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...From the CCEA Chair

Two-thousand and seven marks the 25th anniversary of the Canadian Council on Ecological Areas (CCEA) and I am pleased to tell you that the Council is thriving. Please join me in welcoming our three new board members, Jacques Perron, Joyce Gould, and Karen Beazley, all of whom bring new ideas and expertise to the board.



A field trip to Panuke Lake Nature Reserve, 2006 Annual General Meeting

- The development of a Canadian Guidebook on the IUCN Protected Areas Categories which was the focus of our Annual General Meeting in Mahone Bay, Nova Scotia, "Apples and Oranges - Applying the IUCN Categories to Canada's Protected Areas", in October 2006.
- Marine Protected Areas
- Climate Change and Protected Areas
- The Northern Protected Areas Project - Phase 2
- Updating Canada's Ecological Framework

If you have ideas for future articles or new projects please contact any of our board members to discuss. Enjoy this edition of Eco!

The Great Sand Hills - A category V protected area? Applying the Canadian guidelines to the IUCN categories

Fred Beek, Saskatchewan Environment

The Great Sand Hills is located in an area of southwest Saskatchewan within the Moist Mixed Grassland ecoregion of the Northern Great Plains. The Moist Mixed Grassland occupies about 8.6 million hectares or about 13 per cent of Saskatchewan. About 50 percent of this ecoregion has been cultivated.

The area is rich in biodiversity and landscapes and is known to contain rare and endangered species. Landscapes typical of the ecoregion are level to gently rolling often dissected by morainal uplands and river valleys. The ecoregion also contains unique landscapes such as badlands and active sand dunes. Wheat grasses and spear grasses dominate the vegetation. Large mammals

CCEA has recently launched the Stan Rowe Home Place Scholarship and I am pleased to announce that Lee Anderson from the University of Alberta will be the first scholarship recipient. Lee will receive \$1,000 in support of his research on reserve design in the boreal forest in the Yukon.

The Council is also actively involved in a wide range of projects and new initiatives, several of which are outlined in this edition of Eco, including:

The Mission of the Canadian Council on Ecological Areas

To facilitate and assist Canadians with the establishment and management of a comprehensive network of protected areas representative of Canada's terrestrial and aquatic ecological natural diversity.

include mule deer, white-tailed deer and antelope. Rare and endangered species, such as Sprague's Pipit are found in the ecoregion and within the Great Sand Hills.

The Great Sand Hills occupies over 1900 km² (750 mi²) and is considered the largest protected prairie landscape in Saskatchewan, although not all of the landscape is recognized as a protected area. Ranching and natural gas extraction are the main economic drivers of the area. Protected areas in the Great Sand Hills include a Representative Area Ecological Reserve (366 km², 141.25 mi²), Wildlife Habitat Protection Act lands, Federal and provincial pastures and Federal National Wildlife Areas.

An independent scientific advisory committee, with Dr. Reed Noss as the senior scientist, is currently conducting a Regional Environmental Study for the area. This study is taking a strategic environmental assessment approach to characterize the ecological, social and economic conditions. This is the first time this approach has been taken in Saskatchewan.

Categorizing the Great Sand Hills study area has presented Saskatchewan protected areas managers with some interesting problems. In one way or another, the protected areas within the Great Sand Hills meet all of the management objectives of the IUCN categories. This has presented some unique problems when applying the Canadian Guidelines. Two particular problems not addressed adequately by the Canadian Guide book are grazing and gas development. Both of these activities are socially acceptable to maintaining the ecological integrity of the grasslands found in the Great Sand Hills.

If grazing in this area was seen to be mimicking the historic grazing patterns and keeping the ecological integrity of the area intact and not as a commercial use, then the Great Sand Hills protected areas particularly the ecological reserve could be categorized as a IUCN category III. On other lands where gas development occurs, best management practices are required to be used which helps preserve the integrity of these lands and the management intent of these lands as an IUCN category III.

In addition to these issues facing Saskatchewan protected area managers for the Great Sand Hills, other issues around climate change, management recommendations stemming from the Regional Environmental Study and interpretation of the Canadian Guidelines to see if the entire area can be classed as an IUCN category V protected area will need to be dealt with.

A survey on Protected Areas and Climate Change (PACC) in Canada: Survey update

Christopher Lemieux, Thomas Beechey, and Daniel Scott

For over a decade, the international scientific community and protected areas professionals have recognized that climate change may have critical implications for protected areas policy, planning, and management. Throughout Canada, existing protected areas are largely rationalized on the concept of ecological representation, which seeks to capture areas that represent landforms and their constituent species and biotic communities within an ecoregional context. While such approaches have provided a good foundation for the planning and management of protected areas, they generally

have not taken into account potential shifts in ecosystem composition, structure, and function that could be induced by global climate change.

Researchers from the University of Waterloo and the Canadian Council on Ecological Areas (CCEA) have completed a collaborative Protected Areas and Climate Change (PACC) Survey that gathered information on three critical aspects: 1) climate change impacts currently being experienced, or anticipated to be experienced, in protected areas across

Canada; 2) the importance of climate change relative to other protected areas management issues within Canadian jurisdictions; and, 3) programme initiatives (i.e., policy, planning and management, operations and development, monitoring and research, education and outreach, and other adaptive climate change responses) that have occurred, or are being considered, by protected areas agencies across Canada.

The survey was completed by representatives of 35 protected areas jurisdictions, agencies, and NGOs across Canada (including all federal and provincial protected areas jurisdictions). The responses revealed that a strong majority (89%) felt that climate change is considered to be an important management issue for protected areas now, and 91% strongly agreed or somewhat agreed with the statement that climate change will substantially alter protected area policy and planning over the next 25 years. Nevertheless, the majority of respondents (80%) noted that their agency has not completed a comprehensive assessment on the potential impacts and implications of climate change on policy and management leaving us to assume that jurisdictional and agency-specific impacts and implications are largely unknown. Moreover, while 71% of respondents noted that protected areas within their agency are currently affected by climate change related impacts, 80% of agencies surveyed do not have a climate



The Great Sand Hills, located in southwest Saskatchewan.

change policy or adaptation strategy (or action plan) and 89% do not have a climate change mitigation strategy (i.e., in-house plan to reduce greenhouse gas emissions). Of the 80% currently without a climate change policy or adaptation strategy directly related to protected areas, only 11% are currently developing one.

Importantly, the survey revealed a clear disconnect between the perceived salience of the possible impacts of climate change on protected areas and a lack of available resources (e.g., financial resources and staffing) to respond to the issue. Over 40% of respondents noted that they do not have an individual within their agency responsible for climate change issues (this includes legislation, policy, research, planning, management and research and monitoring); and for the ones that do, climate change was noted as one of several responsibilities. The survey also revealed a strong motivation by protected areas agencies and organizations to move forward on the climate change issue. Nonetheless, protected area agencies and organizations appear uncertain about how to proceed; 86% of respondents felt that they currently do not have the capacity necessary to deal with climate change issues.

Adopting a laissez-faire approach to climate change could have many negative ramifications for Canada's biodiversity. For example, irreversible impacts, such as species extinction could result; and, the potential for more rapid or pronounced change than expected could leave protected areas managers and planners unprepared to effectively deal with climate change impacts. To safeguard against the limitations of traditional protected areas system planning, and to ensure the persistence of Canada's biodiversity over the 21st century and beyond, more rigorous and practical debate by Canadian protected areas agencies and organizations on the issue of climate change, and a collective and proactive management response, will be essential in the short-term.

The authors extend their gratitude to the many protected areas professionals who participated in the PACC survey. Work is proceeding on developing a CCEA occasional paper to fully report the survey results with a summary discussion, conclusions, and recommendations for follow-up initiatives. The authors continue to welcome feedback on the survey and expressions of interest from anyone who wishes to collaborate on advancing this work.

Federal government perspectives on the application of the Canadian Guidebook to Protected Areas: Outstanding issues and fine-tuning

Prepared for the CCEA 2006 AGM, October 2006, Nova Scotia

The Federal Departments responsible for protected areas in Canada, namely Parks Canada, Fisheries and Oceans Canada and Environment Canada have identified a number of issues that need to be addressed in the current draft of the guidebook for Canadian Protected Area Agencies: "Application of IUCN Protected Area Management Categories". The following provides a brief overview of the major issues with

interpreting and applying the IUCN categories to federal government properties which relate to: Marine Protected Areas; cultural landscapes; community conserved areas; application of IUCN categories; and the issue of accuracy and consistency.

Marine Protected Areas often encompass a range of management objectives and levels of conservation and protection. Classifying such areas is a challenge since the usual practice is to apply a single IUCN classification to each protected area. It is recommended that more than one classification be assigned based on the zoning of the individual sectors within the larger MPA. Although there is some resistance to this internationally, it is the only practical approach.

The classification system should also be applied to areas that are primarily cultural in nature (cultural landscapes), yet contain important natural resources which provide nature conservation. This has occurred with several large national historic sites administered by Parks Canada. The current practice is to not apply the IUCN classification to such areas. The guidebook should provide instructions related to classifying such areas to standardize the practice by PA agencies in these situations - ie all such areas to be classified or none (on the basis that they do not have a dedicated conservation purpose).

The guidebook does not address the issue of classification of community conserved areas which is a big preoccupation among protected area professionals and NGOs in developing countries. This particular issue requires further guidance from IUCN task forces that are dealing with this issue. The results of this further analysis would be useful in terms of classifying Aboriginal protected areas which are the closest thing that Canada has to Community conserved areas as defined by Developing countries.

Application of IUCN Categories: All Canadian jurisdictions need to buy into the IUCN classification system and its application. A more detailed "key" should be developed to assist in determining how sites are classified. Training sessions on the application of the guidebook will be important to ensuring the proper classification of sites. A "train the trainer" or a "champion" approach, perhaps led by CCEA, would also help jurisdictions adopt the guidebook approach and address concerns.

Accuracy and Consistency: The guidebook has been useful in interpreting the IUCN categories for Canadian sites, yet there are still judgement calls by practitioners applying the guidelines that may not be consistent amongst the various PA agencies. An independent evaluation or audit of a random selection of sites from each jurisdiction would help ensure consistency in the application of IUCN categories.

Creative research partnerships for Nova Scotia protected areas

Rob Cameron, Nova Scotia Department of Environment and Labour

Research is critical to ensuring that ecological integrity is maintained in the management of protected areas. However, limited government budgets and resources necessitates the

development of partnerships with external researchers to achieve research objectives. Nova Scotia Environment and Labour Protected Areas Branch (PAB) has taken a creative approach to developing unique partnerships with researchers over the last five years in Nova Scotia protected areas.



Flying squirrel trapping with Mersey Tobetic Research Institute.

One of the most successful partnerships for PAB is with the Saint Francis Xavier University (STFXU) biology department. As of 2004, STFXU conducts their third-year biology field ecology course in Egg Mountain-James River and Ogden Round Lake Wilderness Areas. The students learn about field ecology methods and PAB acquires useful data about these protected areas. PAB helps

the class by providing equipment and staff help with teaching. As a result of this partnership long-term ecological monitoring plots have been established and several new provincial species records have been recorded.

Frequently government agencies can access funding for summer students and PAB has taken advantage of this to help increase research activity in protected areas. In 2005 PAB hired 2 biology students under the provincial Youth Conservation Corps program. The students were trained in first aid, wilderness survival and safety and given access to a 4 wheel drive vehicle for the summer. Students' time, for up to 2 weeks, was offered to researchers if they conducted research in existing protected areas. The students worked on 4 different ecological research projects in protected areas and acquired a diverse knowledge of ecological field work, from bog monitoring to trapping flying squirrels.

The PAB "bio-blitz" has been extremely useful in acquiring extensive species lists over a short period of time. PAB invites scientists from a variety of disciplines to conduct surveys on a protected area over a period of 3 or 4 days. Three annual bio-blitzes have occurred in 3 different protected areas between 2003 and 2005. Scientists have participated from various fields such as botany, ornithology, entomology, ichthyology, dendrochronology, lichenology, bryology, mammalogy and herpetology. Over 900 species have been documented so far, many of which are new provincial or protected areas records.

PAB frequently works with graduate students to conduct research. PAB can provide expertise, local knowledge, ideas

for these and can frequently access funding for student salaries. Examples of this kind partnership include projects on connectivity between protected areas in southwest Nova Scotia, endangered Blandings turtle and carbon storage modeling for protected areas.

Partnerships with other government agencies are another way to achieve research goals. PAB partnered with the Air Quality Branch to establish in protected areas, 50 long-term air pollution monitoring plots using lichens as bio-indicators.

Working in partnership has been very successful for PAB. With an investment of \$6500 in 2005/06, PAB generated over \$300,000 in research. Over that same time period, almost 1200 species have been documented, 781 of which are new records for protected areas and 8 are new records for the province. New locations for 10 red or yellow species have also been documented in 2005/06.

Nature Conservancy of Canada – Overview and use of IUCN categories

Douglas Ballam, Nature Conservancy of Canada

The Nature Conservancy of Canada is the largest land conservation organization in the country. NCC is a charitable, non-profit organization that conserves ecologically sensitive areas through the donation or direct purchase of private land. As of January, 2007 NCC has acquired and protected over 2.1 million acres of land. In Saskatchewan for example, 22,226 acres were secured in 2006. In Quebec, \$4,045,507 worth of land was acquired in 2006.

Before NCC acquires a property, it must be subjected to an assessment. One effective tool in this assessment is a conservation blueprint. These blueprints are based on ecoregions. Through an inclusive process, partners are engaged to share valuable information on species, sites and landscapes. The result is a portfolio of sites that, if conserved, would contribute to the maintenance and sustainability of species and communities. In total, NCC has protected habitat for over 120 species at risk across the country. NCC has detailed



Burnt Cape Ecological Reserve, Newfoundland.

conservation blueprints for a large part of North America, including the Northern Tallgrass Prairie ecoregion and the Northern Appalachians ecoregion.

NCC also used two set of criteria to assess a proposal. The first set of criteria is called Biodiversity Ranks. Biodiversity Ranks are assigned to every proposal based on (1) significant species, habitats and priority landscapes (as identified in conservation blueprints) and (2) significant conservation designations. Significant species include, for example, species at risk. Conservation designations include national designations, such as the Important Bird Areas. The second set of criteria is General Criteria. These criteria include representativeness, diversity of habitat and ecological integrity.

NCC is working towards assigning IUCN categories for all our properties. NCC will continue to work with the CCEA and other groups to ensure a consistent and national assignment process.

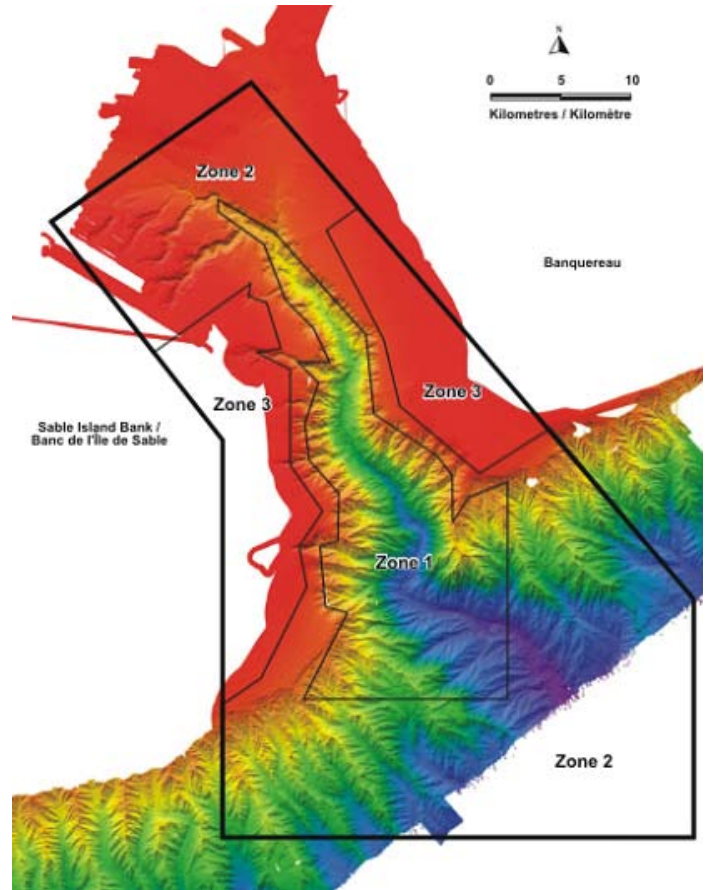
Progress on Marine Protected Areas in Canada: a focus on offshore Nova Scotia

Derek Fenton, Fisheries and Oceans Canada

This presentation provided a broad overview of marine protected area (MPA) progress in Canada using particular examples from the offshore of Nova Scotia. The Oceans Policy context was introduced, including the relationship between MPAs and the recently announced Oceans Action Plan (2005). The mandates and legislation for each federal jurisdiction with protected area responsibilities in the marine environment in Canada was provided. A national overview of sites either designated or in progress sites by Fisheries and Oceans Canada or Environment Canada (Parks Canada and Canadian Wildlife Service) was presented. These sites all contribute to goals of the Federal MPA Strategy released in 2005. A brief tour of selected DFO Oceans Act MPA sites across the country, either designated or candidate, was presented to illustrate the variety of environments included in the network. These included Basin Head, Musquash Estuary, Manicougan, Gilbert Bay and Endeavour Hydrothermal Vents.

The focus of the presentation was on offshore protected area efforts, an environment that has not received as much attention in Canada and globally for targeted protection. The example of the Gully Marine Protected Area under the Oceans Act was presented. As the largest submarine canyon in eastern North America the canyon ecosystem supports a diversity of species including commercial fish, at-risk whales and rare deep sea corals. A review of the MPA regulations was provided, with discussion of how these have been put into operation. In particular, issues related to managing fisheries, adjacent impacts from industrial activities and scientific activity approvals were highlighted. The presentation also provided recent examples of protected area measures using the Fisheries Act. In particular, deep-sea corals off Nova Scotia have attracted significant scientific and conservation interest in recent years. In 2002 DFO established the Coral Conservation Area (CCA), a fisheries closure in the Northeast Channel, a region known to have the highest concentrations

of gorgonian corals. In 2004 DFO established another CCA to protect a small damaged coral reef in the Laurentian Channel. The presentation included a brief overview of the conservation measures including the design elements of the boundaries and the key management issues.



The Gully Marine Protected Area, offshore Nova Scotia.

The presentation concluded with some common challenges related to offshore protected area establishment and management. These include issues related to site access (data & research, surveillance & enforcement), managing activities beyond the boundary and the subsequent role of other regulators, translating establishment regulations for management, to name a few. As well, the evolving policy frameworks for ecosystem approaches, e.g. fishing gear impacts, at-risk species, biodiversity, noise etc., have an influence on how MPAs are identified and managed. Finally, personal reflections on the progress of MPAs in Canada were provided. Designations are increasing, due in part to greater regulatory clarity and certainty. Similarly, for DFO there is a much stronger understanding of both design and management issues which can be transferred to other sites. The national level policy efforts and interagency cooperation have evolved, helping provide an overall framework to progress with network design and additional site designations. The use of the Fisheries Act to meet some immediate conservation pressures has provided a chance to use this other protected area "tool", providing insight on other legislative options for MPA professionals. The next challenge will be to meet the Federal MPA Strategy objectives on a regional scale: building the network collaboratively and within a broader oceans management context.

Implications of climate change for ecological areas and their management

David Welch, Parks Canada

The overwhelming consensus of scientists around the world is that the world's climate has entered a period of rapid change that will significantly increase temperatures, especially in high latitudes and in winter, change weather and precipitation patterns, increase the frequency of extreme weather (e.g. hurricane) and climate (e.g. drought) events, and raise sea level.

Climate change is a global phenomenon and beyond the capacity of Parks Canada to mitigate directly. Nevertheless, the Agency is committed to reduce greenhouse gas emissions in line with Kyoto targets.

In 2000 Parks Canada gained an understanding of climate change and its probable impacts on each national park by commissioning a comprehensive literature review. In 2003 Parks Canada commissioned the generation of a data base of probable climate changes according to several models and emission scenarios endorsed by the Intergovernmental Panel on Climate Change (IPCC). These studies are reinforced by climate change reports from the IPCC, the World Wildlife Fund, the Nature Conservancy, the World Commission on Protected Areas, international conferences and numerous scientific journals.

From this literature, Parks Canada accepts that climate change has serious implications for the resources under its stewardship and for the conduct of its business. For example:

- Park and site management plans should take climate change into account;
- The National Park System Plan may have to change the basis of its natural region characterizations and the purpose of parks in representing those regions;
- Restoration projects, such as prescribed burns in montane and boreal forests, involving vegetation with a life cycle of decades to centuries will have to factor climate change into succession models and performance indicators;
- Recovery programmes for species at risk will need to consider climate change where the historic range of the species in question is near the boundary of a climate region;
- Invasions by alien species are likely to increase in frequency and intensity;
- Northern historic sites will be increasingly subject to site instability as permafrost melts. Coastal historic and archaeological sites will be increasingly threatened by flooding and shore erosion;
- Although opportunities for snow-based recreation will decline, overall visitation levels are expected to increase as an aging population takes advantage of warmer shoulder seasons; and

- Public safety threats will increase with respect to, inter alia, heatwaves, storm hazards for small craft, thinning nearshore ice, and the northward spread of warm climate pathogens.

Parks Canada recognizes the need for a strategy to guide the adaptation of policies, plans and operations to a changing climate. While not targeted at Parks Canada, recent recommendations of the Conference Board of Canada, the Commissioner for Sustainable Development and the World Heritage Committee support this need. Parks Canada will develop an adaptation strategy which integrates all aspects of its stewardship (natural and cultural, terrestrial and marine, tangible assets and visitor and public engagement). The initial design of the strategy is as follows.

General principles

- Limited in what we can do.
- National guidance, local action and partnered delivery.
- Focus on ecological and commemorative integrity.
- Mitigate other stresses to foster resilience and auto-adaptive capacity, e.g. reduce cumulative stresses such as habitat loss and acid rain, e.g. harden or relocate vulnerable cultural resources.
- Promote park and site adaptation by, e.g. risk management, sound science and adaptive management, promoting landscape connectivity and permeability, and by completing the park and marine conservation area networks.
- Public duty and dialogue, e.g. the reduction of greenhouse gas emissions from park operations, and fostering staff and public understanding and engagement.

Strategic outcomes and sample actions

- Informed decision-making, e.g. park and site vulnerability and opportunity assessments, e.g. species and resources sensitivity and risk analyses.
- Long term integrated planning, e.g. adapt system plans, e.g. climate change addressed in site and management plans.
- Effective actions on the ground, e.g. mitigate other threats, e.g. harden cultural assets against climate change.
- Engagement of partners and the public, e.g. by promoting landscape permeability for wildlife movement, e.g. by partnerships for education and outreach.

When to get there

- Short term (years): the appropriate climate change information is available to all aspects of natural resource, cultural resource and asset management.
- Mid-term (years to a decade): climate change is factored into all aspects of ecosystem and asset management plans.

- Long-term (outcome goal): Protected areas are nested within regional landscapes that allow for the free movement of native species and habitats, and which are free from significant impacts from local and regional threats to ecological or commemorative integrity.

Marine Sanctuaries in the Maritimes: a view from outside the box

Martin Willison, Dalhousie University

Only some of the several options for establishing marine protected areas (MPAs) have been applied in the Maritimes region. These include MPAs created under the 1997 Oceans Act, notably The Gully, and fisheries closures under the Fisheries Act, such as closures created to protect cold water corals. Some other promising initiatives include conservation-oriented fisheries management measures, such as the Scotian Shelf “had-dock box” situated on



Area of Interest - Basinhead, PEI

Sable and Emerald banks, and the large ocean management area on the eastern part of the Scotian Shelf where the Eastern Scotian Shelf Integrated Management (ESSIM) project is being conducted. Areas of interest for additional Oceans Act MPAs are also being actively pursued, notably at Musquash Estuary in the Bay of Fundy, and at Basinhead in P.E.I. All of these initiatives fall within the jurisdiction of the Department of Fisheries and Oceans (DFO). The most notable elements of an MPA system that are largely or completely missing in the Maritimes region are those that fall within the responsibility of other federal departments, notably Parks Canada’s National Marine Conservation Areas (NMCAs) and Environment Canada’s Marine Wildlife Areas (MWA’s).

DFO has the responsibility to lead and coordinate the creation of a system of marine protected areas that include all forms of area-based conservation initiatives, but the department has shown leadership mostly within its own jurisdiction to date. Provincial and municipal authorities have not been very active, either within their legislative authority or as advocates for conservation. On the other hand, conservation-oriented non-government organizations such as World Wildlife Fund Canada, the Canadian Parks and Wilderness Society (CPAWS), and the Ecology Action Centre, have been active and effective advocates for the application of ecologically-sound area-based conservation measures.

The problem with relying only on Oceans Act MPAs for biodiversity conservation purposes is that these areas tend

to be resource-oriented (e.g. Basinhead, to protect a rare alga having commercial value) and are not created to take account of ecoregional representivity, as is necessary for a systematic approach. Furthermore, experience elsewhere in the world shows that marine protected areas naturally attract tourists, but DFO doesn’t have a tourism mandate. For this reason, it is imperative that Parks Canada immediately begin to apply its NMCA program in the Maritimes region, where tourism is a major industry.

NMCAs in the region should focus on coastal and nearshore regions, of which there is a rich diversity. Parks Canada

has declared areas of interest for NMCAs in the Iles de la Madeleines (Quebec), and in the south coast of Newfoundland, but not within the Maritimes proper. Non-government organizations have made several speculative NMCA proposals that deserve serious attention by federal government authorities, including the Bay of Fundy region near Digby Neck, St. Margaret’s and Mahone Bays (central Scotian Shelf), Chedabucto

Bay and Ile Madame region (eastern Scotian Shelf), and the Bras d’Or lakes.

Also needing immediate attention is the protection of vulnerable marine ecological areas having special or unique value. In 2006, the Nova Scotia chapter of CPAWS held an expert workshop to create a preliminary map of these, including horse mussel reefs in the Bay of Fundy, concentrations of rare sponges in the Emerald Basin, unique algal assemblages in small bays on Nova Scotia’s north shore, authigenic carbonates in the Gulf of St. Lawrence, and places where cold water corals are either known or suspected to occur.

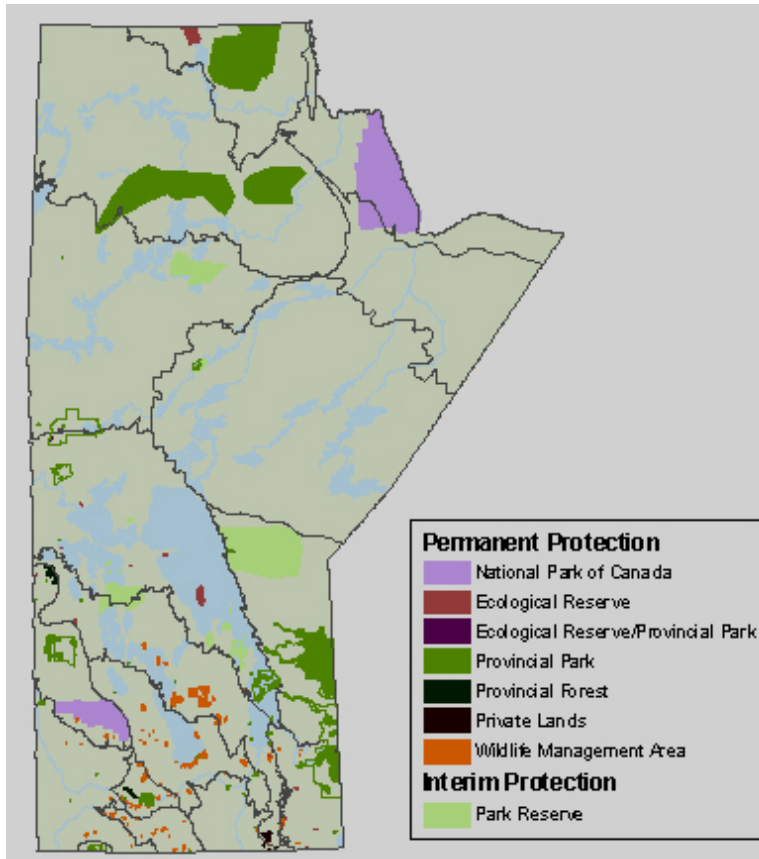
Report for April 2003 - August 2006 Activities on protected areas in Manitoba

New Protected Areas

Manitoba’s network of protected areas includes all sites where logging, mining, hydroelectric development and, as appropriate, other activities that adversely and significantly affect habitat are prohibited by some legal instrument. Since April 1, 2003, about 25,000 ha have been added to the network of protected areas, and about 7,500 ha previously under interim protection were given permanent protection. Private lands were recognized as contributing to the network for the first time.

Permanent protected areas designated included:

- The 132 ha Criddle/Vane Homestead Provincial Park was created in March 2004. First established in spring 2003 as a park reserve, this new provincial park recognizes the contributions of a Manitoba pioneer family to the fields of natural history (especially entomology), science, art, politics and culture.
- In May 2004, Little George Island Ecological Reserve was established to protect 15 ha of nesting habitats for common terns, Caspian terns and the furthest south known Manitoba breeding population of greater scaup.
- In May 2004, an 11,310 ha area of the Porcupine Provincial Forest, the Bell and Steeprock Canyons Protected Area, became the second protected area designated by a regulation under the Forest Act. The area contains two spectacular river canyons and captures a cross-section of the geologically complex and biologically diverse Manitoba Escarpment.
- In June 2004, 49 ha of mixed grass prairie were added as a protected Back-country Land Use Category to Rivers Provincial Park.
- In June 2004, a Memorandum of Agreement was signed between Manitoba and the Nature Conservancy of Canada (NCC). The agreement provides a legal way of ensuring specified lands meet the Manitoba definition of protected areas. A total of 4,118 ha of land in the Tall Grass Prairie Preserve and adjacent areas became the first private lands recognized in Manitoba's protected areas network.
- In December 2004, Jennifer and Tom Shay Ecological Reserve was established to protect 7 ha of river-bottom forest along the Red River near St. Adolphe.
- First established as a park reserve, the 7,416 ha Manigotagan River Provincial Park was permanently protected in December 2004. The Manigotagan River is a challenging whitewater river and this provincial park highlights beautiful Canadian Shield country.



Manitoba's network of protected areas.

- In June 2005, Brokenhead Wetland Ecological Reserve was established to protect a 563 ha calcareous fen and white cedar forest community that is home to many provincially rare and uncommon plants.
- In August 2005, Manitoba signed of a Memorandum of Agreement with the Manitoba Naturalists Society to protect 355 ha of endangered tall grass prairie/associated ecosystems.
- In September 2005, Armit Meadows Ecological Reserve was established to protect a 263 ha area which features remarkable isolated fescue meadows

containing remnants of the endangered fescue prairie ecosystem. Birch River Ecological Reserve situated on the eastern edge of Manitoba's Western Upland Natural Region was established to protect 183 ha area that contains a great diversity of vegetation, including several forest and wetland communities.

- In June 2006, the Delta Marsh Wildlife Management Area was established and 8,125 ha of this extensive freshwater coastal wetland at the southern end of Lake Manitoba was protected.

Interim protection of Amisk Park Reserve that lapsed in September 2002 was renewed for a further 5 years in May 2003. In June 2004, interim protection of Poplar/Nanowin Rivers Park Reserve, due to lapse in fall

2004, was extended for a further 5 years, effective October 1, 2004. In September 2004, interim protection for Chitek Lake Park Reserve was extended for a further 5 years until 2009. In October 2005, we extended designation of Fisher Bay and Birch Island Park Reserves for a further 5 years effective November 1, 2005.

Other Related Activities

Manitoba's Protected Areas Initiative was re-profiled in July 2003, and now reports to the Assistant Deputy Minister for the Programs Division. Based on the experience gained since 2002 in designing the new Bell and Steeprock Canyons Protected Area, the Initiative established a formal Integrated Scientific Advisory Committee (ISAC) and regionally-based integrated technical teams (ITT) of department staff with ecological and conservation-based expertise. ISAC's role is to identify ecological features important for consideration when designing protected area proposals. Planning and design of protected area proposals and consultations are

the responsibility of the regional ITT. In 2003-2004 ISAC and Eastern Region ITT applied the approach in the Tembec Forest Management License #1 in eastern Manitoba, resulting in two new protected area proposals that are approaching completion. In 2005 a protected areas planning session got underway for Natural Region 5c in southeastern Manitoba. Consultations with First Nations, nearby communities, the mining sector and environmental organizations continues to identify additional lands that could be designated for protection.

As of March 31, 2006, the Manitoba Habitat Heritage Corporation (MHHC) held a total of 281 Conservation Agreements (CAs) covering 18,229 ha. Of these, 69 CAs covering 4,463 ha were acquired during 2005-2006, and an additional 23 CAs covering 1,500 ha were being processed. All CAs held by MHHC are in perpetuity. They were donated or acquired through the Potholes Plus Program or the Habitat Stewardship Program focussing on species at risk. These conservation lands contain the gamut of native habitat in Manitoba's prairie ecozone, including wetlands, habitat of species at risk, riparian areas, mixed grass prairie, and woodland.

The Nature Conservancy of Canada (NCC) received a \$100,000 grant from Manitoba Conservation last year in support of their National Campaign for Conservation. This grant was recently doubled to \$200,000 for this fiscal year. Targeted areas for protection in Manitoba include the tall grass prairie in the RM of Stuartburn and the Riding Mountain Aspen Parkland in western Manitoba. NCC will contribute 2.5 dollars for every dollar Manitoba spends

During 2005-2006, the Manitoba Region of the NCC acquired 7 CAs totalling 685 ha (1,693 acres) in its Riding Mountain Aspen Parkland Project Area. This brings the total land owned and under CA in this project area to 2,003 ha (4,949 acres) NCC also bought 1,417 ha (3,501 acres) in 2005-2006 in the Northern Tall Grass/Aspen Parkland Ecoregion Project Area. They included prairie, parkland and wetland communities, and complement previous acquisitions in the Tall Grass Prairie Preserve and Rat River Marsh areas. A total of 7,562 ha (18,685 ha) is owned and under CAs in this project area, and an additional 65 ha (160 acres) are under lease. In addition, NCC owns 583 ha (1,440 acres) and leases and manages an additional 324 ha (800 acres) in the Yellow Quill Mixed Grass Prairie Project Area. In 2005-2006 NCC also received a donation of the first 16 ha (40 acres) within the Interlake Aspen Parkland Area.

Although it does not qualify as a protected area because it contains mining claims, South Atikaki Provincial Park was designated in April 2003, and logging was prohibited by regulation. This legally confirms the no-logging policy begun in 1985, and recognises the recreational significance and intact natural condition of the park's landscape and role as the gateway to Atikaki Provincial Park, Manitoba's first wilderness park.

Despite renewed commitments by Manitoba and Canada in 2004, there was little progress on the proposed national park in the Manitoba Lowlands Region in 2005. Continued opposition to the proposed park from local citizens and from newly elected community leaders has been a challenge for

Parks Canada and Manitoba Conservation staff working on the project. The project coordinator for Parks Canada also left the project for another posting, thus reducing the overall capacity to work on the project.

Woodland caribou was listed as Threatened under Manitoba's Endangered Species Act. National recovery strategies were completed for a number of species, with Manitoba serving as lead author and/or contributor. Biological surveys continued to be undertaken for species of plants and animals considered to be provincially rare or listed as at risk. Improvements continued to be made to the quality and quantity of information in the Manitoba Conservation Data Centre's databases. Data collection and improvement activities covered much of Manitoba, but with greatest emphasis on the Prairie Ecozone, where a higher proportion of rare species and habitats continue to be found. Information on rare and at risk species was provided to a variety of users including government agencies, NGOs and the public, to guide stewardship and recovery activities.

Since April 1, 2003 the Ecological Reserves Advisory Committee recommended five new sites for designation as ecological reserves, revised one existing nomination, and withdrew its nomination of another site. As indicated above, five new ecological reserves were designated between May 2004 and September 2005, the first such designations in five years.

In December 2004, Manitoba made the commitment to work with Accord First Nations, Ontario, and Canada to develop a nomination of 4.5 million ha or 45,000 km² of boreal forest on the east side of Lake Winnipeg for submission to UNESCO as a World Heritage Site. Manitoba, Ontario and the five First Nations have formed a corporation to help facilitate the various levels of land use planning that will be needed. All participants anticipate many years of hard work at the community level to set the foundation for preparing a successful nomination of the area, now called Pimachiowin Aki, as a World Heritage Site.

Rivers were a focus for conservation successes in 2005-2006. The Hayes River was designated a Canadian Heritage River and the Red River joined the System as a Candidate Canadian Heritage River. Designation of the Hayes was the culmination of an eight year planning process for Manitoba and the four First Nations along the River. Nomination of the Red River was through the efforts of Rivers West, a non-government organization working to conserve the Red and promote its recreational and tourism values.

Curious whales and curious habitat: Protecting both using MPAs

Hal Whitehead, Dalhousie University

A population of northern bottlenose whales uses the waters off the edge of the Scotian Shelf. These are 7-9m long beaked whales of the family Ziphiidae, the least known group of large mammals. Bottlenose whales are notable for their pronounced beaks, rounded or squared (in males) foreheads, extreme curiosity towards boats, and deep diving. They routinely dive beneath 1,000m for over one hour where they

hunt for the deep-water squid that are their primary food. Only found in the northern part of the North Atlantic, the distribution of the species is discontinuous. The Scotian Shelf population is the most southerly location in which the animals are regularly found, and genetic data indicate that it is largely isolated from other aggregations of the species. It contains about 160 animals. Although we have been studying these animals since 1988, we have only seen them in three locations along the Scotian Shelf, all submarine canyons. The most prominent of these is the Gully, the largest submarine canyon off eastern North America, and a particularly unusual and interesting area geologically, oceanographically, and biologically. About 33% of the bottlenose whale population is in the Gully at any time. Their horizontal movements, both inside and outside the Gully are remarkably small by cetacean standards. The bottlenose whales were reduced by whaling in the 1960's and are currently threatened by entanglement in long-line fishing gear and noise from oil and gas exploration and development (loud noises are known to kill beaked whales). Both long-line fishing gear and seismic exploration are common in the whales' habitat. These threats, together with the small population size, led to the population being declared Endangered under Canada's Species at Risk Act in 2006. The Gully was made eastern Canada's first Marine Protected Area (MPA) in 1994. Regulations of the Gully MPA appear to protect the bottlenose whales' habitat within the canyon from both long-line fishing gear and seismic exploration. However the animals are still vulnerable to these threats when outside the Gully, and in particular when in the two other canyons that are part of their critical habitat. MPAs are a very good way to protect a species that have clear habitat preferences and limited horizontal movements. However to effectively protect the Scotian Shelf northern bottlenose whales, the Gully MPA is not enough: we need a network of MPAs on and around the Shelf which include the two other canyons that they depend upon.

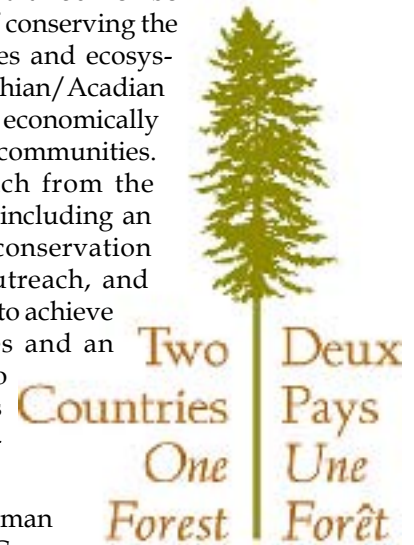


Northern bottlenose whales, The Gully, Nova Scotia

Two Countries, One Forest: Reinventing conservation for the 21st century

Karen Beazley, Dalhousie University; Mark Anderson, The Nature Conservancy; Robert Baldwin, University of Maine; Graham Forbes, University of New Brunswick; Louise Gratton, Nature Conservancy of Canada; Justina Ray, Wildlife Conservation Society; Conrad Reining, The Wildlands Project; Stephen Trombulak, Middlebury College; Gillian Woolmer, Wildlife Conservation Society

Two Countries, One Forest (2C1F) is a cross-boundary (Canada-USA) consortium of more than 50 member organizations with the aim of conserving the natural beauty, native species and ecosystems of the Northern Appalachian/Acadian ecoregion, while maintaining economically and culturally vibrant local communities. It takes a strategic approach from the landscape to the local level, including an ecoregional vision, sound conservation science, communication, outreach, and collaboration across borders, to achieve ecologically viable linkages and an interconnected ecoregion. To this end, the Science Team is completing five regional science initiatives.



First, the Current (2000) Human Footprint, led by Wildlife Conservation Society - Canada, provides an index of human influence across the region, normalized by subregion. It is based on the combined influence layers (indices) for human settlement (population and dwelling densities), electric power infrastructure, roads and rail, land use (agriculture and forestry), resource extraction (mining and dams), and human access (distance to roads). Second, the Future Human Footprint, led by 2C1F Science Fellow, provides three future (2040) scenarios based on (1) current local trends, and those for (2) Pacific Northwest and (3) North Central Lakes, and modeled data layers for population density and road network expansion. The current and future footprints can be compared to identify areas of projected increases and decreases human influence.

Third, The Nature Conservancy (TNC) (USA) and Nature Conservancy of Canada have identified a portfolio of critical sites across the region. These sites capture the best examples and concentrations of representative matrix-forming forest (>/= 25,000 ha), and critical ecosystem and special element (rare/endangered species) occurrences. Fourth, the Wildlands Network Design for the Greater Northern Appalachians, led by the Wildlands Project, delineates core areas, areas of high biological significance, wildlife linkages among these, and buffer areas. These were delineated on the bases of the best-run and summed-run scenarios generated by site selection optimization (simulated annealing) algorithms using MarXan software, and refinements provided by local experts in all of the provinces and states in the region. The design meets conservation targets for three tracks of features: (1) representation of 162 ecological land units, (2) nine special elements (modeled occurrences developed by TNC), and (3)

source and threatened source habitat for focal species (wolf, lynx, and marten). Based on concentrations of these values as indicated by summed runs results, 13 priority areas for conservation attention were identified.



Map of Northern Appalachian and Acadian ecoregion

The fifth regional science initiative is the science synthesis, whereby the data and results from these preceding initiatives are updated, combined and reassessed to create a consensus vision and data for selecting conservation priorities. The MarXan analysis will be re-run with customized site selection criteria and updated data. Megasites will be delineated on the basis of these results, geophysical boundaries such as watersheds and roads, and refinements by local experts. These megasites will then be evaluated in terms of their importance on the basis of their MarXan scores, and in terms of threat on the basis of their human footprint scores. Each megasite will be ranked in terms of its importance and threat scores. This ranking will allow for conservation priorities to be identified, such as those with high importance and high threat, and those with high importance and low threat. These priorities will help to focus conservation communications and campaigns across the region.

An update for the Ecological Framework for Canada (EFC)

Robert Hélie, Environment Canada

The initial digital version of the EFC was developed in a joint initiative between Environment Canada and Agriculture and Agri-Food Canada (AAFC) between 1992 and 1995 and published in 1996. In collaboration with the CCEA, Environment Canada performed the consultative and policy planning while AAFC completed the GIS analysis and spatial interpretations. The spatial analysis utilized physiographic and climatic data interpreted to the Soil Landscapes of Canada (SLC), and a national 1:1,000,000 map and data were produced.

The Ecological Framework for Canada (EFC) provides a consistent, national, spatial context within which ecosystems at various levels of generalization (i.e. ecozones, ecoregions, and ecodistricts) can be described, monitored and reported on. This current joint project between Environment Canada (EC) and Agriculture and Agri-Food Canada (AAFC) proposes

to update the existing version of the Ecological Framework for Canada with provincial and territorial ecological revisions fit to a new version of the Soil Landscapes of Canada. In order to be successful, this project will have to develop effective consultation and collaboration with provinces and territories to gain access to regional data and build consensus. The Canadian Council on Ecological Areas will serve as the coordinating body to facilitate this interaction.

The Project Deliverables will include a consultative and update methodology for the EFC coordinated by the Canadian Council on Ecological Areas (CCEA), a revised Soil Landscapes of Canada coverage (SLC v 4.0) and a spatially nested EFC reflecting current regional concepts and usage. In so doing, the EFC remains accurate, relevant and supported by all jurisdictions in the country.

For more information on the Ecological Framework for Canada, please contact Robert Hélie, Environment Canada (robert.helie@ec.gc.ca).

Closely related to this major update, the Ecological Status and Trends Assessment (ESTA) is being structured according to the Ecological Framework for Canada (EFC). The ESTA project team has already contacted some provincial and Territorial jurisdiction to develop their ecozone-based reporting framework. This work will be taken into consideration for the national update.

Northern protected areas project – Phase 2

Bas Oosenbrug, Environment and Natural Resources, Northwest Territories; John Meikle, Department of Environment, Yukon

In 2003 CCEA initiated a project on Northern Protected Areas (NPA) aimed at guiding efforts to select and to design protected areas in northern Canada. This project included two phases. Phase 1 was summarized in the CCEA Occasional Paper No 16: Protected Areas in Northern Canada - Designing for Ecological Integrity, and entailed a review of science-based approaches for designing large protected areas in relation to current agency-based policies, programs and practices across northern Canada. Phase 2 of the NPA project followed as a pilot study to model a suite of ecological areas for conserving disturbance-sensitive and area-demanding mammals in several target regions: the Western Canadian Mammal Province, and the vast area of north-central Canada comprised of the Taiga Plains, Taiga Shield, Boreal Plains, Boreal Shield and Hudson Plains Ecozones.

Phase 2 used an algorithm-based methodology for study analysis, and set out to apply some of the guidelines outlined in the Phase 1 report to designing representative ecological areas aimed specifically at conserving mammals. The analysis found that ecological areas could be most effectively identified using a heuristic reserve selection algorithm that prioritizes for representation of rare species (in terms of extent-of-occurrence). The analysis also indicated that species diversity patterns, particularly turnover in species composition across south-to-north gradients, were relatively strong predictors of the number of ecological areas needed to represent each target region. Size of target region was not a significant pre-

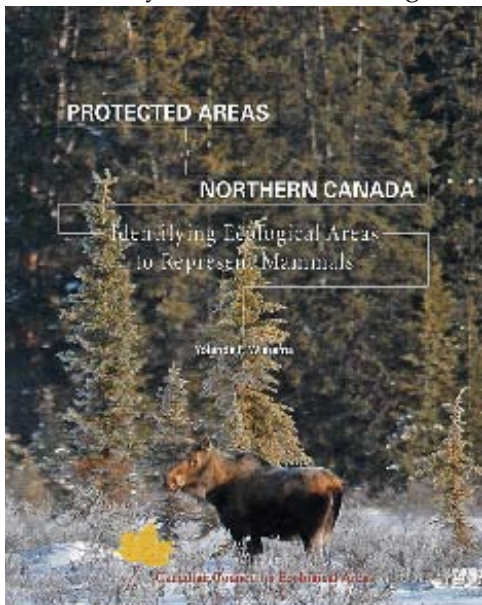
dictor of the number of ecological areas needed to represent species. However, size of the target region did play a role in that larger regions were more efficient than their component parts, suggesting possibilities for efficiencies and/or redundancies in terms of meeting representation goals. The analysis also indicated that existing protected areas, and those proposed under the current Northwest Territories Protected Areas Strategy (NWT-PAS) are not adequate to fully represent disturbance-sensitive mammals in this region, and that additional areas may be necessary.

In addition to illustrating the methodology, the study results have practical application in revealing significant gaps in the current network of protected ecological areas and identifying sites that best address these gaps for the conservation of mammals. The results are sufficiently provocative that they prompt thinking about the adequacy of protected areas for mammal conservation elsewhere in northern Canada.

While the analysis and the results in this report are focused on the "optimal" location of sites for mammal conservation in northern boreal forest regions, the approach lends itself readily to other northern regions and other groups of species.

Together with traditional approaches for ecological representation, species-driven approaches provide a pragmatic working framework for conserving biodiversity in northern Canada.

The Phase 2 report is entitled: Protected Areas in Northern Canada - Identifying Ecological Areas to Represent Mammals, and will be published as a CCEA Occasional Paper No. 17 in early 2007.



Northern Protected Areas Phase 2.

Expanding Nova Scotia's protected areas system through public and private land conservation

David MacKinnon, Nova Scotia Department of Environment and Labour

Protected areas meeting IUCN category Ia, Ib, II, or III criteria cover 8.2% of Nova Scotia. They include provincial wilderness areas, nature reserves, and protection-oriented parks, national parks and wildlife areas, and lands protected by land trusts. Through its 'Green Plan' and other public commitments, Nova Scotia has pledged to work towards completion of the protected areas system. Nova Scotia currently ranks in the middle among Canadian jurisdictions, which range from 2.6% (PEI) to 13.8% (BC) protected, but has

the second-lowest proportion of Crown land (30%), and the highest proportion of protected Crown land (20%) in Canada. Twenty-seven of the province's 80 natural landscapes are considered adequately or near-adequately represented by protected areas.

Significant gaps exist in the protected areas system. Because of the rapid pace of anthropogenic landscape change, there is a limited window of opportunity to fill these gaps, particularly for large natural roadless areas, old forests, coastlines, lake- and riverfrontage, calcareous regions, and rich, fertile lowlands.

Public and political interest in new protected areas is significant, stirred by effective campaigns by environmental non-governmental organizations. This interest has created uncertainty for the forestry industry regarding future land access. The recognition by environmental groups and forestry companies of each others' interests and influence in land-use decisions has led to the development of a cooperative approach between these traditional adversaries, known as the Colin Stewart Forest Forum. The first major goal of the Colin Stewart Forest Forum is to jointly prepare a proposal to government to complete the protected areas system while at the same time, mitigating the wood supply and cost impacts on the forestry industry. The provincial government, recognizing this unprecedented opportunity to make progress on protected areas commitments while resolving land-use conflicts in a cooperative atmosphere, has committed to provide technical assistance to the Forest Forum in development of its proposal, and to review and consult more widely on it, once received.

Perhaps as an expression of confidence in the cooperative approach being demonstrated by the Colin Stewart Forest Forum members, the provincial government has recently enacted, through the Environmental Goals and Sustainable Prosperity Act, a commitment to increase the amount of protected land in Nova Scotia from 8.2% to 12% by 2015. Some significant steps toward meeting this goal include the 2006-07 purchase of \$27 million of high-conservation-value lands from Bowater Mersey Paper Company and the expansion of cost-shared land securement agreements with the Nova Scotia Nature Trust and the Nature Conservancy of Canada. Reaching the 12% goal will require the addition of approximately 209,000 ha to the protected areas system, and creative approaches on both Crown and private lands.

Québec confirms intention to create Parc national Kuururjuaq in Nunavik

Stéphane Cossette, ministre du développement durable, de l'Environnement et des Parcs

This Québec national park project was prepared by a working group made up of representatives of the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP), the Kativik Regional Government, the Makivik Corporation and the village of Kangiqsualujjuaq. It is the Kangiqsualujjuaq representatives who suggested that the park be named Kuururjuaq in order to highlight Inuit cultural heritage.

The creation of Parc national Kuururjuaq is a direct result of the partnership agreement targeting Nunavik's economic and community development. It also falls within the Québec Strategy for Protected Areas. The creation of this park will make it possible to protect a representative sample of the Torngat Mountains Foothills natural region and will have positive repercussions on both the economy of Nunavik and tourism, especially for the northern village of Kangiqsualujuaq.

Territory dedicated to conservation

The territory proposed for the creation of this new Québec national park in Nunavik covers an area of 4 273 km². It includes nearly the entire watershed of the Koroc River, with the exception of the mouth of the river. The easternmost area of the park will protect a section of the Torngat Mountains that boasts the highest summit in Québec, Mount d'Iberville (1 646 metres). As for the Koroc River valley, it is nestled in the heart of the tundra but contains a boreal forest sheltering Québec's most northerly population of white birch.

Within the park, the zoning guidelines establish territory use based on degree of fragility and potential for use. In Parc national Kuururjuaq, 88,2% of the territory will be zoned for conservation; in those sections, wildlife harvesting and motor vehicle access will be prohibited. The directives and regulations related to zoning will not have any impact on traditional hunting, fishing and trapping rights provided for under the James Bay and Northern Quebec Agreement.

The Québec Policy on Parks provides that conservation takes precedence over development. As a result, the visitor reception area, access and lodging, as well as educational and recreational activities have been planned in such a way as to facilitate discovery of the territory while limiting impact on the natural heritage. The visitor reception area will be in Kangiqsualujuaq village in order to encourage exchanges with the Inuit population. Access to the park would be primarily by bush plane using specially designed airstrips and by boat, from Kangiqsualujuaq, for the coastal section of the park. In winter, the park would be accessible mainly by snowmobile along the Koroc River, a natural travel route.

Distinguishing Parc national Kuururjuaq are its two main attractions: the massif of the Torngat Mountains, which offers a spectacular panorama, and the Koroc River valley and its forest of black spruce. The two sectors will provide visitors with a hiking, canoeing and kayaking experience that is unique in Québec.

Unlike the existing national parks in southern Québec, which are managed by Sepaq, Parc national Kuururjuaq will be operated by the Kativik Regional Government. Once the Park has been officially created, an agreement will be signed between the Kativik Regional Government and the Ministère du Développement durable, de l'Environnement et des Parcs, delegating management of this new Québec national park to the Inuit.

The provisional master plan, fact sheets and maps are available on the Web site of the MDDEP.

Images from the 2006 Annual General Meeting, White Point, Nova Scotia



Carolyn Mont (left) and Judy Campbell (centre) accept one of the CCEA's 2006 Gold Leaf awards on behalf of the Friends of McNabs Island Society (FOMIS).



Dr. Ransom Myers, world-renowned marine ecologist. Dr. Myers tragically passed away on March 27, 2007.



Robert Helie presents outgoing Chair, Tony Turner, with a token of CCEA's appreciation for his outstanding and dedicated work on behalf of CCEA

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Protected Areas in Northern Canada: Designing for Ecological Integrity (NPA 1).

This report reviews and assesses science-based approaches appropriate for the design of protected areas in northern Canada. It contains results of a pan-Canadian survey of protected area agencies and practitioners. A central thesis of this report is that large protected areas with inherent ecological integrity are cornerstones in efforts to conserve wildlife and the ecological processes necessary to

sustain them. 110 pgs, CCEA 2005



Protected Areas in Northern Canada: Identifying Ecological Areas to Represent Mammals (NPA 2).

Building on the conclusions of NPA1, this report is a case study of the Western Canadian Mammalian Province, which is largely coincident with Canada's boreal ecozones east of the cordillera. The focus of this casestudy is the testing of an optimization model for representing disturbance sensitive mammalian species in protected areas large enough to maintain species

diversity. This paper contains potential applications by protected area agencies and ENGOs conducting gap analyses throughout this region. 45 pgs, CCEA 2007

To order these publications:

1) Please indicate quantity of copies required:

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