From: Gunn, Amanda
Sent: Wednesday, November 25, 2015 9:41 AM
To: Gunn, Amanda
Subject: GHC Fish Lab Newsletter 11/25/15

Hey Everybody,

It's time for another GHC Fish Lab update. Just because preparations are completed, and we are ready for our eggs, does not mean there is time for a dull moment down in the Aquaculture building! As a reminder, we have our regular volunteer meet-ups on Mondays and Wednesdays at 3pm, and Saturdays beginning at 8am. Here are some of the exciting things we have been up to since our last newsletter:

1. The Wild Fish Conservancy came to speak to BIO100 students before they took a day to explore the watershed.
2. We had our first official volunteer field trip to the Satsop Springs Fish Hatchery.
3. The first field trip was so much fun, we went back a second weekend to tour the Satsop Springs and Aberdeen Lake Fish Hatcheries.
4. We took a moment to sit down and talk to the crew at the Aberdeen Lake facility to learn more about how they serve the Harbor, opportunities available, and what they are looking for in future employees.
5. If you are unable to volunteer, but would like to show your support, you can donate to the Fish Lab fund through the Grays Harbor College Foundation. Visit http://www.ghc.edu/foundation or email Jan Jorgenson (jan.jorgenson@ghc.edu) for more information.

Wild Fish Conservancy. Many of you may have read Jamie Glasgow's piece that went out in our last newsletter, and I received a lot of great feedback on his rental car metaphor. To follow up, Jamie came to speak to the GHC BIO100 students about the intersection between conservation and hatcheries here in Western Washington. Armed with this information, students completed a computer simulation on maintaining genetic diversity to create a stable population equilibrium, then spent the following week down at the GHC Fish Lab.

Here at the Fish Lab, students were treated to a tour and description of the process of raising salmon, giving them an opportunity to visualize first hand what we had discussed. Because no salmon is an island, and an ecosystem requires all kinds, we then went on a hunt to find semi-intelligent amoebas within our model watershed. Now, let's be honest, a semi-intelligent amoeba is basically a euphemism for a slime mold, but did you know that slime molds are capable of finding the shortest route through a maze? Check out this video to learn more about some of the most complex, yet simple, organisms you can find right here in the Harbor.

https://www.ted.com/talks/heather_barnett_what_humans_can_learn_from_semi_intelligent_slime_1?language=en

Our slime mold hunt appears to have been a success, and in the upcoming weeks we will be putting our single-celled cooperative organisms to the test. Drop by the Microbiology lab between 9-11am Monday through Thursday if you want to check it out.

Volunteer Day at Satsop Springs Fish Hatchery. Rounding out the busy season for many fish hatcheries, GHC student and faculty volunteers were given the opportunity to get their hands on some fish! The Satsop Springs Hatchery, co-funded by the Department of Fish and Wildlife and the Chehalis Basin Fisheries Task Force, raises Chinhook, Chum, Coho, and Trout. Managed by a graduate of GHC, Steve Franks, this facility produces approximately 120,000 salmonid for recreational fishing. We would like to thank Steve for welcoming our volunteers and their children, and for training us on species and gender identification.

Pictured above are just some of the student and faculty volunteers who helped with “surplusing”. What does that mean? When the salmon return to spawn, sometimes more return than are needed to produce the next generation. Allowing these fish to spawn in the wild could lead to an increase in hatchery-wild matings, which could negatively impact the robust nature of the wild fish stocks. To reduce this risk, the surplus returns are scanned for biological tags, then either sold to help fund the hatchery, planted in closed systems for recreational fishing, or killed and returned to the river for nutrient enhancement.

Although the Coho runs were low this year, during strong return years in the past these surplus salmon have not only provided additional recreation activities, but have also been donated to food banks.

http://wdfw.wa.gov/news/aug2800a/

The hands-on nature of this task provided a great opportunity for our students to learn more about the fish we will be raising. First, the fish were lifted out of the stream and onto the dock. Then, each fish was scanned for biological tags that would indicate it needed to be returned to DFW. As volunteers carried the fish up to be scanned, they then indicated the gender and species of each fish. This data was recorded by pre-nursing student, Kasia Tugaga, shown above along with GHC Math Instructor: Tom Kuester, Steve Franks, and pre-dental hygiene student: Samantha Richardson.

Altogether, it was a fantastic learning experience for our volunteers, in addition to several of their children who also came to learn. It is unlikely pre-nursing student April Bacongco’s son and daughter will forget their first hands-on experiences with Coho salmon. We look forward to enrolling these future biologists at GHC someday!

Hatchery Tours. After our day at the Satsop Springs hatchery, our volunteers were exhausted but happy. To keep the momentum, we arranged tours of the Satsop Springs and Aberdeen Lake facilities for the following Saturday.

First, Steve gave a fresh set of volunteers a tour of his facility. This was an excellent opportunity for students to see the differences between hatcheries, as the Satsop Springs facility is fed by spring and ground water into a series of ponds where the fish are held. Pointing out the differences between the fish in each pond, Steve answered everybody's questions and let each of the children help feed the fish.

From there, the tour progressed to the inlet from the river where we had the opportunity to see the adult fish at the later stages of life. Steve described the life cycle of salmonids, and pointed out how to tell the difference between the individuals and how to characterize each fish. Several of the female Chum flipped on their sides to create a nest for their eggs. It was a remarkable sight.

http://wdfw.wa.gov/fishing/salmon/chum/life_history/

Our next stop was the Aberdeen Lake Hatchery, where DFW Fish Hatchery Specialist IV: Ken Isaksson gave us a tour of the egg rearing facilities and, yes, let the kids feed more fish. The GHC Fish Lab has a special connection with the Aberdeen Lake facility, they have been our mentors, our educators, and our strongest supporters as we have revived our hatchery these past few months. Shown below is GHC Fish Lab senior volunteer, Joe Kalisch, who has also been volunteering regularly at the Aberdeen Lake Hatchery as part of his training for a future career in Fisheries.

It is not, however, some special connection that got us a tour of Aberdeen Lake. They will give ANYBODY a tour, and I strongly suggest any family interested in a fun educational activity stop by and see the guys. They are patient with questions, incredibly knowledgeable, and always

happy to show you around.

http://www.graysharbortalk.com/2015/09/17/lake-aberdeen-hatchery-tour/

A Conversation With The Aberdeen Lake Hatchery Crew. As noted previously, the Aberdeen Lake Fish Hatchery Specialists have been of tremendous service to the start-up of our GHC Fish Lab. In fact, two members of their team, Eric Roos and Keith Burns, were graduates of the former GHC Fisheries program. Keith was a GHC work-study, and was responsible for helping to maintain the trails of our model watershed.

The Aberdeen Lake Hatchery was originally started up to offset loss of habitat to salmonid species. This single facility is responsible for approximately $2 million dollars that flows into our local economy during the fishing season, and they strive to further support local businesses by purchasing fish feed from Dr. Don's in Aberdeen. A true staple to our community, the hatchery has open doors most days, and welcomes visitors with tours and coloring books for the kids. Okay, they gave me a coloring book, too. It's a good book. ☺

Last week, we took a moment to catch up with each of them to talk about career opportunities at the Department of Fish and Wildlife. Shown below (l-r) are Keith Burns, Ken Isaksson, and Eric Roos, of the Aberdeen Lake Hatchery, who were kind enough to lend me their time and experience.

When asked how they got their start in fisheries, the answer was unanimous. Each member of the team wanted an outdoor career up to his elbows in nature. For Eric it was a love for fishing, and for Keith it was the respectability that led him to the program at GHC. According to Ken, there are graduates from our former program at all levels of DFW, including Steve Franks from Satsop Springs who was an Aberdeen Lake volunteer during high school.

Although having a career outdoors has quite a draw, there is more about working in Fisheries that draws Ken in. "First and foremost, I'm a public servant. I love building things and creating things, and working with positive, forward thinking people."

It seems volunteering and public service are very important ways that students can stand out in a pool of applicants for positions with DFW. Although they have been working in Fisheries for 25 years now, both Keith and Eric started out in volunteer and seasonal positions. In such a unique field, it is incredibly important to gain hands-on experience. The busy season can be chaotic, and there is not always enough time to train new seasonal workers, so to get to the top of that application pile you want to have experience working with the fish.

The combination of education and experience is crucial for any job seeker. "You can walk out of a two year degree with a skill set that would take many years to develop," says Ken, and they are not just looking for one type of degree. At a hatchery, you are not just working with the fish, but also building and maintaining equipment, working with computers, doing biological surveys, you need to be a Jack-of-all-trades. In fact, a lot of the work you might stumble into involves carpentry, welding, plumbing, or even boating.

The jobs aren't just out there for hatchery workers, DFW is also looking for people with computer skills, experience

with environmental monitoring and GIS, in addition to water quality analysis and a STEM background. These are some of the growing fields, with jobs opening up with DFW, the Department of Ecology, and the Quinault Indian Nation. When asked who he would want to hire, Ken said he would love to see applications from people who know how to work hard, aren't afraid of the weather, and who have an open mind willing to absorb new information.

On the subject of resurrecting the GHC hatchery, Keith said he was excited to see the fish coming back. Ken added that, for this area, how can you not have fisheries education opportunities? Eric, in particular, was sad to see the program close and loves the idea of the college bringing back the hatchery. What they would like to see the most would be for the college to offer diverse education opportunities available to a broad variety of students.

On that note, we hope to make them proud. Whether you are studying Biology, Forestry, Carpentry, Office Technology, or any other subject, our doors are open to all GHC students interested in learning more.

I would like to close with something Eric shared with me. His advice for students interested in fisheries was just to get involved and volunteer. He said that when he was growing up, his dad always told him to be happy over being rich. "Do what you love and don't always accept no for an answer, just keep pushing through and doors will open if you keep a positive attitude."

As GHC students register for next quarter's classes, I can't think of a better piece of advice to share.

Amanda Lyn Gunn, Ph.d.
Biology Instructor
Grays Harbor College
amanda.gunn@ghc.edu