



TECHNICAL MEMORANDUM

Prepared by: Farallon Consulting, LLC dba Grette Associates
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October 9, 2024

Prepared for: ATTN: Jing Liu
Toxics Cleanup Program
Washington State Department of Ecology
PO Box 330316
Shoreline, WA 98133-9716

File No.: 260.003

Re: Cornet Bay Marina Model Toxic Control Act (MTCA) Cleanup Mitigation Plan: 2024
(Year 10) Vegetation Monitoring Results

1 INTRODUCTION

Farallon Consulting, L.L.C. dba Grette Associates (Grette) is under contract with Washington State Department of Ecology (Ecology) to assist in the long-term monitoring outlined in the approved *Cornet Bay MTCA Cleanup Mitigation Plan* (Plan; Grette Associates 2013). Cornet Bay Marina is located at 200 Cornet Bay Drive (Island County tax parcels R13436-488-2260, R13436-506-2420, and R13436-517-2500) and in Section 36, Township 34 North, Range 1 East, W.M. in Oak Harbor, Washington.

The purpose of this memorandum is to summarize the Year 10 monitoring that occurred in 2024 to evaluate the mitigation site against the Year 10 performance standards defined in the approved Plan. Photographs taken at the designated photo point locations are presented at the end of this memorandum.

2 METHODS

Per the approved Plan, quantitative data were to be collected to determine species health, density, and canopy coverage. Photographs were collected along the three (3) monitoring transects that were established during the as-built inspection (Grette Associates 2014; see attached transect map). Any additional observations, including wildlife presence, were noted and are summarized below.

As discussed below, the enhancement areas contain very little shrub coverage due to unsuitable growing conditions. As a result, canopy coverage was not able to be measured using the Line-Intercept method (WSDOT 2008) along each transect similar to previous monitoring efforts; therefore, a qualitative assessment was completed to evaluate coverage.

Survival rate was determined by documenting all observed mortality within the enhancement areas and comparing it against the quantities summarized in the contingency actions plan (Grette Associates 2015a¹).

3 RESULTS

Grette completed the site assessment on August 19, 2024 to evaluate the wetland and wetland buffer enhancement areas and to capture photographs at each of the photo-point locations (see attached photos).

3.1 Wetland Enhancement Area

While the emergent species within the wetland area appear to be thriving similar to the previous monitoring assessments, the wetland enhancement area is entirely devoid of shrubs (Table 1). No remnant shrub debris was observed within the wetland enhancement area; therefore, it is assumed that the other shrubs planted did not survive.

There is no performance standard for emergent vegetation within the planted area; however, a general assessment of the emergent vegetation was completed to determine the overall health and success of the plantings. The emergent area predominantly consists of seashore saltgrass (*Distichlis spicata*), Lyngby's sedge (*Carex lyngbyei*), beach plantain (*Plantago maritima*), fleshy jaumea (*Jaumea carnosa*), Puget Sound gumweed (*Grindelia integrifolia*) and pickleweed (*Salicornia pacifica*). Based on visual observations, the planted emergent area has approximately 75 percent aerial coverage.

3.2 Wetland Buffer Enhancement Area

Prior to Grette's Year 7 assessment (Grette Associates 2021), the wetland buffer enhancement area was deck mowed and as a result, there was no shrub coverage within that area. The observed remnant shrub shoots appeared to largely consist of volunteer Nootka rose (*Rosa nutkana*) and salmonberry (*Rubus spectabilis*), and only three surviving planted Nootka rose were observed.

In Year 10, there was no evidence of deck mowing, but the enhancement area was not replanted as recommended in the Year 7 assessment (Grette Associates 2021). In 2024, only one surviving planted Nootka rose was identified, and no surviving planted salmonberry was found (Table 1). Based on line intercept data, however, the aerial coverage of native shrub species was determined to be approximately 20.7 percent, almost entirely volunteer species. Though aerial coverage was larger than the survival rate, this finding still falls short of the 30 percent coverage requirement. Several boat trailers were parked directly on the buffer enhancement area within Transect 1, which likely reduced the shrub coverage. In addition, volunteer species within the area of Transect 2 have not fully recovered from previous deck mowing.

Herbaceous vegetation is well established within the wetland buffer enhancement area (see attached photos). Based on visual observations, the herbaceous vegetation is providing over 90 percent ground cover.

¹ As noted in the Contingency Action Compliance Report (Grette Associates 2015a), the revised standard for assessing survival within the wetland enhancement area was reduced to 50 shrubs. Originally, the area was planted with a total of 65 assorted shrubs; however, 15 were replaced with an assortment of emergent species (Grette Associates 2015a).

Table 1. Preliminary Year 10 performance standard summary

Performance Standards	Performance Standard met?
2a. A minimum of two (2) species of native shrubs will be present by the end of the monitoring period within the wetland enhancement area.	No – No shrubs rooted in the wetland were found
2b. A minimum of 80% survival of planted shrub species in Year 10 within the wetland enhancement area.	No – 0%
2c. A minimum of 30% aerial coverage of native shrubs after Year 10 within the wetland enhancement area.	No – 0%
3a. A minimum of two (2) species of native shrubs will be present by the end of the monitoring period within the buffer enhancement area.	Yes – 3 species present
3b. A minimum of 80% survival of planted shrub species in Year 10 within the buffer enhancement area.	No – 1%
3c. A minimum of 30% aerial coverage of native shrubs after Year 10 within the wetland buffer enhancement area.	No – 20.7%

Table 2. 2024 Shrub Mortality Survey Results

Enhancement Area	2024 Survey Results		Assorted Plant Totals	Assessment Standard	Survival Percentage
	Alive	Dead			
Wetland	0	-	0	50 ¹	0%
Wetland Buffer	1	1 ²	1	79	1%

¹ Per the approved contingency actions (Grette Associates 2015), the assessment standard was reduced to 50 species.

² Only one dead species was found in the field. However, the significant disturbance from deck mowing in 2021 suggests the other species that were not found in the field did not survive.

4 DISCUSSION

The enhancement areas are not meeting Year 10 performance standards.

As noted in the Year 7 report, in Grette’s professional opinion, the wetland enhancement area does not appear to provide suitable growing conditions for a shrub community. The soils in the upper wetland enhancement area are very sandy, and likely do not retain enough moisture during the dry months to support shrub species. Furthermore, the majority of the shoreline is relatively steep and transitions to upland in a moderately short distance (Grette Associates 2014). As a result, the wetland enhancement area appears to provide better growing conditions to support a salt tolerant emergent vegetation community that is regularly inundated by marine waters rather than a vegetation community that includes native shrubs that are conducive to growing in brackish environments. Currently the wetland enhancement area contains approximately 75 percent coverage of emergent vegetation.

In addition, due to the deck mowing prior to the Year 7 assessment, nearly all planted shrubs did not survive. Volunteer species have increased the aerial coverage in Year 10 from the Year 7 results, though the coverage of native species still falls short of the 30 percent coverage requirement and will require more time to recover in order to meet this performance standard.

5 RECOMMENDATIONS

Based on the Year 10 monitoring results presented above, Grette makes the following recommendations.

5.1 Wetland Enhancement Recommendations

Similar to Year 7, Grette recommends that performance standards 2a, 2b, and 2c be updated to reflect emergent species and that a shrub community no longer be required². While removal of a shrub layer will potentially reduce habitat value, the area will still meet wetland criteria (US Army Corps of Engineers 2010); therefore, no net loss of wetland area will occur as a result of the project. Furthermore, approximately 1,320 square feet of aquatic areas was created to compensate from the approximately 990 square feet of permanent aquatic impacts associated with the project and approximately 1,750 square feet of wetland buffer was enhancement in response to the 1,750 square feet of temporary disturbance to the wetland buffer.

It is Grette's professional opinion that the existing site conditions will not support a shrub community given the marine conditions and that it would be more invasive to recommend any substantial modification (e.g., grading) to allow for more suitable growing conditions for shrubs. The emergent community exhibits approximately 75 percent groundcover and re-grading the site would potentially reduce emergent coverage which provides quality aquatic habitat compared to the shrub element that largely provides habitat only for terrestrial wildlife species (i.e. foraging). Additionally, given its location, the wetland enhancement area likely does not provide suitable refuge opportunities for most wildlife species that would be expected to forage in the area. Grette also recommends that the goose exclusion barrier be removed to prevent wrack debris from covering the emergent species within the wetland enhancement area.

5.2 Wetland Buffer Recommendations

It appears that no additional deck-mowing has occurred recently within the buffer enhancement area. However, as discussed in Section 4, in order to meet native shrub aerial coverage performance standards, Grette recommends more time be allowed for volunteer shrubs to recover from the prior deck-mowing. If deck mowing no longer occurs in the buffer enhancement area, Grette anticipates that shrubs will continue to grow and meet the minimum coverage requirements defined in the approved plan.

If you have any questions on the site assessment observations or stewardship recommendations, please contact me at (253) 573-9300, or by email at chadw@gretteassociates.com.

Regards,



Chad Wallin, PWS
Project Biologist
Farallon Consulting L.L.C. dba Grette Associates

² Per the approved Plan, contingency actions may be implemented if the mitigation site continues to fail performance standards (Grette Associates 2013).

Regards,



Terra Hauser
Staff Biologist
Farallon Consulting L.L.C. dba Grette Associates

References:

- Grette Associates, LLC. 2013. Cornet Bay Marina – Cornet Bay Marina Mitigation Plan: Model Toxic Control Act (MTCA) Cleanup. Prepared for Kennedy/Jenks Consultants, Inc. July 2013.
- Grette Associates, LLC. 2014. Cornet Bay Marina – Cornet Bay Marina Model Toxic Control Act (MTCA) Cleanup Mitigation Plan As-Built. Prepared for Kennedy/Jenks Consultants, Inc. August 28, 2014.
- Grette Associates, LLC. 2015a. Cornet Bay Marina Model Toxic Control Act Cleanup Mitigation Plan: Contingency Action Compliance Report. Prepared for Kennedy/Jenks Consultants, Inc. March 17, 2015.
- Grette Associates, LLC. 2015b. Cornet Bay Marina Model Toxic Control Act Cleanup Mitigation Plan: Year 1 Monitoring Report. Prepared for Kennedy/Jenks Consultants, Inc. October 19, 2020.
- Grette Associates, LLC. 2021. Cornet Bay Marina Model Toxic Control Act (MTCA) Cleanup Mitigation Plan: 2021 (Year 7) Vegetation Monitoring Results. Prepared for Washington Department of Ecology Toxics Cleanup Program. December 2, 2021.
- Washington State Department of Transportation (WSDOT). 2008. WSDOT Wetland Mitigation Site Monitoring Methods. Guidance Memorandum. Updated June 12, 2008.

Attachment A.

Photo point 1. Transect 1 facing southeast.



Photo point 2. Transect 1 facing northwest.



Photo point 3. Transect 2 facing southwest.



Photo point 4. Transect 2 facing northeast.



Photo point 5. Transect 3 facing southwest.



Photo point 6. Transect 3 facing northeast.



Photo point 7. Planted emergent area.

