

# Matawin River Habitat Summary

## Black Terns (Special Concern)

nested in the wetland above the dam as recently as 2008, but were not observed in 2007.

## Wild Rice

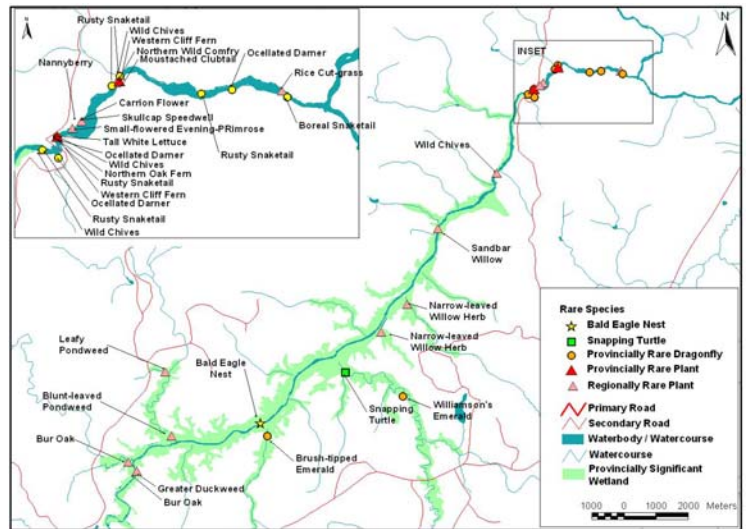
A large stand of wild rice of 32 hectares is located in the upstream wetland. This stand is important to waterfowl in the area.

**Provincially Rare dragonflies** inhabiting the rapids *below the dam* include Ocellated Darner, Boreal Snaketail, Rusty Snaketail, and Moustached Clubtail.

**Provincially Rare dragonflies** inhabiting the wetland *above the dam* include Williamson's Emerald, Walsh's Emerald and Horned Clubtail.

## Provincially Significant Wetland

The wetland above the dam covers 767 hectares consists mostly of meadow, emergent swamp and alder swamp. It is a regionally significant waterfowl staging area and a moose aquatic feeding area.



## Fish Species

- Fourteen fish species live in the system; walleye, northern pike, white sucker and yellow perch are the dominant species;
- Lower Falls, Second Falls and McGraw Falls prevent upstream fish movement;
- Downstream migration between sections is possible as adults, larvae or eggs are swept over the falls;
- Upstream of the dam, spawning habitat for these species is found at the rapids at the head of the wetland and in tributary streams.

## Bird Species

- During fall migration, waterfowl congregate on the river to feed wild rice;
- Nashville warbler, American robin, Common yellow throat, swamp sparrow and song sparrow are the most common birds in the system;
- Common golden eye, mallard, ring-necked duck and blue-winged teal are the most common nesting duck species.

# Water Quality and Noise

## Surface Water Quality (8.1.1) Residual Effect – Insignificant Effect

Intermittent peaking operations may have impact on seasonal surface water quality, due to retention of sedimentation;

- Settling of sediments in water body behind the weir, occurs naturally and should have little effect on aquatic habitats;
- Ability of the wetland to buffer both storm and peaking events will be monitored;
- Intermittent peaking may result in a portion of storm runoff to be temporarily held back behind the rubber dam.



## Noise (8.3.2) Residual Effect – Negligible Effect

Noise emissions associated with operation of the project will originate from the powerhouse building;

- Impacts on adjacent areas (trails & main access roads) predicted to be minimal based on shielding effect of local topography and surrounding forest cover;
- Vents and louvers will be located away from areas where recreational activities take place;
- Building design will minimize transmission of sound out of the building;
- Routine maintenance and inspection of equipment.



## Wetland Health

### Residual effect – Significant Effect – Positive (8.2.1.3)

Plant will be operated in a way to maintain wetland health



Summer and winter water levels will be maintained slightly above historic average levels but well within natural high and low levels.

Addition of an inflatable rubber dam will provide opportunities for increased wetland management of headpond area, including a controlled drawdown of water levels.

Severe drawdowns will not occur as a component of power generation, unless required for wetland management strategy only.



# Birds, Mammals & Dragonflies

The impoundment area has been identified as a significant rearing and staging area for waterfowl and black terns.

## **Birds (8.2.1.3)**

Waterfowl Residual Effect – Insignificant Effect – Positive

Alterations in water level from operations may impact waterfowl in the system. Operating strategy has been developed to stabilize water levels during nesting and rearing periods



## **Black Terns (8.2.1.3)**

Residual Effect – Insignificant Effect

Water level fluctuations can impact nests

Fluctuations during nesting season will be less than historically experienced. Operating plans will seek to buffer extreme fluctuations resulting from precipitation events. This may help to reduce nest failures.

Nesting platforms will be investigated as necessary. These may be required for the initial operating years.

## **Dragonflies (8.2.1.2)**

Residual Effect – Insignificant Effect

A population of provincially rare dragonfly species exists in the upper middle section. Compensatory flow through the channel should maintain the wetted area currently experienced during late summer low flows.

## **Mammals (8.2.1.3)**

Residual Effect – Negligible Effect

The impoundment area is favourable to many mammalian species including muskrat, river otter, beaver and moose.

Species can be impacted by loss of shoreline vegetation. Monitoring of wetland succession and vegetation re-establishment will take place to ensure vegetation is developing in the area.



# Vegetation

## **Wild Rice (8.2.1.3)**

Residual Effect – Insignificant Effect

Water level fluctuations can have an impact on wild rice. Water management will consider this feature. Planting of additional or tolerant wild rice varieties may occur as required.



## **Shoreline Vegetation (8.2.1.3)**

Residual Effect – Negligible Effect

Loss of vegetation diversity can occur due to increased water levels. This is not expected to occur, there is the potential that water management could improve vegetation diversity

## **Shoreline harvesting (8.2.1.3)**

Residual Effect – Insignificant Effect

Under the upper range of operating options being considered there may be some benefit or requirement to conduct shoreline harvesting

- Shoreline cutting will have impacts on marsh, wildlife, loss of shoreline shade, increase in sediment run off, etc.
- The health of shoreline woody vegetation will be monitored and the vegetation harvested as necessary.

# Fish and Fish Habitat

Proposed operating plans seek to maintain fish habitat areas both downstream and upstream of proposed powerhouse location

## Downstream & Lower Middle Sections (8.2.2.1)

Alterations to existing daily & hourly water flow patterns downstream and lower middle sections are predicted to be held within existing levels during fish spawning period (May & June) under average and above average flow conditions.



Fish habitat is not expected to be unduly impacted through operation, with the provisions for compensatory flow. The addition of the rubber dam will improve management of downstream flows and fish habitat during low flow periods

## Upper Middle Section (8.2.2.2)

During normal storm surges, water levels will raise to a point where downstream movement of fish species will occur; however, normal downstream movement is typically limited.



## Impoundment Section (8.2.2.3)

Additional fish habitat will be created as the operating plan reaches the upper range, by increasing water volume in the headpond from April through December, and the expected succession of the wetland.



Although gradual drawdown of water during January to March will bring water volumes close to average historic levels, this is not predicted to limit existing winter fish habitat