

2017 Pacific Hake/ Whiting Committee Meeting

Lynnwood, Washington

March 28, 2017

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### Attendees:

JMC: Frank Lockhart, Steve Joner, Paul Ryall, Barron Carswell, Theresa Williams, Bruce Turris, Sean Cox, Phil Anderson.

AP: Al Carter, Ocean Gold- US AP; Stephanie Johnson NOAA- OGC; Albert Radil, AP- Canada; Dave Dawson, AP – Canada; Shannon Mann AP – Canada; Brian Mose, AP Canada; Joe Bersch, Phoenix Processor Limited partnership; Miko Okoniewski, Pacific Seafood, AP; Joe Green, AP Canada; Dave Smith, AP US; Mike Hyde, American Seafoods, AP US; Brent Paine AP US; Corey Niles, WDFW; Joe Bersch, PPLP, AP US; Robert Dooley, AP US; Mike Okoniewski AP; Tom Libby, California Shellfish;

Others: Lori Steele (SRG, WCSPA); John Holmes SRG- DFO; Michelle McClure, NWFSC NMFS NOAA/ SRG; Larry Huffnagle, NWFSC- NMFS- NOAA Acoustics; Steve Martell, Sea State; Rob Tadey, DFO – Canada; Ian Taylor, NWFSC- NMFS- NOAA, JTC; Miako Ushio, NMFS; Ryan Couch NOAA GC; John Holmes, DFO, SRG.

### Day 1: February 28, 2017

9:00 Call to order and welcome from Frank Lockhart, US JMC Chair. Primary Task: to set 2017 Total Allowable Catch for the U.S. and Canada

#### Welcome

Call to order, welcome by Frank Lockhart US JMC Chair. The primary task for this meeting is to set 2017 Total Allowable Catch for the U.S. and Canada. Phil Andersen, JMC is (out for the first part of the day). Self- introduction by everyone in the room.

**Personnel Notes:** Lori Steele is the newly appointed US observer on the SRG. NMFS has a new General Council in attendance, Stephanie Johnson. She will be replacing Ryan Couch, who is in attendance to help with transition. Rob Tadey (DFO Groundfish) has replaced Barry Ackerman since the last JMC Meeting. The terms of AP- nominated SRG members Trevor Branch and David Sampson are expiring, we will need nominees from AP). Paul Ryall will be retiring from DFO this month, but may stay in his role on the JMC.

[Agenda changes](#): 3:00 JMC- Led discussion today. Thursday: discuss how schedule worked this year, and hydroacoustics, Report back from AP at the end of each day (5pm). The agenda for this meeting tends to be fluid, any changes will be announced.

## [AP Report](#)

Reports for the 2016 the US and Canadian Fisheries are included as Appendix 'D' in the 2017 Stock Assessment Report. Oral versions of these reports are summarized here.

[2016 Canadian Fishery Report](#): 129k TAC; 69k catch. 4 processors landed 48% of TAC. Canada has vessel caps limiting any one vessel to 10% of the Canadian TAC, but there are no sector allocations. Freezer- trawler vessels started in March, which is 2 months earlier than last year. Shoreside started their season at the end of April. The last delivery for the season was made mid-November. Most fish was sold as HGT (headed, gutted, tailed), some minced, and some whole round, and fillets. Overall, it was a positive year for the Canadian fleet, with fleet participation up from 2015 due to good hake abundance close to the processing facility in Ucuelet.

In Canada, one of the freezer vessels sampled weights of 2,539 fish, and had a 539 g average with a 1,254 g max and a 294 g minimum weight. 2- year old and under catch was 10% by numbers of catch was under 2 years 250g, or about 4 % by weight (2014 yearclass).

[US 2016 fishery Report](#): The US allocation was 367K mt, harvest was 261k which works out to 71% utilization. Tribal Whiting was reallocated to the non-Tribal sectors on Sept 15. Ocean conditions were more "normal" than in 2015, with a fairly typical distribution of larger fish to the north, however bycatch of [overfished and limited bycatch species] rockfish was associated with larger fish. Two tows POP nearly shut down first MS pool, then moved to smaller fish areas.

One of Shoreside whiting risk pools shut down due to POP bycatch. The fishery was dominated by bycatch management and reducing impact to 2 year old fish (2014 yearclass). Fishery largely characterized by warm water, with some smaller cooler waters with higher CPUE but bycatch and "issues with bathymetric features." Positive possible indicators of 2015 yearclass. Product forms in the 2016 US hake fishery included surimi, mince, fillet, HGT, and fishmeal products.

## [Question and Answer \(Q/A\) Session](#)

Q/A: Catch by weight of 2014 yearclass is in stock assessment (Table 21).

Q/A: Allocation process in the US is: From the TAC, research and bycatch in other fisheries are first deducted, then the tribal allocation. The remaining is divided: 24% Mothership sector; 34 Catcher-Processor sector; 42% Shoreside sector. Tribal catch was transported with tender vessels to shoreside processor. The reason the system is set up for non-transferability between sectors is for individual and economic interests.

Q/A: Northern distribution of hake/ bycatch limited fishing opportunities. Larger fish were found north of Columbia River, but the at-sea fishery was off southern Oregon to avoid bycatch, because will get shut down if hit bycatch caps. Risk pools in Shoreside, Mothership have rules: if you exceed a certain percent of base bycatch rate, you must move your fishing to a different area. Mothership risk pool has a general policy against "monetizing" bycatch species, in order not to create adverse incentives.

Q/A: Information sharing between AP in US and Canada was hampered by multiple approaches to collecting data, some players used length (for example 40 cm) and others used differing measures of what weight (200, 250 or 400g) to define 2- year old fish.

There is not concurrence in evaluating the attainment of the 2014 yearclass avoidance goal. Report by US industry reports low catch % of the 2014 yearclass (under 10%) whereas Canada does not feel that 20% was achieved. According to the stock assessment, 99K mt (Table 24, 25) of the 2014 yearclass was caught, which is 30.1% of catch by weight (discussion tabled for Stock assessment discussion).

### JTC Report on Stock Assessment

(Ian Taylor, JTC member and NOAA Fisheries NWFSC)

There was no overall change to general modeling approach or new survey. New fishery data (2016) was added. The 2016 fishery had high attainment of the TAC relative to last year. The 2010 cohort continues to be a large fraction of catches, 2014 appears to be large as well. Ian presented data from the 2017 Stock assessment, including: Updates – Fishery age composition (proportion of fish by age). Recruitment by year, median estimate for 2014 is lower but mean is higher (than 2010 yearclass).

Fishing intensity relative to exploitation rate: 1999 in hindsight was above fishing target rate. Last year was the lowest fishing intensity since early 2000's, this year 2016 back similar to 2012 – 2014, but below the several years before that period. Exploitation fraction is currently measured by catch as a proportion of age 3+ hake, which not necessarily a good measure this year when many 2 year old hake were caught. Retrospective analysis is that 2014 is similar in magnitude to 2010. However it has not yet been observed in the acoustic survey, so this estimate is highly uncertain. The survey biomass explicitly excludes age 2 fish. Approximately 30% of weight, 50% of numbers in 2016 was 2014 yearclass.

$\Phi$  is an expression of changes in selectivity over time. Prior to the 2015 stock assessment, selectivity by the fishery was assumed to be the same every year. However, there was a recognition that fishery selectivity is, in fact, not the same every year. An MSE was conducted to estimate if, and how much, time-varying selectivity should be used in the assessment to make the stock assessment the most accurate. The model without time-varying selectivity performed poorly, and so in 2015 the stock assessment started including time-varying selectivity (only a little,  $\Phi$  value .03). Using this  $\Phi$  value in the latest assessment resulted in a 2014 yearclass that was 2.5 times higher than any other cohort ever observed, which seemed unreasonable/ improbable. Many factors, including recent (2014/ 2015) unusual ocean climate conditions may have contributed to more variability in the fishery's selectivity between years. Therefore, more variability in selectivity over time was allowed for the 2017 stock assessment, allowing the model to better fit the observed proportions at age within the fishery.

During the SRG meeting, there was significant discussion regarding tuning  $\Phi$  (time-varying selectivity). SRG expressed concern that the selection of  $\Phi$  was not done through a rigorous statistical analysis. Review of other fisheries models found that this is at least somewhat common (also true for Pollock, another member of family *Gadidae*). The net result of changing the  $\Phi$  value in this most recent stock assessment is that the estimates of 2014 yearclass are more conservative than they could have been, using the old  $\Phi$  value.

An age-1 index is used as a qualitative comparison, but is not used in the assessment.

Management history, risk tables: 2016 default harvest was 830,124 mt, and the TAC was 497,500 mt. Comparison of historic harvest control rule, TAC and realized catch: realized catch is the most stable number.

This year: 969, 840 mt is the default bilateral TAC.

Two year forecasts:

- No fishing scenario and 180k: slight increase in biomass
- 350,000 mt and above catches result in a small decrease in relative spawning biomass, but not approaching  $B_{40}$ . Risk tables are based on 1- and 2-year catches. Even using a low estimate of the state of nature, catches similar to those seen in the recent past do not result in overfishing.
- Estimated changes in biomass due to fishing and natural mortality (by age, for recent large cohorts 1999, 2010, 2014):
- 2010 yearclass biomass declining contributes to declining overall biomass with catches of 350 kmt and above

Q/A We have been fishing harder on the 2014 cohort than on previous cohorts in terms of tons caught, but within the context. That that higher fishing mortality is equal to about 1/3 of estimated natural mortality.

Q/A exploitation of age 2 across 3 strong year classes is in Final 2017 stock assessment report. (Table 22, table 25)

Q/A Defining "Exploitation:" *Exploitation fraction* is catch in given year/ total biomass of ages 3+. In Table 22, *Exploitation* is catch of cohort/ biomass of that yearclass.

Q/A Age 6+ are assumed to have the same selectivity, so after age 6, forecasts of reduction become the same across years and yearclasses.

At age 6, 1999 and 2010 yearclasses were at 64% and 69% of their initial biomasses, respectively. This despite much higher fishing pressure on the 2010 yearclass at age 2 than on the 1999 yearclass. This is because natural mortality is estimated have a larger impact than catch (fishing mortality), especially for early years. The stock assessment model does not capture variability in natural mortality.

- Break-

## SRG Chairs Report

John Holmes (SRG Chair, DFO)

### Winter Cruise and Survey Recommendations

2017 Stock Assessment summary. There is a fairly wide distribution of estimated female spawning biomass, this uncertainty is due to the size of 2014 yearclass. An increase of 6% from last year is believed to be related to large 2014 yearclass.

Time varying selectivity was moved to .2 this year from .03. The uncertainty this year can surrounds whether the 2014 is a well above average, or largest in time series, i.e. "ginormous."

The SRG recommends that the JTC investigate alternative approaches to setting the Phi parameter value for time-varying selectivity in future assessments.

A better approach needed to find alternative Phi values, avoiding optimistic picture when biomass is low and pessimistic picture when high.

Q/A: One of recommendations is to see how other assessments are dealing with this, which is currently unknown here. Also investigating other ways of parameterizing time varying selectivity, e.g. using 'block estimates') instead of time varying selectivity.

Decision tables could be conservative since they are based on a lower estimate of 2014 yearclass.

[JMC request for MSE Advice:](#)

Recommendations on Roles:

- JTC should have at least an oversight role in the MSE process
- Acoustic survey team is also expected to have a role in data development for this process.
- SRG should not have a role in the development of the MSE as it is the primary review body under the agreement are expecting to review the results of the MSE

Spatially explicit vs fleets-as-areas models: The SRG recommends development of spatially explicit Operating Model. Fleet- as-areas is an alternative assessment model but not suitable for an operating model as it simplifies spatial dynamics. A spatially explicit operating model is needed for the MSE process, given that the types of questions being raised have a spatial component.

Next steps: JTC develops provisional objectives (conservation, fishery, etc) and performance metrics to provide a range of options for JMC and AP.

Documentation of design and technical implementation is needed to ensure credibility and continuity.

Some factors to consider in the development of the Operating Model include seasonality, environmental drivers of hake dynamics, migration behavior, fleet behavior, and interactions between areas.

Data collection to inform Operating Model

[SRG Process requests:](#)

- Routine communication between all bodies (plus survey team) so that members of SRG are updated about priorities and concerns of managers and stakeholders
- Written request to SRG co-chairs for input to JMC about two weeks before SRG meeting to allow time for SRG agenda to be adjusted appropriately and for review of background materials
- Written opinion on the utility of multiple decision tables

Q/A: – Discussion on how to communicate issues that come up since there isn't a MSE report after those meetings.

Comment (JTC): Provisional objectives for MSE need to come from participants. JTC can draft the objectives on behalf of the participants (i.e. JMC, AP) because it's easier to consider when there is something in front of you (measurable objectives).

Comment (JMC Canada): we already have a lot of information, more not necessarily useful information. With the caveat that there is other important information, we might want to see that. Looking at age 1 index 2014 didn't look higher than 2010. Age 1 index is data from survey, not from the model.

**Ricker Update:** The Ricker (DFO survey vessel) went in for repair to the winches, and the engines were discovered not to be repairable. The Ricker is in the process of being decommissioned, and will not be able to conduct the 2018 survey. DFO contracting for an industry charter vessel is ongoing. 2-frequency acoustics is part of requirement for this contract charter. Plan B is request for Bell Shimada to do whole survey. This backup plan has been approved on US side.

In the past, there has been interleaving to calibrate between boats (Shimada, the NOAA ship and Ricker). Calibration between the Shimada and the charter vessel this year would be along Vancouver Island.

Survey spacing between transects would be 10 nmi with 2 boats, and 15 nmi with just the Shimada. Uncertainty goes up with higher spacing.

Contracting for the survey will be known by early April. Industry has identified a vessel that they believe will be available. Science center is submitting a plan with two vessels to Shimada, with backup of Shimada doing all.

Possible delay of new DFO vessel would not affect next survey immediately since 2018 is not a survey year.

The 1999 yearclass was seen at similar ages far north, so we don't want to miss the northern extent of the survey.

12:30 Break for lunch until 1:30

**Hiring update for NOAA Northwest Fisheries Science Center:** to be determined, (status due to hiring freeze unclear) offers have been made.

## MSE Workplan

Presentation by Sean Cox, JTC

Paul Ryall and Frank Lockhart requested Scoping for an MSE including options of Non-spatial, quasi-spatial and fully spatial multi-fleet models.

Cox showed an overview of an MSE he has developed in the past, the CHUM spatial model for salmon MSE in BC.

Sustainable fisheries is a process, not a product. A Management Strategy Evaluation evaluates the process.

Overview Objectives and Performance Indicators (from 2014 JTC)

- What is the desired status of the stock? (i.e. abundance)
- What is the desired age structure?
- What is the desired proportion/availability of fish in each country after allocation?

Current MSE simulation framework is made up things we can't control (stock, fishery) and things we can control (management procedure: monitoring, assessment, harvest rule).

The current MSE framework has 4 main issues:

- Assessment model is mostly identical to operating model
- No alternative hypotheses for hake population dynamics, data quality, etc
- Single stock, single area, single fleet- doesn't address key questions
- Other species aren't included [but affect fishing behavior/ access to hake].

Scoping Document Options:

- Option A1: Landmark Fisheries Research (Sean Cox's consulting company) leads development of fleets-as-areas (100-150k)
- Option A2: JTC leads the development of fleets as areas
- Option B: Landmark develops spatially explicit simulation modeling framework (200-300k)

A1: cost effective means of testing spatial implications in quasi-spatial model, completed within one year, adaptable to new information

A2: similar, completed within 1 year. Examples; BC sablefish, Pacific herring, Atlantic halibut, Atlantic cod. Probably also possible with Stock Synthesis (the program currently used for assessment).

B: multi stock (or species) multi-fleet, multi-area

- Need to disaggregate hake fishery and survey data
- Adaptable to new information via collaboration with NOAA post-doc
- Heavy design phase and pilot project

ChumGEM: multi-stock, spatial, genetic environmental model. Harvest rates by area and stock, could be by age class and area.

Adaptations:

Biological and fisheries: include age specific migration movement

Other key bycatch species

Environmental layers that influence distribution

Add multiple fleets as areas

Management

Spatial performance metrics

Fleet dynamics

Harvest strategies: spatial, non-spatial

CHUM model: management areas were given to Sean, for Hake he estimates that 2-3 meetings will be needed to determine areas and scale.

Operating model would become very different from assessment model, and be based on input from AP/JMC.

Paul Ryall: need to make sure we don't build a model that we don't have the data to properly inform. MSE is an iterative process, and can identify information that would be really useful to have.

3:00 Delegation meetings

4:00 JMC Meeting Reconvenes, while AP meets separately

Planning to create a spatial model. Responsibilities (ie of committees) need to be outlined in a work plan. US and Canadian resources: probably combination of contract and gov't resources. This falls within the agencies' mandate. However there is a limitation of hiring ability in the US, at present no Federal hiring can be done, and also a limitation of funding that could go toward contracts.

What questions are we trying to address. This is needed before we can know what data we need and how to structure the model.

## Day 2

8:30 – JMC Assembles to discuss MSE (AP in camera, discussing TAC)

Frank Lockart welcomed attendees (Attendance: JMC members, Miako Ushio NMFS, John Holmes DFO, Stephanie Johnson, NOAA General Counsel, Ryan Couch NOAA General Counsel, Corey Niles Washington)

Canada AP states that it is "struggling with commitment" from the US AP to the MSE, a discussion follows that includes reassurances from the US NMFS representatives of the US commitment to the MSE.

There was an informal agreement between the APs to avoid the 2014 yearclass. Waldeck: US industry worked hard to avoid age-2, and asserts that there is a question over appropriateness of the weights used [to represent age-2 fish] to create Table 25. Canadian

Comment (AP Canada): What is the impact of hitting 2 year old south of the US/ Canada border? The Canadian AP wants an MSE to answer this, rather than putting together numbers to support their position. Response (AP US) refers to table 25. Comment (JMC Canada): better to run a model to see what the result is 'most of the time' rather than selecting from limited data. Discussion of what the JMC can do to move the MSE forward. Canadian JMC member suggests cost-sharing opportunities including industry. Believes Sean is the best person to build an MSE model, and timelines are easier to ensure through a contractor (because pay dependent on performance).

Q/A staffing at DFO: could Sean lead and have staff members from DFO, NMFS do work. Discussion of funding possibilities.

**Action item:** Get more information from Sean about cost breakdown and roles in option 2B scenario.

JMC wants JTC to propose how many areas should be in the model (more than two: US/ Canada). JTC/ SRG response: The MSE is an iterative process of stakeholders defining objectives and modelers coming up with solutions. Building in the flexibility to have more 'areas' was generally agreed to be an important part of any spatial model that is developed.

Public comment: POP bycatch is driving catch of age-2, changing that allocation would be a better tool to manage catch of age-2 hake. It seems the question is: what is the value/ cost to Canada of harvesting 2 year olds in the US? If the question is how to maximize yield to both countries, looking at yield per recruit and selectivity for two different countries can answer this, a complicated spatial model isn't required.

Comment (JTC US): Answering availability in countries requires a spatial component.

This could answer: what is the best strategy for utilizing a year-class, and include a metric of catch stability.

JTC's stock assessment research and data needs document was reviewed by the JMC. 1) understanding the system (how do ecosystem components drive hake abundance and availability

What do we want out of the model? Areas and timescales. 2 areas, annual time step to begin, with flexibility.

What are we hoping the MSE will answer? Principles that were adopted in 2014.

What is the impact of catching 2 year olds on Canadian fishery

What is the optimal strategy for dealing with different size yearclasses

What is the optimal strategy for using a strong yearclass

What is the metric that the MSE will produce: biomass?

Resourcing is a challenge that needs to be overcome: expert lead contractor versus government employee.

### Break, after which AP Joins JMC

AP and JMC summarize their separate discussions. Lockhart summarized the JMC's MSE discussion (above) for the benefit of the AP.

**Summary of AP Discussion:** The AP received a presentation from Ian regarding tables showing length age weight frequency. Discussion of exploitation rates' impact on future catch in Canada and US. No discussion of TAC. Some discussion of MSE.

There was a Canadian presentation of concerns regarding exploitation rates: continued increased exploitation rate (higher than on past 2 strong cohorts), what is the impact over the long term of this? There is uncertainty of 2014 yearclass strength, and therefore a desire to be 'ultraconservative' in absence of being able to answer these questions. There has been a fundamental change recently in the level of impact the fishery has on 2-3 year olds.

Comment (AP US): Shares this concern, and it has been reflected in the past TAC selection. Need to use stock assessment and recommendation.

Comment (AP Canada): We are interested in setting a TAC that gets us 2-3 years. However, the US looks at next year, stock assessment is focused on next year. Need MSE to bridge gap.

Comment (AP US): doesn't have the experience with the MSE to know that it will be as useful as Canada. Stronger sense on the US side that there are other ways of addressing the same issues besides an MSE.

US AP requests delegation meeting (30 minutes).

US does not agree that they have a one year view. Mike H, for example has been harvesting whiting for 40 years. Wants to harvest fish as long as very certain that it's not damaging the long term prospects of the stock. The tools available project only information for a one year harvest.

Canada AP: apologizes for language saying US is short term thinking.

Other tools than MSE available? Other models, that aren't an MSE could make more progress.

US Delegation meeting 11:20 – 11:50

### JMC Plenary Session Reconvenes

(JMC US Chair): US delegation has strong commitment to moving forward with a spatial operating model. Preference to use agency funding, but no funding mechanism identified at present. Recommend move forward with discussion on TAC.

(JMC Canada): what if agencies can't come up with the funding, and what is the timeline for knowing if the agencies will or will not be able to fund. Looking for commitment from industry to fund.

(AP Canada): Don't want to be sitting in same meeting next year and no progress.

Lockart/ Ryall will discuss workplan/ framework with Sean Cox.

(AP US): TAC discussion should not be contingent on funding for MSE.

(JMC Canada): incentive to make progress on MSE is the TAC.

(JMC US): Making a TAC decision in 2017 and progress on the MSE not inextricably linked. I'm not hearing that industry came with their checkbooks. Yes, we have a commitment: scoping with Sean. However, the idea of holding hostage the TAC over a \$300,000 check is inappropriate

(JMC Canada): being able to understand the risk in the future is tied to the decisions today

Break – Lunch, AP convenes

2:40 JMC convenes (without AP) and calls Sean Cox

Discussion of Sean's availability and potential roles in MSE development. Plan is for Sean to develop a Scope of Work for his role in the JTC. Cox anticipates that the SOW will be to Coordinate, develop concepts and questions, expected outcomes, model design and documenting steps. Deliverable: draft working paper by July.

Important to identify who is responsible.

### US delegation meeting 3-340

### 345 plenary session reconvenes

(AP Chair, US) presents a report from the AP

The AP considered impacts to Age 2 and 3 fish, and Presentations by JTC and SRG. They support work on an MSE and Benefits to both parties. Data and analysis in stock assessment were also considered, particularly the decision tables (ie, tables 28, 29 and 30)

For 2017 the AP recommends an 597,500 Adjusted TAC.

AP made estimates of what the various sectors would harvest, and their estimated catch for 2017 believed to be under 400,000 mt.

(AP Chair Canada): First week of May AP will meet via conference call, and will discuss sourcing funding if no progress is made from governments.

Public comment opportunity (none given)

JMC requests a written AP report outlining the decision.

## Day 3: Thursday, March 2

0930 JMC Plenary Session

AP was tasked with writing a report outlining the reasoning behind their TAC recommendation, and has been working in camera.

[AP presentation of TAC advice](#) (written document is available on Pacific Whiting Treaty Website).

AP comments on the transparent, open communication with JTC and SRG. Comment from JMC: openness and effectiveness of this process, this is the way is 'ought to be.' AP considers the 2017 Pacific Hake/ Whiting Assessment the best available science. Recommended TAC is well below default harvest control rule, AP recommends a more conservative recommendation in order to reduce the potential impacts of harvest on the whiting stock.

The discussion of the AP focused on the actual projected harvest under the recommended TAC, considered which would be under 400 k tons. Focus on 2010 and 2014 cohorts, this harvest level will allow for continued economic and biological contribution from these stocks in future years. Not making proposal for future year TACs.

Q/A Quantitative advice on future contribution of 2010/ 2014 under this TAC/ harvest level not was not used.

MSE Advice: AP believes that the assessment is best available science but does not adequately inform manages on issues relevant to long term management of p whiting stock

AP supports efforts to expedite an MSE

If Funds/ resources not secured by end of April (in advance of May meeting) by the agencies, AP will convene a meeting to discuss funding alternatives.

[Survey Recommendations from AP:](#)

Take all steps nec. To secure needed resources in absence of a Canadian research vessel in 2017.

AP stresses importance of robust survey in 2017

AP requests survey design team to include the input of two AP representatives in considering the best approach to minimize adverse impacts of survey design changes. (Brian Mose and Dave Smith)

QA concern about design: 15 nmi design spacing

AP Appointment Recommendations to the SRG/ JTC:

For JTC: **Sean Cox**, Andre Punt, and Mark Maunder. For SRG: **Trevor Branch, Allan Hicks**, Dave Sampson, Tom Jagielo, John Horn, and Sandy McFarlane. Preferences in bold.

Paul Ryall thanked AP for report and acknowledged short turn-around time.

Comment: industry and survey team has not had very good coordination, this needs to improve. Particularly for issues like changes in net design and survey design. Industry would like to say 'don't survey there, there are never any fish there.'

**ACTION** May meeting deliverable: Written report from Acoustics about 'reaching out' and survey design changes.

JMC Discussion of TAC and AP Report

(JMC Chair Canada): The expectation of a 400 mt catch in 2017 is higher than 363 mt, the previous record in 2003(?) What does that mean as far as impacts to achieving benefits to each party? Ability to transfer TAC within the US is a limiting factor in catching the whole TAC

Thanks to JTC, SRG, AP for work. There is lots of fish out there, we are contemplating an historic high TAC and historic high catch. Critical to make substantive progress on MSE, especially spatial model to do some scenario testing, rather than the current attempts to forecast from the assessment. Comfort that 2015 is potentially a strong yearclass. Survey will conform 2014 yearclass

Closing Comments from JMC and TAC Acceptance:

We have built faith in process, strong bilateral team. WE have been fortunate to have 5 years to built respect and trust, which will be useful in the inevitable point in the future when stock levels are lower.

The stock will not stay at historic highs, and we will need our strong time when the stock is at lower levels. Comfortable with number than has been proposed by the AP. Some discomfort expressed with the current TAC recommendation. Looking at the 50% likelihood decision tables, pattern of change and discontinuities. 497 to 600 is fairly consistent – above 600, probability of bad things happening double. Would not have been able to support above 600. Look forward to development of MSE. When strong yearclasses are less frequent, will enable to provide stability. Look to the future and put in position to improve management.

Paul Ryall is retiring and may not return, the JMC expressed its thanks for the role he has played in creating this successful process, and that it has been a privilege to work together.

No objections from JMC, accepts AP recommendation of 597,500 mt.

MSE Discussion

Contract with Sean Cox to work with JMC SRG JTC and AP on developing conceptual framework for model (questions and models). Report by April, for May meeting on results of those discussions.

**ACTION July deliverable:** Outline allowing programmers to start creating model.

Feedback from DFO on contracting options. Sean is already on contract with DFO through March.

Impact of any strong cohort at any age: What is the impact of catch? What does it mean if they're allowed to spawn or not?

Impact of catch on spawning age (all ages) in terms of production over life.

Start out simple, 2 geographic areas and annual time-step. 'Don't create a model that can't be easily altered.' Outcome: biomass, possibly economic.

Question (AP US): Population size and cohorts in size: is there a statistical correlation with recruitment? Correlation between level of recruitment that occurs and population of smaller fish. (Does increased population have a negative impact on recruitment? ) (EG are they eating the YOY?)

Comment: Stability in harvest is desirable.

Re-run question of annual and biannual surveys against more complicated MSE (was run against first MSE)

What is the most appropriate harvest policy?

### Canadian Research Vessel Update

Request for bids will be released in next couple of weeks. Heard from Dr. McClure, NOAA has approval to use Shimada for full survey but survey design will be revised.

S. of pt. Conception: AP wants to know how critical. JTC: current proposal does not include that area.

AP's preference is that the Canadian vessel also participate, to insure that the spacing is not increased (which in turn increases uncertainty). Want to have AP input into survey design, and modifications that might be needed.

Discussion of how to consolidate recommendations to one place.

SRG report to JMC could incorporate recommendations from AP? In Stock Assessment?

**ACTION: RE:** appointment: Michelle finds out if people are available, actual appointees is decision of parties. Canada is changing the way they make appointments.

### Planning/ Schedule

Next year is a survey year, so the shortened time between end of fishing year/ stock assessment will not work.

Will discuss in May.

**ACTION:** Frank and Paul will survey SRG about when the stock assessment can be done, in order to plan next years' meetings

Comment (AP Canada): The loss of January meeting/ check in was not beneficial. Preference to have less emphasis on December meeting instead, because fishery data is more final in January. Also the Ap would like to receive information about design changes to the survey (ie marine mammal excluder device on net in survey).

A May 4 JMC meeting (1 day) is scheduled in Vancouver, BC—

Just JMC travel costs will be paid by NMFS.

Request for Webinar access to meeting

### Action Items- Summary

**April:** NMFS and DFO determine if funding for MSE work available. If not, AP will have call and seek other funding sources.

### May

1 Day May 4 JMC meeting in Vancouver, BC

Next year is a survey year, so the shortened time between end of fishing year/ stock assessment will not work. Will discuss schedule in May.

**ACTION:** Frank and Paul will survey SRG

### **Deliverables:**

Written report from Acoustics about 'reaching out' and survey design changes.

Get more information from Sean about cost breakdown and roles in option 2B scenario.

### July

**Deliverable:** Sean Cox. Outline allowing programmers to start creating model.

**Other Action Item:** appointments: Michelle finds out if people are available, actual appointees is decision of parties. Canada is changing the way they make appointments.

Schedule next years' meetings