SITCUM WATERWAY REMEDIATION PROJECT

CLEAR CREEK HABITAT IMPROVEMENT PROJECT MONITORING REPORT, 2008

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1. INTRODUCTION

This report presents the results from the 2008 monitoring activities at the Clear Creek Habitat Improvement Project site. The results contained herein represent the final scheduled monitoring activities for the Clear Creek Habitat Improvement Project site.

The Clear Creek Habitat Improvement Project site was constructed as one of the habitat components of the mitigation package for the Sitcum Waterway Remediation Project, pursuant to CERCLA. The schedule of post-construction environmental monitoring activities at the Clear Creek Habitat Improvement Project is presented in the Operations, Maintenance, and Monitoring Plan (OMMP) (Port of Tacoma 1995). Comparisons of the results of the monitoring activities to the performance standards established in the OMMP can be found in the Year 1, 3 and 5 Monitoring Reports (Grette Associates 2000, 2002, 2004).

Based on the OMMP, additional physical monitoring (water level monitoring and photo points) was scheduled to occur in year 10 (2008). There are no performance standards associated with the year 10 monitoring.

2. PROJECT MONITORING

Year 10 monitoring focused on two activities, water level monitoring and photo points. The functional objectives for the monitoring program are listed in Table 2 of the OMMP. Monitoring activities to address the functional objectives are listed in Table 3 of the OMMP.

2.1. WATER LEVEL MONITORING

The OMMP states "the results of water level monitoring…[will] be compared to the 5.5 ft (NGVD) water level" and that "this is not a performance standard, but provides a check of general project conditions during the term of the monitoring program.

The following summarizes the water level monitoring methods and results for Year 10.

2.1.1. Tidal-Induced Fluctuation

Water level monitoring was conducted in May 2008. Water level was recorded continuously within the Clear Creek Habitat pond/wetland complex using a Global Water WL-15 water level logger. In order to calibrate the reading to NGVD datum, a correction factor was added to logger depth data. This correction factor was obtained by measuring the water level within the pond/wetland complex at the beginning and end of each monitoring session. Water level was measured at the upper weir, which was surveyed during year 0 ("as-built") and provides a known elevation.

The results from May 2008 show that regular tidal-induced water level fluctuations occurred during Year 10 monitoring of the pond/wetland complex (Figure 1). The steep leading edge of each tidal curve shows that tidal flooding was unrestricted. The extended trailing edge of each tidal curve demonstrates the weirs' effectiveness at controlling water retention within the pond/wetland complex.

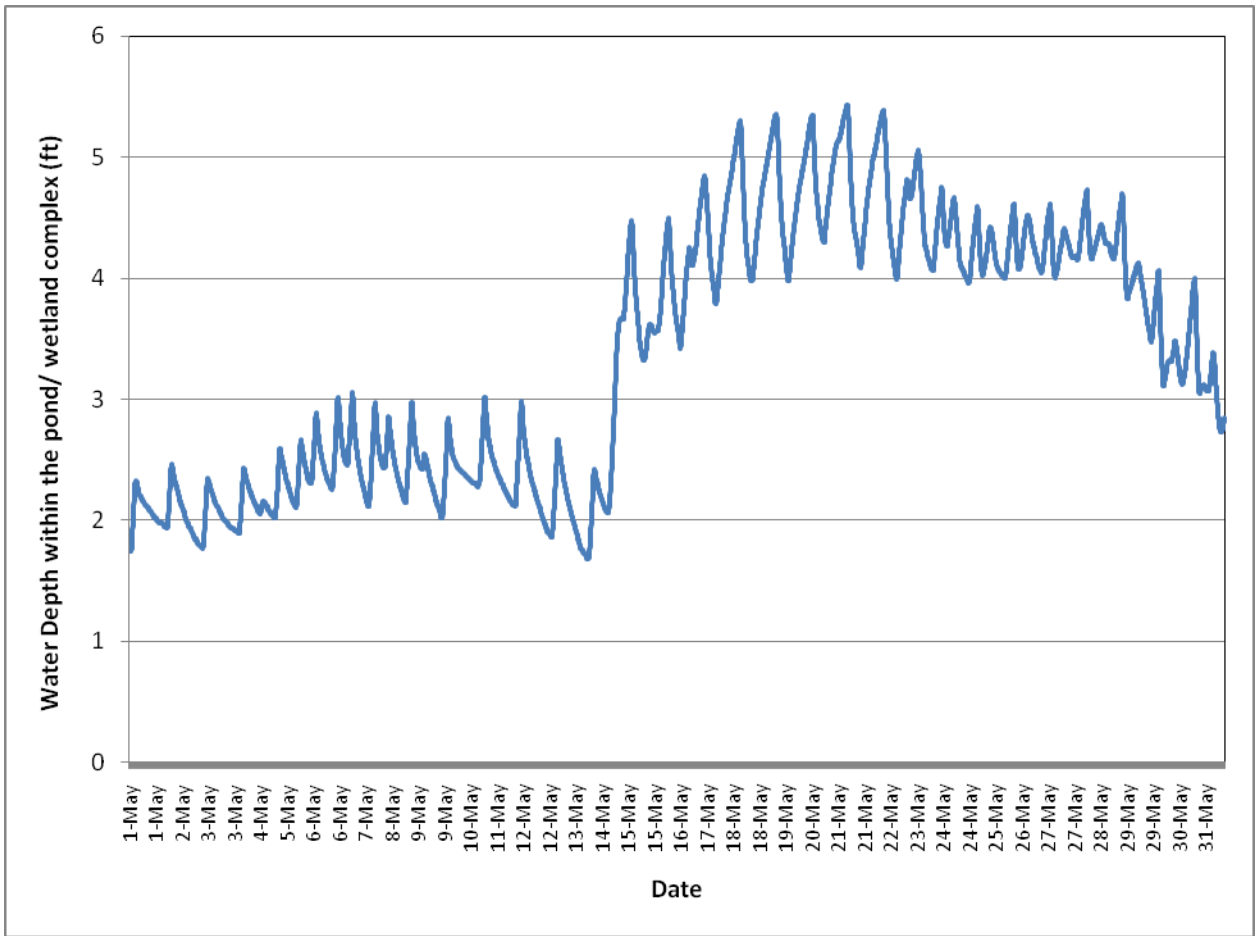

Figure 1. Tidally Induced Water Level (ft; NGVD) for the Clear Creek Habitat Improvement Project Site Pond/Wetland Complex during May 2008.

2.2. PHOTO POINTS

Section 5.5 of the OMMP describes the photo point monitoring requirements. The OMMP does not establish a performance standard for photo points. Pursuant to the OMMP, photographic documentation of the habitat area requires the establishment of set photo points around the project area. Photo points were established at one or more ends of each vegetation sampling transect. Additional locations were chosen based on their relative value for documenting the habitat area.

Figure 2 shows the location of each photo point relative to the eight transects. Each photo point was surveyed and marked with a permanent stake so that future photographs can document the same location. Time, date, photo point location, and photographer were all recorded in a photo journal. Photographs were taken in September and repeated in November 2008 to document the summer and winter conditions. Unless otherwise noted, photographs were taken at an elevation of 3 feet (NGVD) as listed in the OMMP. At many of the photo points, vegetation obstructed the view of the habitat. In response to this, additional photo points were added along each transect at the water's edge or at alternative elevations (i.e. 10 ft NGVD rather than 3 ft NGVD), duplicating the photo direction specified in the OMMP.

Results from year 10 photographs are shown in Appendix A. The photos clearly document the continued establishment of vegetation within the site.

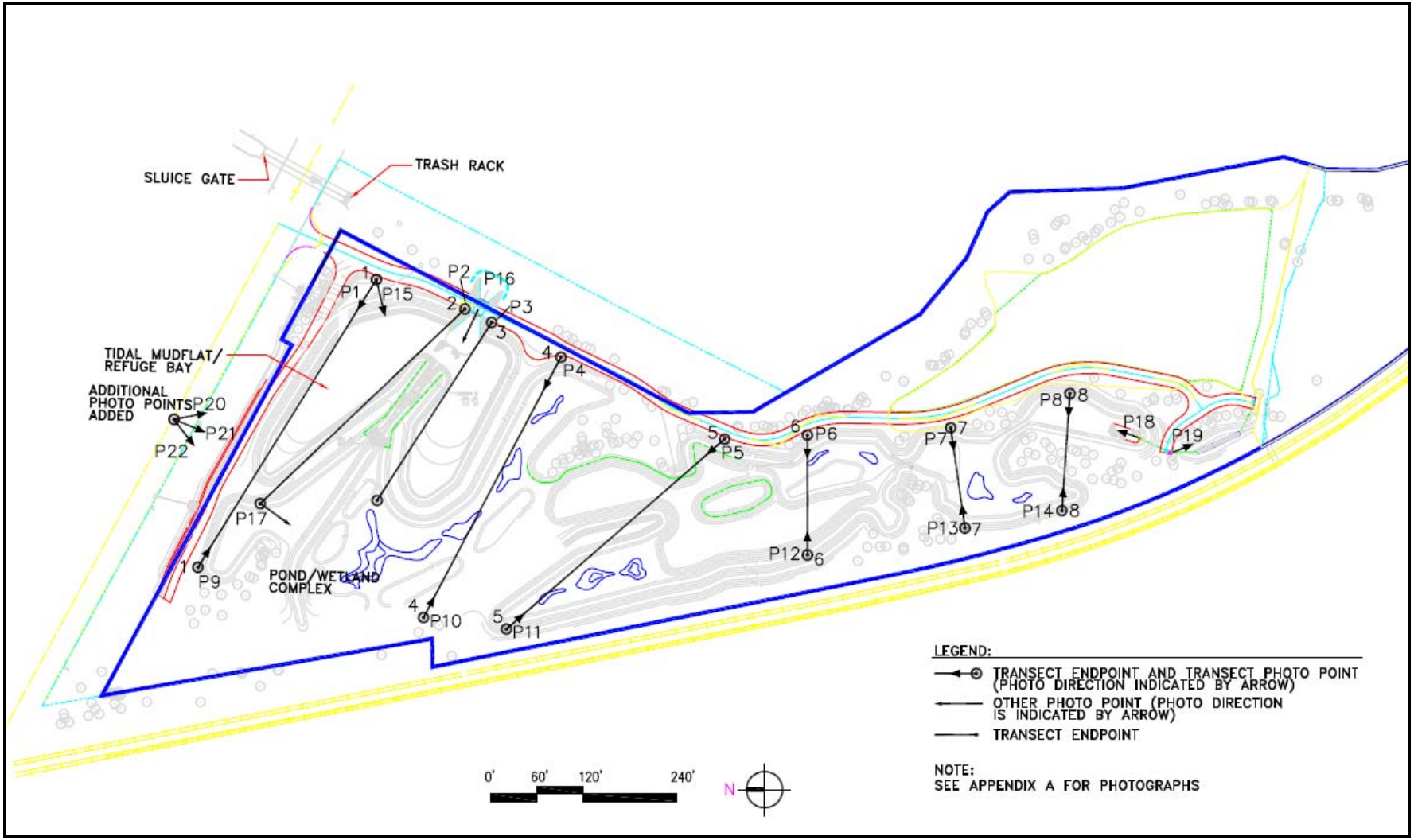

Figure 2. Clear Creek Habitat Improvement Project site map indicating location of photo point transects during May and November 2008.

3. DISCUSSION

The Clear Creek Habitat Improvement Project was designed to provide refuge, feeding, and rearing habitat for juvenile salmonids and other wildlife in the lower reaches of the Puyallup River system. Construction of the site has resulted in increased wetland, open water, and upland habitats that effectively promote the goals of the Project.

The 2008 monitoring activities demonstrate that adequate inundation continues to occur within the pond/wetland complex. Previous years' monitoring results have documented salmonid and waterfowl utilization of the Clear Creek habitat area. It is expected that adequate inundation will continue to occur and fish and waterfowl will continue to utilize the habitat.

Furthermore, the 2008 monitoring results document that vegetation growth at the habitat area has continued to progress. Overall, the Port concludes that the Clear Creek Habitat Improvement Project effectively provides a diverse range of habitat with wetland, open water, and upland components (OMMP Functional Objective 2.B.).

4. REFERENCES

Grette Associates[LLC]. 2000. Sitcum Waterway Remediation Project Clear Creek Habitat Improvement Project Monitoring Report, 1999.

Grette Associates[LLC]. 2002. Sitcum Waterway Remediation Project Clear Creek Habitat Improvement Project Monitoring Report, 2001.

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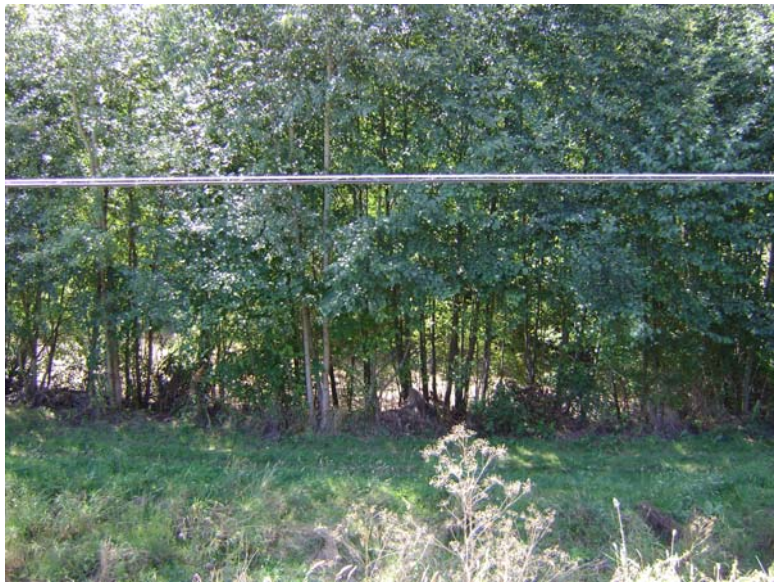

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