

Thinking Like a Watershed

Ecological governance concepts, trends and applications

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The challenge ahead

In a healthy society, economy always follows ecology, and education precedes them both

Ken Carey

Starseed

The Third Millennium, Living in the Posthistoric World

Harper, San Francisco, 1991



Presentation overview

- Ecological governance
- Key watershed governance trends
- Thinking like a watershed and learning from other places
- The path forward for BC



Foundations

Governance

....the process of decision making...

Who • What • How

&

Accountability

Power



Ecological governance

- Embeds *ecology* in all levels of decision making
- Environment not an 'add on' but central
- Asks how we might foster circular systems – reducing demand on distant and local ecosystems
- Meaningful engagement and collaboration with all key players -- civil society, business, First Nations -- affected by decisions

With the fundamental question:

What does governance shaped by the principles of ecological sustainability look like?



Ecological governance

What it is NOT!

- **One size fits all**
 - instead it must evolve in place
- **Neat and tidy models**
 - instead it is messy and complex
- **Applicable to individual sectors or industries**
 - instead it is about whole system change
eg must address markets, education, law and policy, governments, planning and management, and whole cities and communities



Ecological governance - concepts

- Economy is a subset of the ecosystem
 - recognize biophysical limits
- Ecological resilience a priority
 - To sustain flow of ecological goods and services
- Emphasize circular systems
 - no such thing as waste - simply an input for other processes
- Take uncertainty and complexity seriously
 - requires managing adaptively
- Cultivate social resilience and feedback loops
 - through decentralized power and institutions at the watershed scale
- Reconnect humans (and communities) to the natural world



Climate change represents a **CLEAR AND PRESENT LONG TERM DANGER (and opportunity)**

- More than just the issue of the day, week, month?
- Carbon reduction is all about ***Mitigation***
- Water (and watersheds) is where we will feel the impacts
 - ✓ ***Water is all about Adaptation***
 - *Emphasizes ecosystem resiliency critical to adapt to a changing climate* and will directly impact watershed and ecological function influencing community prosperity



Government to *Governance*

- *Governance* is more than just *government*
-- includes other critical actors such as associations, universities, civil society and business
 - drivers of innovation and change
- Governance, alone, cannot correct poor management
 - yet poor governance often leads to ineffective management and unsustainable—social, economic and ecological—outcomes

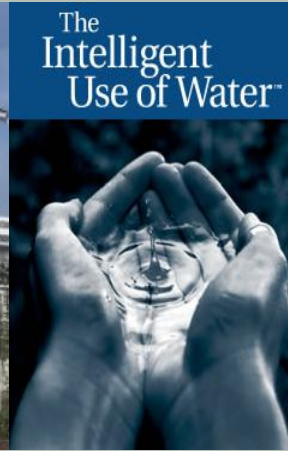


Watersheds, catchments and basins

- Integrators of the landscape and the source of key ***ecological goods and services***
 - drinking water, flood control, biodiversity and food and resource production
- By valuing ecosystem services and formally including them in the decision making process ***strengthens the business case for ecosystem resiliency***
- Watersheds have long been recognized as the appropriate scale for ***management*** (Dublin Principles) and are increasingly recognized as the key “scale” for ***governance***

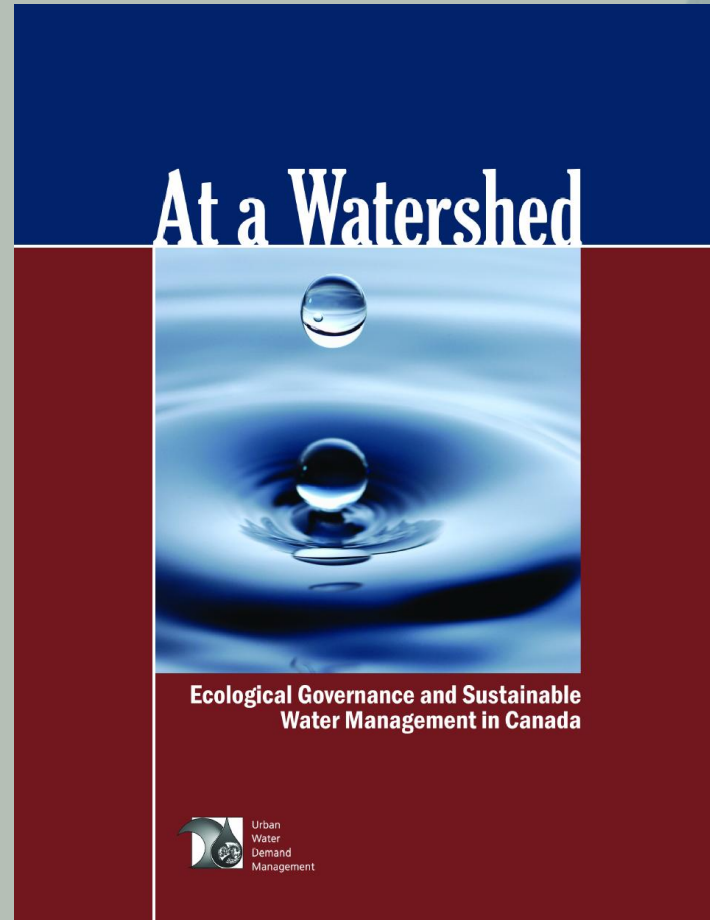


New conception of infrastructure



At a Watershed:

Ecological Governance
and Sustainable Water
Management in Canada
(May 2005)



Primary conclusions

Watershed Sustainability is a **social**—NOT a technical—challenge

- Maintain ecosystem health and function as the priority
- Requires water conservation and changing behaviour and activities on the landscape
- Innovation, adaptive management and whole system thinking as foundations
- Local solutions must be allowed to develop in place
- Watersheds must be managed and governed as whole units

REQUIRES...attention to governance



'Thinking like a Watershed'

Integrated decentralized collaborative watershed-based governance:

- France's Water Agencies and "Water Parliaments" (European Union)
- Murray-Darling Basin Initiative (Australia)
- Conservation Authorities (Ontario)



Water Framework Directive

- Legal framework to protect and restore clean water across Europe and ensure its long term and sustainable use
- Provides watershed/basin focus across various jurisdictions with priorities:
 - Integrate water management based on river basins
 - Ecological and holistic water status assessment
 - Water pricing as an incentive for conservation
 - Streamline legislation and regulation
 - Pollution prevention - uniform water quality objectives
 - Public engagement

French Water Agencies

WHO

- 6 agencies organized around main basins (since 1960s)
 - enabled by the *Water Act*
- Supported by “**water parliaments**”
 - independent stakeholder agencies to manage watersheds in accordance with *WFD* principles

WHAT

- *Quantity*- allocations and adequate water supply
- *Quality* - surface and ground water protection/pollution
- *Planning and Infrastructure* - binding watershed plans

HOW

- Balance between ***Harmonization*** and ***Subsidiarity***
- *Watershed* solutions to water challenges

French Water Agencies

ACCOUNTABILITY

- Appointed administrative council - 5 year plans
- Stakeholder basin committee advise and implement
- “water parliament” of basin representation and decision making

FUNDING/FINANCING

- State-owned but financially independent
- Consumer/polluter pay
- National/EU funding for specific priority projects

Catchment Management Boards/Authorities

WHO

- State created decentralized catchments mgmt bodies (advise and implement *all* aspects of natural resource mgmt)
- Driven nationally by *Murray-Darling Basin Ministerial Council*
- Supported by autonomous *Commission*
 - coordinates implementation of Council measures
- *Wentworth Group* independent national policy advice

WHAT

- quality • consumptive uses • environmental flows
- Develop enforceable catchment plans

HOW

- National level water reform - COAG and WRF (1994) - NWI (2004) - National Plan for Water Security (2007) - \$10+ billion
- Prioritize ecological flows and address over allocations

Catchment Management Boards/Authorities

ACCOUNTABILITY

- Community Advisory Committees and stakeholder reference groups at a variety of levels (local -national)
- Significant independent/autonomous oversight through *Commissions* at the state and national scale

FUNDING/FINANCING

- User/polluter pays through senior gov
- Significant national support through “fiscal federalism”

Ontario Conservation Authorities

WHO

- Quasi-governmental public agencies and corporate bodies based on watershed boundaries
 - enabled under the *Conservation Authority Act* (1946) with municipal and watershed representation
- Supported by *Conservation Ontario* - independent organization

WHAT

- Source Water Protection (*Clean Water Act* 2006)
- Flood proofing
- Developing key “green infrastructure” to ensure resilience

HOW

- Catalyst for local involvement and partnerships through watershed management and planning

Ontario Conservation Authorities

ACCOUNTABILITY

- Variable framework for structure, size, composition and public engagement (36 currently exist)
- Generally through elected or appointed representation at the watershed

FUNDING/FINANCING

- Highly varied but generally shared:
 - 1/3 Senior gov
 - 1/3 municipal
 - 1/3 self generated project/user fees

Key context and drivers

French Water Agencies

- *EU Water Framework Directive*
- History of citizen watershed level engagement

Murray Darling Initiative

- COAG and *National Water Reform*
- High H₂O IQ

Ontario Conservation Authorities

- Flood Protection (Hurricane Hazel)
- Source Protection and *Clean Water Act* (Walkerton)



Comparing with BC

Key Attributes	3 EGs	In BC?
Senior government direction and engagement	√	X - currently ad hoc/varied across province <i>?Living WaterSmart</i> new direction?
Decentralized power including accountability and responsibility	√	X - resource and watershed decisions centralized
Manage cumulative impacts	√	X - currently sector by sector licensing and regulation with minimal ecosystem monitoring
Independent oversight and implementation support	√	X - not specific to water or watersheds
Resources and funding	√	? - water (and watershed) resource mgmt generally under-funded - Living Rivers Trust can leverage \$\$

Where to from here?

BC and Collaborative Watershed
Governance



Key Outcomes for BC's Reform

- Maintain ecological function
 - ensure flow of ecological goods and services
✓Living WaterSmart priority
- Equitably reduce water use
 - more water in the system enhances resilience
✓Living WaterSmart priority
- Link economy to ecology
 - Ecological goods and services provide well being and community prosperity
✓Provincial and national priority
- Recognize and accommodate aboriginal title and rights
 - ✓New Relationship/Constitutional priority*



Proposed Governance “Design” Principles

Administrative

- First Nations accommodation and Decision-Making
- Nested watershed institutions - collaborative and shared responsibility
- Independent oversight - attention to cum. impacts
- Aligned resources

Business Case

- Adaptive to climate change
- Streamlined regulation of activities at the watershed scale
- Equitable water pricing for cost recovery
- Encourage innovation (eg green developments)

Process

- Community engagement
- Science informed

