

CURRICULUM VITAE

Myriam BORMANS

Education

- 1988 Ph.D. Oceanography Dept, Dalhousie University, Canada
A model of the water exchange through the Strait of Gibraltar – Superv: Pr C Garrett
- 1983 Licence en Sciences Physiques, University of Liège, Belgium complétée avec « Grande Distinction » – Thesis in Geophysical Fluid Dynamics - Superv : Pr J Nihoul
« Etude des courants au large de Calvi en régime d'été ».

Positions

- 2008 – 2016 Research Team Leader «Role of biodiversity in ecological processes» in the Research Laboratory ECOBIO, University of Rennes 1
- 2005 Research Director at the CNRS, UMR ECOBIO, University of Rennes 1
- 2005 Invited researcher CNRS, IFR CAREN-ECOBIO, Rennes
- 2004 Principal Research Scientist, CSIRO Land and Water, Australia
Team Leader – Aquatic Systems Modelling Group
- 2000 – 2004 Senior Research Scientist, CSIRO Land and Water, Canberra, Australia
Team Leader – Aquatic Systems Modelling Group
- 1999 – 2000 Senior Research Scientist, CSIRO Land and Water, Canberra, Australia
- 1993 – 1998 Research Scientist, CSIRO Centre for Environmental Mechanics, Canberra, Australia
- 1989 – 1992 Postdoctoral Fellow in Geophysical Fluid Dynamics, Research School of Earth Sciences, Australian National University, Canberra, Australia
- 1978 – 1979 Teaching Assistant, 1st year Physics and Chemistry, University of Liège, Belgium

Awards

- 2015 Fullbright Fellowship Nominee
- 2012 International Outgoing Fellowship PI (EU Marie Curie actions)
- 2005 International Reintegration Fellowship PI (EU Marie Curie actions)
- 2003 Biennial medalist
Fellow of the Australian and New Zealand Modelling and Simulation Society
- 2001 Australian Prime Minister Science award Nominee
- 1989 – 1992 Australian National University Fellowship
- 1987 – 1988 Dalhousie Graduate Fellowship
- 1984 – 1987 World University Service of Canada Fellowship
- 1983 – 1984 Dalhousie Graduate Fellowship

Responsibilities

- 2011 - Member of committee for the experimental centre ECOLEX in ECOBIO
- 2010 - 2015 Nominated member of the OSUR Research Commission (Observatory of Environmental Sciences in Rennes)
- 2010 - Nominated member representing the OSUR at the CRESEB (Centre de Ressources et d'Expertise sur l'Eau en Bretagne)
- 2008 - 2012 Nominated member at the CNRS National Committee – section 20 : Continental surface and interfaces
- 2007 - Nominated member at the Council of UMR ECOBIO
- 2007 - 2016 Research Team Leader « Role of Biodiversity in Ecological processes »

2006 - 2012	Member of the Specialists Commission (Rang A sections 67 et 68) at UR1
2006 - 2013	Elected Member at the Direction of the GRISCYA (GRoupe d'Intérêt Scientifique sur les CYAnobactéries)
2006 - 2016	Co-responsible for the Master 2 HYDRO ³ (Hydrogéologie-Hydrobiogéochimie-Hydropédologie) at the Université de Rennes 1
2006 - 2012	Responsible for the international relations for the European Master in Environnement (HYDRO3)
2005 - 2012	Elected Member representing the Research Directors at the Council of UFR Sciences de la Vie et de l'Environnement

Research interests

Quantitative interactions between physical and biological processes are rarely studied in aquatic ecology. However, the complexity of the processes (physical, biogeochemical and ecological) and the scale changes from single organism to the whole ecosystem requires a profound understanding of the many links between causes and responses. Deterministic understanding is welcome if impacts of future scenarios associated with climate change or anthropogenic changes on ecosystem functioning, resistance and resilience are to be predicted.

My research deals with the improvement of water quality in freshwater systems and on phytoplankton dynamics (in particular cyanobacteria) in rivers, lakes and reservoirs. My work is centred on the development of models to quantify the physical, chemical and biological processes and their validation using field data. Hence most of my projects have a field, an experimental and a modelling component. My strength resides in the combination of these approaches to follow the dynamics of microorganisms in variable environments including their diversity and the fate of cyanotoxins.

- Field observations are made in rivers, lakes and reservoirs to characterize phytoplankton dynamics at different temporal and spatial scales. High frequency recording meteorological forcing, temperature probes and profiling multiparameter probes allow detailed quantification of overall and species biomass together with physico chemical factors subjected to rapid fluctuations.
- Experiments in controlled laboratory conditions allow the estimation of parameters involved in physiological processes to be incorporated in models
- Mathematical models (coupled hydrodynamical and ecological) capable of integrating the processes at the scale of organisms and at high frequency into the dynamics of the global ecosystem over longer term are being developed. The models are also used for management scenarios testing under different environmental and meteorological conditions.

Research Team Leader (19 permanents, 22 contracted)

From september 2008 to 2016, I have been the Team Leader of the Research Group « Role of Biodiversity in Ecological Processes ». Ecosystems rely on a web of interactions between organisms and ecological processes and the RBEP group explores these interactions in an integrative way.

The 'Role of Biodiversity in Ecological Processes' (RBEP) team focuses its activities on the study of interactions between organisms and ecological processes involved in ecosystems functioning. The team associates complementary competences (in functional ecology, environmental genomics, ecophysiology and modelling) in an integrative way. Our research aims to identify and quantify the

roles of organisms in (i) transformations of organic matter and in biogeochemical cycles of major elements in soils, water and sediments; (ii) their implication in transfer pathways and regulation between organisms and their environment; and (iii) their response to changes and variations of these environments. We integrate spatial and temporal heterogeneity of both ecological processes and organisms at the community level. Our biological models include plants, invertebrates and micro-organism communities present in soil, sediments and water, with a strong focus on micro-organisms, including phytoplankton, cyanobacteria, bacteria, fungi and, more recently, viruses. New integrative techniques in genomics, proteomics and metabolomics ensure a novel quantitative view of the research studies linking organisms and ecosystem functioning.

Selected research contracts

- European - IOF Marie Curie: 2012 – 2016 Secondary metabolites of *Microcystis aeruginosa* (CYANobacteria): study of their production and role by a metaboloMIC approach E. Briand/M. Bormans €280 000
- European Action COST – CYANOCOST : 2012 – 2016 « Cyanobacterial blooms and toxins in water resources : Occurrence, impacts and management » M. Bormans/L. Brient €600 000
- International Chair in Ecotoxicology (Université Européenne de Bretagne): 2010 – 2013 « Adaptations of invertebrates to multi pollutions » Pr. C. Wiegand €400 000, Coord M. Bormans/F Binet
- ANSES - TOXCYN: 2010-2013 « Dynamique de la production de la cyanotoxine cylindrospermopsine en région Bretagne et effets toxiques » Coord: M. Bormans €150 000
- EC2CO (CNRS) MICROFLUX 2012 « Rôle des exopolysaccharides de phytoplancton dans les FLUX de C, N, P à MICRO-échelle » Coord. A. Pannard €15 000
- ANR SEST 2008-2011: *Microcystis aeruginosa*, un modèle pour étudier le déterminisme de la toxicité chez les cyanobactéries (Matrics). Coordinateur J.F. Humbert (ENS Bioemco/INRA) €300 000
- PNEC: 2008-2009 MOITEM Estuaires Coordinateur: Laurent Memery (IUEM Brest) €10 000
- EC2CO: 2008-2009 Assurance Spatiale et Biodiversité des systèmes Lentiques (AsBiL). Coordinateur Myriam Bormans €25 000
- CPER 2007-2011, instrumentation de métrologie pour les systèmes aquatiques. Coordinatrice : M. Bormans €100 000
- EC2CO 2007-2009 Environmental genomics of phototrophic fluctuations in a freshwater ecosystem. Coordinateur Yvan Couée (ECOBIO) €20 000
- Rennes Métropole 2007: Subvention pour l'achat d'un PHYTOPAM : instrument de mesure de la production algale par fluorescence €20 000
- European Actions Marie Curie : 2006-2008: Phytoplankton dynamics in systems dominated by variable forcing. Coordinateur : Myriam Bormans €30 000

Teaching at Master level

- 2008 - 2010 Aquatic Ecology, Physical Limnology (Master Functional Ecology)
- 2008 – 2016 Sediment and nutrients transport in rivers (Master HYDRO3 (Hydrogéologie, Hydrobiogéochimie, Hydropédologie) Université de Rennes 1

Supervision of PhD and Masters

Gorenka Bojadzija (2016-2019) Interactions métaboliques entre cyanobactéries et daphnies. En co-direction avec C. Wiegand et L. Lawton (University Aberdeen)

Maxime Georges des Aulnois (2016-2019) Evaluation du transfert du risque des cyanobactéries des eaux douces aux eaux estuariennes. En co-direction avec Z. Amzil (Ifremer, Nantes)

Keith Bouma-Gregson (2013-2017) Déterminisme de développement et transport des cyanobactéries benthiques en rivière et impact des cyanotoxines sur la santé des organismes. En co-supervision avec Mary Power (UC Berkeley)

Stéphane Fraisse (2009-2013) Structure de la communauté phytoplanctonique des fleuves côtiers en réponse aux contraintes hydrodynamiques : une approche basée sur les traits fonctionnels. En co-direction avec Y. Lagadeuc

Emilie Lance (2005-2008) L'effet des cyanobactéries toxiques sur les communautés de gastéropodes et sa répercussion sur les niveaux trophiques supérieurs. Directrice de thèse avec C. Gérard en co-direction.

Alexandrine Pannard (2003-2006). Dynamique du phytoplancton et flux sédimentaires en réponse aux perturbations par le vent et la pluie dans les systèmes lentiques. Co-direction avec Y. Lagadeuc

Sebastien Reubrecht (2014-2015) Rôle des métabolites secondaires dans les interactions entre organismes planctoniques. Co-direction avec Enora Briand

Caroline Klavins (2013-2014) Les facteurs influençant le relargage du phosphore à l'interface eau-sédiments et impacts du contrôle de celui-ci sur le développement des cyanobactéries (Master Hydro3)

Guislain Alexis (2012-2013) Découplage des facteurs de contrôle d'une communauté phytoplanctonique d'un lac de carrière. Co-direction avec A. Pannard (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Sbeyti Sadek (2011-2012). La croissance et l'état physiologique de deux formes de *Microcystis aeruginosa*. Co-direction avec A. Pannard (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Le Nezet - Pedrono Julie (2010-2011). Production d'exopolysaccharides (EPS) chez des cyanobactéries: variabilité interspécifique et facteurs de contrôle. Co-direction avec A. Pannard (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Adeline Bahon (2010-2011) Rôle des facteurs biotiques et abiotiques dans la production des EPS : effet de la turbulence, de la présence de bactéries et de la prédation chez la cyanobactérie *Microcystis aeruginosa*. Co-direction avec A. Pannard (M1 Ecologie, Biodiversité, Evolution de l'Université Pierre et Marie Curie)

Pauline Bryère (2009-2010) Stoechiométrie des communautés microbiennes : comparaison d'écosystèmes aquatiques et terrestres. Co-direction avec A.J. Francez (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Myriam Jourdain 2009 Dynamique des akinetes dans le Lac de Bromont (Etudiante de l'Université du Québec à Montréal)

Adeline Julia (2008-2009) Dynamique de la structure des communautés phytoplanctoniques et le rôle des forçages physiques Co-direction avec Y. Lagadeuc (Master recherche Ecologie Ethologie

Evolution de l'Université de Rennes 1)

Arnaud Auber (2007-2008) Photoacclimation et compétition pour la lumière au sein du phytoplancton. Co-direction avec Y. Lagadeuc (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Marion Varet (2006-2007). Effet de la turbulence sur la structure dimensionnelle du phytoplancton. Co-direction avec Y. Lagadeuc (Master recherche Ecologie Ethologie Evolution de l'Université de Rennes 1)

Sébastien Galopin and **Stéphane Chokomert** (2007) Conception et réalisation d'une station de mesure flottante pour surveiller la qualité de l'eau. (Master pro Mécatronique de l'Université de Rennes 1)

Marina Danet (2006-2007) Rôle du stress nutritif dans la quantité de phycocyanine produite par cellule de cyanobactéries. Co-direction avec B. LeRouzic (Master pro Gestion Intégrée des Bassins Versants, Université de Rennes 1).

Cécile Klein (2005-2006) Etude de la compétition phytoplanctonique pour des apports de nutriments pulsés

Julien Desré (2005-2006) "Effet sur le phytoplancton d'une disponibilité en ressource après un traitement au sulfate de cuivre". Co-direction avec B. LeRouzic

Fanny Naidon (2005) Modèles de dynamiques de phytoplancton

Member of 15 theses jurys and HDRs (2005 – 2015)

Publications

Refereed publications : (h=28, citations=1672 Google Scholar)

Lance E, Desprat J, Holbech BF, Gérard C, **Bormans M**, Lawton LA, Edwards C, Wiegand C (2016). Accumulation and detoxication responses of the gastropod *Lymnaea stagnalis* to single and combined exposures to natural (cyanobacteria) and anthropogenic (the herbicide RoundUp®Flash) stressors *Aquatic Toxicology* 177, 116-124.

Ibelings BW, Fastner J, **Bormans M**, PM Visser (2016) Cyanobacterial blooms: ecology, prevention, control, mitigation. Editorial to a CYANOCOST Special Issue. *Aquatic ecology* 50 : 327-331

Mantzouki E, Visser P, **Bormans M**, Ibelings BW (2016) Understanding the key ecological traits of cyanobacteria as a basis for their management and control under expected environmental changes. *Aquatic Ecology* 50 : 333-350

Bormans M, Marsalek B, Jancula D (2016) Controlling internal phosphorus loading in lakes by physical methods to reduce cyanobacterial blooms: a review. *Aquatic Ecology* 50 : 407-422

Visser PM, Ibelings BW, **Bormans M**, J Huisman (2016) Artificial mixing to control cyanobacterial blooms: a review. *Aquatic Ecology* 50 : 423-441

Ibelings BW, **Bormans M**, Fastner J, PM Visser (2016). CYANOCOST special issue on cyanobacterial blooms: synopsis - a critical review of the management options for their prevention, control and mitigation. *Aquatic Ecology* 50 : 595-605

Pannard A, Pédrone J, **Bormans M**, Briand E, Claquin P, Lagadeuc Y (2016) Production of exopolymers (EPS) by cyanobacteria: impact on the carbon-to-nutrient ratio of the particulate organic matter. *Aquatic Ecology*, 50 : 29-44

Briand E, Humbert JF, Tambosco K, **Bormans M** & Gerwick WH (2016a) Role of bacteria in the production and degradation of Microcystis cyanopeptides. *Microbiology Open*, Volume 5, Issue 3, June 2016, Pages: 469–478

Briand E, **Bormans M**, Gugger M, Dorrestein P, W Gerwick (2016b). Changes in secondary metabolic profiles of *Microcystis aeruginosa* strains in response to intraspecific interactions *Environmental Microbiology* doi:10.1111/1462-2920.12904

Faure D, Bonin P, Duran R, and the Microbial Ecology EC2CO consortium (2015) Environmental microbiology as a mosaic of explored ecosystems and issues. *Environ Sci Pollut Res* 22:13577–13598

Sukenik A, Maldener I, Delhay T, Viner–Mozzini Y, Sela D and **Bormans M** (2015) Carbon assimilation and accumulation of cyanophycin during the development of dormant cells (akinetes) in the cyanobacterium *Aphanizomenon ovalisporum*. *Front. Microbiol.* 6:1067. doi: 10.3389/fmicb.2015.01067

Sulmon C, van Baaren J, Cabello-Hurtado F, Gouesbet G, Hennion F, Mony C, Renault D, **Bormans M**, El Amrani A, Wiegand C, Gérard C (2015). Genericity of stress responses between organisms: molecular reality, but next ? *Environmental Pollution* , 202, 66-77.

Fraisse S, **Bormans M**, Lagadeuc Y (2015) Turbulence effects on phytoplankton morphofunctional morpho-functional traits selection. *Limnol Oceanog*, 60 (3), pp.872–884.

Lance E, Petit A, Sanchez W, Gérard C, **Bormans M**. 2014 "Evidence of trophic transfer of microcystins from the gastropod *Lymnaea stagnalis* to the fish *Gasterosteus aculeatus*" *Harmful Algae* 31 :9-17.

Bormans M, Lengronne M, Briant L, Duval C. 2014 Cylindrospermopsin production and release by the benthic cyanobacterium *Oscillatoria* sp PCC 6506 under different light conditions and growth phases *Bulletin of Environmental Contamination and Toxicology* 92 : 243-247.

Malécot M, Guével B, Pineau C, Holbech B, **Bormans M**, Wiegand C. 2013 Specific proteomic response of *Unio pictorum* mussel to a mixture of glyphosate and microcystin-LR *Journal of Proteome Research* 2 (11), pp 5281–5292

Fraisse S, **Bormans M**, Lagadeuc Y. 2013. Morphofunctional traits reflect differences in phytoplankton community between rivers of contrasting flow regime. *Aquatic Ecology*, 47 : 315-327.

Briand E, **Bormans M**, Quiblier C, Humbert JF. 2012 Evidence of the cost of the production of microcystins by *Microcystis aeruginosa* under differing light and nitrate environmental conditions. *Plos One* 7(1): e29981.

Pannard A, Beisner B, Bird D, Braun J, Planas D and **M. Bormans**. 2011 Recurrent internal waves in a small lake: potential ecological consequences for metalimnetic phytoplankton populations. *Limnology & Oceanography Fluids & Environment* 1, 91-109.

Lance E, **Bormans M**. 2011. Impact of microcystin producing cyanobacteria on reproductive success of *Lymnaea stagnalis* (Gastropoda, Pulmonata) and predicted consequences at the population level. *Ecotoxicology* 20 (4) 719-730.

Lance E., C. Josso, D. Dietrich, B. Ernst, C. Paty, F. Senger, **M. Bormans**, C Gérard 2010 Histopathology and microcystin distribution in *Lymnaea stagnalis* (Gastropoda) following toxic cyanobacterial or dissolved microcystin-LR exposure. *Aquat Toxicol* 98 3 211-20

Lance E., L. Brient, A. Carpenter, A. Acou, L. Marion, **M. Bormans**, C. Gérard 2010 Impact of toxic cyanobacteria on gastropods and microcystin accumulation in a eutrophic lake (Grand-Lieu, France) with special reference to *Physa* (=Physella) *acuta*. *Science of The Total Environment* 408 17 3560-3568

Lance E., M. Neffling, C. Gérard, J. Meriluoto et **M. Bormans** 2010 Accumulation of free and covalently bound microcystins in tissues of *Lymnaea stagnalis* (Gastropoda) following toxic cyanobacteria or dissolved microcystin-LR exposure. *Environmental Pollution* 158 3 674-680

Vandenkoornhuyse P., A. Dufresne, A. Quaiser, G. Gouesbet, F. Binet, AJ Francez, S. Mahé, **M. Bormans**, Y. Lagadeuc et I. Couée 2010 Integration of molecular functions at the ecosystemic level: breakthroughs and future goals of environmental genomics and post-genomics. *Ecology Letters* 13 6 776-791

Brient L., M. Lengronne, **M. Bormans** and J. Fastner 2009. First occurrence of cylindrospermopsin in freshwater in France, *Environmental Toxicology*, 2009 24 4 415-20 DOI: 10.1002/tox.20439

Brient, Luc, Lengronne, Emilie Bertrand, Delphine Rolland, Arnaud Sipel, Delphine Steinmann, Isabelle Baudin, Michèle Legeas, Bertrand Le Rouzic and **Myriam Bormans** 2008. A phycocyanin probe as a tool for monitoring cyanobacteria in freshwater bodies *J. Environ. Monit.*, 10, 248–255.

Pannard A., **M. Bormans**, Y. Lagadeuc 2008. Phytoplankton species turnover controlled by physical forcing at different time scales. *Canadian Journal of Fisheries and Aquatic Sciences* 65, 47-60.

Lance, Emilie, Emilie Bugajny, **Myriam Bormans**, Claudia Gérard 2008. Consumption of toxic cyanobacteria by *Potamopyrgus antipodarum* (Gastropoda, Prosobranchia) and consequences on life traits and microcystin accumulation. *Harmful Algae* 7, 464–472.

Pannard Alexandrine, **Myriam Bormans**, Sebastien Lefebvre, Pascal Claquin, Yvan Lagadeuc 2007. Phytoplankton size distribution and community structure : influence of nutrient input and sedimentary loss. *Journal of Plankton Research* 29 7 583-598.

Pannard A., **M. Bormans**, Y. Lagadeuc 2007. Short-term variability in physical forcing in temperate reservoirs: effects on phytoplankton dynamics and sedimentary fluxes. *Freshwater Biology* 52(1) 12-27.

Lance Emilie, Chrystelle Paty, **Myriam Bormans**, Luc Brient, Claudia Gérard. 2007 Interactions between cyanobacteria and gastropods II Impact of toxic *Planktothrix agardhii* on the life-history traits of *Lymnaea stagnalis*. *Aquatic toxicology* 81 389-396

Viney, N., Bates, B., S. Charles, I. Webster, **M. Bormans** 2007. Modelling adaptive management

strategies for coping with the impacts of climate variability and change on riverine algal blooms. *Global Change Biology*, 13, 1-13.

Vink, S., P. Ford, **M. Bormans**, C. Kelly C. Turley. 2007. Contrasting nutrient exports from a forested and an agricultural catchment in south-eastern Australia. *Biogeochemistry* 84 3 247-264 Citations 26

Lance E, Brient L., **Bormans M.** and Gérard C. (2006). Interactions between Cyanobacteria and Gastropods. 1) Ingestion of toxic *Planktothrix agardhii* by *Lymnaea stagnalis* and kinetics of microcystin bioaccumulation and detoxification. *Aquatic Toxicology*, 79, 140-148.

Vink S., **Bormans M.**, Ford P., and Grigg N. (2005). Quantifying ecosystem production in the Murrumbidgee River during irrigation flow releases. *Marine and Freshwater Research*, 56, 227-241.

Bormans, M., P. Ford and L. Fabbro (2005). Spatial variability in cyanobacterial population in the Fitzroy River controlled by physical process. *Journal of Plankton Research*, 27(1), 61-70.

Bormans, M., Ford P., Fabbro L., and G. Hancock (2004). Onset and persistence of cyanobacterial blooms in a large impounded tropical river, Australia. *Marine and Freshwater Research*, 55, 1-15.

Ford, P., **Bormans M.** and G. Hancock (2003). Paragrass "*Brachiara mutica*" and nitrogen cycling in a tropical barrage. *Verh. Internat. Verein. Limnol.*, 28.

Bormans, M. and P.W. Ford (2002). Setting flow levels for controlling cyanobacterial blooms in tropical weir pools. *Lakes and Reservoirs Management*, 18(4), 275-284.

Maier, H.R., Birch, M.D., and **Bormans M.** (2001). Flow management strategies to control blooms of the cyanobacterium, *Anabaena Circinalis*, in the River Murray at Morgan, South Australia. *Regulated Rivers: Res. Mgmt.*, 17: 637-650.

Walter, M., Recknagel, F., Carpenter, C., and **Bormans M.** (2001). Predicting Eutrophication in Burrinjuck Reservoir (Australia) by Means of the Deterministic Model SALMO and the Recurrent Neural Network Model ANNA. *J. Ecol. Modelling*, 146, 97-113.

Webster, I.T., Sherman, B.S., **Bormans, M** and Jones, G. (2000). Management strategies for cyanobacterial blooms in an impounded lowland river. *Regulated Rivers: Res. Mgmt.*, 16, 513-525.

Bormans, M., Ford, P., Fabbro, L. and Duivenvoorden, L. (2000). Temporal changes in nutrients and cyanobacterial populations in a dammed, stratified tropical river. *Verh. Internat. Verein. Limnol.*, 27, 3239-3242.

Bormans, M., Sherman B.S., and Webster I.T. (1999). Is buoyancy regulation in cyanobacteria an adaptation to exploit separation of light and nutrients? *Mar. Freshwater Res.* 50, 897-906.

Bormans M. and I.T. Webster (1999). Modelling the spatial and temporal variability of diatoms in the River Murray. *J. Plankton Res.*, 21(3), 581-598.

Bormans M. and I.T. Webster (1998). Dynamics of temperature stratification in lowland rivers. *J. Hyd. Eng.*, 124, 10, 1059-1063.

Bormans M. and S. A. Condie (1998). Modelling the distribution of *Anabaena* and *Melosira* in a stratified river weir pool. *Hydrobiologia*, 364, 3-13.

Bormans M. and I.T. Webster (1997). A mixing criterion for rivers. *J. Env. Modelling and Software*, 12,

4, 329-333.

Bormans M., H. Maier, M. Burch and P. Baker (1997). Temperature stratification in the lower River Murray, Australia: implication for cyanobacterial bloom development, *Mar. Freshwater Res.*, 48, 647-654

Condie S.A. and **M. Bormans** (1997). The influence of density stratification on particle settling, dispersion and population growth. *J. Theor. Biology*, 187, 65-75.

Bormans M. (1992). An experimental study on the formation and survival of subsurface stratified eddies. *J. Geophys. Res.*, 97, 20155-20167.

Bormans M. (1992). Effect of R_p on double diffusive interleaving. *Deep-Sea Res.*, 39, 871- 884.

Bormans M. and J.S. Turner (1990). The formation of the doubly stable stratification in the Mediterranean Outflow. *Deep-Sea Res.*, 37, 1697-1712.

Garrett C.J.R., **M. Bormans** and K.R. Thompson (1990). Is the exchange through the Strait of Gibraltar maximal or submaximal? in *The Physical Oceanography of Sea Straits* (L.J. Pratt, ed.) NATO/ASI Series, Kluwer, Dordrecht, 271-294.

Bormans M. and C.J.R. Garrett (1989). A simple criterion for gyre formation by the surface outflow from a strait, with application to the Alboran Sea. *J. Geophys. Res.*, 94, 12637-12644.

Bormans M. and C.J.R. Garrett (1989). The effect of non-rectangular cross-sections, friction and barotropic fluctuations on the exchange through the Strait of Gibraltar. *J. Phys. Oceanogr.*, 19, 1543-1557.

Bormans M. and C.J.R. Garrett (1989). The effect of rotation on the surface inflow through the Strait of Gibraltar. *J. Phys. Oceanogr.*, 19, 1535-1542.

Bormans M., C.J.R. Garrett and K.R. Thompson (1986). Seasonal variability of the surface inflow through the Strait of Gibraltar. *Oceanologica Acta*, 9, 403-414.

Bormans M. (1988). A model of the exchange through the Strait of Gibraltar. PhD thesis, Dept of Oceanography, Dalhousie University, Halifax, Canada, 187pp.

Bormans M. (1983). Etude des courants au large de Calvi en régime d'été. Thèse de Licence, Département de Physique, Université de Liège, Belgium, 124pp.

Books Chapters

Bormans, M. et al 2007. Budgeting and monitoring for sediment and nutrients at the catchment scale. Chapter 8 in *Salt, Nutrient, Sediment and Interactions: findings from the National Contaminants Program*. Published by Land and Water Australia.