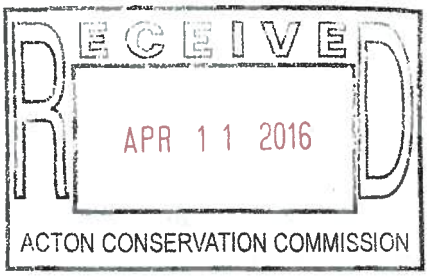
BORREGO SOLAR

April 7, 2016

Chairman
Town of Acton Conservation Commission
472 Main Street
Acton, MA 01720



RE: Notice of Intent Application
2798.820 kW Ground Mounted PV Facility
127 Stow Street
Acton, Massachusetts

Dear Chairman:

Borrego Solar Systems is pleased to submit our responses to requests made at the March 16, 2016 hearing regarding our Notice of Intent for the above referenced project.

1. Review Wetland series A and B for vernal pools. *NEE has completed this site review. Please see attached Vernal Pool Assessment dated April 6, 2016.*
2. Cross section of the pole line route and how trees would be pruned. *This is shown on the attached revised plans on sheet C-5.1. Eversource requirement is for 8 feet clear on each side plus 10 feet below and 15 feet above. The poles are 30 high.*
3. Show 75-foot no structure zone on plans. If any racking is in 75-foot zone please relocate. *We have added the zone to the plans and relocated a rack. Refer to revised plans.*
4. Stake out pole line and approximate location of poles. *We will complete this on April 18th and let you know so that Commissioner's may visit.*
5. Revise grading at northwesterly corner of project area to minimize grading in 100-foot buffer zone. *We have revised the plans to reflect a steeper slope. We were asked to move a portion of the southeasterly corner of the solar array further from the 35-foot no touch zone by the Stow Conservation Commission and those racks were relocated in the northeasterly corner of the site in Acton. This slope will be armored with rock rip-rap.*
6. Contact Tom McGuire at DEP about the status of the solar drainage policy. *I left a message with Mr. McGuire and have not heard back. I did speak with Rachel Freed the MA DEP Northeast Regional Wetlands-Regional Section Chief regarding this policy and she said they (DEP) should have something out by March 19, 2016. This is ahead of our next Acton Conservation Commission hearing so I will update the Commission on whatever we learn.*
7. Work through fees. *We understand your comments; however, we have not had any comments from towns' or every DEP regional offices regarding our submission under Category 2D "Electric generating facility activities". We consider "activities" as anything related to the construction and operations of the system. Based on our discussion you feel that the following are relevant:*

   - **Category - 3(a)** Site Preparation – this would include all of the buffer zone tree removals necessary and the stabilized construction entrance. *This category specifically includes work outside the Notice of Intent scope. All work noted on the plans within the buffer zone is part of the NOI scope.*

55 Technology Drive, Suite 102
Lowell, MA 01851

- **Category - 3(c)** Roadway Construction – this would cover the 16' wide roadway, gates and fence in the buffer zone and the equipment pad. There is also a swale proposed along the gravel access road. *We consider this work (minimal) since there is an existing roadway that we will be continuing to use and we will be re-creating an older road with new gravel surface. We also consider this as included in the "activities" as noted in Category 2D.*
- **Category - 2(e)** Construction of Overhead Utility – this would cover the new poles and underground conduit. *As mentioned above we filed under Category 2D.*

We look forward to presenting these modifications to the Commission at the April 20, 2015 scheduled hearing. Please contact me at 978-513-2621 if you have any comments.

Sincerely,

David Albrecht, PE
Principal Civil Engineer

Attachments
C: MADEP - Central Region

New England Environmental, Inc.
Environmental Consulting
15 Research Drive
Amherst, MA 01002
(p) 413.256.0202
(f) 413.256.1092
www.neeinc.com

April 6, 2016

Dave Albrecht, P.E.
Borrego Solar Systems Inc.
55 Technology Drive, Suite 102
Lowell, MA 01851
dalbrecht@borregosolar.com

RE: **Vernal Pool Assessment**
127 Stow Street
Acton, MA
NEE #15-4777

Dear Dave,

New England Environmental, Inc. (NEE) Certified Wildlife Biologist, Christin McDonough, completed a vernal pool evaluation at two adjacent parcels located at 127 Stow Street in Acton and Stow, Massachusetts on March 30, 2016 (see attached figure). Wetland resource areas were previously delineated by NEE on July 20, 2015. The parcels are located on the north/northwest side of Stow Street in Acton and South Acton Road in Stow.

The state of Massachusetts allows vernal pools special protection based on the presence of obligate amphibians or invertebrates, facultative amphibians or invertebrates, and the absence of fish (310 CMR 10.00, 310 CMR 15.00, 3.04 CMR 11.00, and 314 CMR 4.00). The purpose of this survey was to document evidence (or absence) of vernal pool criteria to assist in the planning phase of future solar development at the properties.

SITE DESCRIPTION & BACKGROUND

The two parcels evaluated, referred to as the Site, total approximately 25 acres and are located at 127 Stow Street in the towns of Stow and Acton Massachusetts. Uplands at the Site consist of upland pine forest and soil stockpile areas. There were numerous pieces of heavy equipment stored onsite as well as several school buses. An access road off of Stow Street extends from the south to the northwest through the Site. Forested wetlands surround the property to the north, east and south, while an upland forest exists to the west of the property.

NEE completed a wetland delineation and report in July, 2015. The Conservation Commission later requested a vernal pool evaluation, specific to the "A-Series and B-Series" wetlands be completed during the appropriate time of year. NEE evaluated these, and all other, wetland areas on the Site for vernal pool habitat.

METHODS

Vernal pool biological criteria is best observed during clear (sunny) weather conditions, to eliminate the glare which occurs on overcast days, and with polarized lenses. A white invertebrate tray was used to

photograph submerged amphibian eggmasses, as it improves photographic quality and reduces solar glare (see Photopages). Based on regional discussion (vernal pool listserve) and personal observation, vernal pool breeding amphibians have been active in New England for several weeks, and our survey occurred during the peak of the vernal pool season in 2016.

NEE's Certified Wildlife Biologist completed the vernal pool evaluation during the appropriate season and on a sunny, 52° F day. All areas previously delineated by NEE were evaluated, including the areas requested by the Conservation Commission, following NHESP and ACOE procedures and guidance documents. Acceptable documentation of vernal pools includes breeding evidence of obligate vernal pool animals such as spotted salamanders (*Ambystoma maculatum*), wood frogs (*Lithobates sylvatica*), or fairy shrimp (Anostraca: Eubranchipus). Breeding evidence of these obligate animals includes spermatophores, egg masses, chorusing, and/or evidence of aquatic larvae.

RESULTS

The A-Series Wetland. The isolated wetland delineated as the "A-Series" is a seasonally-flooded palustrine pool with no rooted/floating vascular submerged aquatic vegetation growing (indicator of a seasonally-flooded hydroperiod). The wetland is located within a topographically confined basin with no permanent inlet/outlet, which meets the physical criteria for a vernal pool [310 CMR 10.04, 10.57(1)(a)(3), 10.57(1)(b)(4), and 10.58(1)]. There is abundant submerged woody debris, suitable for amphibian eggmass attachment. The hydroperiod is sufficient to allow full development (metamorphosis) of obligate vernal pool breeding animals, and the wetland has no established fish population. The surrounding vegetation includes upland species consisting of eastern white pine (*Pinus strobus*) and mixed oaks (*Quercus spp.*), with an open understory.

Biological vernal pool evidence observed includes 12 spotted salamander eggmasses and 63 wood frog eggmasses, including a communal wood frog oviposition site, where approximately 47 wood frog eggmasses were clustered. No caddisfly larvae or fairy shrimp were observed in the pool. This wetland does provide suitable vernal pool habitat and meets both the physical and the biological criteria for a vernal pool.

The B/C-Series Wetland. The B/C-Series wetland is a red maple (*Acer rubrum*) swamp with a pit-and-mound topography, several "islands" vegetated with sweet pepper bush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), maleberry (*Lyonia ligustrina*), and winterberry (*Ilex verticillata)* in the shrub layer (see Photopages). The northern end of this wetland complex becomes vegetated with persistent emergent vegetation, such as common reed (*Phragmites australis*) and cattails (*Typha latifolia*), and the broad-leaved deciduous shrub density decreases.

The pools in between the islands vary in size. Some of the larger pools, which can be seen in the ortho (attached Figure, *Vernal Pool Habitat*), such as near flag B-26 or C-10, contained vernal pool evidence, such as spotted salamander and/or wood frog eggmasses, and/or wood frog chorusing. The northern portion of the wetland complex, where the vegetation becomes dominated by persistent emergents (for example, near wetland flags B-1 through B-9, and C-19 through C-47), is shallower, with approximately 6" to 10" of standing water, which is generally too shallow for vernal pool obligate breeding, and no vernal pool evidence was observed at those areas.

Trash, including many tires, a car, a stove, rusting metal of various type, cans, drums, and barrels, are located at a large and deep pool near C-10 (see Photopages). The water at this pool is murky and

visibility is extremely poor, making this pool nearly impossible to survey for vernal pool eggmasses. However, one wood frog eggmass was observed at the eastern edge of this pool, and wood frogs were chorusing (video including with the electronic copy of this report). No fairy shrimp or caddisfly larvae were observed throughout the B/C wetland complex.

The D/E-Series Wetland. The D-Series wetland is a ditch, with water flowing in a south/southwest direction towards the E-Series wetland to the southwest. There is a very deep pool located near wetland flag D-12 (the depth was too deep to measure with chest waders), and a small pocket of duckweed (*Lemna spp.*) was floating near the southern corner of the pool (which indicates a more permanent hydroperiod). The channel is approximately 4-6' in width. Thirteen spotted salamander eggmasses were found within this channel.

The D-Series wetland empties into a palustrine wetland dominated with persistent & non-persistent emergent vegetation such as tussock sedge (*Carex stricta*) and cattails, and flagged as the E-Series. Caddisfly larvae are common throughout the wetland (see Photopages). This pool was not entirely searched for amphibian eggmasses, and survey effort was ceased at flag E-9. Three spotted salamander eggmasses were observed up flag E-9, and wood frog chorusing was videoed. The 3 spotted salamander eggmasses in conjunction with wood frog chorusing is sufficient to document that the E-wetland does provide vernal pool habitat for obligate vernal pool breeding amphibians.

IMPLICATIONS

While the attached figure shows the locations of obligate vernal pool breeding amphibian eggmasses documented in the field, the precise locations of eggmasses are not indicative of the year-round habitat these animals require. These breeding locations are not a firm indication of where these animals live outside of the breeding season, where they spend the majority of their lives. It is therefore not definitive to use the eggmass locations as a tool to determine where on the landscape they may be immigrating to the wetland from.

Vernal pool breeding amphibians breed in vernal pools, the larvae are aquatic for some weeks, and then the juveniles emigrate from these pools where they spend the remainder of their lives living in upland forested areas in underground small mammal burrows (with the exception of their brief springtime breeding migrations to breeding sites, after which they return to their upland burrow sites). As adults these animals prefer non-hydric soils under a closed canopy forest, in areas with coarse woody debris on the forest floor, and a cool, moist micro-climate. Therefore any open, sandy areas or mucky, swampy areas around the documented breeding sites are not suitable adult non-breeding (i.e., overwintering) habitat.

SUMMARY

NEE completed a vernal pool habitat assessment at the parcels located at 127 Stow Street in Acton and Stow, Massachusetts on March 30, 2016. NEE observed evidence of obligate vernal pool breeding amphibians (eggmasses & chorusing) at the A-Series wetland, the B/C-Series wetland, the D-Series wetland and the E-Series wetland.

The A-Series wetland contained 63 wood frog eggmasses and 12 spotted salamander eggmasses on the day of the survey, and does meet both the biological and the physical criteria of a vernal pool.

Pools within the B/C-Series wetland complex contained 4 wood frog eggmasses and 2 spotted salamander eggmasses, in addition to wood frog chorusing. These are obligate vernal pool indicators, and therefore portions of the B/C-Series wetland do meet the criteria for a vernal pool.

The D-Series wetland is a ditch, with flowing water. Thirteen spotted salamander eggmasses were found within the D-Series wetland. Spotted salamanders are direct indicators of vernal pool habitat. When breeding evidence of obligate species is documented, it is not necessary to prove there is no established fish population. However, this wetland may not meet the physical criteria, which requires evidence of no permanently flowing outlet. NEE previously delineated this wetland as Bank, and determined it to be perennial. Therefore, portions of the D-Series wetland *may* be a vernal pool, depending on whether the flow of water is year-round or not.

The E-Series wetland contained at least 3 spotted salamander eggmasses (the entire wetland was not surveyed since sufficient evidence of vernal pool habitat is obtained after 2 obligate eggmasses are documented). Further, wood frogs were chorusing, indicating breeding evidence of a second obligate vernal pool animal. This wetland therefore meets the biological criteria of a vernal pool. The E-Series wetland may also meet the physical criteria, if the existing wetland connection is not permanent. Documentation later in the year will be required to substantiate the physical criteria.

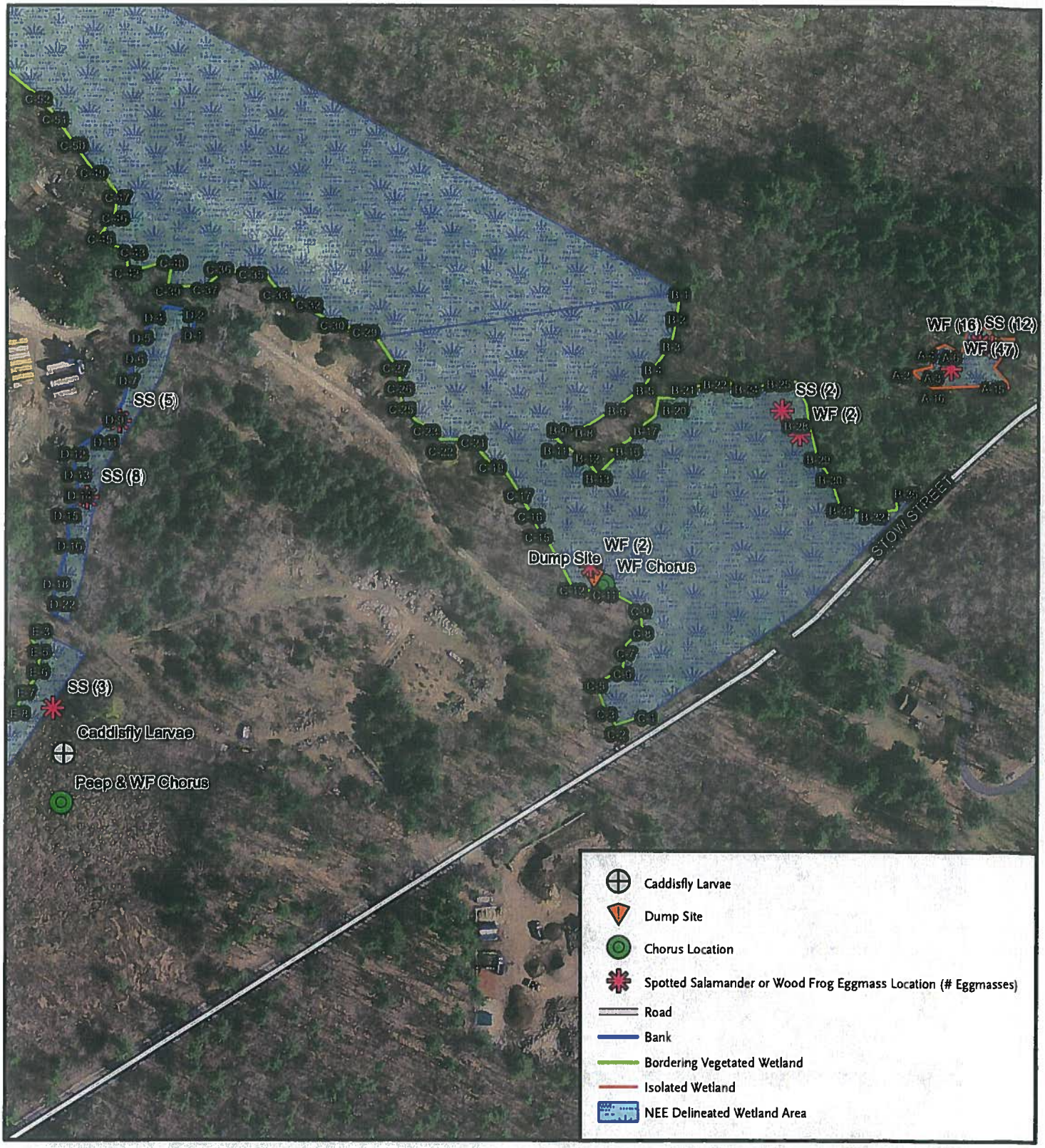
None of these wetland areas are certified vernal pools at this time. The determination of whether an area is subject to protection under the Wetlands Protection Act or local bylaws, and the location of protected resource areas, can only be made definitively by the local Conservation Commission or by the Department of Environmental Protection or Supreme Court on appeal. The town of Acton does include vernal pool protection (a 100 foot buffer). The limits of federal jurisdiction are determined by the Corps of Engineers. If you have any questions regarding this report, please do not hesitate to contact our office.

Please contact our office if you have any questions or comments regarding the following report.

Sincerely,
NEW ENGLAND ENVIRONMENTAL INC.

Christin McDonough
Certified Wildlife Biologist

Attachments: Photopages
Figures



New England Environmental, Inc.
Environmental Consulting
15 Research Drive
Amherst, MA 01002
(p) 413.256.0202
(f) 413.256.1092
www.neeinc.com

Vernal Pool Habitat

127 Stow St.
Acton, MA

04 Apr 2016
NEE Job #15-4777

Data Sources: Office of Geographic Information (MassGIS), New England Environmental, Inc. Wetland Delineation July 2015; Vernal Pool Survey March 2016; 2013 Color Orthophotographs

0 50 100 200 Feet

N

Latitude 42° 27' 13.5" N
Longitude 71° 28' 21.5" W

A-Series Wetland

Photo 1: View of the A-Series wetland, facing north (the flag in the foreground is A-15). *03.30.16*

Photo 2: Several new (approx. 1 day old) wood frog eggmasses at the A-Series wetland. *03.30.16*

Photo 3: View of a cluster of spotted salamander eggmasses attached to submerged vegetation in the A-Series wetland. *03.30.16*

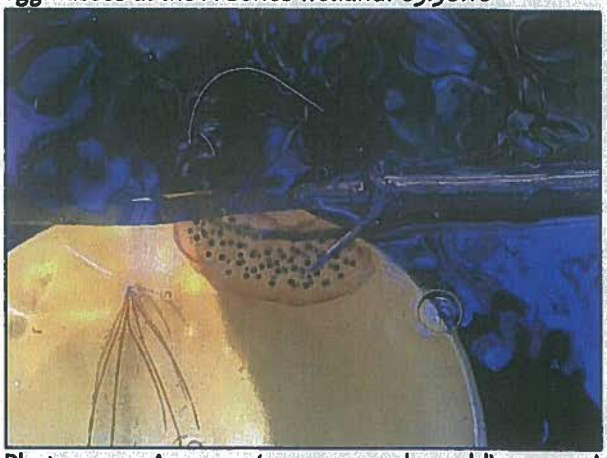


Photo 4: A new (approx. 1 day old) spotted salamander eggmass in the A-Series wetland. *03.30.16*

Photo 5: View of the communal wood frog oviposition site at the A-Series wetland (approx. 47 eggmasses are in this cluster). *03.30.16*

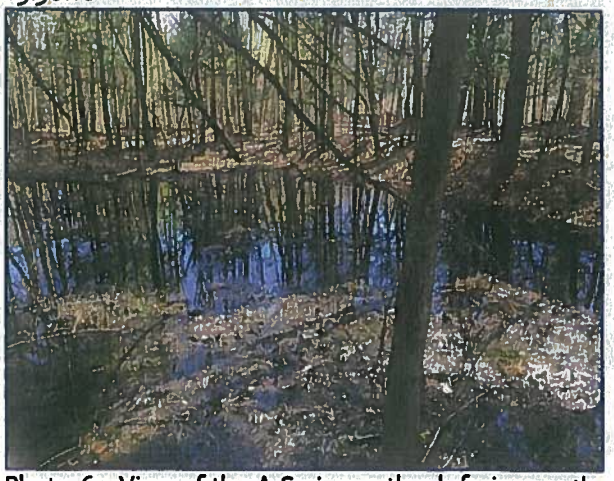


Photo 6: View of the A-Series wetland, facing south. *03.30.16*

Photo 7: View of the B/C-Series wetland, facing north from Stow Road. Note the pit-and-mound topography with "islands" and "pools". *03.30.16*

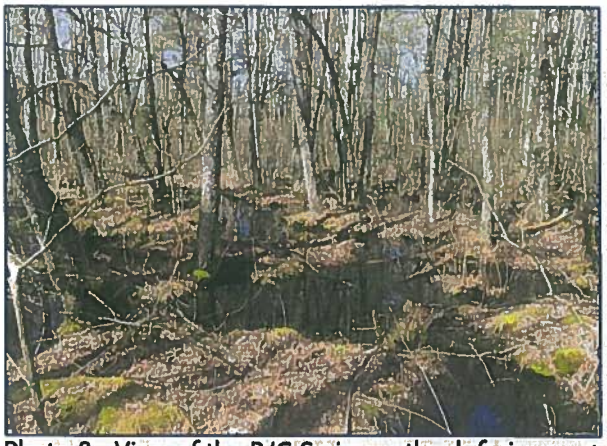


Photo 8: View of the B/C-Series wetland, facing west from B-31. Note the pit-and-mound topography with "islands" and "pools". *03.30.16*

Photo 9: Wood frog eggmass, located near B-28. *03.30.16*

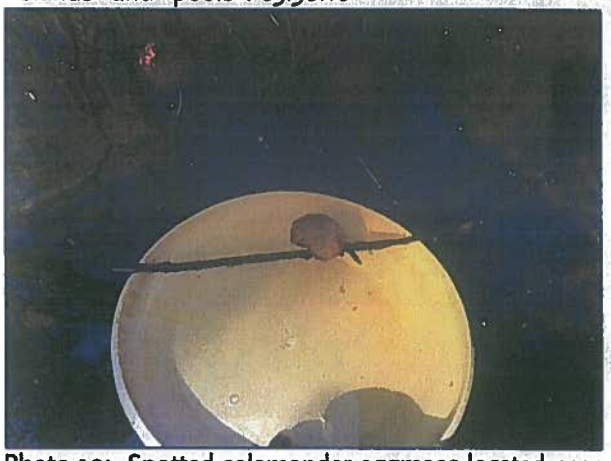


Photo 10: Spotted salamander eggmass located near B-26. *03.30.16*

Photo 11: Overview (facing north) of a pool within the B/C-Series wetland where wood frogs were actively chorusing (north of C-10). Note the trash dump. *03.30.16*

Photo 12: Wood frog eggmass from pool near C-10. Note the murky water, which made locating eggmasses nearly impossible. *03.30.16*

Photo 13: Five spotted salamander eggmasses were observed near D-9. *03.30.16*

Photo 14: Five spotted salamander eggmasses were seen near flag D-9. *03.30.16*.

Photo 15: Spotted salamander eggmass seen near wetland flag D-14. *03.30.16*

Photo 16: Cluster of spotted salamander eggmasses (8) attached to submerged woody debris near flag D-14. *03.30.16*

Photo 17: Caddisfly larvae were common throughout the E-Series wetland. *03.30.16*

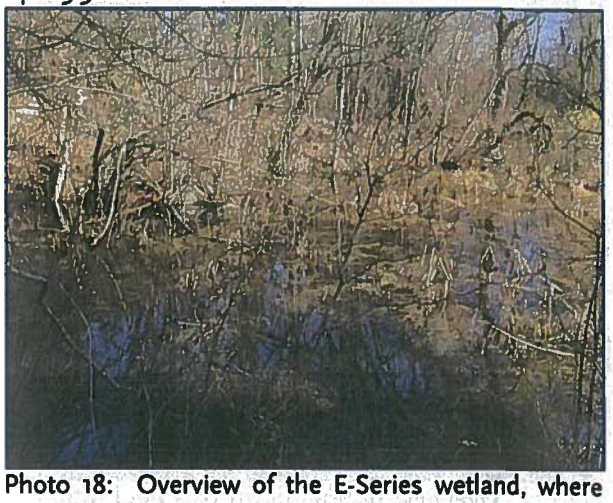


Photo 18: Overview of the E-Series wetland, where many spotted salamander and wood frog eggmasses were observed, and where wood frogs were actively calling. *03.30.16*