



**Enhancement of
Source Protection Measures
for the Eskasoni First Nation
Drinking Watershed through
Community Awareness Sessions
and a Potential Hazards Survey**

Enhancement of Source Protection Measures for the Eskasoni First Nation Drinking Watershed through Community Awareness Sessions and a Potential Hazards Survey



Funded by **Health Canada**

Written by **Shelley Denny** and **Catherine Paul**

Unama'ki Institute of Natural Resources

PO Box 8096, 4102 Shore Road, Eskasoni, NS BIW 1C2

@ UINR 2005



Final report

The quality of drinking water has come under heavy scrutiny after tragedies that have occurred in Walkerton and North Battleford. Inquiries into both of these cases resulted in a recommendation based on a “multi-barrier approach”. The multi-barrier approach involves a set of five barriers put in place to protect the quality of drinking water from its source to distribution. These measures are developed to ensure

- Source protection;
- Adequate water treatment;
- A safe distribution system;
- Monitoring programs, and
- Responses to adverse conditions (Cooper 2003).

Barriers are not intended to be functional on their own but must operate in balance with each other. However, problems experienced at one barrier, does not “spill into” the next level. The critical step in the multi-barrier approach is source protection. Source protection planning is a critical component in the broader watershed management framework.

In the proceedings of Walkerton, Justice O’Connor had several recommendations for the multi-barrier approach. He suggested the development of a “water budget” (Cooper 2003, p. 24) where intakes (revenues) and outflows (expenses) from all sources are recorded to determine if they are in balance. He also suggested that all significant direct threats to the quality and safety of the drinking water be identified, knowledge gaps be filled in with monitoring and research and “maps of land-use and groundwater characteristics and vulnerability” be created (Cooper 2003, p. 24).



Several communities that receive their supply of drinking water from the Bras d'Or Lakes watershed are experiencing problems with their drinking water quality. The source of their drinking water for these rural communities is often found in natural lakes, rivers and groundwater sources within the wooded watershed area of the Bras d'Or Lakes. While the location provides shelter from disastrous events that may occur to water supplies that are situated along highways and other potentially hazardous locations, it becomes difficult to detect problems in water quality that may arise from forestry practices and recreational activities until the water already becomes affected. Protection of the source is not always easy, especially in the cases where direct visual contact of the source is difficult to achieve. Also, with increases expected for microbiological contamination on the global level due to changes in climate (Cooper 2003), current protection of drinking water sources is a concern.

Enhancing the current source protection measures for the Eskasoni First Nation drinking water watershed using source protection within the multi-barrier approach to maintaining water quality will serve as a model for other First Nation and non-First Nation communities around the Bras d'Or Lakes. Water quality issues are paramount to communities dependent on the watershed. A creative plan in Eskasoni would serve as model for other surrounding communities which is completely consistent with the goals of the collaborative planning and management in Unama'ki Institute of Natural Resources.



Objectives

The objectives of the project were:

1. to complete a potential hazards survey to identify significant direct threats to the source; and
2. to generate community awareness on where their drinking water supply originates and how we as individuals can protect it.

Potential Hazards Survey

In general, potential hazards to Eskasoni's drinking water source were found near the source of Eskasoni's drinking water. Examples of significant threats found included oil furnace tanks, paint thinner substances, paint cans, metal items, appliances, household debris and organic substances. Effort to remove this material has taken place in December 2004 following the results of the survey.

The full report generated from the survey can be found in attached documents.

Community Awareness in Eskasoni

A background report was developed in order to gather and organize relevant information to answer the questions:

- What can affect Eskasoni's drinking water safety? and
- How can we protect it?

Also, the hazards survey identified specifically the types of activities that directly impact the source of Eskasoni's drinking water and were used to address some of the community's problems with source protection. The background report can be found in attached documents.

Generating awareness within the community took two approaches:

1. education of Eskasoni's youth in ways drinking water can be affected and how to protect the source through in-class presentations and a demonstration; and
2. involve the youth in a poster contest in which the message of protecting the source of the drinking water will be portrayed in the poster for distribution throughout the schools and community facilities in Eskasoni.



Three schools in Eskasoni received a 30 minute presentation and classroom demonstration on how pollutants enter the water supplies (surface and groundwater):

- Training and Education Center (TEC; Alternative High School)
- Eskasoni Elementary and Junior High School (Grades 4 to 9)
- Eskasoni High School (Grades 10 to 12).

One presentation was given at TEC for grades 9 to 12 and three presentations were given at the High School (one per grade). Twenty-four presentations were given to the Elementary and Junior High School as there were many classes for each grade and the presentations were more effective when given to one class at a time. An estimated 640 children were given classroom presentations in the community of Eskasoni. The presentation, demonstration and questions lasted approximately 40 minutes. The demonstration given was taken from EPA Environmental Education “Aquifer in a Cup” that can be found at <http://www.epa.gov/OGWDW/kids/cup.pdf>. The presentation and demonstration given to students of Eskasoni can be found in attached documents.

Poster Contest

A donation was received from the Eskasoni First Nation for the poster contest. These funds were used to create three other categories for which prizes were given. Winners for the poster contest were Ellen Cabot (High School), Sophia Peter Paul (TEC), Mary Louise Cabot (Grade 7 to 9 Category) and Norlene Sylliboy (Grades 4 to 6 Category). Their posters were copied and distributed to all schools and community facilities. Poster selection was based on artistic drawing ability and the environmental message it relayed regarding protection of the drinking water source. Copies of the winning posters can be found in attached documents.



Signs

Signs were developed to be posted in the area of the water source explaining why dumping is not permitted. A copy of the sign developed can be found in attached documents.

Additional Efforts

Other presentations were given for other First Nation Communities in Cape Breton by using a generic version of the presentation in Chapel Island, We'komaq and Wagmatcook. Membertou First Nation hosted an event at the Trade and Convention Centre and UINR took this opportunity to give the presentation to the youth of Membertou. An estimated 120 children were given the presentation and demonstration in other Mi'kmaq communities in Unama'ki.

Conclusions

Overall, this project was very successful in generating community awareness in protecting Eskasoni's drinking water. The youth of Eskasoni know where their drinking water comes from, and many of them did not know the source of their water beyond "the tap" before the presentations were given. They are also aware of the types of objects that pose a significant health risk, and who to contact if their water smells or tastes unusual or if they see individuals dumping around their drinking water source.

There are signs posted in the areas of the drinking water source however, erecting newly worded signs explaining why dumping is not permitted rather than simply "NO DUMPING" will hopefully solve some of Eskasoni's dumping problems near the source and reduce the potential for source contamination.



Literature Cited

Cooper, K. 2003. Trusting the tap: One key lesson from the Walkerton and North Battleford tainted water tragedies is the need to protect our drinking water at the source. *Alternatives Journal* 29:2 (Spring 2003).

Keep The World Clean, For A Healthier
~HOMES~



Sophia
Peter-paul

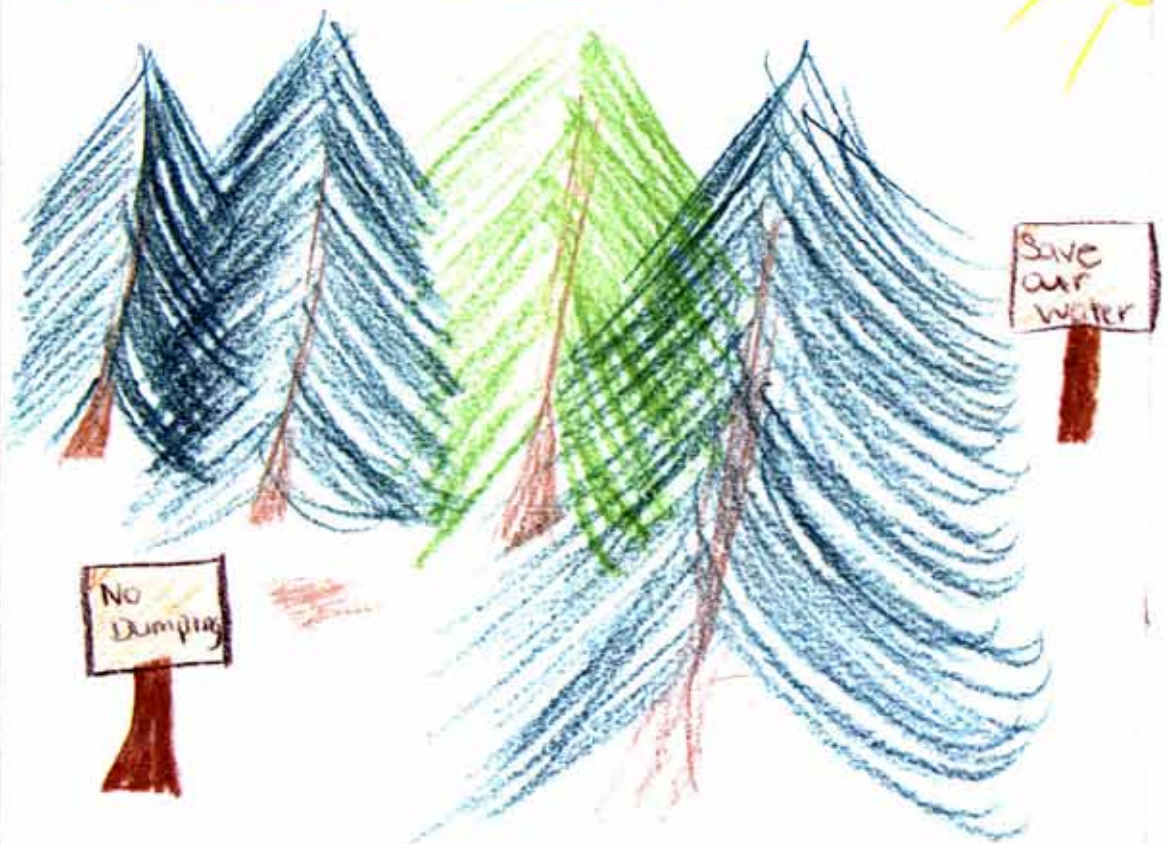




Protect Eskasoni's

Do's

Put up awareness sign's to help our community!

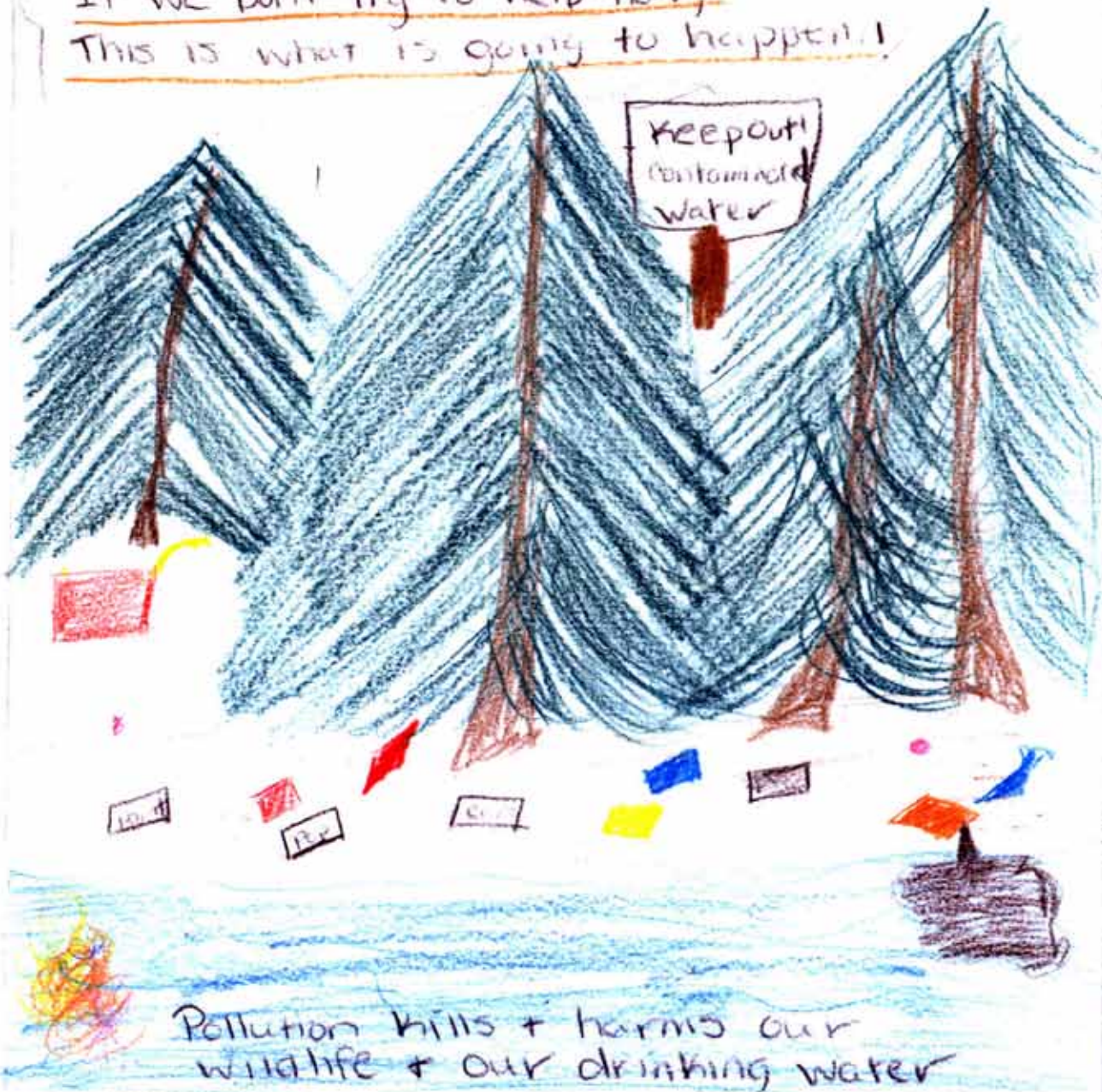


Don't Dump or pollute, Especially near Streams, rivers etc.

Drinking Water V

DON'T'S

If we don't try to help now,
This is what is going to happen!





Mailing Address

PO Box 8096
Eskasoni NS B1W 1C2

Street Address

4102 Shore Road
Eskasoni NS B1W 1C2

Phone

902 379 2163
Toll Free
1 888 379 UINR (8467)

Fax

902 379 2250

E-mail

info@uinr.ca

Web

www.uinr.ca

■
uinr.ca