# Dams stop nature's ways on mighty rivers

**By Bruce Little**
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DARTHMOUTH, N.S. — Protests over the environmental effects of huge power dam developments usually focus attention on what happens to the land above the dams that will be drowned in water.

Apart from that, an energy-hungry world tends to see hydro projects as a source of power that is clean relative to nuclear reactors and oil-fired thermal generators.

Hans Neu does not go along with that assessment. He is an expert in hydrology at the Bedford Institute of Oceanography here and he feels hydro power may be far dirtier than most people realize.

Instead of looking upriver for the effects of a dam, Neu looks at the ocean into which the river waters eventually spill.

In his view, well-dammed rivers like the Manicouagan in Quebec, have given man the power to alter drastically the after the entire ecosystem and the Atlantic coast.

His theories start with the hydrological cycle in which ocean waters evaporate, rise into the atmosphere and return to earth again inland in the form of rain that feeds the lakes with water.

In a southern climate, the process is continuous. But in the north, nature comes almost to a halt in the winter and doesn't need the water. Nature's solution is to store the water in the form of snow.

As a result, the flow of water from rivers to the sea falls off in the winter. In the spring, at the beginning of what he calls Canada's "very short but very strong biological activity season", the water is released.

It is nature's design to provide as much water as it can just at the time it is needed most. Before dams were built, water flows from the St. Lawrence, into which the Manicouagan drains, rose to an immense peak in the spring, more than three times the level of wnter.

This is where the other half of Neu's theory comes in.

As the fresh water of the St. Lawrence tumbles into the Gulf, it acts as a pump on salt water, drawing in salt water from the sea through deep gorges and pulling it up to mix with the new water on top.

This churning of the deep-running salt water brings to the surface the nutrients from near the ocean floor which fish and other forms of life need for food.

**PROVIDED FOOD**

The relationship of the two systems meant that the strongest flows of water, coming as they did in the spring, helped bring near the surface abundant quantities of food and nutrients.

But the daming of rivers has changed that neat interaction.

Instead of letting all that power-producing water in the spring go to waste, engineers have built huge storage lakes behind the dams that can hold the water until the following winter. Then it can be released to create power when the normal river flows would be small.

The result of these storage lakes is a flattening of the wide swings in the flow of rivers. And that means more nutrients in the Gulf are brought up in the winter, when they are needed least, while fewer nutrients are supplied in the spring and summer, when they are needed most.

Manicougan River dams cut the flow of the St. Lawrence River by as much as one-third in the spring, according to Neu's research, and he is worried that it could produce a stagnant Gulf.

## Coming events

Announcements appearing in the Coming Events column are charged $2.25 for the first 25 words or less and 40c for each additional five words or portion thereof.

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NO Shangri-La Bingo at the German Canadian Club on Monday, Feb. 25. T0396U

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PLAN to attend the North Hill Eagles No 3475 Marathon Bingo March 9th at

Bingo every Tuesday 7:45 p.m. OLPH Hall, 625 - 4th Ave. N.E.

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Montgomery Bingo 5003 - 16 Ave. N.W. every Wed. 7:45 p.m. $10 and $15 games. 4 jackpots and bonanza game.

## Announcements

### 5 Births

McGINLEY — Patrick and Margaret (Daly) are happy to announce the arrival of Pauline Margaret on February 5. U0092U7

WUDRICH — Emil and Valerie are pleased to announce their first arrival on February 6th, a daughter Tanya Lee, 8 lbs. 11 oz. Many thanks to Dr. McQuitty and Dr. G. Brown and staff at Foothills Hospital. U0002U