

1.4 Marine Productivity & Sustained Exploitation of Emerging Fisheries

Summary

Project Leader(s)

Tremblay, Jean-Eric

The main objective of this project is to assess the impacts of sea-ice cover reduction, increasing sea temperatures and altered ocean circulation on the biological productivity, fisheries resources and marine mammal populations of the coastal Canadian High Arctic. The goals are (1) to link seasonal microalgal production to oceanic properties and the seasonal extent and type of sea-ice across the study area (North Water, Central Archipelago, Mackenzie Shelf); (2) to relate key indices of ecosystem maturity at the end of the biological production season to the spring-summer pattern of sea ice distribution and sea surface temperature; (3) to inventory and track the availability of fish and marine mammal resources; and (4) to monitor fisheries harvest by Northerners.

People

Network Investigators

Fortier, Louis (Université Laval)
Gagné, Jacques (Université Laval)
Gosselin, Michel (Université du Québec à Rimouski)
Larouche, Pierre (Université du Québec à Rimouski)
Lovejoy, Connie (Université Laval)
Poulin, Michel (Université du Québec à Rimouski)
Price, Neil (McGill University)
Simard, Yvan (Université du Québec à Rimouski)
Tremblay, Jean-Eric (Université Laval)

Collaborators & Research Associates

Belt, Simon T (University of Plymouth)
Massé, Guillaume (University of Plymouth)
Michel, Christine (University of Manitoba)

Post-Doctoral Fellows

Lalande, Catherine (Université Laval)
Mundy, CJ (Christopher John) (Université du Québec à Rimouski)
Sampei, Makoto (Université Laval)

PhD Students

Ben Mustapha, Sélima (Fisheries and Oceans Canada - Maurice Lamontagne Institute)
Benoit, Delphine (Université Laval)
Forest, Alexandre (Université Laval)
Gagnon, Jonathan (Université Laval)
Lafrance, Pascale (Université Laval)
Ly, Christophe (Université Laval)
Terrado, Ramon (Université Laval)
Thaler, Mary (Université Laval)
Thanassekos, Stephane (Université Laval)

Masters Students

Bouchard, Caroline (Université Laval)
Forest, Alexandre (Université Laval)
Martin, Johannie (Université Laval)

Pedneault, Estelle (Université Laval)
Scarcella, Karen (Québec-Océan)
Tremblay, Genevieve (Université du Québec à Rimouski)

Undergraduate Students

Canuel, Pierre (Université Laval)
Rousseau-Lanctot, Shani (Université du Québec à Rimouski)

Technical Staff

Bédard, Catherine
Blondeau, Sylvain (Québec-Océan)
Cloutier, Hélien (Université Laval)
Coulombe, Remi
Ferland, Joannie (Université du Québec à Rimouski)
Lebel, Simon (Université Laval)
Lemaire, Nicolas (Université du Québec à Rimouski)
Letourneau, Louis (Université Laval)
Massot, Pascal (Université Laval)
Michaud, Luc (Université Laval)
Perron, Vincent (Université Laval)
Ringuette, Marc (Université Laval)
Rondeau, Jean-Guy (Fisheries and Oceans Canada - Maurice Lamontagne Institute)
Simard, Mélanie (Université du Québec à Rimouski)
Thorne, Marilyn (Université Laval)

Project Staff

Potvin, Marianne (Université Laval)

Partners

IPY Federal Program Office
Indian and Northern Affairs Canada - Northern Scientific Training Program
Institut des sciences de la mer de Rimouski
Québec-Océan
Northern Rockies Conservation Cooperative
Fisheries and Oceans Canada - Institute of Ocean Sciences
Fisheries and Oceans Canada - Maurice Lamontagne Institute
International Arctic Research Center
National Institute of Polar Research
Hokkaido Tokai University
Canadian Museum of Nature

Publications

Articles Published in Refereed Publications

Barber, D., Fortier, L., and Byers, M., 2006, The incredible shrinking sea ice, *Policy Options Politiques*, v.27, no.01, 66-71, Published

Fortier, M., and Fortier, L., 2006, Canada's Arctic, vast, unexplored and in demand: Canadian-led international research in the changing coastal Canadian Arctic, *Journal of Ocean Technology*, v.1, no.1, 1-8, Published

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Belt, S.T., Massé, G., Rowland, S.J., Poulin, M., Michel, C. and Leblanc, B., 2007, A novel chemical fossil of palaeo sea ice: IP25, *Organic Geochemistry*, v.38, 16-27, Published

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Garneau, M.-È., Gosselin, M., Klein, B. Tremblay J.-É. and Fouilland, E., 2007, New and regenerated production during a late summer bloom in an Arctic polynya, *Mar. Ecol. Prog. Ser.* V. 345, 13-26, 1, Published

Juul-Pedersen, T., Michel, C. and Gosselin, M., 2008, Influence of the Mackenzie River plume on the sinking export of particulate material on the shelf, *J. Mar. Syst.*, doi:10.1016/j.jmarsys.2008.02.001, 1, Accepted

Other Refereed Contributions

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Tremblay, J.E., Martin, J., Gagnon, J. and Gratton, Y., 2007, Nutrient investigations in ArcticNet: tracking changes in oceanic circulation and ecosystem productivity, 2006 ArcticNet Annual Conference Proceedings, Victoria, BC, 1, Published

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Thanassekos, S., 2007, Modelling Growth and Survival of Larval Arctic Cod, 2007 ArcticNet Annual Conference Proceedings, 13, Published

Lalande, C., Forest, A., Fortier, L., 2007, Pan-Arctic Comparison of the Annual Variability of Particulate Carbon Fluxes in the Beaufort Sea, Northern Baffin Bay, and Laptev Sea, 2007 ArcticNet Annual Conference Proceedings, 25, Published

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Martin, J., Tremblay, J.-É., Larouche, P., 2007, The Effect of Subsurface Chlorophyll Maxima on the Estimation of Marine Productivity by Orbiting Sensors in the Canadian Arctic, 2007 ArcticNet Annual Conference Proceedings, 77, Published

Tomkins, J., Lamoureux, S., Antoniadis, D., Vincent, W., 2007, A 1000-Year Record of Hydroclimatic Variability from a Lake at the Northern Extreme of Canada, 2007 ArcticNet Annual Conference Proceedings, 92, Published

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Martin, J., Tremblay, J.-E. and P. Larouche, 2007, The effect of subsurface chlorophyll maxima on the estimation of marine productivity by orbiting sensors in the Canadian Arctic, 2007 ArcticNet Annual Conference Proceedings, 73, Published

Forest, A., Bélanger, S., Sampei, M., Sasaki, H., and Fortier, L., 2008, Three-year assessment of particulate organic carbon fluxes in Amundsen Gulf (Beaufort Sea): Satellite observations and sediment trap measurements, 2007 ArcticNet Conference Proceedings, 50, Published

Thanassekos, S., Dupont, F. and Fortier, L., 2008, Modelling Growth and survival of Larval Arctic Cod, 2007 ArcticNet Annual Conference Proceedings, 88, Published

Valdenaire, B., Forest, A., Lalande, C. and Fortier, L., 2008, Seasonal variations of vertical fluxes of particulate organic carbon in coastal Hudson Bay: First insights from 2005-2006, 2007 ArcticNet Annual Conference Proceedings, 89, Published

Specialized Publications

Poulin, M., 2006, Ice aboriginals, Science, First Hand, v. 5, no. 10, 25, 47, Published