

11 May 2020

Mr. Dean Tagliaferro
Project Manager
GE-Pittsfield/Housatonic River Site
USEPA – Region 1
5 Post Office Square – Suite 100
Boston, MA 02109-3912

Re: **2020 Phase 4C Floodplain Vernal Pool Survey**
Contract 912WJ-14-D-0003, Task Order 7 (W912WJ19F0124)
GE-Pittsfield/Housatonic River Site
DCN: AE-051120-AIAA

Dear Mr. Tagliaferro:

Attached please find a summary memorandum titled “*2020 Phase 4C Floodplain Vernal Pool Survey – GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts*” prepared by Stantec Consulting Services Inc. (Stantec) per request of Bluestone Environmental LLC (Bluestone).

Bluestone subcontracted Stantec under contract W912WJ-14-D-0003, with the US Army Corps of Engineers, New England District Task Order 7 (W912WJ19F0124) to conduct a survey of the restored vernal pool at Parcel I6-1-106 within the Phase 4C Floodplain Properties Removal Action Area on April 6, 2020.

Should you have any comments or questions regarding this document, please contact me at 610-505-6533 or via e-mail at djones@bluestoneenviro.com.

Sincerely,



Deborah Jones
Program Manager

Cc: DCN Files (Bluestone)
Robert Leitch, USACE
Christopher Ferry, EPA
EPA Electronic Repository

To: Deb Jones
Bluestone Environmental Group Inc.

From: Daniel G. Nein, CWB
Stantec Consulting Services Inc.

File: 195601048

Date: May 11, 2020

Reference: 2020 Phase 4C Floodplain Vernal Pool Survey — GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts

On April 6, 2020, Stantec Consulting Services Inc. (Stantec), under contract with Bluestone Environmental Group Inc. (Bluestone), under contract to the U.S. Army Corps of Engineers, conducted a survey of the restored vernal pool at Parcel I6-1-106 within the Phase 4C Floodplain Properties Removal Action Area (hereafter, Vernal Pool 4C) adjacent to the 1 ½-Mile Reach of the Housatonic River in Pittsfield, Massachusetts. Prior to Stantec's survey, Berkshire Environmental Action Team (BEAT) and Bluestone conducted preliminary surveys at the vernal pool on March 22 and March 26, 2020, respectively, to inform the date for Stantec's field survey and share observations of vernal pool activity. Certified Wildlife Biologist Dan Nein of Stantec conducted the survey independently, following the BEAT and Bluestone surveys. Post remediation assessments of Vernal Pool 4C began in 2009 as outlined in General Electric's 2010 Final Completion Report (FCR)¹ for Removal Action for Housatonic River Floodplain – Non-Residential Properties and 2020 marks the twelfth year of the survey.

Survey methodology followed the Obligate Species Method of the March 2009 Natural Heritage and Endangered Species Program (NHESP) *Guidelines for the Certification of Vernal Pool Habitat in Massachusetts* (Guidelines)². The Guidelines require evidence of breeding activity by obligate vernal species or the presence of fairy shrimp (*Eubbranchipus vernalis*) and evidence of no permanently flowing outlet for a vernal pool to meet certification criteria. Stantec methodically waded through the vernal pool to visually characterize and document biota and ecological conditions. Species identification and taxonomy follows Kenney and Burne (2001)³; however, frog and salamander taxonomy follows Crother (2017)⁴.

SURVEY RESULTS

On March 22, 2020, Jane and Bruce Winn, members of BEAT, observed approximately 40 recently fertilized wood frog (*Lithobates sylvaticus*) egg masses (Photos 1 and 2) at the 4C vernal pool. These findings and photographs were conveyed to the U.S. Environmental Protection Agency and the Bluestone-Stantec team.

On March 26, 2020, Bluestone performed a follow-on survey at the vernal pool and observed greater than 40 wood frog egg masses (Photo 3) and no fairy shrimp.

The April 6, 2020, survey of the vernal pool performed by Stantec began at approximately 1:15 PM under mostly sunny skies with a temperature of approximately 65°F. The vernal pool and surrounding landscape

¹ Arcadis. 2010. *Final Completion Report for Removal Action for Housatonic River Floodplain – Non-Residential Areas*. General Electric Company. Pittsfield, Massachusetts. 1102 pgs. Document ID 462575.

² Massachusetts Natural Heritage and Endangered Species Program. 2009. *Guidelines for the Certification of Vernal Pool Habitat in Massachusetts*. Available at <http://www.mass.gov/eea/docs/dfg/nhesp/vernal-pools/vpcert.pdf>. Accessed April 1, 2020.

³ Kenney, L. and M. Burne. 2001. *A Field Guide to the Animals of Vernal Pools*. Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program, Westborough, MA. Vernal Pool Association, Peabody, MA.

⁴ Crother, B. I. (ed.). 2017. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico*, with Comments Regarding Confidence in Our Understanding pp. 1–102. SSAR Herpetological Circular 43. Available at <https://ssarherps.org/wp-content/uploads/2017/10/8th-Ed-2017-Scientific-and-Standard-English-Names.pdf>. Accessed April 1, 2020.

Reference: 2020 Phase 4C Floodplain Vernal Pool Survey — GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts

were free of snow and ice (Photo 4). Representative water depths within the vernal pool ranged from approximately 1 to 3 feet and were generally consistent with past years' survey observations. The vernal pool does not have a permanent inlet or outlet.

Stantec's observations of wood frog breeding evidence (i.e., egg masses) in the pool during the April 6, 2020, survey were consistent with observations reported by BEAT and Bluestone. Approximately 91 egg masses were observed, primarily clustered near the western and eastern edges of the pool (Photos 5–7). The majority of the egg masses were upwards of two weeks old, which coincides with observations at the vernal pool in late March reported by BEAT and Bluestone to Stantec. Two wood frog adults were also observed in the shallows near wood frog egg masses along the northern edge of the pool. Two adults and a few tadpole green frog (*Lithobates clamitans*) and three pairs of spring peepers (*Pseudacris crucifer*) in breeding amplexus (Photos 8–9) were observed during the survey. No fish or breeding evidence of spotted salamander (*Ambystoma maculatum*) were observed in 2020. Spotted salamander breeding activity can overlap with wood frogs but can also occur later in the spring.

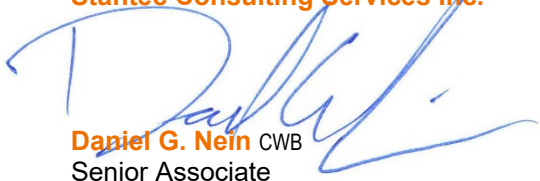
Macroinvertebrates observed during the survey included caddisflies (*Order Trichoptera*), water striders (*Family Gerridae*), water mites (*Order Acariformes*), water boatmen (*Family Corixidae*), water beetles (*Order Coleoptera*), backswimmers (*Family Notonectidae*), amphipods (*Order Amphipoda*), and mosquito larvae (*Family Culicoidea*). Fairy shrimp were not observed within Vernal Pool 4C in 2020, suggesting that the pool may not have completely or nearly dried out in 2019 unlike prior years when fairy shrimp were observed at Vernal Pool 4C. Fairy shrimp eggs laid in vernal pools require desiccation in the year (or years) following deposition for successful reproduction.⁵

RESULTS AND RELATIONSHIP TO RESTORATION REQUIREMENTS

Section 7.2 of the FCR 2010 notes that the Obligate Species Method, as defined by the Massachusetts Division of Fisheries and Wildlife, will be used during surveys of Vernal Pool 4C. The Obligate Species Method specified in the Guidelines require evidence of breeding activity by obligate vernal species or the presence of fairy shrimp and evidence of no permanently flowing outlet in order to meet certification criteria.

Observations in 2020 indicate that Vernal Pool 4C met the physical certification criterion (lacking a permanently flowing outlet) and the biological criteria (evidence of obligate amphibian breeding [≥ 5 wood frog egg masses]). The results of the April 2020 survey indicate that this vernal pool continues to be eligible for certification under the NHESP's 2009 Guidelines.

Stantec Consulting Services Inc.



Daniel G. Nein CWB
Senior Associate
Phone: (207) 406-5465
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Attachment: Photographs

⁵ Ward, M. and P. deMaynadier. 2009. Fairy Shrimp: Coming Soon to a Wetland near You? *The Maine Entomologist* 13(1):4–5.

Reference: 2020 Phase 4C Floodplain Vernal Pool Survey — GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts



Photo 1. Approximately 25 wood frog egg masses observed at the 4C vernal pool. BEAT. March 22, 2020.



Photo 2. Approximately six wood frog egg masses observed at the 4C vernal pool. BEAT. March 22, 2020

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Photo 3. Wood frog egg masses along the 4C vernal pool eastern shoreline. Bluestone. March 26, 2020.



Photo 4. Vernal Pool 4C looking southeast from the northwest shoreline. Stantec. April 6, 2020.

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Photo 5. A raft of wood frog egg masses at the western edge of Vernal Pool 4C. Stantec. April 6, 2020.



Photo 6. Wood frog egg masses at the western edge of Vernal Pool 4C. Stantec. April 6, 2020.

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Photo 7. Single wood frog egg mass near the center of Vernal Pool 4C. Stantec. April 6, 2020.



Photo 8. Spring peepers in breeding amplexus in the south end of Vernal Pool 4C. Stantec. April 6, 2020.

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Photo 9. Spring peepers in breeding amplexus in the south end of Vernal Pool 4C. Stantec. April 6, 2020.