

**Alaska Hatchery Research Program Science Panel meeting December 16,
2019**

ADF&G Juneau Office, Governors Conference Room

Summarized meeting notes and decision points

Attendees

An asterisk (*) indicates attendance by teleconference.

Science Panel

Milo Adkison, University of Alaska
*David Bernard, ADF&G (retired)
John Burke, Southern Southeast
Regional Aquaculture
Association (SSRAA; retired)
*John H. Clark, ADF&G (retired)
Chris Habicht, ADF&G
*Jeff Hard, Northwest Fisheries
Science Center, National
Marine Fisheries Service
(NMFS; retired)
*Ron Josephson, ADF&G (retired)
* Bill Smoker, University of Alaska
(retired)
Bill Templin, ADF&G
Alex Wertheimer, NMFS (retired)
Peter Westley, University of Alaska

Other Attendees

Sam Rabung, ADF&G
Dave Gaudet – Consultant David Gaudet
Fisheries Services, contracted by
PSPA and Alaska Fisheries
Development Foundation as a
Technical Facilitator for Marine
Stewardship Council certification
Tommy Sheridan, Prince William Sound
Aquaculture Corporation
Chance Gray, Sitka Sound Science Center
(SSSC)
Callie Simmons, SSSC
Jodi Neil, ADF&G
Bev Agler ADF&G
*Crystal Moenaert, ADF&G
Garold V. “Flip” Pryor, ADF&G
*Glenn Reed, Pacific Seafood Processors
Association (PSPA)
Kyle Shedd, ADF&G
Erica Chenoweth, ADF&G
Mike Wells, Valdez
Emily Lescak, ADF&G (short-term non-
perm contract ending 1/28/19)
Ron Heintz, SSSC
Dr. Pete Rand, PWSSC

Budget status

- **Sam R.** Proforma budget up-to-date and available
 - Project will be in the red in FY22 by approx. \$1M if processor payments suspended; conversations ongoing; processors undecided; also assuming ADF&G continues with approximately \$400,000/year in kind.

Budget status continued

- 2016 Pink Salmon Disaster Funding is available: \$2.1M, to be spent in 4 years (timer started when decisions were made in July 2019). Questions remain about if processors see this funding as replacement for their contributions
- **Fund sources**
 - National Pacific Research Board (NPRB) grant is a perfect fit for Hogan 2018, since they funded Hogan 2014/2016 – **Decision point:** preparing an application was approved by the Science Panel and Kyle Shedd will lead
 - Northern Fund
 - Relatively easy to work with administratively, follow that model wherever else when possible; **Steve Reifentstahl** is lead, currently application in for \$150,000
 - **Decision point:** pursue this funding for the duration of the project

Publications and website updates

- Straying manuscripts
 - PWS – pink and chum
 - Pete Rand reported that the paper has been submitted to an open access, online AFS journal, *Marine and Coastal Fisheries*, he will keep the Science Panel posted on the review process
 - Pete R. anticipates the management implications in the discussion section is the weakest point and will need revising if accepted
 - **Decision point: Pete R. via Flip P.** will circulate the submitted version after this meeting.
 - Data will be available upon acceptance and publication, but the method remains TBD
 - SEAK – chum
 - Current version is halfway through the submission process
 - Conflict of Interest portion needs written
 - Data sharing will be accomplished by supplementary tables; whatever necessary to recreate the analysis
 - Draft has been sent to the Science Panel for any comments, still time to change it
 - Suggested reviewers: Steve Heinl and Andy Piston
 - Discussion of SEAK chum dead counts and weighting process
 - Peter W. desired more clarity on the dead counts across sampling teams
 - **Decision point: Bill T., Alex W. and Peter W.,** will meet today to go over the numbers
- RRS reports and publications
 - Hogan & Stockdale 2013–2016
 - The plan is to submit to the journal *Evolutionary Applications* due to many of the RRS papers cited being published there

Publications and website updates continued

- **Decision point:** any remaining feedback from **SP** members needs to be received by Monday, December 23 to meet submission goal and comments by line number will be provided to assist with administrative work of documenting Science Panel comments and authors' responses
- Discussion on criteria for deserving authorship on papers:
 - **Bill T.** noted the disjoint between the planning, oversight, and collection of data for the project and writing of the manuscript, stressing that there is room for authorship credit and significant contributions for more members of the **SP**
 - **John B.** reiterated the idea of the possibility of perspectives being written after the project by all members of the Science Panel
 - **Decision point: Bill T.** will be listed as an author, pending availability and will be removed if unable to contribute more before submission
- **Tyler Dann's** pink SNP panel that is still in prep for publication is cited; this paper is good motivation for getting a technical document out to cite before this paper so methods for panel development available
- Data archiving and access must be public: archiving three types of data in two locations: (1) genotypes and phenotypes and (2) analysis scripts which are already available on GitHub
 - Dryad charges a one-time fee of \$120
 - **Decision point: Peter W.** will send info on the Knowledge Network for Biocomplexity, which is free; don't see the need to pay for Dryad at this stage.
- Discussion on Conflict of Interest statement
 - Review of journal's comprehensive definition of "Conflict of Interest" which includes perceived conflicts
 - Because the state regulates hatcheries and the hatcheries have helped to fund this research, there is the potential for a perceived conflict of interest
 - It was suggested we should reiterate what we already say in the document text about funding sources in the conflict of interest section; make sure it is clear what connections exist for transparency
 - It was further suggested that we specifically mention in the acknowledgments section of the paper that the comments from the Science Panel and the author's responses are all documented and available by request to show the author's independence
 - **Decision point: Chris, Kyle, and Emily L.** will get a statement for the conflict of interest section together in the next week or so (at or around 12/23/2019)
- Discussion on manuscript content generally

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- **Peter W. and Emily L.** discussed broadening the introduction and discussion sections to make it relevant to a broader audience
- Website updates
 - 2019 synopsis
 - **Bill T.** sent it to the Science Panel the day before the meeting, please comment on the synopsis
 - Comment: Table 2 heading should indicate that they're in thousands of fish
 - Discussion of balancing wide audience information needs (processors, stakeholders, and general public) and length
 - Previous versions are all available on the website; comments requested shortening the length
 - People on staff have skill sets for graphic design upgrades to make it more visually appealing; we would have to create the capacity

2019 Contractor Reports

- PWS Stream Sampling summary – PWSSC
 - Pete Rand presented on a successful field season; even with unique weather year, very low flows and enormous prespawn mortality events; decreased effort this year from 5 to 3 streams; reviewed sampling metrics by week
 - 30,661 samples over 3 streams
 - Short stream life (less than 3 days) in 2019; Peter W. expressed interest in calculating stream life estimates for previous years; valuable statistic
- SEAK Stream Sampling summary – SSSC
 - Chance Grey presented on a successful field season covering three creeks despite low water year, not many flood events; maintained minimum sample collection goal of around 500 fish per stream, exceeded it in some cases; very low predation rates this year compared to previous
 - Dead count defined as all dead fish on the creek in a sampling area, includes previously sampled
 - Discussion of sampling design and dead count included the following points:
 - Sampling rate over time throughout the season with pink (one age class) even more critical to understand with chum with differential sampling across age classes; need sense of what we're missing each day
 - We've been sampling 100% of the fish that are available in the survey range for that day; entire creek has been covered over a set of days rather than sampling sections across entire creek in one day
 - The unsampled fraction from past sampling could be gotten at by using spatial data: total dead counts for subsections across days can be related geographically (broken out by river stretch) and combined with day before and day after to estimate sampling fraction (if flood doesn't occur)
 - Otolith distributions from sampling could tell us if see differences in distribution of natural versus hatchery origin
 - **Decision point:** **Kyle S.** and GCL team will make maps that show if otolith samples show differential distributions

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- **Decision point:** going forward, we'll add fields in the software for field technicians: "sampled dead" count and "dead" count
- **Decision point:** going forward, will sample along the entire stretch of a stream in one day (not expected to reduce the number of genetic samples acquired significantly, less than 10% loss)

2019 Lab Reports

- PWS Otolith – ADFG Cordova
 - Crystal Moenaert presented: 30,500 otoliths sampled for 2019 across three streams; as of this meeting they're 38% read and all of 2018 samples are done, with 98% successful reads (higher than previous years)
 - Kyle S. confirmed that with increased GCL lab throughput (see below), need to prioritize Gilmour, Paddy and Erb reads from 2015–2018 in order to do formal pedigree analyses
- SE Otolith – ADFG Mark, Tag and Age Lab (MTAL)
 - Bev Agler presented and introduced Jodie Neil; 3,000 otoliths read from 2018; as of this meeting, 2019 nearly completed (7 conflicts to resolve)
 - Bev also said that the MTAL has capacity to read otoliths from PWS pinks, if needed
- Genetic – GCL
 - See PowerPoint presentation "GCL Lab Progress update" for full details
 - Summary includes 43,000 samples have been extracted in 2019 thanks to borrowed workers, 27,000 genotyped
 - Need more otolith reads to extract more samples; Mark, Tag, Age lab could help potentially this spring **Decision point: Chris H./GCL** will work with MTAL to send them otoliths to read to help with the backlog and throughput
 - 2020 extractions will be Gilmour 2015 and Hogan/Stockdale 2019; 2020 genotyping will be Stockdale 2016/2018, Hogan 2016, and Gilmour 2014/16/17/18

RRS results for Hogan Creek and Stockdale

- Hogan & Stockdale Parentage Results 2015–2017
 - See presentation for detailed view "Hogan and Stockdale 15-17 Parentage Results";
 - Hogan 2015/2017: female RRS for ~ 0.16 and males ~ 0.17
 - Stockdale 2015/2017: female RRS ~ 0.41 and males ~ 0.66
 - Even with high sampling rates, ~ 6% offspring assigned for both streams in 2015/2017; much higher assignment rates are seen in the even years 2014/2016
 - First step towards grandparent analysis (F2 generation): Hogan 13/15/17 analysis found 5 grandoffspring, Stockdale 13/15/17 found 21 grandoffspring
 - **Decision point: Kyle S.** will update report with results after reanalysis (added more offspring in 2013/15 analysis; doesn't change the message but would update tables and figures with tighter confidence intervals)

2020 Planning

- SEAK stream sampling

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- Discussion of further SEAK chum sampling included the following points
 - Variability in returns of 3 year old fish has been unprecedented in the last two years for chums
 - 2017 was the best brood year we've collected numerically by far for chum so if 3 year old fish were to return in 2020, would have potential for robust analysis
 - **Decision point:** SEAK streams will be sampled in 2020 for chum salmon
- PWS stream sampling
 - Discussion of further PWS pink sampling included the following points
 - Concerned was voiced about mission creep. Additional outreach will be required to help funders understand further sampling
 - 2014 was an unusual year for collecting brood numbers; more samples in 2020 would make analysis more robust, especially for grandparentage
 - samples can be collected, and analysis delayed if funding difficulties; collaborators can be found to write grants down the road (Forest Service etc.)
 - **Decision point:** 2 PWS streams (Paddy and Erb) will be sampled with one team and land-based access for crew (“Yes”: Bill S., Jeff H., Alex W., John B., Chris H., Peter W., Milo A.; “No”: Bill T., Ron J.; “Abstain”: John H.C.)
- Priorities for sampling processing
 - With 2020 sampling decisions, Kyle S. can move forward with new sample processing lists at GCL; will work to coordinate shifting otoliths to MTA lab to help with processing (reiterated earlier decision point)
- Outreach/presentation opportunities
 - March 2-6, 2020, Coastwide Pink & Chum Workshop, Bend, OR
 - **Wei, Kyle, Emily** could present talks assuming travel is approved; **Bill S.** agreed to provide an overview of the program; **Pete R.** is helping to organize it and will try and schedule them early enough to return for HWI public outreach meeting on March 6
 - March 6, 2020, HWI Public outreach meeting, Anchorage
 - **Decision point:** **Kyle S.** will prepare a presentation on the 2013–2017 Stockdale/Hogan numbers, discuss the general linearized model (GLM), include grandparent results and skipping 2013–2015 due to small sample size.
 - March 7, 2020, Board of Fisheries Hatchery Committee, Anchorage
 - A half-day meeting this year; expect an update on the study, cost recovery and mechanics of how program works
 - March 23-26, 2020, AK Chapter AFS meeting, Fairbanks
 - Questions about travel are pending; **Pete R.** could help with presentations; **Bill Smoker** could also help; **Bill T.** would like to put together an overview presentation and type up notes for this

Data Sharing

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- Progress has been made in drafting a memorandum of understanding (not an agreement, which has different data sharing implications) by Chris H. and Peter W.
 - Document outlines the expectations of the department and for the person requesting data: what's being requested and why, so ADF&G can provide caveats to help person interpret results
 - First letter/interaction is request for data and requested information for ADF&G to fulfill the request
 - Second letter/interaction says here is the data, we'd appreciate if you'd give us opportunity to review and a statement that would ideally be seen in the acknowledgment section that states where all data came from; not done, made progress, ran into issues:
 - Phrasing of statement about how the Science Panel would help researcher interpret whether their interpretations were valid
 - Amount of time for reviewing a researcher's product
 - Discussion on the subject of whether to have a list of available data fields on the AHRP website (or any website) resolved into the **Decision point**: if someone requests it, we will send a metadata compilation file so they can see what data are available, rather than posting the list on the web
 - **Decision point**: Peter W. and Chris H. will finalize this, get it to Sam R. for law review, then out to the rest of the panel for review

Discussion of RRS and interpretation

Discussion of RRS and interpretation included the following points

- What the management implications are of this research are of great interest to ADF&G and the public; **Bill T.** encourages the **SP** to chase down some concepts; keep thinking about this within the group; revisit how far down the mechanism path the SP would like to go
- We've taken a look at productivity of natural fish in two different ways: counting them and separating the natural/hatchery origin runs and looking at productivity of hatchery fish in wild streams; how do we integrate those two sources of information and what actions we can take based on that information?
- The term "RRS" or Relative Return per Spawner right now is not completely specific and can mean a bunch of different things; we need to be careful about what we mean; perhaps even invent some new jargon to specify what quantity we're talking about
- Technical document or paragraph or page-long text that outlines important definitions and concepts
- Fitness can be influenced by both in genetic and non-genetic issues
- Productivity in a system is the final measurement and is about how well the fish are adapted to particular systems

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- Questions of stock management and hatcheries taking pressure off wild stocks so they continue in perpetuity are important
- Washington is going through hatchery reform period and looking at program sizes, risk evaluation; water temperature fluctuations and climatic changes going forward are going to be a factor