First Nations Liaison/Field Monitor Report

Completed by: Austin Paul

Report covering the period from: May 4th- June 2nd, 2016

Dates: May 6th, 9th, 11th, 13th, 2016

Activities conducted

Participated in migratory bird surveys near the Mactaquac Generating Station. The work was carried out in conjunction with Stantec Consulting in support of NB Power's Comparative Environmental Review.

Pertinent Tasks:

- To begin the migratory bird surveys, we selected areas that offered a wide field of view.
- Using binoculars we would identify and record the number of birds that passed by as well as their species. This aspect of the survey involved 3 hours of continuous observation.
- We also made regular excursions to migratory bird stop-over areas near Duplesis' farm, the area of the head pond immediately in front of the main spillway and near the Jewett's Mills causeway.
- We selected areas to survey for owls on either side of the river. Game cameras were set up to capture images of birds in the area.
- The species of migratory birds that we identified included: Geese, Mergansers, Black Ducks, Wood Ducks, Teals, Dark eyed Juncos, Song Sparrows, Killdeer, Cormorants, Ring-Billed Gulls, Crows, Pigeons, Eagles and Ospreys. These birds were identified visually with the use of binoculars and the help of a bird expert employed by Stantec Consulting.

Interests and Potential Concerns from a First Nations Perspective

The methods employed in this survey were non-invasive and posed no threat to wildlife. The areas that were surveyed have previously been impacted by the initial construction of the Mactaquac Generating Station, as such, no archaeological sites were encountered. While conducting studies near the Keswick stream, I could not help but notice the archaeological potential offered by the area. The stream is very dynamic, it has meandered significantly: many former river channels are present throughout the landscape. The stable banks of the former river channels should contain woodland period archaeological components (2500-500 years before present). A formal archaeological assessment of the Keswick stream has never taken place, there could be many unknown sites located throughout the river valley. The topography suggests that the area could have been suitable for habitation in a post-glacial environment. There are high terraces that would not have been inundated by a dramatic rise in sea level. Any archaeological sites found along the high terraces would be of great antiquity possibly extending to the Palaeo Period (12,500- 8,000 years before present).

Photographs

Above: A juvenile bald eagle near the Mactaquac Generating Station.

Date: May 9th, 16th, 17th, 18th, 20th, 26th, 27th, 30th, 2016

Activities Conducted:

Striped Bass fishing near the main spillway of the Mactaquac Generating Station (MGS) for the purpose of tagging and tracking.

Pertinent Tasks:

- Active angling was carried out near the main spillway of the MGS, our goal was to capture striped bass for the purpose of tagging.
- A secondary goal was to pump the stomachs of the fish that we caught in order to analyze the stomach contents. This analysis would give insight in terms of the dietary habits of striped bass and to determine whether or not the bass eat salmon smolt.
- No striped bass have been caught thus far. Our team was able to test the stomach pumping equipment on a Muskellunge that was incidentally caught in the fish-lift located on site at the MGS. Unfortunately, the fish's stomach was empty however; we were able to deduce that the pumping apparatus works quite well.

Interests and Potential Concerns from a First Nations Perspective

As was mentioned in a previous report, the area adjacent to the tailrace of the MGS is water reserved for First Nations fishermen only. The permit held by the Canadian Rivers Institute allows for scientific studies to be carried out in the area, although we always give priority to the First Nations fishermen. We had to euthanize a muskellunge in order to ascertain the effectiveness of our stomach pump. We cut fillets off of the fish and delivered them to an elder in KFN.

Photographs

Above: An 83cm Muskellunge caught in the MGS fish-lift.

Date: May 27th, 30th, 31st, 2016. June 1st, 2nd, 2016

Activities Conducted:

Vibracore testing in the Mactaquac head pond for the purpose of sediment analysis. This work was carried out by the Canadian Rivers Institute in support of the Mactaquac Aquatic Ecosystem Study.

Pertinent Tasks:

- The vessel known as the Sea Truck had to be prepared for the water.
- All essential gear had to be organized and repaired when necessary.
- Safe work practices were discussed at length and much time was spent delivering boat orientation to the new staff members.

- Once all of the training had been completed, we began to test the vibracore unit. Snowshoe Island was one of the first areas that our team tested.
- The vibracore would be lowered by a gas powered wench to the bottom of the head pond. The vibracore would then be powered on left to run for 2 minutes.
- We had noticed that the vibrations of the device caused the very fine sediment to be re-suspended in water contained inside of the core tubes. For this reason, it was decided that we would use the device unpowered, in hopes of maintaining the stratigraphy of the sediment sample.
- Using the vibracore in the manner described above led to very successful core samples that will be used to analyze the sediment constituents, sheer stress, etc.

Interests and Potential Concerns from a First Nations Perspective

Through conversations with elder members of my family, I am led to believe that Snow Shoe Islands have a high potential to host archaeological sites. As such, I carefully analyze the core samples looking for traces of cultural material. None have been found at this time. The team members responsible for analyzing the sediment cores are aware of the potential to find archaeological material within the samples. I will take time to show the team members examples of artifacts that are commonly found along the Wolastoq River in order to increase the chances of identifying traces of human activity in the past.

Photographs

Above: The vibracore team after a successful test of Snowshoe Island.