

**RC- ___ Comments for 2015 Alaska Board of Fisheries: February 23 - March 3, 2015
Provided by Sitka Herring Researcher, Heather Meuret-Woody**

My name is Heather Meuret-Woody and I currently work in planning and development but prior to that I was a Herring Research Biologist for the Sitka Tribe of Alaska for almost 10 years. I have several published journal articles focusing on herring stock identification and traditional use of herring in federal waters. With that said I would like to express my support for Proposal 114/115, 121, and 125 and document my opposition to Proposals 117, 119/120, and 122.

I'd first like to point out Herbert's 2015 report, that finally confesses that all of the herring spawning biomass in Southeast Alaska is declining, and the percentage of age-3 herring is very low for all stocks, indicating poor survival for the juvenile herring across the region. This is something I have known for at least 7 years now, as a researcher of juvenile herring. But the department does not conduct any research on juvenile herring stocks.

I agree that extreme caution needs to be taken in consideration when allowing the harvest of herring stocks that have not recently met the threshold limit. The biomass of these stocks is quite small and they have been depressed for many years, with only recently experiencing an increase. However, they could be at risk of overharvest or be un-sustainable, if conservation measures, such as meeting thresholds for five consecutive years, are not in place. Current thresholds for these small stocks don't allow for stocks to fully rebuild for the long-term, in order to support a commercial fishery.

I believe the pre-fishing activities of the commercial fleet disrupt the natural movements and spatial representation of pre-spawning and spawning herring. Recently, pre-spawning herring are restricting themselves to deep trenches in Sitka Sound, possibly a learned behavior used to avoid the nets of the commercial fleet, only to surface to nearby beaches the moment they are ready to spawn. They appear to spawn on the closest beach, which may not necessarily be their historically natal beach which indicates a change in the natural distribution of spawn. This is a well-researched subject called "fishery-induced evolution and changing reproductive ecology of fish." Additionally, my published research indicates that the coastal waters along the Sitka road system, specifically in the Harbor Point area north to the Starrigavin estuary the most important essential herring habitat for juvenile herring in all of Sitka Sound. So an attempt at making any sort of reserve in this area would be favorable to the survival of juvenile herring.

The subsistence area does not affect the commercial sac roe industry in any comparable manner. The subsistence area allows for a subsistence priority opportunity, as required by state and Federal law. Both proposals 119 and 120 are clearly an attack on subsistence harvesters by the industry, DBA "Southeast Herring Conservation Alliance."

It is no surprise that as the GHJ increased over the past 10-15 years, the price of herring sac roe has dropped dramatically. A simple lesson in the economics of supply and demand explains this relationship. The sac roe fishery has saturated its market as evidenced by low prices on tonnage and a healthy oversupply in Asia. In fact Asian markets, specifically Japan, prefer sac roe from San Francisco and British Columbia as opposed to sac roe from Sitka. In 2014, landings in Sitka tripled while the price per ton was about \$150. Meanwhile, in San Francisco, prices were at \$750

a ton with only 2,500 tons harvested. Sitka could create a market for demand if they reduce the harvest levels. It seems evident now that the only way to make any money off this fishery is to catch more fish.

Additionally, British Columbia is required to extract roe inside the province under employment measures by the government, whereas Sitka ships round-form fish with roe to Asia for them to extract. Sitka could be processing this herring roe in Sitka, creating jobs and demand for a high valued product. On a personal note, creating new herring products (e.g. kippered snacks, smoked fillets, pickled and canned) and processing them in Sitka would be a sustainable future for herring and for Sitkans who need jobs.

ANS is already monitored annually in partnership with ADF&G Division of Subsistence and the Sitka Tribe of Alaska since 2002. Since 2010, staff from the Division of Subsistence spend over 1 week in Sitka during herring egg harvesting to assist the Tribe with weighing eggs and recording accurate weights. Additionally, ADF&G staff developed the currently used conversion method and the survey instrument. This data is reported in an annual report published by the Division of Subsistence. What the Southeast Herring Conservation Alliance is proposing is not only duplicative of work that is already being done by the Department, but also it is unnecessary, especially coming from this industry group disguised as a conservation group. Also their methodology is questionable as their process is not transparent like the Division of Subsistence's is. We don't need the commercial industry weighing and recording subsistence harvested herring eggs. They are not the watchdog of the subsistence fishery!

Additionally, I'd like to point out that the Southeast Herring Conservation Alliance proposals claim that in 2011, a local group prevented their harvest, when in fact it was the Alaska Wildlife Troopers. This group paid a non-resident to harvest subsistence herring eggs, a clear violation of the State's harvesting laws.

The current regulation regarding threshold was set during the previous BOF meeting in 2009. Since then, there has been no issue that would prompt a need to change the regulation. ADF&G has found no need to neither analyze nor justify a reason that there is a need for this regulation to be changed. I encourage the BOF to allow for the current regulation to evolve so that a legitimate analysis and subsequent synthesis can be developed; which will be based on data, not the industry's whims and wishes.

Stock Data

Meuret-Woody, H. and N. Bickford. 2009. Identifying essential habitat (source vs. sink habitat) for Pacific Herring (*Clupea pallasii*) in Sitka Sound using otolith microchemistry, Exxon Valdez Oil Spill Restoration Project Final Report (Restoration Project 080834), Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

Juvenile otolith chemistries indicate that the area of Starrigavan Bay and south along the road appears to be the most productive source area in Sitka Sound. The bulk of herring spawn occurs in the area, as well as 97% hatch in in this area, and over 57% of juvenile herring use the area as a nursery bay. This indicates that the greater Sitka Sound is the most productive area for both adult and juvenile herring in Sitka; specifically the area along the northeast shoreline from Harbor Point north, to the Starrigavan Bay estuary.

Herring hatch in Sitka Sound and then disperse to other sites such as Salisbury Sound. Sitka Sound appears to be supplying Salisbury Sound, along with other nursery areas north of Salisbury Sound, with juveniles. Salisbury Sound may be a source population for Hoonah Sound. 14% of fish collected in Hoonah Sound hatched in Salisbury Sound and the remainder came from Sitka Sound. Based on the results, I hypothesized that the ocean currents may drive herring larvae from Salisbury Sound north, through Peril Straits, to Hoonah Sound. The currents in the greater Sitka Sound area may drive herring larvae up through the narrows into Salisbury Sound and, subsequently, Hoonah Sound. ADG&G manages Salisbury Sound and Sitka Sound as one stock, and Hoonah Sound as a separate stock. According to this data, all three populations should be managed as separate stocks, or combined as one metapopulation.

In 2005 and 2006, the otolith chemistry of spawning adult herring collected on the northern part of Salisbury Sound, specifically east of Kane Island, was distinct from those herring that were collected in Sitka Sound. In 2007, the herring sampled in Salisbury Sound spawned on a different beach, Sukoi Inlet, in southern Salisbury Sound. The chemistry of the herring collected in 2007 is different from the chemistry of the herring collected in 2005 and 2006. In 2006, the ADF&G commercial herring sac roe fishery harvested 4,204 tons, about half the guideline harvest limit, in Salisbury Sound. This large commercial harvest in Salisbury Sound may have contributed to the inability to locate herring for sampling in 2007. None of the herring collected in 2007 in Salisbury Sound were hatched in Salisbury Sound, while 50% hatched in Sitka Sound and 50% hatched in an unknown location.