on the remainder of the site meet MDEP classification as “Wetlands Not of Special Significance”.

4.0 SUMMARY OF FINDINGS

ARC delineated sixty-five wetlands within the proposed development areas; fifteen vernal pools (VP’s), six of which were in the proposed development areas and nine within 250 feet of the proposed development areas; and six streams within 250 feet of the proposed development areas, three of which were within 100 feet of the proposed development areas.

[7] Cowardin, et al. 1979. United States, Fish and Wildlife Service, “Classification of Wetlands and Deepwater Habitats of the United States”. Biological services program ; FWS/OBS-79/31) FWS/OBS-79/31 . QH76.U54a 79/31 [QH104] 574.5'0973s [574.5'2632] 79-607795

The observed wetlands on the site are forested, scrub-shrub and emergent (in converted agricultural field that was recently forested). The wetlands that contain the Significant Vernal Pool Habitat (regulated as Significant Wildlife Habitat), or contain a freshwater wetland with greater than 20,000 square feet of emergent marsh vegetation or open water, are classified as MDEP "Wetlands of Special Significance". The wetlands on the remainder of the site meet MDEP classification as "Wetlands Not of Special Significance".

The Maine Department of Inland Fisheries and Wildlife (IF&W) lists the site as within potential habitat of one or more of the eight species of bats that are currently Endangered, Threatened or species of Special Concern in Maine. IF&W recommends that the USFWS be contacted regarding bats and site development. Generally, bats are a concern if the site is near a known hibernacula or brooding tree, or if trees with greater than 5-inch DBH will be cut between about April 1 to October 15. Based on a reconnaissance of the site, there are no trees greater than 5-inch DBH within the proposed development areas. Generally, Atlantic salmon are a concern if streams or near-stream areas are to be disturbed.

IF&W also maps the site as within upland sandpiper habitat and makes recommendations for construction timing based on the potential presence of this species. IF&W recommends a 100-foot undisturbed buffer be maintained along streams, and recommends that stream crossings be avoided, if possible. If stream crossings are required, IF&W makes recommendations pertaining to the crossing design. An Upland Sandpiper survey was conducted by BRI in the summer of 2019, and is as yet to be finalized.

The Maine Natural Areas Program (MNAP) lists two "Rare and Exemplary Botanical Features" documented within 4 miles of the TRI Area: Canada Mountain-Ricegrass and Domed Bog. A Rare, Threatened and Endangered Survey for botanical species was conducted by Weber Ecological Services in the summer of 2019, and is as yet to be finalized.

The US FWS database indicates that two federally-listed species "*should be considered as part of an effect analysis for this project*"; the Endangered Atlantic Salmon and the Threatened Northern Long-eared Bat. Additionally, the site is within Critical Habitat of the Atlantic salmon. If the project will require a federal permit or will use federal funding, the federal action agency will determine if there are concerns regarding the project affecting this mapped habitat. Generally, Atlantic salmon are a concern if streams or near-stream areas

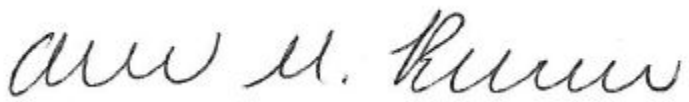
are to be disturbed. Generally, bats are a concern if the site is near a known hibernacula or brooding tree, or if trees will be cut between about April 1 to October 15.

5.0 CLOSING

Thank you for the opportunity to assist you with this project. If you have any questions, please contact ARC.

Sincerely,

Atlantic Resource Co, LLC



Aleita M. Burman, C.W.S., C.S.S., L.S.E.

Roger St.Amand, CSS, LSE, LPF, CPESC, PWS
PRINCIPAL |*ATLANTIC RESOURCE CO, LLC*

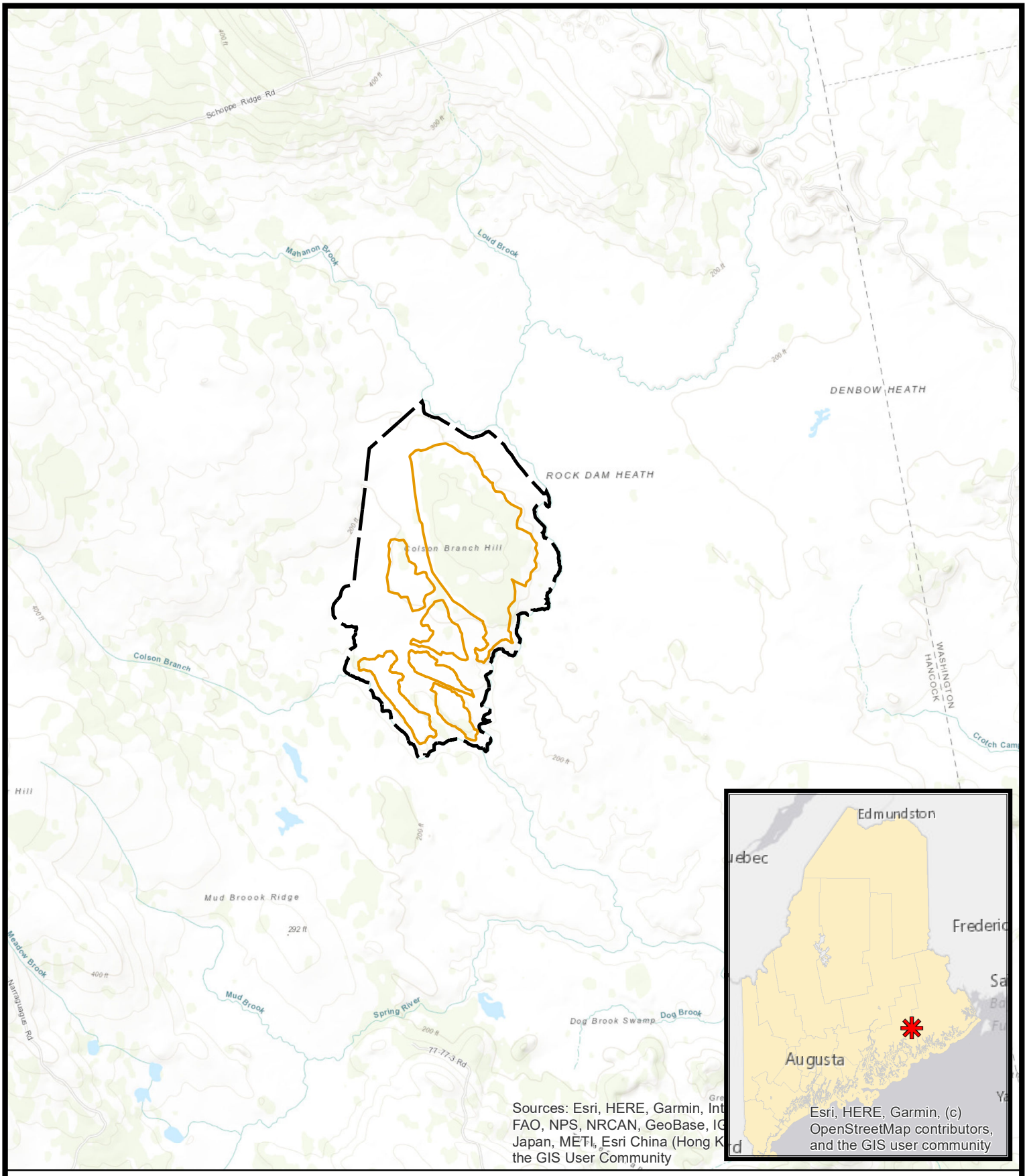
cc: Kirk Ball, Acheron Engineering Services

APPENDIX A
Limitations

Appendix A – Limitations

The scope of Atlantic Resource Co, LLC services has been limited to identification and delineation of Protected Natural Resources for Three Rivers Solar Power, LLC's proposed Three Rivers Solar project in T16MD, Maine. This Report has been prepared for the exclusive use of Three Rivers Solar Power, LLC. No warranty, expressed or implied, is made. The conclusions made in this report are based on the data obtained from the areas explored at the time of services.

APPENDIX B
Site Location Map
Protected Natural Resource Plans



N

S

ARC
Atlantic Resource Co. LLC

AUGUST 26,2019 ARC
NOT A LEGAL SURVEY

Legend

TRS_PROJECT AREA_ACH

TRS_TRI Area_PLISGA

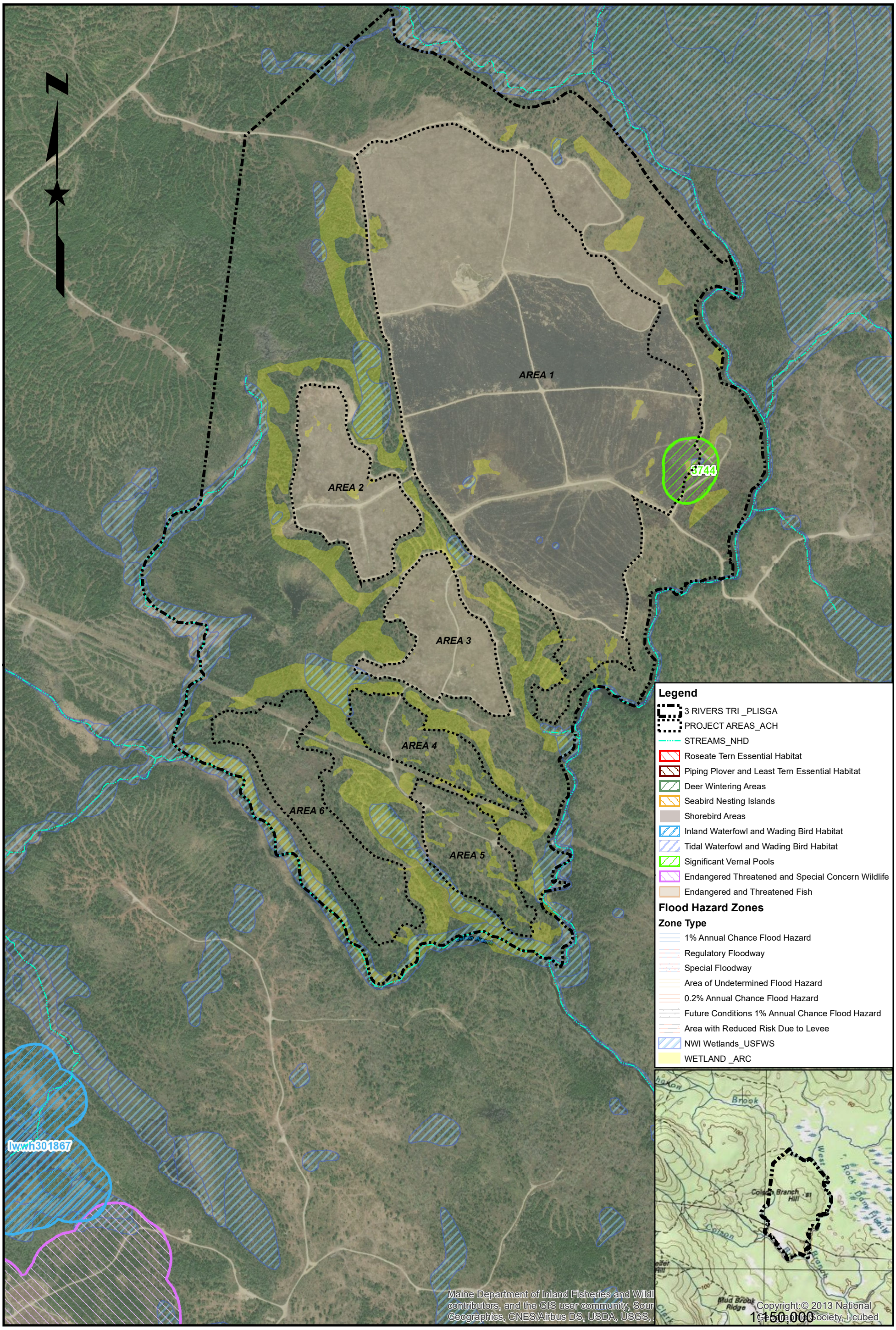
1 inch equals 4,000 feet

Feet

0 2,000 4,000

1:48,000

SHEET B-1
LOCATION MAP
THREE RIVERS SOLAR
THREE RIVERS SOLAR POWER, LLC
T16 MD, HANCOCK COUNTY, MAINE



ARC
Atlantic Resource Co. LLC
WWW.ARC-ENV.COM

NOTES:
1.NOT A LEGAL SURVEY.
2.FEATURES SHOWN ARE FOR GENERAL PLANNING ONLY
3.DATA SOURCES: ATLANTIC RESOURCE CO, LLC, PLISGA&DAY, ACHERON ENGINEERING, MAINE OFFICE OF GIS, MAINE DEPT. IF&W, MAINE GEOLOGICAL SURVEY U.S. FISH&WILDIFE, USGS

1 inch = 1,000 feet

0 250 500 1,000 1,500 2,000 Feet

1:12,000

SHEET B-2
OVERVIEW MAP
THREE RIVERS SOLAR
THREE RIVERS SOLAR POWER, LLC
T16 MD, HANCOCK COUNTY, ME
AUGUST 26, 2019

N

0 150 300 600
Feet

1 inch = 250 feet

RESOURCE MAP SCALE

NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Resource Co, LLC in November and December of 2018 and May, June and July of 2019 . Services included identification and delineation of protected natural resources (wetlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground-truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.

2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental Protection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015-2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).

3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and onsite surveys within 250' of the proposed development areas.

4. Location of delineated natural resource features was conducted by Atlantic Resource Co, LLC using sub-meter mapping grade GPS receivers. The GPS data was overlaid onto a base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.

5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natural Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; it is not a survey.

Legend

- TRS_AOI__PLISGA
- TRS PROJECT AREA_ACH

VERNAL POOL_ARC

ORIGIN

- SVP-NATURAL-MODIFIED
- NATURAL
- NATURAL-MODIFIED
- MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC

WETLAND BOUNDARY_ARC_2019

TYPE

- RECON
- PEM1E
- PFO1E
- PSS1E
- WETLAND DATA PLOT_ARC
- Wetland AREA_ARC
- DELIN. STREAM_ARC
- 250FT BUFFER_TRS
- WOSS_PEM/PUB_ARC_2019
- STREAM_NHD

Location Map Scale:
1:24,000

1.) WETLAND AND VERNAL POOL SURVEYS COMPLETED DURING 2018 & 2019 BY ATLANTIC RESOURCE CO, LLC
2.)BOUNDARIES LOCATED USING A TRIMBLE GEO/TOPCON GRS-1 GPS WITH POST PROCESSED SUBMETER ACCURACY AS STATED BY MANUFACTURER
3.) RESOURCE DATA IN NAD83 UTM ZONE 19-US.FEET.
SOURCE:
1.) ORTHOIMAGERY-ESRI ARCGIS ONLINE
2.) USGS TOPO QUADS- ESRI ARCGIS ONLINE USA TOPO MAPS
3.) BASE SURVEY PROVIDED BY PLISGA & DAY

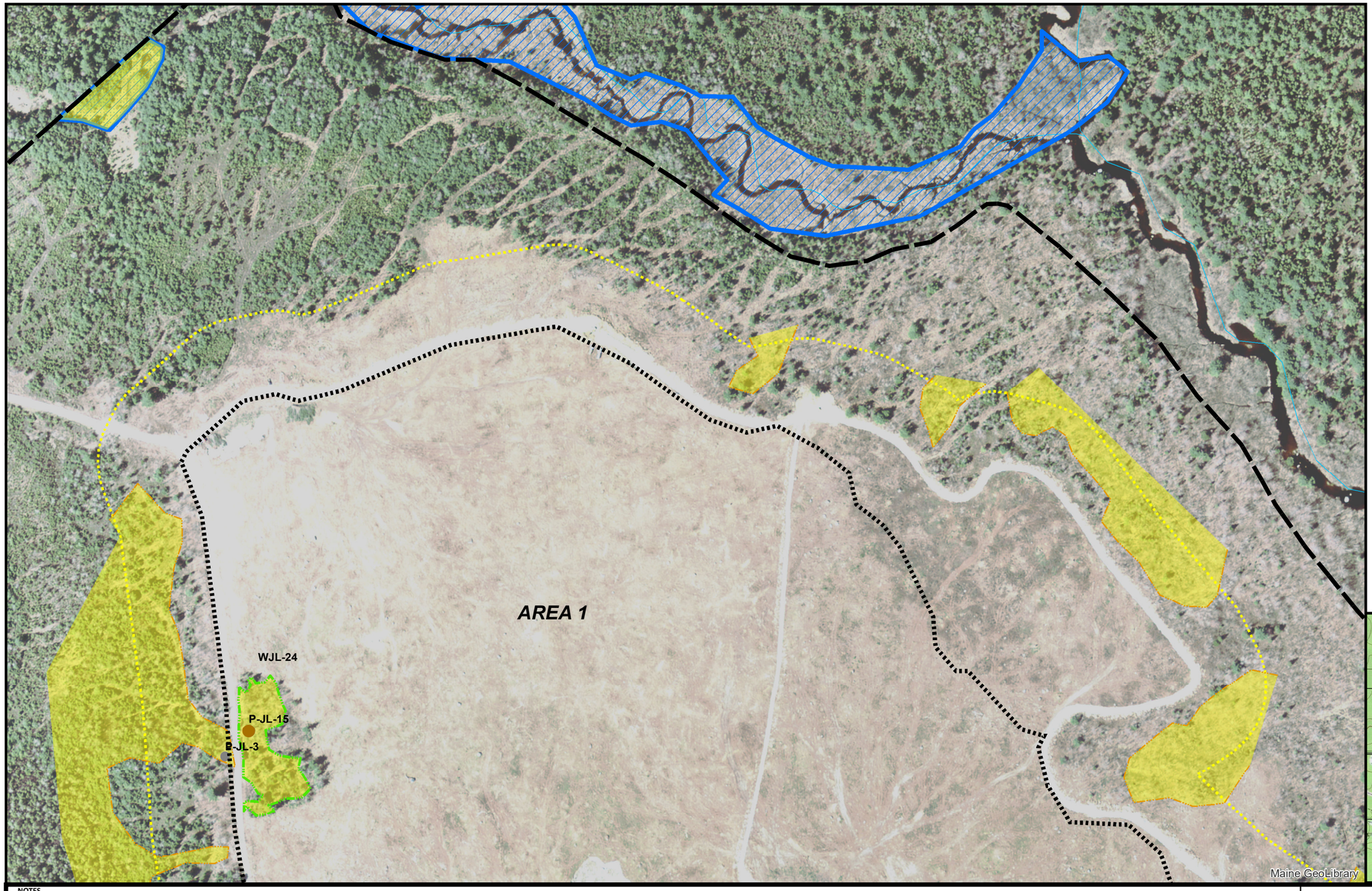
ARC
Atlantic Resource Co. LLC

THREE RIVERS PROJECT
THREE RIVERS SOLAR POWER, LLC
T16 MD, HANCOCK COUNTY, MAINE
1 inch = 250 feet

N
S

SHEET B-3
RESOURCE MAP OVERVIEW

DATE: AUGUST 26, 2019

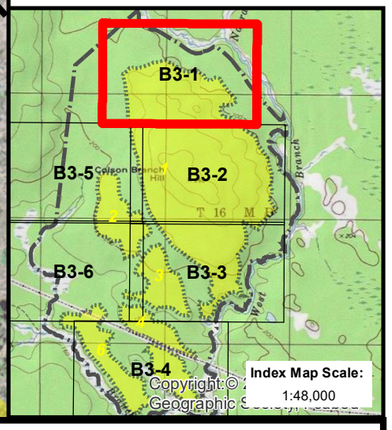


RESOURCE MAP SCALE

0 150 300 600 Feet

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- **TRS_PROJECT AREA_ACH**
- **VERNAL POOL_ARC**
- **ORIGIN**
  - SVP-NATURAL-MODIFIED
  - NATURAL
  - NATURAL-MODIFIED
  - MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC
- **WETLAND BOUNDARY_ARC_2019**
- **TYPE**
  - RECON
  - PEM1E
  - PFO1E
  - PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC Atlantic Resource Co. LLC

THREE RIVERS SOLAR

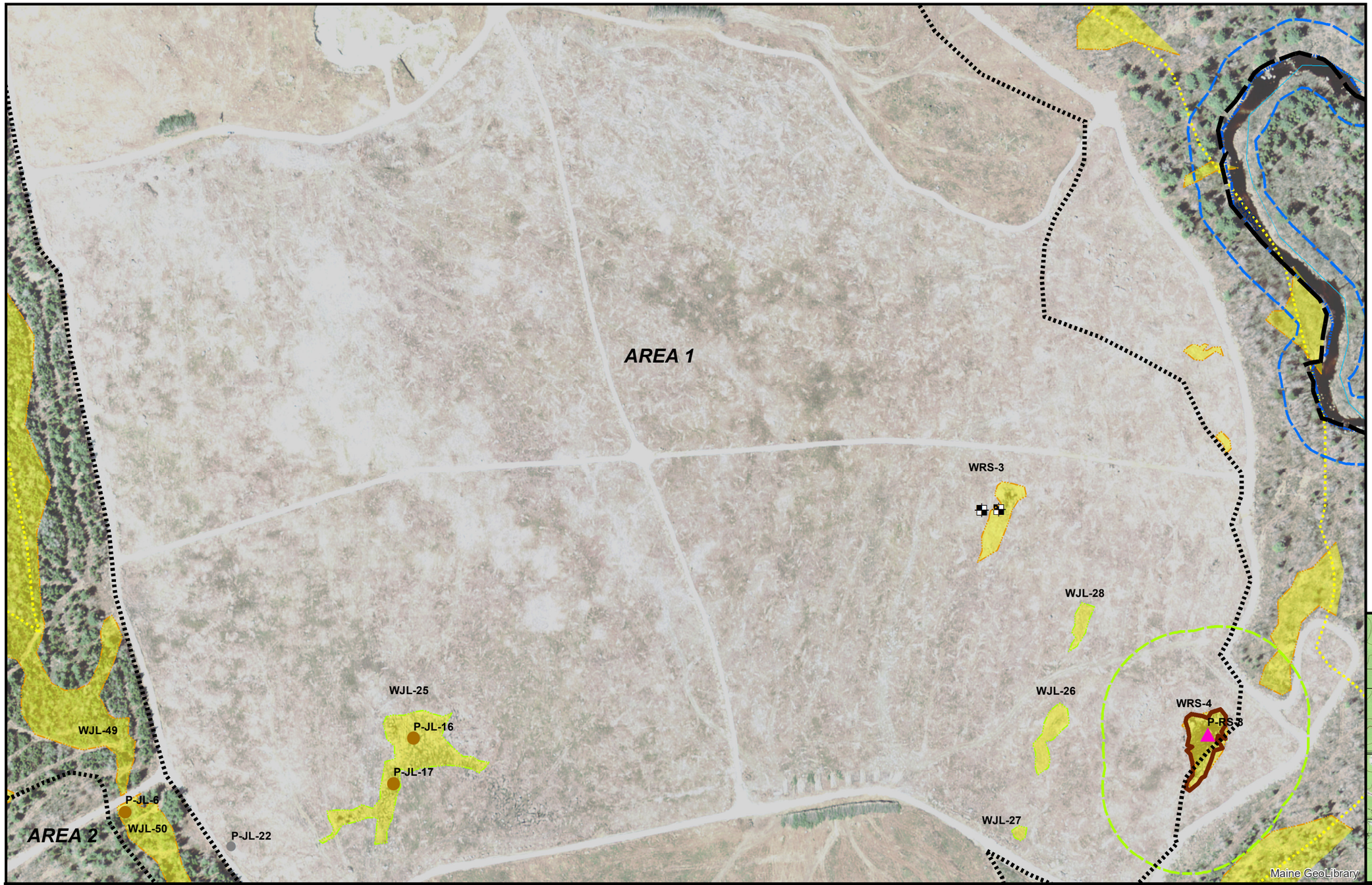
THREE RIVERS SOLAR POWER, LLC
T16 MD
HANCOCK COUNTY MAINE
1 inch = 300 feet

N S

B3-1 - RESOURCE MAP

Page 1 of 6

DATE: AUGUST 26, 2019

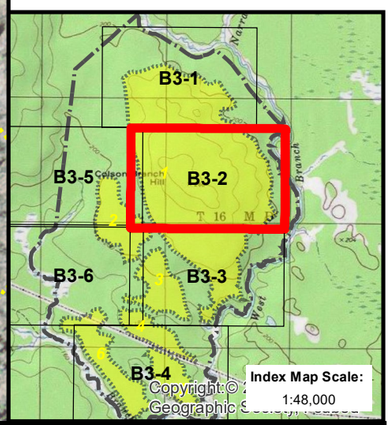


RESOURCE MAP SCALE

0 150 300 600 Feet

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- **TRS_PROJECT AREA_ACH**
- **VERNAL POOL_ARC**
- **ORIGIN**
  - SVP-NATURAL-MODIFIED
  - NATURAL
  - NATURAL-MODIFIED
  - MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC
- **WETLAND BOUNDARY_ARC_2019**
- **TYPE**
  - RECON
  - PEM1E
  - PFO1E
  - PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC
Atlantic Resource Co. LLC

THREE RIVERS SOLAR

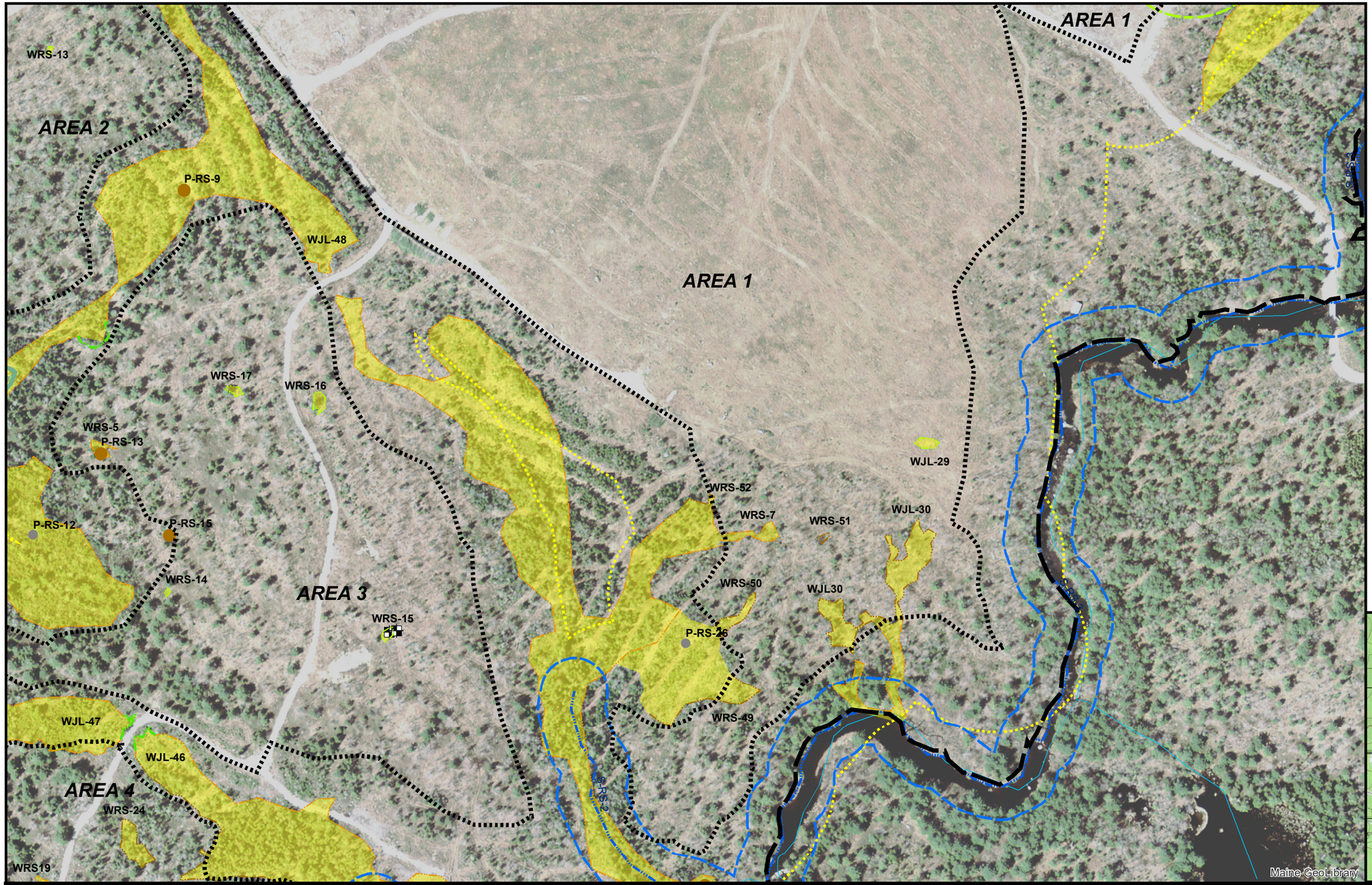
THREE RIVERS SOLAR POWER, LLC
T16 MD
HANCOCK COUNTY MAINE
1 inch = 300 feet

N
S

B3-2 - RESOURCE MAP

Page 2 of 6

DATE: AUGUST 26, 2019



RESOURCE MAP SCALE

0 150 300 600 Feet

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- TRS_PROJECT AREA_ACH

VERNAL POOL_ARC

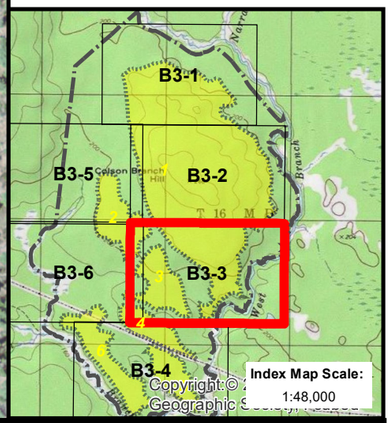
ORIGIN

- SVP-NATURAL-MODIFIED
- NATURAL
- NATURAL-MODIFIED
- MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC

WETLAND BOUNDARY_ARC_2019

TYPE

- RECON
- PEM1E
- PFO1E
- PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC Atlantic Resource Co. LLC

THREE RIVERS SOLAR

THREE RIVERS SOLAR POWER, LLC

T16 MD

HANCOCK COUNTY MAINE

1 inch = 300 feet

N

S

B3-3 - RESOURCE MAP

Page 3 of 6

DATE: AUGUST 26, 2019

RESOURCE MAP SCALE

0 150 300 600 Feet

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- TRS_PROJECT AREA_ACH

VERNAL POOL_ARC

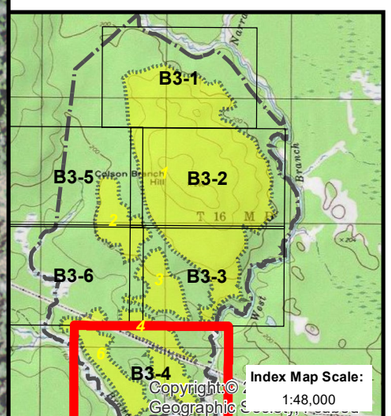
ORIGIN

- SVP-NATURAL-MODIFIED
- NATURAL
- NATURAL-MODIFIED
- MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC

WETLAND BOUNDARY_ARC_2019

TYPE

- RECON
- PEM1E
- PFO1E
- PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC Atlantic Resource Co. LLC

THREE RIVERS SOLAR

THREE RIVERS SOLAR POWER, LLC

T16 MD

HANCOCK COUNTY MAINE

1 inch = 300 feet

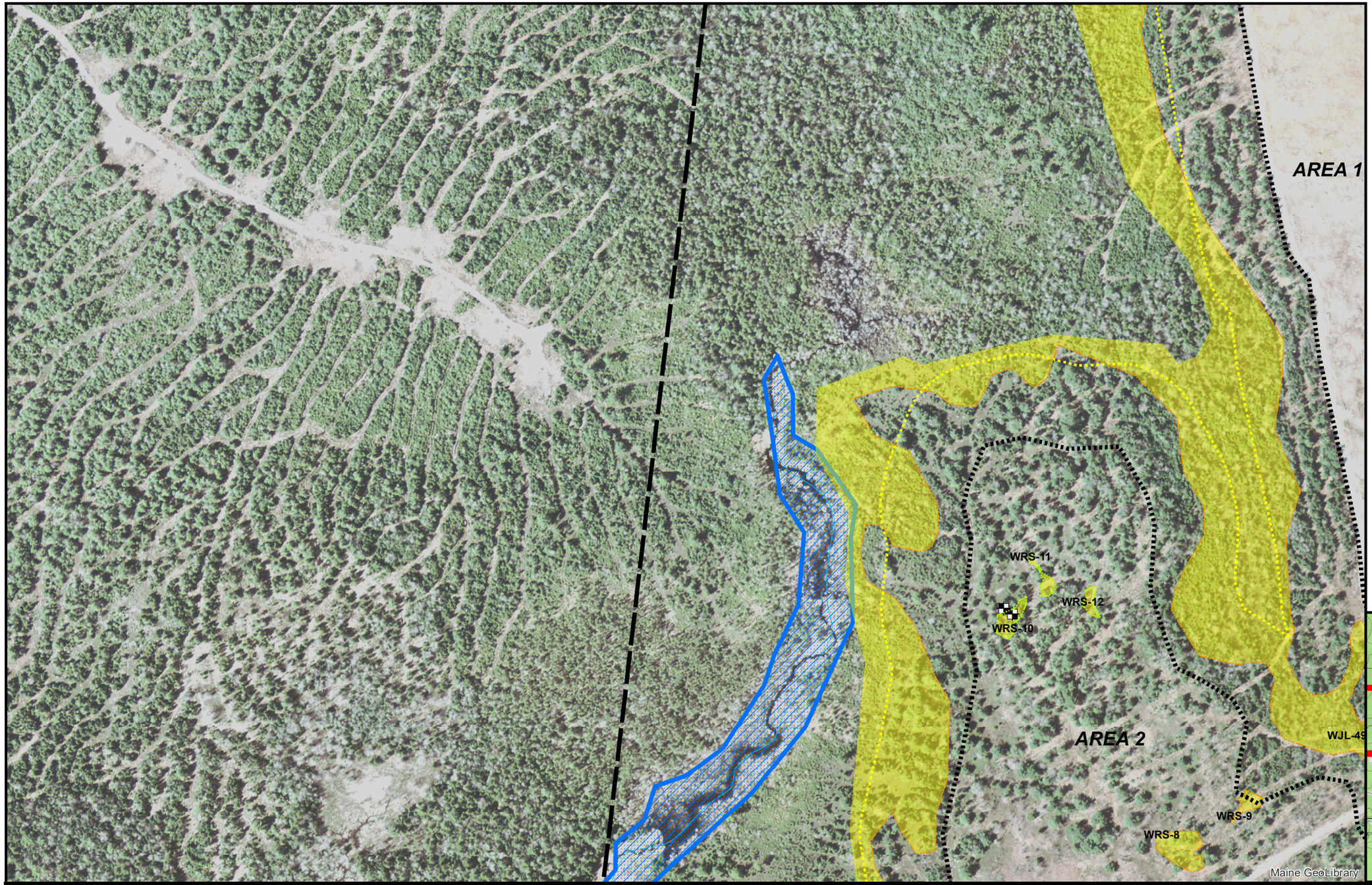
N

S

B3-4 - RESOURCE MAP

Page 4 of 6

DATE: AUGUST 26, 2019

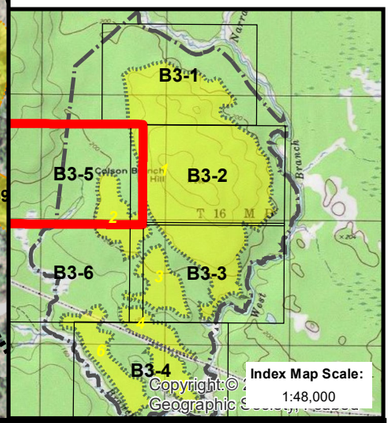


RESOURCE MAP SCALE

0 150 300 600 Feet

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- **TRS_PROJECT AREA_ACH**
- **VERNAL POOL_ARC**
- **ORIGIN**
  - SVP-NATURAL-MODIFIED
  - NATURAL
  - NATURAL-MODIFIED
  - MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC
- **WETLAND BOUNDARY_ARC_2019**
- **TYPE**
  - RECON
  - PEM1E
  - PFO1E
  - PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC Atlantic Resource Co. LLC

THREE RIVERS SOLAR

THREE RIVERS SOLAR POWER, LLC
T16 MD
HANCOCK COUNTY MAINE
1 inch = 300 feet

N S

B3-5 - RESOURCE MAP

Page 5 of 6

DATE: AUGUST 26, 2019

RESOURCE MAP SCALE

0 150 300 600 Feet

WRS-13

AREA 2

P-JL-11

AREA 3

WRS-5

P-RS-13

P-RS-12

AREA 3

WJL-47

WRS18

AREA 4

WRS

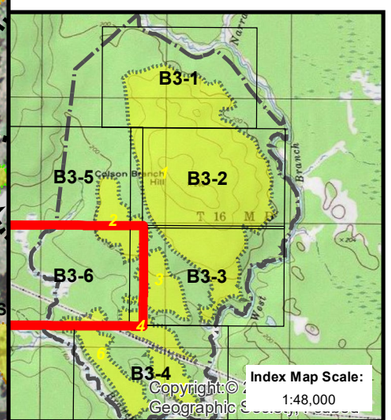
AREA 6

WRS19

Maine GeoLibrary

LEGEND

- TRI AREA _PLISGA
- UTILITY CORRIDOR_PLISGA
- **TRS_PROJECT AREA_ACH**
- **VERNAL POOL_ARC**
- **ORIGIN**
  - SVP-NATURAL-MODIFIED
  - NATURAL
  - NATURAL-MODIFIED
  - MAN-MADE
- SIGNIFICANT VERNAL POOL
- 250FT_SVP_CTH_ARC
- **WETLAND BOUNDARY_ARC_2019**
- **TYPE**
  - RECON
  - PEM1E
  - PFO1E
  - PSS1E
- DELIN. STREAM_ARC
- WETLAND DATA PLOT _ARC
- 100_FT_FROM_STREAM_ARC
- 250 FT PNR RECON. AREA
- WETLAND AREA_ARC
- WATER_AREA_ARC
- WOSS_PEM/PUB_ARC_2019
- STREAM_MEGIS



NOTES

1. This Protected Natural Resources Plan details the findings of Protected Natural Resources services conducted by Atlantic Reso urce Co, LLC in November and December of 2018 and May, June and July of 2019. Services included identification and delineation of protected natural resources (we tlands, streams, vernal pools) within the 6 proposed development areas, identification of vernal pools within 250' of the proposed development areas, identification of streams within 100' of the proposed development areas, and ground -truthing of wetlands and streams identified during the desktop review within 250' of the proposed development areas.
2. Protected Natural Resources were identified and delineated in general accordance with the Maine Department of Environmental P rotection Natural Resources Protection Act definitions; the United States Department of the Army State of Maine General Permit (October 2015 -2020), the Corps of Engineers Wetland Delineation Manual (1987), and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012).
3. The MDEP "Wetlands of Special Significance" determination is based on published mapping and filed observations within 250' of proposed development areas
4. Location of delineated natural resource feature s was conducted by Atlantic Resource Co, LLC using a mapping grade GPS receiver. Base map provided by Acheron Engineering Services and Plisga & Day Land Surveyors.
5. This Plan should be used in conjunction with the Atlantic Resource Co, LLC Protected Natu ral Resources Report, dated August, 2019. This Plan is for planning and resource alteration permitting purposes; not a survey.

ARC Atlantic Resource Co. LLC

THREE RIVERS SOLAR

THREE RIVERS SOLAR POWER, LLC

T16 MD

HANCOCK COUNTY MAINE

1 inch = 300 feet

N

S

B3-6 - RESOURCE MAP

Page 6 of 6

DATE: AUGUST 26, 2019

APPENDIX C
Wetland, Vernal Pool, and Stream Data Spreadsheets

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WAB-3	Roadside	6/15/2019	PFO & PSS	red maple; gray birch; balsam fir & gray birch; sphagnum, cattails	F3: Depleted Matrix & A2: Histic Epipedon	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WDK-01	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WDK-02	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WDK-03	Area 5	12/11/2018	PEM1E	meadowsweet; bristly dewberry; smooth goldenrod	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WDK-04	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WDK-05	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Wildlife Habitat	p/o of larger, off-site wetland, partially converted agricultural land (disturbed)	WOSS
WDK-06	Area 5	12/11/2018	PEM1E	red maple; pointed broom sedge; Canada bluejoint	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WDK-07	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Production Export; Wildlife Habitat	contains P-DK-01, P-DK-02, p/o of larger, off-site wetland, partially converted agricultural land (disturbed)	WOSS
WDK-08	Area 5	12/11/2018	PEM1E	common rush; meadowsweet; red-osier dogwood; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o of larger, off-site wetland, partially converted agricultural land (disturbed)	WOSS
WJL-24	Area 1	12/4/2018	PFO1E	red maple; balsam fir; speckled alder	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; A2: High Water Table; A3: Saturation; B9: Water stained Leaves; B10 Drainage Patterns	Colonel-Skerry-Brayton association, 0-15 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	contains P-JL- 15, p/o of larger, off-site wetland via culvert under road, partially dammed by road	WNSS
WJL-25	Area 1	12/10/2018	PEM1E	meadowsweet; red maple; sheep laurel; labrador tea	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Colonel-Skerry-Brayton association, 0-15 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	contains P-JL-16; P-JL-17; isolated wetland, converted agricultural land (disturbed)	WNSS
WJL-26	Area 1	12/10/2018	PEM1E	meadowsweet; common rush; labrador tea; woolgrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WJL-27	Area 1	12/10/2018	PEM1E	meadowsweet; sheep laurel; panicgrass; common rush	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WJL-28	Area 1	12/11/2018	PEM1E	meadowsweet; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WJL-29	Area 1	12/11/2018	PEM1E	meadowsweet; pointed broom sedge	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WJL-30	Area 1	12/11/2018	PSS1E	quaking aspen; red maple; meadowsweet	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Wildlife Habitat	p/o of larger, off-site wetland, logged forestland (disturbed)	WNSS
WJL-40	Roadside	6/3/2019	PFO4E	black spruce; larch; winterberry; rhodora	A2: Histic Epipedon	A1: Surface Water; A2: High Water Table; A3: Saturation	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WNSS
WJL-41	Roadside	6/3/2019	PFO4E	black spruce; larch; winterberry; rhodora	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-42	Roadside	6/3/2019	PFO1E	red maple, balsam fir; gray birch	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WNSS
WJL-43	Roadside	6/3/2019	PFO1&4E	red maple, black spruce; meadowsweet	A2: Histic Epipedon	A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-44	Roadside	6/3/2019	PFO1E	quaking aspen; willow; sheep laurel; red maple	F3 - Depleted Matrix	A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-45	Roadside	6/3/2019	PSS1E	balsam fir; winterberry; rhodora; sheep laurel	A2: Histic Epipedon	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-46	Roadside	6/5/2019	PSS1E	quaking aspen; red maple; balsam fir; winterberry	F3 - Depleted Matrix	A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-47	Roadside	6/5/2019	PSS1E	willow; balsam fir; quaking aspen; rhodora	A2: Histic Epipedon	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-48	Roadside	6/5/2019	PSS1E	winterberry; woolgrass; black spruce; red maple	F3 - Depleted Matrix	A2: High Water Table; A3: Saturation	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-49	Roadside	6/5/2019	PFO1&4E	red maple; balsam fir	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Colonel-Skerry-Brayton association, 0-15 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-50	Roadside	6/5/2019	PFO1&4E	red maple; black spruce; winterberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Colonel-Skerry-Brayton association, 0-15 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WOSS
WJL-56	Roadside	6/18/2019	PSS1E	gray birch; balsam fir; meadowsweet	F3 - Depleted Matrix	B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	wetland is on side of connector road between Areas	WNSS
WRS-10	Area 2	12/5/2018	PEM1E	meadowsweet; gray birch; rhodura; lowbush blueberries	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Production Export, Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-11	Area 2	12/5/2018	PEM1E	meadowsweet; sheep laurel; bristly dewberry; broom sedge	F3 - Depleted Matrix	A3: Saturation to Surface; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Production Export, Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WRS-12	Area 2	12/5/2018	PEM1E	woolgrass; wrinkle-leaf goldenrod; flat-topped white aster	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-13	Area 2	12/5/2018	PEM1E	sheep laurel; bristly dewberry; field goldenrod	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-14	Area 3	12/5/2018	PEM1E	Carolina rose; raspberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-15	Area 3	12/5/2018	PEM1E	woolgrass ; sheep laurel; sedges	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-16	Area 3	12/7/2018	PEM1E	sheep laurel ; gray birch; withe-rod; bunchberry; velvet-leaved blueberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-17	Area 3	12/7/2018	PEM1E	withe-rod; wrinkle-leaved goldenrod; dark green bulrush	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Production Export; Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-18	Area 4	12/8/2018	PSS1E	balsam fir; black spruce; gray birch ; red maple ; winterberry ; woolgrass; fowl mannagrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-19	Area 4	12/8/2018	PSS1E	gray birch; quaking aspen; meadowsweet ; wrinkle-leaf goldenrod; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed), pit & mound	WNSS
WRS-20	Area 4	12/8/2018	PSS1E	winterberry; meadowsweet; bristly dewberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	contains P-RS-21, isolated wetland, logged forestland (disturbed)	WNSS
WRS-21	Area 4	12/8/2018	PSS1E	winterberry; meadowsweet; bristly dewberry	F3 - Depleted Matrix	A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-22	Area 4	12/8/2018	PSS1E	balsam fir; speckled alder; red maple; bristly dewberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Production Export; Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed), combined with WRS-25	WOSS
WRS-23	Area 4	12/10/2018	PSS1E	gray birch; quaking aspen; meadowsweet; interrupted fern, Canada mayflower, sedges	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	contains P-RS-25; isolated wetland, logged forestland (disturbed)	WNSS
WRS-24	Area 4	12/10/2018	PSS1E	withe-rod; red spruce; quaking aspen; sheep laurel; Canada bluejoint	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-26	Area 4	12/10/2018	PSS1E	gray birch; quaking aspen; meadowsweet; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WRS-27	Area 4	12/10/2018	PSS1E	red maple; quaking aspen; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-28	Area 4	12/10/2018	PSS1E	red maple; quaking aspen; meadowsweet; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-29	Area 4	12/11/2018	PSS1E	red maple; sheep laurel; bristly dewberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-3	Area 1	11/14/2018	PEM1E	sheep laurel; meadowsweet; sedges, lowbush blueberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Production Export; Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-30	Area 4	12/11/2018	PSS1E	gray birch; red maple; quaking aspen; cotton-grass; rattlesnake mannagrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-31	Area 4	12/11/2018	PSS1E	red maple; speckled alder; balsam fir; woolgrass; Canada bluejoint; fowl mannagrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-32	Area 4	12/11/2018	PSS1E	balsam fir; winterberry; withe-rod ; cotton-grass; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-33	Area 6	12/11/2018	PSS1E	meadowsweet; quaking aspen; bunchberry; velvet-leaved blueberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Colton-Hermon association, 5-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Production Export; Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-34	Area 6	12/11/2018	PSS1E	speckled alder; meadowsweet; tall white aster; bristly dewberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland,logged forestland (disturbed)	WNSS
WRS-35	Area 6	12/11/2018	PSS1E	red maple; withe-rod ; balsam fir; woolgrass; tall white aster	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-36	Area 6	12/11/2018	PSS1E	gray birch; quaking aspen; willow; bunchberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Colton-Hermon association, 5-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-37	Roadside	12/12/2018	PSS1E	red maple; withe-rod; woolgrass; fowl mannagrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	contains P-RS-24; p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-38	Area 5	12/12/2018	PSS1E	speckled alder; sheep laurel; winterberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B10: Drainage Patterns; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-39	Area 5	12/12/2018	PSS1E	speckled alder; red spruce; withe-rod; meadowsweet; bristly dewberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WRS-4	Area 1	11/14/2018	PEM1E	sheep laurel; willow; withe-rod; field goldenrod; meadowsweet	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Hermon-Monadnock-Peru complex, 0-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Production Export; Wildlife Habitat	contains P-RS-8 SVP; isolated wetland, converted agricultural land (disturbed)	WOSS
WRS-40	Area 5	12/12/2018	PSS1E	speckled alder; meadowsweet; red maple; wrinkle-leaved goldenrod; tall white aster	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-41	Area 5	12/13/2018	PSS1E	speckled alder; withe-rod; meadowsweet; balsam fir	A2: Histic Epipedon	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; B10: Drainage Patterns	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-42	Area 5	12/12/2018	PSS1E	speckled alder; withe-rod; meadowsweet; balsam fir	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-43	Area 5	12/12/2018	PSS1E	Canada bluejoint; meadowsweet; gray birch	F3 - Depleted Matrix	A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland,partially converted agricultural land (disturbed)	WNSS
WRS-44	Area 5	12/12/2018	PSS1E	sheep laurel; Canada bluejoint; red maple	F3 - Depleted Matrix	A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WRS-45	Area 5	12/12/2018	PSS1E	sheep laurel; Canada bluejoint; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WRS-46	Area 6	12/12/2018	PSS1E	speckled alder; red maple; withe-rod; meadowsweet	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Colton-Hermon association, 5-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-47	Area 6	12/12/2018	PSS1E	red maple; speckled alder; quaking aspen; balsam fir; field goldenrod	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Colton-Hermon association, 5-15 percent slopes, very bouldery	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o of larger, off-site wetland, logged forestland (disturbed)	WOSS
WRS-48	Area 6	12/12/2018	PSS1E	woolgrass; tall white aster; Canada bluejoint; gray birch	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-49	Area 1	12/13/2018	PSS1E	red spruce; speckled alder; woodgrass; bristly dewberry; field goldenrod	F3 - Depleted Matrix	A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o of larger, off-site wetland, logged forestland (disturbed)	WNSS
WRS-5	Area 3	12/5/2018	PSS1E	winterberry; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WRS-50	Area 1	12/13/2018	PSS1E	speckled alder; red maple; meadowsweet; sheep laurel	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o of larger, off-site wetland, logged forestland (disturbed)	WNSS
WRS-51	Area 1	12/13/2018	PSS1E	withe-rod; meadowsweet	F3 - Depleted Matrix	A3: Saturation; D4: Microtopographic Relief	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, logged forestland (disturbed)	WNSS
WRS-52	Area 1	12/13/2018	PSS1E	balsam fir; red maple; beaked hazelnut	F3 - Depleted Matrix	A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o of larger, off-site wetland, logged forestland (disturbed)	WNSS
WRS-7	Area 1	12/13/2018	PSS1E	red maple; withe-rod, raspberry	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	p/o larger, off-site wetland, paritally converted agricultural land (disturbed), pit & mound	WNSS

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Delineated Wetlands in Proposed Development Areas - November/December 2018 and Spring/Summer 2019										
Resource ID	**Location**	**Delineation Date (verified in spring/summer 2019)**	**Cowardin Classification[1]**	**Dominant Vegetation[2]**	**Hydric Soil Indicator[3]**	**Hydrology Indicators[3]**	**Soil Map Unit[4]**	**Principal Functions and Values[5]**	**Notes**	**MDEP Classification[6]**
WRS-8	Area 2	12/5/2018	PEM1E	red maple; withe-rod; sheel laurel; meadowsweet; wrinkle-leaf goldenrod; fowl mannagrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WRS-9	Area 2	12/5/2018	PEM1E	red maple; gray birch; bristly dewberry; sheep laurel; tall white aster; woolgrass	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation; B9: Water Stained Leaves; D4: Microtopographic Relief	Lamoine-Scantic-Colonel complex, 0-8 percent slopes, very stony	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, converted agricultural land (disturbed)	WNSS
WSH-1	Area 5	12/11/2018	PSS1E	meadowsweet; red maple	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Production Export; Wildlife Habitat	contains P-RS-22; p/o of larger, off-site wetland, partially converted agricultural land (disturbed)	WOSS
WSH-2	Area 5	12/11/2018	PEM1E	meadowsweet; red maple; speckled alder	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Wildlife Habitat	isolated wetland, partially converted agricultural land (disturbed)	WNSS
WSH-3	Area 5	12/11/2018	PSS1E	meadowsweet; speckled alder	F3 - Depleted Matrix	A1: Surface Water; A2: High Water Table; A3: Saturation	Scantic-Biddeford complex, 0-3 percent slopes	GW Recharge/Discharge (as shallow soil water interchange); Floodflow Alteration; Wildlife Habitat	p/o of larger, off-site wetland, partially converted agricultural land (disturbed)	WOSS

1 - Cowardin, et al. 1979. United States, Fish and Wildlife Service
2 - Dominant vegetation - see below for Genus species
3 - U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual:Northcentral and Northeast Region (Version 2.0)
4 - USDA. NRCS Soil Survey. Accessed On-Line
5 - U.S. Army Corps of Engineers, NE District. The Highway Methodology Workbook Supplement
6 - State of Maine, Department of Environmental Protection, Natural Resources Protection Act Statute and Chapter 310: Wetlands and Waterbodies

Plant Name	***Genus species (latin)***	**Plant Name**	***Genus species (latin)***	**Plant Name**	***Genus species (latin)***
balsam fir	*Abies balsamea*	sheep laurel	*Kalmia angustifolia*	bristly dewberry	*Rubus hispidus*
red maple	*Acer rubrum*	eastern larch	Larix Laricina	woolgrass	*Scirpus cyperinus*
speckled alder	*Alnus incana*	interrupted fern	*Osmunda claytoniana*	dark green bulrush	*Scirpus atrovirens*
gray birch	*Betula populifolia*	rice grass	*Oryzopsis asperifolia*	smooth goldenrod	*Solidago gigantea*
Canada bluejoint	*Calamagrostis canadensis*	witch panicgrass	*Panicum capillare*	field goldenrod	*Solidago nemoralis*
broom sedge	*Carex scoparia*	black spruce	*Picea mariana*	wrinkle-leaf goldenrod	*Solidago rugosa*
bunchberry	*Cornus canadensis*	red spruce	*Picea rubens*	goldenrod	*Solidago sp.*
beaked hazelnut	*Corylus cornuta*	quaking aspen	*Populus tremuloides*	meadowsweet	*Spiraea alba*
tall white aster	*Doellingeria umbellata*	common cinquefoil	*Potentilla simplex*	dogwood	*Swida*
cotton-grass	*Eriophorum angustifolium*	red oak	*Quercus rubra*	red-osier dogwood	*Swida sericea*
fowl mannagrass	*Glyceria striata*	Labrador tea	*Rhododendron groenlandicum*	lowbush blueberry	*Vaccinium angustifolia*
winterberry	*Ilex verticillata*	Carolina rose	*Rosa carolina*	velvet-leaved blueberry	*Vaccinium myrtilloides*
common rush	*Juncus effuses*	dewdrop	*Rubus dalibarda*	withe-rod	*Viburnum nudum*

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Vernal Pool Documentation - April and May 2019															
Resource ID	Pool Location	Pool Origin	Wood Frog Egg Masses		Spotted Salamander Egg Masses		Blue Spotted Salamander Egg Masses		Fairy Shrimp		Vegetation Classification	Pool Hydroperiod (Estimated)	Soils	Notes	Corps Jurisdictional	MDEP Jurisdictional
			V #1	V #2	V #1	V #2	V #1	V #2	V #1	V #2						
P-JL-15	Area 1	Man-Made to Natural-Modified	5	0	0	0	0	0	0	0	PFO/PSS	Semi-Permanent to Ephemeral - 24" at visit	shallow O over mineral	in wetland W-JL-24; hydrology impacted by road	**	No
P-JL-16	Area 1	Natural-Modified	7	TP	6	6	0	0	0	0	PSS/PEM	Ephemeral, ~5-16" at visit, may not be viable	shallow O over mineral	in wetland W-JL-25; converted agricultural land (disturbed)	**	No
P-JL-17	Area 1	Natural-Modified	2	2	0	0	0	0	0	0	PSS/PEM	Ephemeral, open & sunny	shallow O over mineral	in wetland W-JL-25; converted agricultural land (disturbed)	**	No
P-RS-8	Area 1	Natural-Modified	1	TP	2	27	0	0	0	0	PEM	Ephemeral , ~12-30" at visit	shallow O over mineral	in wetland W-RS-4, converted agricultural land (disturbed)	**	YES - SVP
P-RS-21	Area 4	Natural-Modified	4	TP	4	7	0	0	0	0	PSS	Semi-permanent - 30" at visit	shallow O over mineral	in wetland W-RS-20, ~25' diameter	**	No
P-RS-25	Area 4	Natural-Modified	1	0	0	0	0	0	0	0	PSS	Ephemeral, ~ 10" deep at visit	shallow O over mineral	~15' diameter	**	No
P-DK-1	250' Buffer Area	Natural to Natural-Modified	2	0	2	13	0	0	0	0	PFO	Ephemeral - 16" at visit	leaf litter over mineral	~25'X60'; intermittent outlet	**	No
P-DK-2	250' Buffer Area	Natural to Natural Modified	2	0	0	0	0	0	0	0	PSS	Ephemeral - 12" at visit	shallow O over mineral	~30' X 70'; disturbed due to logging	**	No
P-JL-6	250' buffer area	Natural-Modified	3	0	5	5	0	0	0	0	PFO	Semi-Permanent to Ephemeral - 12" at visit	organic	in wetland; hydrology modified by road and culvert, skid ruts	**	No
P-RS-4	250' buffer area	Man-Made to Natural-Modified	0	0	2	0	0	0	0	0	PFO/PSS	Ephemeral - ~12" deep at visit	leaf litter over mineral	in pool near road, old beaver activity, ~12'X10', snapping turtle	**	No
P-RS-6	250' buffer area	Natural	5	1	0	2	0	0	0	0	PSS/PEM	Ephemeral - 6-12" at visit	organic	~15' diameter	**	No
P-RS-9	250' buffer area	Natural-Modified	0	0	2	2	0	0	0	0	PFO	Ephemeral - 8" at visit	organic	pit & mound, disturbed	**	No
P-RS-15	250' buffer area	Man-Made to Natural-Modified	3	3	3	3	0	0	0	0	PFO/PSS	Ephemeral - ~18 ft deep at visit	shallow O over mineral	~20'X30', hydrology altered or created by road	**	No
P-RS-22	250' Buffer Area	Natural to Natural Modified	4	0	0	0	0	0	0	0	PSS/PFO	Ephemeral, ~14" deep at visit	organic	~30' diam, disturbed due to logging	**	No
P-RS-24	250' Buffer Area	Natural-Modified	0	0	1	0	0	0	0	0	PSS	Ephemeral, ~12" deep at visit	shallow O over mineral	hydrology altered by road	**	No

V#1 Visit Dates: 04/30/19, 05/06/19; 05/07/19
V#2 Visit Dates: 05/20/9; 05/21/19; 05/28/19

** = May be jurisdictional to the Corps if wetland alteration triggers jurisdiction

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine - Indicator Breeding Area (Not Vernal Pools) Documentation - April and May 2019															
Resource ID	**Pool Location**	**Pool Origin**	**Wood Frog Egg Masses**		**Spotted Salamander Egg Masses**		**Blue Spotted Salamander Egg Masses**		**Fairy Shrimp**		**Vegetation Classification**	**Pool Hydroperiod (Estimated)**	**Soils**	**Notes**	**Corps Jurisdictional**	**MDEP Jurisdictional**
			V #1	**V #2**	**V #1**	**V #2**	**V #1**	**V #2**	**V #1**	**V #2**						
P-JL-22	Area 1	Man-Made	0	0	7	6	0	0	0	0	OW	Ephemeral, ~24" deep at visit, sunny	mineral	~10'X10', borrow pit in upland	No	No
P-RS-13	Area 3	Natural-Modified	0	0	1	0	0	0	0	0	PEM	Ephemeral - sunny, 6" at visit, not viable, drying quickly	shallow O over mineral	in wetland W-RS-5, converted agricultural land (disturbed)	**	No
P-JL-3	250' buffer area	Man-Made	0	0	1	0	0	0	0	0	PSS	Ephemeral - full sun, 12" at visit	mineral	~8'X8' borrow pit, steep sides	No	No
P-JL-11	250' buffer area	Natural	7	2	1	0	0	0	0	0	PEM	Permanent	organic	Beaver Pond with inlet and outlet	**	No
P-JL-23	250' Buffer Area	Man-Made		0		7		0		0	PFO/PSS	Ephemeral - 16" at visit	O over mineral	several skid ruts, only 2 with masses	**	No
P-RS-12	250' buffer area	Man-Made		0		1		0		0	PFO	Ephemeral - 14" deep at visit	shallow O over mineral	~14'X20'; skidder ruts	**	No
P-RS-23	250' Buffer Area	Man-Made	0	TP	2	2	0	0	0	0	PFO	Ephemeral - 12" deep at visit 1, likely not viable	shallow O over mineral	2 skid ruts	**	No
P-RS-26	250' Buffer Area	Man-Made	0	0	5	0	0	0	0	0	PFO/PSS	Ephemeral - 6" deep at visit, drying quickly	shallow O over mineral	~3X15', skid ruts in wetland, disturbed by logging	**	No
P-RS-27	250' Buffer Area	Natural	0	0	1	0	0	0	0	0	PFO	Permanent, ~5' deep at visit	organic	fish, active beaver pond	**	No

V#1 Visit Dates: 04/30/19, 05/06/19; 05/07/19
V#2 Visit Dates: 05/20/9; 05/21/19; 05/28/19

** = May be jurisdictional to the Corps if wetland alteration triggers jurisdiction

Three Rivers Solar Power, LLC - Three Rivers Solar Project, T16MD, Maine Streams within 250' Buffer Area - November/December 2018 and May/June 2019					
Resource ID	Location	Hydroperiod	Width	Depth at Visit	Bottom Type
S-RS-1*	250' buffer area	Intermittent	18"	10"	sandy silt
S-RS-2*	250' buffer area	Intermittent	24"	8"	sandy,cobbles
S-RS-3	250' buffer area	Perennial	10-15'	2-4'	sand and gravel
S-RS-4	250' buffer area	Perennial	10-15'	2-4'	sand and gravel
S-RS-5	250' buffer area	Intermittent	12"-24"	8"-12"	sand and silt
S-RS-6*	250' buffer area	Perennial	24"-60"	12-30"	sand /silt and mud

* S-RS-1, S-RS-2, and S-RS-6 are within 100' of Proposed Development Areas

APPENDIX D
Color Photographs of Wetlands and Streams
(see Appendix F for vernal pool photographs)

Atlantic Resource Co, LLC

August 26, 2019

Photo 1: Wetland WRS-1: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 2: Wetland WRS-2: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 3: Wetland WRS-3: PEM1E (Area 1). Photograph taken 6/12/19.

Photo 4: Wetland WRS-4: PEM1E (Area1). Photograph taken 6/18/19.

Photo 5: Wetland WRS-5: PEM1E (Area 3). Photograph taken 08/16/19.

Photo 6: Wetland WRS-7: PSS1E (Area1). Photograph taken 7/5/19.

Photo 7: Wetland WRS-8: PEM1E (Area 2). Photograph taken 6/18/19.

Photo 8: Wetland WRS-9 (Area 2): PEM1E. Photograph taken 6/18/19.

Photo 9: Wetland WRS-10 (Area 2): PEM1E. Photograph taken 6/17/19.

Photo 10: Wetland WRS-11: PEM1E (Area 2). Photograph taken 6/17/19.

Photo 11: Wetland WRS-12: PEM1E (Area 2). Photograph taken 06/18/18.

Photo 12: Wetland WRS-13: PEM1E (Area 2). Photograph taken 6/18/19.

Photo 13: Wetland WRS-14: PEM1E (Area 3). Photograph taken 6/18/19.

Photo 14: Wetland WRS-15: PEM1E (Area 3). Photograph taken 6/18/19.

Photo 15: Wetland WRS-16: PEM1E (Area 3). Photograph taken 6/18/19.

Photo 16: Wetland WRS-17: PEM1E (Area 3). Photograph taken 6/18/19.

Photo 17: Wetland WRS-18: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 18: Wetland WRS-19: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 19: Wetland WRS-20: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 20: Wetland WRS-21: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 21: Wetland WRS-22: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 22: Wetland WRS-23: PSS1E (Area 4). Photograph taken 12/10/18.

Photo 23: Wetland WRS-24: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 24: Wetland WRS-26: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 25: Wetland WRS-27: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 26: Wetland WRS-28: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 27: Wetland WRS-29: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 28: Wetland WRS-30: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 29: Wetland WRS-31: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 30: Wetland WRS-32: PSS1E (Area 4). Photograph taken 6/18/19.

Photo 31: Wetland WRS-33: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 32: Wetland WRS-34: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 33: Wetland WRS-35: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 34: Wetland WRS-36: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 35: Wetland WRS-37: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 36: Wetland WRS-38: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 37: Wetland WRS-39: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 38: Wetland WRS-40: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 39: Wetland WRS-41: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 40: Wetland WRS-42: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 41: Wetland WRS-43 (Area 5): PSS1E. Photograph taken 6/17/19.

Photo 42: Wetland WRS-44: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 43: Wetland WRS-45: PSS1E (Area 5). Photograph taken 6/17/19.

Photo 44: Wetland WRS-46: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 45: Wetland WRS-47: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 46: Wetland WRS-48: PSS1E (Area 6). Photograph taken 6/17/19.

Photo 47: Wetland WRS-49: PSS1E (Area 1). Photograph taken 5/7/19.

Photo 48: Wetland WRS-50: PSS1E (Area 1). Photograph taken 5/7/19.

Photo 49: Wetland WRS-51: PSS1E (Area 1). Photograph taken 5/7/19.

Photo 50: Wetland WRS-52: PSS1E (Area 1). Photograph taken 5/7/19.

Photo 51: Wetland WJL-24: PFO1E (Area 1). Photograph taken6/18/19.

Photo 52: Wetland WJL-25: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 53: Wetland WJL-26: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 54: Wetland WJL-27: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 55: Wetland WJL-28: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 56: Wetland WJL-29: PEM1E (Area 1). Photograph taken 6/18/19.

Photo 57: Wetland WJL-30: PSS1E (Area 1). Photograph taken 5/7/19.

Photo 58: Wetland WDK-1: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 59: Wetland WDK-2: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 60: Wetland WDK-3: PEM1E (Area 5). Photograph taken 6/17/19.

Photo 61: Wetland WDK-4: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 62: Wetland WDK-5: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 63: Wetland WDK-6: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 64: Wetland WDK-7: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 65: Wetland WDK-8: PEM1E (Area 5). Photograph taken 12/11/18.

Photo 66: Wetland WSH-1/WAB-1: PSS1E (Area 5). Photograph taken 6/15/19.

Photo 67: Wetland WSH-2: PEM1E (Area 5). Photograph taken 6/18/19.

Photo 68: Wetland WSH-3: PSS1E (Area 5). Photograph taken 6/18/19.

Photo 69: Wetland WJL-40: PFO4E (Road Connector). Photograph taken 6/12/19.

Photo 70: Wetland WJL-41: PFO4E (Road Connector). Photograph taken 6/12/19.

Photo 71: Wetland WJL-42: PFO1E (Road Connector). Photograph taken 6/12/19.

Photo 72: Wetland WJL-43: PFO4E (Road Connector). Photograph taken 6/12/19.

Photo 73: Wetland WJL-44: PFO1E (Road Connector). Photograph taken 6/12/19.

Photo 74: Wetland WJL-45: PSS1E (Road Connector). Photograph taken 6/12/19.

Photo 75: Wetland WJL-46: PSS1E (Road Connector). Photograph taken 6/12/19.

Photo 76: Wetland WJL-47: PSS1E (Road Connector). Photograph taken 6/12/19.

Photo 77: Wetland WJL-48: PSS1E (Road Connector). Photograph taken 6/17/19.

Photo 78: Wetland WJL-49: PFO1&4E (Road Connector). Photograph taken 6/17/19.

Photo 79: Wetland WJL-50: PFO1&4E (Road Connector). Photograph taken 6/17/19.

Photo 80: Wetland WJL-56: PSS/PEM (Road Connector). Photograph taken 6/17/19.

Photo 81: Wetland WAB-3: PSS1 (Road Connector). Photograph taken 6/17/19.

Photo 82: Stream S-R1 (within 100' of Area 4). Photograph taken 7/1/19.

Photo 83: Stream S-R2 (within 100' of Area 1). Photograph taken 7/1/19.

Photo 84: Stream S-R6 (within 100' of Area 5). Photograph taken 7/1/19.

APPENDIX E
Representative Corps Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: DK-3 U

Investigator(s): JL, DK Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): HILLSIDE Local relief (concave, convex, none): LINEAR Slope (%): 3-8

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.709137 Long: -68.103059 Datum: WGS84

Soil Map Unit Name: Scantic-Biddeford Complex (SBA) NWI classification: UPLAND

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DK-3 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Prunus pensylvanica*	25	Yes	FACU
2. *Populus tremuloides*	30	Yes	FACU
3. *Viburnum nudum*	15	No	FACW
4. *Acer rubrum*	10	No	FAC
5.			
6.			
7.			
	80 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Rubus idaeus*	30	Yes	FACU
2. *Rubus allegheniensis*	20	Yes	FACU
3. *Aralia nudicaulis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	135 (A)		500 (B)
Prevalence Index = B/A =			3.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DK-3 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 2.5/1	100						ORGANIC
3-4	7.5YR 3/3	100					Loamy/Clayey	
4-10	10YR 5/6	100					Loamy/Clayey	
10-20	10YR 5/6	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: DK-3 W

Investigator(s): JL, DK Section, Township, Range: T16MD

Landform (hillside, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.709079 Long: -68.103119 Datum: WGS84

Soil Map Unit Name: Scantic-Biddeford Complex (SBA) NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WDK-03

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____
Water Table Present?	Yes X	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-3 U

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): HILLSIDE Local relief (concave, convex, none): CONVEX Slope (%): 3-8

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.722488 Long: -68.095245 Datum: WGS84

Soil Map Unit Name: Hermon-Monadnock-Peru Complex (HMC) NWI classification: UPLAND

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and shrubs, stumped and large boulders currently being removed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-3 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Acer rubrum*	10	No	FAC
2. *Vaccinium angustifolium*	40	Yes	FACU
3. *Kalmia angustifolia*	40	Yes	FAC
4. *Viburnum nudum*	10	No	FACW
5. *Prunus pensylvanica*	5	No	FACU
6.			
7.			
	105 =Total Cover		
Herb Stratum (Plot size: 1M)			
1. *Gaultheria procumbens*	40	Yes	FACU
2. *Pteridium aquilinum*	5	No	FACU
3. *Poa pratensis*	20	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	50	x 3 =	150
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	170 (A)		610 (B)
Prevalence Index = B/A =			3.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-3 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/1	100						ORGANIC
2-4	7.5YR 4/1	100					Loamy/Clayey	
4-6	10YR 3/4	100					Loamy/Clayey	
6-10	10YR 4/6	90	10YR 5/2	10	D	M	Loamy/Clayey	
10-14	10YR 4/6	100						GRAVELLY

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-3 W

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.722587 Long: -68.094948 Datum: WGS84

Soil Map Unit Name: Hermon-Mondadnock-Peru Complex (HMC) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WRS-03

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and shrubs, stumped, boulders currently being removed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	4
Water Table Present?	Yes X	No ____	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-3 W

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Spiraea alba*	15	Yes	FACW
3. *Acer rubrum*	5	No	FAC
4. *Viburnum nudum*	5	No	FACW
5.			
6.			
7.			
	55 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Scirpus cyperinus*	5	No	OBL
2. *Solidago gigantea*	5	No	FACW
3. *Carex debilis*	10	Yes	FACW
4. *Carex tenera*	10	Yes	FAC
5. *Gaultheria procumbens*	20	Yes	FACU
6. *Kalmia angustifolia*	5	No	FAC
7. *Spiraea alba*	5	No	FACW
8. *Vaccinium angustifolium*	20	Yes	FACU
9.			
10.			
11.			
12.			
	80 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	40	x 2 =	80
FAC species	50	x 3 =	150
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	135 (A)		395 (B)
Prevalence Index = B/A =			2.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-3 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 2.5/1	100					Peat	ORGANIC
2-4	2.5Y 4/1	100					Loamy/Clayey	
4-10	2.5Y 5/2	80	7.5YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
10-14	2.5Y 6/2	70	7.5YR 5/8	30	C	M	Loamy/Clayey	Prominent redox concentrations
14-18	2.5Y 6/2	40	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations
	10YR 6/1	30						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/17/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-10 U

Investigator(s): JL,RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): HILLSIDE Local relief (concave, convex, none): LINEAR Slope (%): 3-8

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.721927 Long: -68.109603 Datum: WGS84

Soil Map Unit Name: Lamoine-Scantic-Colonel Complex (LLB) NWI classification: UPLAND

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-10 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Pteridium aquilinum*	5	No	FACU
2. *Carex arctata*	10	No	UPL
3. *Vaccinium angustifolium*	80	Yes	FACU
4. *Kalmia angustifolia*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	85	x 4 =	340
UPL species	10	x 5 =	50
Column Totals:	100 (A)		405 (B)
Prevalence Index = B/A =			4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-10 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 3/1	100						ORGANIC
3-5	2.5Y 8/2	100					Loamy/Clayey	FSL
5-7	7.5YR 3/3	100					Loamy/Clayey	FSL
7-11	5YR 4/3	100					Loamy/Clayey	FSL
11-15	10YR 4/6	100					Loamy/Clayey	FSL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/17/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-10 W

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.721931 Long: -68.109513 Datum: WGS84

Soil Map Unit Name: Lamoine-Scantic-Colonel Complex (LLB) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WRS-10

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	2
Water Table Present?	Yes X	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RS-10 W

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Betula populifolia*	10	Yes	FAC
2. *Spiraea tomentosa*	10	Yes	FACW
3. *Spiraea alba*	10	Yes	FACW
4. *Rhododendron canadense*	10	Yes	FACW
5.			
6.			
7.			
	40 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Carex canescens*	15	Yes	OBL
2. *Maianthemum canadense*	2	No	FACU
3. *Vaccinium angustifolium*	5	No	FACU
4. *Vaccinium myrtilloides*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	27 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	35	x 2 =	70
FAC species	10	x 3 =	30
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	67 (A)		143 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-10 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 2.5/1	100					Peat	
4-6	5Y 5/1	100					Loamy/Clayey	
6-9	2.5Y 5/2	50	10YR 5/6	30	C	M	Loamy/Clayey	Prominent redox concentrations
	2.5Y 4/2	20						
9-16	2.5Y 6/2	70	10YR 5/8	30	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: FIRM LAYER

Depth (inches): 16

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-15 U

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): Toe slope Local relief (concave, convex, none): convex Slope (%): 3-8

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.714577 Long: -68.102401 Datum: WGS84

Soil Map Unit Name: Hermon-Monadnock-Peru Complex (HMC) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-15 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Kalmia angustifolia*	5	Yes	FAC
3. *Betula alleghaniensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Solidago canadensis*	30	Yes	FACU
2. *Maianthemum canadense*	10	No	FACU
3. *Carex lucorum*	20	Yes	UPL
4. *Betula alleghaniensis*	5	No	FAC
5. *Kalmia angustifolia*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	40	x 4 =	160
UPL species	20	x 5 =	100
Column Totals:	85 (A)		330 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-15 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100						Loam
2-8	7.5YR 3/4	100						Sandy Loam with coarse fragments
8-12	10YR 4/4	100						Gravely loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: NEXT PHASE ENERGY, LLC State: ME Sampling Point: RS-15 W

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.714438 Long: -68.102312 Datum: WGS84

Soil Map Unit Name: Hermon-Monadnock-Peru Complex (HMC) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WRS-15

Remarks: (Explain alternative procedures here or in a separate report.)
Area has undergone conversion to agricultural land, has been cleared of all trees and most shrubs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	6
Water Table Present?	Yes X	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-15 W

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Kalmia angustifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Scirpus cyperinus*	20	Yes	OBL
2. *Carex canescens*	10	Yes	OBL
3. *Onoclea sensibilis*	5	No	FACW
4. *Rubus hispidus*	5	No	FACW
5. *Solidago gigantea*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	55 (A)		90 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-15 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y 2.5/1	100					Peat	ORGANIC
1-8	2.5Y 5/2	95	10YR 4/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations
8-14	2.5Y 5/2	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-23 U

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): HILLSIDE Local relief (concave, convex, none): CONVEX Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.712216 Long: -68.105249 Datum: WGS84

Soil Map Unit Name: Scantic-Biddeford Complex (SBA) NWI classification: UPLAND

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Area has been cleared of all trees.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-23 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Populus tremuloides*	30	Yes	FACU
2. *Viburnum nudum*	30	Yes	FACW
3. *Picea rubens*	5	No	FACU
4. *Abies balsamea*	5	No	FAC
5. *Acer rubrum*	10	No	FAC
6.			
7.			
	80 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Pteridium aquilinum*	5	No	FACU
2. *Vaccinium angustifolium*	15	Yes	FACU
3. *Maianthemum canadense*	15	Yes	FACU
4. *Kalmia angustifolia*	5	No	FAC
5. *Carex novae-angliae*	20	Yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	20	x 3 =	60
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	140 (A)		480 (B)
Prevalence Index = B/A =			3.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-23 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/1	100						ORGANIC
1-3	7.5YR 3/4	100						LOAM
3-16	10YR 5/4	100						SILT LOAM
16-20	2.5Y 5/4	80	10YR 5/6	20	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/12/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-23 W

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.712325 Long: -68.105117 Datum: WGS84

Soil Map Unit Name: Scantic-Biddeford Complex (SBA) NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WRS-23

Remarks: (Explain alternative procedures here or in a separate report.)
Area has been cleared of all trees.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- x Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- x Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- x Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes x	No ____	Depth (inches):	3
Water Table Present?	Yes x	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-23 W

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)			
1. *Alnus incana*	10	No	FACW
2. *Viburnum nudum*	5	No	FACW
3. *Spiraea alba*	40	Yes	FACW
4. *Betula populifolia*	15	Yes	FAC
5. *Acer rubrum*	5	No	FAC
6. *Rhododendron canadense*	5	No	FACW
7.			
	80 =Total Cover		
Herb Stratum (Plot size: 1 m)			
1. *Osmunda claytoniana*	10	Yes	FAC
2. *Maianthemum canadense*	10	Yes	FACU
3. *Rubus hispidus*	5	No	FACW
4. *Carex debilis*	5	No	FACW
5. *Carex canescens*	10	Yes	OBL
6. *Spiraea alba*	10	Yes	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	50 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	80	x 2 =	160
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	130 (A)		300 (B)

Prevalence Index = B/A = 2.31

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-23 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 2.5/1	100					Peat	ORGANIC
6-8	2.5Y 2.5/1	100						LOAM
8-18	2.5Y 4/1	60	7.5YR 4/6	10	C	M		SILT LOAM
	2.5Y 5/2	30						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/17/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-36 U

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): linear Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.707440 Long: -68.106041 Datum: WGS84

Soil Map Unit Name: Colton-Hermon Association (CUC) NWI classification: UPLAND

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Area has been cleared of most trees, leaving shrubs up to 20' tall.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: RS-36 U

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	2	No	FAC
2. *Prunus pensylvanica*	2	No	FACU
3.			
4.			
5.			
6.			
7.			
	4	=Total Cover	
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Prunus pensylvanica*	5	No	FACU
2. *Populus tremuloides*	60	Yes	FACU
3. *Betula populifolia*	5	No	FAC
4. *Viburnum nudum*	15	No	FACW
5. *Corylus cornuta*	2	No	FACU
6.			
7.			
	87	=Total Cover	
Herb Stratum (Plot size: 1 M)			
1. *Prunus pensylvanica*	2	No	FACU
2. *Populus tremuloides*	5	Yes	FACU
3. *Corylus cornuta*	2	No	FACU
4. *Fragaria virginiana*	5	Yes	FACU
5. *Hieracium aurantiacum*	5	Yes	UPL
6. *Potentilla simplex*	5	Yes	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	24	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	7	x 3 =	21
FACU species	88	x 4 =	352
UPL species	5	x 5 =	25
Column Totals:	115 (A)		428 (B)
Prevalence Index = B/A =			3.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-36 U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y 2.5/1	100					Peat	
1-4	10YR 4/4	100					Loamy/Clayey	
4-8	2.5Y 5/4	100					Loamy/Clayey	
8-12	2.5Y 6/3	80	2.5Y 5/1	10	D	M	Loamy/Clayey	
			10YR 4/4	10	C	M		Distinct redox concentrations
12-16	2.5Y 6/3	60	2.5Y 5/1	20	D	M	Loamy/Clayey	
			10YR 4/4	20	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Firm Layer

Depth (inches): 16

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: THREE RIVERS SOLAR City/County: HANCOCK Sampling Date: 6/17/2019

Applicant/Owner: THREE RIVERS SOLAR POWER, LLC State: ME Sampling Point: RS-36 W

Investigator(s): JL, RSA Section, Township, Range: T16 MD

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-3

Subregion (LRR or MLRA): LRR R, MLRA 143 Lat: 44.707410 Long: -68.106184 Datum: WGS84

Soil Map Unit Name: Colton-Hermon Association (CUC) NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	WRS-36

Remarks: (Explain alternative procedures here or in a separate report.)
Area has been cleared of all trees and most shrubs for agricultural use.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)	___ Aquatic Fauna (B13)
X High Water Table (A2)	___ Marl Deposits (B15)	___ Hydrogen Sulfide Odor (C1)
X Saturation (A3)	___ Water Marks (B1)	___ Sediment Deposits (B2)
___ Drift Deposits (B3)	___ Algal Mat or Crust (B4)	___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)	___ Sparsely Vegetated Concave Surface (B8)	

___ Oxidized Rhizospheres on Living Roots (C3)	___ Surface Soil Cracks (B6)
___ Presence of Reduced Iron (C4)	___ Drainage Patterns (B10)
___ Recent Iron Reduction in Tilled Soils (C6)	___ Moss Trim Lines (B16)
___ Thin Muck Surface (C7)	___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)	___ Crayfish Burrows (C8)
	___ Saturation Visible on Aerial Imagery (C9)
	___ Stunted or Stressed Plants (D1)
	X Geomorphic Position (D2)
	___ Shallow Aquitard (D3)
	X Microtopographic Relief (D4)
	X FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____
Water Table Present?	Yes X	No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RS-36 W

Tree Stratum (Plot size: 10 M)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 5 M)			
1. *Viburnum nudum*	45	Yes	FACW
2. *Spiraea alba*	10	No	FACW
3. *Populus tremuloides*	20	Yes	FACU
4.			
5.			
6.			
7.			
	75 =Total Cover		
Herb Stratum (Plot size: 1 M)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Spiraea alba*	10	Yes	FACW
3. *Rubus pubescens*	5	No	FACW
4. *Carex debilis*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	105 (A)		250 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: RS-36 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 2.5/1	100					Peat	
2-4	2.5Y 3/1	100					Mucky Loam/Clay	
4-8	2.5Y 5/2	98	10YR 4/6	2	C	M	Mucky Loam/Clay	Prominent redox concentrations
8-18	2.5Y 5/2	70	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations
18-20	2.5Y 5/2	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

APPENDIX F
Maine State Vernal Pool Assessment Forms and Attachments

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-JL-15 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-JL-15 is in the northwest of TRS Area 1 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1066 Latitude/Northing: 44.7280

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☑ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

PFO/PSS wetland with numerous areas of standing water.Pool depth is increased by road and plugged culvert.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Pool is 36-60" deep in center, but up to half of delineated pool dries out (ditch and/or shallower pools).

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ◉ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ○ m ◉ ft Length: 75 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☑ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☑ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/30/19, 5/7/2019, 5/20/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	5	0	0	3	3	3	M								
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Hydrology impacted by road.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-JL-16 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St. Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-JL-16 is in the central portion of TRS Area 1. Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1018 Latitude/Northing: 44.7205

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☑ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area has been cleared of all vegetation over 3 feet tall and treated with herbicides for agricultural use. Skid ruts are evident in the wetland and vernal pool.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Pool at most 18" deep. No surrounding cover (full sun).

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ○ m ◉ ft Length: 140 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☑ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/20/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	7			3			M				Y			3	
Spotted Salamander	6	6		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is large chain of connected pools in PEM/PSS wetland. Skid ruts on east side.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-JL-17 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St. Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-JL-17 is in the central portion of TRS Area 6. Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1021 Latitude/Northing: 44.7203

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area has been cleared of all vegetation over 3 feet tall and treated with herbicides for agricultural use. Skid ruts are evident in the wetland.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Pool at most 18" deep, average of 6" deep. No surrounding cover (full sun).

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ○ m ◉ ft Length: 80 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/30/2019, 5/20/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	2	2		3	3		M	H							
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Chain of connected pools in a PSS/PEM wetland. Over 500 feet from undisturbed upland forests.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: P-RS-8 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-8 is in the eastern portion of TRS Area 1 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.0927 Latitude/Northing: 44.7206

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ○ Pool associated with larger wetland complex
- ◉ Other: Isolated pool inside isolated wetland

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area around and in pool has been cleared of all vegetation over 2 feet high and treated with herbicides

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Although deep during survey season, pool was only 10" deep by mid June, and therefore likely dries out completely (saturated soils and high water table likely).

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ◉ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ○ m ◉ ft Length: 250 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/30/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ◉ Yes ◉ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	1	0		3	3		M				Y			3	
Spotted Salamander	2	27		3	3		F	M							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Deep organics and sphagnum mat. One continuous pool inside isolated wetland. Dense leather leaf in center of pool, lots of sedges around edges.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: P-RS-21 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-21 is in the southern portion of TRS Area 4 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1052 Latitude/Northing: 44.7116

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area has been clear cut, only shrubs and small trees remaining.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small pool area, no cover.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 12 ○ m ◉ ft Length: 20 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☑ Other: Green frogs observed

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/7/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ◉ Yes ◉ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	4			3			F				Y			3	
Spotted Salamander	4	7		3	3		F	M							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-25 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St. Amand, J. LeClerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-25 is in the central portion of TRS Area 4 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1050 Latitude/Northing: 44.71211944

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area has been clear cut.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Shallow with minimal shade cover in small isolated wetland

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 10 ( ) m (•) ft Length: 20 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- (•) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/28/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ◯ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◯ Yes ◯ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	1	0		3	3		M								
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ◯ does not meet biological criteria. ◯ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-DK-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R.St. Amand, J. LeClerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-DK-01 is east of TRS Area 5 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1004 Latitude/Northing: 44.7077

Coordinate system: WGS 84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Within area of timber harvest.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Shallow, with intermittent outlet to northeast

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ○ m ◉ ft Length: 60 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☑ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/28/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	2	0		3	3		M				X			3	
Spotted Salamander	2	13		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool inside forest on edge of clearing

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: P-DK-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-DK-02 is east of TRS Area 5 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1002 Latitude/Northing: 44.7074

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☑ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Western section of pool has been cleared of woody vegetation, skid ruts are evident.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Full sun; shallow O over mineral.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ○ m ◉ ft Length: 70 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ◉ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/28/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	2	0		3			A								
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-JL-06 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-JL-6 is northeast of TRS Area 2 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1052 Latitude/Northing: 44.7201

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☑ ATV or skidder rut
- ☑ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Roads border wetland on east, north, and west. skid ruts and logging impacting pool and surrounding wetland. Small borrow pit on west side where spotted salamander masses were observed.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Pool and surrounding wetland likely saturated all year, with small pockets of standing water present most years. Culvert draining wetland to north limits water depth, shortening hydroperiod.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 40 ○ m ◉ ft Length: 30 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☑ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/7/19 and 5/21/19

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	3	0		3	3		M								
Spotted Salamander	5	5		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Most indicator species' egg masses found in modified areas (skid ruts and burrow pits). Drains north through culvert under road

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-4 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS - 4 is east of TRS Area 1 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.0986 Latitude/Northing: 44.7124

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Evidence of historic logging and old road along south side. Very old beaver dam holding water to southeast

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Pool drains through historic beaver dam to southeast. 18" deep max at time of surveys.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 12 ○ m ◉ ft Length: 10 ○ m ○ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☑ Other: Snapping turtle in pool.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ◉ Other or Unknown (explain): Drains thru old beaver dam into intermittent stream

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	2	0		3	3		F								
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Sparsely vegetated concave surface with 80% Alnus incana cover (growing in and on edges of pool). Very large snapping turtle observed laying on/in substrate. This area likely a historic intermittent stream prior to beaver activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-6 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS - 6 is east of TRS Area 4 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1010 Latitude/Northing: 44.7112

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Shallow, open PEM

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 ○ m ◉ ft Length: 15 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ◉ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/7/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ◯ Yes ◯ No
- Was the entire pool surveyed for egg masses? ◉ Yes ◯ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	5	1		3	3		A	H							
Spotted Salamander	0	2		3	3			M							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small chain of connected pools in larger PEM/PFO5b

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ◯ does not meet biological criteria. ◯ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-9 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-9 is between TRS Areas 2 and 3 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1046 Latitude/Northing: 44.7181

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Strip-style logging throughout area. Skid ruts along both edges of pool.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Shallow. Drains (non-channelized) to southwest

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ○ m ◉ ft Length: 60 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	2	2		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Chain of connected pools in large PFO/PSS. Wetland drains southwest, areas of visible water movement.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: P-RS-15 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St.Amand, J. Leclerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-15 is west of TRS Area 3 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1048 Latitude/Northing: 44.7153

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Potentially modified by road/earthwork around north and east sides of pool. Possible borrow pit (very old).

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Isolated pool, not associated with larger wetland. Mineral soils.

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 ( ) m (•) ft Length: 25 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- (•) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/30/2019, 5/8/2019, 5/21/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	3	3	0	3	3	3	F	M	H			Y			3
Spotted Salamander	3	3	3	3	3	3	F	M	A						
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Hydrology altered by road.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-22 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St. Amand, J. LeClerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-22 is southeast of TRS Area 5 (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: 44.70647778 Latitude/Northing: 68.10027778

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Area has been clear cut of all trees. Only shrubs remaining. Some skid ruts in wetland.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Shallow and limited cover (50% shade).

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 80 ○ m ◉ ft Length: 40 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ◉ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☑ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☑ Other: Green frogs

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ◉ Other or Unknown (explain): Wetland drains southeast to W. Branch Narraguagus R.

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/28/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	4	0		3	3		M								
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: P-RS-24 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: R. St. Amand, J. LeClerc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Aleita Burman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Three Rivers Solar

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Duane Jordan Phone: 207-479-4465

Street Address: 381 Cave Hill Road City: Waltham State: ME Zip: 04605

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T16 MD

Brief site directions to the pool (using mapped landmarks):

P-RS-24 is (see map). Large undeveloped property; use coordinates to find.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -68.1050000 Latitude/Northing: 44.71069444

Coordinate system: WGS84

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Hydrology altered by road to south.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Shallow with full sun

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ○ m ◉ ft Length: 35 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6/2019, 5/28/2019

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	1	0		3	3		M								
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Atlantic Resource Co, LLC

July 06, 2019

Photo 1: Vernal Pool: P-JL-15 (Area 1). Man-Made/Natural Modified. Photograph taken 5/7/19.

Photo 2: Vernal Pool: P-JL-15 (Area 1). Wood frog egg mass. Photograph taken 4/30/19.

Photo 3: Vernal Pool: P-JL-16 (Area 1). Natural Modified. Photograph taken 04/30/19.

Photo 4: Vernal Pool: P-JL-16 (Area 1). Wood frog egg mass. Photograph taken 4/30/19.

Photo 5: Vernal Pool: P-JL-16 (Area 1). Spotted salamander egg mass. Photograph taken 4/30/19.

Photo 6: Vernal Pool: P-JL-17 (Area 1). Natural Modified. Photograph taken 5/20/19.

Photo 7: Vernal Pool: P-JL-17 (Area 1). Wood Frog egg mass. Photograph taken 5/20/19.

Photo 8: Vernal Pool: P-RS-8 (Area 1). Natural Modified. Photograph taken 5/20/19.

Photo 9: Vernal Pool: P-RS-8 (Area 1). Wood frog egg mass. Photograph taken 04/30/19.

Photo 10: Vernal Pool: P-RS-8 (Area 1). Spotted Salamander egg mass. Photograph taken 5/20/19.

Photo 11: Vernal Pool: P-RS-21 (Area 4). Natural Modified. Photograph taken 5/21/19.

Photo 12: Vernal Pool: P-RS-21 (Area 4). Wood frog egg mass (upper right). Photograph taken 04/30/19.

Photo 13: Vernal Pool: P-RS-21 (Area 4). Spotted salamander egg mass. Photograph taken 5/21/19.

Photo 14: Vernal Pool: P-RS-25 (Area 4). Natural Modified. Photograph taken 5/28/19.

Photo 15: Vernal Pool: P-RS-25 (Area 4). Wood frog egg mass. Photograph taken 04/30/19.

Photo 16: Vernal Pool: P-DK-1 (250’ Buffer Area). Natural / Natural Modified. Photograph taken 5/28/19.

Photo 17: Vernal Pool: P-DK-1 (250' Buffer Area). Wood frog egg mass. Photograph taken 04/30/19.

Photo 18: Vernal Pool: P-DK-1 (250' Buffer Area). Spotted salamander egg mass. Photograph taken 5/6/19.

Photo 19: Vernal Pool: P-DK-2 (250' Buffer Area). Natural / Natural Modified. Photograph taken 5/28/19.

Photo 20: Vernal Pool: P-DK-2 (250' Buffer Area). Wood frog egg mass. Photograph taken 05/28/19.

Photo 21: Vernal Pool: P-JL-6 (250’ Buffer Area). Natural-Modified. Photograph taken 5/6/19.

Photo 22: Vernal Pool: P-JL-6 (250’ Buffer Area). Wood Frog egg mass. Photograph taken 5/6/19.

Photo 23: Vernal Pool: P-JL-6 (250' Buffer Area). Spotted salamander egg mass (center). Photograph taken 5/6/19.

Photo 24: Vernal Pool: P-RS-4 (250' Buffer Area). Man-Made/ Natural Modified. Photograph taken 5/21/19.

Photo 25: Vernal Pool: P-RS-4 (250' Buffer Area). Spotted salamander egg mass. Photograph taken 04/30/19.

Photo 26: Vernal Pool: P-RS-6 (250' Buffer Area). Natural. Photograph taken 5/21/19.

Photo 27: Vernal Pool: P-RS-6 (250’ Buffer Area). Wood Frog egg masses. Photograph taken 4/30/19.

Photo 28: Vernal Pool: P-RS-6 (250’ Buffer Area). Spotted salamander egg mass. Photograph taken 04/30/19.

Photo 29: Vernal Pool: P-RS-9 (250’ Buffer Area). Natural Modified. Photograph taken 5/6/19.

Photo 30: Vernal Pool: P-RS-9 (250’ Buffer Area). Spotted salamander egg mass. Photograph taken 5/6/19.

Photo 31: Vernal Pool: P-RS-15 (250’ Buffer Area). Man-Made/Natural Modified. Photograph taken 5/21/19.

Photo 32: Vernal Pool: P-RS-15 (250’ Buffer Area). Wood Frog egg masses. Photograph taken 5/6/19.

Photo 33: Vernal Pool: P-RS-15 (250' Buffer Area). Spotted salamander egg mass (typical – no photo at this VP). Photograph taken 5/6/19.

Photo 34: Vernal Pool: P-RS-22 (250' Buffer Area). Natural/Natural Modified. Photograph taken 5/28/19.

Photo 35: Vernal Pool: P-RS-22 (250' Buffer Area). Wood Frog egg masses. Photograph taken 04/30/19.

Photo 36: Vernal Pool: P-RS-24 (250' Buffer Area). Natural Modified. Photograph taken 5/28/19.

Photo 37: Vernal Pool: P-RS-24 (250' Buffer Area). Spotted salamander egg mass. Photograph taken 04/30/19.

Photo 38: Indicator Breeding Area: P-JL-22 (Area 1). Man-Made Borrow Pit. Photograph taken 5/28/19.

Photo 39: Indicator Breeding Area: P-RS-13 (Area 3). Natural Modified – Insufficient Hydrology. Photograph taken 5/21/19.

Photo 40: Indicator Breeding Area: P-JL-3 (Area 3). Man-Made Borrow Pit. Photograph taken 5/28/19.

Photo 41: Indicator Breeding Area: P-JL-11 (250' Buffer Area). Natural Beaver Pond in Stream. Photograph taken 5/7/19.

Photo 42: Indicator Breeding Area: P-JL-23 (250' Buffer Area). Man-Made - Skid Ruts. Photograph taken 5/28/19.

Photo 43: Indicator Breeding Area: P-RS-12 (250' Buffer Area). Man-Made - Skid Ruts. Photograph taken 5/21/19.

Photo 44: Indicator Breeding Area: P-RS-23 (250' Buffer Area). Man-Made - Skid Ruts. Photograph taken 5/28/19.

Photo 45: Indicator Breeding Area: P-RS-26 (250’ Buffer Area). Man-Made - Skid Ruts. Photograph taken 5/28/19.

Photo 46: Indicator Breeding Area: P-RS-27 (250’ Buffer Area). Natural Beaver Pond. Photograph taken 5/08/19.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

July 26, 2019

Aleita Burman
Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474

Re: Vernal Pool Significance Determination, Pool ID #s 3741, 3742, 3743, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755–T16 MD BPP

Dear Aleita Burman:

Vernal pools are temporary to semi-permanent wetlands occurring in shallow depressions that typically fill during the spring and dry during the summer or in drought years. They provide important breeding and foraging habitat for a wide variety of specialized wildlife species including several rare, threatened, and endangered species.

Based on your field surveys, it has been determined that the vernal pools identified above on the property of Duane Jordan are NOT SIGNIFICANT because either: 1. the features do not meet the definition of a vernal pool under the Significant Wildlife Habitat rules, 06-096 CMR 335(9) or 2. the vernal pools do not meet the biological standards for exceptional wildlife use of the Significant Wildlife Habitat rules, 06-096 CMR 335(9)(B). Therefore, activities within 250 feet of the pools are not regulated under the Natural Resources Protection Act (NRPA) unless there are other protected natural resources nearby such as streams or freshwater wetlands. I have attached a copy of the database printout that verifies the State's findings with respect to your surveys.

I want to also advise you that the pool areas on the property can be considered freshwater wetlands and therefore direct pool alterations may require permitting under the NRPA.

The Department will notify the landowner of the pool status under separate cover. If you have any questions or need further clarification, please contact me at (207) 530-0965 or email at: Nick.Livesay@maine.gov

Sincerely,

Nick Livesay, Director
Bureau of Land Resources

cc. town file

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

July 26, 2019

Aleita Burman
Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474

Re: Vernal Pool Significance Determination, Pool ID # 3744–T16 MD BPP

Dear Aleita Burman:

Vernal pools are temporary to semi-permanent wetlands occurring in shallow depressions that typically fill during the spring and dry during the summer or in drought years. They provide important breeding and foraging habitat for a wide variety of specialized wildlife species including several rare, threatened, and endangered species.

Based on your field survey, it has been determined that the vernal pool identified above on the property of Duane Jordan is SIGNIFICANT. I have attached a copy of the database printout that verifies the State's findings with respect to our survey.

As a significant vernal pool, all areas on the Duane Jordan property within 250 feet of the vernal pool depression, known as the "critical terrestrial habitat", will be subject to the requirements of the Natural Resources Protection Act, 38 M.R.S.A. §§480-A to 480-FF, and the Significant Wildlife Habitat rules, 06-096 CMR 335.

The Department will ensure that the vernal pool's location and status is entered and mapped in the State's vernal pool database. Note that if the pool depression (only) crosses two or more property boundaries the abutter(s) are similarly subject to the requirements of the Natural Resources Protection Act and the Significant Wildlife Habitat rules.

The Department will notify the landowner of the pool status under separate cover. If you have any questions or need further clarification, please contact me at (207) 530-0965 or email at: Nick.Livesay@maine.gov

Sincerely,

Nick Livesay, Director
Bureau of Land Resources

cc. town file

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

IFW Recommendations for Significant Vernal Pool Determinations

The following is a list of pools and IFW's recommendations for whether or not they qualify as Significant Vernal Pools, one of Maine's Significant Wildlife Habitats.

Data current as of: Friday, July 26, 2019

IFW's Pool ID: 3741 Twp: T16 MD BPP
Observer's ID: P-JL-15
UTM Coordinates of Pool Center: 570749 E, 4953126 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 4/30/2019 Additional Survey Dates: 05/07/2019, 05/20/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments: Pool provides some habitat for wood frogs but does not meet threshold for significance. Possible permanent hydrology.

IFW's Pool ID: 3742 Twp: T16 MD BPP
Observer's ID: P-JL-16
UTM Coordinates of Pool Center: 571131 E, 4952311 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/20/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3743 Twp: T16 MD BPP
Observer's ID: P-JL-17
UTM Coordinates of Pool Center: 571113 E, 4952271 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 4/30/2019 Additional Survey Dates: 05/20/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3744 Twp: T16 MD BPP
Observer's ID: P-RS-8
UTM Coordinates of Pool Center: 571858 E, 4952315 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 4/30/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: GREEN: SIGNIFICANT
IFW Comments: Pool provides some habitat for wood frogs and significant habitat for spotted salamanders

---

IFW's Pool ID: 3745 Twp: T16 MD BPP
Observer's ID: P-RS-21
UTM Coordinates of Pool Center: 570877 E, 4951300 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/7/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW Recommendations for Significant Vernal Pool Determinations

The following is a list of pools and IFW's recommendations for whether or not they qualify as Significant Vernal Pools, one of Maine's Significant Wildlife Habitats.

Data current as of: Friday, July 26, 2019

IFW's Pool ID: 3746 Twp: T16 MD BPP
Observer's ID: P-RS-25
UTM Coordinates of Pool Center: 570895 E, 4951360 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/28/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3747 Twp: T16 MD BPP
Observer's ID: P-DK-01
UTM Coordinates of Pool Center: 571265 E, 4950876 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/28/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3748 Twp: T16 MD BPP
Observer's ID: P-DK-02
UTM Coordinates of Pool Center: 571268 E, 4950847 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/28/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3749 Twp: T16 MD BPP
Observer's ID: P-JL-06
UTM Coordinates of Pool Center: 570868 E, 4952244 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/7/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3750 Twp: T16 MD BPP
Observer's ID: P-RS-4
UTM Coordinates of Pool Center: 571397 E, 4951392 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/8/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW Recommendations for Significant Vernal Pool Determinations

The following is a list of pools and IFW's recommendations for whether or not they qualify as Significant Vernal Pools, one of Maine's Significant Wildlife Habitats.

Data current as of: Friday, July 26, 2019

IFW's Pool ID: 3751 Twp: T16 MD BPP
Observer's ID: P-RS-6
UTM Coordinates of Pool Center: 571211 E, 4951258 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/7/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3752 Twp: T16 MD BPP
Observer's ID: 3752
UTM Coordinates of Pool Center: 570920 E, 4952029 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3753 Twp: T16 MD BPP
Observer's ID: P-RS-15
UTM Coordinates of Pool Center: 570906 E, 4951712 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 4/30/2019 Additional Survey Dates: 05/08/2019, 05/21/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments: Pool provides some habitat for wood frogs and spotted salamander but does not meet threshold for significance. May be unnatural?(borrow pit)

IFW's Pool ID: 3754 Twp: T16 MD BPP
Observer's ID: P-RS-22
UTM Coordinates of Pool Center: 571275 E, 4950736 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/28/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

IFW's Pool ID: 3755 Twp: T16 MD BPP
Observer's ID: P-RS-24
UTM Coordinates of Pool Center: 570897 E, 4951202 N
ProjectType: Three Rivers Solar

Landowner: Duane Jordan
381 Cave Hill Road
Waltham, ME 04605
(207) 479-4465

Contact: Aleita Burman - Burman Land & Tree, LLC
PO Box 145
Orrington, ME 04474
(207) 825-4050 blburman@gmail.com

Survey Date: 5/6/2019 Additional Survey Dates: 05/28/2019
IFW's Recommendation: RED: NOT SIGNIFICANT, does not meet the biological criteria
IFW Comments:

APPENDIX G
Resource Agency Reponses/Database Searches

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
ACTING COMMISSIONER

January 8, 2019

Aleita Burman
Burman Land & Tree Company, LLC
P.O. Box 145
Orrington, ME 04474

RE: Information Request - Three Rivers Solar Project, T16 MD BPP

Dear Lee:

Per your request received December 10, 2018, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Three Rivers Solar Project* in T16 MD BPP. Note that as project details are lacking our comments are non-specific and should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Upland sandpiper

Upland sandpipers, a State Threatened species, have been documented in the barrens in the Downeast Coastal Plains region as well as within the project search area. Upland sandpipers are protected under Maine's Endangered Species Act and, as such, are afforded special protection against activities that may cause "Take" (kill or cause death), "harassment" (create injury or significantly disrupt normal behavior patterns), and other adverse actions.

Upland sandpipers nest only on the ground and use both native and cultivated vegetation for nesting sites. Given the location, size, and amount of cleared area upland sandpipers may be utilizing the project area for breeding purposes. Therefore, to protect against unintended Take of breeding upland sandpipers (including territorial, incubating, low mobility fledgling birds, and eggs), MDIFW recommends a construction window of September 1 – May 1. MDIFW is willing to work closely with the applicant to design a project that attempts to limit potential impacts to this listed species.

Significant Wildlife Habitat

Significant Vernal Pools

At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

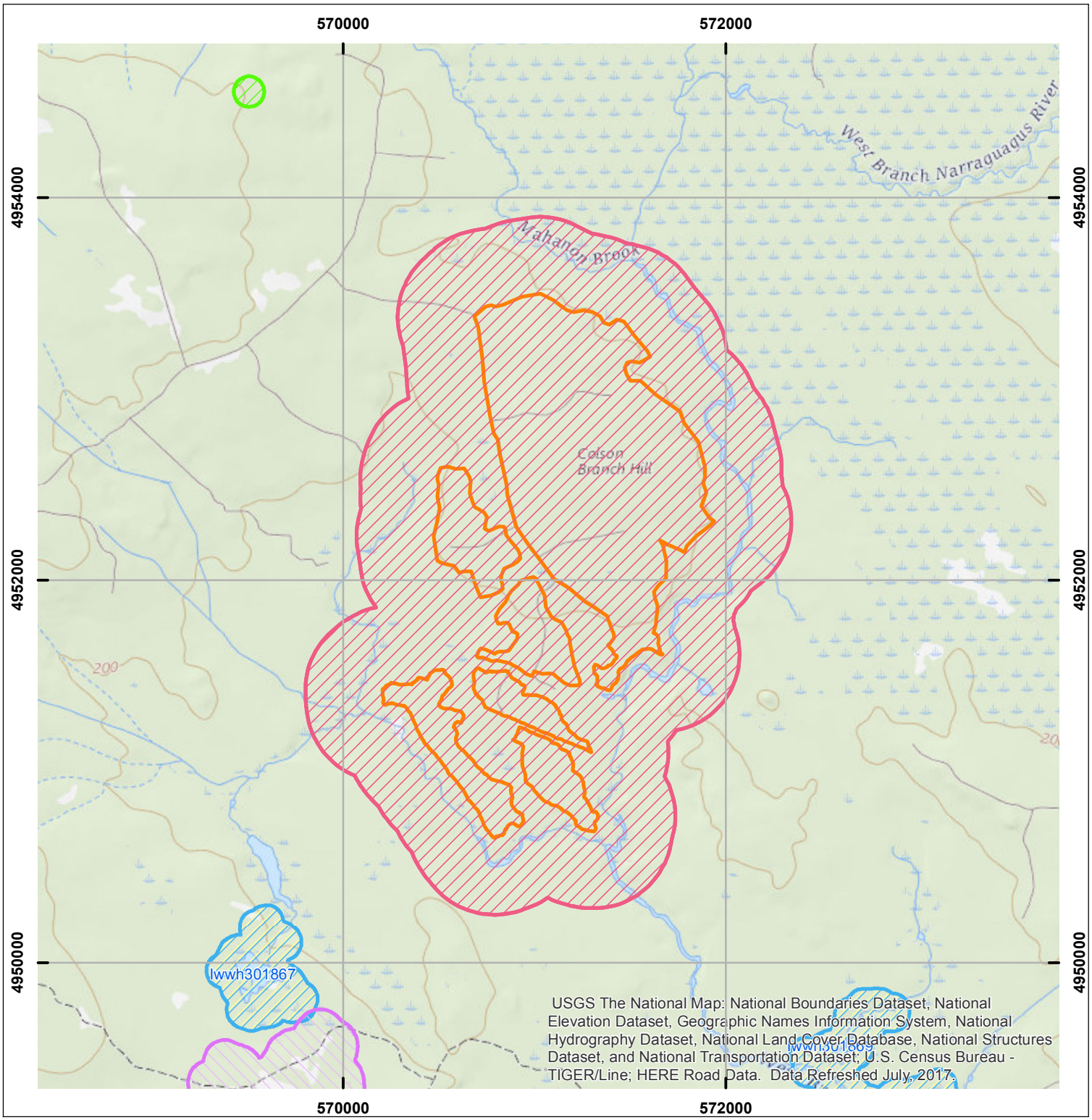
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may

occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

John Perry
Environmental Review Coordinator



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Township 16, Three Rivers Solar Project (Version 3)

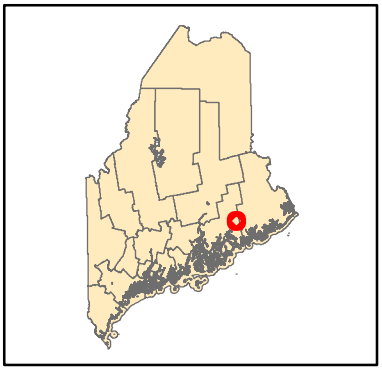
Maine Department of Inland Fisheries and Wildlife

0 0.15 0.3 0.6 0.9 1.2 Miles

Projection: UTM, NAD83, Zone 19N

Date: 12/15/2018

- ProjectPolys
- ProjectSearchAreas
- Inland Waterfowl/Wading Bird
- Significant Vernal Pools
- ETSc Environmental Review Polygons



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

December 7, 2018

Aleita Burman
Atlantic Resource Co
PO Box 76
Bass Harbor, ME 04653

Via email: blburman@gmail.com

CC: Roger St. Amand; roger@arc-env.com

Re: Rare and exemplary botanical features in proximity to #18-006, Commercial Energy Project, T16 MD Maine

Dear Ms. Burman:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received December 6, 2018 for information on the presence of rare or unique botanical features documented from the vicinity of the project in T16 MD, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #18-006, Commercial Energy Project, T16 MD, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Canada Mountain-ricegrass						
	SC	S2	G4G5	1938-07-01	9	Dry barrens (partly forested, upland)
	SC	S2	G4G5	1930-07-08	1	Dry barrens (partly forested, upland)
Domed Bog						
	<null>	S3	GNR	2004-04-09	2	Forested wetland,Open wetland, not coastal nor rivershore (non-forested, wetland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2019-SLI-0321
Event Code: 05E1ME00-2019-E-02836
Project Name: Three Rivers Solar

August 20, 2019

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

To Whom It May Concern:

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

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

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

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

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

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

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

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2019-SLI-0321

Event Code: 05E1ME00-2019-E-02836

Project Name: Three Rivers Solar

Project Type: POWER GENERATION

Project Description: The project is construction of a large scale solar array and substation, on about 550-acres of land.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.71936942574213N68.10210421473107W

Counties: Hancock, ME

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Atlantic Salmon *Salmo salar* Population: Gulf of Maine DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2097	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Atlantic Salmon *Salmo salar* https://ecos.fws.gov/ecp/species/2097#crithab	Final

Exhibit 7-3

Three Rivers Solar Upland Sandpiper Survey Report

A Survey of Upland Sandpipers at the Three Rivers Solar Project proposed in T16 MD BPP

(BRI Rep. No. 2019-14)

A Survey of Upland Sandpipers at the Three Rivers Solar Project proposed in T16 MD BPP

WILDLIFE SCIENCE CHANGING OUR WORLD

Submitted to:

David Fowler
Senior Director
Three Rivers Solar Power, LLC
89 Main Street
Yarmouth, ME 04096

Submitted By:

Chris DeSorbo
Solar Project Coordinator
Biodiversity Research Institute
276 Canco Road
Portland, ME 04103

Submitted on:

July 31, 2019

Biodiversity Research Institute (BRI) is a 501(c)(3) non-profit organization located in Portland, Maine. Founded in 1998, BRI's mission is to assess emerging threats to wildlife and ecosystems through collaborative research, and to use scientific findings to advance environmental awareness and inform decision makers.

For further information on this project, please contact:

Chris DeSorbo
Solar Project Coordinator
Biodiversity Research Institute
276 Canco Road
Portland, ME 04103
USA
(207) 839-7600 xt 115

chris.desorbo@briloon.org
www.briloon.org

FRONT PHOTO: *Adult Upland Sandpiper observed in the project area.* Photo credit: Lauren Gilpatrick

SUGGESTED CITATION: DeSorbo, C. R., L. Gilpatrick, K. Regan, M. W. Goodale and Dustin Meattey. 2019. A Survey of Upland Sandpipers at the Three Rivers Solar Project proposed in T16 MD BPP. BRI Report # 2019-14 submitted to Three Rivers Solar, Yarmouth, Maine. Biodiversity Research Institute, Portland, Maine. 13 pgs. plus appendices.

History, Background and Timeline

On 17 June, Wing Goodale, Biodiversity Research Institute (BRI) was contacted by Aleita Burman, Wetland Scientist Subconsultant to Atlantic Resource Co, LLC to explore the possibility of having BRI assist with bird survey work and agency consultations with the Maine Department of Inland Fisheries and Wildlife, related to the "Three Rivers Solar Project" in T16 MD BPP. (approx. N44.72296°, W68.09924°; East Hancock). On 19 June, staff from BRI (David Evers, Executive Director and Chief Scientist, Wing Goodale, Senior Deputy Director and Chris DeSorbo, Deputy Director, Raptor Program Director, and Solar Project Coordinator) had a conference call with staff from Swift Current Energy (Dave Fowler, Senior Director; Lucy Fowler, Project Coordinator) and Aleita Burman to discuss the project details and project needs. On 21 June, BRI presented a scope of work to Swift Current Energy and Three Rivers Solar, LLC, and on 26 June, Swift Current Energy approved the work. Swift Current Energy and BRI finalized the subcontractor agreement on 2 July.

A Survey of Upland Sandpipers at the Three Rivers Solar Project proposed in T16 MD BPP

EXECUTIVE SUMMARY

This report summarizes the results of a late-season survey for Upland Sandpipers at the "Three Rivers Solar" project site being proposed in T16 MD BPP. We used a combination of methods to detect individuals including point counts, area searches and roadside surveys in ten different designated areas within the project area over three days (2/3 July and 13 July). Sandpiper activity differed notably between the first and second surveys. Upland Sandpipers were conspicuous and detected at all point count stations in the primary solar area (point count stations PT01, PT07–PT10; in Areas 1–7) during the first survey. Sandpipers were also commonly detected during area searches and roadside searches. No sandpipers were detected in Areas 1 – 7 during the second survey using any survey method. No sandpipers were detected in Areas 8, 9 or 10 during the first survey; however one individual was detected in Area 8 during the second survey (the only individual detected during the second survey). Overall, estimates of the number of individuals present within the project area ranged between 1 to 3 individuals at individual point count stations, a minimum of 5 to 6 individuals across all point count stations (survey 1), and a minimum of 5 individuals detected simultaneously during roadside surveys and area searches. Successful breeding was confirmed in the project area with the observation of one chick in the primary solar area. Findings from the first survey suggested that sandpiper activity was notably higher in the primary solar area – particularly in the southern two-thirds of this area (areas 3–7) – as compared to areas 8–10.

INTRODUCTION

Upland Sandpipers (*Bartramia longicauda*), the only species in the *genus Bartramia*, are a medium-sized neotropical migrant shorebird that inhabits upland grassland habitats throughout Maine. The ecology of Upland Sandpipers is well-described in Weik (2006). The species is notoriously difficult to quantify, and population trends are poorly estimated using standard survey protocols such as the Breeding Bird Survey. To our knowledge, the most comprehensive survey for Upland Sandpipers in Maine resulted from a grassland bird survey conducted during 1999-2000 (Weik and Purtell 2001). Like other grassland bird species, the range of Upland Sandpipers is restricted to limited open grassland habitats throughout the state, a habitat type that has decreased in area in Maine since the late 1800s and early 20th century as agricultural lands were allowed to revert back to forest. With a few exceptions in northern and southern Maine, the range of Upland Sandpipers in Maine is predominantly limited to active blueberry farm fields in eastern Maine (Weik and Purtell 2001, Weik 2006). Individuals arrive from wintering areas in central and South America in late April (York County) to mid-May (Aroostook County) (Weik 2006). Following their arrival, the breeding period – including courtship, incubation (~21–23 days), and chick development (30–34 days) – is approximately 61–62 days (WIDNR 2014). Adults abandon their young once they are fully developed and capable of flight at 30–34 days of age (Weik 2006). A 1997-1999 survey of 15 sandpiper broods in Aroostook, Washington and York counties in Maine hatched as early as 15 June and as late as 10 July (Weik 2006). Upland Sandpipers disperse and begin to aggregate in open grassland habitats and blueberry barrens in August and begin migrating southward by early September (Weik 2006).

STUDY SITE

The project area discussed in this report is located in T16 MD BPP (East Hancock; 44.722105, - 68.099472). The project areas surveyed during this study are shown in Figure 1. A significant portion of the project area is being proposed for solar panel installation. For the purposes of clarity in this report, we have numbered the different areas surveyed as Areas 1–10 (Figure 1). The largest open space in the survey area is referred to in this report as the "primary solar area." This area is approximately 332 acres and is delineated by roads that we used to divide this area into seven different sections (Areas 1–7). Two open space areas exist immediately to the southwest of the primary solar area; a northern section (Area 8; 40 acres), and a southern section (Area 9; 34.9 acres; Figure 1). We surveyed a third open space area in the far southwestern corner of the study area (Area 10; 44 acres). This section is long and narrow, and is comprised of a mix of open space and early successional tree species in some portions, flanked by mixed forest habitat on all sides. Two other areas being proposed for solar development immediately south of Area 9 (not numbered; northern section, 23 acres; southern section, 26 acres; Figure 1) were not surveyed as these areas were deemed too small and overgrown with early successional species to

provide habitat for Upland Sandpipers. Vegetation in the majority of the open space areas emphasized in this report are comprised of grasses, sedges, and low-lying vegetative cover, including lowbush blueberry (*Vaccinium angustifolium*), sheep Laurel (*Kalmia angustifolia*), wintergreen (*Gaultheria procumbens*), sweetfern (*Comptonia peregrine*), and small saplings of red maple (*Acer rubrum*), northern red oak (*Quercus rubra*), several poplar species (*Populus spp*), and numerous other species. Large boulders and stumps have been extracted from the ground throughout much of the northern portion of the primary solar area (i.e., Areas 1–2), and as a result, the topography and vegetation structure in this northern section area is more homogeneous compared to the southern portions (i.e., Areas 3–7). Areas 8 and 9 are similar in habitat character to Areas 1-2.

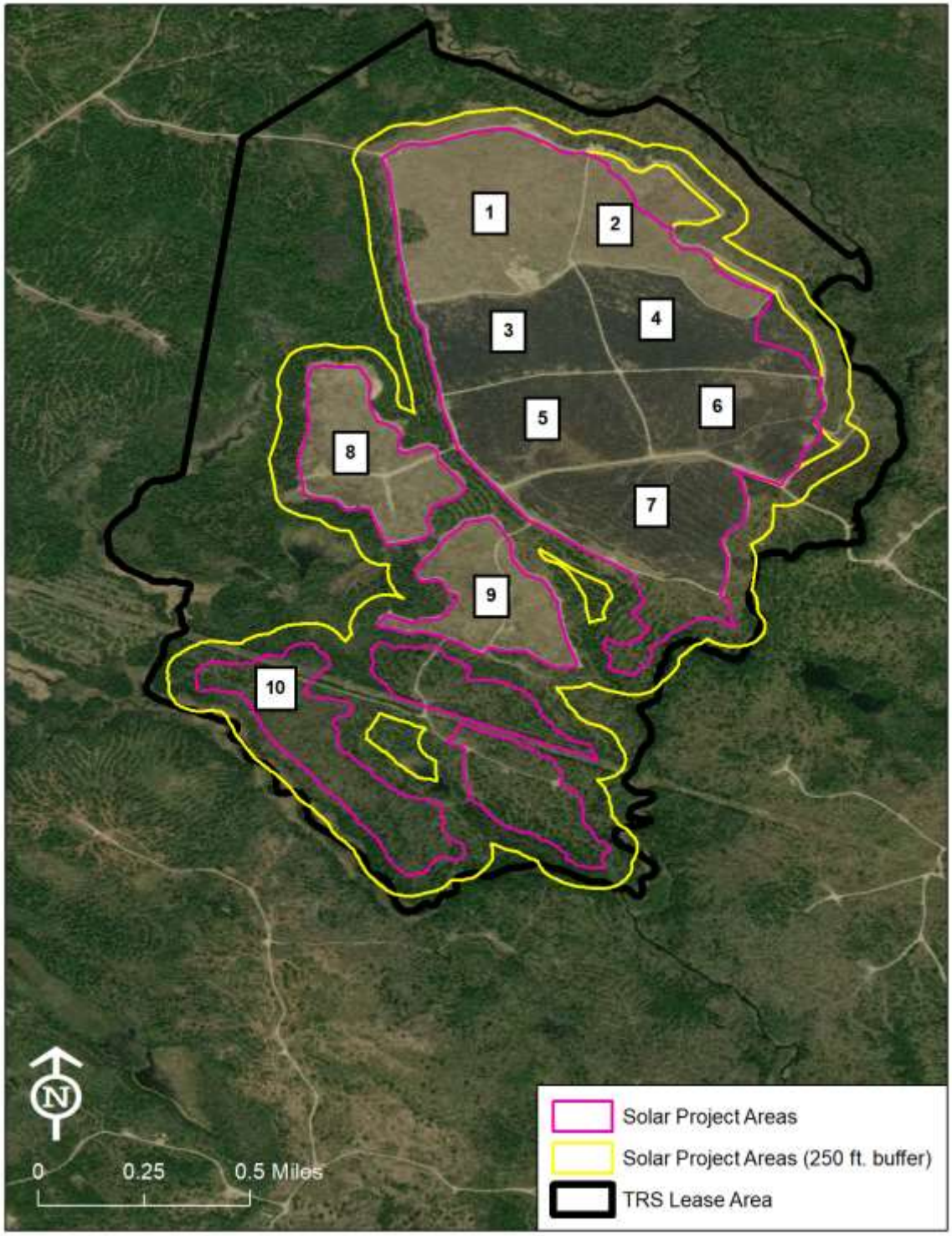


Figure 1. Three Rivers Solar Project in T16 MD BPP (East Hancock). Numbers on map are area numbers referenced in the report. Areas 1–7 are collectively referred to in this report as the "primary solar area."

OBJECTIVES

Objectives of this survey were to:

1. Conduct two separate field surveys at the study site to assess if Upland Sandpipers were present.
2. Map results of surveys relative to the project area.

METHODS

Survey Techniques:

There are multiple methods commonly used to survey Upland Sandpipers. Point count surveys were used in Maine grassland surveys (three times, between May and 15 July; (Weik and Purtell 2001); area searches are used in Wisconsin (WIDNR 2014); rope-dragging was used to locate nests on an airfield in New Hampshire (Weidman 2011). Surveyors in New York commonly use a combination of roadside surveys, point counts and area searches to maximize likelihood of detecting several grassland bird species. Since we did not have the option of starting surveys until early July (see history, background and timeline section), we used three different approaches to survey for Upland Sandpipers in the project area to meet the survey objectives:

1. **Point counts:** We conducted 10-minute point counts at 10 stations (PT01–PT10), ranging approximately 270–590 m apart, between 0800–1930 EDT (Figure 2). The number of Upland Sandpipers counted at each station were noted.
2. **Roadside surveys:** All roads within the study area were surveyed from a vehicle between 0800–940 at slow speeds (i.e., 2–10 mph) while searching for and listening for birds out both sides of the vehicle. We stopped the vehicle intermittently and regularly throughout the roadside survey to enable investigations of areas of interest using binoculars and/or a spotting scope from the roadside. Areas surveyed during roadside surveys are shown in Figure 2.
3. **Area searches:** We conducted area searches throughout the study area (Figure 2). Area searches comprised walking slowly through areas of specific interest, and regularly stopping and listening for calls and scanning the area with binoculars (WIDNR 2014). We did not conduct area searches in areas in which Upland Sandpipers had already been detected during either point counts or roadside surveys during the first survey to avoid flushing adults out of those areas.

All other species detected in the project area during all survey types were compiled into Appendix 1.

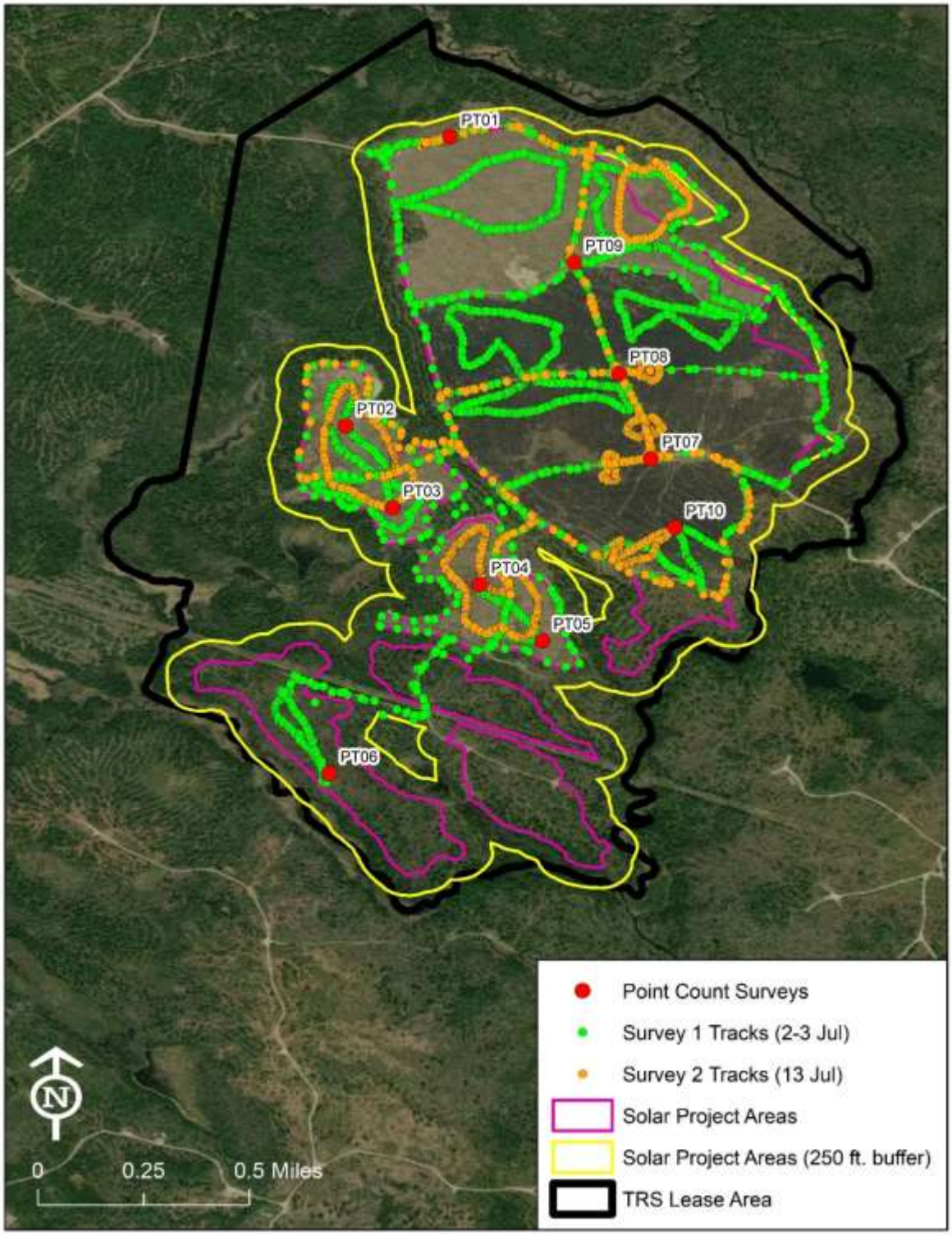


Figure 2. Survey efforts within the study area, showing ten point count stations, and areas searched during roadside surveys and area searches. Areas in which birds were detected during point counts or roadside surveys were not area searched to avoid further disturbance (i.e., Areas 5-7).

Schedule:

We conducted surveys for Upland Sandpipers (UPSAs) on three separate days during two different survey visits to the project area as follows:

Survey 1. On 2 July, BRI staff Chris DeSorbo and Lauren Gilpatrick, Wildlife Research Biologist, conducted a site orientation visit with Aleita Burman, Dave Fowler, Lucy Fowler and Duane Jordan, the landowner. After the initial orientation visit, surveyors initiated surveys at areas 1–10. Staff returned to the site on 3 July. Of the ten point count stations, only those in the primary solar area (PT01, PT07–PT10) were re-surveyed on 3 July since we deemed this area far more likely to hold individuals than those in areas 8, 9 and 10 based upon size and habitat characteristics.

Survey 2. On July 13, Kevin Regan, BRI Wildlife Research Biologist, conducted a second survey at the project area, focusing on Areas 1–9. Area 10 was deemed of lower priority during Survey 1 and was not re-surveyed during Survey 2 since we deemed its elongated shape (~125 m wide throughout much of the area) and size (44 acres) would make it less attractive to sandpipers for nesting due to the close proximity to edge habitat. The focus of the second survey was: (1) thorough area searches areas in areas which Upland Sandpipers were not detected during the first survey, (2) conducting point counts at 9 of the 10 point count stations (i.e., excluding Area 10), (3) conducting roadside surveys between all surveyed point count stations, and (4) conducting limited area searches in areas in which Upland Sandpipers were detected during the first survey, but were absent during the second survey.

RESULTS

Point Counts

Survey 1. Upland Sandpipers were detected at all point count stations in the primary solar area (point count stations PT01, PT07–PT10; in Areas 1–7; Figure 3). Detections were commonly visual and aural and birds were conspicuously calling (i.e., the "wolf-whistling") and displaying. No Upland Sandpipers were detected during point counts in Areas 8, 9 and 10 (Point count stations PT02–PT06). The number of Upland Sandpipers observed at any single point count station during counts ranged from 1 to 3 individuals.

Survey 2. Upland Sandpipers were not detected in the primary solar area stations (PT01, PT07–PT10; Figure 3). No Upland Sandpipers were detected during point counts in Areas 8, 9 and 10. Due to the relatively high mobility of Upland Sandpipers in the project area and long-distance aural detectability overall, double-counting birds at some point count stations was likely.

Totals (Survey 1 & 2). The approximate total count of sandpipers estimated from point counts ranged from 5–6 individuals on Survey 1 and no individuals on Survey 2 (Table 1).

Table 1. Number of Upland Sandpipers detected during 10-minute point count surveys conducted during Survey 1 and Survey 2.

	Survey 1		**Survey 2**
Station	**Jul 2**	**Jul 3**	**Jul 13**
PT01	0	1[a]	0
PT02	0	-	0
PT03	0	-	0
PT04	0	-	0
PT05	0	-	0
PT06	0	-	0
PT07	**1**	**3**	0
PT08	**2**	**2** [b]	0
PT09	**2**	**3** [a, b]	0
PT10	-	**2** [c]	-
Approximate Totals:	**~ 5**	**~ 6**	**0**

[a] The individual detected in PT01 was most likely detected as one of the 3 individuals detected at PT09; the 3 Jul column total has been adjusted (-1) to avoid double-counting this individual.
[b] One of the two individuals detected at PT08 was likely also the same bird as that detected from PT09; the 3 Jul column total has been adjusted (-1) to avoid double-counting this individual.
[c] It is possible that 1-2 of the birds detected south of PT07 were the same two detected from PT10. The 3 Jul column total has been adjusted (-2) to avoid double-counting these 2 individuals.

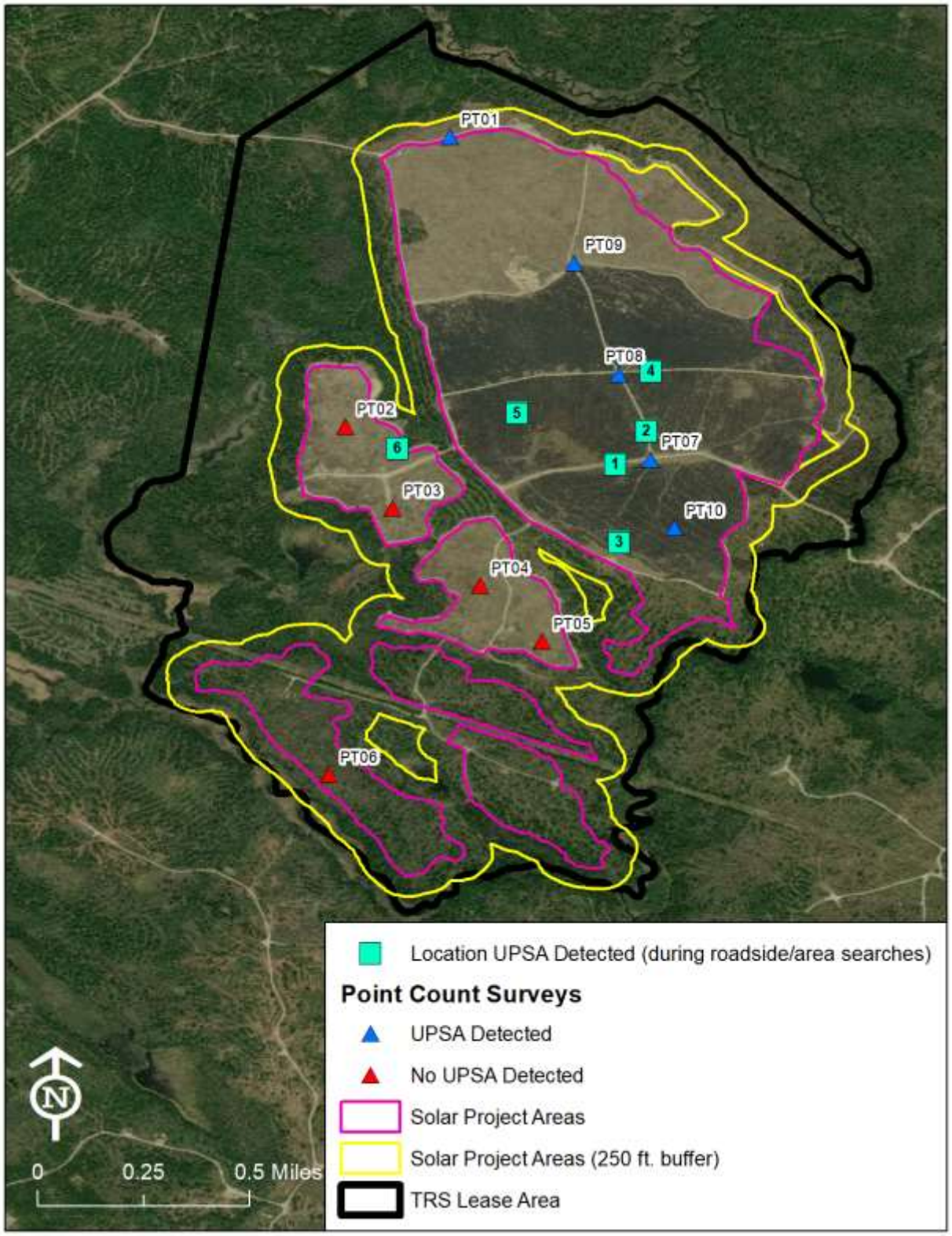


Figure 3. Station detections of Upland Sandpipers at ten point count stations (PT01–PT10) during two surveys (2/3 Jul and 13 Jul). Also shown are locations (UPSA1–UPSA6) from which surveyors observed Upland Sandpipers during roadside and area searches.

Area Searches and Roadside Surveys

Survey 1. Upland Sandpipers were conspicuous throughout the study area during area searches and roadside searches. Time of day did not appear to affect detectability; birds were commonly singing and calling throughout the day. Between 1-5 sandpipers were detected at six locations noted in the primary solar area (Figure 3). Individuals from these locations were likely double-counted; therefore, we did not total the number of individuals observed during these surveys. Observation detection locations below correspond to locations noted in Figure 3.

Observation **#1** (Jul 2): ≥4 individuals (presumed adults), and one chick observed.

Observation **#2** (Jul 2): 3 individuals (presumed adults) observed.

Observation **#3** (Jul 3): 2 individuals (presumed adults) observed, very territorial behavior; likely to have a nest or young. Due to high mobility of the adult and the brood after hatching, this may be the same group observed at #1.

Observation **#4** (Jul 3): 5 sandpipers observed in all directions from point (3 Jul). One adult in road.

Observation **#5** (Jul 3): 1 sandpiper observed to exhibit territorial behavior south of this point, along and parallel to the road.

Survey 2. Upland Sandpipers were not nearly as conspicuous during area searches and roadside surveys during Survey 2 as they were during Survey 1. No Upland Sandpipers were detected in area searches or roadside surveys during Survey 2 in the primary solar area. Unlike Survey 1, one Upland Sandpiper was detected in Area 8 during an area search. Observation detection locations below correspond to locations noted in Figure 3.

Observation **#1-4** (revisiting sites from Survey 1)**:** 0 individuals.

Observation **#5:** not searched.

Observation **#6:** 1 adult detected (heard) in Area 8 during extensive area searches of Areas 8 & 9.

Totals (Surveys 1 & 2). The approximate count of sandpipers estimated from roadside and area searches ranged from 1 – 5 individuals during Survey 1 and 1 individual during Survey 2.

SUMMARY AND CONCLUSIONS

Our surveys confirmed that Upland Sandpipers feed, defend territories and successfully breed within the project area. We estimate the minimum number of individual birds using the site, based on point counts, ranged between approximately 5 to 6 individuals, although there is uncertainty in the estimate due to the high mobility of birds. These totals were generally similar to the minimum number of individuals detected during area searches and roadside surveys detected during Survey 1 (1 to 5 individuals). Only one Upland Sandpiper was detected in the Project Area during Survey 2. We confirmed the presence of one chick during Survey 1 as it crossed the road. Chicks would be difficult to detect in areas 3–7 due to the variable vegetation height and irregular topography.

Not all areas of the project area appeared to be used equally by Upland Sandpipers. During the Survey 1 (July 2/3), sandpipers were found in the primary solar area (Areas 1–7), but were not detected in areas 8–10. During Survey 2, one sandpiper was detected in Area 8, but no sandpipers were detected in any other area.

Areas 1–7: Between our observations and habitat characteristics, we suspect that the sandpipers are less likely to breed (but probably do forage) in the northern third of the primary solar area (Areas 1–2) as compared to Areas 3–7 (see Figure 3). Areas 3–7 exhibit more irregular topography and taller vegetation, whereas Areas 1 – 2 exhibit comparatively flat topography, and the vegetation is notably shorter and scarce in places. Large stumps and rocks in Areas 3–7 both increase and decrease sandpiper detectability because these features are prominent and are commonly used for perching, but regularly obscure views and notably lessen visual detectability of birds.

Areas 8–9: We did not detect Upland Sandpipers in Areas 8 and 9 during the first survey; however, a single individual was detected (heard) in Area 8 during the second survey. Previous studies have noted that Upland Sandpipers were uncommon on sites <125 acres (<50 ha) (Vickery et al. 1994, Weik 2006); thus, Areas 8 (40 acres) and 9 (35 acres) may be too small to support breeding pairs.

Area 10: We did not detect Upland Sandpipers in Area 10 during our first survey. We determined during the first survey that sandpiper use in Area 10 was unlikely due to its size (44 acres), elongated shape and habitat characteristics (early successional tree species developing in some portions of this area; edge habitat flanking northern and southern areas).

Additional species detected in the project area: See Appendix 1.

Literature Cited

Vickery, P. D., M. L. Hunter Jr. and S. M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. Conservation Biology 8: 1087–1097.

Weidman, T. 2011. Upland Sandpipers in New Hampshire: a Review and Prospects for Future Management. Unpublished report submitted to New Hampshire Fish and Game Department Nongame and Endangered Species Program. 21 pgs plus appendices.

Weik 2006. Upland Sandpiper Assessment. Unpublished report of the Maine Department of Inland Fisheries and Wildlife. Bangor, Maine. 39 pp.

Weik, A., Purtell, R., 2001. Grassland Birds, in: Weik, A.P., DeMaynadier, P., Hodgman, T.P. (Eds.), A Survey of Rare, Threatened, and Endangered Fauna in Maine: East Coastal and Eastern Interior Regions (1999 - 2000). Unpublished Rep. by the Maine Department of Inland Fisheries and Wildlife, Bangor, Maine. pp. 116–126.

WINDR 2014. Protocol for Incidental Take Permit and Authorization. Upland Sandpiper (*Bartramia longicauda*). Wisconsin Department of Natural Resources. April 2014. 7 pp.

Appendix 1. Additional species incidentally documented during surveys for Upland Sandpipers in the project area.

Row no.	Species Code	Common Name
1	AMCR	American Crow
2	AMKE	American Kestrel
3	AMRO	American Robin
4	BAWW	Black-and-white Warbler
5	BCCH	Black-capped Chickadee
6	BLJA	Blue Jay
7	BRTH	Brown Thrasher
8	BWHA	Broad-winged Hawk
9	CEDW	Cedar Waxwing
10	COGR	Common Grackle
11	CONI	Common Nighthawk
12	CORA	Common Raven
13	COYE	Common Yellowthroat
14	CSWA	Chestnut-sided Warbler
15	EAPH	Eastern Phoebe
16	FISP	Field Sparrow
17	GBHE	Great-Blue Heron
18	HETH	Hermit Thrush
19	INBU	Indigo Bunting
20	LISP	Lincoln's Sparrow
21	MODO	Mourning Dove
22	NOFL	Northern Flicker
23	NOHA	Northern Harrier
24	OSFL	Olive-sided Flycatcher
25	OVEN	Ovenbird
26	RBNU	Red-breasted Nuthatch
27	REVI	Red-eyed Vireo
28	RTHA	Red-tailed Hake
29	SAVS	Savannah Sparrow
30	SOSP	Song Sparrow
31	TUVU	Turkey Vulture
32	VEER	Veery
33	VESP	Vesper Sparrow
34	WITU	Wild Turkey
35	WTSP	White-throated Sparrow
36	YEWA	Yellow Warbler

PHOTOS **(**Photo credit for all photos: Lauren Gilpatrick)

Photo 1. Area 3 facing north

Photo 2. Middle of Project Area (in vicinity of PT08) facing north.

Photo 3. Northern end of Project Area (Area 2) facing northeast.

Photo 4. View from area 1 facing South.

Photo 5. Point count station PT01 (Area 1) facing South.

Photo 6. Point count Station PT02 (Area 8) facing South.

Photo 7. Point count station PT04 (Area 9) facing northwest.

Photo 8. Point count station PT06 (Area 10) facing southeast.

Photo 9. Point count station PT08 (intersection of Areas 3 – 6) facing south.

Photo 10. Point count station 10 facing north (Area 7).

Photo 11. UPSA observed at observation detection location #2 (UPSA #2).

Photo 12. UPSA observed at observation detection location #2 (UPSA #2).

Photo 13. UPSA observed offsite at Jordan's cultivated blueberry fields.