

HARRIS CENTRE APPLIED RESEARCH FUND - SUMMARY OF RESEARCH FINDINGS AND POTENTIAL BENEFITS

A) FISHERIES

Four ARF projects addressed management and sustainability issues within Newfoundland and Labrador fisheries. Three projects investigated management assumptions and policy frameworks by establishing base-line information concerning marine populations and habitats (Fleming, Snelgrove, Snelgrove). One project addressed management and policy through literature review (Schneider).

- **Ian Fleming, *Building the road to scientifically sound management of exploited fish populations in NL in the context of regional development (2005/06)***

Fleming investigated how the interactions between non-migratory Atlantic salmon (ouananiche) and Atlantic salmon (ocean migratory or anadromous) during early rearing and within a single population might influence the abundance of harvestable fish. This study was part of a broader research project to develop life-history models that will allow for proactive, predictive evaluation of prospective management decisions.

The data compiled can be applied to improving fisheries management models and policy.

Potential benefits: Greater certainty in fisheries management; preservation of ecologically and culturally important exploited fish populations

- **Paul Snelgrove, Ian Bradbury et al, *Dispersal and Active Retention of Larval Smelt in Estuaries of St. Mary's Bay, NL (2005/06)***

Snelgrove et al studied smelt dispersal during the larval stage and evaluated the importance of active vertical migration and swimming to dispersal and population connectivity in coastal NL estuaries and bays. Understanding habitat usage, larval behaviour and dispersal is crucial to developing sustainable fisheries, and any fishery development should consider how the habitat is utilized by fish populations at different times of the year.

The researchers collected data that showed a high level of population structures and a low level of connectivity between populations. Also, different parts of the river and estuaries are utilized at different early life history stages, making some areas particularly important at certain times of the year. These findings indicate that increasing localized management will increase more effective marine conservation.

Potential benefits: Policy makers may work toward implementation of localized conservation schemes (such as Marine Protected Areas); decreased environmental impact on marine areas and populations.

- **Paul Snelgrove, Ian Bradbury, et al, *Genetic Determination of the Uniqueness of Holyrood Pond Cod and Hake Population (2006/07)***

Snelgrove et al investigated the effect of isolation on population structure of marine fish in Holyrood Pond. Newfoundland & Labrador's capacity to conserve marine populations and to manage existing and new fisheries depends on a strong knowledge of the spatial ecology of species and the identification of ecologically significant units that are best managed somewhat independently.

The evidence showed genetic structuring in three species that inhabit coastal Newfoundland, however the isolation associated with the regular closing of the Holyrood Pond fjord has not translated into stronger differentiation there than in the three species found in adjacent bays. This research provides valuable information on the population structures of Holyrood Pond that suggests a localized scheme for the pond should be considered and provides insight into the connectivity of fish populations, generally.

Potential benefits: Change in management assumptions (i.e. localized management as opposed to Federal); development of ecotourism and a recreational fishery in the pond; development of ecotourism as interest is generated by the distinctness of populations (especially if designated an MPA).

- **David Schneider, Paul Snelgrove et al, *Marine Protected Areas: Policy Context and Science Basis in NL (2006/07)***

Schneider *et al* identified provincial policy options and their impacts nationally, provincially and locally. The researchers also identified internationally significant science questions relevant to the design and implementation of Marine Protected Areas (MPAs) that can be addressed in NL.

The researchers advocate that the small and unique areas designated as MPAs should exist within a larger framework of MPAs if they are to be effective (i.e. an individual MPA is still affected by surrounding waters, therefore require a network of linked MPAs to be effective).

The findings indicate that stronger provincial and local development and management approaches are necessary in order to maximize effectiveness of MPAs.

Potential benefits: Increased planning and management by the province and localities, with emphasis on developing a comprehensive MPA framework for NL; increased stability of fishery markets through supply management and control of external factors; increased ecotourism in areas surrounding MPAs.

B) RENEWABLE ENERGY

Two projects investigated possible alternative energy sources available in Newfoundland and Labrador that could decrease reliance on diesel energy (Iqbal, Iqbal).

- **Tariq Iqbal & Neil Bose, *Design of a Hybrid Energy System for Battle Harbour Island in Labrador, NL (2006/07)***

Iqbal and Bose designed a hybrid power system for Battle Harbour Island to reduce the community's reliance on its diesel generator. This system utilized renewable energy sources available on the island (including, wind, micro-hydro, solar).

Potential benefits: Improved economy and resilience of Battle Harbour; reduced subsidies paid by provincial government; reduced environmental impact; test-case for development of alternative energy systems in other northern, remote communities.

- **Tariq Iqbal, *Design of Hybrid Power Systems for Port Hope Simpson and Cartwright, Labrador (2007/08)***

Iqbal designed a hybrid power system for the remote northern communities of Port Hope Simpson and Cartwright, based on renewable energy sources available on the island (including, wind, micro-hydro, solar), to reduce the communities' reliance on diesel fuel.

Potential benefits: Improved economy and resilience of Port Hope Simpson and Cartwright; reduced subsidies paid by provincial government; reduced environmental impact; test-case for development of alternative energy systems in other northern, remote communities.

C) NATURAL RESOURCES

Two ARF projects facilitated a greater appreciation and understanding of climate change and development impacts on renewable resources in Newfoundland and Labrador.

- **Luise Hermanutz & Wilf Nicholls, *Biodiversity and Sustainable Ecotourism: Inspiring rural communities to use and protect our natural heritage (2005/06)***

Hermanutz and Nicholls developed and produced a CD and colour field guide to the Limestone Barrens on the Northern Peninsula to educate tourism operators on the importance of the rare plants in the region and the relevant legislation.

The CD and guide demonstrate that the limestone barrens are not a wasteland, but a living, changing habitat, supporting a very high percentage of rare plants and three species of plants that are found nowhere else in the world. The barrens are a remarkable hotspot of plant diversity in NL, but they are easily damaged and warrant protection.

Potential benefits: Increased understanding of potential uses and enjoyment of local resources can assist local development groups and government departments (INTRD, etc) in developing strategies for rural renewal; increased understanding of the wildlife and of the area might stimulate interest in ecotourism; increased understanding of legislation concerning the plants of the region can assist residents and ecotourism operators in keeping uses within the law; increased interest in preserving the area and its plants.

- **Trevor Bell & John Jacobs, *Climate Change and Renewable Resources in Labrador: Looking toward 2050 (2007/08)***

Bell and Jacobs hosted a two-day workshop in North West River, Labrador (March 11-13/08) that brought researchers, scientists, resource managers and community members together to examine the relationships between climate and climate change and the renewable resources that support northern economies and lifestyles. The workshop participants and presenters shared observations of changes in the environment and natural resources, shared expertise on interactions between climate change and renewable resources in Labrador, and identified key challenges presented by climate change and priorities for developing adaptive strategies.

Adaptive strategies discussed included: improving collaboration amongst communities, researchers and governments; establishing monitoring programs; educating and engaging communities; adapting infrastructure for coming changes; and gathering support for climate change action.

Potential benefits: Guiding governments and communities in addressing climate change impacts and developing adaptation strategies; increased resilience of northern economies and lifestyles; decreased impact on environment.

D) ECONOMY

Several ARF projects addressed Newfoundland and Labrador economic issues. Two concerned establishing base-line data and analysis from which future analysis and planning can be developed (Wernerheim, Lynch). Three projects actually sought to directly stimulate the economy of Newfoundland and Labrador by facilitating the development of Newfoundland and Labrador industry and business (Friis, King, Bell).

- **Michael Wernerheim, *Upstream-Downstream Co-agglomeration of Advance Service Industries in Rural Canada: Implications for Regional Policy (2005/06)***

Wernerheim analyzed a detailed spatial data set from Statistics Canada to examine whether Newfoundland and Labrador's weak manufacturing base makes it difficult to attract advanced service industries (i.e. industries that use intensive human capital to provide highly specialized support services to advanced service industries).

The data showed that advanced service industries must be located in areas with appropriate supporting industries and services in order to survive, therefore advanced service industries should not be located away from established centres of economic activity.

Potential benefits: Increased understanding of regional disparities and conditions for success will increase efficiency and effectiveness of government attempts to stimulate regional economies (i.e. so that industries will be able to survive in a region, even after subsidies to attract industries come to an end).

- **Scott Lynch, *Understanding the Dynamics of Out-Migration: An analysis of regional demographic change (2006/07)***

Lynch compared Statistics Canada data concerning out-migration at zonal levels to develop profiles of individuals who choose to leave NL (*interprovincial*) and to identify labour market imbalances within regional zones (*intraprovincial*).

The findings support the argument that out-migration was driven by the loss of the economic-base provided by the fishery. The findings are descriptive and set the foundation for more investigation – from the results econometric modeling can be pursued to analyze the possible explanations and factors of out-migration.

Potential benefits: Can assist policy makers in determining what kinds of resource allocation and infrastructure development will benefit particular areas; will guide policy makers in supporting urban areas while working to prevent rural areas from disappearing.

- **Dag Friis, *Boat Building Design for the Yacht Fleet (2006/07)***

Aiming to create an alternative to fishing vessel production for Newfoundland and Labrador's boat builders, while retaining a NL-grown concept, Friis developed a model hull for a 'pleasure trawler' that can be successfully manufactured and exported by a group of NL boat builders. He engaged interested and equipped builders in cooperatively building a mould to produce the hull (after which, each builder could tailor the design and interiors to create their own versions of the pleasure trawler).

Potential benefits: Increased entrepreneurship and employment in boat building sector.

- **Wayne King & John Maher, *Case Writing Project: Newfoundland and Labrador and the Republic of Ireland (2007/08)***

King and Maher are producing a series of 10 business case studies of innovative businesses located in rural areas of NL and Ireland (5 businesses from each locality) to be used in business education and to alert students to the potential for developing innovative businesses in rural areas. The case studies will provide real-life, modern examples that encourage students to think innovatively in their communities ('out of the box'), rather than moving to 'where the work is'.

Potential benefits: Can contribute to revitalization of rural economies, allowing more people to reside in rural areas; could encourage government to foster entrepreneurship from the business side, rather than focusing on the product side (i.e. realizing that a great plan can precede a great product, and that a great product doesn't always translate into a great business).

- **Trevor Bell, *Building Government and Industry Partnerships in Seabed Mapping across the North Atlantic (2007/08)***

Bell hosted a roundtable in cooperation with, and bringing together, key stakeholders in Newfoundland and Labrador seabed mapping. The roundtable workshop aimed to contribute to building a 'community' of seabed mapping stakeholders and Newfoundland and Labrador's capacity and future growth in seabed mapping.

Participants and presenters identified several challenges in seabed mapping, including that: local industries require training for highly qualified personnel and need to be able to quality-test their products; costs for data collection and use could be reduced through collaborations; use of appropriate vessels for data collection would reduce costs and inefficiencies.

Potential benefits: Policy makers will benefit from new technologies, data standards and understanding of the Newfoundland and Labrador seabed; increased competitiveness of NL mapping companies in global markets through collaborations and improved efficiencies; increased awareness of benefits of seabed mapping.

E) GOVERNANCE & COMMUNITY ORGANIZATION

Seven ARF projects investigated increasing efficiencies and effectiveness in governance and community organization. Two projects focused on inter-government relations (Tomblin, Feehan), two projects investigated the links between communities and governance (May, Jones), and three projects addressed education issues and the role of education systems in Newfoundland and Labrador (Locke, Galway, Mulcahy)

- **Stephen Tomblin, *Economic Development, Governance and Regionalism in NL: From slippery slopes to best practices (2005/06)***

Tomblin interviewed policy makers from different policy areas – municipal, health, education and economic development – that generally operate in ‘silos’ (i.e., operating separately toward individual mandates and goals) to discuss their experiences in regionalization.

Tomblin’s study demonstrated that systems of regionalization in different fields have developed through different means, in different times, with different objectives. By acting in isolation from each other, policy silos can actually be working to the detriment of other areas (for instance, some economic development plans might result in worse health for residents in a region). On the other hand, if policy makers in regionalization are aware of the goals of other policy fields, integrated and holistic policies can be developed within regions that ensure the objectives of all fields are being achieved.

Potential benefits: Improved efficiency and effectiveness of regional planning and resource allocation by policy makers in all policy fields.

- **James Feehan, *Federal Government Presence in NL: Trends and implications (2005/06)***

Feehan investigated the trends in the presence of the federal government in Newfoundland and Labrador (in terms of decision-making positions, bases, etc, located in NL). The study confirmed declining trends in federal presence – both in number of positions overall and in the number of executive, decision-making position, resulting in movement of decision-making capacity to outside Newfoundland and Labrador.

Potential benefits: Provides evidence to provincial stakeholders in advocating for greater federal presence; increased federal decision-making capacity resident in NL; increased professional, high-skilled employment in NL.

- **Douglas May, *State of the Province: Socio-economic indicators about well-being (2005/06)***

May investigated the indicators of well-being that are being used nationally and internationally and compared them to the structure of Newfoundland and Labrador’s Community Accounts. Through literature review and investigation of the provincial indicators used, May described the role Community Accounts can play in public sector accountability, policy development and decision-making, informing citizens about social and economic community development planning, helping governments and citizens to engage in community development.

Potential benefits: Improved use of Community Accounts by academics in research, and external stakeholders and citizens in practice, to determine root causes of societal problems and successes.

- **Jones, *How Mediating Organizations Contribute to the Social Reproduction of Rural Localities (2006/07)***

Jones moved to Fogo Island and immersed himself in its culture and community to examine the ways that mediating organizations (entities that can link societal levels, muster resources, foster collective identities and bolster fresh interpretations of the world) influence the continued existence of rural localities. Jones also examined the interactions between the mediating organizations and government authorities at all levels.

The findings showed that the volunteer base on Fogo Island faces more pressing circumstances than were experienced in the 1960s and that there is frustration at the lack of perceived local influence over the factors impacting the area and the difficulty experienced engaging effectively with government departments. The research also showed that there are people who wish to stay on Fogo Island and are willing to engage with each other that it may be so. Jones argues that any future plans for Fogo Island must involve and support local organizations, as they have the knowledge of local potential and can help bring it to fruition. Jones also states that funding needs to be apolitical and stable.

Potential benefits: Increased local, rural economic development through support to mediating community organizations.

- **Wade Locke, *Supporting the Contribution of Higher Education Institutions (HEIs) to Regional Development within Atlantic Canada (2006/07)***

As part of the Organization for Economic Co-operation and Development's international study on the role of higher education institutions (HEIs), Locke conducted a self-evaluation of all HEIs in Atlantic Canada. The report legitimizes the role of community engagement in scholarship, dispelling 'ivory tower' perceptions of academia.

Locke is producing two additional reports from his work, one (in cooperation with the Atlantic Provinces Economic Council) setting out a regional strategy to enhance the role of Atlantic Canada's HEIs in regional economic development and capacity building analysis, and the second highlighting lessons learned in NL for enhancing the role of local HEIs in local economic development.

Potential benefits: Increased awareness, discourse and standards concerning the importance of regional engagement of HEIs; increased desire and expectations for collaborations between governments and HEIs.

- **Gerald Galway & David Dibbon, *Research Incubation Fund for Symposium 2008: Post-confederation educational reform – rhetoric to reality (2007/08)***

To address the gap in research and discourse concerning NL education reform, Galway and David Dibbon (co-investigator) hosted a Symposium on education reform in NL, funded the preparation of policy-relevant research papers, and is compiling the papers into an edited book. The Symposium and generation of papers were designed to stimulate rational discussion of education policy directions outside the political arena and to stimulate and consolidate current research on the impacts of NL's education reform. Discussion and research had not been generated or consolidated on this topic since the 1990s.

The research book and the Symposium presentations and proceedings show how policy and program reforms, in general, impact human lives by displacing people and effecting communities and economies.

Potential benefits: Better understanding of policy makers (inside NL and out) concerning the effects of policy reform (education or otherwise) on human lives – findings apply to consolidation/centralization of organizations.

- **Dennis Mulcahy, *An Investigation Into the Nature of Education in a Rural and Remote Region of the Province of Newfoundland and Labrador (2007/08)***

Mulcahy investigated the conditions of rural education in the Labrador Straits to identify the issues related to education in rural communities, the expectations of external stakeholders for education in rural communities and whether those expectations are being met by rural schools, and how education attainment contributes to rural economies.

Potential benefits: Improved education in rural areas leading to improved economic activity and decision-making capacity at the local level.

F) CULTURE

One ARF project addressed cultural aspects of regional policy and development (Tulk), seeking to foster appreciation for Mi'kmaw culture and populations in Newfoundland and Labrador through the compilation of Mi'kmaw music for use in classrooms.

- **Janice Esther Tulk, *Welta'q – "It Sounds Good": Sound recordings of Mi'kma'ki (2007/08)***

Tulk is compiling an archival CD with more than 24 tracks of historic archival recordings of music and story-telling, with an accompanying book to contextualize the selections and provide interpretative materials and additional information. The goal is to promote Mi'kmaw culture in NL and beyond. The CD is intended for use in Newfoundland and Labrador's education system as well as in Aboriginal education systems, to assist Mi'kmaw learners to gain appreciation for their history and culture and non-Mi'kmaw learners to gain awareness and appreciation of the diversity of cultures and populations in Newfoundland and Labrador and throughout the Atlantic Provinces.

Potential benefits: Increased Mi'kmaw valuing of culture can increase pride and self-validation, which contributes to health and productivity; increased understanding by non-Mi'kmaw contribute to a respectful and inclusive province; proceeds from CD sales (approximately 800 of the 1000 CDs produced will be sold) going into scholarship fund for Mi'kmaw students; researchers and policy makers will have better understanding of best practices for documenting and presenting cultural history; increased appreciation for Mi'kmaw culture and NL diversity could contribute to increased tourism.