CAAR-MHC Mortality & Morbidity Workshop November 18, 2009

Comments on Proceeding Transcript as Submitted by the Conservation Coalition to the Cohen Inquiry

Opening Comments

Page Number: 4

Auditory Track #: 1, beginning of Track 2

Auditory Time Sequence: 13:28 – 15:00

Concern: Missing opening comment by Dr. Crawford Revie explaining the intent of the workshop, "I hope to take two more minutes just on procedural things because we want to get to Bengt and the time he needs for his presentation. We have two more presentations we need to get to before coffee and it would be nice to have the maximum amount of time to discuss them. So a couple of practicalities in terms of the way we hope to run the meeting. The first thing is as you may have noticed we have a technician keeping us on track here. One of the things that is happening is a recording of the session just so that we can have a transcription of what happens. It will be helpful for us when we are writing up the notes, particularly during the discussion session. So just so you are aware of that. **And partly because of that I think I have to take slight issue with you Craig, on the issue of, I have been told by the DFO folks that because of the judicial review process it's not really appropriate for them to be involved in the discussion of the sockeye and the Fraser River sockeye and we will have to ask them to be excused**… So I think if it's really important that we have to go down that road we can flag that and do so. But otherwise I think there is enough material being presented today – I hope – on all that is going to be presented today. There really is no harm in someone making a reference to that, but I don't think we should have a major discussion on that unless we wish to have it separately. We can talk about that at lunch to make sure we are all happy. **I think we just have to respect the constraints within everyone is working within. And we weren't really primarily focusing on the sockeye issue in this workshop.** But let's not prejudge that. The whole process that CAAR and MHC engaged in was much more about moving towards consensus, and trying to explore through dialogue the issues rather than being in any sense antagonistic."

Craig Orr, "**Crawford just to let you know if you take out the word sockeye in this meeting that is fine by me. But if you include discussion on fish of that size it would be really helpful**".

Presentation: Dr. Larry Dill

Page Number: 29-30

Auditory Track #: 17 – beginning of 18

Auditory Time Sequence: 8:32 – 15:00

Concern: Missing approximately 6.5 minutes of discussion, where Sharon DeDominicis asks "How much variation is there for non-parasitized fish?" Point is repeated in different words by Dr. Farrell, Dr. Saksida, and Brent Hargreaves. In Auditory Track #22 (Time ~11:30) Dr. Dill recognizes that study does not investigate the schooling behaviour of individual fish, and therefore cannot compare parasitized and non-parasitized schooling behaviour. This has not been reflected in the 'overall findings' section of the text.

Presentation: Dr. Martin Krkosek

Page Number: 29-30

Auditory Track Sequence: Track 19 Time 14:10-15:00 continuing through Track 20 Time 0:00-6.25

Concern:Missing approximately 7.5 minutes explaining the characteristics of the parasite dynamics included in the Parasite Process of the model. Model parameters and associated assumptions are critical to understanding how the model works.

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Auditory Track #: 22

Auditory Time Sequence: 2:50 – 11:50

Concern: Bulk of discussion between Drs Krkosek, Saksida, Revie, Farrell and Dill is missing from text. Critical discussion on the ability of the model to effectively predict mortality during 1 versus 80 days of exposure, patterns of reinfection indicated by varying lice stages in the wild based upon multiyear datasets (not just 2004), differences in the model with a single farm (15 days exposure) compared to multiple untreated farms with 80 days exposure, acknowledgement that motiles are the most damaging louse stage,concept that experiments by Drs Farrell, Dill and Krkosek leading towards same mortality threshold (direct plus indirect effects), agreement between Dr. Farrell and Dr. Krkosek on the time it takes wild fish to learn to eat commercial feed, agreement on the ability of pinks to shed lice, agreement that mortality due to a single exposure event is <10% and that the Krkosek model predicts <5% mortality from a single exposure which corresponds to empirical data. Challenge that the field experiments and model (multiple exposures) do not predict 80% mortality to pink salmon, questions on the utility of the alpha value to predict adult stage louse affects. Also, Dr. Dill recognizes that the schooling behaviour experiment that he presented did not monitor schooling behaviour of individual fish and "if we had the data for the other 29 fish we would have a mean, but we would also have a variance around it. Then we could ask is that point for the parasitized fish significantly outside the range, but we don't have that, we don't have the data, we can't individually identify fish…"

Section Entitled "Messages/things to agree on:"

Concern – missing text – example Bullet #1

Page Number: 37

Auditory Track #: 24

Auditory Time Sequence: 5:20 – 10:12

Concern: Key elements in the discussion have not been included in the text; such as Lep. salmonis in the Atlantic and Pacific oceans are now known to be genetically different - yet little is known of the behavioural differences. The host-parasite relationship differs between countries and jurisdictions; therefore, data and associated interpretations should not be taken 'carte blanche' from European or Eastern Canada in terms of plugging mortality thresholds into models and the propensity of resistance to therapeutants. The differences between Caligus and Lep.salmonis (host-parasite relationship) also need to be better understood.

Concern – different emphasis on key findings – example Bullet #2

Page Number: 38

Auditory Track #: 24

Auditory Time Sequence: 10:20 – 15:00

Concern: Different interpretation on what text should be highlighted. In Transcript "Studying morbidity/mortality of parasites on fish in lab tanks and/or net pens may considerably underestimate true mortality rates in the wild" is highlighted. MHC would have highlighted 3 sections in the text of Bullet 2:

1. Craig: Studying morbidity/mortality of parasites on fish in lab tanks and/or net pens may considerably underestimate true mortality rates in the wild. Crawford: you could conversely say, based on the kind of model Marty gave us that under certain assumptions you might also overestimate mortality. Perhaps we could more generally say that you shouldn't extrapolate in either direction?
2. Simon: Pink salmon appear to be relatively resistant compared to chum salmon and certainly compared to the species investigated in Europe, in a relative sense we are beginning to see trends.
3. Larry: I think we should pay more attention to indirect effects. A really important one is disease.