

Setting the Stage: Current IWM Approaches

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A Global Perspective

Global Shifts in Water Management

- from process to outcomes;
- from water management to watershed management;
- from regulating to shared responsibility; and,
- from government to governance



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A Global Perspective

- ❑ A recent survey completed by the Commission on Sustainable Development found that 16 of 27 developed countries and 19 of 77 developing countries had fully or partially developed IWRM plans
- ❑ Basin level water management has existed in Germany since 1899 and in Spain for over 75 years
- ❑ Current major issues are population growth, demographic changes, economic development and climate change
- ❑ Policy setting and processes with basin management helps lower risks and leads to more sustainability, promoting economic growth and more equitable development while protecting the environment



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Integrated Watershed Management

An Ontario Perspective



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What is IWM?

Integrated Watershed Management is the **process** of managing human activities and natural resources in an area defined by watershed boundaries. It is an evolving and **continuous** process through which decisions are made for the sustainable use, development, restoration and protection of ecosystem features functions and linkages. It addresses a **multiplicity of issues** and objectives and enables planning for **multiple outcomes** which are needed given the complexity and **uncertainty** associated with the natural environment. It requires the **integration** of scientific components and identification of agency and stakeholder responsibilities as part of the process, leading to social learning which is key to sound implementation. IWM must account for spatial and temporal **scales** from its initiation and results can therefore be applied at different scales, depending on the question and the need.

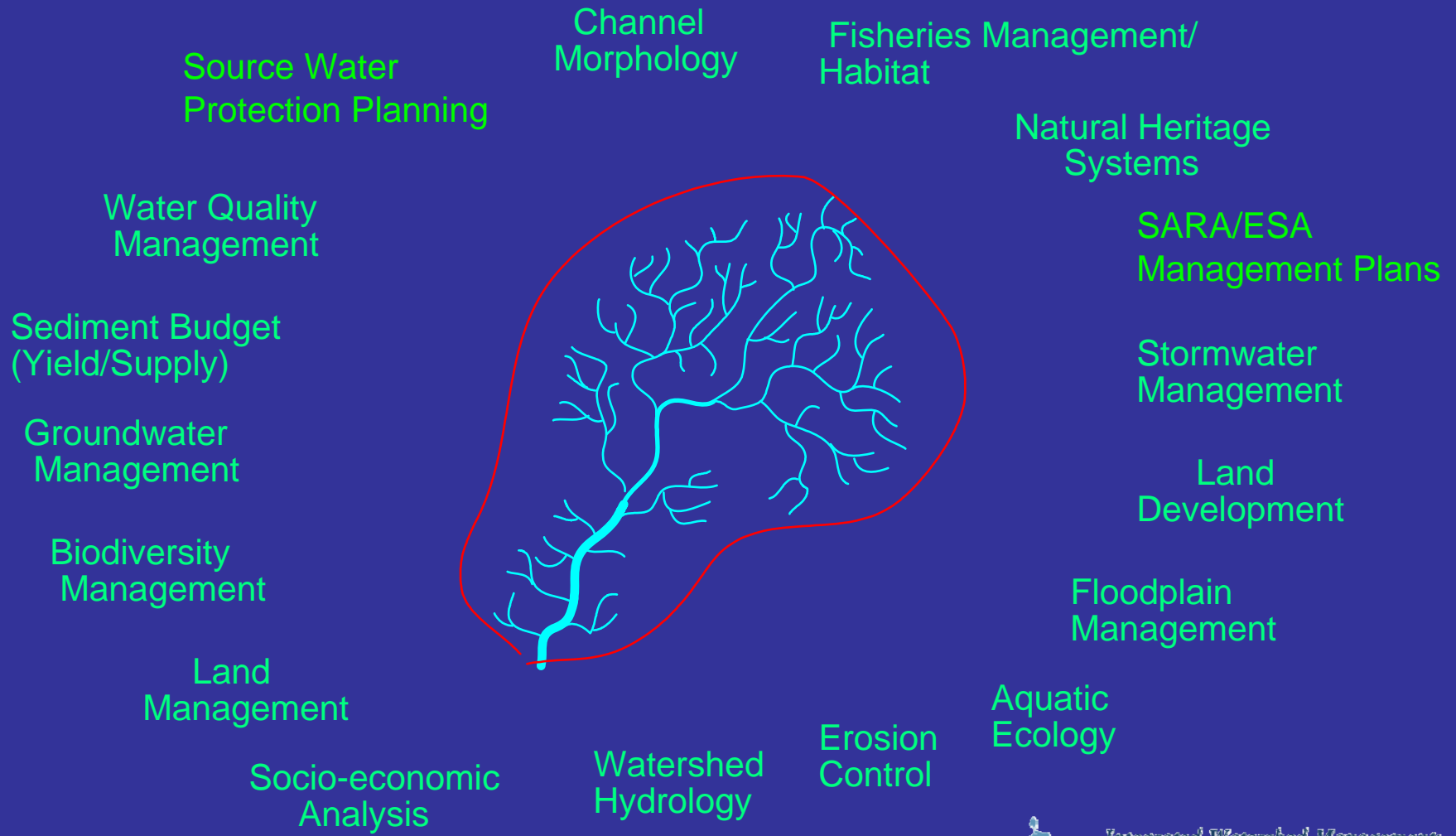


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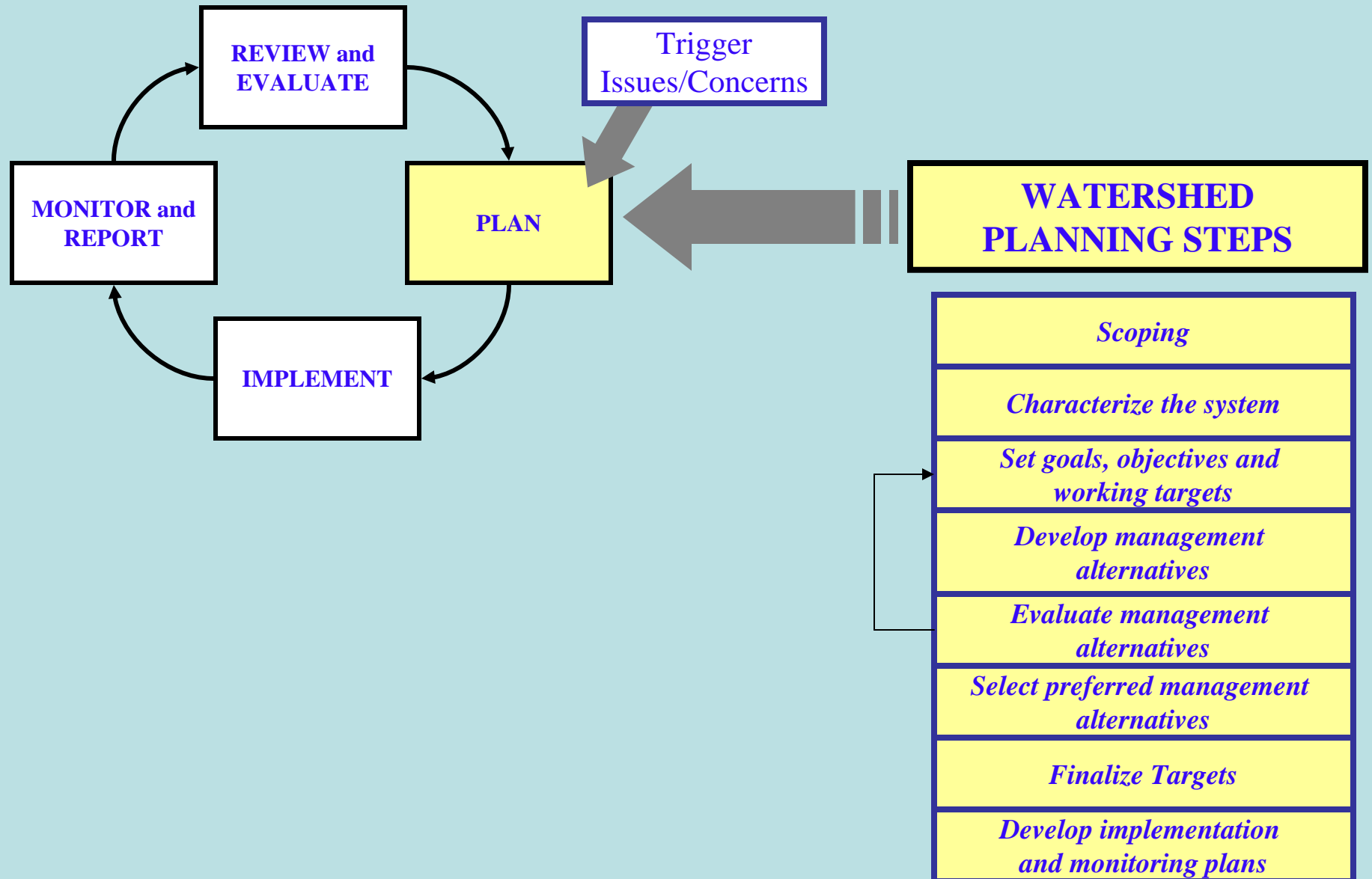


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What is IWM?



WATERSHED MANAGEMENT PROCESS



How do we do IWM?

As part of the IWM process, impact assessments of a variety of **stressors** (e.g. climate change, growth pressures etc.) are considered and **alternative management** approaches are evaluated. This ultimately leads to better management decisions which help to set priorities, pool limited resources and increase efficiency amongst governments, residents and stakeholders.



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How is IWM used?

IWM has evolved over the years and has expanded to include assessments that link human behaviour to environmental impact, and promote healthy environments, safety and a good quality of life. These goals can be achieved by protecting and restoring natural infrastructure, linking land and water management, protecting aquatic and terrestrial ecosystems, including biodiversity, water quality and supply, and promoting sound wastewater treatment.

There has been a growing legislative basis for IWM by the Ontario government



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Why IWM?

The IWM process allows for:

- ❑ Application of **Integration** (stakeholder collaboration, interdisciplinary learning, considering other initiatives e.g. fish management plans, source water protection, land use planning)
- ❑ Establishing **Targets**, milestones and performance measures
- ❑ Dealing with **Uncertainty** (recognize complexity, risks with the use of Adaptive Environmental Management)
- ❑ Evaluating existing and future **Stressors** (spatial and temporal scales)
- ❑ Incorporating **New Ideas and New Technologies**
- ❑ Provides **Context** for decision-making



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Why do we need IWM in Ontario?

Need for a Strategy – today’s drivers in Ontario are:

- Water resource management agenda is complex, new programs, new mandates (low water, source water protection)
- Linkages to other terrestrial-based systems and programs has increased due to development of those initiatives i.e. Endangered Species Act
- Population growth
- Infrastructure Management
- Economic benefits
- Climate change – too much, too little water
- Linkage to Great Lakes
- “Governance” – oversight for watershed management needs to be confirmed. New legislation and policies are needed to consolidate our approach to IWM (Lake Simcoe Protection Act, Oak Ridges Moraine Act, Clean Water Act)
- Need to move from the 1980’s/90’s – community driven, voluntarily applied
- Monitoring issues
- Growing awareness of the public to IWM



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Status of IWM in Ontario

- ❑ IWM is being practiced in Ontario by Conservation Authorities
- ❑ The majority of Watershed Plans are done for managing Environmental Resources and Land use Change
- ❑ The number of Plans has decreased since 2005
- ❑ Significant scientific gaps exists in the target setting, economic, social and integration components



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Status of IWM in Ontario

- Weak links in the IWM process include monitoring and evaluation, and plan updates
- Only a third of CAs consider Great Lakes issues
- Stakeholder collaboration is limited (mostly CA and municipality)
- Ontario is a world leader in the area of integration of the sciences (surface water/groundwater/fisheries/geomorphology etc.)



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Status of IWM in Ontario

□ IWM is being used to:

- Set Workplan Priorities (CAs and municipalities)
- Secure Budgets (CAs and municipalities)
- Influence Municipal OPs/Secondary Plans with respect to growth and infrastructure (municipalities)
- Influence Provincial direction (local NGOs)
- Assess use of best management practices (swm, agricultural bmp's)
- Assess key stressors such as climate change (CAs)



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Status of IWM in Ontario

The barriers to IWM include:

- CA staff capacity
- Ever emerging Provincial Legislation
- Data gaps
- Science
- Lack of public and political support



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Where do we need to go from here?

The IWM concept should be evaluated using a set of tools with a view to updating and formally recognizing its role in Ontario that include:

- Management Instruments;
- Enabling Environment; and
- Institutional Framework.

In other words, we need to take a look at governance



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Governance: Need for Collaboration

Adaptive Co-Management

- ❑ Can be an important innovation in natural resources governance under conditions of change, uncertainty and complexity
- ❑ It is a flexible system for environment and resource management that operates across multiple levels
- ❑ It is possible to begin implementation in a phased manner over a relatively short period of time which is an advantage given the need to begin dealing with the imminent challenges facing Ontario (increases the ability of Ontario to deal with crises)



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Integrated Watershed Management Initiative

Thank you



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