

MORE THAN A DROP IN A BUCKET:

ECOSYSTEM SERVICES AND THEIR
POTENTIAL ROLE IN PROTECTING AND
MANAGING MUSKOKA'S WATERSHEDS

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THE ENVIRONMENT IS THE ECONOMY

MUSKOKA'S ECOSYSTEM SERVICES

Overview

- Background
- Natural Capital and Ecosystem Services 101
- Muskoka's Watershed Ecosystem Services
- Application of Ecosystem Services
 - Natural Heritage Protection
 - Water Management
 - Planning
- Questions Discussion

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Background

- Strong global economy in the 80's leads to the Brundtland Commission's report documenting growing the negative social, environmental, and economic impacts of unrestrained development.
- Global business community adopts Sustainable Development as an aspirational goal that growth today must not compromise the needs of future generations.
- Corporate Social Responsibility (CSR) is adopted as a communications and reporting tool for the global business community.
- The Environment-Economy Nexus emerges.

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Background

- What is the Environment/Economy Nexus?
- Nexus is defined as:
 - “a connection or link associating two or more people or things or ideas;”
 - “a group or series of connected people or things;” or
- Presentation will focus on the links or connections between the economy and the ecology of Muskoka.

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Background

- Ecology and Economy share same root “Eco”
 - “Eco” comes from the Greek word “Oikos” meaning house or household.
 - “Logos” is the word for “science” or “nature of” and is root of all the “ologies”.
 - “Ecology” is the study of our “house or household”;
 - “Economics” is the study of how we measure the household, the services it provides, and, the value placed on it.
- They are complementary, yet in practice, they are often positioned as an either/or proposition.

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- **ECOSYSTEM SERVICES 101**

- What are Natural Capital and Ecosystem Services?
- **Natural Capital** -World Forum on Natural Capital defines is as the “stock of natural assets which include geology soil air water and all living things.”
- **Ecosystem Services** are the benefits derived from or generated by the Natural Capital

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- **ECOSYSTEM SERVICES 101**
- **Four Categories**
 - Provisioning
 - Regulating
 - Habitat or Supporting
 - Cultural

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- Provisioning
 - Food
 - Water
 - Fibre
 - Timber

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- **Regulating Services include**
 - **Local climate and air quality:** Shade, Rainfall and Soil Moisture regulate storm runoff and base flow and removing pollutants from the atmosphere.
 - **Carbon sequestration and storage:**
 - **Moderation of extreme events:** Ecosystems and living organisms create buffers e.g. wetlands soak up flood water and trees stabilize slopes
 - **Waste-water treatment:**

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- **Habitat or Supporting Services**
 - **Habitats for species:**
 - Habitats provide everything that an individual plant or animal needs to survive: food; water; and shelter
 - Ecosystems provide different habitats that can be essential for a species' lifecycle e.g. Migratory Birds
 - **Maintenance of genetic diversity:**
 - Genetic diversity is the variety of genes between and within species populations
 - Habitats with an exceptionally high number of species which makes them more genetically diverse than others and are known as 'biodiversity hotspots'.

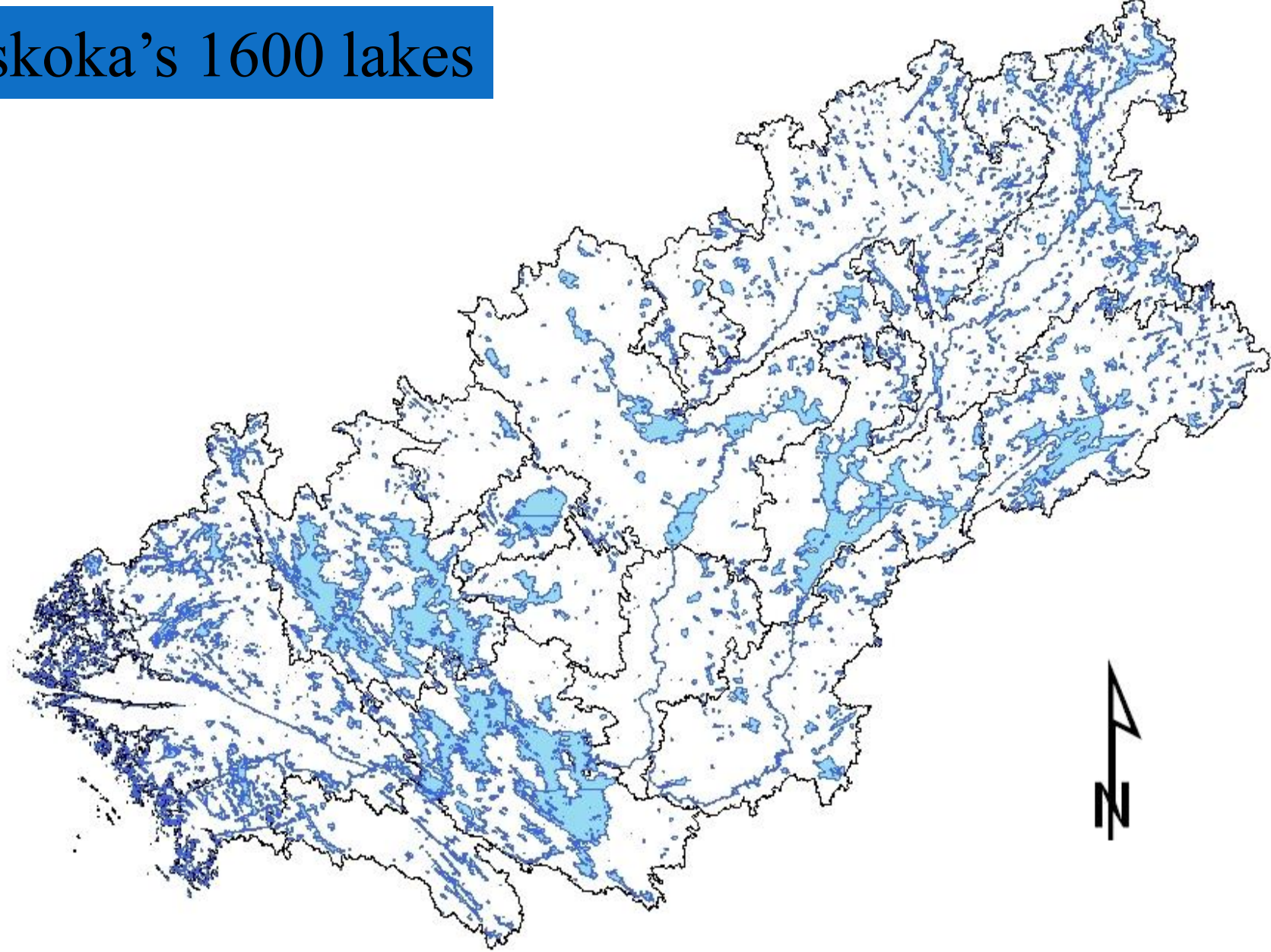
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- Cultural Services
 - Recreation and mental and physical health
 - Tourism:
 - Aesthetic appreciation and inspiration for culture, art and design
 - Spiritual experience and sense of place

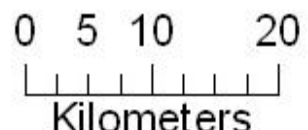
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- Application 1 – Watersheds
- Ecosystem services of rivers and watersheds should be considered in the pursuit of integrated planning, decision-making, and management to sustain and/or enhance this important natural capital.
- 25 years of ecosystem service-related river and watershed studies were reviewed. The most commonly studied ecosystem services for rivers and watersheds were:
 - recreation (41% of studies), food (29%) and,
 - climate regulation (26%).
- Many of the studies also focused on three ecosystem service themes: modelling (91%), mapping (80%), and economic valuation (72%); 58% of the studies investigated all three of these themes.

Muskoka's 1600 lakes

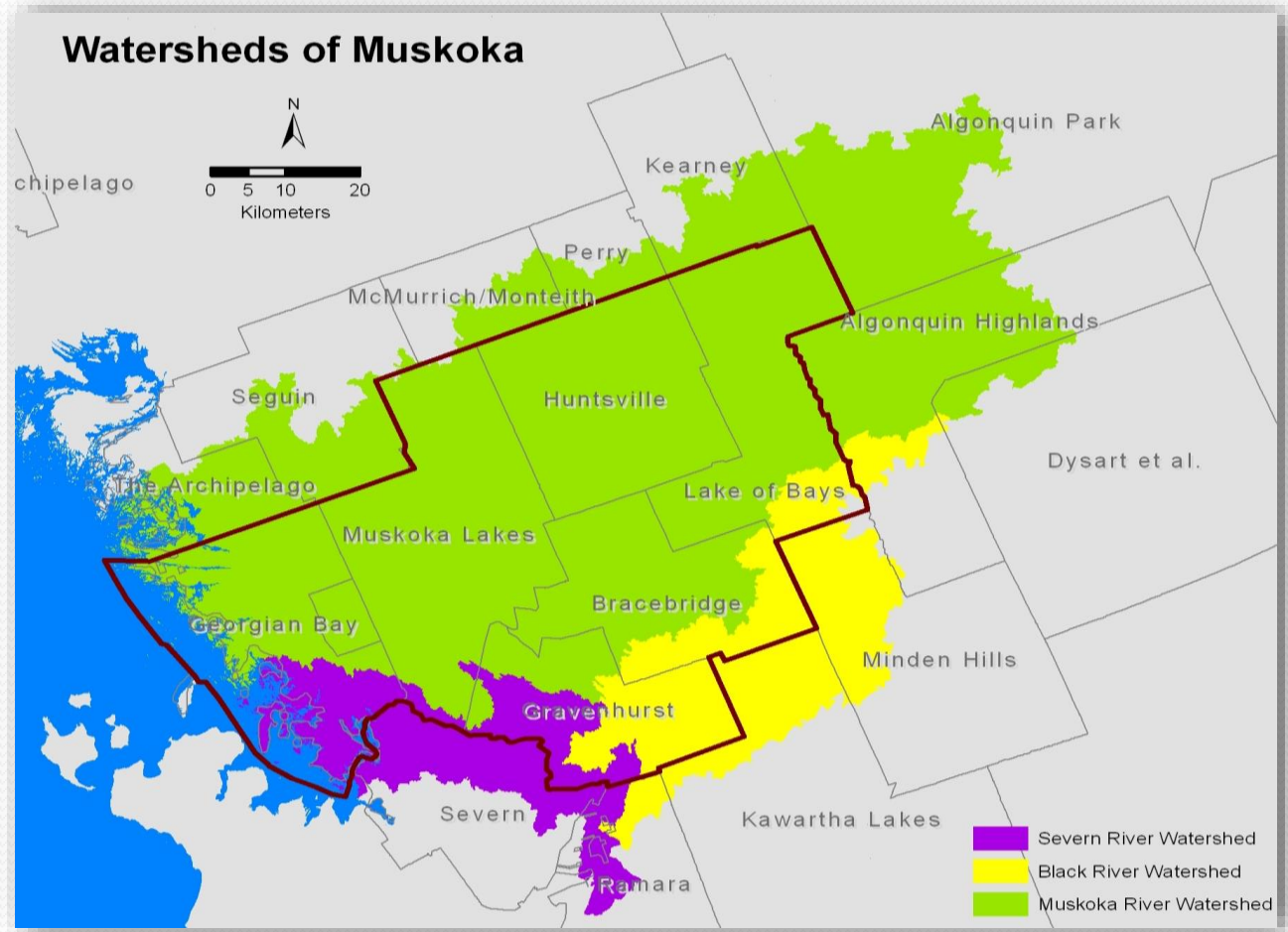


Universal Transverse Mercator
NAD83 Zone 17
NTDB 1:50 000



 Waterbodies
 2EB Boundary

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- Application 2-Planning and Development
 - The DMM has developed a GIS based mapping capacity for the Watershed and sub-watersheds. This technology allows the District to present local and district zoning categories on a sub-watershed basis as well as development applications for these same areas.
 - Once developed these same sub-watershed files could track loss of natural capital from property development.

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- Application 3- Natural Heritage Protection
 - Use of Natural Capital and Ecosystem Services calculations and mapping would assist in the identification of high potential properties for acquisition, gifting or easements.

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- Thank You

- About Me

- Seasonal Resident (30 years) Twp of Lake of Bays
- Background in both environmental protection and local & regional economic development.
- Author/Editor- The Water Quantity Resources of Ontario, 1984
- Planning and Management Consultant

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