

**OKANAGAN WATER STEWARDSHIP COUNCIL**  
*A Technical Advisory Body to the Okanagan Basin Water Board*  
**MINUTES OF THE MEETING HELD March 11th, 2021,**  
**VIRTUALLY THROUGH THE ZOOM PLATFORM**

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**COUNCIL MEMBERS:**

**Present**

Emeritus, Chair  
BC Wildlife Federation – Region 8  
Canadian Water Resources Association  
Agriculture & Agri-Food Canada  
UBC Okanagan  
Ministry of Agriculture, Food and Fisheries  
City of Kelowna  
City of Kelowna  
Independent  
Okanagan College  
Regional District of North Okanagan  
BC Agriculture Council  
BC Groundwater Association  
Regional District of Okanagan-Similkameen  
National Hydrological Services  
Interior Health Authority

Denise Neilsen  
Lorne Davies  
Brian Guy  
Kirsten Hannam  
Bernard Bauer  
Andrew Petersen  
Rod MacLean  
Ed Hoppe (Alt)  
Renee Clark  
Allison O’Neill  
Tricia Brett  
Hans Buchler  
Marta Green  
Zoe Kirk  
David Hutchinson  
Rob Birtles

**STAFF:**

OBWB, Office and Grants Manager  
OBWB, Executive Director  
OBWB, Water Stewardship Director  
OBWB, Communications Director  
OBWB, Policy and Planning Specialist  
OBWB, Technical Writer and Researcher

James Littley  
Anna Warwick Sears  
Nelson Jatel  
Corinne Jackson  
Kellie Garcia  
Farah Kanani

**GUESTS:**

Eterna Consulting  
Northwest Hydraulic Consultants  
Water Supply Association BC  
Larratt Aquatic Consulting Ltd. (LAC)  
District of Peachland  
Environment and Climate Change Canada  
Prince George  
Recreation Sites and Trails BC  
UBCO

Scott Smith  
Joel Trubilowicz  
Patti Meger  
Heather Larratt  
Shawn Grundy  
Jeremy Fyke  
Dennis Einarson  
Ian McLellan  
Nicholas Peleato

Freshwater Life  
Copper Sky Productions  
Copper Sky Productions

Gregg Howard  
Jan Vozenilek  
Ryan Cope

## 1. CALL MEETING TO ORDER

Denise called the Zoom meeting to order at 1:04 pm by welcoming members and guests and acknowledging that we are meeting on the unceded territory of the syilx people, the original inhabitants of the Okanagan. Introductions commenced around the table. This is the ninth Zoom meeting of the OWSC.

## 2. APPROVE AGENDA

Agenda was approved as presented.

**Moved by: Brian Guy**

**Seconded by: David Hutchinson**

***"That the agenda for the March 11<sup>th</sup>, 2021 meeting of the Okanagan Water Stewardship Council be approved."***  
***No objections.***

## 3. ADOPTION OF MINUTES

**Moved by: Bernie Bauer**

**Seconded by: Hans Buchler**

***"That the minutes from the February 11<sup>th</sup>, 2021 meeting of the Okanagan Water Stewardship Council be approved."***  
***No objections.***

## 4. BUSINESS ARISING (from previous meeting):

**a) Invasive Mussels (update) (James Littley)**

This month we wrote another letter to the provincial government, the board sent it a week ago. Each year we do a gap analysis to determine what might be missing from provincial action to prevent invasive Zebra and Quagga mussels. This year we are asking for 6 specific items:

1. Restore funding to the provincial inspection programme to \$3.8 million/year and adjust for inflation. That is based on 2017, the year they had the highest funding.
2. Get legislation requiring all watercraft to pull their drain plugs before they are transported on public roads in BC. It allows enforcement officials to determine who is a higher risk watercraft or not.
3. Review and update the early rapid detection response plan which was first published in 2015. Would like to have quarantine of invasives to be included.
4. Provide a toolkit for local governments

specifically to do vulnerability assessments and to retrofit infrastructure to make it more resilient in case of an infestation.

5. Have all out of province watercrafts inspected before launching in BC waters and that is something we have been calling for several years now.

6. Provide more funding for regional invasive species groups which are really the boots on the ground. Educating the public and provide water monitoring.

Many of you may have seen this in the news – discovery of Zebra mussels in these aquarium plants called moss balls – actually a form of algae sold at pet stores. Once this story was out, the conservation officers started doing a sweep. A biologist discovered Zebra mussels in her on aquarium. Moss balls have been confiscated from over 600 pet stores. They found several in the lower mainland. If the water in the aquarium gets discarded into the water supply it can be an issue and provincial guidelines have to be followed.

Corrine: We have been following it closely and if people are looking for update to date information if you follow any of our social media channels you can get stay informed and share. It isn't only through pet stores but even online purchases. Conservation officers are working with Canadian Food Inspection Agency to try and stop the importation of these.

Scott Smith: James were any pet stores in the Okanagan checked by the conservation staff?

James: Yes they did check in the region and they have not found any infestations here.

Corrine: They believe those were from Singapore and have been ceased and are no longer for sale. 2200 have gone to a lab to be tested to see if there are any alive. These things were shipped dry and we know they can live out of the water for 30 days therefore if they came in after 28 days they can still be restored in water.

## 5. BOARD REPORT (Anna Warwick Sears):

- o Grant applications for \$350,000 funding.
- o Corrine presented on education guides.
- o Caroline – Osoyoos Lake Water Forum, planning to have in October this year. Still a little bit of uncertainty around vaccinations. It's going to be indigenized - working with ONA and Okanagan Indian Band.

- Brian Guy is one of the chairs of the programme committee and if you have any questions you can contact him. We are interested all things water and doesn't have to be directly related to Osoyoos Lake but anything that influences it.
- Broadening our partnerships outside of the province.
- Kellie reported on the source water protection initiative. Just about to finish up the SWP tool. Oriented towards Okanagan examples.
- We just launched the newly updated and revised the Okanagan Home Guide, purely digital version on our website. Interesting examples for homeowners to reduce runoff on their property.
- Nelson spoke about progress on the OBWB new hydrometric service and also the flood resilience and wetland projects. Helping the Ministry of Environment on water quality testing. We have a webapp/database on long-term water quality and make change related graphs or download the data.
- Every May we have a joint OBWB and WSC meeting – 9 am – 12 pm on May 4<sup>th</sup>. Our special speaker will be Ed Zimmerman. He is specifically in charge of BC's new watershed security strategy. It is not a normal council day because it is on a Tuesday.
- We have had communication in the last couple of weeks from the province – related to calling on the province to be further engaged in the Okanagan Lake Regulation system review and update. This is how the level of OK lake is managed trying to accommodate changes for climate resiliency. We have been working closely with Shawn Rimer closely throughout the whole process since the flood maps. Shawn and I have been leading a gap analysis which is almost completed being written and developed by Brian Guy with a host of experts guiding him. We acknowledge we are working in partnership with government staff, but what we really need is for the elected officials - ministers and the people setting the budget in the province to help seriously fund it. This is a big issue for communities in our province. If you want to talk more about it, please contact me.

**6. GUEST SPEAKER: Ryan Cope, Gregg Howard, Jan Vozenilek (Copper Sky Productions) Micro-plastics in the Okanagan?**

- Ryan: microplastics found on a 2008 sea education expedition. Witnessed

macroplastics found in a Mahimahi. 2012 – Midway Atoll National Wildlife Refuge working with US wildlife for seabird monitoring through necropsies. 2019 – Mahahual, Quintana Roo, Mexico – plastic pollution right along the beach. Conducted microplastic research as it is less known and difficult to see. All samples had microplastic in them. 2021 – Okanagan and beyond – working with Greensteps Solutions have had the opportunity to do local cleanups. We found nurdles – pre-production plastic pellets and small parts of styrofoam. It is getting worse. We need to consider how fast we are putting plastic into the environment and mitigate as much as possible. Both producers and consumers are aware of this and are attempting through assessments such as Life Cycle Assessment (LCA) to mitigate pollution.

- Gregg: There is no single island I have been to where I have not come across plastic pollution. Freshwater ecosystems represent 1% of the Earth's surface. Historically what we have seen is extinctions in freshwater ecosystems (27%) caused by overfishing, pollution but habitat destruction is the by far the largest cause (60%). All these problems can be solved however some are more complex than others.
- Pollution is harder to recover from – biosecurity principles apply. What is happening in the ocean and is it potentially happening here in the Okanagan Valley Lakes?
- Yearly marine plastic leakage is 12 Mt/y i.e. 3% of annual plastic production (415 Mt/y). Plastics don't all go away and some degrade faster than others – 85% end up as sediment, 14% in water column and only 1% is visual at surface.
- Plastics are in the global ecosystem and food chains. Patterns we are seeing in the marine system is mirrored in the freshwater system but disproportionately less researched. Limited understanding of microplastics and consequences in the Okanagan Valley.

Anna: I am curious about the plastic in the lake but also how much of the garbage floats out of the Columbian river and into the Pacific.

Gregg: Three systems in Asia that deposit into the Pacific. It gets concentrated further downstream.

Denise: To what extent do the dams on the Columbia help as a barrier with the larger items.

Ryan: That would present a significant barrier and would require collaboration to study that. If you were to follow the journey of the garbage/plastic. So much of the pollution we see is still only a small percentage of what is out there.

Glenn Sinclair: are we connecting with these furniture makers that are now turning all these plastics into lawn chairs and other outdoor & patio items? does two things: cleans up plastic and reduces the need for trees & their wood.

Gregg: What is clear from the data is coming out is that while the benefits of plastics is clear, however globally we are producing a lot more than the environment can handle. We are putting enormous amounts of plastic into the ecosystem and is accumulating and the environment is not able to keep up. Not all plastics are going away within our lifetime. It is alarming to think about the volumes of plastic and its consequences. Thinking about how we are using plastic is imperative and recycling and clean up are some of the solutions available.

Ryan: We find a solution of using plastic as lawn furniture but we have to think about further down and how that will break down.

Tricia: How our plastics that end up in landfill being dealt with?

Jan: The impact is reduced as a product is consistently used over and over again. It is not a new concept – the idea of circular economy. Consumers need to be conscious of purchasing products that are long term. Cradle to Cradle book – technical read.

Farah: I attended the ACLCA conference last year and learnt how industry should perhaps perform LCA studies on products at an earlier stage during product development to reduce emissions and plastic pollution.

Dennis: What is the impact of your body from consuming so much sushi?

Gregg: From my understanding, some data suggests there could be endocrine disruptors, potential for hormonal disruption if there is accumulation in the body to reach the

bloodstream and tissues through consumption in muscle. It can also transfer between placenta. There is enough evidence to show that it is hazardous.

Ryan: the toxins in the plastic can leach into the body and what is on the plastic and what it is made out of is of significant concern.

Dennis: At this point we have been doing studies on microplastics of about 6 microns however we have not looked at how much of those can be broken down by digestive enzymes.

Corrinne: It is frustrating seeing people coming out of the supermarkets with single use plastic. Shoreline clean ups – it is something we have promoted through collaboration. The federal government has said they were going to re-introduce a ban on single-use plastic and I know it will raise awareness but I am wondering how much you think it is going to make a difference?

Ryan: I think it is a good step in the right direction. Whatever is in our sphere of influence however there are things that we cannot control and the provincial and federal governments need to tackle this issue. We will make even more still and that somehow needs to stop and slowdown.

Gregg: It is uncertain if this single plastic use ban will do for the pollution however it will raise awareness and create controversy in communities.

Brian: Have you considered partnering with the university as there is a lot of research on-going on this topic? Is there anything you can suggest that local governments and local districts can do better or more of in terms of education and regulation?

Gregg: We have just started to discuss this with academics and are in the early phase and I think you just mentioned a couple of names now and I would be interested in hearing more. It is going to take a mix of academics, government, and NGOs to tackle this. No matter what gets started – it's the harmonization of the data, how it is collected and the presentation of data that is going to be important. There is an opportunity here for the Okanagan to start off on the right foot, establish good protocols that have a good life to them i.e. data that is

collected over time periods can be harmonized e.g. you want to compare the south and north end of the lake – data should be collected the same way that it’s possible to analyze. There is an opportunity here to do this in a more systematic and sustainable way.

Ryan: It is difficult to compare datasets that are different and researchers are now trying to come up with ways to follow a standard. On the scale of local government – federal and provincial action has been slower. The ban on single use plastic for example has been in motion on paper but won’t be coming in for a while. Local action can be a little more flexible and agile. Part of the work I have been doing with Greensteps is with the RDCO a project with multi-family residential units in the region to increase waste diversion at those properties and one of the things we are coming up with is a toolkit, a resource for property managers to communicate how to recycle better, divert more waste, compost at home i.e. things they can tackle at their own pace without any other information. Education and communication need to be constant and having an inclusive environment and local action can tackle that more effectively than a provincial level.

Jan: I was working on a film at an elementary school in Penticton and the principal invited me to show me their hot lunch programme. 150 kids were served these meals on plastic plates and cutlery 5 days/week. We had a presentation done for the board on the environment and plastics by the kids. 6 months later we learnt that the school invested in dishwashers and silverware.

Hans: Each and every one of us must have some microplastic in our lungs and possibly in our bloodstream. I recently came across a study on the growth rate of earth worms and they found the growth rate was substantially reduced. It is everywhere not just in the water. In my opinion, the only thing you can do is to stop production all together.

Gregg: There is uncertainty that comes with it. We are passing along the next generation this plastic and the consequences of that is uncertain. Just because plastic is in the environment does not mean it is a bad thing entirely. Plastic is not equal. Concentrations differ and have different implications.

## **7. DISCUSSION AND POSSIBLE ACTION ITEMS ARISING FROM WORKSHOP:**

### Actionable Items:

- (1) Define water problems and priorities, economic feasibility of solutions, responsibility, necessary legislation and required action.
- (2) Communicate and coordinate between levels of government.
- (3) Present proposal and recommendations to government.
- (4) Advise local government when proposed actions, bylaws are contrary to the Okanagan Basin Study.

## **8. VIRTUAL COFFEE BREAK**

## **9. COMMITTEE BREAK-OUT SESSIONS**

## **10. SUB-COMMITTEE UPDATES**

### Policy committee (Brian Guy):

Last month I reported to the council that the policy committee was managing a process of assembling comments from OBWB to send to the federal government on the Canada Water Agency and I thought we had until the end of May but in fact we only had until March 1<sup>st</sup>. The intention as to send the draft to the council for review and comment but with that drastic reduction in the timeline, the policy committee responded with comments and we put together a letter and sent it over to Anna and they got it in on time. Apologies for not sharing it with the council and perhaps Nelson can share the letter with the council.

The active sub-committee issue is to maintain access data from retiring government scientists. We have a sub-committee formed and I asked for input and the next step is to draft a memo and it will get sent out to the WSC for input.

The third thing is related to Kirsten’s Agricultural Water Committee. We have been planning on providing some further advice to the provincial government on rolling out the Water Sustainability Act and in particular the urgent issue of successfully bringing in farmers and others who are currently using groundwater without licenses and bringing them into the licensing system. We have contacted Ted White, the controller of water rights, to have a discussion on that issue. Once we have

this insight we will be writing a letter to the province on successfully rolling out this act which they have one more year to do.

Kellie: The province is proposing to update their drought levels. I have sent an email out to all Okanagan water suppliers with the new proposed drought levels to ask for their feedback and depending on what I receive from them, I will produce a group response or encourage each water supplier to submit individual responses or maybe both. The main change is that they are moving from 4 levels to 5. They have changed wording in the general response table.

Agriculture and Water committee (Kirsten Hannam):

The biggest news is what Brian just informed everyone about. We will attempt to add information to our state-of-the-art document on groundwater licensing in BC. We had our meeting this morning on this and we are hoping to have a good draft by the middle of next month.

Source Water Protection committee (Renee Clark):

I had a short discussion with my group about our versions on the position paper. There are a few things we need to correct. We agreed we need to review it in one year to see how the actions are being followed.

I will ask Kellie to update on the toolkit – should be ready around the end of April. It is moving ahead and then onto the next phase.

Kellie: Final stages of editing. Heather is sending me the draft to do a cover to cover edit and we have our technical editor we are hiring to do her edit. We don't have to wait for the web platform to release the toolkit. Developing webinars around each tool for government staff and others and planning to do a suite of presentations for elected officials and industry organizations. Will be working with the city of Penticton on their source protection plan using the toolkit as our framework therefore applying it in a community to see how it works.

Dams and Reservoirs committee (Bernard Bauer):

Finalized the draft of the white paper with the appendix that dealt with the storage licensing issue sent to Nelson for technical editing. We will send it over to you to have a look at it before sending it off to the board.

Nelson: The OBWB and Anna are working on a

scenario for a flooding map in the Okanagan that looks at current operating principles which is something that isn't modelled. In conversations with the ONA, Anna has been working on a worst-case scenario flood map what an event would look like in 200 years. Today I launched information on a workshop we are having next Thursday on datums. We are creating new maps that have the old datum which is the levels of flooding and the old datum is what all local governments and First Nation groups in the Okanagan are using so we are going to be talking about that dataset. Finally, during the real estate series that Scott led where we were able to talk to realtors about our website which was incredibly well received and Shawn Reimer did a presentation on how and what influences flood control in the Okanagan.

## **11. MEMBER UPDATES: ROUNDTABLE**

Marta: I just posted the agenda for the April 21<sup>st</sup> convention and virtual for the BC groundwater association.

Rod McLean: The city on March 22<sup>nd</sup> is tweaking its water rate bylaw due to some unusual billing. Looking further into the details along the allotments. Council just heard about green infrastructure and possibilities down the road for incorporating some elements into our subdivision bylaw dealing with both onsite and offsite works. Final comment on whether upper reservoirs make an impact and it wouldn't to Okanagan Lake but certainly to creeks. A lot of the irrigation reservoirs up at the top have the sole purpose of storing water but by adding some purpose for flood management we could add a little flexibility to the system.

Anna: Just for the record, I am all for expanding reservoir capacity. I don't feel it will be a magic bullet for flooding downstream and I am somewhat concerned about having high consequences upstream of my home but I am for it for agricultural irrigation and fisheries.

Andrew Petersen: AFF has a few new responsibilities. Involved in the drought levels for example. Kellie should look at the voluntary work. The livestock water file is on hold probably for at least a year and in some ways it could make an impact on groundwater licensing. Producers have been saying they shouldn't have to license their well if they don't want to. There is one more year left and licenses will surge hopefully towards the end.

Jeremy Fyke: Vernon's climate action plan is now on

the website which includes flood resiliency. I will put a link to that draft action plan.

Scott Smith: One of the on-going projects is on the water demand model, applying the updated soils information to that effort. We have a few issues in that the land use and soil information does not add up and trying to rectify that and only happens in a few places. Whole province is covered except a handful of soil types where the data is still being developed.

Tricia: Algae samples are not normally monitored during winter months. We have seen a standard rate of bacteria. Abbotsford has also had algae problems likely to see more of it due to climate change and flooding. Our funding proposal with Mytax and UBCO - "assessing cumulative hydrological impacts from forest disturbance in climate change in forested watersheds" - that is a project with Adam Wei and Jeff Curtis at UBCO. Patti is helping us promote the rack number put up in upland watersheds. A lot of people don't know how to report to the province.

Heather: We have had a strange year on Kal Lake. We can definitely point this towards the increased flooding in recent years. I like the idea of more upland storage. If you are adding some meters of water to an existing reservoir then you have changed it and it is a new reservoir. The higher the population we have here the more impact we are going to see on the mainstem lakes.

Rob Birtles: Been working with the Thompson Rivers University with a lecture series that will be held online directed for smaller water suppliers. We had the opportunity to sit down with the newest member from the provincial drinking water office who is very interested in data. You may see a change in the reports produced from that office. Interior Health does rapid water testing when the suppliers' intakes are threatened by algae blooms. We look at people to do speciation after that.

Lorne: There was another invasive species story today on Castanet. Someone transported a largemouth Bass and put it into the Garnet Valley reservoir - the province's response it to close the reservoir to fishing. That is an issue out there of people transplanting invasive species because they want to bring it to BC. Educating the public on moving species around as it effects our ecosystem.

Brian: If you have thoughts on the water science forum send me your ideas. My organization CWRA is

a partner with OBWB and the Western Canada Aquahacking challenge that Carolina is managing. The national CWRA conference which is usually in late May/June is virtual this year. There is a whole slew of webinars that CWRA is putting on - LiDAR and flood damage estimation guidelines. Finally, March 22<sup>nd</sup> is World Water Day. Couple of events organized by CWRA - one is at 11 MST hosted by Bob Stanford with presentations by a panel on the value of mountain water and during that session they are going to do a tribute to the great David Schindler - who was one of the greatest freshwater ecologist in Canada.

Kirsten: I also chair a committee as part of the agriculture climate adaptation research programme and we have a draft report of our road map to a sustainable weather network. I just got the draft yesterday. Should be getting the final report by the end of month and it will be a very valuable document.

Bernie: We received an announcement that UBC plans to be back to face-face sessions by September but will depend on directives from the health ministries. The Dams and Reservoirs issue that was raised a couple times now probably the only member of the committee who isn't convinced about upland reservoirs. I see the potential to have some but really depends on how we manage those reservoirs in addition to potential damage downstream and ultimately when we think long-term we need to think about living within our means I suggest we begin dealing with it right away.

Kellie: We have recently released a version of slow it, spread it, sink it for homeowners using rainwater as a resource. This has been a well-used resource since it came out. This new version we had a permaculture expert come in and update it. Working on updating the groundwater bylaws toolkit which came out in 2008, our topsoil bylaws tool kit and creating webpages to explain the them, hopefully before summer. Thank you to Rob Birtles for securing \$10,000 for the SWP tool kit project for this year.

Corinne: I was looking at the CWRA event. We are also looking at holding something for the week of World Water Day. Looking at screening the film Lost Rivers.

Brian: That won't conflict.

Denise: Are both those workshops open to the public?

Brain: Yes I am pretty sure they are however there is more information on the website.

Corrine: Water education guidelines are up now on the website. Very excited about those and have had excellent feedback from teachers. Really trying to promote them and if you know folks in education please be sure to let them know about these guides. There is a real hunger of locally developed content. Space based learning in the Okanagan. Did a pro D to the OK zone conference and was very well received and have been invited to present at another session in Vernon.

Nelson: This is Denise’s last full council meeting. We will be doing a change of guard next month. Looking forward to celebrating next month of the past two terms that Denise has been demonstrating phenomenal leadership and looking forward to having that as part of our agenda.

**12. CHAIR REPORT**

Thank you all for staying until the end of the meeting. I will say a few words at the start of the next meeting. Very interesting topic we haven’t looked at in the past.

**13. NEXT MEETING**

The next meeting date of the OWSC is to be confirmed for Thursday, April 8<sup>th</sup>, 2021.

**14. ADJOURNMENT**

The meeting was adjourned by Denise at 4:04 pm.

***“That there being no further business,  
the meeting of the Okanagan Water  
Stewardship Council of March 11<sup>th</sup> 2021  
be adjourned.”***

***Moved by Bernard Bauer and seconded by  
Brian Guy.***

**CERTIFIED CORRECT:**

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**Chair**

**Executive**

**Director**