INTERNATIONAL OSOYOOS LAKE BOARD OF CONTROL

JUNE QUARTERLY CALL MINUTES

Monday, June 10, 2024
09:00-11:30 AM (PST)

BOARD MEMBERS	
Dave Hutchinson	Chair, Canadian Section
Scott VanderKooi	Chair, U.S. Section
Connie Chapman	Board Member, Canadian Section
Sue McKortoff	Board Member, Canadian Section
Brian Symonds	Board Member, Canadian Section
Anna Warwick Sears	Board Member, Canadian Section
John Arterburn	Board Member, U.S. Section
Col. Kathryn Sanborn	Board Member, U.S. Section
Kris Kauffman	Board Member, U.S. Section
Arnie Marchand	Board Member, U.S. Section
BOARD STAFF and ASSISTANTS	
Martin Suchy	Secretary, Canadian Section
Sarah Dunn	Secretary, U.S. Section
Sonja Michelsen	Technical Advisor to Colonel Kathryn Sanborn
Kate Alexander	Canadian Section Assistant
Jamie Kolodinsky	Canadian Section Assistant
IJC REPRESENTATIVES	
Rob Caldwell	Engineering Advisor, Canadian Section
John Allis	Engineering Advisor, U.S. Section
Catherine Lee-Johnston	Environment Advisor, Canadian Section
David Herman	Senior Policy Advisor, U.S. Section
Jeff Kart	Communications Liaison of the IJC, U.S. Section
Christie Chiasson	Communications Liaison of the IJC, Canadian Section
GUESTS	
Craig Jordan	Washington State Department of Ecology
Elinor McGrath	Okanagan Nation Alliance
Chris Fisher	Confederated Tribes of the Colville Reservation
Genevieve Brown	Northwest Hydraulic Consultants
Nick Sutfin	U.S. Geological Survey

List of Abbreviations

ac-ft	Acre-foot
cfs	Cubic feet per second
Ecology	Washington State Department of Ecology
ft	Foot
HRU	Hydrologic Response Unit
GCM	Global Circulation Model
IJC	International Joint Commission
JARPA	Joint Aquatic Resources Permit Application
k.ac-ft	Thousand acre-feet
ONA	Okanagan Nation Alliance
NHC	Northwest Hydraulic Consultants
NWRFC	Northwest River Forecast Center
SCADA	Supervisory Control and Data Acquisition
SSP	Shared Socio-economic Pathways
USGS	United States Geological Survey

Welcome, Introductions & Approve Meeting Agenda

Mr. Dave Hutchinson (Board Chair, Canadian Section) welcomed Board members and IJC advisors to the meeting and cautioned of the tight timeline. He gave an update on the Board's secretaries. He thanked Dr. Andy Long for serving as the U.S. Board Secretary and welcomed Ms. Sarah Dunn as Dr. Long's replacement. Ms. Katie Slimmon will be acting as the Canadian Secretary for Mr. Martin Suchy from June 17 to September 2. Mr. Hutchinson then gave a quick overview of the meeting's agenda and highlighted the small changes to the one that had been previously sent out.

Approval of March meeting minutes

Dr. Anna Warwick Sears (Board Member, Canadian Section) moved to approve the March minutes. Ms. Sue McKortoff (Board Member, Canadian Section) seconded the motion. No objections were received, and the minutes were unanimously approved.

Hydrologic Conditions and Drought Declaration

Mr. Suchy gave an update on the local hydrologic conditions and the status of the drought declaration. The cooler temperatures observed in May have caused the mid and high-elevation snowpacks to melt later than previously anticipated. Lower-elevation snowpacks fully melted earlier than normal. Similkameen snowpacks are lower than normal (37%) and Okanogan snowpacks are lower than normal but higher relative to Similkameen (73%). All three drought criteria were projected to be met in April, and the Board had declared that Ecology could manage lake levels within the Condition 8 rule curve. Since then, Okanagan Lake level hit the condition 8bii threshold (June 5) and the net inflow is now projected to surpass condition 8bi. If both were to hit the threshold, the criteria for a condition 8 drought declaration would not be met. The Similkameen River at Nighthawk April-July forecast (condition 8a) is still well below the drought threshold. The Similkameen River at Nighthawk recorded a peak in

mid-May that was significantly lower than last year's and the NWFRC is predicting a decrease in flows. Okanagan Lake has accumulated 182,166 ac-ft of net inflow since April 1. If the lake continues to record inflow at the same rate as the previous week (~2800 ac-ft/day), it should surpass the 195 k.ac-ft threshold within approximately 5 days. However, the potential for negative net inflows in July should be taken into consideration. Osoyoos Lake has been maintained within the Condition 8 drought rule curve, coming close to the upper limit on 3 occasions. The lake level peaked at 912.44 ft on May 22. Inflow and outflows were balanced on June 9 at approximately 532 cfs. Mr. Suchy added that a news release with updates to freshet and drought conditions is being prepared.

Board members Anna Warwick Sears, John Arterburn, and Brian Symonds each expressed their concerns about rescinding the drought declarations and supported the notion of holding off on any decisions until early July. There was a discussion on the procedural requirements of the Board and the possibility for Ecology to apply for a condition 10 variance should the Board rescind the declaration. Mr. Suchy clarified that the order states the Board can rescind Condition 8 if they feel that the conditions aren't being met. Mr. Kris Kauffman (Board Member, U.S. Section) cautioned that the Similkameen River flows are very low and expressed worry about the impacts of the lack of water downstream in the U.S. Ms. Michelsen suggested looking at the water supply forecast for Tonasket as it is more up-to-date than the May 1 BC Snow Bulletin and may provide additional information about basin conditions. Mr. Arterburn emphasized this year's Similkameen River water supply is abnormally low and suggested that the magnitude of this condition should be considered in addition to the three criteria when declaring a drought. Mr. Scott VanderKooi (Board Chair, U.S. Section) asked about how the regulation of Okanagan Lake impacts its net inflow value. Dr. Warwick Sears confirmed that the Condition 8bi threshold has been surpassed due to the active management of the reservoir, not natural inflows. She also mentioned the potential public concern if later in the season, Okanagan Lake levels were decreased to refill Osoyoos Lake. Mr. Symonds added that residents aren't concerned about the current Osoyoos Lake level.

The Board consensus was to continue to allow operations of lake levels under the Condition 8 rule curve, until the Board meets again in early July, at which time conditions will be reassessed. In the meantime, the Board will let Zosel Dam operators know that they are monitoring the conditions closely. A doodle poll will be sent out to schedule the meeting.

At this point guests were let into the meeting and Mr. Hutchinson gave a brief update on the drought declaration conversation to Mr. Craig Jordan (Ecology).

<u>Zosel Dam Project (Ecology) – update and discussion</u>

Mr. Craig Jordan gave an update on the Zosel Dam gate replacement project progress. Ecology is opening bids on June 12, with a submission deadline of July 9. They will be proceeding with permitting concurrently, doing each

permit individually and not using JARPA. A permit, which will include updated project specifications, will be sent to the Board soon. All gate work is to be completed by April 16, 2025. Ecology will allow for two gates to be under construction simultaneously. The SCADA and cameras will be a separate contract.

Mr. Kris Kauffman asked about considerations given to access road upgrades. Mr. Jordan responded saying access road upgrades will be a part of the project and will be performed ahead of time through a separate bid. The old right-of-way has been mapped out and Ecology is working with the landowners to get the easement finalized. The biggest concern with the current road is accessing the generators.

Mr. Hutchinson asked about the plans for stoplog replacement. Mr. Jordan explained that they have been experimenting with stoplogs on the downstream side, but that they don't have anything with a fish window. This year they are spilling over the full-length stop log in a single gate. They may move a stoplog with a fish window from the upstream side to the downstream side and replace the one upstream. Mr. Arterburn floated the idea of cutting stoplogs in half to adjust the flows to what is desired.

Fish Passage Developments

Mr. Chris Fisher and Ms. Elinor McGrath are working with John Arterburn to understand the fish passage at Zosel Dam and were introduced to the Board. They are hoping to expedite access through Zosel Dam, especially for the sockeye. Mr. Fisher emphasized that this project was a group effort and thanked John Arterburn, Elinor McGrath, Karilyn Alex, Jeff Fryer, Craig Jordan, Marc Egerton, and Shaun Reimer for their contributions.

Mr. Fisher provided an overview of the types of salmon in the Okanagan. He explained that fish pass through Zosel Dam twice in their lifetimes, traveling downstream as juveniles and returning through the system as adults. The current exits and entrances through the Zosel Dam structure were shown. The risk of predation and contact injuries to juveniles as well as the low flow through fish ladders and thermal barriers for the adult fish were emphasized as challenges. To aid the smolts, there is an opportunity to install a stop log downstream and fully open a gate to increase flow. This option is being trialed in 2024. Evidence collected so far has shown a positive impact on smolt survival. In addition to opening a gate to optimize adult passage, coordinating with Okanagan Lake operations to time water releases with water temperature and PIT tag detection was also suggested.
Before concluding, Mr. Fisher called attention to the groups involved in the sockeye salmon restoration. Mr. Hutchinson voiced his support of the coordinated release idea.

Phase II Modeling (NHC) – update and discussion

Ms. Genevieve Brown from NHC gave an update on the Osoyoos Lake Climate Change Vulnerability Study's Phase II modeling progress. She provided a recap on what had previously been discussed in NHC's check-ins with the

Board. For the hydrologic modeling, NHC has downscaled PCIC data to 500m projections and will be using 5 different GCMs for two SSPs from CanDCS-M6. NHC used the ClimDown Rpackage to support downscaling efforts. The hydrologic modeling group aggregated the climate data to the HRU average. All 10 scenarios assuming present-day operations have been rerun for the Similkameen and Okanagan models.

Dr. Warwick Sears asked what NHC is using for the water demand on the U.S. side. Ms. Brown explained that they use water licenses, as well as applying the Canadian lake basin averages to the U.S. side.

Ms. Brown presented preliminary results extracted from the hydrological model for four different time periods. Trends identified show an increase in both temperature and precipitation. The Similkameen Basin showed more precipitation than the Okanagan Basin. Although there is more precipitation throughout most of the year there is less snow projected to fall and the date of maximum snow accumulation is expected to shift earlier. Streamflow freshet peaks are also expected to be seen earlier and at a smaller magnitude. More flow in the winter months is also anticipated. Okanagan Lake also showed trends similar to the streamflow. Osoyoos Lake results were different because of the upstream regulation. Once the water demands have been updated, the models will be rerun.

The hydraulic model has been using the Okanagan DEM, USGS DEM, and 2021 bathymetry. Some large jumps in elevation have been identified between each dataset. NHC is investigating the source of the errors. Some sensitivity testing may be done on the boundary. The rough 2D model is helping inform the development of the 1D model.

Next steps identified were to finalize the hydrologic model, send in data requests, and schedule a check-in meeting in July. The need to have the 1D model up and running to inform the feasibility of the long-term analysis was pointed out. Ms. Brown confirmed that they are on track for a deliverable in October.

Mr. Kauffman brought attention to the recorded historical stream flow conditions (1976-present) available on the US side.

Ms. Michelsen suggested grouping the data to see the full range and not just the averages to improve data visualization. Ms. Brown agreed and said they will look into doing so.

Mr. Arterburn asked if NHC had considered any changes that might occur following the removal of Zosel Dam. Ms. Brown said no, their project scope only considers current conditions. Mr. Arterburn also asked if it would be possible to have access to hydraulic models. The 1D model is a part of the deliverable and Mr. Hutchinson

confirmed it will be open source. Ms. Brown said the 2D model may be able to be shared with the caveat it was used for the 1D model development.

Mr. Fisher brought up the potential for information sharing between NHC and the Enloe Dam removal feasibility study. Ms. Brown said they could share results from previous studies, but the group would have to wait for the current results.

Mr. Hutchinson asked why the predicted values for Osoyoos Lake jumped at the beginning of the month. Ms. Brown answered that it could be because of how Okanagan Lake operations were computed in the model. Mr. Hutchinson suggested continuing this discussion at the July check-in, and that the reasoning should be communicated to the public.

Mr. Arterburn asked if NHC was planning on making recommendations on how operations may need to be changed in the future. No system changes are being modeled, so this is out of the current project scope.

Ice Jam (USGS) – update and discussion

Dr. Nick Sutfin (USGS) gave a brief update on the status of the Ice Jam project. The hydrological and meteorological data has been compiled and an analysis on the hydrological conditions conducted. They are currently working on the report. He noted that most of the data available is limited to more recent years, however the wind speed and direction data goes back to the mid-1990s. They used Osoyoos Lake discharge and level, in addition to satellite imagery, to identify ice jam occurrences. So far there have only been 4 confirmed during the model period, however, there are more potential ones identified. During an ice jam, their data shows a drop in the temperature of the Okanogan River and Osoyoos Lake (less pronounced). More significantly, there is also an increase in wind speed and change in direction. The results and study still need to go through the appropriate reviews, including aa courtesy review by the Board. It was added that there has been a change in temperature and wind direction over the long-term record.

After a brief discussion, it was decided to add the most recent ice jam (January 12, 2024) to the analysis, raising the number of jams analyzed from 4 to 5. Dr. Sutfin planned to meet with Mr. Arterburn to make sure they haven't missed identifying an ice Jam.

IWI proposal Osoyoos Lake Operations Model

Ms. Michelsen provided an update on the IWI proposal for the Osoyoos Lake Operations Model. The proposal has yet to be completed. She explained the tool will simplistically estimate inflow, outflow, and lake level. Ms. Michelsen plans to have the proposal written up this summer. Dr. Warwick Sears suggested accompanying the

Osoyoos Lake operations model with a log to capture Zosel Dam operators' decisions. Mr. Arterburn suggested working with the fish group to better account for fish passage in the operational schema. Ms. Michelsen clarified that her work will solely be on the proposal, but that she will try to incorporate these suggestions in the proposal.

IWI proposal Osoyoos Lake Nutrients

Dr. Warwick Sears hoped the Osoyoos Lake Nutrients initiative could move forward as an IWI project. Mr. Rob Caldwell suggested finding links between the project and the Directive and migrating the proposal over to the IWI template. The IJC may only fund a portion of the project so identifying other funding and in-kind contributions may be necessary. Dr. Warwick Sears will communicate to ONA the need for a broken-down budget that highlights the connection. Ms. Dunn and Ms. Slimmon were selected to help with the IWI template migration.

Mr. Arterburn mentioned that people from fisheries have indicated interest in applying for some of the funding and he asked for the form and information on the process. Mr. Caldwell clarified that the IWI team seeks submissions twice a year but that proposals can be sent in at any time. Proposals don't technically need to be submitted by the Board, but they must meet seven criteria. One of the criteria is tied to being on the Board's workplan, so the Board would have to endorse the proposal. Ms. Dunn sent the proposal template to the meeting attendees.

IWB Update

Ms. Catherine Lee-Johnston provided an update on the status of the IWB scoping and feasibility study. She voiced her appreciation for the Board's engagement and assistance with the meetings held with local groups in late 2023 and early 2024. The Commission is finalizing the report on those meetings.

Ms. Lee-Johnston asked for feedback on the draft outline for the feasibility study before she briefs the Commission in early July. The IJC will be leading the feasibility study but is looking for Board support.

Dr. Warwick Sears volunteered to be involved. She also expressed that she thinks including the Similkameen in the IWB would fill a huge gap and change Board operations. This potential addition would call for a discussion on the pros and cons early in the process.

Mr. Suchy said that it would be great to see the scoping report before proceeding and that he believes the provisional timeline may be a bit optimistic. Ms. Lee-Johnston said that there is a little bit of wiggle room in the provisional timeline.

Mr. Arterburn said he would like to volunteer but doesn't have time to serve in a volunteer role. However, if there were funding available, he may be able to provide his support. Ms. Lee-Johnston said she would look into potential IJC funding, especially to cover travel to meetings as that is estimated to be the biggest expense.

It was stated that the composition of the feasibility study team will primarily be IJC staff and IOLBC members. The exact size was not defined.

Mr. Marchand said that ONA and the Colville Tribes would like for the Similkameen to be included and that they may want to be a part of the feasibility study.

Mr. Kauffman asked where in the process are sovereign (State, Provincial and Tribes/First Nations) decision making is considered. The Commission will work with governments during the feasibility study to assess the interest, and should the study indicate the potential for an IWB, the Commission will work directly with the governments to move the IWB forward.

Round Table

Mr. Suchy provided the dates for the upcoming meetings, which included the September 4th and December 9th quarterly calls, Annual board and public meeting (October 3rd), field trip (October 4th), and fall semiannual meetings (week of October 21st). He reminded the group that a freshet update news release will be prepared.

Dr. Warwick Sears mentioned that she is running for provincial office on Oct 19 and if she is voted in there may need to be discussion on how to proceed with her Board membership.

Mr. Hutchinson adjourned the meeting at 11:24.

Action Items:

- Schedule a board meeting at the end of June to check in about drought conditions and lake level management. Discussion on rescinding Condition 8 and recommending Condition 10 variance possibly.
    - Set up Doodle Poll.
    - Request for mid to later in day from Mr. Arterburn. Vacation & holiday considerations.
- Schedule July check-in for NHC modeling
- Work with Dr. Warwick Sears to break down the budget for the nutrient study and transfer to the IWI proposal.