Living With the River: The Rideau River Biodiversity Project

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The Rideau River winds out of a series of lakes that occupy an old fault in the landscape of southeastern Ontario. From the town of Smiths Falls to the bustling city of Ottawa, it drains an area of almost 4,000 square kilometres. For centuries the River was an important food source and transportation route and, with the construction of the Rideau Canal in the 1820s, its significance increased. Today, it remains in use as a transportation link and is a highly prized recreational river.

Along with its marshes, lakes and forests, the Rideau is a vital natural habitat for a surprising variety of plants and animals. And it is, like most natural areas, under increasing stress. Whether from the proliferation of zebra mussels or the increased use of pesticides along its shores, the river faces a swarm of challenges.

The Canadian Museum of Nature, Canada's first and largest natural history museum, has had a longstanding interest in the Rideau. In 1998, together with the Rideau Valley Conservation Authority, the Museum initiated the Rideau River Biodiversity Project to study the long-term health of the river. Funded in part by a grant from Montreal's EJLB Foundation, the three-year project was designed to combine the expertise of many scientists in providing an in-depth report card on the River's health. This would lead to an exploration of how local needs could be reconciled with sustainable management of the River's biodiversity. The multi-disciplinary approach remains one of the Project's important features. Zebra mussels or snapping turtle populations are not being studied in isolation. Instead, Museum scientists are attempting to study all aspects of the Rideau's biosystem, from water chemistry to migratory birds.

It is an ambitious approach, and one that has had Museum researchers and many volunteers wading, diving and boating all along the River. Already, some interesting findings have appeared. For instance, the aquatic flora of the Rideau seems to be surprisingly rich, with 55 species identified to date. The world's smallest flowering plant, *Wolffia*, is alive and well in the River. Several fish never before seen in the Rideau turned up early in the Project. One, *a Freshwater Drum*, seems to have moved in from neighbouring waterways. Another, an Oscar, is more at home in the Amazon basin and is probably an escapee from an aquarium.

Also reassuring is the discovery that populations of frogs and turtles do not show a high incidence of abnormalities. This is possibly connected to the discovery that levels of pollutants due to fertiliser use are also in decline. Less happily, the expansion of the zebra mussel population was also confirmed.

A second crucial element of the Rideau River Biodiversity Project is community involvement. For centuries, settlements along the Rideau have depended on the River for their own vitality. Over that time, highly detailed stores of local knowledge have been built. In an effort to utilise that knowledge, and to ensure that the Project's studies were relevant to the river communities, the Museum sought their involvement. Community groups helped to identify areas of concern and continue to participate in the data gathering. Research results and recommendations will be turned over to the same groups, where they will be used to make informed decisions on issues affecting the Rideau's biodiversity.

Governmental organisations such as the Regional Municipality of Ottawa-Carleton and Environment Canada have been important partners in the Project. Community advisory groups made up of volunteers review the Project and provide direction. Their suggestions led to the expansion of the research area to include the lakes at the upper end of the watershed. But even more important are the area-based organisations such as the Rideau Environmental Action League, based in the town of Smiths Falls near the headwaters of the River. This volunteer organisation has a ten-year track record of successful initiatives, from radio shows to water quality seminars, and continues to be an important support to the Biodiversity Project.

The Project is not just about data collection and the subsequent research. It includes a strong public education component too. This takes many forms, including publications and a small travelling exhibit, but it includes more innovative activities as well. Identification workshops took museum scientists to many river communities to assist in the identification of local species. A field guide to species along the Rideau is in production. Boat tours, led by Museum researchers, provided a careful but detailed look at environmentally-sensitive areas. A locally-produced television series focusing on communities along the River was produced and broadcast, and a half-hour video was also prepared. A Turtle Hot Line was set up in order to obtain as much information as possible about turtle species living and breeding along the Rideau. So many calls came in the first year that they swamped the voicemail capabilities of scientist Mike Rankin.

The project is now in its third year, and while the research continues, the major focus of the final year is to set up an independent, community-run organisation to continue the work. To that end, a 30-member community roundtable has

been convened and a detailed plan titled RiverCare 2000 has been developed to identify required work to preserve and sustain the river. It includes everything from new sewage treatment plants to shoreline restabilisation.

The Rideau River Biodiversity Project has proven to be an important application of Museum research to an issue of immediate relevance to the local community. It has not only enhanced knowledge of the life of the River, but it has provided solid data upon which political decisions must be made. It has involved many museum disciplines and it has been the catalyst for a lively and sustained interaction between the Canadian Museum of Nature and its immediate community.

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