US/Canadian Pacific Whiting Joint Management Committee meeting

March 18-20, 2014 • Vancouver, BC

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DAY 1: Opening Plenary Session

Welcome, opening remarks

Paul Ryall & Frank Lockhart, JMC Co-Chairs

Meeting Chair Paul Ryall welcomed participants and JMC members were introduced.

Lockhart noted the treaty was now in its third year, with the work of the JMC benefitting from very good information and technical support.

Lockhart introduced new AP member Dave Smith and staff Miako Ushio. Ryall introduced two new Canadian AP members: Mike Buston and Wayne Elvan.

Ryall noted there was good news from both the hydro-acoustic assessment and the fishery, confirming the very strong 2010 year class. Such events occur infrequently and are typically followed by poor year classes, so a key question is how to take care of those large recruitments moving forward. The MSE (Management Strategy Evaluation) process has helped the JMC to think about management, and it may be appropriate now to provide more direction and rigour to get the best out of the MSE. Ryall added that the JMC process has worked very well, with members collectively offering a great deal of knowledge and benefitting from the support of the JTC and SRG.

Review of agenda:

It was agreed to move the MSE presentation to Day 1, to have all the information presented up front, then provide time for separate AP and JMC sessions later in the day.

Presentation: JTC final report

Nathan Taylor, Allan Hicks, JTC

Allan Hicks introduced the presentation, noting that the JTC 's work focuses on providing information on two key questions, using two key instruments:

1. The short-term risks of setting this year's TAC (assessment component).
2. The cumulative long-term risks of applying the hake management procedures (MSE).

1. Management Strategy Evaluation (MSE)

Hicks provided an overview of MSE work undertaken and results of model simulations to test whether including time varying selectivity improved model performance. They also tested effects of tweaking the harvest rule.

- Q/A (Question/Answer): The simulations were done using the 2013 model, with the large uncertainty around the 2010 year class, but this had no effect on long-term performance results. The intent was to see how changes to the assessment model would perform in general, over a range of scenarios, not in the current situation. The changes to the assessment model were better able to characterize the fishery and smoothed the highs and lows over time.

(Presentation, continued) Summary of results:

- Including time varying selectivity in the assessment improves performance across multiple metrics, with a lower risk of biomass below 10% of B_0, higher median average catch with lower variability and similar median average depletion.
- Even including a small amount of time varying selectivity resulted in considerable improvement.
- Improvement in retrospective estimates of recruitment (Squid plot)
- The simulations assumed the harvest control rule is followed exactly.
- That's our biggest change from last year's assessment model.

2. Assessment Data

Nathan Taylor presented and explained a series of data tables (harvest and stock information) followed by an overview of the decision tables.

Discussion

- Q/A: Tables based on 25/50/25 probability have not been produced for a few years.
- Q/A: Even at the lowest probability percentiles, the 2010 year class is still very large.

Presentation: MSE - survey frequency & catch ranges

Allan Hicks, JTC

This work is about testing management strategies: the goal is a clear management strategy that can guide the management response to unpredictable events, with benefits for industry and managers. Key challenges include how best to deal with unpredictable fluctuations in hake abundance and the need for clear objectives that address how to balance long and short term views about what is an appropriate level of caution. Sustainability goals should be guided by science, but need to be developed with broad advice from all parties.

The 2014 MSE work involved simulation testing to compare the expected long-term performance of the default harvest rule and alternatives, including setting catch ceilings (to mimic implementation error),

setting a catch floor, and having a constant catch level. These scenarios are not JTC recommendations, but were evaluated to increase understanding of the relative effects of different strategies. Performance results were presented for the short-term (2014-2023) and the long term (2033-2042), showing that some differences are only apparent in the short-term, while others are relevant only over the longer term.

- Q/A: The base case is the 2013 assessment.
- Q/A: The primary difference is the uncertainty around 2010 recruitment and a second one is the 2011 differences.
- Q/A: The model simulations assume random occurrence of large recruitment events but has not factored in a pattern of low years following these large recruitments.

(Presentation, continued) Summary of 2014 MSE results:

- The risk of biomass under 10% of B_0 can be reduced in several ways.
    - More information about the population (annual survey): small reduction.
    - Alternate assessment model (including time varying selectivity)
    - Alternate harvest rule
- Combining these factors could further reduce risk.

Many trade-offs must be weighed and that's where clear objectives are needed, though setting those is not the job of the science process.

There are many possible future directions for MSE work, depending on what stakeholders want. The work is time consuming, so it must be prioritized against non-MSE work.

Discussion

- Ryall: So far, we haven't provided direction regarding management objectives. This requires input from industry and government, so maybe this is the next step: i.e. to consider how to establish those objectives.
    - Hicks: On the MSE working group call last September, we talked about putting together questions that might help guide that discussion – how do people define what is "good" and "bad." For example, the catch ceilings tested were from discussions with the AP. So we agree that's probably a good next step and we've already started a bit down that road.
- Q: For Table A4, are the actual catches available anywhere in the document?
    - Hicks: There were lots of different results from the simulations; the graphs show the range of outcomes and the average.
- Q: Did you look at a strategy of having catch follow abundance?
    - Hicks: That's what the 40/10 rule is doing and all simulations are based on that control rule.

- Q/A: The modelling included large recruitment events but did not model scenarios such as squid impacts – we assumed a constant rate of natural mortality. The MSE is meant to look at how the management procedure performs under a wide range of possible scenarios, so we need to expand the range of scenarios that we consider.
- Q: How does the stock keep regenerating itself with such a low percentage of mature fish?
    - Hicks: Even in virgin stocks, the average age is around 4 years. The percentage is low because there are so many small fish. It should be noted that very small differences in the number of mature fish can have large effects on future outcomes. Part of the reason for that metric was that we also wanted to look at how many fish go to Canada, because we don't have a spatial model (although this was a poor metric for that purpose, because distribution depends on a number of things, not just age).
- Q: We know 2010 is a strong year class. If this occurs again in 2015 or 2020 and we get another spike, would the long term results be much higher?
    - Hicks: Yes, that's one of many possible scenarios. What this analysis shows is the average. It should be clear that this is a tool for evaluating management performance across a range of scenarios, not a tool for forecasting – it won't replace the assessment.
    - Spawning biomass also includes Age 3 and Age 2 fish. We've experienced some of largest recruitment from the smallest spawning biomass.

Presentation: SRG review of 2014 hake assessment

Michelle McClure, SRG

McClure presented an overview of the conclusions and recommendations. Key points included:

- SRG conclusion that the 2013 survey was a success: the population is currently dominated by the 2010 cohort in US waters.
- SRG endorses the inclusion of time varying selectivity in the assessment model.
- Concern about recruitment scenarios in general: 2010 is big, but some uncertainty of how big.
- Overall, SRG is impressed with the MSE work, including the benefit of including time varying selectivity and that the results suggesting that strict adherence to the harvest rule presents more risk.
- Recommendations outlined for research, MSE and process.
- SRG proposes using 2014 as a development year for the survey, and update the assessment for 2015.

Discussion

- Q: Can the JTC provide mean or mode instead of median from the data?
    - Hicks: If there is a specific request for information that would be more useful, we can provide it. This is about risk assessment and median is the most risk-neutral.
    - Q: The concern is to have a scale consistent with what we've seen before.

    - Hicks: The model produces 1,000 realization and we provide the median for those; we also take a closer look at the lower probability results.
- Ryall: Any comments re the SRG recommendations?
- Q: The Mexican stock goes all the way around to inside waters, does that affect the outside stock?
    - Hicks: There are interesting questions on this issue.
- Q: Is there room for input from the AP on how to improve the survey?
    - McClure: We are definitely open to that.
    - Workman: The survey teams meet twice a year; there should be opportunity for broad participation.
    - Q: It's a very strict procedure and it can be frustrating for industry when changes can't be made. It would be up to industry to identify a representative to participate in discussions.
    - Workman: We welcome recommendations from the AP on the survey.
- Ryall: The reports imply that there is no hydro-acoustic survey for next year so this would free up time to do other things, such as MSE work and research on the hydro-acoustic survey. How much does it reduce the JTC's time in 2014?
    - Hicks: My schedule is more open this year than last.
    - Taylor: It's unlikely that I can dedicate any time next year for hake. Producing an updated assessment would still require a fair amount of work. Possibility fo learning something important that guides the updated assessment.
- Q/A: Clarification: reference to decline in stock status means decline in abundance.
- Turris: It might be useful to run the MSE analysis retrospectively and compare to actual results.
    - Hicks: We want to do a retrospective analysis; it's something we're working on.
    - Taylor: There are some challenges to doing it, based on the data available.
    - Turris: A comparison for the 1999-2009 period could be useful in highlighting other things that the model doesn't pick up.
- Q: I'm still not entirely clear on the MSE: What are costs to the stock and to industry of being too conservative or too aggressive?
    - Hicks: The MSE is the appropriate place to pose such questions. You can add economic metrics.
- Q: How useful are 10 – 30-year models, given all the uncertainty around the population.
    - Hicks: The MSE and the assessment model are not accurate at projecting the future state of the hake population. It's not possible to make predictions beyond 3 years.
    - Taylor: The other thing is that we don't behave or respond exactly as the model assumes. One of the benefits of such simulations is they allow you to test new policies virtually, before trying them out in real-life experiments.
    - McClure: The MSE is about identifying management strategies that are robust to a range of scenarios – so it's about identifying which strategy is best for hedging our bets.

- Q: Would it be useful to test the implications of a super recruitment event every 10 years, and a squid event every 5 years?
    - Hicks: Yes, our next step is to be able to model recruitment more accurately, but that will take some research.
- Hicks: The JTC would appreciate feedback from the JMC on the usefulness of the decision tables and how the information is presented.

Discussion: Next steps

1. Discussion topics for AP

Proposed topics included 2013 fisheries, the AP's first impressions of today's reports, comments on the MSE and initial discussion of 2014 TAC, with a report back to the JMC at the end of the day.

JMC requested that the AP submit a joint report.

2. AP appointments

AP asked the JMC to clarify the plans for AP appointments.

3. Distribution of meeting materials

Hicks will upload presentations and related documents to a Google Drive folder accessible to US members; Barry Ackerman will forward the documents to DFO members.

Concurrent Breakout Sessions

AP meeting

The AP met in camera.

JMC Executive meeting

The JMC held informal discussions, with 2 conclusions noted for the record:

> **1. Setting objectives:** Both parties (US and Canada) will consider this question (the AP may also choose to have its own discussion) and the JMC will discuss it further at the May meeting, at which time direction will be provided to the MSE Steering Committee on refining the objectives. Bruce Turris and Dan Waldeck will take this direction to the Steering Committee.
>
> 2. The JMC is comfortable with the current version of the JTC report. There is no flexibility in the schedule, so a decision on TAC? must be made in the third week of March.

DAY 1: Closing Plenary Session

The AP Co-chairs reported briefly to the JMC, requesting further time for discussion. It was agreed that they should continue meeting and report back at the start of Day 2 on the 2013 fishery and science, before the delegation caucus sessions.

The JMC adjourned for Day 1 at 5:30 pm, while the AP resumed meeting in camera.

DAY 2: Opening Plenary Session

A plenary session was reconvened at 8:30 am to receive an update from the AP, which was delivered by Co-Chair Joe Bersch.

1. Report on 2013 fishery:

Bersch provided an overview of the report, noting this was an updated version of the JTC report from the Nanaimo meeting.

Discussion

- Request for distribution of the report via Google Docs.
    - Hicks: The assessment document does not include proportion by age, but that information will also be shared via the Google Docs drive.

2. Report on science:

AP believes the treaty has led to improvements in the science process and data quality, that the JTC and SRG have done an excellent job, and commends the more transparent process and improved collaboration with industry.

Recommendations included allowing more time for science presentations, advance distribution of presentations, participation of advisory committees in developing meeting agendas, continuation of the annual acoustic survey as a science priority, and development of an Age 1 recruitment index.

Neither delegation supports TAC of 872,424 for 2014 as per the treaty default harvest rule. There has been good dialogue so far, but more time is required to reach a joint recommendation for 2014 TAC.

Discussion

- Q/A: Intent of agenda request is that AP be involved in discussing how to structure meeting agendas.
- Ryall: Re the AP's appointments request, it is an annual requirement, so candidates for the following year's appointments must be provided by March.

    - Bersch: We can provide nominees. It's important to the AP that appointees are full members.
    - Lockhart: They needn't be new names - existing members can be re-appointed.
- Ryall: Regarding the annual hydro-acoustic survey, no one questions its importance, but there are a number of technical questions and potential trade-offs (i.e. doing the survey or other work as outlined by the SRG in 2014), so which would the AP prefer?
    - Bersch: We hope there are enough resources to do both. If the JMC wants a prioritization, we can discuss that.
    - Discussion: Considerations re doing Age 1 survey, and preparatory work required to develop that.
- Anderson: Request for more detail on the 2013 Canadian fishery.
    - Noted that JTC minutes (on Google Docs) provide more detail on that.
    - Canadian delegates provided brief verbal reports.
    - Agreed that more detail on the Canadian fishery should be added to the AP report.
- Turris: Request for more detail on the 2013 US tribal fishery.
    - Joner provided a brief verbal report.
    - Agreed that Joner would write a summary of the tribal fishery to be added to the report.
- Hicks: In light of the difficulty in coordinating winter meeting schedules, propose that both parties develop a list of important meetings in May to assist in scheduling.
    - The AP also discussed a desire to schedule the assessment and planning process earlier to enable access to economic opportunities that are not currently possible.
- Ryall: Did the AP have any further technical questions?
    - Bersch: None.

Concurrent Breakout Sessions: Delegation meetings

The Canadian and U.S. delegations met separately, in camera, from 9:20 – 11:15 am.

Concurrent Breakout Sessions: JMC and AP meetings

AP meeting

AP members met in camera from 11:20 am – 3 pm.

JMC Executive meeting

JMC Executive reconvened for informal discussions at 11:15 am and agreed to the following:

1. JMC direction to AP: JMC request that AP include advice, along with objectives and rationale, in the report. *(Direction delivered to AP meeting by JMC Co-chairs)*.

2. Next meeting: JMC agreed to schedule a planning meeting for the JMC and AP on May 12 – 13, 2014, in Lynwood, WA, starting at 10 am on May 12 and ending at 2 pm on May 13.

Following a break for lunch, the JMC reconvened at 1:30 pm to continue informal discussions. It was agreed to propose the following 6 draft management principles for consideration by the parties:

> *I. Manage the Pacific Whiting resource in a precautionary manner.*
>
> *II Maintain a healthy stock status across a range of recruitment events.*
>
> *III. Consider the long-term implications associated with using the treaty harvest policy (Article III, Par. 1)*
>
> *IV. Manage the fishery to ensure that each country has the opportunity to receive the intended benefits contemplated in the treaty.*
>
> *V. Set total allowable catch levels that spread the harvest of strong recruitment events over multiple years*
>
> *VI. Use a harvest policy that sustains the Pacific Whiting resource.*

JMC/AP Plenary Session

At 3 pm, the JMC reconvened a joint plenary session for the AP to report progress.

The AP Co-chairs noted they were having productive talks. The Panel members had discussed objectives and exchanged numbers but they still had a lot to discuss. They had some science questions and were working with the JTC to get answers. The AP hoped to continue discussions with the goal of providing recommendation to the JMC by the following morning. The AP also requested time for US and Canada delegation meetings.

The plenary session adjourned at 3:05 pm.

Concurrent Breakout Sessions: Delegation meetings

The US and Canadian delegations met in camera from 3:10 to 4:15 pm.

Breakout Session: AP meeting

The AP met in camera from 4:15 – 6:30 pm

DAY 2: Closing JMC/AP Plenary Session

The AP Co-Chairs reported back to the JMC at 6:30 pm, noting that they were making progress, and requested more time to continue their talks, with the intention of presenting a report to the JMC the following day.

The JMC adjourned for the day at 6:40 pm.

Breakout Session: AP meeting

The AP continued meeting in camera, and resumed discussions at 7 am the following morning.

DAY 3: Concurrent Breakout Sessions: Delegation meetings

The US and Canadian delegations met in camera from 8:30 – 9:15 pm.

Breakout Session: AP meeting

The AP resumed meeting in camera from 9:15 – 10:55 am.

JMC/AP Plenary Session

The plenary session was reconvened to receive a report from the AP, to receive public comments (if any) and to review further business as required.

AP report

Bersch reported on the following items on behalf of the AP:

1. AP appointments:

The AP agreed to submit the same candidates as last year:

- For the SRG: Sean Cox, Dave Sampson and Trevor Branch.
- AP advisors to the SRG: Rod Moore and Mike Buston.

2. Revisions to 2013 fishery report:

The AP proposed submitting an updated report following the meeting, with the supplemental information requested, as there had not been time to work on the required edits.

3. Proposed management objectives for the MSE:

The AP had not had opportunity to discuss the proposed objectives, so requested an opportunity to discuss and provide comments at the May meeting.

- Discussion: JMC members noted slightly different perspectives on how broadly the proposed objectives were intended to apply (e.g. to provide initial guidance for the MSE and then apply more broadly to management?).
    - It was agreed that the JMC would provide a draft outlining the draft objectives and their intended scope, for further discussion at the May meeting.

4. Recommendations for 2014 TAC

The AP presented joint recommendations for 2014 TAC, based on extensive discussion of the science, history and resource management considerations. The AP believes the compromise TAC proposed is well supported by science.

AP objectives for setting 2014 TAC:

1. To conservatively manage the resource to maximize yield over time and enhance the stability of the fishery to the extent practicable.
2. To utilize the science generated from the JTC and SRG to sustainably manage the resource in 2014 and beyond.

AP recommended 2014 TAC (in metric tonnes)

Total unadjusted coast-wide TAC	377,570
US portion of unadjusted TAC	278,949
Canadian portion of unadjusted TAC	98,621
US 2013 shortfall carry forward	37,258
Canadian 2013 shortfall carry forward	13,172
US adjusted TAC	316,207
Canadian adjusted TAC	111,793
Total adjusted TAC	428,000

Rationale:

- The carry over amount is derived from treaty provisions allowing carryover of 15% of the previous year's unused TAC.
- The default harvest rule would result in TAC of 872,424, but the treaty allows deviation from this, if there is good reason to do so. The AP considered the stock assessments, historical management and removals and decided on a more conserve TAC of 428,000 metric tonnes.
- Based on past utilization of TAC, the AP believes actual harvest will be even more conservative.

The AP appreciates the time allowed to work through the issues and notes that this recommendation is very important to the AP members. The AP will also consider recommendations for making future meeting time more useful.

Discussion

- Ryall: The report is straightforward and the effort to document the rationale is appreciated. This demonstrates that the process works. There is a solid science basis for management of the hake fishery, though it is sometimes daunting to understand and interpret. The JMC also had some discussion on how to improve the process and would appreciate advice from the AP.
    - Lockhart: We appreciate the AP taking the time to reach a joint decision. It's hard work but it makes for better decisions. There have been many changes since this process first started, but we appreciate the advice to add further discussion of how to improve the process at the May meeting.

Request for public comments

Ryall invited any public comments:

- One question was raised about dates for the next meeting, but the proposed dates (May 12-13) were accepted as satisfactory.

Next steps:

JMC members met in camera to discuss next steps, from 11:30 – 11:45 am.

DAY 3: Closing Plenary Session

The plenary resumed at 11:45 am and both JMC Co-Chairs expressed appreciation for the challenging work done by the AP and the effort devoted to reaching a joint recommendation.

The JMC Co-Chairs confirmed that the JMC endorsed the AP recommendation for 2014 TAC of 428,000 metric tonnes, which included the carryover from 2013.

The JMC o-chairs also supported the advice to consider further process improvements at their next meeting. Ryall suggested looking at how best to ensure enough time was provided to consider science advice before deciding how to set TAC and what the advice means for long-term use of the resource.

The Chair invited any final comments. There being none, the meeting was adjourned at 12 noon.

Appendix 1: Attendance

Name	Organization	Day 1	Day 2	Day 3
Paul Ryall	JMC Co-Chair, Canada	✓	✓	✓
Frank Lockhart	JMC Co-Chair, US	✓	✓	✓
Phil Anderson	JMC US	✓	✓	✓
Steve Joner	JMC US	✓	✓	✓
Dan Waldeck	JMC US	✓	✓	✓
Bruce Turris	JMC Canada	✓	✓	✓
Theresa Williams	JMC Canada	✓	✓	✓
Barron Carswell	JMC Canada	✓	✓	✓
Joe Bersch	AP US	✓	✓	✓
Tom Libby	AP US	✓	✓	✓
Michael Okoniewski		✓	✓	✓
Brent Payne	AP US	✓	✓	✓
Mike Hyde	AP US	✓	✓	✓
Dave Smith	AP US	✓	✓	✓
Dave Dawson	AP Canada	✓	✓	✓
Peter Knott	AP Canada	✓	✓	✓
Shannon Mann	AP Canada	✓	✓	✓
Don Mcleod	AP Canada	✓	✓	✓
Brian Mose	AP Canada	✓	✓	✓
Albert Radil	AP Canada	✓	✓	✓
Allan Hicks	JTC US	✓	✓	✓
Nathan Taylor	JTC Canada	✓	✓	✓
Sean Cox	SRG Joint	✓		
Michelle McClure	SRG US	✓	✓	✓
Greg Workman	SRG Canada	✓	✓	✓
Rod Moore	SRG US industry	✓	✓	✓
Barry Ackerman	DFO – FM	✓	✓	✓
Neil Davis	DFO - FM	✓	✓	✓
Miako Ushio	NOAA – FM	✓	✓	✓
Ryan Couch	NOAA – FM	✓	✓	✓
Catarina Wor	UBC student/observer	✓	✓	✓
John Bundy	Glacier Fish Co	✓	✓	✓
Dawn Steele	Note-taker	✓	✓	✓