

NEWS FROM THE...

# Salmon Coast | Field Station

SUMMER 2013

Volume Three | Issue Two

SPRING RESEARCH 2013



## PARASITES, PREDATORS AND CHUM SURVIVAL STUDY

**April-May 2013:** Ph.D. candidate Stephanie Peacock and her team performed experiments testing for predatory juvenile coho preference for juvenile pink over chum salmon as prey, and if that preference changes if prey is infected with sea lice. See page 2 for more information about Steph's research.

## IMPACTS OF SEA LICE ON FORAGING ABILITIES OF FRASER RIVER SOCKEYE SMOLTS

**April-July 2013:** Master's student Sean Godwin and his team are investigating effects of high sea lice loads on the foraging abilities of juvenile Fraser River Sockeye salmon, a key stage of this important stock's life history that has been studied very little. See page 2 for more about Sean's research.

## New Station Boat!

Thanks to station founder and supporter Sarah Haney and to the JayMac Foundation, Salmon Coast was able to buy a dependable station-owned boat. We brought home our new 20 foot welded aluminum boat in March 2013 and she has greatly increased our capacity for safely and efficiently transporting station users and supplies, hosting research projects and other groups, and undertaking station based research.

Sadly, Sarah Haney's wonderful husband Alan Calderwood passed away this spring. In his honour, the new boat has been given his nickname: *Big Yin*. We miss you Al.



## LONG TERM SEA LICE MONITORING PROJECT

**April-June 2013:** Continuing a data set now ongoing since 2001, station volunteers and project leader Lauren Portner continued to monitor sea lice levels on juvenile pink and chum salmon passing local salmon farms this spring by sampling weekly throughout the spring juvenile outmigration season.

## MARINE MAMMAL MONITORING AND SURVEYS

**Ongoing:** Salmon Coast records local marine mammal sightings, and is beginning regular surveys in the Broughton throughout the year to collect data on marine mammals.

## Greetings, Broughton Visitors!

As always, we are excited to see old friends and meet new folks traveling through the area this summer. Interested visitors are invited to stop in at the station to get in touch with the work we do.

Salmon Coast | Field Station



## CONTACT US FOR A TOUR

Website | [www.salmoncoast.org](http://www.salmoncoast.org)  
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## SPRING RESEARCH 2013

### PARASITES, PREDATORS AND CHUM SURVIVAL STUDY

Sea lice from farmed salmon have been correlated with reduced productivity of pink and coho salmon in the Broughton. However, new research led by Steph out of SCFS shows chum salmon populations *do not* display this trend. This is puzzling, since in the Broughton chum migrate with pink salmon in their early marine life and both species have similar numbers of lice.

Parasites by definition harm their hosts, but interactions between parasitism and predation may have unexpected results for host/prey survival. Steph is studying how predator preference for pinks may reduce predation on chum salmon, especially when sea lice make prey easier to catch. Models have shown that such an effect may actually *increase* chum survival when louse numbers are high.

To test these hypotheses, Steph's spring field experiments were designed to confirm predatory juvenile coho preference for juvenile pink over chum salmon as prey, and to see if coho preference changes if prey is infected with sea lice. If it can be shown that coho prefer pinks, and more easily select favoured prey if it is loaded with sea lice, this could provide predation relief for chum. Stay posted for results!

### IMPACTS OF SEA LICE ON FORAGING ABILITIES OF FRASER RIVER SOCKEYE SMOLTS

Fraser River Sockeye salmon are an important salmon stock in B.C., and their gradual decline in productivity over the past two decades, and devastatingly low 2009 return, has triggered much public interest into the causes of these phenomena. Despite its importance to the sockeye life cycle, juvenile sockeye marine outmigration is little studied and factors influencing survival during this period are poorly understood.

Sea louse infestations of juvenile sockeye salmon migrating through B.C.'s Discovery Islands have been linked to salmon farm presence along the sockeye migration route. Sea lice have been shown to have significant impacts on other Pacific salmon species, but no study of impact on juvenile sockeye has been performed.

This spring at SCFS, Sean Godwin and his team performed a series of experiments to investigate how high sea lice loads impact the competitive foraging abilities of juvenile stage Fraser River sockeye salmon. This study will be the first to explore sea lice impacts on wild juvenile sockeye salmon, an important addition to discussions of the Fraser River sockeye decline and the effects of aquaculture on wild salmon.

# Contribute to conservation in the Broughton!

We're working hard to keep this spectacular ecosystem healthy and thriving. If you share our love of this coast, please consider supporting our efforts.

### Here are some concrete ways to show your support:

- 1. General Donations** – These help support the station's ongoing operating costs, the area where we most urgently need funding. We are a non-profit society, so we rely on support from citizens who believe in our work.
- 2. Directed Donations** – These donations can be aimed to help with a specific project or research area you want to support at Salmon Coast.
- 3. Volunteer Sponsorship** - For \$850 you can sponsor a young volunteer for a month to help with research and other tasks at the station. This opportunity changes lives - read three volunteer experiences on Page 3.
- 4. In-Kind Donations** – We always need more useful equipment in good working order. See our online "Station Wishlist" for items we need most!
- 5. Citizen Science** - Report local Marine Mammal sightings and unusual marine life or events to us at [info@salmoncoast.org](mailto:info@salmoncoast.org)

### HOW TO DONATE

- Online at [www.salmoncoast.org](http://www.salmoncoast.org)
- Send a cheque to:  
Salmon Coast Field Station Society,  
General Delivery, Simoom Sound, BC,  
V0P 1S0
- Drop by the Station, or use our donation box at Billy's Museum



## Salmon Coast board transitions

Thank you Jennifer  
and welcome Andrew!

Jennifer Ford, one of the original founding members of the Salmon Coast board of directors, stepped down this spring.

Thank you for the all time you shared with us, Jenn!

In her place, we are happy to welcome Dr. Andrew Bateman to our board. His knowledge, enthusiasm, and willingness to put in time at the ground level give him the ability to make significant contributions to Salmon Coast.





## Carolyn Prentice

*Carolyn recently completed a marine biology degree at UBC and plans to pursue further studies in biology or conservation.*

After hearing about the Salmon Coast Field Station from some folks at the Bamfield Marine Sciences Center, I made a mental note to get there someday. Then, after taking an aquatic ecology course in my last semester at UBC, which focused on salmonids, I was even more motivated to get involved with salmonid research on the BC coast.

In May 2013, I was lucky enough to spend ten days helping Stephanie Peacock, who had previously been my TA in Bamfield, with her experiments with juvenile pink, chum and coho salmon. I spent lots of time at the Shenty, met some great people and was inspired by the hard-working yet laid-back lifestyle that one adapts to while living at the station.

I also realized how much there is still to learn about our complicated relationship with salmon and the other components of BC's coastal ecosystems, and my time at Salmon Coast reassured me that I do indeed want to continue studying, volunteering and working in the realm of biology and conservation.

I am so grateful to have had this amazing opportunity, and I would like to thank everyone who shaped my experience at Salmon Coast - I hope to make it back someday!

# Spring 2013 Volunteers

share their experiences  
at Salmon Coast



## Leah Walker

*Leah is entering her third year of Environmental Science Applied Biology at SFU and intends to pursue graduate studies in Biology*

My wonderful adventure at Salmon Coast all started with a grad student, Sean Godwin, looking for a field assistant for this spring. Little did I know what a life-changing journey it would be.

I originally came here to volunteer for Sean and his project with juvenile sockeye, but I was fortunate enough to get involved in other work at the station too, such as Stephanie Peacock's project and Alex's weekly sea lice monitoring.

I cannot begin to explain how enriching my experience here has been. Everyone at Salmon Coast has been supportive and willing to help me learn new skills. I've learned to drive boats, seine for fish, ID salmon species and sea lice, and so much more! Talking with grad students here has also given me more confidence in the direction that I want my degree to take.

Despite the grunt work and net scrubbing at Shenty, fun is always had and every day is a new adventure. I enjoyed hiking to Billy's, berry picking in Shoal Harbour, swimming, Settler's of Catan, and late night adventures. Oh and did I mention the food is amazing? I have enjoyed my time here so incredibly much and I hope my future will bring me back!



## Christina Weir

My month at Salmon Coast was an inspiring adventure. I travelled to untouched islands and inlets and saw herring spawn, caught coho, chum and pink juveniles (for science of course), tasted fucus with roe, saw bald eagles do barrel rolls, and realized that cetaceans, primates and pinnipeds are together in waiting to be Broughton fed. There I saw proof of invertebrates exponentially bigger than textbooks suggest, heard local accounts of mystical creatures and viewed artefacts and sites from coastal legend.

Yet these pristine scenes were a reminder of the necessity of protecting these vulnerable places. What tenacious but fragile creatures the young salmon fry are. Not only must they contend with natural obstacles, they are increasingly challenged with an onset of pathogens, viruses and parasites, potentially perpetuated through fish farms lining the Broughton. The very places that should provide refuge for ecosystem functionality are instead used for the economic interests of foreign investors like those who own and operate the fish farms. It is inspiring to work with people like those at Salmon Coast who labour to remedy this split.

Breathtakingly beautiful and at times downright magical, my volunteering experience at the field station is something for which I will always be grateful.



## Spring Highlights and Summer Plans

In addition to our **new boat**, there were many other **new beginnings** at SCFS this spring: Salmon Coast veteran Lauren Portner became our invaluable **new research assistant**, carpenters Jim and Fred put the **new roof** on the main house, and we hosted Steph and Sean's **new research projects**, enthusiastic **new volunteers**, and **new educational outreach**.

We hosted tours for groups from **St. George's School** again this year, and also a great volunteer work crew from **Coastal Challenges** canoe trips.

This July, we're looking forward to several weeks of hosting students and instructors with **Broadreach**, an international adventure education group for high school and college students.

Wildlife has been active this year around the station – **pods of orcas** passed monthly, **pacific whitesided dolphins** are returning to our area in the hundreds, and a **humpback** has made his way back to Echo Bay.



Less welcome visitors also made appearances – a small, underfed **cougar** appeared on our porch in May and a **larger cougar** was spotted in June.

Local deer populations have dropped dramatically, so cougars are hungry. If you visit our area, **hike cautiously!**

Later this summer, we hope to be taking **DNA samples** from local adult salmon; watch for our **sampling crew** at Pierre's Echo Bay Marina!

Our **4<sup>th</sup> Annual Pie Competition** on June 25<sup>th</sup> was a success again. Brainstorming for the 5<sup>th</sup> annual has already begun.

Enjoy your summer, everyone!



### 4<sup>th</sup> Annual Salmon Coast Pie Competition 2013 Champions

**SWEET PIE**  
"You'd Never Know  
Pie" by Lauren  
Portner



**SAVORY PIE**  
"Spicy Bear Pie"  
by Zephyr Polk