**Western Alaska Salmon Stock Identification Project**
**Joint Meeting of Advisory Panel and Technical Committee**
**17-18 January, 2012**
**Hilton Hotel**
**Anchorage, Alaska**

**MINUTES**

**Chair:** Eric Volk, Alaska Department of Fish and Game (ADFG)

**Call to Order:** 8:40 AM Tuesday January 17th

**Attending:** (Name and affiliation)

Eric Volk, ADFG
Tim Baker, ADFG
Doug Eggers, ADFG
Chris Habicht, ADFG
Lisa Fox, ADFG
Art Nelson, Bering Sea Fishermen's Association (BSFA)
Andrew Munro, ADFG
Denby Lloyd, Aleutians East Borough (AEB)
Bill Templin, ADFG
Pat Martin, Concerned Area M Fishermen (CAMF)
Milo Adkison, UAF-Fisheries, (Technical Committee; TC)
Jeff Wadle, ADFG
Bob Murphy, ADFG
Mark Witteveen, ADFG
Matt Nemeth, ADFG
Dick Jacobsen, Aleut Corporation
Ernie Weiss, Aleutians East Borough
Steve Brown, CAMF
Chuck McCallum, Lake and Penn Borough
Michael Link, BBNA/BBSRI/LGL, arrived at 8:48am
Jill Klein, Yukon River Drainage Fisheries Association (YRDFA), arrived at 9:30am
Rose Fosdick, Kawerak, Inc., arrived at 1:50pm
Charlie Lean, Norton Sound Economic Development Corporation (NSEDC), arrived at 2:00pm

**Missing:**

Alisa Frothingham, Tanana Chiefs Conference (TCC)
Robin Waples, NOAA Fisheries, (TC)
Bruce Weir, University of Washington, (TC)
Tom Quinn, University of Washington, (TC)
Lisa Kangas, TCC

Casie Stockdale, Association of Village Council Presidents (AVCP)
Karen Gillis, BSFA
Loretta Bullard, Kawerak, Inc.
Roy Ashenfelter, Kawerak

**Agenda:**

1.  Welcome and introductions
2.  Review and approval of agenda
3.  Project updates
4.  Public Comments (there will be at least one opportunity each day)
5.  Estimation of reporting group escapements for sockeye and overview of methodology for calculating harvest rates
6.  Estimation of reporting group escapements for chum and discussion of issues
7.  Overview of proposed approach to estimating reporting group harvests for sockeye and chum
8.  Treatment of sampled strata with small sample sizes and unassociated strata (single stratum without priors)
9.  Results from the chum reporting groups exploratory methods (TD17)
10. WASSIP outreach in advance of results publication
11. WASSIP results roll-out (Chuck and Pat)
12. Review and approval of minutes from September and November  2011 meetings
13. Scheduling of next meeting

**Notes:**

*1. Welcome and introductions*

Eric Volk (EV) – Opened the meeting and thanked all for attending.  Covered the agenda and addressed the timeline.  He expressed the need for stakeholder input on the timeline since many will be out fishing while the documents need review.

Pat Martin (PM) – Wanted to make sure that effective ways to present the data from WASSIP was on the agenda.
*   EV – Noted that would be covered in agenda item 11, WASSIP results.

*2. Review and approval of agenda*

EV – Highlighted things that needed to be covered in the meeting:
*   Technical documents review and agreement for specific numbers of escapement and harvest.
*   Difficulty in estimating escapement of chum salmon and the need to talk about these difficulties.
*   Need to make decision about strata, how many samples you need to make estimates, and some strata stand alone and so there are issues with choosing prior distributions.
*   Ad hoc committee, CWAK reporting group discussion.

- Whirlwind overview of what to expect from WASSIP presentations, trips around AK to disseminate some of the project, who are the appropriate AP people to coordinate these trips.
- Pat and Chuck can talk about making WASSIP more presentable.
- Review of minutes for two meetings.

*3. Project updates*

Presentation by Chris Habicht (CH) – Timeline of technical documents and reports –

For each species, there will be three reports:
- Baseline
- Estimates
- Harvest

There was a discussion about the timing of release of these reports:
- Keep the same release timeline for both species.
- Release as early as possible for AP review.
- Review period will be difficult for ADFG staff and AP members due to fishing season.
- Getting reports out early will be difficult for Genetics staff.

*4. Public Comments*

None.

*5. Estimation of reporting group escapements for sockeye and overview of methodology for calculating harvest rates*

Presentation by Andrew Munro (AM)

Harvest rates are within the WASSIP area, not beyond.
Harvest rates are over the regional fisheries.
Need to determine what CVs are appropriate for escapements.

A lot of discussion regarding appropriate CVs for escapements ensued.
- 2% proposed by the department for weirs and towers.
- Most AP members felt 2% was too low.
- Carol Woody's estimates were not comparable and high (short duration).
- The references of Woody and Seibel should be put in the report.
- Scott Rayborn set up a systematic calculation of CVs in Bristol Bay that ranged from 1-3%. There is observer variation that Woody talked about; on average the uncertainty is also very low 2%. Add together to come up with 5%?
- Seems arbitrary to assume the weir CVs will be similar to the tower CVs (CV = 0.02), especially given the citations for towers CVs.
- Milo Adkison (MA) – There are uncertainties that you can get numbers to quantify and there are some uncertainties that are unknown. When you apply all this to that

formula, if you put a 0 or 10% in there, the uncertainty in harvest is going to be dwarfed by the CV of escapement counts.
- There was a general feeling that whatever we came up with it needed to be believable, scientifically sound, and documented.
- One way to come up with appropriate CVs is to use expert opinion – this method has been effective in other arenas. A blind poll among people in the meeting might be a good expert opinion.
- There was the suggestion that multiple CVs might be appropriate within escapement measurement type (weir, tower, air), depending on the variables.
- A blind poll was administered during the break.

There was some confusion about bias and variance
- Weirs are used as the gold standard, so they do not have estimates of uncertainty – bias is a different issue. Bruce Barrett did an experiment at Chignik and found 7% error (bias).

**Break**: 10:09 AM
**Resume**: 10:32 AM

- The bias for sockeye is fairly small, for chum it's a bit larger. It's a different case for chum, especially for sonar counted chum. Chum could be traveling outside the ensonified area of the river. A best guess would be less than 10%.
- Dick Jacobsen (DJ) – There's a river on the south side of the Alaska Peninsula, Mino Creek, which is ideal for estimating escapement. Every year the department has estimated 200,000 less fish than I surveyed, and I lived on that river. There's places where ADFG always survey and the systems are always dirty and you can't see the fish, like Urilia Bay and in Stepovak too.

EV – Do pages 1 through 3 in the technical document make sense, Milo (MA)?
- MA – The equations are basic math, it's just the numbers that go into it that are important.

There was some discussion regarding the fishery level at which harvest rates would be calculated:
- Denby Lloyd (DL) – Are we dividing the South Peninsula June and Post-June fishery?
- Doug Eggers (DE) – The regional sampling model will be used, for example, in Bristol Bay so that in five districts in three years, South Peninsula might be aggregated but North Peninsula will be kept separate.
- EV – I sense a little bit of lack of clarity on how these results are going to be reported.
- DL – Will the harvest rate for terminal harvest areas be included in the overall harvest rates?
- DE – We haven't sat down and laid out all of the regional fisheries yet, we used Bristol Bay to fit the model. We didn't use terminal fisheries for that yet. It depends on the stock composition estimates before we can construct the regional fisheries.
- PM – How will seeing the numbers help define the categories?

- DE – We don't know what stocks will be occurring in the fishery until we do the estimates for that fishery, which will define the regional fishery model parameters. That will be a very important decision when we get to that point.
- PM – We have temporal distinction in the South Peninsula which we need to address at that point. We also have terminal harvest issues.
- DE – That information will be available. We should be able to address how important terminal fisheries are to each fishery's harvest.

MA – What is the criteria for deciding that a stock isn't present?
- Stock composition estimates will likely allocate some amount to all reporting groups. Allocations and harvest will be multiplied to come up with harvest numbers – no criteria for determining whether stocks are actually present.
- Stocks will be allocated into the subregional and regional reporting groups. Because small proportions that will sum up have different implications for different fisheries, we will pool up the small allocations to larger regional reporting groups outside the region where the fishery occurs.

*6. Estimation of reporting group escapements for chum and discussion of issues*

Presentation by DE

No report similar to sockeye available yet, but open to ideas/concerns about the process.

Converting aerial survey data into escapement:
- Because there is not as much data for chum in Western Alaska, we are proposing using data from outside the region to help interpret data collected within the region. To get at the conversion of aerial escapement peak counts to escapement numbers, we propose using these data:
  - Trader's Creek and Disappearance Creek in southeast Alaska, mark recapture experiments paired with aerial survey is only chum salmon data.
  - Pink salmon estimates could be used as a proxy. There are weir estimates paired with aerial survey experiments.
- A discussion about the merits of doing this analysis:
  - Assumptions are:
    - The stream life is the same between pink and chum.
    - The surveys encompass peak chum salmon time.
  - Advantage to using pink data is that chum data is limited.
  - Canadian biologists might have some insights.

Bristol Bay is problematic:
- Aerial surveys were flown in conjunction with king salmon surveys. No estimates are given for peak chum salmon. There is essentially no data from 2009 for Bristol Bay aerial surveys that are reliable. There was a consensus that these data were not useful.
- Exploitation rate, which inverts the regional model, seemed to have more traction. Assumptions would have to be made regarding migration timing, migration path, and exploitation rate across species. Estimating CVs is problematic with this approach.

- Escapement estimates exist for the Nushagak, use the escapements with exploitation to develop estimates, and then use those rates to estimate Togiak's.
- Documenting methods will be important.

Norton Sound is also problematic:
- Weir and tower data applied to aerial surveys can be used to correlate from one system to another, as done by John Clark.
- Department report by John Clark notes some fairly large absolute errors in Subdistrict 1. In Subdistrict 2, it's a little bit better. In Norton Bay, there's hardly any data. In Moses Point, there's a tower project and aerial survey extrapolations. In Shaktoolik/Unalakleet, there is a tower, but there's an unknown relationships between tower and surrounding rivers. There's a lot of stretching to get these numbers up in Norton Sound.
- John Clark's analysis was criticized internally and externally, however, he filled in some of the blanks in some of the data, and he stated his assumptions. This work has been peer reviewed.
- More than half of the systems have towers. The eastern districts do not have any estimates of escapement and harvest. So, relative catches in western districts are applied to eastern districts, but there's a total lack of assessment. Approach should be vetted with local knowledge (e.g. Charlie Lean).
- Weather and plane availability limit aerial surveys.
- Department will keep working on this and see how credible we really believe the numbers are.

*7. Overview of proposed approach to estimating reporting group harvests for sockeye and chum*

Presentation by AM

There was a discussion about whether the fish ticket numbers are accurate for estimating harvest numbers.
- Converting weight to number of fish is problematic because: 1) Fish gain and lose weight after they are caught depending on if they are dry, in RSW, in slush freshwater, or if they are bled fish. 2) Scales may not be accurate – biased low.
- There was a suggestion that a sensitivity analyses be conducted.
- EV - Paul Salomone said they interview processors that they trust, take the average proportions, and get the proportion of sockeye to chum and then use that to estimate harvest.
- ADFG has sampled about 10% of the fishery, and can use that to get a CV of about plus or minus 2-3% on sockeye. Bob Clark did a study and assumed 5% for Chinook. Could compare our sample to the numbers presented by the processors.

A discussion of the need to include sport fish harvests in the overall harvest. The consensus among AP members was that these harvests were too low to include given the difficulties in obtaining numbers within the strata set out in the WASSIP program.

**Decision Point: Sport fish catch will not be included in WASSIP harvest numbers.**

**Break:** 12:15 PM
**Resume:** 1:33 PM


*8. Treatment of sampled strata with small sample sizes and unassociated strata (single stratum without priors)*

Presentation by CH

Department recommendation was to exclude strata with less than 100 fish and unassociated strata because we could not use approved methods to define priors, but we are open to suggestions.

[Meeting minutes for this section were distributed to AP and TC members on January 24 and attached to the end of these minutes as "Minutes – Appendix A."]

*9. Results from the chum reporting groups exploratory methods (TD17)*

Presentation by CH

There was discussion about how some other labs are able to pull more reporting groups out of CWAK.
- Terry Beacham appears to be able to separate out some CWAK reporting groups.
- However, there are multiple differences between the data analyses that make comparisons of MSA performance difficult. Among these are: populations represented in the baseline, criteria for data quality control and inclusion, and statistical methods for testing of MSA performance.
- Robin Waples has suggested an analysis that standardizes all the variables to look at the relationship between the number of alleles and MSA performance using all available marker types (microsatellites, SNP, allozymes). ADFG has agreed to proceed with this type of analysis once the report is out.
- It may be that the biology of the species and the glacial history of the area make MSA a tough tool to use.

*10. WASSIP outreach in advance of results publication*

EV – It seems useful for the department to help out with a presentation about WASSIP, to make sure people are adequately informed. We want to give people an opportunity to ask questions. There are a few of us from the department that are willing to travel to key parts of the state, but it would be good to have an AP member present as well. We had a vision to do this all in one week. The timeframe would have to be between February and mid-April. What I want to know is, is this worthwhile? Are you willing to participate?

There was some discussion about the timing of these trips – should it be done after the results are out?
- BOF venues will be the place for the rollout of results to the public.

- These presentations are just to get out basic information. Everything up until the results and anything the AP suggests.
- Some thought timing should be request-driven. This could take advantage of timing of other meetings.
- General dates where thrown out by some AP members
- AP members asked to shop this out a little bit and get back to EV with dates.
- EV said he would pass this on to other AP members not present.

**Break:** 3:05 PM
**Resume:** 3:30 PM

*11. WASSIP results roll-out (Chuck McCallum and Pat Martin)*

CM and PM outlined the issues we need to address during the rollout:
- Explain the process:
  - Need to explain the stakeholder process, the AP, the TC. There was a reason why the AP wanted a TC, because there are varying levels of trust or distrust about what the department does. We all agreed upon a very high level technical team to advise us in this process.
  - Need to highlight that we are operating on a consensus basis. Any group has veto power.
  - Need to chronicle the number of meetings and technical documents.
- Explain the scale, and therefore the timing of the project:
  - The sheer scale of this project compared to other projects, the geographic scale, and the number of samples needs to be conveyed.
  - Provide a timeline to show how all the aspects fit in.
- Address expectations and technical complexity:
  - It is not going to be a trivial matter to explain what we've done here.
  - We need to address the expectations, explain the tools, statistics, and describe what the goals of the study in language that doesn't require equations.
  - We need to reassure people about the assumptions underlying the project in a common sense way.
  - The feedback we get during the outreach efforts planned before the results go out will help shape how this information needs to be related.

PM provided some ideas about the roll-out presentation to the BOF:

- Stakeholders want to know if they are going to be able to understand this at all.
- A few different data types were presented:
  - Allozyme data for chum salmon graph.
  - Google Earth rare-allele graph, horizon vs. top down maps.
  - This product should have pictures of people and fish.
- There was some discussion about having someone from the department go see what an expert has to say about presenting this data:
  - Class being offered in San Diego.
  - EV asked if we could we bring the instructor up here as a consultant?

*12. Review and approval of minutes from September and November, 2011 meetings*

September 21-22 meeting minutes, 16 pages. No comments.  These will be posted as final minutes.

November 14 meeting minutes. Michael Link had a question, but now he's good.  No further comments. These too will be posted as final minutes.

*13. Scheduling of next meeting*

March 15$^{th}$-16$^{th}$ was set for the next meeting, where sockeye and chum (harvest) escapements, final draft locus selection, and stock composition estimates format will be covered.

Also looking at a meeting in May and another in August.

**Meeting adjourned:** 4:30 pm

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**MINUTES - Appendix A.**

At the WASSIP AP/TC meeting on January 17, 2012, Chris Habicht gave the presentation "Issues: Low sample sizes and unassociated strata". This presentation was designed to inform AP and TC members of analysis issues associated with small sample sizes and unassociated strata, provide the scope of these issues, and elicit input from the AP and TC on actions to resolve these issues. All time and area strata and sample sizes can be found in the tables referenced in the WASSIP sampling report (Eggers et al. 2011).

1) Small sample sizes:

Small sample sizes will lead to imprecise stock composition estimates. The department recommended that stock composition estimates should not be calculated for strata represented by fewer than 100 samples. The following strata were affected:
- Sockeye salmon
  - Ikatan area (Table 9): exclude 2006 (n=50); include 2007 and 2008 (n>300 each)
- Chum salmon
  - Kuskokwim, District 5, stratum 3 (Table 16): exclude 2009 (n=91) and 2008 (n=0); include 2007 (n=337).
  - Norton Sound, Subsistence, Subdistrict 5 (Table 20): exclude 2007 (n=20), 2008 (n=0), and 2009 (n=0).
  - Norton Sound, Subsistence, Nome area (Table 20): exclude 2008 (n=12) and 2009 (n=5); include 2007 (n=176).
  - Pt. Clarence, Subsistence, (Table 20): exclude 2008 (n=40) and 2009 (n= 0); include 2007 (n=365).

*Decision Point:* **After discussion, all the AP and TC members present concurred that stock composition estimates should not be calculated for strata represented by fewer than 100 samples.**

2) Unassociated strata:

Unassociated strata are strata that are not associated with other sampled strata taken within a fishery (one sample in one year). In other words, a fishery that was sampled over a single temporal stratum in a single year. Because the TC has recommended and approved a method to determine the prior that depends on information in associated strata, we do not have a method for deriving a prior for unassociated strata. Where these unassociated strata occur, the department recommended two approaches, either 1) exclude these strata from analysis or 2) decide to analyze on a case-by-case basis. If the second approach is adopted, then the AP, with TC advice, will need to reach a consensus on method used to set a prior. The following strata were affected:

- Sockeye salmon:
  - <u>Chignik Area, Eastern District (Table 3):</u> 2007 only (n=400). Total harvest for this fishery was 33,220 fish for 2007 to 2009, but 90% of this catch was in 2007.
- Chum salmon (all Norton Sound-Port Clarence Area):
  - <u>Golovin, Subdistrict 2, Commercial (Table 20):</u> 2008 only (n=215). Total harvest for this fishery was 710 fish from 2007 to 2009.
  - <u>Moses Point, Subdistrict 3, Subsistence (Table 20):</u> 2007 only (n=128). Total harvest for this fishery was 4,218 fish from 2007 to 2009.
  - <u>Nome area, Subsistence (Table 20):</u> If we don't analyze collections with less than 100 fish, we only have only 2007 left (n=176); 2008 (n=12) and 2009 (n=5) are too small. Total harvest for this fishery was 4,064 fish from 2007 to 2009.
  - <u>Pt Clarence District, Subsistence (Table 20):</u> If we don't analyze collections with less than 100 fish, we only have only 2007 left (n=365); 2008 (n=20) was too small. Total harvest for this fishery was 13,470 fish from 2007 to 2009.

*Decision Point:* **After discussion, the AP agreed to the following decisions, supported by the TC:**

- Exclude the sockeye salmon unassociated stratum from analysis
- Analyze all of the chum salmon unassociated strata. For these strata, the following decisions on priors were agreed upon:
  - <u>Golovin, Subdistrict 2, Commercial:</u> Use the results from the Moses Point commercial stock composition estimates for the same year as the prior.
  - <u>Moses Point, Subdistrict 3, Subsistence:</u> Use the results from the Moses Point commercial stock composition estimates for the same year as the prior.
  - <u>Nome area, Subsistence:</u> Consult with Charlie Lean to come up with expert estimate for a prior. Charlie provided the following as a prior: 74.4% Coastal Western Alaska, 18.6% Kotzebue, and 1% for each of the seven remaining reporting groups.
  - <u>Pt Clarence District, Subsistence:</u> Consult with Charlie Lean to come up with expert estimate for a prior. Charlie provided the following as a prior: 46.5% Coastal Western Alaska, 46.5% Kotzebue, and 1% for each of the seven remaining reporting groups.