



Okanagan Basin Water Management

Environment Canada Perspective

**Okanagan Basin Water Board Workshop
March 19, 2004**

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Overview

- Forces of change
 - Population, climate
- Threats to water quality and availability
- Okanagan issues
 - Water efficiency and wastewater
 - Riparian areas
 - Transboundary flows
- Information sources



Okanagan Water: The Question We Are Hearing

Will future water resources in the Okanagan be sufficient to sustain the environment, the economy, and quality of life for communities?



The Overarching Consideration

How will **population growth** and **climate change** impact future water resources?



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The Tough Question

Are residents and those with vested “rights” to water able and prepared to change?



There's Only One Okanagan

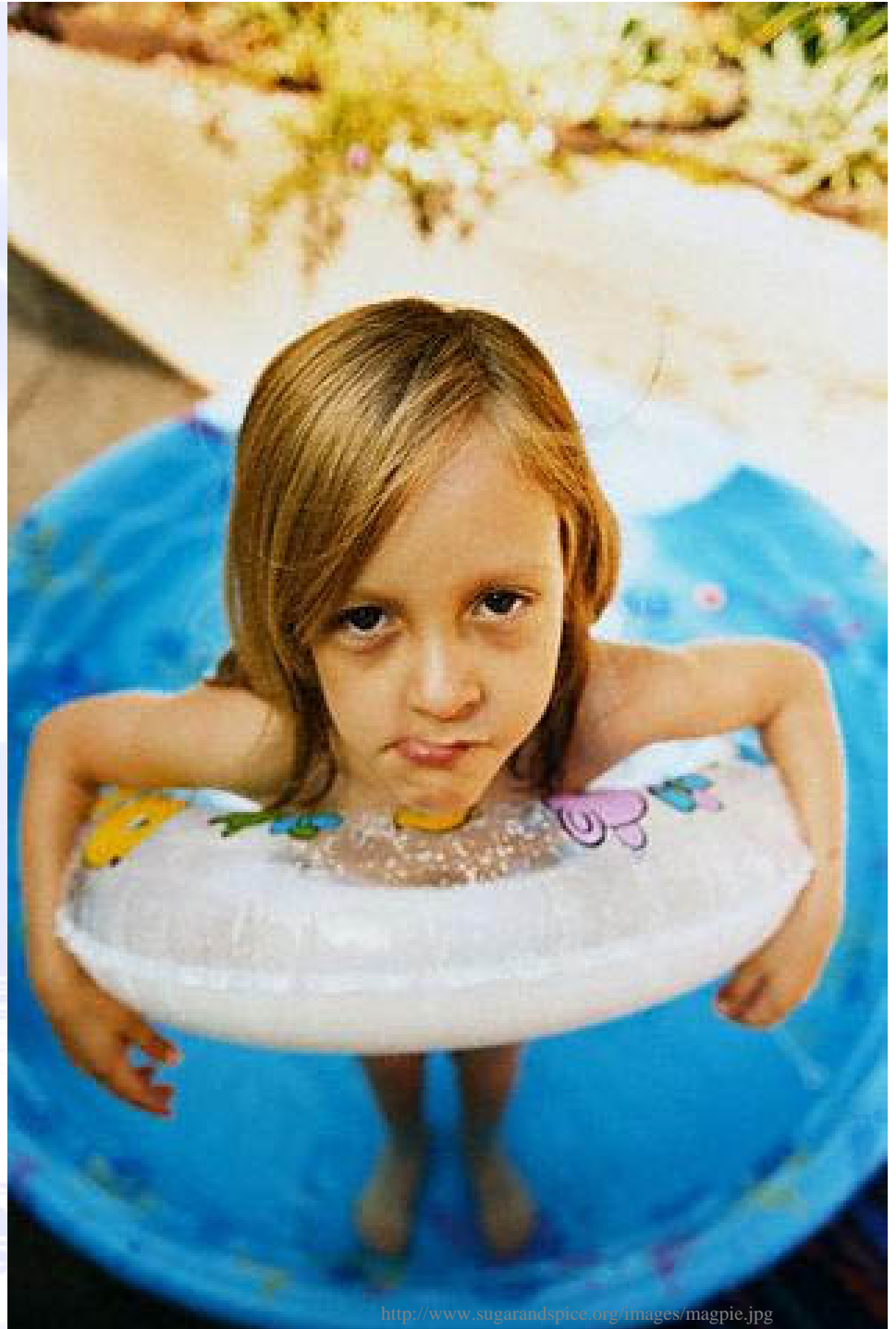
Everybody has to share the water!

- Each community's decisions about the valley's land and water impact the all the others...it's an integrated system
- As first recommended in the 1974 Study, the valley needs *integrated water resource management*



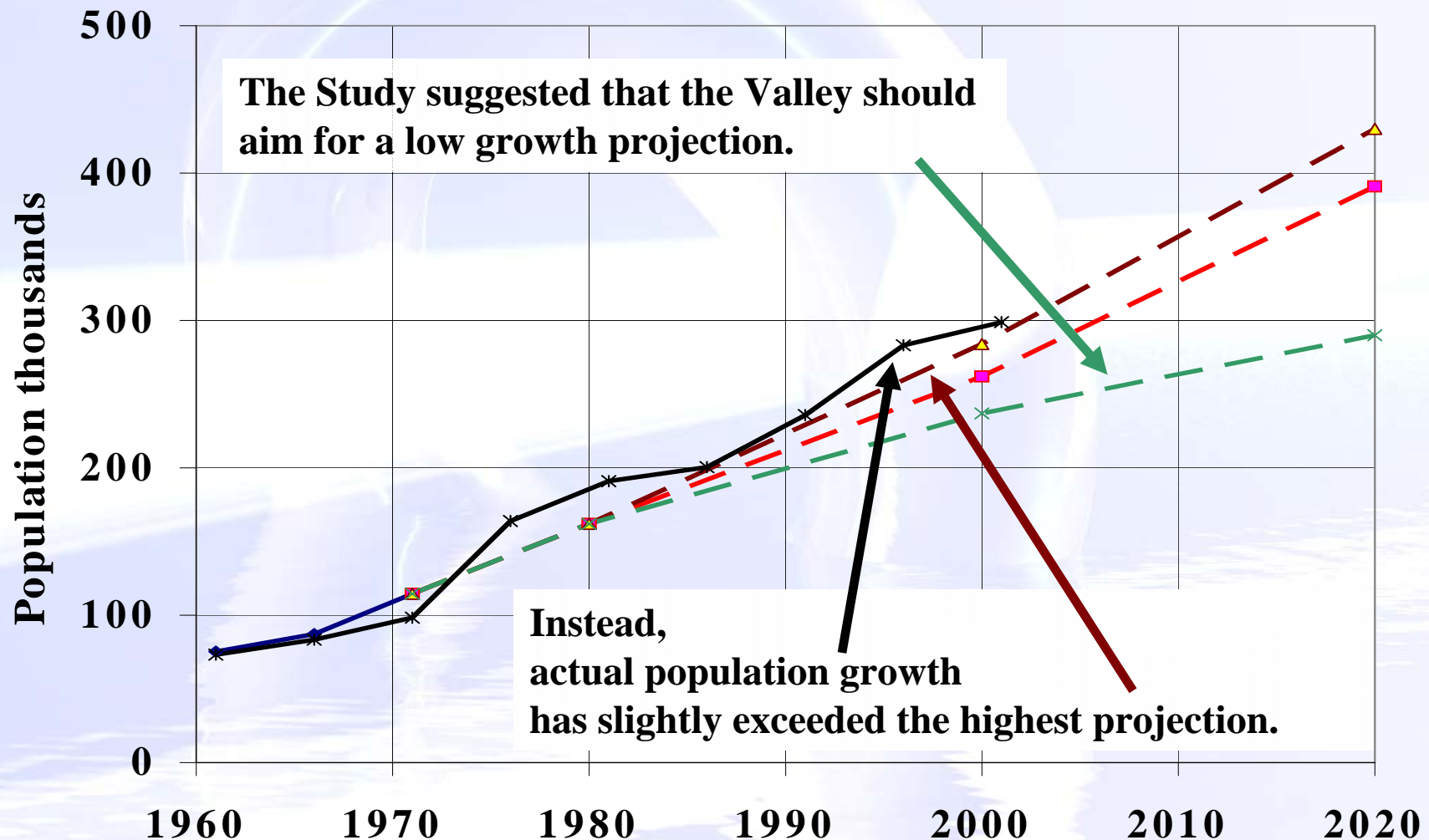
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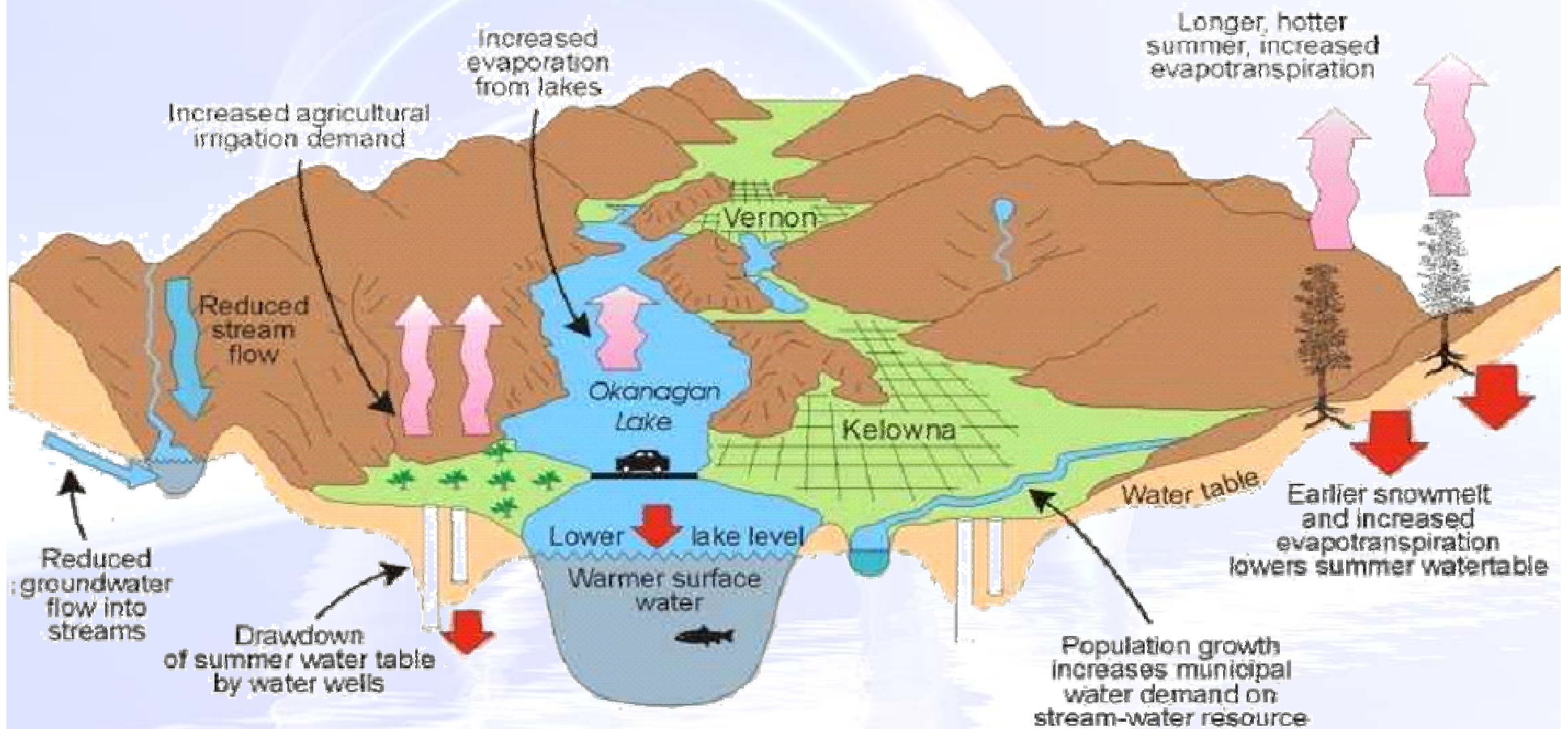


<http://www.sugarandspice.org/images/magpie.jpg>

Population Projections from 1974 Okanagan Basin Study

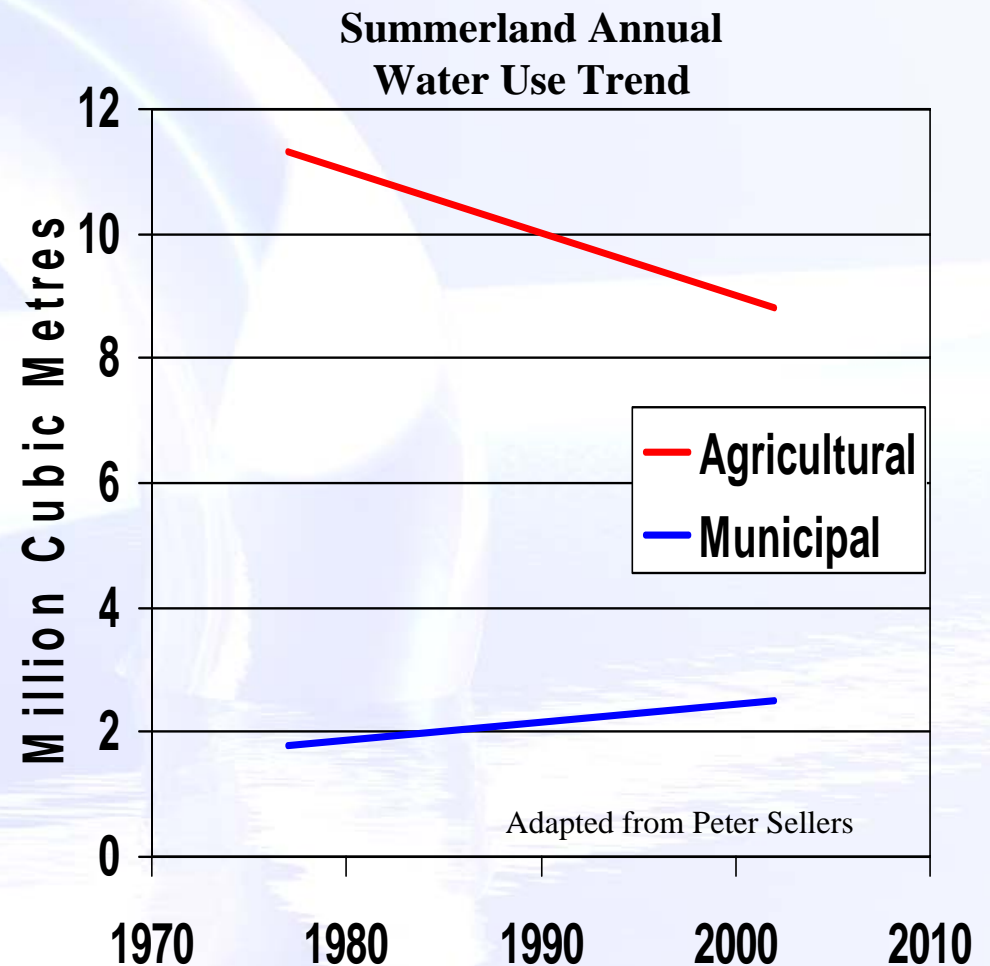


A Warmer Okanagan



Water Quantity Issues

- Freshwater is a limited resource
- A changing climate may imply more water shortages
- A changing climate will change flood patterns
- Urban supplies are already under stress
- Agricultural water consumption tops the scale
- Forests are important
- Groundwater is a hidden and uncertain resource
- Integrated and cumulative threats to freshwater availability are a present reality!



Threats to Water Quality

- Quality of water resources and sources for drinking water are threatened by wide range of contaminants
- Key contaminant sources include agricultural and forestry practices, municipal wastewater effluents, industrial discharges, urban run-off, landfill and disposal sites, and natural sources
- Impacts on water quality are projected to increase without renewed efforts to better understand threats, monitor occurrences and trends, and adopt guidelines and practices to mitigate or eliminate problems



Recommended Approaches

- Assess integrated and cumulative threats and create appropriate linkages to water planning and management
- Make dialogue an explicit tool of management
- Utilize a broader range of policy instruments
- Give consideration to equity and sustainability in decision making
- Increase the capacity of institutions to respond
- Increase the investment in databases and improve access to data
- Broaden the research effort



**Opportunity for
BC Environmental
Sciences Network**

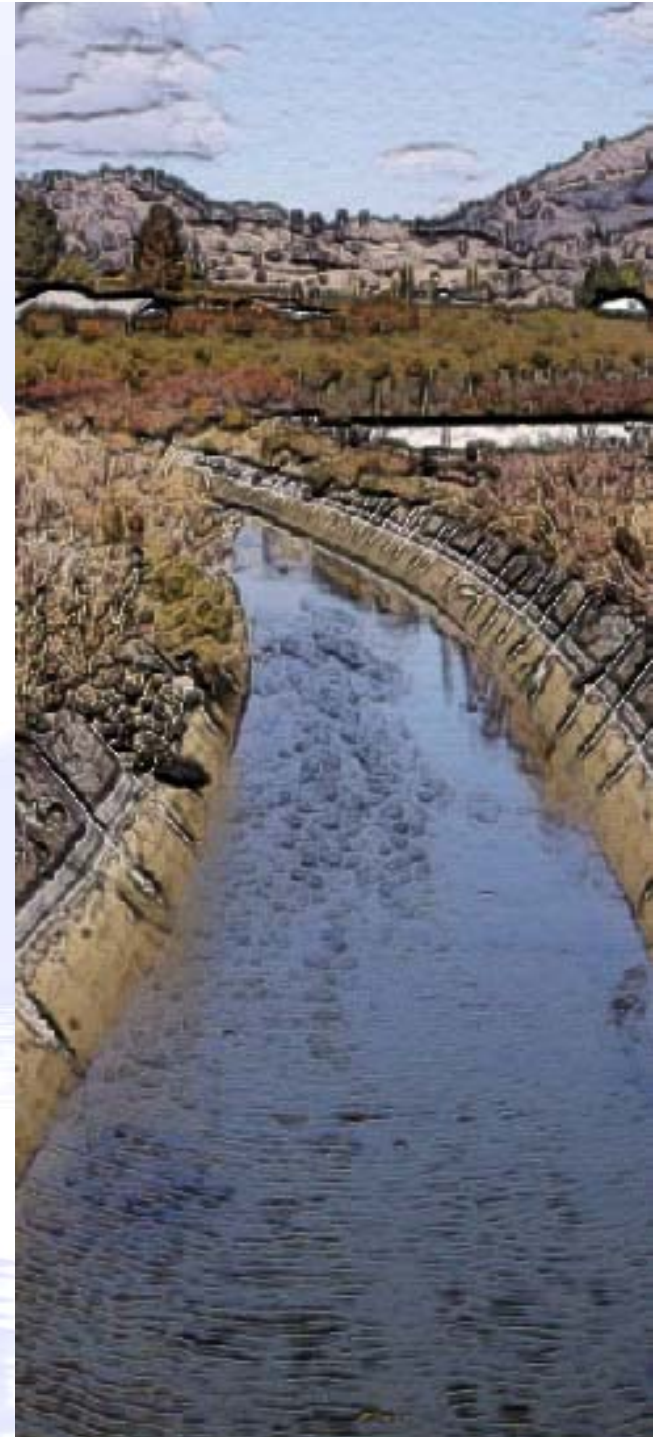


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Water Efficiency

- Water metering is essential for knowing how much water is being used.



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Wastewater

SCALES and TALES®

By Bill McElroy



...“Did you know it's leaky septic systems that make those weeds so thick...and rich,...and chewy?!”



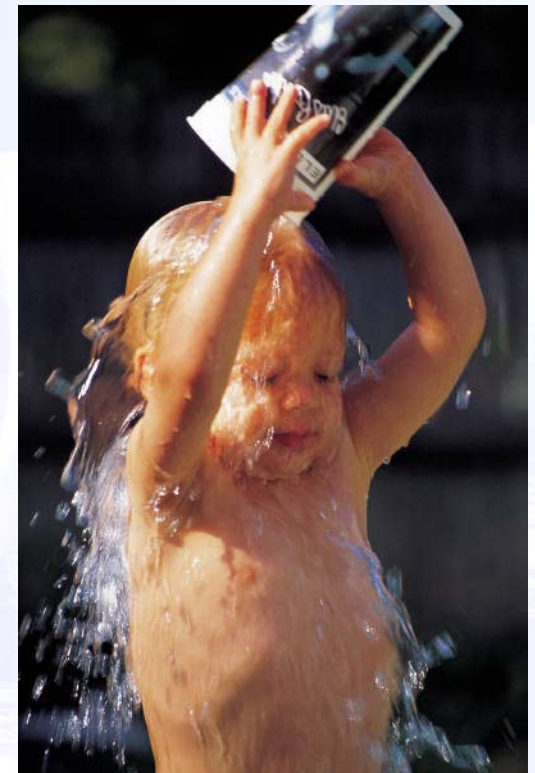
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<http://www.fishingstories.net/septic.html>

Opportunity

- Federal infrastructure funds can be used to build better rural water and wastewater systems
 - Funding is available for “green” projects through the new Municipal Rural Infrastructure Fund, a \$1B Canadian fund primarily targeted towards small communities including First Nations
 - Green infrastructure projects may include water/wastewater, solid waste, and municipal environmental energy improvements
 - Also, a portion of the Canada Strategic Infrastructure Fund is aimed at smaller communities



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To date, \$20-million federal share, \$60-million overall in the three Okanagan Regional Districts

Is the valley
losing the
attributes that
make it such a
wonderful place
to live, with
species and
habitat loss?

Sage Thrasher

http://thebirdguide.com/digiscoping/SageThrasher_800x600.jpg



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Protecting Riparian Habitats

- Fringe or strip of vegetation bordering the shores of streams, wetlands and lakes
- Importance...
 - moisture retention
 - natural dissipation of floodwaters
 - stable stream banks
 - clean water
 - salmonid habitat
 - wildlife habitat



Okanagan Riparian Habitat

- Up to 80% of South Okanagan and Similkameen terrestrial wildlife species use riparian habitats
- 90 % of native riparian habitat in the valley has already been destroyed or severely degraded



Riparian Species at Risk

- Seven *Species at Risk* utilize riparian zones in the South Okanagan and Similkameen valleys
 - Yellow-breasted Chat
 - Lewis's Woodpecker
 - Western Screech-Owl
 - Western Red Bat
 - Tiger Salamander
 - Spadefoot Toad
 - Gopher Snake
- ...And the Northern Leopard Frog is already extirpated in this area

• Chats require dense riparian habitat for nesting

• Conservation or creation of habitat for Chats will protect habitat for other threatened species



Transboundary Flows

- What southward flows will the US seek in the future?
- How will the 2013 IJC Order for Osoyoos Lake differ from the current Order?
 - Modified water levels? New flow requirements?

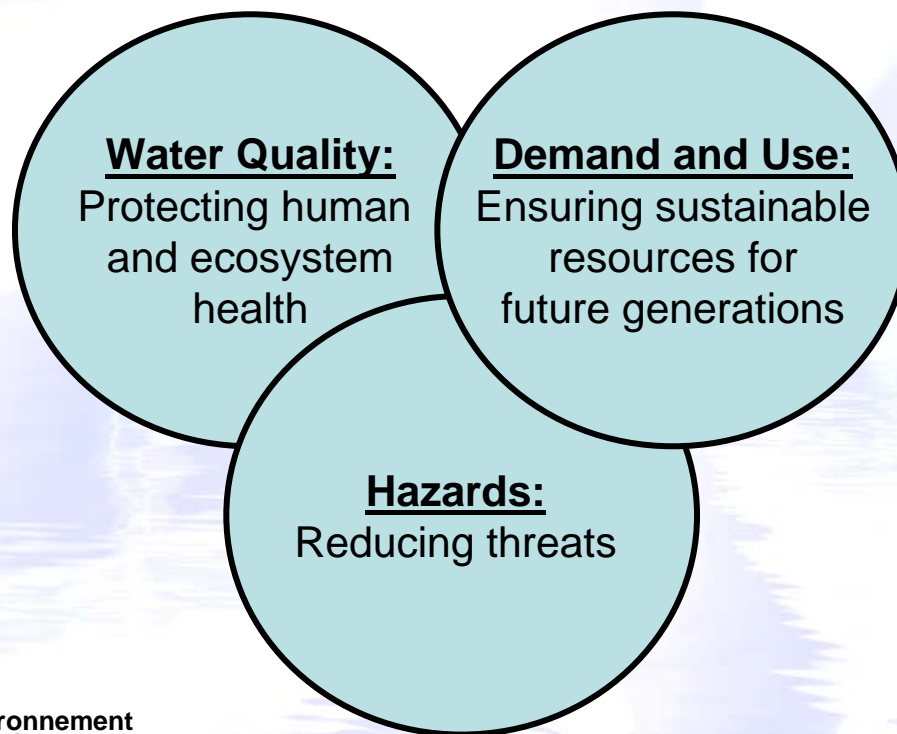


Zosel Dam, WA

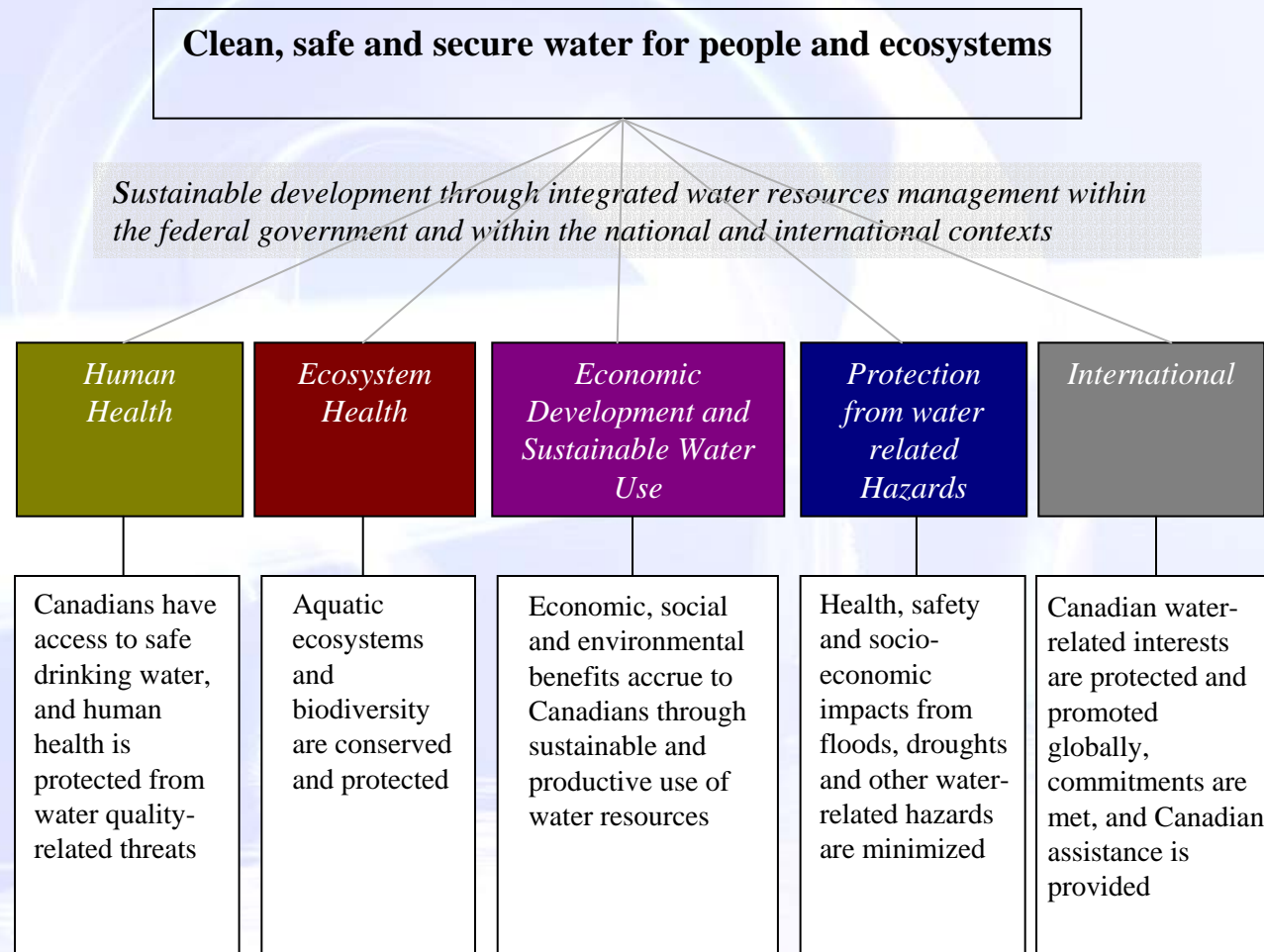


EC WATER VISION

**...working together to ensure
clean, safe and secure water for all uses**



Federal Water Framework



Improving Riparian Areas



- Protection and restoration of riparian zones will improve water quality downstream for humans, wildlife, fish and livestock
- The South Okanagan Similkameen Conservation Program
 - Certain ranches now fenced to create riparian zones
 - Osoyoos Band fences and cattle rotation plan
 - Funding from Environment Canada's Habitat Stewardship Program \$80-98K/year began in 2000 (contingent on matching funds from partners/landowners)



Water Monitoring

- Water quantity measurements ongoing at 24 sites in the Okanagan basin and 12 in the Similkameen
- Water quality stations at Okanagan River near Oliver, Similkameen River at Princeton, and Similkameen River at the US boundary
 - Physical elements, major ions, trace elements, nutrients, and fecal coliforms
- Federal-Provincial water quality monitoring and arsenic investigations in the Similkameen River



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Environment Canada's Efforts in the Okanagan

- Research on hydrology, climate change, drought, water balance
- Programs on species conservation, water quantity and quality monitoring, waste management tools
- Development of Canada-wide environmental standards under the National Agri-Environmental Standards Initiative
- Programs to help understand future agricultural requirements for water



Available from Environment Canada

- Water quality
 - <http://www.waterquality.ec.gc.ca/>
- Environmental indicators
 - <http://www.ecoinfo.ec.gc.ca>
- Aquatic biomonitoring
 - <http://www.eman-rese.ca/birc/intro.asp>
- Weather
 - http://www.weatheroffice.ec.gc.ca/forecast/canada/bc_e.html
- Water Threats
 - <http://www.nwri.ca/threats/intro-e.html>
- Species at Risk
 - <http://www.speciesatrisk.gc.ca/>
- EcoAction community funding
 - http://www.pyr.ec.gc.ca/ecoaction/index_e.htm
- IJC and Osoyoos Lake
 - http://www.ijc.org/conseil_board/osoyoos/en/osoyoos_home_accueil.htm
- Water conservation
 - http://www.ec.gc.ca/water/en/manage/effic/e_weff.htm

Or call (604) 664-9100



The Future?

- First Nations, Regional Districts and municipalities incorporate science and trends into growth decisions
- Infrastructure project applications will not only be well engineered, but also connected to a strategy that conserves resources and considers the entire Okanagan basin

