

Forestry Protocol Workshop
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Breakout Session – Water Quality and Quantity and Aquatic Resources

Reported by Dean Toole

Participants:

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John Jacobs – Memorial University
Jim Nuna – Innu Nation
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Objective: Maintain the integrity of the aquatic component of the forest ecosystem.

Monitoring/Means: Implementation of an effective monitoring and research program as prescribed in the Forest Ecosystem Strategy Plan for Forest Management District 19.

Recommended Activity 1: Full review of current databases including relevant literature and local knowledge

- where they exist
- identification of knowledge gaps
- base level knowledge
- local knowledge, Environment Canada, DFO, etc.
- focus on indicator watersheds

***Known:** Currently limited knowledge of fish and fresh water aquatic populations. Species are known.

Recommended Activity 2: Development of a conceptual model of impacts of harvesting practices on the aquatic component of the forest ecosystem in Labrador

- based on literature review and local knowledge
- a lot is known about impacts of forest harvesting in the boreal forest
- how applicable is it in Labrador?
- using local knowledge and expert opinion, develop a quantitative model to be used in the forest implementation plan and forecasting models

Recommended Activity 3: Develop a research plan to test the quantitative model in the local context.

- **Note:** To facilitate the required research, management units for the planning and operational plan should (must) be watershed units.
 - as a minimum a key indicator watershed to allow for monitoring program
 - paired watershed approach
 - comprehensive pre-harvest survey, involving local expertise, of harvest block areas to monitor selected indicators (tie to other issues, ie. biodiversity):
 - Road construction
 - immediate impacts of construction (currently viewed as a problem)
 - long term impacts of increased access
 - Current harvest blocks overlap watershed areas
 - no relationship to topography
 - creates a challenge for monitoring indicators
 - suggest watershed units as management units
 - ecosystem based management
 - Test to see if the buffer zones prescribed are having the desired effect
 - paired watershed approach to assess impacts of harvesting:
 - different harvesting methods
 - time of year of operations
 - different prescriptions
 - fuel storage
 - road construction
 - rutting
 - different bio-physical conditions
 - current forest condition
 - soils
 - Key indicator
 - % of water shed in a recent cut condition
 - water quality/discharge
 - ground water
 - turbidity
 - nutrients (nitrates and phosphates)
 - dissolved oxygen
 - dissolved organic carbon
 - temperature
 - mercury in fish flesh
 - food fishery - trout, salmon
 - test fishery to determine population levels

- cultural species of concern. ie. white spruce
- juvenile fish in streams
- aquatic invertebrate assessment
- Sampling regimes
- key indicator watershed areas to capture cause and effect
- intensive sampling
- global sampling to determine base level
- BMP's
- operational guidelines
- road construction
- stream crossings
- decommissioning roads
- feedback and testing effectiveness of prescriptions

Potential Partners:

- Department of Fisheries and Oceans
- Environment Canada
- Universities - SFM Network
- COMERN
- Institute for Environmental Monitoring and Research
- Innu Nation
- DFRA
- Provincial Department of the Environment
- Fish and Wildlife Department
- Other issues

Timing:

Activities one and two can proceed immediately depending on resources (human and financial). Activity three is an active research and monitoring program. Planning should commence soon in preparation for next field season. Monitoring should commence at least two years prior to forest harvesting activities in the selected indicator watersheds.

Recommendation:

It is the recommendation of this working group that an expert committee be struck to commence planning for work under this research issue area.