

FREE MAP
WIND ENERGY

ANNUAL ENVIRONMENT ISSUE

CANADIAN

Geographic

WIND POWER

Can it deliver
clean energy
and green jobs?

WIND
PHOTO
CONTEST
WINNERS

SAVIOUR OF THE SEAS

Environmental Scientist of the Year

ECO INFIGHTING

Are greens squandering
a golden opportunity?



Cancer in the woods?

Emissions from a pulp mill, a tire-manufacturing facility and a provincially operated coal plant all contribute to the chemical soup in Nova Scotia's Pictou County, about 160 kilometres northeast of Halifax. The rate of prostate cancer among the county's

46,500 residents is 24 percent higher than the provincial average.

Nicole d'Entremont, a recent graduate in physics at Mount Allison University, in Sackville, N.B., is studying tree rings to determine whether the region's trees also show cancer-like symptoms — such as an increased replication of cells — given that they are exposed to the same environmental conditions as humans.

With funding from The Royal Canadian Geographical Society, d'Entremont (LEFT) ventured into the woods of Pictou County last summer to extract core samples from trees at various distances from the factories. She then applied a process called flow cytometry, typically used in oncology, but rarely applied to plants.

In flow cytometry, a stream of liquid containing biological cells flows through two pressurized containers. The stream is so thin that a laser can illuminate a single cell, allowing scientists to examine each one individually and to monitor how many times a cell duplicates. Excessive duplications may indicate cancer.

But flow cytometers are expensive and are designed to accommodate the cells of animals, not plants. "It's proving very difficult to get tree cells to suspend in a liquid," says d'Entremont. Undeterred, she has built her own flow cytometer with the help of one of her professors. Results of her study are pending as she develops a method of analysis that works with various species of trees.

Marielle Picher

