

November 20, 2023
Rev. November 26, 2024

Amesbury Conservation Commission
City of Amesbury
62 Friend Street
Amesbury, MA 01913

Re: Wetland Replication Area Monitoring Report – Fall 2023
12 – 14 South Hunt Road, Amesbury, MA
(Map: 97, Lots: 4-5)

Dear Amesbury Conservation Commission:

Goddard Consulting, LLC (Goddard) is pleased to submit this wetland replication area monitoring report as required in the Order of Conditions (DEP File # 002-1299) issued by the Amesbury Conservation Commission on 04/20/2022 for the above referenced site. The Order of Conditions was issued with the special condition that the proposed wetland replication area would be created during construction as mitigation for the approved work. As part of the approved work, 1070 square feet of wetland fill was required in order to provide roadway improvements and access. As a result, 2166 square feet of wetland replication was proposed adjacent to the sports field to expand the existing BVW from flags WF-BM1 to WF-BM10 to create a 2:1 ratio of wetland replication to fill, as required under the local wetlands bylaw.

Background

The Amesbury Conservation Commission approved the proposed action items listed in the Weston & Sampson Approved Site Plan, “*Global Property Developers – Amesbury Sports Park*” dated 3/08/2022 to provide a 2:1 ratio of wetland replication to fill associated with the proposed project.

1. Excavation of soils to reach natural wetland hydrology to prepare for native wetland plantings and seeding.
2. Planting of native shrubs and fern species (highbush blueberry, winterberry, spicebush, cinnamon fern, royal fern, and sensitive fern) to re-establish native species from the cleared area.
3. Seeding of the entire replication area with New England Wetland Plants Wetmix to re-establish a native herbaceous layer.
4. The applicant was required to have the replication area inspected for two full growing seasons (2022 and 2023) and to provide the commission with monitoring reports to

ensure the approved 90% survival of the plantings is reached. This monitoring report serves as the fall of 2023 required report under the site's Order of Conditions.

All work performed on-site prior to the fall of 2023 was performed by others. Goddard was retained in the fall of 2023 to provide inspections of the wetland replication area and to provide an independent report on the area's vitality at the conclusion of the fall growing season. The below documentation outlines the findings and conclusion from Goddard's November 8, 2023, site inspection.

2023 Fall Inspection

Goddard visited the site on November 8, 2023, to inspect the status and vitality of the wetland replication area. During this site visit, Goddard inspected the health of the planted shrubs, as well as the revegetation of the replication area from the proposed seedmix. Goddard additionally performed soil sampling throughout the restoration area to ensure the area contains adequate hydrology.

During the site inspection, Goddard noted an exceedingly dense and diverse herbaceous layer that has revegetated throughout the replication area. Herbaceous species found within the restoration area include, but are not limited to, blue vervain, soft rush, sedges, beggarticks, cattail, flat-topped goldenrod, curly dock, st john's wort, American bugleweed, stinging nettle, sensitive fern, and rabbit-foot clover. The documentation of all herbaceous layer species is important in this setting to document revegetation success. Blue vervain, beggarticks, various sedges, and soft rush are all found within New England Wetland Plants Wetmix, pointing to high likelihood that the seedmix has been successful in introducing desirable native species to the area. The remaining native species that are not found within the seedmix are signs that the area has a strong existing seedbank, and that additional species from adjacent resource areas are spreading through the area. As such, the area now holds a diverse herbaceous layer that provides excellent habitat cover, foraging, and pollinator habitat.

In addition to the strong herbaceous layer, Goddard inspected the site's shrub plantings as shown in the approved site plans. The approved site plan set called for 16 highbush blueberry, 16 winterberry, and 10 spicebush plantings. During the November 8, 2023, site inspection, Goddard documented more highbush blueberry plantings than the proposed plans show (in excess of 20 shrubs throughout the area). The majority of winterberry and spicebush shrubs were not located within the area. Through continued conversations with the applicant, Goddard was made aware that the highbush blueberry appeared to be taking to the area, but that the other shrubs were not, and therefore additional highbush blueberries were installed to provide a stronger shrub layer. One item affecting shrub survival appears to be grazing; Goddard documented significant grazing occurring on the surviving highbush blueberry shrubs. Other woody shrubs were grazed to ground level. In addition to the highbush blueberries, native willow species are beginning to spread into the replication area from the adjacent wetland. These trees show fewer signs of grazing and are likely to spread strongly into the area.

In terms of revegetation criteria, it is the opinion of Goddard that the 90% revegetation threshold applies to the overall cover of native plants throughout the replication area as opposed to the survival rate of the individual planted shrubs. Due to an extremely dense and diverse herbaceous layer, the area both meets and exceeds a 90% cover of native species. The area that the replication area is hydrologically connected to contains a relatively low density of woody vegetation. The area is primarily dominated by herbaceous vegetation, with willow species providing much of the woody vegetation. Goddard believes that the replication area, in its current design, will mimic and blend in with the existing resource areas. Goddard does not recommend the installation of any additional plantings, as the area has fully revegetated, and further work in the area will create unnecessary disturbances.

Site Photos



Photo 1: Soil Sample from Wetland Replication Area. Redox Concentrations in a Depleted C-Layer Can be Seen.



Photo 2: Dense Herbaceous Layer after Fall Growing Season Concludes. Blue Vervain can be seen in the Foreground.



Photo 3: Highbush Blueberry Preparing for Winter Dormancy

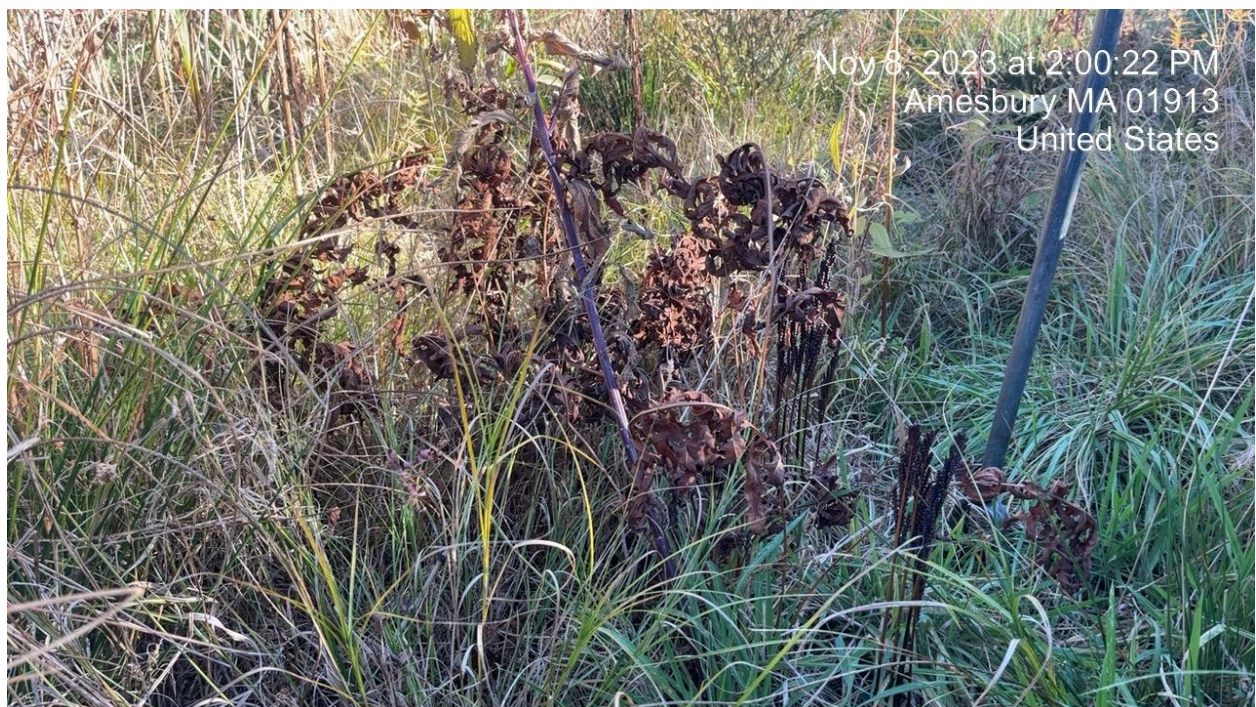


Photo 4: Sensitive Fern, Sedges, and Wetland Grasses within Replication Area



Photo 5: Heavy Grazing Occurring on Planted Shrubs



Photo 6: Native Willow Species Beginning to Spread to Replication Area

On November 25, 2024, Goddard received an as-built survey plan of the completed wetland replication area, titled *Wetland Replication As-Built Plan*, dated 11/25/2024, prepared by Kelly Engineering Group. As seen in the attached plan, the surveyed wetland replication area details a total square footage of wetland replication of 3145 SF. As noted above, the project originally proposed 2166 SF of wetland replication for the 1070 SF of required fill, a 2:1 ratio of replication to fill. The final wetland replication area construction has yielded an additional 979 SF of constructed wetlands, reaching a 3:1 ratio of replication to fill. As such, Goddard concludes that the project has resulted in an increase in constructed wetlands of 979 SF over the proposed and approved amount.

Conclusion:

As a result of the wetland replication efforts carried out to date, confirmed with Goddard's 2023 fall inspection, the wetland hydrology within the replication area has been achieved, and the area has met and exceeded the 90% threshold of revegetation with native species. The majority of the revegetation has stemmed from a dense and diverse herbaceous layer. Despite significant grazing throughout the area, all highbush blueberry plantings were deemed to be healthy and entering winter dormancy. Native willow species are spreading into the area to provide additional woody species as the winterberry and spicebush did not take to the area. Due to the dense revegetation that has occurred as of November of 2023, it is Goddard's opinion that the area currently meets the 90% revegetation threshold required in the order of conditions for the project. As outlined above, the final as-built survey plan for the wetland replication area concluded that the project constructed 3145 SF of wetlands, 979 SF over the amount proposed and approved. As a result, the project has resulted in a 3:1 ratio of wetland replication to fill. Goddard recommends that no additional work be performed, and that the replication area be deemed in compliance with the Order of Conditions under DEP File # 002-1299 as the area has filled in with native wetland vegetation and wetland hydrology has been created.

If there are any questions, please do not hesitate to reach out.

Sincerely,

Goddard Consulting, LLC

Andrew Thibault

Andrew Thibault, WPIT, WSA

Environmental Scientist