

**OKANAGAN WATER STEWARDSHIP COUNCIL**  
*A Technical Advisory Body to the Okanagan Basin Water Board*

**MINUTES OF A MEETING HELD THURSDAY, SEPTEMBER 9, 2010, AT  
KELOWNA AND DISTRICT FISH AND GAME CLUBHOUSE, 4087 CASORSO RD., KELOWNA, B.C.**

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**COUNCIL MEMBERS:**

**Present**

UBC Okanagan	Bernie Bauer, Chair
Ministry of Agriculture and Lands	Ted van der Gulik, Vice Chair
Agriculture & Agri-Food Canada, Research Branch	Doug Edwards
BC Agriculture Council	Hans Buchler
BC Fruit Growers Association	Lorraine Bennest
BC Ground Water Association	Doug Geller
Canadian Water Resources Association	Brian Guy
City of Kelowna	Mark Watt
Environment Canada – Pacific & Yukon Region	Dan Millar
Ministry of Environment, Fish and Wildlife Science	Steve Matthews
Oceola Fish and Game Club	Lorne Davies
Osoyoos Lake Water Quality Society	Mark McKenney
Regional District North Okanagan	Laura Frank
Water Supply Association of BC	Bob Hrasko

**Alternates present**

BC Ground Water Association	Remi Allard
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**Regrets**

Agriculture & Agri-Food Canada, Research Branch	Denise Neilsen
BC Cattlemen's Association	Lee Hesketh
Community Futures	Don Main
Interior Health Authority	Rob Birtles
Ministry of Environment, Water Stewardship	Ken Cunningham
Okanagan Collaborative Conservation Program	Carolina Restrepo-Tamayo
Okanagan College	Douglas MacLeod
Okanagan Nation Alliance	Gwen Bridge
Shuswap Okanagan Forestry Association	Kerry Rouck
Regional District of Central Okanagan	Chris Radford
Regional District of Okanagan-Similkameen	Jillian Tamblyn
Urban Development Institute	Bal Poonian

**STAFF:**

OBWB, Executive Director	Anna Warwick Sears
OBWB, Water Stewardship Director	Nelson Jatel
OBWB, Office and Grants Administrator	Genevieve Dunbar
OBWB, Communications and Research Coordinator	Corinne Jackson
OBWB, Interim Office and Grants Administrator	Melissa Tesche

**GUESTS:**

Environment Canada	Gabor Friczka
Insight Environmental Consulting	Kellie Garcia
Kelowna and District Fish and Game Club	Doug Flintoft
Kelowna Capital News	Judie Steeves
Ministry of Environment, OWSC Source Protection Cttee.	Solvej Patschke
Summerland resident	Paul Sterling
UBC Okanagan	John Janmaat

## 1. CALL MEETING TO ORDER

Chair Bauer called the meeting to order at 1:02 p.m. and welcomed members and guests.

## 2. APPROVAL OF AGENDA

Moved by Dan Millar

Seconded by Steve Matthews

*"That the agenda for the June 10, 2010 meeting of the Okanagan Water Stewardship Council be approved."*

**CARRIED**

## 3. ADOPTION OF MINUTES

3.1 Minutes of a regular meeting of the Okanagan Water Stewardship Council held June 10, 2010, at Kelowna and District Fish and Game Club clubhouse, Kelowna

Amendments: A small amendment to the minutes was suggested and incorporated.

Moved by Hans Buchler

Seconded by Lorraine Bennest

*"That the minutes from the June 10, 2010 meeting of the Okanagan Water Stewardship Council be approved as amended."*

**CARRIED**

## 4. BOARD REPORT

Dr. Warwick Sears reported on the Sept. 7, 2010 Okanagan Basin Water Board meeting, noting the board unanimously approved \$500,000 to UBC-O for a BC Regional Innovation Chair in Water Resources and Ecosystem Sustainability. The request first went to the three Okanagan regional districts for prior approval. The program represents a new initiative for the Water Board. Dr. John Janmaat has been nominated for the position, she added.

The board was also told that staff members are updating the Sewage Facilities Grant program to ensure better tracking and improved communication with local government. A memo was provided regarding the launch of the Okanagan WaterWise website. The site is a starting point and there are plans for its further development as well as other tools to reach out to the community.

Dr. Bauer noted that funding has been contributed by the BC Real Estate Foundation, and the Water Supply Association of BC. The benefit of this type of program is that it brings provincial funds into the Okanagan and ensures water research occurs in our region, he added. Dr. Janmaat was nominated after conducting an international search and his appointment requires approval from the province, said Dr. Bauer.

Dr. Warwick Sears added that there will be an advisory committee, to help guide the research, and elected officials will be able to provide input. Committee members still need to be determined.

The Water Board is looking to develop a Topsoils Bylaw Toolkit, building on the work of the Waterbucket partnership, added Dr. Warwick Sears.

## 5. ROUND TABLE - MEMBER UPDATES

Council members provided an update on their organization's activities.

- Mr. Edwards: Agriculture & Agri-Food Canada is busy developing a groundwater workshop to be held in the next few months.

- Mr. Buchler: I will be co-chairing a roundtable, a working group of agriculturalists, looking to develop policies on water use and water legislation at the federal level.
- Ms. Garcia: I will be facilitating the OBWB's review of its Sustainable Water Strategy, gathering input from Stewardship Council members.
- Mr. McKenney: The Osoyoos Lake Water Quality Society was working with B.C. Ministry of Environment to identify potential well sites for monitoring. They are now working with a landowner who has offered to help build the well on his own property, near Anarchist Mountain. The Osoyoos group is also working with Lake Country Environmental Society, and with funding from the OBWB, to create a report card for the public on our watersheds. Similar report cards were done in Ontario and Saskatchewan, making scientific studies more easily understood for the public.
- Mr. Davies: The Ocoela Fish and Game Club is continuing its work on the wildlife habitat reserve in Winfield. Beaver dams have been creating problems for water flow in the local creek causing concern for spawning kokanee. The club has been working with MoE and the native band to try and address this.
- Mr. Geller: BC Ground Water Association spent the summer working on the Water Act Modernization (WAM). Starting in October, Remi Allard will be representation the association and I will be an alternate.
- Mr. Allard: The BC Ground Water Association is meeting with MoE staff next week to discuss changes with pump installers. Also, a lot of geothermal drilling is occurring, in addition to groundwater wells, so the association is looking to rein this in. Chair Bauer noted that there has been a lot of support for licencing groundwater with WAM and invited the group to contact the OWSC for help if needed. Mr. Allard added that he has reviewed the province's draft WAM and is disappointed with the proposed groundwater changes and will be working to address this.
- Mr. Millar: The International Joint Commission's Osoyoos Lake Board of Control has its annual public meeting Sept. 28 at 7:30 p.m. at the Old Depot in Oroville and interested individuals are invited to attend.
- Mr. Flintoft: The BC Wildlife Federation is reviewing the recently released draft WAM, put out by the province.
- Mr. Van der Gulik: B.C. Ministry of Agriculture is working to have its irrigation certification program and design manual ready by winter. The last one done was in 1989.
- Mr. Jatel: A review of the Sustainable Water Strategy is underway. The OBWB is looking to set up monitoring wells on 15 sensitive ground aquifers that are under- or not monitored at all. MoE will maintain them. We are also working with MoE and regional districts to develop some standard drought signage and hopefully pilot the signs in the Okanagan in the spring.
- Dr. Warwick Sears: The Water Board has been busy on a number of projects this summer, including attending WAM meetings and now preparing for our AGM tomorrow.
- Dr. Bauer: UBC-O was busy with the B.C. Water symposium Aug. 30 to Sept 1. Looking back, there should have been better communication about what is involved in a strategy. There was some criticism that there has already been a lot of talk but not a lot of progress made. The province is now compiling information that was gathered at the meetings and developing a report. I was pleased to be a part of the Okanagan contingent because we have a lot of traction, especially with our Sustainable Water Strategy. We are creating deliverables and moving forward and hope other areas of the province can do the same.
- Ms. Jackson: This summer saw the launch of the Okanagan WaterWise website ([www.okwaterwise.ca](http://www.okwaterwise.ca)). Council members are encouraged to visit, provide feedback and join us on Facebook and Twitter since the way social media works is to have people start following and then word spreads. We met with local governments, asking for feedback on the OkWW Outreach Strategy and Action Plan. Based on that feedback, an addendum will be drafted. We will also be looking to re-engage the OWSC's Communications and Outreach Committee and add members as we move forward with the WaterWise program. Mr. McKenney noted there is an appetite from media to be supplied with water stories and perhaps we should be creating a package to provide to them. Ms. Jackson made note of the comment and will pursue.
- Mr. Matthews: The focus for Ministry of Environment this summer was on drought management. We have also been developing water management plans, and determining water flow needs, on

various creeks. We are expecting 100,000 sockeye throughout the Okanagan River and near Oliver which hasn't been seen since recording began in the 1930s. We expect it to peak October 15.

- Ms. Patschke: Watershed assessments have been done on various creeks, including Fortune Creek. We're waiting on assessments from Oyama and Vernon and Okanagan Lake to be made available.
- Ms. Frank: Regional District of North Okanagan has been working with City of Vernon, planning a Rivers Day event, Sept 26 at Kin Beach. There will be stream clean up, information on local waterways, and more. We've also been developing a draft Terms of Reference for a sustainability plan for the Shuswap watershed.
- Ms. Bennest: The weather has been good for apple colouring so we're hoping for a good year. There is a new pest we are battling this year – a worm that gets attacks soft fruit. One way to address it is to refrigerate the fruit or eat it right away.
- Mr. Sterling: Invited by Ms. Bennest to attend, I work in mining and involved in zero discharge.
- Mr. Janmaat: As the nominee for UBC-O's Water Resource Chair, I'm grateful to the Water Board for their support and to council members who have helped me gain a better understanding of water in the valley. We've been reviewing the data collected from the 450 people in Kelowna who were surveyed regarding water issues. I travelled to Nepal on a CIDA-funded project this summer to study water storage. Interestingly, a number of people knew of (the Okanagan) and its water shortages. We're hoping the work in Nepal will contribute to the work being done here.
- Mr. Guy: The Canadian Water Resources Association has been working through the WAM process and is looking forward to reviewing the province's document. The CWRA conference in June in Vancouver included a look at the Okanagan Water Supply and Demand Study. The papers were well-received and it was a good way to communicate and disseminate results. I was asked to participate in a story for BC Business about water in the Okanagan which was published this summer.
- Mr. Hrasko: The Water Supply Association of B.C. provided input to WAM and will be reviewing the resulting document from the province. Two large utilities are being amalgamated into the District of West Kelowna, the Lakeview ID and Westbank ID (which began in 1922 and is one of the first in B.C.). We have our AGM in Osoyoos Oct. 21 and 22. The council should consider having representation at the BC Water and Waste Association annual conference, to be held April 16 to 20 in Kelowna.
- Ms. Dunbar: I've enjoyed the last four years working with the council and the Water Board and look forward to returning following a year-long maternity leave.
- Ms. Tesche: The summer was busy addressing milfoil which was out of control, especially around Osoyoos. We also did some milfoil harvesting in Okanagan River near Vaseaux for MoE. Rototilling will be going full tilt this winter to help address the issue. We've also been busy preparing for our AGM tomorrow.
- Mr. Watt: The City of Kelowna has been working on filtration deferral and a Water Protection Plan with Interior Health. We have also been working with Kelowna's Joint Water Committee to create water drinking standards.

## **6. SUSTAINABLE WATER STRATEGY: PROGRESS REPORT AND REVIEW**

Ms. Garcia led a discussion, reviewing progress on recommendations provided in the Sustainable Water Strategy. Comments were compiled and will be part of a progress report being conducted by Ms. Garcia.

## **7. PRESENTATIONS**

**Gabor Fricska, Senior Meteorologist - Environment Canada  
Climate & Weather Forecasting**

Mr. Fricska presented an Introduction to Probabilistic Forecasting – a new method of meteorology made possible by advances in computing capabilities. He noted that some probabilistic products are available on their website now.

Mr. Fricska ran through a brief history of meteorology, beginning in the 1920s, when Norwegian meteorologists noticed cold and warm fronts. In the 1940s, World War 2 brought the age of aviation and with it the development of weather balloons that could gather more information to supply growing aviation needs. At that time, a mathematician discovered that the motion of the atmosphere could be predicted, but the calculations were so complicated that to predict the next 24 hours of weather required more than 72 hours of calculating. Further improvements were made in the 1960s with the advent of satellite imagery, which could observe weather patterns and the evolution of weather conditions. The computer age of the 1980s ushered in a new wave of computer models that produced single deterministic forecasts. A deterministic forecast produces only one possible weather outcome, with no probability provided that it will actually occur. Now, with increased computing power in the form of Ensemble Prediction Systems that use probabilistic forecasting, several weather models give different potential weather outcomes with associated probabilities. This is used, for example, in hurricane tracking.

Mr. Fricska suggested that every 10 years, we gain a day of weather forecasting accuracy. Ten years ago, we could accurately predict three days ahead, now we can do four. However, he noted, we will never be able to predict with 100% accuracy.

Mr. Fricska outlined the forecasting process meteorologists use:

- 1) Measure the current state of the atmosphere. All of the instruments used have some degree of measurement error. He noted it is hard to collect data over the oceans, so coastal forecasts can be harder to predict than forecasts over a large landmass.
- 2) Assimilate the data. All the gathered data is put into the computer model(s), but there are errors during this stage as points on the grid are estimated and adjusted when there is no data available. There can also be quality control problems at this stage—some data must be rejected because of errors.
- 3) Attempt to move forward in time. He notes that the atmosphere is chaotic, and there is limited resolution. The main weather model right now uses a 15 km grid, and points throughout the Okanagan Valley are barely noted at that resolution. Some of these resolution problems can be corrected through statistical programs, but there will always be some problems with prediction.

He noted that one way to deal with this is to use an ensemble approach, running multiple models that produce a variety of different possible outcomes. If all models point to similar outcomes, they are likely accurate.

Probabilistic forecasting involves probability density functions, which mathematically help predict the most likely weather outcome. Whereas a deterministic forecast will tell you that there will be 15mm of rain, a probabilistic forecast will also give you the likelihood of receiving an additional 10 or 20 mm.

Mr. Fricska notes that probabilistic forecasting is most beneficial to decision makers like water suppliers. He notes there is still spatial variability based on smaller weather cells that may occur in very localized areas, but that probabilistic forecasting serves decision makers as a risk management exercise. Water managers know what the effect of a certain weather outcome would be on their water supply, and they can get an idea of how likely that particular weather outcome is.

Mr. Fricska went on to lead a discussion around how council members use weather forecasting. Mr. Hrasko noted that utilities rely on snowpack forecasts to predict how much water they will have for the next season. Mr. Fricska said that reservoir spillage could also be predicted.

Mr. Van der Gulik noted that the Farm West website uses Environment Canada's five-day forecast to provide farmers with information. He also mentioned there are people working on a climate network to control the quality of the weather data being collected and used, using Environment Canada's data as a supplement to their own data.

Dr. Warwick Sears asserted the future lies in combining public and private groups who are collecting

weather data and working on processes and standards for the collection and sharing of lots of high quality data.

Mr. Guy pointed out that deterministic models are still being used for snowpack and soil moisture, without any likelihood of long-term forecasting included (i.e.: assuming that spring conditions will be average, versus what the spring conditions are actually likely to be). Mr. Fricska noted that seasonal forecasting is done at an even poorer resolution than daily and short-term forecasts.

Mr. Davies asked if the forecasting considers El Nino and La Nina, to which Mr. Fricska replied that many models look at current ocean temperatures and conditions. Mr. Fricska added that La Nina appears to be strengthening.

Mr. Fricska concluded that models should be used as a decision support tool, rather than as a forecast. Future work will include communicating the value of probabilistic forecasting, and as computer power increases, so will the accuracy of forecasting.

## 8. NEW & UNFINISHED BUSINESS

### 8.1 Stormwater management

- (a) “From Rain to Resource: Managing Stormwater in a Changing Climate” workshop, Oct. 28 to 29, 2010

Mr. Jatel encouraged members to go to the website for more information and to register. He noted the workshop has two tracks: One for people who manage water, and one for people who are writing the policy. Dr. Warwick Sears added that the conference is geared towards helping the Okanagan and other parts of the province develop better rain water management, using examples that are working in other places.

- (b) Explore concept of an Okanagan Rainwater Utility Charge

The idea of an Okanagan Rainwater Utility Charge came out of the Re-Inventing Rainwater Management Guide (Environmental Law Clinic, 2010). Mr. Jatel suggested that the Stewardship Council may want to explore and/or make recommendations to the board. The concept would be to institute a tax that is levied per parcel to go towards rainwater management, similar to what the OBWB does to fund water management. Funds could go to things like creating rain traps, but there are currently no funds ear-marked for these types of activities.

Dr. Janmaat asked if the tax could be variable based on the parcel’s rainwater techniques, since areas with lots of concrete are worse at managing rainwater. Mr. Van der Gulik pointed to the Surrey example where downland areas sued upland areas based on poor rainwater management that caused flooding. Upland areas were taxed over 25 years to pay off the damages awarded. Now Surrey is keen to implement better rainwater techniques. Mr. Allard pointed out that rainwater management is very complicated and that solutions are not always apparent. Dr. Bauer added that it would need a different spin to sell to the public since they wouldn’t react well to being taxed on rainwater.

### 8.2 Hydrometric monitoring sub-committee

Mr. Jatel noted that the sub-committee has not met yet. The board has requested that the sub-committee pull together recommendations that are first reviewed by the larger OWSC, and then are taken to the board. Dr. Bauer asked Mr. Guy to work with Dr. Neilsen to develop an action plan to move on this.

### 8.3 Project updates: NASA initiative / Streamlined Water Use Reporting Tool (SWURT)

Mr. Jatel reported that the NASA initiative has applied for two large grants from NASA. One is for remote sensing to gain a better understanding of snowpack (worth \$740,000), and the second addresses biological response to climate change (worth \$2.3 million) and has many partners. He noted that one of the key partners in the application was Samantha Bartling, Coordinator of North Central Washington RC&D. He anticipates hearing back on the proposals in mid-October.

SWURT phase one is complete, and consultations are complete on what should be included in the model. Nelson anticipates an initial launch shortly, with a launch for users on Jan 1, 2011.

### 8.4 Okanagan Water Supply Communication Strategy: Signage project

Mr. Jatel reported that the subcommittee will be meeting in the next couple of weeks. He relayed Mr. Pike's concerns, noted at the last OBWB Board of Directors meeting, that the signs are more complicated than the province's fire risk signs. The criteria are more difficult to find agreement on because different areas have different ways of communicating drought risk.

Mr. Jatel pointed out that all three regional districts are very supportive of the signage project, but that the OBWB is responding, in particular, to a request that originated from Regional District of North Okanagan during their drought this spring. He noted that the provincial ministry is also supportive.

### 8.5 Okanagan Water Supply and Demand Study, Phase III

Dr. Warwick Sears reported that with the completion of Phase 2 of the Okanagan Water Supply and Demand Study, Phase 3 will begin with a new management team that will be conducting a workshop Sept 16. The workshop will include discussion around scenarios being considered for Phase 3. She invited comments on suggested scenarios from council members. She also noted that all data and reports from Phase 2 are now available in hardcopy and on CD. The report will also be made available on the OBWB website.

Dr. Warwick Sears added that Ron Fretwell has been contracted to develop an in-house database to house the models in the OBWB computer system and that the Water Board is working on ways to make the models available to the general public.

Work is also underway to determine how the data can be used by different agencies, with the goal of making the study results used as much as possible. Dr. Warwick Sears added that she hopes the study's results will become a tool for future research, as part of an integrated water database. In response to a question, she said that she hopes the database will hold the model's predictions on future water availability, water demands, and more.

Phase 3, she added, is about transitions and moving forward with the results of the Phase 2 supply and demand studies.

## 9. NEXT MEETINGS

The next meeting of the Okanagan Water Stewardship Council will be held Oct. 14, 2010 at Kelowna and District Fish and Game Club clubhouse.

Mr. Jatel noted the November meeting will be a joint meeting between the Stewardship Council and the Board of Directors on Nov. 2. Location is still to be determined.

## 10. ADJOURNMENT

The meeting was adjourned at 4:58 p.m.

Moved by Bob Hrasko

*"That there being no further business, the meeting of the Okanagan Water Stewardship Council of Sept. 9, 2010 be adjourned."*

**CARRIED**

**CERTIFIED CORRECT:**

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**Chair**

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**Executive Director**