Spring 2024

Coastal and Marine Fish Ecology Lab

Sarah Granard
Western Washington Univerity

COLLEGE OF THE ENVIRONMENT

WESTERN WASHINGTON UNIVERSITY
MAKE WAVES.

Internship Title: Investigating Inverebrate Density in Snohomish Estuary

Organization Worked For: Coastal and Marine Fish Ecology Lab

Student Name: Sarah Granard

Internship Dates: 04/08/24-05/28/24

Faculty Advisor Name Kathryn Sobocinski

Department ENVS

STUDENT SIGNATURE _____

DATE: 06/01/24

Sarah Granard
ESCI 498B
Kathryn Sobocinski

This Spring I worked under Sean Grealish and Kathryn Sobocinski in the Coastal and Marine Fish Ecology Lab at Western Washington University collecting invertebrate samples in the Snohomish estuary. The goal of the study is to better understand how invertebrates vary throughout the estuary to aid future restoration projects providing food for salmon where it is scarce. Weekly invertebrate samples were collected from April to June using neuston nets at surface and benthic levels within the channel.

Every week I aided Sean in the field by hauling equipment, recording data, and collecting samples. We dropped the neuston nets in the channel in ten-minute increments. While the nets were in the water, I measured the salinity, dissolved oxygen, and temperature of the water using the YSI probe. We measured the flow using a flow meter to estimate the density of invertebrates per volume. After pulling the nets from the channel we rinsed them off, collected the samples, then treated the samples with ethanol. We took as many samples as possible until the water completely drained and the surface net wasn't submerged. On my last sample day, we finished early so we spent time setting up quadrants and taking vegetation samples of the area.

This internship has allowed me to directly apply knowledge from previous classes like salmon ecology, habitat assessment, and water quality in the field. I was able to use my knowledge of bottom-up processes and prey/predator interactions in the field and I got to actively use equipment to contribute to this study. I was able to get real-world experience in sampling, data collection, and working with a professional group in the field.

Overall, this internship was a success. I got to work and learn from my superiors and get a glimpse of how fieldwork and data collection are conducted during an actual study. I am

pleased I got to contribute to research within my community and I hope our findings are used during future restoration efforts in the Snohomish estuary.

Invertebrate Sampling Daily Log

Date	Hours	Description
04/16/2024	7:00 am-1:00 pm 6 hours	I spent the first day working with Sean and Karis. We explored the Heron Point sample site but spent the majority of our time at the Qwuloolt sample site at Olympic View Park. We got an introduction on how the equipment works. Karis and I kept track of time, used the YSI and recorded all data. We also helped Sean pull the nets, rinse them, and collect the samples.
04/24/2024	7:00 am-1:00 pm 6 hours	Sean and I went to the Marysville boat launch and walked down the dike to our sample site carrying all our gear. It took us about an hour to get to the site therefore we had little time to collect samples before the water in the channel drained. I helped from the shore recording data, helping Sean pull and rinse the nets, and collect the samples.
05/01/2024	10:30 am-6:00pm 7.5 hours	Sean and I worked at the Qwuloolt sample site. We carried our equipment to the site and spent the entire day taking samples. I recorded data, took measurements with the YSI, helped pull and rinse the nets, and labeled the sample containers.

05/22/2024	6:00 am-12:00 pm 6 hours	Sean and I worked at the Qwuloolt sample site again. We had the same routine of Sean being in the water holding the nets while I recorded data, took YSI measurements, pulled and rinsed nets, and collected and labeled samples.
05/28/2024	7:30 am- 3:00pm 7.5 hours	Sean and I worked with Tulalip and took the boat out to the sample site. The water was really high when we arrived so we had to use our walking stick to hold the nets in a shallower area in order to collect samples. Once the water started draining from the channel we carried on collecting samples from the set posts. Once the water completely drained from the channel we still had to wait for Tulalip to give us a ride back so while we waited we collected vegetation samples around our site.
Total	**33 hours**	