In the case of protected areas, the application of the ecosystem approach has required viewing and managing protected areas as part of a broader ecosystem. This is essential to the successful management of protected areas, as the integrity of those designated ecosystems is affected by the land uses and human activities that surround them. The federal government is putting an ecosystem approach into practice by establishing integrated and collaborative management agreements and programs for protected areas that include such activities as monitoring and working with adjacent landowners and land management agencies. For example, to ensure that Marine Protected Areas are part of a comprehensive effort to protect the functioning of marine ecosystems, many of these protected areas will be developed and established within wider integrated management plans that will strive to promote the sustainable development of coastal and marine ecosystems.

## **Restoring Ecosystems**

Equally important to protecting ecosystems is the restoration of degraded ecosystems. The goal is to restore the integrity of ecosystems to the greatest extent possible. This may involve activities like the reintroduction of species and the reconstruction of habitat.

Although Canadians have been undertaking restorative actions for decades, these actions have only recently been viewed in terms of restoring ecosystems. As we try to control and prevent individual problems, we are learning about the complex relationships between environmental, social, and economic activities throughout ecosystems, and we are finding that an ecosystem-wide approach is required to implement effective solutions. The six Ecosystem Initiatives established by Environment Canada are a good example of this transition.

## Evolution of the Ecosystem Initiatives

The genesis of the Ecosystem Initiatives was the cooperative work between Canada and the United States. These two countries have been working together for many decades to address pollution in the Great Lakes. In response to a study of pollution in Lakes Ontario and Erie, Canada and the United States signed the Great Lakes Water Quality Agreement in 1972. In 1978, the agreement was amended to reflect a shift toward an ecosystem approach, which recognized the complex relationships among water, land, air, and living things rather than merely water quality and the need for pollution control. This focus on ecosystems was born out of the need to consider a wide

## Protected Areas in Nova Scotia

On February 28, 1997, Nova Scotia released Keeping the Wilderness Wild: Nova Scotia's Protected Areas Strategy, and on December 3, 1998, passed the Wilderness Areas Protection Act. Nova Scotia is committed to updating the strategy, designating new nature reserves and updating the Special Places Protection Act, conducting the ongoing inventory and assessment of sites of natural value, encouraging private land stewardship, and continuing its participation in the integrated resource planning process for Crown land led by the Department of Natural Resources.

## **Northern River Basins Study**

The Northern River Basins Study was launched when the rapid expansion of pulp mills in northern Alberta was causing increased concern about the health of the aquatic ecosystem. The goal was to help guide the management of the basins' natural resources. In one component of the study, Aboriginal residents were interviewed to find out about native traditional knowledge that could complement and enhance the physical science studies. Archival records, together with the collective memory of the residents, spanned more than two centuries. This component of the study revealed the sweeping social and environmental changes within the basins. Hundreds of maps were created to capture historic and present patterns in land use, wildlife, and other aspects of the basins' ecosystem.