

ecotones of various ages showed plant species spreading into burned areas at an average rate of 0.5-0.8 m per year. With an 80-year rotation, the maximum distance between upland unburned fragments that will replenish biodiversity throughout the forest 80 to 130 m. Management implications for burned protected areas subject to salvage logging will be discussed.

Relationships Between Forest Fires, Habitat Change and Ecological Integrity in Terra Nova National Park, NF

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Parks Canada has adopted a definition of ecological integrity that incorporates the status of native species diversity, ecosystem function (such as nutrient cycling) and stresses on species and their habitats. Managing for “ecological integrity” in protected areas implies that optimal combinations of these factors exist and can be maintained within political boundaries.

In this project we documented how forests respond to different levels of stress in the form of wildfire. The establishment success of black spruce in severely burned areas had strong positive effects on regeneration of other plants, nutrient cycling and wildlife habitat value. In contrast, many areas did not burn deeply and became dominated by expansive heathlands with low plant diversity and negative feedbacks on habitat quality. The relationship between optimal states for the ecosystem and types of disturbances are discussed in relation to park management options.

The Role of Biosphere Reserves in Working towards Ecological Integrity: Case Example of Frontenac Axis Biosphere Reserve

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St. Lawrence Islands National Park

There are currently ten places in Canada recognized by UNESCO (United Nations Education, Scientific, and Cultural Organization) as ‘biosphere reserves’, and a number of other areas in the process of developing biosphere reserve proposals. Four of the designated reserves and several of the proposals include national parks as biosphere reserve ‘core areas’. One such proposal is the 1000 Islands - Frontenac