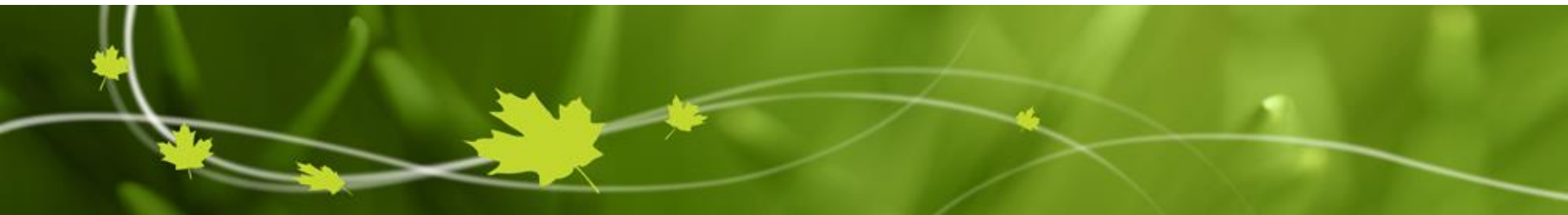




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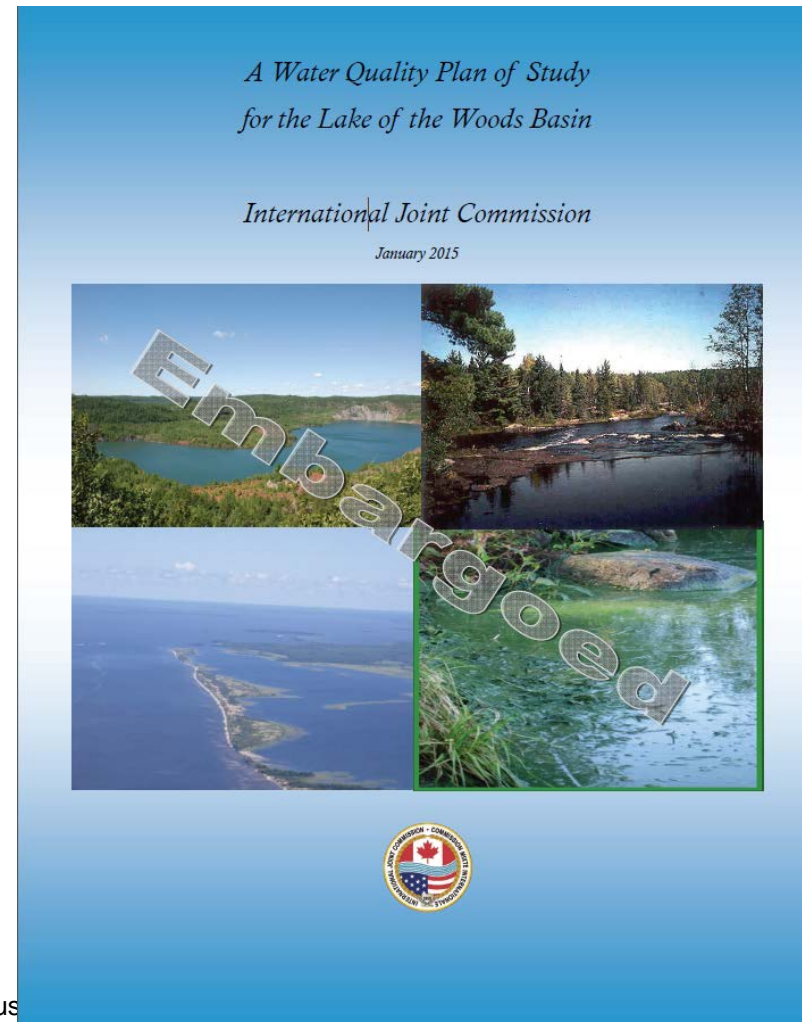
Draft ECCC Science Plan

Rainy River and Lake of the Woods

Water Science and Technology

Context for the Draft Science Plan

- Focus on critical issue of algae
- Starting point
 - IJC PoS
 - Binational updates to the PoS
 - Build on existing knowledge and work
- Draft plan not 'set in stone'—need and welcome input and feedback
- Goal is to produce the science that informs the best outcome possible for Lake of the Wood water quality
- Starting work on “no regrets” elements, the rest will come as we engage further



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Foundation for the draft Science Plan

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Monitoring	1. International Monitoring Program for the Lake of the Woods Basin
Nutrient Enrichment and Harmful Algal Blooms	2. Mass-Balance Models for Phosphorus and Nitrogen in the Lake of the Woods Basin 3. Internal Loads and Hypoxia in Lake of the Woods 4. Assessment of Iron Fluxes from Sediments on Cyanobacteria Bloom Formation in Lake of the Woods 5. Assessment of Nutrient Subsidies from Shorelines Due to Erosion from High Water Levels in Lakes and High Flows in Rivers 6. Application of Water Quality Models at Watershed and Basin-wide Scales to Apportion Nutrient Sources 7. Implementation of Nutrient Load-Reduction Strategies in Lake of the Woods Basin 8. Application of Satellite Imagery and Remote Sensing Tools to Map and Characterize Water Quality and Algal Blooms 9. Development of Predictive Models of Algal Blooms from Hydrological and Meteorological Processes 10. Influence of Altered Food-Web Structure on Production of Harmful Algal Blooms 11. Taxonomic Characterization of Algal Communities and Algal Toxins 12. Public Health and Animal Welfare Risks: State of Knowledge and the Need for Alerting Mechanisms
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Science Focus on nutrients and algae

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Direct links with draft science plan

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Data to inform other projects

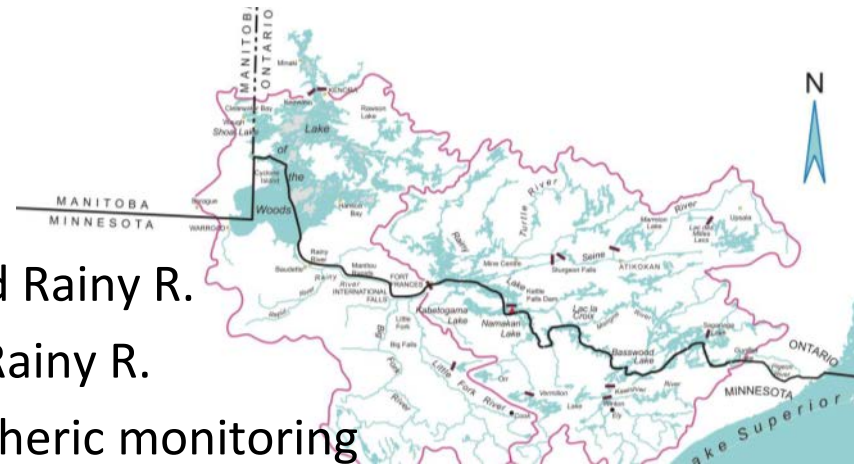
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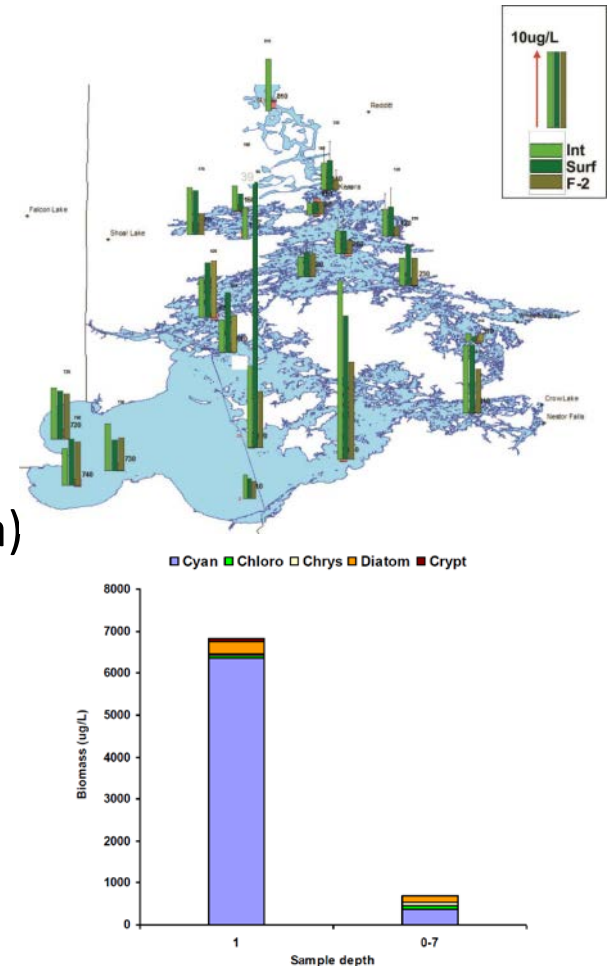
Component 1: Monitoring

- Water Quality Monitoring in the Lake of the Woods and the Rainy R. (based on POS#1)
 - Baseline monitoring in LOW and Rainy R.
 - Event based monitoring in the Rainy R.
 - Enhanced tributary and atmospheric monitoring through partnership
- Links to other POS projects
 - POS#18
 - POS#21
 - POS#24
 - POS#25
 - POS#28



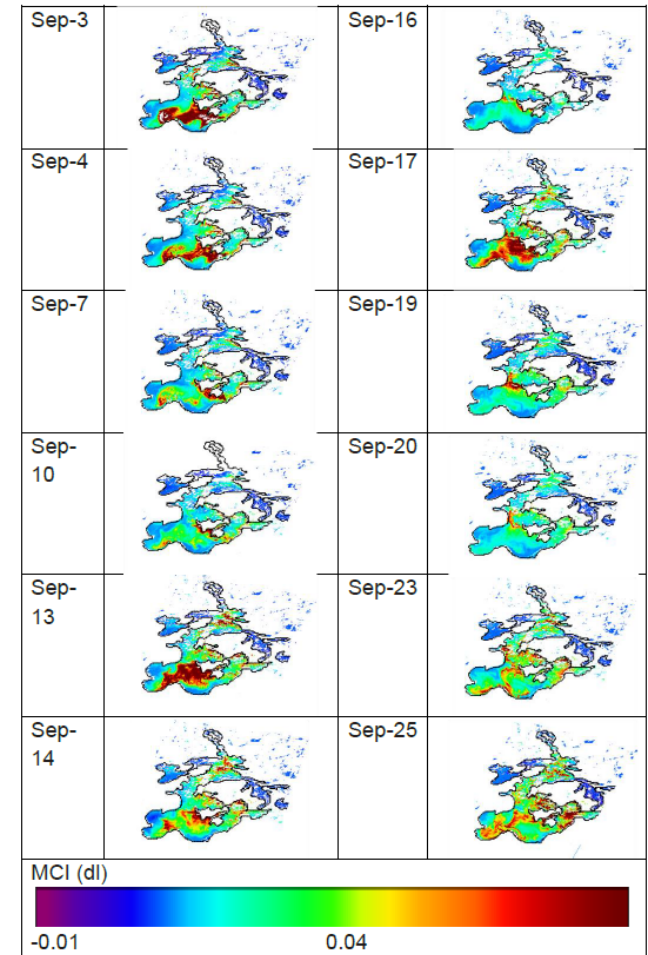
Component 2: Nutrient enrichment and algal blooms

- Address critical knowledge gaps in lake nutrient dynamics and algal blooms (based on POS#2,3,4,11)
 - Bloom species among LOW basins
 - Sources and types of toxins in LOW
 - Nearshore nutrient loading
 - Internal loading (resuspension and hypoxia)
- Links to other POS projects:
 - POS#8
 - POS#9
 - POS#10
 - POS#12



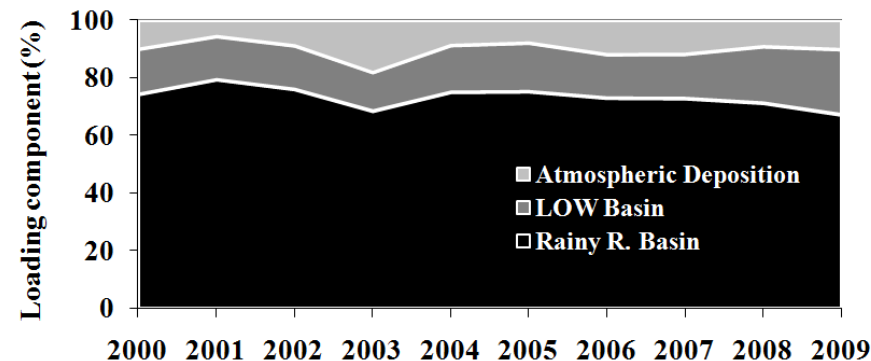
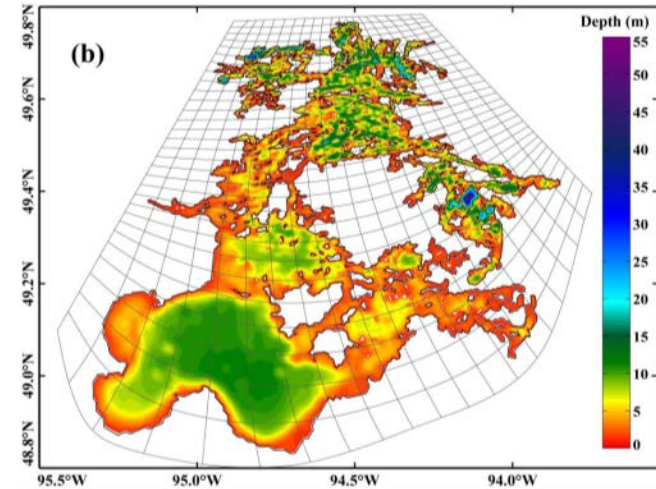
Component 3: Remote sensing

- Development of Remote sensing tools to identify and monitor algal blooms (based on POS#8)
 - Evolution of algal blooms
 - Near-real time monitoring of dynamic algal blooms
 - Methods for satellite detection of algal bloom composition
- Links to other POS projects:
 - POS#11
 - POS#30



Component 4: Modeling

- Develop integrated modeling framework for the watershed and the lake (based on POS#2,3,5,6,7,9,10)
 - Nutrient cycling and algal bloom triggers
 - Contribution to water quality objectives for LOW
 - Evaluation of BMPs and climate change impacts
- Links to other POS projects:
 - POS#18
 - POS#19
 - POS#28
 - POS#29



Component 5: Engagement and Partnerships

- Input and feedback on the Draft ECCC Science Plan welcome
- Committed to regular reporting on progress in science implementation and findings
- Committed to Open Data
- Partnerships are still needed to contribute to other projects by leveraging proposed activities
- Seeking partnerships to advance the *contaminant* and *capacity building* themes of the POS

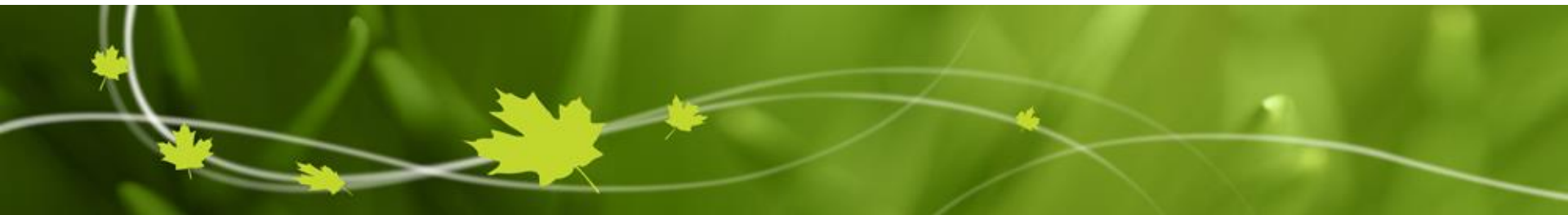
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Thank you!