Duwamish River is important to local ecologies because it serves as the natural habitat for surrounding invertebrates, but human activities like the port industry irreversibly changed the habitat with rock and concrete. Because invertebrates play a significant role in the main diets of Duwamish salmonids, it is crucial to figure out how such a change will affect the invertebrate groups. The purpose of this study is to figure out how invertebrate population differs among 5 monitoring sites from different types of shorelines (soft/armored shorelines). In this research, soft shorelines are commonly referring those natural shorelines, while armored shorelines are represented by rocky and concrete shorelines. To compare their environmental impacts, I collected and identified invertebrate samples along the Duwamish River. During the 2 months of researching, I processed 1,027 invertebrate samples and conducted my preliminary deliverables. The results indicted different capacities of shorelines in support of the invertebrates nearby. Soft shorelines were suitable for diverse invertebrate population, because more invertebrate taxa were found in average; while armored shorelines were more suitable for certain dominant species because fewer taxa shared more resources there. The disparities among different shorelines allow us to protect the Duwamish invertebrates by habitat restoration catering to their preference. As we conduct more researches like this, we will be able to better protect these important species.