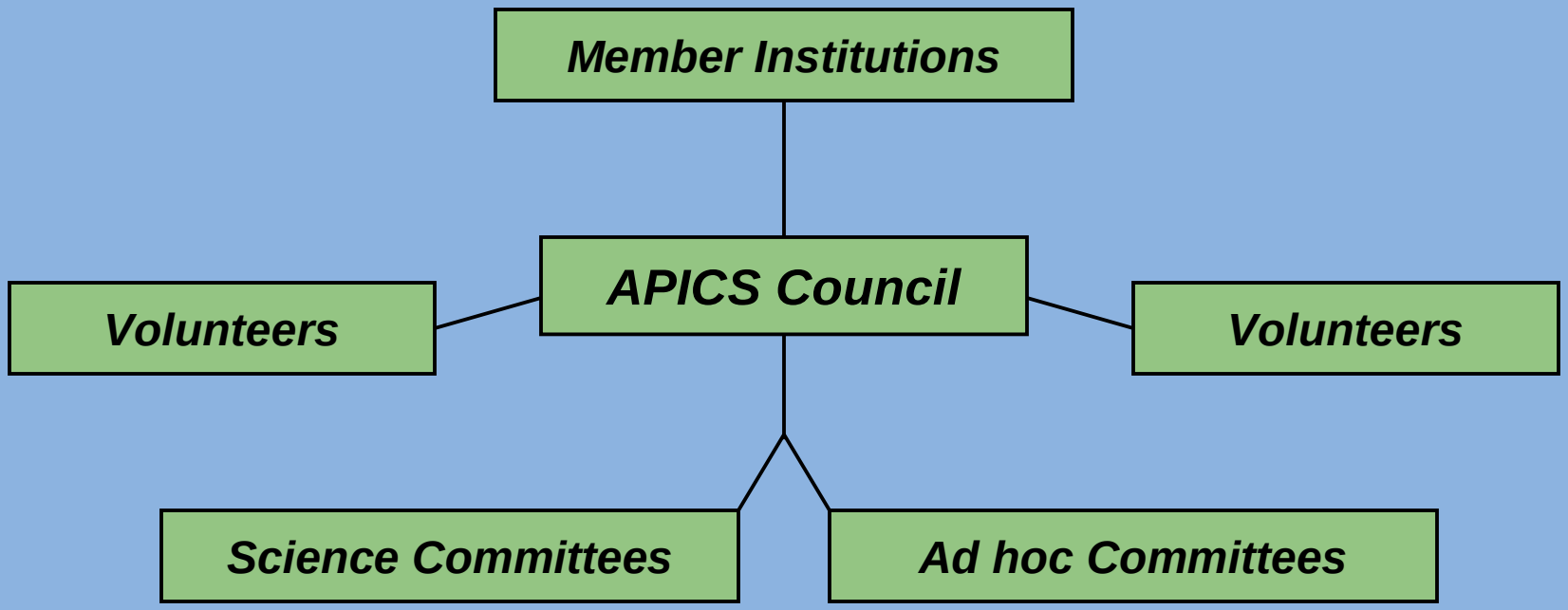
http://www.apics.dal.ca

The Atlantic Provinces Council on the Sciences (APICS) is a non-profit association composed of universities, colleges, government labs and other institutions in Atlantic Canada. Its goal is the advancement of science and technology through education and public awareness and the promotion of scientific literacy, education and research throughout the region.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APICS University Members

Acadia University

Atlantic Baptist University

Cape Breton University (CBU)

Dalhousie University (Dal)

Memorial University (MUN)

Mount Allison University (Mount A)

Mount St. Vincent University

Nova Scotia Agricultural College

St. Mary's University

Sir Wilfred Grenfell College (Memorial University - MUN)

St. Francis Xavier University (St FX)

St. Thomas University

Université de Moncton (UdM)

University of New Brunswick (UNB)

University of Prince Edward Island (UPEI)

Coastal Ocean Research

- A natural focus for Atlantic universities
- APICS members address the complex questions that arise from our dependence on and interaction with coastal environments in many ways, including:
  - Canada Research Chairs
  - Specialized Research Centres
  - Collaborative research groups or centres of excellence
  - Individual research projects

Note that this presentation will not be exhaustive, as there is a tremendous amount of coastal ocean research done at APICS' institutions. Hence while I have tried to be as inclusive as possible, there will no doubt be individuals or units that have not been incorporated into the presentation.

Canada Research Chair Program

- Established by the Federal Government in 2000 with the goal of creating 2000 Canada Research Chairs by 2008
- Chairs allocated to universities based on a variety of criteria
- University makes nominations to a national board which then must approve the appointment
- Chair must fit with the University's strategic research plan
- Two levels of Chair – Tier 1 and Tier 2
    - Tier 1: seven year appointment, renewable
    - Tier 2: five year appointment, renewable once
- For further information, go to http://www.chairs.gc.ca/web/home_e.asp.

Coastal Zone Research at APICS Universities: Canada Research Chairs

Acadia University:

- Nelson O'Driscoll — Environmental Biogeochemistry
- John Roff — Environmental Science and Conservation

Dalhousie University:

- Katja Fennel — Marine Prediction
- Jeff Hutchings — Marine Conservation and Biodiversity
- Heike Lotze — Marine Renewable Resources
- Daniel Ruzzante — Marine Conservation Genetics
- Helmuth Thomas — Marine Biogeochemistry
- Keith Thompson — Marine Prediction and Environmental Sciences

Memorial University:

- Sam Bentley — Seabed Processes and Seabed Imaging
- Ratana Chuenpagdee — Natural Resource Sustainability and Community Development
- Bill Driedzic — Marine Bioscience
- Matt Rise — Marine Biotechnology
- Murray Rudd (SWGC) — Ecological Economics
- Paul Snelgrove — Boreal and Cold Ocean Systems
- Lev Tarasov — Glacial Dynamics Modeling
- Sue Ziegler — Environmental Science

Coastal Zone Research at APICS Universities: Canada Research Chairs (cont'd)

St. Francis Xavier University

- Ricardo Scrosati — Aquatic Ecology

University of New Brunswick

- Richard Cunjak — River Ecosystem Science
- Gary Saunders — Molecular Systematics and Biodiversity

University of Prince Edward Island

- Michael van den Heuvel — Watershed Ecological Integrity

Coastal Zone Research at APICS Universities: Specialized Centres

Acadian Centre for Estuarine Research (Acadia University)

- Estuarine and coastal water research, fisheries, aquaculture, coastal erosion and sedimentation

Bras d'Or Institute for Ecosystem Research (Cape Breton University)

- Mapping and development of technology for producing maps of the seabed in shallow water

Canadian Institute of Fisheries Technology (Dalhousie University)

- Aquaculture development, biotechnology, fish/food process engineering, marine oils and nutrition, seafood biochemistry…

Canadian Rivers Institute (University of New Brunswick)

- Aquatic ecology, environmental impacts, food web contamination

Centre for Environmental and Molecular Algal Research (Mount Allison University)

- Molecular ecophysiology of Cyanobacteria, ecology and evolution of macroalgae

Coastal Wetlands Institute (Mount Allison University)

- Study of the processes underlying the health of coastal wetlands
- Ten faculty members plus several associates

Ocean Sciences Centre (Memorial University)

- Fish physiology, population sustainability, ecosystem health

Coastal Zone Research at APICS Universities: Groups and networks

Canadian Healthy Oceans Network (CHONE)

- National initiative
- Population connectivity, ecosystem function, biodiversity characterization at multiple scales
- Participants include MUN (Snelgrove, Schneider), the University of Victoria (Tunnicliffe), Fisheries and Oceans Canada (Pepin), UPEI (Quijon)

Canadian Aquatic Invasive Species Network (CAISN)

- Alien aquatic species on both coasts of Canada and inland lakes
- Richard Rivkin (MUN/Ocean Sciences Centre) is a participant

Community-University Research for Recovery Alliance (CURRA)

- Barbara Neis (MUN) applicant
- Multiple partners including St. Mary's University, Fisheries and Oceans Canada, Parks Canada, and several community organizations
- Development of recovery strategies for Newfoundland west coast marine fisheries and fishing communities
- Funded at $1M over 5 years

Coastal Zone Research at APICS Universities: Groups and networks (cont'd)

Coastal CURA

- Community-based governance of coastal resources
- Partners include St. Mary's University, UNB, two fishing organizations, four First Nations groups and the Bay of Fundy Marine Resource Centre

Community-based Environmental Monitoring Network (CBEMN) (St. Mary's University)

- A community resource linking expertise and skills to community organizations involved in environmental stewardship

Atlantic Co-operative Wildlife Ecology Network (ACWERN) (UNB, Acadia, MUN)

- Initiated as NSERC University-Industry Chair with Canadian Wildlife Service as 'industrial' partner and one chair at each university
- Current initiatives include work on coastal habitats for seabirds, seabird ecology and population studies, long-term change in coastal ecosystems

Atlantic Environmental Science Network (AESN) (http://www.aesn.ca)

- A 'network of networks' which includes universities, federal and provincial government departments, industry (associations and individuals), NGOs and First Nations
- Six thematic co-operatives, including biodiversity, watersheds, climate change and marine life/natural capital valuation

Coastal Zone Research at APICS Universities: Selected individual research

Martha Jones (Cape Breton University)
- Estuary assessment

Geoffrey Lee-Dadswell (Cape Breton University)
- Physiological impacts of seismic testing on invertebrates

Len Zedel (MUN)
- Acoustic fish sampling techniques

Brad deYoung (MUN)
- Development of gliders for coastal ocean sampling; ocean observatory

George Rose (MUN – Fisheries Conservation Chair)
- Acoustics, fisheries conservation, fish stock dynamics

Luc Tremblay (Université de Moncton)
- Bacterial biomarkers; estuarine particulate matter

Céline Surette (Université de Moncton)
- Trace metal bioaccumulation; impacts of pharmaceuticals on water quality

Dean Strickland (Sir Wilfred Grenfell College – MUN)
- Long-term monitoring and assessment; understanding estuaries; climate change impacts (Humber River Basin)

Coastal Zone Research at APICS Universities: Some examples

Dr. Paul Snelgrove, Tier 2 Canada Research Chair in Boreal and Cold Ocean Sciences, Memorial University

Research focus: Improving our understanding of the biodiversity of cold ocean ecosystems

Dr. Snelgrove's lab is located at the Ocean Sciences Centre. In the spring of 2008, he had three Honours students, six M.Sc. Students and three Ph.D. students at work on marine research.

He plays a key role in national and international initiatives dealing with biodiversity, ocean health, and sustainability of marine ecosystems.

On May 14, 2008, the NL Dept of Industry, Trade and Rural Development announced a $1M contribution from the Industrial Research Infrastructure Fund to CHONE.

Coastal Zone Research at APICS Universities: Some examples

ACADIA ESTUARINE CENTRE FOR RESEARCH

Director: Dr. Anna Redden

- Established 1985 at Acadia University
- Primary objective is to focus research attention on estuaries and near shore coastal waters
- Currently four Research Associates, but other members of faculty may be involved in research activities as interest dictates
- Selected current and recent areas of activity:
  - Feeding and migratory behavior of fish species
  - Fish mortality associated with the Annapolis tidal power station
  - Environmental impact studies on wetland rehabilitation
  - Dredging impacts on biological resources in the Miramichi estuary
  - Shoreline erosion at Fort Anne National Historic Site
  - Consequences of causeway removal at Rustico Harbour, PEI

Coastal Zone Research at APICS Universities: Some examples

Dr. Ricardo A. Scrosati, Tier 2 Canada Research Chair in Aquatic Ecology, St. Francis Xavier University

Research focus: Generating new knowledge about how coastal systems work. Applications in conservation and management in Atlantic Canada and in environmentally similar coasts of the world.

Dr. Scrosati is supervising four M.Sc. students and one Ph.D. His current research includes:

- Community diversity along gradients of environmental stress
- Environmental stress models of community organization
- Regional and local variability in seaweed and invertebrate populations
- Effects of sea ice on intertidal invertebrates

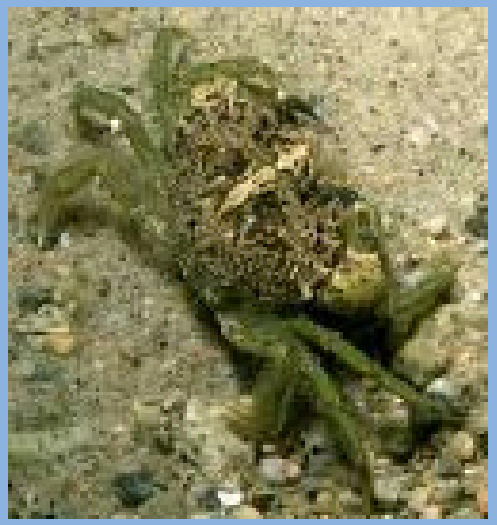
Coastal Zone Research at APICS Universities: Some examples

Dr. Pedro Quijon, Assistant Professor of Biology, UPEI

Research focus: Estuarine and marine benthic ecology, especially predator-prey interactions, marine biodiversity and invasive species.

Current research:

- Community-wide effects of the European green crab in PEI's sedimentary habitats
- Colonization and distribution of invasive tunicates
- Pathogenic infestations of lobster
- Interactions between green crab and native species
- Arrival and distribution of four species of invasive tunicates
- Community-based monitoring of invasive tunicates



Opportunities?

- Engaging university researchers on contract or by grants to do work directly related to your priorities
  - Funding graduate students (typically requires at least two year commitment)
  - University researcher as Principal Investigator
- Engaging university researchers as expert collaborators to provide input on proposed initiatives. Area of expertise include:
  - Experimental design
  - Literature review
  - Data analysis and interpretation
- Accessing information that might otherwise be overlooked
  - Graduate theses
  - Data collected serendipitously as part of another project
  - Data from an ongoing research program that hasn't yet reached the publication stage
  - Papers in press but not yet published

Acknowledgements

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