Identification of Bivalve Species at Commencement Bay

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Purpose
The Urban Waters Initiative was conducted by the Washington State Department of Ecology which researchers studied 30 sites of Commencement Bay and took sediment samples which contained benthic organisms (Partridge 2010). Students at the University of Washington of Tacoma studied 5 of these sites to compare results of benthic richness. However, many of the taxonomic groups contained many unidentified species that could have led to errors in the results. This research focused at the bivalves found at these 5 sites to re-identify the species that were found.

Methods
After processing by the students, all bivalves were contained in small vials that were labeled by species with the site they were found. The specimens of each vial were carefully studied to determine that all specimens were one species. Once each specimen is identified, it was transferred to the vial of the same species of the same site it was found. Specimens that were re-identified were relabeled as such. This transfer was documented to make sure all specimens were accounted for. Specimens were identified by an identification book on bivalve species (Coan 2000). Findings were compared to what previous students have found.

Results
Compared to past results, there were very few changes to the number of specimens per species. Most species were identified with some new species that were not accounted for by the previous students (Figures 1-7). Figure 8 shows results from previous students at UWT in yellow columns, while my results are shown in red columns. Figure 9 shows a high abundance of site 287 compared to the other sites. Site 285 had the least diverse population compared to other sites (Figure 10). P. tenuisculpta and A. serricata were both abundant at site 287, however, P. tenuisculpta was abundant at site 285 also and A. serricata was not (Figures 11 and 12). Sediment deposition may have had an affect of species populations (Figure 13).

Conclusion
The re-identification of the specimens was not much different from what the previous students had found. Some unknown specimens were identified, however, there were only a few unknown specimens that were found at the sites and therefore would not change bivalve species diversity. There was more than one Macoma sp vials for each site but due to the transparent texture of the shell I was not able to identify the species without finding the palial sinus which distinguishes each species. Therefore all Macoma species were all identified as one category on the species table.

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References