Overview of the Canadian Fisheries Research Network

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National Academies Workshop - June 18, 2021

Réseau canadien de recherche sur la pêche

Canadian Fisheries Research Network

RESHAPING
FISHERIES RESEARCH
IN CANADA

Bringing together **industry, academia** and **government** to answer strategic questions through collaborative research

Training the **next generation of fisheries researchers** and **managers**

Working toward a **sustainable fishing industry** in an **evolving management system**

www.cfrn-rcrp.ca

NSERC
CRSNG

2

CFRN – What is/was it?

- Collaboration among industry, academics and government across Canada
  - 50 industry, 30 academics, 40 government
  - 50 students/PDF's
- Research on practical and strategic issues of relevance to industry and management
- Research 2010-2015 (reporting through 2020)
- $9M+ research program
  - NSERC ($5M), DFO ($2M), Industry ($2M)

Pre-conditions… about 2009

- Academics were remote from applied fisheries research
- Issues of importance to industry and management were not being addressed
- Increasing challenges of ecosystem-based management and precautionary approach
- Interest in 'alternate service delivery'
- Funding opportunity

Stringer et al 2009

The Changing Nature of Fisheries Management and Implications for Science

Authors   Authors and affiliations

Kevin Stringer ✉ , Marc Clemens ✉ , Denis Rivard ✉

Needs:
…more comprehensive in our approach
…growing array of information
…new partnerships and working arrangements between fisheries managers, scientists and the fishing industry
……an overall framework for sustainable fisheries, a set of policies to support it, a decision-making framework…

Richard J. Beamish
Brian J. Rothschild
Editors

Fish & Fisheries Series 31

The Future of Fisheries Science in North America

Springer
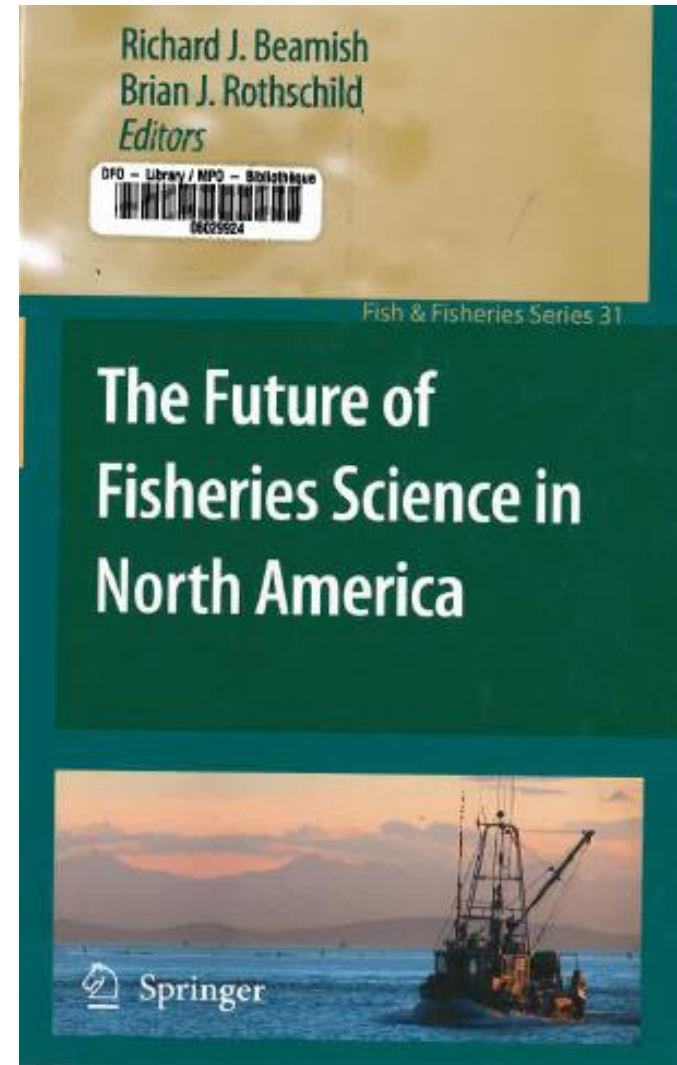
Network Vision

- Reshape fisheries research in Canada
- Bring together industry, academic community, government research
- Link existing work/research so that it is useful
- Train a cohort of practitioners for future
- Improve sustainability, viability, competitiveness of industry

Q1 – Identifying Science needs

- Co-construction of projects
- What are the most critical areas of need?
- What is the unique niche?
- What requires collaborative approach?

CFRN Co-Construction Process

1. Key questions identified by fish harvesters and supported by government scientists and academic researchers

2. Research designed jointly by fish harvesters, academics and government

3. Facilitated collaboration and implementation of research

(Thompson et al 2019, CJFAS)

Original workplan/themes

1. **Increasing industry information for addressing key knowledge gaps in support of key commercial fisheries**

   1.1 Enhanced fisheries knowledge for evolving management

   1.2 Metapopulation dynamics, management units and productivity of lobster

   1.3 Recruitment and early survival of lobster

   1.4 Effects of socio-economic complexity on dynamics of harvested stocks

2. **Promoting ecological sustainability and operational efficiency**

   2.1 Evaluating strategies to reduce energy dependence and greenhouse gas emissions from Canadian fisheries

   2.2 Reducing seabed impacts of mobile fishing gears

3. **Improved evaluation and effective ecosystem-based management**

   3.1 Fishery closures in ecosystem-based fisheries management

   3.2 Assessing the impact of marine mammals on the recovery of salmon, rockfish, herring and cod

   3.3 (a-e) Management strategy evaluation in Canadian fisheries

Q2 – Identifying who conducts science

Canadian Fisheries Research Network

Réseau canadien de recherche sur la pêche
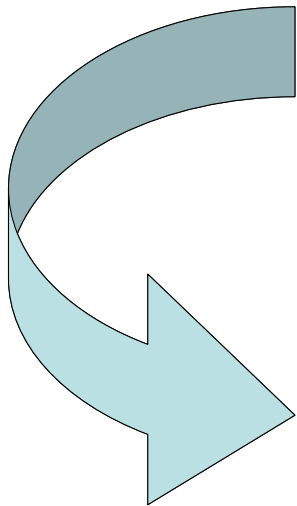
Industry + Academia + Government

Collaborations in research on critical questions of management

Co-construction

Background: NSERC call (2009)

- *The network will draw on the **extensive experience , expertise, data and technology** of the fishing industry, government scientists and managers, and fisheries academics to build capacity and forge partnerships among these groups to develop a national capture fisheries sector research capacity*

Memorial
University of Newfoundland

UNB

uOttawa

UQAR
Université du Québec
à Rimouski

SFU

SIMON FRASER UNIVERSITY
THINKING OF THE WORLD

UBC

UNIVERSITÉ
LAVAL

UNIVERSITY
of GUELPH

UNIVERSITÉ
DE MONCTON

SAINT MARY'S
UNIVERSITY SINCE 1802

One University. One World. Yours.

DALHOUSIE
UNIVERSITY
Inspiring Minds

UPEI
UNIVERSITY
of Prince Edward
ISLAND

Université
Sainte Anne

Partnerships and Engagement

-Large collaboration (130+ people)

-Facilitated close collaboration

-Unique training for cohort of students

Government agencies

NSERC, Federal and Provincial managers, scientists and policy makers

Industry

Commercial harvesters, processors and representatives

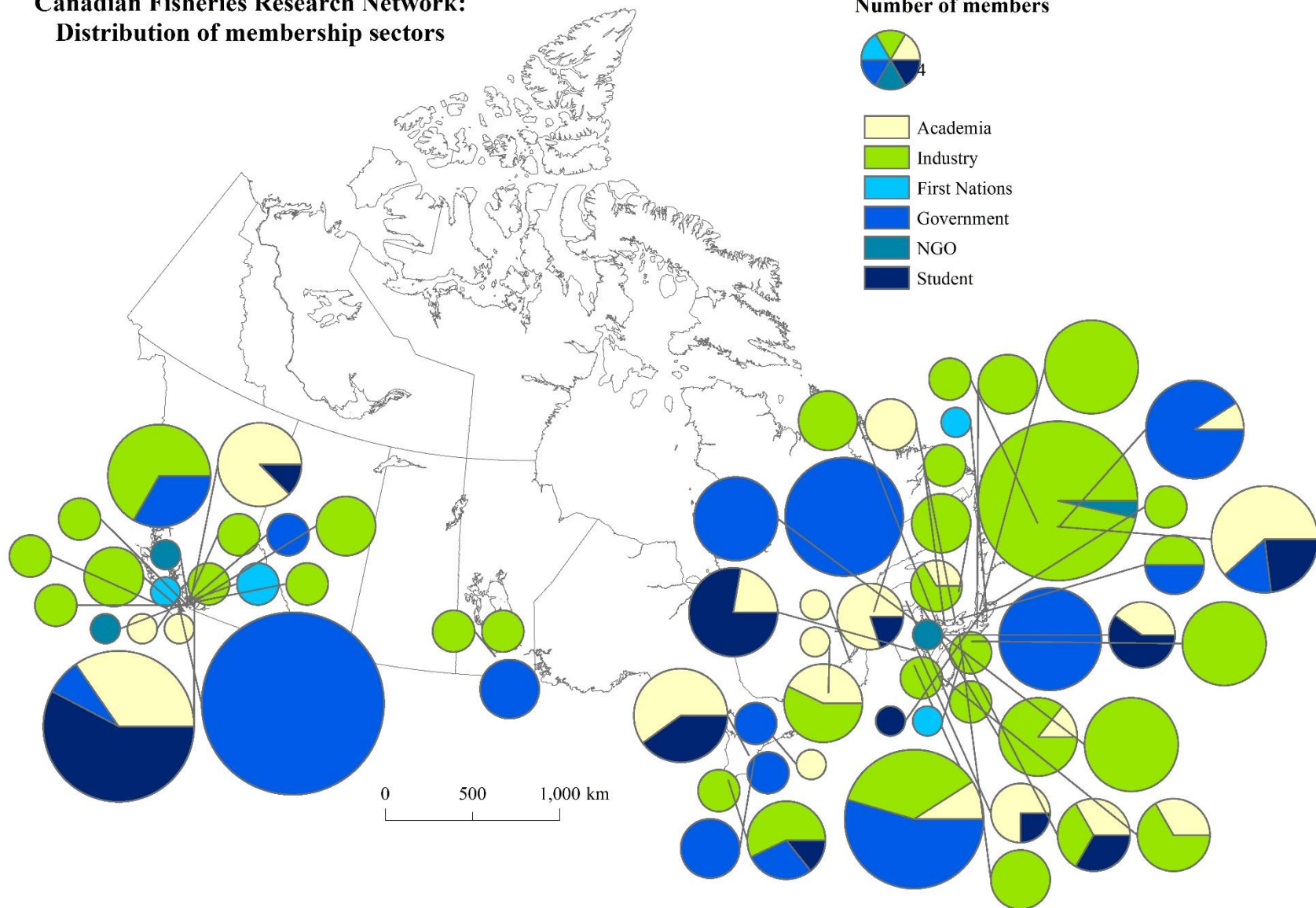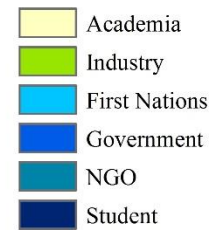**Academics**

Social and Natural scientists, including students

Research DFO (or industry or academics) couldn't do alone
...for example:

- Management Strategy Evaluation and adaptive management
- Methods for adding social, economic and institutional aspects
- Modifying gear to reduce impact
- Impact of fishery closures and of marine mammals
- Increased industry information and sampling (e.g. lobster stock structure)

Canadian Fisheries Research Network:
Distribution of membership sectors

Number of members

4

Academia
Industry
First Nations
Government
NGO
Student

0   500   1,000 km

Participatory research

- Collaboration is a process
- Collaboration requires effort/organisation
- Industry (and academics and government) have unique and valuable things to offer
- Participatory research is facilitated by governance that values (and can use) the results

Best practice?

- Meaningful involvement of all parties
- Trust, respect and commitment
- Co-construction (facilitated collaboration)
- Consensus on clear objectives and roles
- Communication (plain language)
- Accepting/enabling governance structure

⇒ … 'behaviours' of collaboration

Q3+4 Program outputs and impacts

- Over 650 products ('Product bundles' – for academia, government, and industry)
- Facilitated interdisciplinary collaboration
- Facilitated DFO/industry collaboration with over 30 academics and 50 students
- Dedicated journal issues:
  - Canadian Journal of Fisheries and Aquatic Sciences
  - Ecology & Society

EDITORIAL

Collaborative fisheries research: the Canadian Fisheries Research Network experience[1]

Susan A. Thompson, Robert L. Stephenson, George A. Rose, and Stacey D. Paul

Ecology and Society

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E&S HOME > PAST ISSUES > FEATURE (2020)   Open Access Publishing

Full-Spectrum Evaluation of Sustainability: Insights from Fisheries in Canada

Guest Editors: Paul Foley, Evelyn Pinkerton, Melanie Wiber, and Robert Stephenson

guest editorial

Full-spectrum sustainability: an alternative to fisheries management panaceas

Paul Foley, Evelyn Pinkerton, Melanie G. Wiber, and Robert L. Stephenson

HTML   Download Citation

research

CFRN Brand

- Deep collaborations

- Co-constructed projects

- Built on strengths of industry, academia and government

- Addressed critical areas of need

- Pushed disciplinary and institutional envelopes

What has it done?

- Delivered research on key issues
- Unified researchers across Canada
- Cultured a group of applied academics
- Demonstrated feasibility of deep collaboration and interdisciplinarity
- Trained ('cross-trained') a unique cohort of graduates/PDFs
- Changed the discourse on fisheries issues
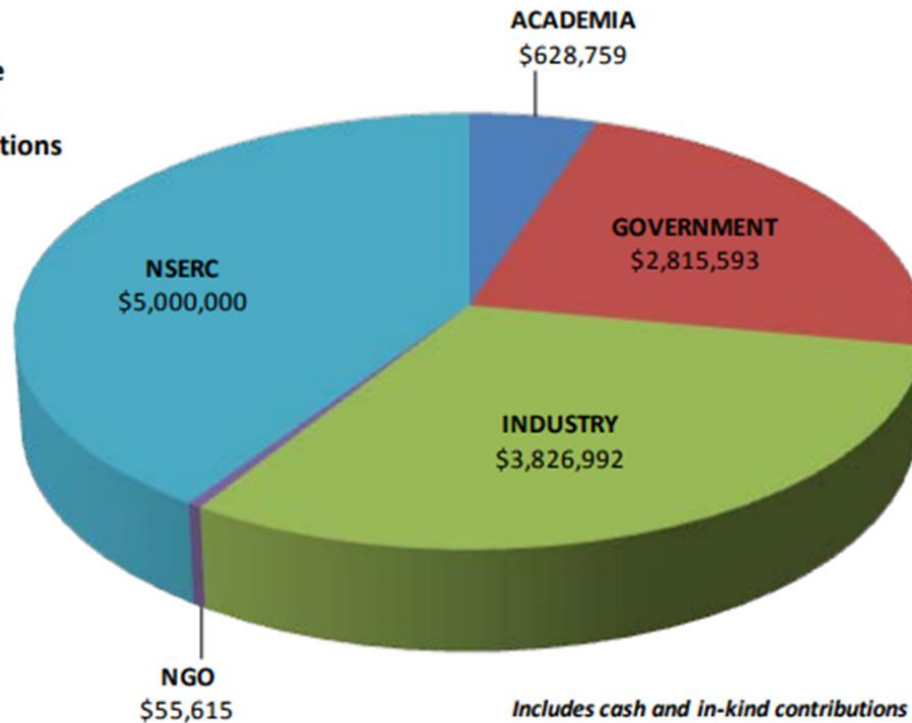- Set the stage for future collaboration

Q5 – Program improvements?

Institutionalize such a collaborative approach

Leverage is high…

Figure 2:
CFRN Total Value
with NSERC and
Partner Contributions
2010-2015

ACADEMIA
$628,759

GOVERNMENT
$2,815,593

NSERC
$5,000,000

INDUSTRY
$3,826,992

NGO
$55,615

Includes cash and in-kind contributions

CFRN as a springboard...?

For further information:

Thompson, S., R.L. Stephenson, G. Rose and S.D. Paul. 2019. Collaborative Fisheries Research: The Canadian Fisheries Research Network Experience. Canadian Journal of Fisheries and Aquatic Sciences. https://cdnsciencepub.com/doi/full/10.1139/cjfas-2018-0450

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