The chart below presents the mercury concentration among residents in five communities where the study was carried out. As previously noted, the amount of mercury in hair from all participants was below the selected threshold of 10 ppm. The blue boxes represent the range of concentration within which 50% of the study participants fall for each community. The grey line above and below the boxes each represent 25% of the remaining participants.

**FOR MORE INFORMATION**

The full study report is available on the Muskrat Falls Project website at [www.muskratfalls.nalcorenergy.com](http://www.muskratfalls.nalcorenergy.com).

For more information or to speak to a member of our team about the study, contact us:

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**Muskrat Falls Project**
**Summary Report: Dietary Survey and Human Hair Sampling Program**
In fall 2014 and winter 2015 a baseline dietary survey and human hair sampling program was conducted for the Lower Churchill Project (LCP) by Golder Associates, with assistance from Sikumiut Management Ltd. The program was conducted in communities adjacent to the Churchill River, and was designed to identify food consumption habits among residents and to measure current mercury levels among those living in these areas.

BACKGROUND

Prior to conducting the program, Nalcor Energy consulted with government agencies and Aboriginal groups about the baseline dietary survey and human hair sampling program. Approvals were received from Aboriginal groups and provincial research authorities to conduct the study.

The research was conducted in Happy Valley-Goose Bay, Mud Lake, North West River, Sheshatshiu and Churchill Falls. A total of 293 people took part in the study. Participants were of all ages, male and female, and close to 200 of the participants indicated that they belonged to an Aboriginal group.

Results of the baseline dietary survey identify the country food and store-bought food people in communities near the Churchill River eat. Results of the hair sampling study provide data on current levels of mercury in people living in these communities. Findings of both the dietary survey and human hair sampling study, combined with the monitoring programs for the project that measure mercury levels in the water, sediment, fish, seal and other animals, will inform the development of the baseline human health risk assessment (HHRA) for the LCP. The baseline HHRA, which will be prepared by an independent consultant, will be used to compare any future changes in mercury levels and in determining if, and when, consumption advisories are needed.

DIETARY SURVEY RESULTS

Results of the dietary survey indicate:

- The most commonly eaten fish are salmon, brook trout, smelt, lake trout and rock cod. Most participants eat fish once a week or less, with only a few eating fish more than once a week.
- Most survey respondents consume seal or seal organs once a week or less, with a small number consuming more than once a week.
- The majority of survey respondents consume bird or bird organs once a week or less, with a small number consuming more than once a week.
- Most commonly eaten birds are black duck, Canada goose, grouse and partridge. The most common species of wild bird eggs consumed are gull, duck and Canada goose. The majority of survey respondents consume bird or bird organs once a week or less, with a small number consuming more than once a week.
- The most commonly consumed mammals were rabbit, moose, and porcupine. The majority of survey respondents consume mammals once a week or less, with a small number consuming mammals more than once a week.
- Most survey respondents consume store-bought meats (e.g., beef, pork, chicken), cod, canned tuna, salmon and Arctic char.

Results of the hair sampling analysis indicate:

- The amount of mercury in hair from all participants was below the selected threshold of 10 ppm. Hair mercury levels ranged from <0.004 ppm to 4.34 ppm.
- Generally, males had higher levels of mercury than females, and adults had higher levels of mercury than children.
- In general, hair concentrations in participants from the communities of Mud Lake and North West River tend to have higher mercury levels than Churchill Falls, Happy Valley-Goose Bay and Sheshatshiu. This may be the result of higher consumption of fish and seal by Mud Lake and North West River than the other communities, as was recorded in the dietary survey.

HAIR SAMPLING PROGRAM RESULTS

Government health agencies around the world establish thresholds for the level of mercury an individual can be exposed to without causing health risks. When people have hair mercury levels below the target thresholds, these agencies suggest there are no known health effects, and that individuals may continue to consume locally caught fish and enjoy the positive health benefits of including fish in their diet.

The mercury hair threshold of 10 parts per million (ppm) has been selected for this baseline study, which is based on Health Canada’s intake guidelines. It also represents the lower end of a range of thresholds applied at other hydroelectric projects within Canada. The threshold of 10 ppm is based on the protection against health effects on children and adults, including sensitive groups such as very young children and pregnant women.

Hair sampling is used in major studies of human mercury exposure around the world. Mercury stays in scalp hair for a long time and can indicate how much mercury a person has been exposed to during the time that the hair has grown. In addition, the amount of mercury in an individual's hair can reliably be linked to mercury exposure through an individual's diet.
In fall 2014 and winter 2015 a baseline dietary survey and human hair sampling program was conducted for the Lower Churchill Project (LCP) by Golder Associates, with assistance from Sikumiut Management Ltd. The program was conducted in communities adjacent to the Churchill River, and was designed to identify food consumption habits among residents and to measure current mercury levels among those living in these areas.

**BACKGROUND**

Prior to conducting the program, Nalcor Energy consulted with government agencies and Aboriginal groups about the baseline dietary survey and human hair sampling program. Approvals were received from Aboriginal groups and provincial research authorities to conduct the study.

The research was conducted in Happy Valley-Goose Bay, Mud Lake, North West River, Sheshatshiu and Churchill Falls. A total of 293 people took part in the study. Participants were of all ages, male and female, and close to 200 of the participants indicated that they belonged to an Aboriginal group.

Results of the baseline dietary survey identify the country food and store-bought food people in communities near the Churchill River eat. Results of the hair sampling study provide data on current levels of mercury in people living in these communities. Findings of both the dietary survey and human hair sampling study, combined with the monitoring programs for the project that measure mercury levels in the water, sediment, fish, seal and other animals, will inform the development of the baseline human health risk assessment (HHRA) for the LCP. The baseline HHRA, which will be prepared by an independent consultant, will be used to compare any future changes in mercury levels and in determining if, and when, consumption advisories are needed.

**DIETARY SURVEY RESULTS**

Results of the dietary survey indicate:

- The most commonly eaten fish are salmon, brook trout, smelt, lake trout and rock cod. Most participants eat fish once a week or less, with only a few eating fish more than once a week.
- Most survey respondents consume seal or seal organs once a week or less, with a small number consuming mammals more than once a week.
- The majority of survey respondents consume bird or bird organs once a week or less, with a small number consuming mammals more than once a week.
- Most survey respondents consume store-bought meats (e.g., beef, pork, chicken), cod, canned tuna, salmon and Arctic char.
- Wild bird eggs consumed are gull, duck and Canada goose. The majority of survey respondents consider gull and Canada goose eggs to be safe to eat.
- The most commonly consumed mammals were rabbit, moose, and porcupine. The majority of survey respondents consume mammals once a week or less, with a small number consuming mammals more than once a week.
- Most survey respondents consume store-bought meats (e.g., beef, pork, chicken), cod, canned tuna, salmon and Arctic char.

**HAIR SAMPLING PROGRAM RESULTS**

Government health agencies around the world establish thresholds for the level of mercury an individual can be exposed to without causing health risks. When people have hair mercury levels below the target thresholds, these agencies suggest there are no known health effects, and that individuals may continue to consume locally caught fish and enjoy the positive health benefits of including fish in their diet.

The mercury hair threshold of 10 parts per million (ppm) has been selected for this baseline study, which is based on Health Canada’s intake guidelines. It also represents the lower end of a range of thresholds applied at other hydroelectric projects within Canada. The threshold of 10 ppm is based on the protection against health effects on children and adults, including sensitive groups such as very young children and pregnant women.

Results of the hair sampling analysis indicate:

- The amount of mercury in hair from all participants was below the selected threshold of 10 ppm. Hair mercury levels ranged from <0.004 ppm to 3.84 ppm.
- The average mercury level in all hair samples was 0.317 ppm.
- Generally, males had higher levels of mercury than females, and adults had higher levels of mercury than children.
- In general, hair concentrations in participants from the communities of Mud Lake and North West River tend to have higher mercury levels than Churchill Falls, Happy Valley-Goose Bay and Sheshatshiu. This may be the result of higher consumption of fish and seal by Mud Lake and North West River than the other communities, as was recorded in the dietary survey.

**DID YOU KNOW?**

Hair sampling is used in major studies of human mercury exposure around the world. Mercury stays in scalp hair for a long time and can indicate how much mercury a person was exposed to during the time that the hair has grown. In addition, the amount of mercury in an individual’s hair can reliably be linked to mercury exposure through an individual’s diet.
The chart below presents the mercury concentration among residents in five communities where the study was carried out. As previously noted, the amount of mercury in hair from all participants was below the selected threshold of 10 ppm. The blue boxes represent the range of concentration within which 50% of the study participants fall for each community. The grey line above and below the boxes each represent 25% of the remaining participants.

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