Sebastien Donnet, MSc; ORCID
Physical Scientist
Department of Fisheries and Oceans
White Hills Road

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EDUCATION

- PhD candidate, Physical Oceanography, Université de Bretagne Occidentale, Brest (France) (2016-present). Principal subjects: coastal physical oceanography, internal Kelvin wave dynamics in a broad fjord. Reference: plazure@ifremer.fr

- Coastal Engineering Certificate Program, Old Dominion University, Norfolk (VA, US) (2011-2012). Principal subjects: costal engineering, coastal hydrodynamics and sediment transport.

- Master of Science (MSc) in Applied Physical Oceanography, University of Wales, Bangor (UK) (2002-2004). Principal subjects: observational and numerical oceanography, hydrodynamics, instrumentation, underwater optics and acoustics.

- Bachelor of Science (BSc) with Honours (Hons) in GIS and Remote Sensing applied to Marine Sciences, University of Glamorgan, Pontypridd (UK) (2001-2002). Principal subjects: Geographical Information Systems (GIS) theory and applications, remote sensing techniques/technologies, spatial databases.

- Engineering Technology (ET) Diploma in Oceanography and Marine Instrumentation, Institute of Technical Marine Sciences (Intechmer), Cherbourg (France) (1999-2001). Principal subjects: physical, chemical, geological and biological oceanography, oceanographic instrumentation, hydrographic surveying.

OTHER RELEVANT COURSES

- MODNUMOA 'Modelisation Numerique Ocean-Atmosphere' (Numerical modeling Atmopshere-Ocean). November 2018, Brest, France. Course offered to PhD candidates to introduce and enhance skills in numerical modeling. Course was done over a duration of 1 week and included both theoretical presentations and tutorials.

- FORTRAN 95. March 2016, Brest, France. Course offered to PhD candidates to introduce and train students to the FORTRAN programing language. Course was done over a duration of 3 days and included both theoretical presentations and tutorials.

WORK EXPERIENCES

- Physical Scientist (Coastal Oceanography), Department of Fisheries and Oceans (DFO), St John's (Newfoundland), June 2013 - Present. Main activities: project planning and execution, field work planning and execution, data processing and analysis, numerical modeling and report/science paper writing. Type of business: government research agency. Reference: Andry Ratsimandresy (andry.ratsimandresy@dfo-mpo.gc.ca).

- Oceanographer, Golder Associates, St John's (Newfoundland), September 2011 - June 2013. Main activities: field work planning and execution, data processing and analysis, numerical modeling and report writing. Type of business: science consulting (private sector). Reference: Phil Osborne (Phil_Osborne@golder.com).

- Oceanographer/Modeler, AMEC E&E Marine Services (now Wood), St John's (Newfoundland), Jan. 2006 - September 2011. Main activities: data processing and analysis, numerical modeling, field execution and report writing. Type of business: science consulting (private sector). Reference: Bruce Batstone (bruce.batstone@intmarsci.com) and/or Patrick Roussel (patrick.roussel@woodplc.com).

- Research Assistant, Institute of Marine Research (IIM-CSIC), Vigo (Spain), April - August 2005. Main activities: data analysis and report writing. Type of business: government research agency. Reference: Des Barton (barton@iim.csic.es).

- Analyst Programmer, National Museum of Wales, Cardiff (UK), July - August 2002. Main activities: data analysis and report writing; onset of the now-called "Spring Bulbs for Schools" project (https://museum.wales/spring-bulbs/). Type of business: national museum. Reference: N/A.

- Technician, GPS fleet management, CGG survey and positioning (now Fugro NV), Paris (France), April-September 2001. Main activities: programing and hardware (electronics) setup, field work execution. Type of business: hydrographic surveying (private sector). Reference: N/A.

- Environmental Analyst Volunteer, Oceanographic Centre of Research, Abidjan (Ivory Coast), July 2000. Main activities: data analysis and report writing. Type of business: government research agency. Reference: Dr Jacques Abe (jabe1@hotmail.com).

PERSONAL SKILLS

- Languages: French (native), English (proficient), Spanish (intermediate) and Italian (rudimentary)

- Social: enjoy cultural diversity and multi-disciplinary work and life environments. Keen traveller and 'experimenter', i.e. enjoy the challenges of new opportunities or adventures

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(whether been professional or personal). Keen to outdoor sports, in particular: mountain biking, climbing, snorkel diving and skate boarding. Happy father of two young girls.

- Organizational: proficient (10+ years experience) in oceanographic field work planning and execution as well as data management.

- Computer: proficient MS windows and Linux user (home and supercomputers). Programing languages: Matlab (proficient), Fortran (trained), Python (basic), R (basic).

- Field work: mooring design and modeling, instrumentation setup and calibration. Cruise lead of coastal oceanographic surveys including mooring deployment and recovery, CTD and water sampling, VMADCP survey, drop video survey. About 10-15 days long on average; 12 cruises done so far with DFO since 2013; about a dozen more done before.

- Data processing and analysis: Acoustic Doppler Current Profilers -ADCP-, Conductivity Temperature Depth -CTD-, flurorometers, transmissometers, optical backscatters, LISSTs, weather stations, tide gauges; wind and wave, sea-ice and icebergs hindcast and observations.

- Numerical modeling (coastal dynamics, mainly): hydrodynamic, advection-diffusion, near and far-field effluent plume, sediment transport, particle tracking and spectral wave growth and propagation. Currently implementing FVCOM (Finite Volume Coastal Ocean Model) a fully non-linear, 3 dimensional, primitive equations model to study the dynamics of internal Kelvin waves in a broad fjord.

- GIS and Remote Sensing: AVHRR, QuikScat, SeaWifs and MODIS sensors; ArcMap, QGIS, SeaDAS and Matlab software platforms.

- Data management and dissemination: design lead and data analyst of a SQL&PHP based relational database. http://www.damiancastro.ca/myoceandatasql/; https://github.com/damiancastro/MyOceanDataSQL1.1

PUBLICATIONS

Peer-reviewed publications

- Bridier, G., T. Meziane, J. Grall, L. Chauvaud, **S. Donnet**, P. Lazure and F. Olivier, 2021. Sources, quality and transfers of organic matter in a highly-stratified sub-Arctic coastal system (Saint-Pierre-et-Miquelon, NW Atlantic). Progress in Oceanography 190, 102483, https://doi.org/10.1016/j.pocean.2020.102483.

- **Donnet, S**., P. Lazure, A.W. Ratsimandresy and G. Han, 2020. A comprehensive oceanographic dataset of a subpolar, mid-latitude broad fjord: Fortune Bay, Newfoundland, Canada. Earth Syst. Sci. Data, 12, 1877–1896, https://doi.org/10.5194/essd-12-1877-2020, 2020.

- A.W. Ratsimandresy, **S. Donnet** and P. Goulet, 2020. Identification of geographic zones of influence associated with surface circulation for Aquaculture Bay management area application. Journal of Marine Systems. https://doi.org/10.1016/j.jmarsys.2019.103291.

- Poitevin, P., J. Thebault, V. Siebert, **S. Donnet**, P. Archambault, J. Doré, L. Chauvaud and P. Lazure, 2019. Growth response of Arctica islandica to North Atlantic oceanographic conditions since 1850. Frontiers in Marine Science, Global Change and the Future Ocean. https://doi.org/10.3389/fmars.2019.00483.

- Hamoutene, D., F. Salvo, S. Cross, S. C. Dufour and **S. Donnet**, 2018. Linking the presence of visual indicators of aquaculture deposition to changes in epibenthic richness at finfish sites installed over hard bottom substrates. Environmental Monitoring and Assessment (2018) 190:750; https://doi.org/10.1007/s10661-018-7108-2.

- Hamoutene, D., D. Cote, K. Marshall, **S. Donnet**, S. Cross, L. C. Hamilton, S. McDonald, K. D. Clarke and C. Pennell, 2018. Spatial and temporal distribution of farmed Atlantic salmon after experimental release from sea cage sites in Newfoundland (Canada). Aquaculture (492) 147-156, https://doi.org/10.1016/j.aquaculture.2018.03.040.

- Gallardi, D., T. Mills, **S. Donnet**, C. C. Parrish and H. Murray, 2017. Condition and biochemical profile of blue mussels (Mytilus edulis L.) cultured at different depths in a cold water coastal environment. Journal of Sea Research (126) 37-45, https://doi.org/10.1016/j.seares.2017.07.001.

- Hamoutene, D., F. Salvo, **S. Donnet** and S. C. Dufour, 2016. The usage of visual indicators in regulatory monitoring at hard-bottom finfish aquaculture sites in Newfoundland (Canada), Marine Pollution Bulletin, Available online 19 April 2016, ISSN 0025-326X, http://dx.doi.org/10.1016/j.marpolbul.2016.04.028.

- Ratsimandresy, A. W., **S. Donnet**, P. Goulet, R. Bachmayer and B. Claus, 2014. Variation in the structure of the water column as captured by Slocum glider CTD and by CTD from a research vessel and assessment of internal waves. Proceedings of 2014 IEEE Oceans - St. John's, St. John's, NL, 2014, pp. 1-10. http://dx.doi.org/10.1109/OCEANS.2014.7003283.

Selected technical reports and advisory documents

- Ratsimandresy, A.W., **Donnet, S.**, Snook, S., and Goulet, P. 2019. Analysis of the variability of the ocean currents in the Coast of Bays area. DFO Can. Sci. Advis. Sec. Res. Doc. 2019/008. viii + 60 p. https://waves-vagues.dfo-mpo.gc.ca/Library/40805116.pdf.

- **Donnet, S.**, S. Cross, P. Goulet and A. W. Ratsimandresy, 2018. Coast of Bays seawater vertical and horizontal structure (2009-13): Hydrographic structure, spatial variability and seasonality based on the Program for Aquaculture Regulatory Research (PARR) 2009-13

oceanographic surveys. DFO Can. Sci. Advis. Sec. Res. Doc. 2017/077. viii + 255 p. http://waves-vagues.dfo-mpo.gc.ca/Library/40655945.pdf.

- **Donnet, S.**, A. W. Ratsimandresy, P. Goulet, C. Doody and S. Burke, 2018. Coast of Bays metrics: Geography, Hydrology and Physical Oceanography of an Aquaculture Area of the South Coast of Newfoundland. DFO Can. Sci. Advis. Sec. Res. Doc. 2017/076. x+109 p. https://waves-vagues.dfo-mpo.gc.ca/Library/40654473.pdf.

- DFO, 2016. State of knowledge of the oceanography and water exchange on the south coast of Newfoundland to support the development of bay management areas for finfish aquaculture. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2016/039. http://waves-vagues.dfo-mpo.gc.ca/Library/40595134.pdf.

- Inuplan A/S - Golder Associates, 2012. Maersk Oil Kalaallit Nunaat A/S 2012 Program Block 9 (Tooq), 3D-Seismic Survey and Hydrographic Survey, Environmental Impact Assessment. Bureau of Minerals and Petroleum. http://naalakkersuisut.gl/~/media/Nanoq/Files/Hearings/2012/Offentliggorelse%202011%2015/EIA%20for%203D%20engelsk.pdf.

- AMEC, 2011. Labrador – Island Transmission Link Environmental Assessment, Strait of Belle Isle: Oceanographic Environment and Sediment Modelling. Nalcor Energy. https://www.gov.nl.ca/eccm/files/env-assessment-projects-y2010-1407-marine-environment-effects-modelling.pdf.

- AMEC, 2011. Old Harry Drilling Mud and Cuttings Dispersion Modelling, Final Report. Component of the Environmental Assessment of the Old Harry Prospect Exploration Drilling Program, submitted to Corridor Resources Inc. http://www.cnlopb.ca/pdfs/corridorresinc/drillingmuden.pdf?lbisphpreq=1.

- AMEC, 2010. Nunavut Impact Review Board Screening-Level Environmental Assessment: Disposal At Sea of Dredged Marine Sediments, Pangnirtung Fjord, Pangnirtung, Nunavut. Public Works and Government Services Canada. ftp://ftp.nirb.ca/01-SCREENINGS/COMPLETED SCREENINGS/2009/09UN052-DFO - Pangnirtung Harbour/01-APPLICATION/110106-09UN052-Disposal At Sea/101214-09UN052-EA-IT6E.pdf.

- AMEC, 2009. Site Evaluation of the OPG New Nuclear at Darlington – Part 5: Flood Hazard Assessment. Ontario Power Generation. http://www.ceaa.gc.ca/050/documents_staticpost/cearref_29525/0105/ai-p5.pdf.

Dataset

- Fortune Bay physical oceanography overview data; https://doi.org/10.6084/m9.figshare.13526366
- Fortune Bay (NL, Canada) oceanographic observations May 2015 - May 2017. SEANOE. https://doi.org/10.17882/62314

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- Acoustic Doppler Current Profiler data from the Coast of Bays, Newfoundland; https://open.canada.ca/data/en/dataset/dc1a3b85-dbb8-49d4-8e77-014cc1c115fb
- Coast of Bays seawater vertical and horizontal structure: Hydrographic structure, spatial variability and seasonality, 2009-2013; https://open.canada.ca/data/en/dataset/a650f132-7502-402f-a42e-7ba4dea3f829
- Coast of Bays Metrics: Geography, Hydrology and Physical Oceanography of an Aquaculture Area of the South Coast of Newfoundland; https://open.canada.ca/data/en/dataset/d744963f-133c-4a50-8329-0b44865c1e3e

CONFERENCE PROCEEDINGS

- Cross, S. and **S. Donnet**, 2016. The use of GIS tools to aid in the understanding of the marine environment: examples from the Newfoundland Fisheries and Oceans Aquaculture Section. Bulletin of the Aquaculture Association of Canada 2016-2, pp 13-18.

- **Donnet, S.** and P. Roussel, 2009. Suspended Sediment Transport Measurement using ADCPs & LISSTs, development of a methodology. Proceedings of the Seventh ADCPs in Action Conference, October 5 to 7, 2009, San Diego, California.

PRESENTATIONS (since 2013)

- **Sebastien Donnet**, Damian Castro and Andry Ratsimandresy, 2019. MyOceandataSQL: an application to store and distribute ocean observations data. OceanPredict'19 GODAE OceanView Symposium, 6-10 May 2019, Halifax, NS (Canada). Poster presentation available at: https://www.godae.org/~godae-data/OP19/posters/P22-20190502_Donnet_et_al_OceanPredict19_poster_OceanData.pdf

- **Sebastien Donnet**, Andry Ratsimandresy, Guoqi Han and Pascal Lazure, 2018. Unlocking the secrets of Fortune Bay ocean dynamics. Newfoundland Aquaculture Industry Association Cold Harvest 2018 Conference & Trade Show September 26 – 28, 2018, St John's, NL (Canada).

- **Donnet, S.**, P. Lazure, A. W. Ratsimandresy and G. Han 2018. Effect of wind forcing on the oceanographic conditions of Fortune Bay (NL) a large, mid-latitude, fjord. Canadian Meteorological and Oceanographic Society (CMOS) conference 2018. June 10-14, 2018, Halifax, NS (Canada).

- **Donnet, S.** 2017. Effect of wind forcing on the oceanographic conditions in Fortune Bay: review of the observation program (2015-2017). Newfoundland Aquaculture Industry Association (NAIA) Cold Harvest 2017, 24th Annual Conference and Trade Show. September 26-28, 2017, Gander, NL (Canada).

- **Donnet, S.**, P. Pepin, G. Han, and F. Davidson. 2016. COCI: Coastal Ocean Color Imager, Coastal Ocean Color Imager, NL examples/perspectives. 2nd Coastal Ocean Color Imager (COCI) Users and Science Team Meeting. June 21-22, 2016, Ottawa, ON (Canada).

- Cross, S., **S. Donnet**, 2016. The use of GIS tools to aid in the understanding of the marine environment: Examples from the Newfoundland Fisheries and Oceans Aquaculture section. Aquaculture Association of Canada (AAC) - Newfoundland Aquaculture Industry Association (NAIA) Aquaculture Canada and Cold Harvest 2016 conference. September 18-21, 2016, St John's, NL (Canada).

- **Donnet, S.**, A. W. Ratsimandresy, G. Han, and P. Lazure, 2016. Effect of wind forcing on the oceanographic conditions of Fortune Bay – Belle Bay (NL). Identification of changes in water physical conditions and development of a forecasting tool. Canadian Meteorological and Oceanographic Society (CMOS) conference 2016. May 30-June 2, 2016, Fredericton, NB (Canada).

- **Donnet, S.**, A. W. Ratsimandresy, and P. Lazure, 2015. Effect of wind forcing on the oceanographic conditions of Fortune Bay – Belle Bay. Identification of changes in water physical conditions and ocean currents and development of a forecasting tool. Aquaculture Association of Canada (AAC), Aquaculture Canada 2015 conference. June 1-3, 2015, Nanaimo, BC (Canada).

- Ratsimandresy, A., and **S. Donnet**, 2014. Characterization of the Oceanographic Conditions on the South Coast of Newfoundland to Help Develop Bay Management Area for Finfish Aquaculture. Stakeholder meeting, Newfoundland Aquaculture Industry Association (NAIA) Cold Harvest 2014. February 11th, 2014, Gander, NL (Canada).