

# Hatchery Wild Interaction Science Panel Meeting – March 30, 2023

Aerie Conference Room and virtual meeting via Microsoft Teams  
Summarized meeting notes and decision points

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The primary goal of this meeting was to provide guidance for “docking the ship”. The study design has been completed and the final samples will be collected in 2023. Analysis and publication work needs to be completed and a final product (workshop, symposium, etc.) needs to occur.

*Disclaimer: There were technical difficulties throughout this meeting. The Anchorage office was experiencing a network performance issue. Attendees that were connected via Microsoft Teams had a poor connection, and were not able to hear or were disconnected part-way through the meeting. Some attendees left early due to this issue.*

## 1) Introductions

### a. Science Panel Attendees

- i. Milo Adkison, University of Alaska (retired) and ADF&G
- ii. John Burke, ADF&G and Southern Southeast Regional Aquaculture Association (retired from both)
- iii. Jeff Hard, Northwest Fisheries Science Center, National Marine Fisheries Service (retired)
- iv. Ron Josephson, ADF&G (retired)
- v. Bill Smoker, University of Alaska (retired)
- vi. Bill Templin, ADF&G
- vii. Alex Wertheimer, National Marine Fisheries Service (retired)
- viii. Dave Bernard, ADF&G (retired)
  
- ix. Chris Habicht of ADF&G and Peter Westley of University of Alaska were unable to attend

### b. Other Attendees

- i. Sam Rabung, ADF&G
- ii. Chance Gray, Sitka Sound Science Center
- iii. Kristen Gruenthal, ADF&G
- iv. Kyle Shedd, ADF&G
- v. Garold V. “Flip” Pryor, ADF&G
- vi. Tina Fairbanks, Kodiak Regional Aquaculture Association
- vii. Ron Heintz, Sitka Sound Science Center
- viii. Lorna Wilson, ADF&G
- ix. Stormy Haught, ADF&G
- x. Kari Winkel, ADF&G
- xi. Scott Wagner, Northern Southeast Regional Aquaculture Association
- xii. Ben Americus, Sea Grant Fellow with AFDF
- xiii. Tela Barkley, ADF&G
- xiv. Katie Harms, Douglas Island Pink and Chum (DIPAC)
- xv. Eric Prestegard, DIPAC (retired)
- xvi. Tommy Sheridan, University of Alaska (previously ADF&G, Silver Bay Seafoods, PWSAC)
- xvii. Mike Wells VFDA

*\*Introductions were not formal. May have missed some attendees.*

## 2) Planning 2023-2025

### a. Final sampling

- i. Will occur summer 2023 (July 21 to August 28)
- ii. Chance Gray on field sampling:
  1. Two crews, each working half of the creek
  2. Sampling every day, mark-recapture continues
  3. Otherwise, the operational plan is the same as last year

### b. Reports and publications

- i. **Question 1: Genetic stock structure of pink and chum salmon**
  1. PWS pink – Even and odd year population structure
    - a. Complete
  2. PWS pink – Retrospective analysis
    - a. In progress, with Bill Templin; analysis draft will be available later this year
  3. SEAK/PWS chum draft
    - a. In progress, will be available later this year
    - b. *Question: Will it include more than PWS?*
      - i. Response: It is most efficient to write one paper with PWS and SEAK for now.
- ii. **Question 2: Extent and annual variability of hatchery pink and chum salmon**
  1. PWS pink and chum
    - a. Completed and published
  2. SEAK chum
    - a. Completed and published
- iii. **Question 3: Impact on fitness due to straying**
  1. **PWS pink salmon initial results**
    - a. Completed and published
  2. **PWS pink comprehensive results available in 2024**
    - a. *Question: What is your [Kyle Shedd's] anticipated completion date for this paper?*
      - i. Response: 2025. The DNA extractions are complete. Genotyping should be complete before in-season projects begin this summer. It is a matter of re-running all the pedigrees. We were running one stream at a time, but we have switched to running all streams at the same time to detect straying. Hopefully we will be able to find the computing resources to run them all, but it is a bigger lift to do all of the streams together.
    - b. *Question: Do you see this as one big paper, or multiple papers?*
      - i. Response: My thought was to do one more PWS pink salmon paper focused on reproductive success first.
    - c. *Question: Do you foresee a separate paper for straying?*
      - i. Response: It would depend on the journal. I could see it becoming very lengthy depending on how many tangents come up.
  3. **SEAK chum comprehensive results available in 2025**
    - a. Kristen Gruenthal is working on panel development for GT-seq, similar to PWS. This is being done in-house.
      - i. Currently in the third round of panel optimization.

1. Taking sequencing information and looking for loci that have high heterozygosity and would be useful for parentage.
  2. Filtering through the loci and culling ones that do not perform well, do not amplify the region of DNA we are interested in, or perform too well and take resources away from other loci.
  3. The first round brought the number of loci down from 576 to 488 loci. The second round brought it down to 402 loci.
  4. A fourth round of optimization may be necessary (standby).
  5. The end goal is assigning parentage with chum just like we did with pink salmon.
- b. Kyle Shedd stated that the lab is currently working on the SEAK chum DNA extractions.
- i. Samples from 2014-2022 were agreed upon (~15,500 samples in extractions now).
  - ii. Will be ready for genotyping once the panel is ready.
  - iii. The hopeful timeline is to start genotyping late summer 2023, and finish by the end of spring 2024.
  - iv. Will need to add samples from the 2023 Fish Creek sampling effort.

### 3) Final Product (Last public meeting and Board of Fish presentation – March 2025\*\*)

- a. *\*\*There was some discussion stating that March 2025 may be too early for the last public meeting and that fall 2025 or spring 2026 would be more realistic.*
  - b. **Who is our audience? There are two broad groups:**
    - i. Legislators, Governor's office, AC members, members of the Board of Fisheries, those that believe hatcheries are harming wild stocks, and the public.
    - ii. Scientific community and peers; those that aid in how research is interpreted for the public.
  - c. **How do we get the information to both audiences?**
    - i. Hatchery committee meeting March 2024 and 2025.
    - ii. Need a public informational meeting late 2024, which will include some of Wei Cheng's work comparing early and late pink salmon samples in PWS.
    - iii. Sam Rabung proposed AFS as a platform. Less expensive.
      1. Western Division would create a wider variety of experience in the room.
      2. Bill Templin thinks it could be a two-step process:
        - a. Presentation and a series of talks at AFS to get the information out in a comprehensive way,
        - b. Entertain the idea of a point-counter-point meeting a year later after the material is digested, and peers can come back to the conversation with comments/concerns.
    - iv. Other thoughts:
      1. A panel discussion, symposium, or travelling show.
      2. Milo Adkison proposed that a national meeting might bring more attention/press, and that an in-state and out-of-state meeting is needed.
        - a. Sam Rabung wants to ensure that we do not disenfranchise Alaskans by going completely out-of-state.
3. **Takeaways:**

- a. AHRP is completed upon publications, presentations to the scientific community, and presentations to the public.
- b. More discussion needs to occur to determine concrete goals, costs, and audiences.
- c. The general consensus was that a symposium at the 2026 Western Division meeting (try to host in Alaska?) would cover most of the bases. Many were interested in the idea of a travelling show to distribute the knowledge to a broad audience (although it may not be affordable).

#### 4) Financial Review (Proforma review, and possible funding needs of final product)

##### a. Where are we on the proforma?

- i. No major changes to the proforma since the last meeting, except projecting into state FY24 and FY25.
- ii. Sam Rabung stated the budget is limited for travel.
- iii. Currently have a surplus of a little over a half million dollars for 2024.
  - 1. If this surplus is accurate, contributions from processors and operators could be reduced (but in 2025 and not in 2024, as many have already budgeted for that year).
  - 2. Bill Templin says we need to consider the cost of final presentations and travel, which may reduce this surplus.
  - 3. Many agreed they did not want to reduce contributions and then scramble for the money if it runs out.
- iv. **Takeaway:** Reassess the proforma in the future to see if the surplus can get closer to zero.

##### b. Analysis and publications financial needs (2023-2025)

- i. Analytical papers (open source journals cost ~\$5K/manuscript)
  - 1. Population genetic comparison of PWS pink samples from the 1990s to 2014 and 2015
  - 2. Heritability
  - 3. Model for interpreting results
  - 4. Coastwide chum baseline
  - 5. SEAK chum salmon RRS paper
  - 6. PWS pink salmon RRS paper
  - 7. Pink salmon inter-stream analysis
  - 8. Pink salmon site-selection
  - 9. Straying
  - 10. Catalogue ancillary studies and identify new ones
- ii. Perspective paper (organized by Bill Templin and carried out by the science panel; the science panel discussed first steps for this paper after the meeting)
  - 1. Overview/background/context
  - 2. Intentions/questions/needs
  - 3. Permitting/policy/planning
  - 4. Basically... Why did we do this, what does it all mean, and where do we go from here?

#### 5) Science Panel membership discussion

- a. Chris Habicht is retiring!
- b. Is it necessary to round out the science panel when we are so close to landing the project? What would they do?
  - i. Make decisions regarding the last year of field work
  - ii. Review methods and results of pink and chum salmon spawner work
  - iii. Help write and review the perspectives paper

- c. Many discussed that Tommy would be a good addition to the science panel moving into the final stages due to his broad policy experience and outreach.
- d. Bill Templin would like someone involved in the lab. Genetics is constantly adapting, and the science panel needs someone with that perspective.
  - i. Sara Gilk-Baumer and Kyle Shedd are already overburdened with their job duties.
  - ii. Kristen Gruenthal is a potential candidate if she is interested.