

## Jérôme Marty

St. Lawrence River Institute  
2, Belmont Street,  
Cornwall, ON  
K6H 4Z1  
Canada

Email : [jmarty@scimail.uwaterloo.ca](mailto:jmarty@scimail.uwaterloo.ca) or [jmarty@riverinstitute.ca](mailto:jmarty@riverinstitute.ca)

Tel: 613-936-6620 ext 227

### Personnel information

Date of birth: November 18 1973, Lannion, France.  
Family situation: Married, 2 children.  
Citizenships: Canadian and French.  
Languages: French, English and Spanish.

### Key words

Flow perturbations, carbon cycle, aquatic food web dynamic, northern ecosystems, stable isotopes.

### Education

2002-2006: Ph.D., Sciences Biologiques,  
Direction: D. Planas, Université du Québec à Montréal.  
Title: Le rôle des producteurs secondaires dans les réseaux trophiques planctoniques et le cycle du carbone des lacs et réservoirs du Nord du Québec.-  
Defended: 4/12/2006, mention Excellent.

1999-2001 M.Sc., Sciences Biologiques  
Direction: B. Pinel-Alloul, Université de Montréal.  
Title: Effets de la prédation et des nutriments sur les communautés planctoniques d'un lac humique du bouclier canadien: une étude expérimentale en enclos.

1995-1996 Master en biologie des organismes et des populations,  
Université J. Fourier, France,  
mention Bien, ranked 3/75.

1992-1995 Deug B, Licence en biologie,  
Université J. Fourier, France

### Professional experiences

2008-now	Research scientist, Ste Lawrence River Institute, Cornwall, Ontario.
2007	Consultant, Department of Fisheries and Oceans. Literature survey and synopsis on <i>Hemimysis Anomala</i> , the latest invasive specie found in the Great Lakes.
2006-2008	Postdoctoral fellow, Determining Ramping Rate Impacts on Aquatic Food Web. Biology Department, University of Waterloo (Dir.: Dr. M. Power) and Canadian Center for Inland Waters, Department of Fisheries and Oceans (Dr. K. Smokorowski).
2001	Research assistant, zooplankton sampling and analysis for a series of northern lakes and reservoirs. Biology Department, UQAM (Dir: Dr. D. Planas).
2000-2001	Field station manager. Laurentian Field station, Université de Montréal.
1997	Field assistant, Respiration measurements based on Winkler method. Biology Department, McGill University (Dir.: J. Kalff)

### Teaching experiences

2008	Lecturer, Aquatic Ecology. St. Lawrence College, Cornwall, ON.
2004-2005	Lecturer, Biostatistic, (first and second year students). Département de Biologie, UQAM
2002-2003	Teaching assistant, responsible for statistical laboratory, graduate course, Département de Biologie, UQAM
2000-2001	Laboratory supervisor for several courses (animal physiology, cell physiology), Département de Biologie, U. de M.
1999-2000	Teaching assistant (animal physiology, cell physiology, biodiversity) Département de Biologie, U. de M.

### Grants and Award (since 2000)

2008	Research Grants from DFO/UW (Magpie project) (\$15000)
2008	Research Grants from DFO (Hemimysis anomala) (\$15000)
2007	Ontario Center of Excellence travel Award (\$2000)
2007	Nominated for the Governor General scientific prize.
2006	Graduate research award GEOTOP-UQAM (\$5000)
2005	Prize for the best presentation, 15 <sup>th</sup> Symposium, Groupe de Recherche Interuniversitaire en Limnologie (GRIL)
2004	GV-Instrument award for technical note (\$2000)
2003	Scientific research award from Indian and Northern Affairs Canada (\$1300)
2002	Graduate research award GRIL (\$3000)
2002	Graduate research award GEOTOP-UQAM (\$5000, declined)
2002	PhD fellowship NATEQ (\$54, 000 for 3 years)
2001	Grant from the UQAM foundation (\$3000)

### Current research activities

- Assessment of flow perturbation on the food web of boreal rivers (Co sup. M. Power/K. Smokorowski). This project aims to:
  - o To relate dam activity to the stable isotope composition of organisms (aquatic plants, invertebrates and fish).
  - o To determine the effect of flow perturbation on the length of the food web and on the source of carbon fueling the food web.
  - o To identify a threshold for hydro peaking activities in order to minimize effects on the food web.
- Variations in stable isotope composition of consumers over a 4-year period (Co sup. M. Power/K. Smokorowski). This project aims to identify the physical and chemical variables responsible for the variation in  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  stable isotope compositions of invertebrates and fish.
- What is the terrestrial baseline carbon signature ( $\delta^{13}\text{C}_{\text{terr}}$ ) in boreal freshwaters? (Co sup. M. Power/K. Smokorowski)
- The importance of freshwaters as a source of carbon for the atmosphere and its relation to flooding. This study is a compilation of data from lakes, reservoirs and streams from the boreal ecoregion and will be published as a chapter in a new volume on GHG production by aquatic ecosystems (Casper and Adams ed.)
- The effect of flooding in an experimental reservoir on the aquatic food web (Collaboration R. Hecky). Based on an experimental flooding at the Experimental Lakes Area, variations in the stable isotope composition of the aquatic biota were recorded. This project aims to determine the main source of

carbon supporting the food web during flooding and to relate such results to mercury bio-accumulation.

- Food web study on *Hemimysis anomala*, the recent aquatic invader of the Great Lakes. This is a contract for the Department of Fisheries and Oceans to determine the impacts of HA on the food web of the Great Lakes. This study is the first step prior to implement management strategies to minimize the spread of the organism.

## Publications

- 1-**Marty, J.**, Power, M. and Smokorowski, K. Carbon pathways supporting the food web under variable flow regime: does terrestrial carbon matter? Submitted to Journal of North American Benthic Society, September 2008
- 2-Smokorowski, K., Metcalfe, R., Finucan, S. Insley, M., Jones, N., **Marty, J.**, Power, M., Pyrcce, R., Steele, R. Assessing the effectiveness of ramping rate restrictions to maintain ecosystem integrity: a large-scale, long-term river experiment. Submitted to Hydro Review, September 2008
- 3-Koops, M., Gerlofsma, J. and **Marty J.** Risk Assessment of the Bloody Red Shrimp (*Hemimysis anomala*) in Canada. Submitted, December 2007
- 4-**Marty, J.**, Planas, D and Jasmin J.N. Autochthonous carbon as the main subsidy for zooplankton in oligotrophic lakes and reservoirs from the boreal ecoregion. Re-submitted to Limnology and Oceanography.
- 5-Koster D., Hall R. and **Marty J.** 2008. Influence of floods on the food-web structure of two freshwater delta lakes as determined by carbon and nitrogen stable isotopes. *Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie*. 30/4:497-500.
- 6-**Marty, J.**, Smokorowski, K. and Power, M. 2008 The influence of fluctuating ramping rates on the food web of boreal rivers. *River Research and Applications*, DOI: 10.1002/rra.1194.
- 7-**Marty, J.**, Smokorowski, K. and Power, M. 2008. The effects of flow regulation on food webs of Boreal Shields Rivers. *Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie*. 30/2:275-278.
- 8-**Marty, J.** 2008. Biological synopsis of the Bloody Red Shrimp (*Hemimysis anomala*). *Can. Manusc. Rpt. Fish. Aquat. Sci.* 2842: viii + 36p
- 9-**Marty, J.** and Planas, D. 2008. A comparison of methods to determine carbon algal signatures. *Limnology and Oceanography-Methods*. 6:51-63

- 10-**Marty, J.** and Planas, D. 2005. The source of carbon for zooplankton in lakes and reservoirs from northern Quebec (Canada). *Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie* 29:342-344.
- 11-**Marty, J.,** D. Planas, D., Pinel Alloul, B. and Méthot, G. 2005. Planktonic community dynamics over time in a large reservoir and their influence on carbon budgets. Pages 421-440 in Tremblay, A., Varfalvy, L., Roehm, C. and Garneau, M. Editors. Greenhouse gases Emissions: Fluxes and Processes, Hydroelectric Reservoirs and Natural Environments. Springer, New York.
- 12-Limén, H. and **Marty, J.** 2004. Stable carbon and nitrogen isotope analysis on small-sized samples: a protocol for preparation and analysing microscopic organisms. Technical Note-AN13-GV Instruments.
- 13-**Marty, J.,** Pinel-Alloul, B. and Carrias, J.F. 2002. Effet de la prédation et des nutriments sur les réseaux microbiens planctoniques. *Revue des Sciences de l'Eau*. 15 :37-49
- 14-Cattaneo, A., Kerimian, T., Roberge, M. and **Marty, J.** 1997. Periphyton distribution and abundance on substrata of different size along a gradient of stream trophy. *Hydrobiologia*, 354:101-110.

#### Invited seminars

- 1-**Marty, J.** Biological Synopsis of the Bloody Red Shrimp (*Hemimysis anomala*), Department of Fisheries and Oceans, Burlington, Ontario (January 2008)
- 2-**Marty, J.** Planas, D. Power, M. and Smokorowski, K. Zooplankton swim in brown waters, but prefer a green diet: Insights into carbon sources for zooplankton in oligotrophic systems. Environmental Chemistry Seminar Program, Trent University, Peterborough, Ontario (March 2007).
- 3-**Marty, J.** Carbon flow within oligotrophic aquatic food webs, Great Lake Laboratory for Fisheries and Aquatic Sciences, Department of Fisheries and Oceans Canada, Burlington, Ontario (Jan. 2007).
- 4-**Marty, J.** How can animal biomass within aquatic food webs be fuelled primarily by autotrophic production if the ecosystem as a whole is heterotrophic? Ecology Seminar Series, Biology department, Mc.Master University, Canada (April 2006).
- 5-**Marty, J.** Carbon sources for zooplankton: insight from stable isotopes, EcoDiscussion Seminar, Biology department, Waterloo University, Canada (Jan. 2006).

6-**Marty, J.**, Jasmin, J.N. and Planas, D. L'importance du carbone autochtone pour le zooplancton dans une série d'écosystèmes hétérotrophes. Aquatic seminar, Université de Montréal, Canada (May 2005)

### Conferences

- 2008 6<sup>th</sup> International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Honolulu, USA (August 2008)
- 2008 American Fisheries Society 138th Annual Meeting. Ottawa, Canada (August 2008)
- 2008 St15th Annual International Conference on the St. Lawrence River / Great Lakes Ecosystem (May 2008)
- 2008 University of Waterloo Aquatic Group (January 2008)
- 2007 SIL XXX, Montreal , Canada (August 2007)
- 2007 Canadian Society of Ecology and Evolution, Toronto, Canada (May 2007)
- 2007 Ontario Centre of Excellence, Annual Symposium meeting, Guelph, Canada (February 2007)
- 2007 SCL meeting (Society of Canadian Limnologists), Montreal, Canada (January 2007)
- UWAEG (University of Waterloo Aquatic Ecology Group), Waterloo, Canada (November 2006)
- 90<sup>th</sup> annual meeting of the ESA (Ecological Society of America), Montreal, Canada. (August 2005).
- 15<sup>th</sup> Symposium du GRIL (Groupe de Recherche Inter-universitaire en Limnologie), St Hippolyte, Canada. (March 2005).
- SIL XXIX congress. (Societas Internationalis Limnologiae), Lahti, Finland. (August 2004).
- 2005 SCL meeting, Windsor, Canada. (January 2005).
- 14<sup>th</sup> Symposium du GRIL (Groupe de Recherche Inter-universitaire en Limnologie), St Hippolyte, Canada. (March 2004).
- 2004 SCL meeting, St John's, Canada. (January 2004).

7<sup>th</sup> CILEF (Conférence Internationale des Limnologues d'expression Française),  
Montréal, Canada. (July 2003).

2003 SCL meeting, Ottawa, Canada. (January 2003).

Canadian Electric Power Facilities workshops on mercury and greenhouse gases.  
Montréal, Canada. (February 2002).

2001 SCL meeting, Toronto, Canada. (January 2001).

6<sup>th</sup> Conférence Internationale des Limnologues d'Expression Française. Clermont-  
Ferrand, France. (July 2000).

In addition, I have 5 published abstracts and presented more than 20 scientific  
conferences during my PhD.

### **Professional societies and services**

Member of research groups and scientific societies:

- American Fisheries Society (**AFS**) (since 2008)
- Canadian Society of Ecology and Evolution (**CSEE**) (since 2007)
- International Association of Theoretical and Applied Limnology (**SIL**) (since 2004)
- International Society of Ecology (**INTECOL**) (since 2005)
- American Society of Limnology and Oceanography (**ASLO**) (since 2005)
- Society of Canadian Limnologists (**SCL**) (since 2001)
- Groupe de Recherche Interuniversitaire en Limnologie (**GRIL**) (1999-2006)
- Centre de recherche en géochimie et en géodynamique (**GÉOTOP-UQAM**) (2002-2006)

Reviewer for: Ecography (1), Freshwater biology (2), Hydrobiologia (2), Canadian  
Journal of Fisheries and Aquatic Sciences (1), Aquatic Microbial Ecology (1),  
Geochemical Journal (1) (Journals), Science Foundation of Ireland (proposals review).

Invited Editor: Hydrobiologia.

### **Leadership achievements**

Science advisory member: Magpie River Ramping Rate Study

Session chair: Flow perturbation on river ecosystems (St. Lawrence River annual  
conference- 2008), Land-water interactions (SCL- 2007).

Student member, elected on the executive board of the Society of Canadian Limnologists  
(2004-2007)

Organisation of weekly aquatic seminars, Groupe de Recherche en Écologie Aquatique de l'UQAM. (2003).

Organisation of the annual conference of Centre de recherche en géochimie et en géodynamique (GÉOTOP-UQAM) (2001) and Groupe de Recherche Inter-universitaire en Limnologie (GRIL) (2000)

Student representative on the evaluation comity of the Biology Department, Université de Montréal (2001).

### **Applied specialities**

- Univariate/multivariate statistical analysis (SAS, JMP, Canoco)
- Stable isotopes techniques applied to ecology
- Radiotracers techniques ( $^{14}\text{C}$  and  $^3\text{H}$  labelling)
- CO<sub>2</sub> measurements (pCO<sub>2</sub>, flux)
- Zooplankton taxonomy
- Scanning and transmission electron microscopy
- Extensive field experiences (boat, hydroplane)
- PDIC and CMAS scuba diving certifications