

## Students Saving Salmon

Salmon aren't generally considered "cute." Being fish, they lack a soft fur coating and obviously can't walk on land. Too often animal protection and preservation organizations highlight the mammals: from adorable pandas to majestic elephants and cuddly koalas, or at least exciting animals like terrifying leopards, lynxes, and polar bears oh, my! Despite this salmon have always been an essential part of the Pacific Northwest, not only to the ecosystem but to the culture of many indigenous people along the coast. Beyond being the primary diets of many of the tribes of Native Americans, salmon are also used in many of their spiritual rituals and are an integral part of their identity. Without salmon, they "would cease to be Indians"(CRITFC).

Now many different species of salmon are either endangered or threatened because of human influences. Humans have polluted their waterways, have imposed impossible obstacles (anything from power dams to decorative waterfalls) that prevent them from returning to their streams to spawn, and have overfished, causing a large decline in salmon population (US). As president of the Students Saving Salmon club at my school, I, along with my club, believe it is essential to work for the recovery of salmon, not only in the watersheds in Edmonds, Washington, but *everywhere* . But we're working one watershed at a time.

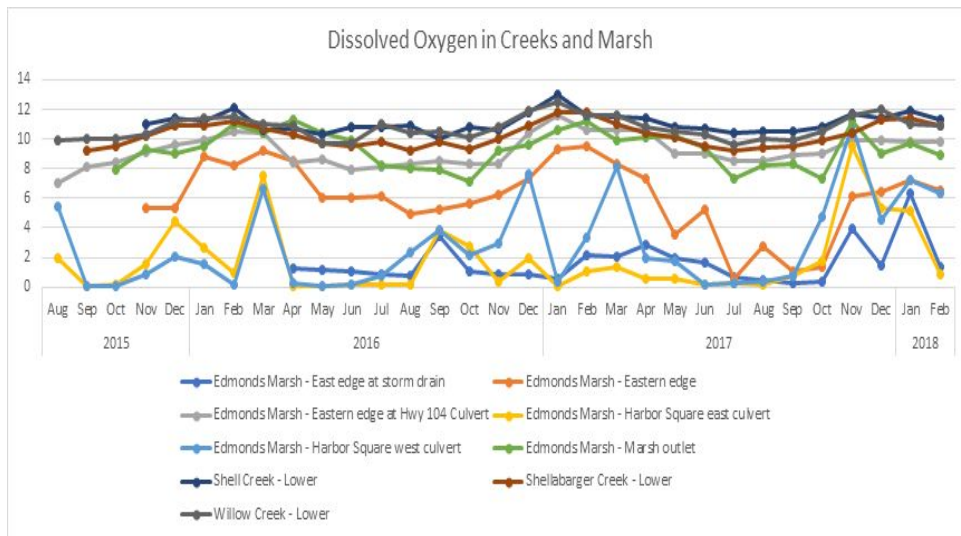
I have been a member of this club for three years, and have served as president this year. Our club membership has changed over the years, but currently, we have a couple dozen members.

The main focus of our club is taking water quality measurements monthly at four different watersheds: Shell Creek, Shellabarger Creek, Willow Creek, and the Edmonds Marsh. We measure many different criteria, including dissolved oxygen content, salinity, and temperature with various

probes including Yellow Springs Instruments: the YSI DSS and YSI ProPlus probes, as shown in the picture below.



The streams all stay within the Washington state water quality standards for “salmonoid spawning, rearing, and migration”(Department), such as for dissolved oxygen, which is above or at 8 mg/L, and water temperature, which is 63.5 degrees Fahrenheit (Department), as shown in the graph below. However, the Edmonds Marsh, having a much more industrial history (Maul), has unliveable water in some areas because of low dissolved oxygen levels (sometimes below 2 mg/L which is toxic to almost all organisms), as shown by the yellow, light blue, and orange lines in the graph below, fluctuating salinity levels (as it is connected to the Puget Sound), and too high temperatures during the summers. Personally, I have been working collecting data on the Edmonds Marsh, and have personally seen the poor conditions there.



We have presented these results annually for two years now to the Edmonds City Council, and have been able to make some changes with their support. Because the creeks have liveable water quality standards and because Shell Creek still currently has some salmon, we have put most of our efforts into Shell Creek, by spreading awareness of the salmon, teaching how to protect the salmon, and by directly interacting with the salmon’s habitat in the creek.

For the past two years, we have completed surveys along lower Shell Creek, both talking with residents about their experiences and salmon sightings and directly studying the creek itself, during November to December, when salmon are supposed to return to the creeks.



Unfortunately, last year's salmon return was fewer than it has been in the past several years, according to the residents who live along the creek. In our club, we are working to increase these numbers and released 800 coho fry (hatchery-raised) into upper Shell Creek last May, and are planning to continue annually. Last May was the first time in over a century that salmon had been so high in Shell Creek. The only reason we were able to plant the fry was that our water quality data proved to the Edmonds Community Council that the waters were safe for salmon.

This year we are also helping raise the salmon in the Willow Creek Hatchery (to release into Shell Creek), including moving the eggs into trays (placed in order to allow water to flow through them), moving the eggs to runways, and most recently feeding the salmon as they grow in the pond before they're released. Last year we also experimented with hatchboxes, which are a way of raising salmon in their own habitat (rather than in a hatchery), but still protecting them from possible predators or other dangers, and are planning on continuing this this year.

Currently, we are working on removing obstacles from the salmon's return in three years, such as a five-foot man-made waterfall, as pictured below. While we have identified grants that could pay for the removal or modification of the waterfall, we are struggling to work with gaining much support from the owner of the waterfall, as he has continually evaded many of our attempts to contact him, though we have made some progress, as a classmate of mine is his neighbor him and has talked to him.



We have also planted native plants along Shell Creek to provide shade and protection to the salmon along the creek, because we saw many bare edges along the properties bordering the creeks, which makes it much easier for predators to feed on the salmon. We were able to plant 400 native plants on four separate properties and were able to plant along Holy Rosary Church's property, which I was personally involved in.

Our overall goal is just to protect the salmon, and in doing so conserve the ecosystems, which they are so critical to. We cannot take back the mistakes of our ancestors, who put the lives of salmon at risk, but we can fight to right them. By getting the whole community informed and involved, we hope that salmon will be able to return to and flourish in the Edmonds Watersheds.

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Note: all photos are personal photos.