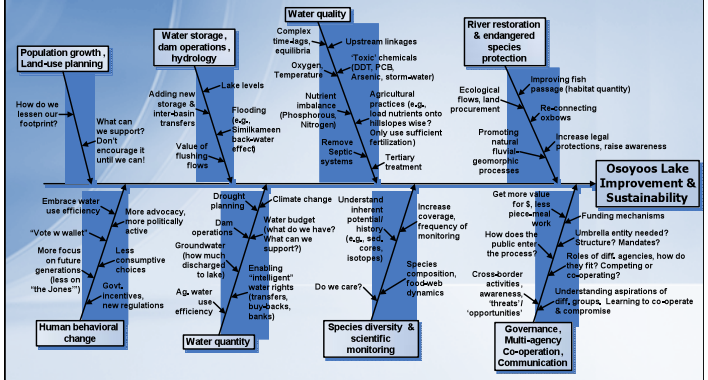
Progress since inaugural 2007 Osoyoos Forum ...Path forward

Clint Alexander
Sept 20, 2011

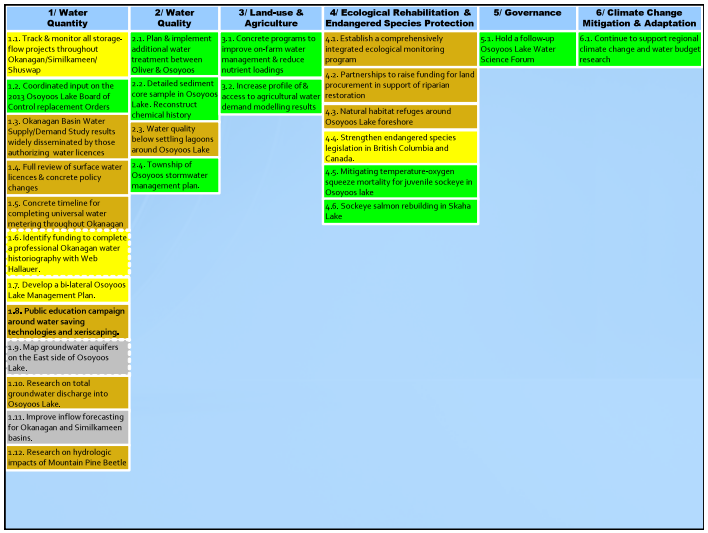
Sampling of major issues raised



1/ Water Quantity	2/ Water Quality	3/ Land-use & Agriculture	4/ Ecological Rehabilitation & Endangered Species Protection	5/ Governance	6/ Climate Change Mitigation & Adaptation
1.1. Form storage-flow monitoring task force to track & monitor all water storage projects throughout Okanagan/ Similkameen/Shuswap.	2.1. Plan & implement additional water treatment between Oliver & Osoyoos	3.1. Concrete programs to improve on-farm water management & reduce nutrient loadings.	4.1. Establish a comprehensively integrated ecological monitoring program (First Nations, Provincial/Federal governments, UBC-O, municipal govt.)	5.1. Hold a follow-up Osoyoos Lake Water Science Forum.	6.1. Continue to support and track outcomes of regional climate change and water budget scenario research.
1.2. Provide coordinated input on the 2013 Osoyoos Lake Board of Control replacement Orders, incld. input from local residents.	2.2. Take more detailed sediment core sample in north and south basins of Osoyoos Lake. Reconstruct chemical history since 1900s.	3.2. Increase profile of & access to agricultural water demand modelling results that show optimal water requirements by crop x soil.	4.2. Foster partnerships to raise funding for land procurement to support ongoing & new riparian restoration.		
1.3. Ensure Okanagan Basin Water Supply/Demand Study results widely disseminated by those authorizing development & water licences.	2.3. Establish water quality monitoring in wells below settling lagoons around Osoyoos Lake.		4.3. Define specific natural habitat refuges around Osoyoos Lake foreshore to serve as seed banks and make these off-limits to development/vehicles.		
1.4. Full review of surface water licences & concrete policy changes (e.g., buy-back/transfer mechanisms).	2.4. Invite University faculty & students to review township of Osoyoos stormwater management plan.		4.4. Strengthen endangered species legislation in British Columbia and Canada.		
1.5. Concrete timeline for completing universal water metering throughout Okanagan			4.5. Adaptive management experiments on mitigating temperature-oxygen squeeze mortality for juvenile sockeye in Osoyoos lake.		
1.6. Identify funding to complete a professional Okanagan water historiography with Web Hallauer.			4.6. Continue to investigate sockeye salmon rebuilding potential in Skaha Lake.		
1.7. Develop a bi-lateral Osoyoos Lake Management Plan.					
1.8. Public education campaign around water saving technologies and xeriscaping.					
1.9. Map groundwater aquifers on the East side of Osoyoos Lake.					
1.10. Research on total groundwater discharge into Osoyoos Lake.					
1.11. Improve inflow forecasting for Okanagan and Similkameen basins.					
1.12. Support & track outcomes of research on hydrologic impacts of Mountain Pine Beetle.					

26 Actions

Excellent - Good	Good - Fair	Fair or No Progress	Unknown
1.2. Coordinated input on the 2013 Osoyoos Lake Board of Control replacement Orders	1.3. Okanagan Basin Water Supply/Demand Study results widely disseminated by those authorizing water licences	1.1. Track & monitor all storage-flow projects throughout Okanagan/Similkameen/ Shuswap	1.11. Improve inflow forecasting for Okanagan and Similkameen basins
2.1. Plan & implement additional water treatment between Oliver & Osoyoos	1.4. Full review of surface water licences & concrete policy changes	1.7. Develop a bi-lateral Osoyoos Lake Management Plan.	1.9. Map groundwater aquifers on the East side of Osoyoos Lake
2.2. Detailed sediment core sample in Osoyoos Lake. Reconstruct chemical history	1.5. Concrete timeline for completing universal water metering throughout Okanagan	4.4. Strengthen endangered species legislation in British Columbia and Canada	
2.4. Township of Osoyoos stormwater management plan	1.10. Research on total groundwater discharge into Osoyoos Lake	1.6. Identify funding to complete a professional Okanagan water historiography with Web Hallauer	
1.8. Public educa tion campaign Around water sav ing technologies and I xeriscaping			
3.1. Concrete programs to improve on-farm water management & reduce nutrient loadings	1.12. Research on hydrologic impacts of Mountain Pine Beetle		
3.2. Increase profile of & access to agricultural water demand modelling results	2.3. Water quality below settling lagoons around Osoyoos Lake		
4.5. Mitigating temperature-oxygen squeeze mortality for juvenile sockeye in Osoyoos lake	4.1. Establish a comprehensively integrated ecological monitoring program		
4.6. Sockeye salmon rebuilding in Skaha Lake	4.2. Partnerships to raise funding for land procurement in support of riparian restoration		
5.1. Hold a follow-up Osoyoos Lake Water Science Forum	4.3. Natural habitat refuges around Osoyoos Lake foreshore		
6.1. Continue to support regional climate change and water budget research			



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Path Forward: Recommendations

Climate Variation & Change

- Agricultural producers will need to be proactive in adapting the selection of crops that will survive & thrive under future climate regimes (diff. climate & growing seasons)
- Water supply/licensing likewise proactive in considering future demands and climate

Path Forward: Recommendations

Water Quantity

- if 911.5 - 912.5 can be accepted you can do a better job of meeting in-stream flow requirements especially on the shoulder seasons.
- Osoyoos Lake Orders should be structured to not only consider lake elevations but also **flows**. Important upstream / downstream objectives best understood in terms of flow.

Path Forward: Recommendations

Water Quantity

- Increase collaborative research on remote sensing technology & hydrometric monitoring to improve water supply forecasting

Path Forward: Recommendations

-Water quality has improved since 1970s

-Zosel dam operations are not a primary factor in water quality

Water Quality

- Continue to monitor estrogen concentrations in Okanagan River where dilution factors are lower
- Diffuser oxygenation techniques would be cost prohibitive in the North Basin of Osoyoos Lake.
  - Continue to manage Okanagan Lake to allow for pulse water releases to Osoyoos in late July/August.

Path Forward: Recommendations

Water Quality

- Canadian & US partners come together to develop bi-lateral aquatic vegetation mgmt. plan
  - e.g., 5-yr plan, experiments/monitoring to test alternative treatments
  - Better guide piece-meal permitting applications such as Veranda Beach

Path Forward: Recommendations

-Approx. 88% of Osoyoos basin wetlands eliminated.

- Wetlands highest value water treatment choice with other beneficial outcomes

Water Quality

- Additional land acquisition & wetland restoration projects, incld. constructed wetlands

Path Forward: Recommendations

Fisheries and Species at Risk

- Support programs that detect & control new invasive species (incld. but not only milfoil); e.g., walleye, zebra mussel
- Enhancing resiliency as a key principal in restoration design (e.g., re-establishing habitat range for Okanagan sockeye).
- Extend success of FWMT approach for other sensitive aquatic species – e.g., rocky mountain ridged mussel; other salmonids immediately downstream of Zosel dam.

Path Forward: Recommendations

Land Use Planning

- Limit sprawl & regulate where development is happening & what kind of landscape people are using
- New 'experience' objectives:
  - increase planning efforts guiding responsible recreation, incld. local residents & diff. categories of on-lake recreational activity (water by-laws, max. boating density, education, safe areas, etc.)

Path Forward: Recommendations

Governance

- Real partnership with Aboriginal peoples involve creating space for meaningful dialogue (e.g., not just '5 minute Q&A' sessions), including seats at the table that carry real votes

Key to success…

The 2013 IJC Replacement Orders should expressly recognize the need for & include formal adaptive mechanisms to adjust & respond to new knowledge & surprises

Key to success…

IJC & Others: Enhance engagement of local levels of government, including First Nations, in providing information & judgments on the acceptability of trade-offs surrounding Osoyoos Lake management regimes

Key to success…

Sustain efforts to increase access to the *excellent* water science that has been accomplished in the Okanagan over the past five years; *transitioning to it's use to inform & reform policy*

Key to success…

Ensure ecological flow requirements are not confounded with downstream water needs. To do so would erode the scientific legitimacy of eFlows.

Key to success…

Collaborative, inclusive social networks are key to getting things done

Key to success…

Continue to hold regional forums like OLWSF that help drive accountability


Feedback?