

ROBERT O. FOURNIER

Curriculum Vitae

PERSONAL:

Address: 2985 St. Margaret's Bay Rd.
Timberlea, Nova Scotia
Canada B3T 1H5

Phone: (902) 876-7663

Born: 29 October 1939, Fall River, Massachusetts, U.S.A.
Canadian Citizen

Married: Anne Holt Fournier

Children: Andrew Jason (1972), Michael Christopher (1973)
Samantha Jane (1974), Daniel Robert (1976)

CURRENT EMPLOYMENT:

Professor of Oceanography,
Dalhousie University
Halifax, Nova Scotia
Canada B3H 4H6

Telephone (902) 494-3666 Fax (902) 494-3666 Email: robert.fournier@dal.ca

EDUCATION:

Ph.D. (Biological Oceanography) University of Rhode Island, 1967
(Thesis Advisor: Dr. T.J. Smayda)

M.A. (Biological Oceanography) College of William and Mary, 1963
(Thesis Advisor: Dr. B. Patten)

B.Sc. (Ecology) University of Rhode Island, 1961

ACADEMIC AWARDS AND ACTIVITIES:

Dalhousie University Postdoctoral Fellowship, 1968-69 (with Dr. Gordon Riley)

National Science Foundation Postdoctoral Fellowship, 1967-68, University of Oslo, Norway (with Dr. Trygve Braarud) and Plymouth Marine Biological Laboratory, England (with Dr. Mary Parke)

ACADEMIC AWARDS AND ACTIVITIES (cont'd):

National Academy of Science Travel Grant (five awarded) to attend Second International Oceanographic Congress, Moscow, June 1966

Advisor, Staff of Assistant Secretary for Science Smithsonian Institution, July and August 1966

Advisor, Staff of Senator Claiborne Pell, United States Senate regarding Sea Grant College Legislation, April-June, 1966

National Institutes of Health Pre-Doctoral Fellowship, 1964-1966

PROFESSIONAL APPOINTMENTS:

Executive Director, Dalhousie Ocean Studies Program, 1991-1999

Associate Vice-President (Research and International Relations), Dalhousie University, 1996-1999

Associate Vice-President (Research), Dalhousie University, 1988-1996

Assistant Vice-President (Research), Dalhousie University, 1984-1988

Chairperson, Department of Oceanography, Dalhousie University, 1980-1984

Professor of Oceanography, Dalhousie University, 1979-

Associate Professor of Oceanography, Dalhousie University, 1973-1979

Assistant Professor of Oceanography, Dalhousie University, 1971-73

Assistant Professor of Botany, University of Hawaii, 1969-1971

Research Assistant, United States Fish and Wildlife Service, Oyster Enhancement Program, Martha's Vineyard, Massachusetts, Summers 1959-1961

TEACHING EXPERIENCE:

Supervisor for six MSc. and six PhD. students at University of Hawaii and Dalhousie University

Courses taught at Undergraduate and Graduate Levels:

Marine Science, Technology and Management, 2000-
Introduction to Oceanography, 1973-
Introduction to Biological Oceanography, intermittently, 1972-1984
Phytoplankton Ecology, 1967-1984
Phytoplankton Systematics, 1969-1971

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TEACHING EXPERIENCE (cont'd):

Summer Courses:

Stanford University, Hopkins Marine Laboratory, Pacific Grove, California
Phytoplankton Ecology and Systematics, Summer, 1971
Huntsman Marine Laboratory, St. Andrews, New Brunswick
Phytoplankton Ecology, summers 1973-1983

International Regional Courses:

Lecturer for the International Ocean Institute in Halifax, Nova Scotia;
Valleta, Malta; Kingston, Jamaica, Port-of-Spain, Trinidad, and Xiamen, China, 1985-1995

RESEARCH INTERESTS:

1. Factors affecting the initiation of Phytoplankton blooms, 1961-1963.
2. The occurrence and importance of olive green cells (Sensu Lohmann) in the deep water of the North Atlantic and North Pacific, 1963-1971.
3. Physical factors influencing Phytoplankton dynamics on the Continental Shelf off Nova Scotia 1973-1985.
4. Initiator and participant in the joint Canadian-Uruguayan research initiative known as EcoPlata, dealing with integrated coastal zone management of the Rio de la Plata, the second largest estuary in South America, 1992-

ADVISORY/CONSULTATIVE RESPONSIBILITIES:

Professional: (Ocean Related)

Co-founder and board member of the Nova Scotia Oceans Initiative, 1992-1999

Initiator and continuing participant in the "EcoPlata" integrated coastal zone management initiative between Canada and Uruguay, 1992-

Three month leave of absence from Dalhousie to the International Development Research Centre in Ottawa, Ontario to assist in creation of national oceans network "OceansNet", Apr-June 1995

Secretary, International Scientific Committee on Oceanic Research (SCOR), 1986-1992

Task Force on Northern Cod, advising Minister of Fisheries and Oceans regarding stock conservation, 1989-1990

Member, National Marine Council, Advising the Minister of Fisheries and Oceans, 1987-1990

Member and Vice-Chair, Fisheries and Oceans Research Advisory Committee, 1986-1989

Canadian Delegate to Intergovernmental Oceanographic Commission, Paris, 1984-1992

Chairperson, Canadian National Committee for SCOR, 1984-1986

ADVISORY/CONSULTATIVE RESPONSIBILITIES (cont'd):

Board of Directors, Huntsman Marine Laboratory, St. Andrews, New Brunswick, 1979-1981

National Steering Committee for Joint Oceanographic Assembly, Halifax, 1979-1982

Canadian Editor, Marine Biology, 1979-1983

Editorial Board, Marine Ecology: Progress Series, 1979-1983

Chairperson, Organizing Committee, 39th Annual Meeting of American Society of Limnology and Oceanography, Halifax, 1975

Editorial Board, Pacific Science, 1970-1971

National:

Member, Natural Resources Canada Advisory Board on Energy Science and Technology, 2001-

Member, Canadian Space Agency Advisory Council, 2000-2003

Member, Board of Trustees, Canadian Foundation for Climate and Atmospheric Sciences, 2000-2002

National Energy Board; Chair, Joint Public Review for the Sable Gas Project, 1996-1998

Department of the Environment, Advisory Committee on Environmental Protection, 1993-1995

Chair, Board of Directors, Ocean Production Enhancement Network (National Centre of Excellence), 1990-1995

Canadian Council on Animal Care, 1989-1992; Chairperson 1992

Member, Manning Awards Selection Committee, 1990-

National Award Selection Committee, Corporate Higher Education Forum, 1987-1990

Member, National Advisory Board on Science and Technology, (Chaired by Prime Minister), 1986-1990

Evolutionary Biology Advisory Panel, Canadian Institute for Advanced Research, 1986-1989

National Advisory Council, Canadian Advanced Technology Association, 1985-1991

Member and Executive Committee, Science Council of Canada, 1984-1990

National Evaluation Panel, Public Awareness Program for Science and Technology, 1984-1986

Member, University Advisory Board, Industry Canada, 1996-1999

Provincial:

Chair, Electricity Marketplace Governance Committee, 2002-2003

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ADVISORY/CONSULTATIVE RESPONSIBILITIES (cont'd):

Co-Chair and Facilitator, Provincial Energy Strategy Public Meetings, April-May 2001

Member, Premier's Energy Council, 2000-

Nova Scotia First Fund, 1992-1995

Monitoring Committee on Implementation of N.S. Economic Strategy, 1992-1994

Trustee, Nova Scotia Environmental Trust, 1991-1992

Nova Scotia Economic Strategy Committee, 1989-1991

Chairperson, Halifax Harbour Cleanup Task Force, 1989-1990

Co-Chairperson, National Forum of Science and Technology Advisory Councils, Halifax, June 1989

Premier's Planning Advisory Council, 1988-1989

Chairperson, Nova Scotia Council of Applied Science and Technology, 1987-1994

Chairperson, Editorial Board, Innovations, Technology Transfer Newsletter for Nova Scotia, 1987-1989

Industry:

Member, Scientific Advisory Board, Ocean Nutrition Canada (a subsidiary of Clearwater Fine Foods), 1996-2002

Member, Scientific Advisory Board, Clearwater Fine Foods, 1995-96

University:

Member and Board Chair of Nova Scotia Universities Technology Transfer Consortium (NU-TECH), 1996-1999

Management Committee, Atlantic Health Promotion Research Centre, 1993-1999

Board of Directors, Cardiac Prevention Research Centre, 1993-1996

Board of Directors, Centre for Environmentally Sustainable Economic Development, 1992-1994

President's Advisory Council on the Future of Ocean Studies at Dalhousie, 1990-1991

Advisory Board, Technology Transfer Office, 1988-1990

Editorial Board, Dalhousie Alumni Magazine, 1985-1988

Council of Institutes and Centres, 1985-1987

Board of Directors, Atlantic Institute of Biotechnology, 1984-1992

ADVISORY/CONSULTATIVE RESPONSIBILITIES (cont'd):

Board of Directors, Applied Microelectronics Institute, 1984-1995

Board of Directors, Lester Pearson Institute for International Development, Dalhousie University, 1984-1986

Ocean Studies Council, 1975-78

Community Activities:

Board of Directors, Discovery Centre, Halifax, 1985-1987

Board of Directors, Ecology Action Centre, 1982-1984

Boy Scout Leader, 1976-1984

Public Lectures to parent-school groups, service clubs, and church groups, plus two national speaking tours for the Canadian Clubs of Canada. 1974-

Media Activities:

Contributed science commentaries to media including national and local radio, television, and magazines since 1974. This includes weekly appearances on the following C.B.C. programs: "This Country in the Morning" (1974-75), "Morningside" (1980-88), "Information Morning" (1978-), "Midday" (1985-2000), and NewsWorld "Morning Program" (2000). Total number of presentations in excess of 1,500. In addition, prepared a one-hour program on Oceans for "Ideas" (1975), hosted a one-hour documentary for C.B.C. television entitled "Iceberg Alley" (1984), and hosted a 20-part series for local Cable TV extolling technological innovation (1992-1993).

PUBLICATIONS AND REPORTS:

- 1966 Some implications of nutrient enrichment of different temporal stages of a phytoplankton community. *Ches. Sci.* 7: 11-19.
- 1966 North Atlantic Deep-Sea Fertility. *Science* 153: 1250-1252.
- 1968 Particulate organic carbon observations in the Mediterranean Sea and their relevance to the deep-living coccolithophorid *Cyclococcolothus fragilis*. *Limnol. and Oceanogr.* 13: 693-697.
- 1969 Observations on the flagellate *Diacronema vlkianum* Prauser (Haptophyceae). *Brit. Phycol. J.* 4: 185-190.
- 1970 Studies on pigmented microorganisms from aphotic marine environments. *Limnol. and Oceanogr.* 15: 675-682.
- 1971 A note on the primary production in Fanning Island lagoon. *Pacific Sci.* 25: 11-16 (with Donald C. Gordon and Georges J. Krasnick).
- 1971 *Chrysocampanula spinifera* gen et sp. nov., a new marine haptophyte from the Bay of Chaleurs, Quebec. *Phycologia* 10: 89-92.

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PUBLICATIONS AND REPORTS (cont'd):

- 1971 Book review of: Vollenweider, R. A. (ed.) 1969. A manual on methods for measuring primary production in aquatic environments. I.B.P. Handbook No. 12. Blackwells. In Trans. Am. Fish. Soc. 100: 146
- 1971 Studies on pigmented microorganisms from aphotic marine environments. II. North Atlantic distribution. Limnol. and Oceanogr. 16: 952- 961.
- 1971 Light and electron microscopy of some aphotic ocean micro-organisms. In the Ocean World, Proceedings of Joint Oceanographic Assembly, IAPSO, IABQ, CMG, SCOR, 13-25 Sept., 1970, Editor Michitaka Uda. Japan Soc. for the Promotion of Science, Tokyo, pp. 468-469.
- 1972 The transport of organic carbon to organisms living in the deep oceans. Proc. Royal Soc. Edinburgh (B) 73: 203-211.
- 1973 Studies on pigmented microorganisms from aphotic marine environments III. Evidence of apparent utilization by benthic and pelagic Tunicata. Limnol. and Oceanogr. 18: 38-43.
- 1977 Plankton dynamics and nutrient enrichment of the Scotian Shelf. J. Fish. Res. Board, Canada 34: 1004-1018 (and J. Marra, R. Bohrer, and M. Van Det).
- 1978 A simple model for cross-shelf mixing on the Scotian Shelf. J. Fish. Res. Board, Canada 35: 414-421 (with R. Houghton and P. C. Smith)
- 1978 Biological aspects of Nova Scotian shelf-break fronts. p. 69-77, In: Bowman, M. J. and W. E. Esaias, Eds.) Oceanic Fronts in Coastal Processes. Springer-Verlag, New York.
- 1978 Three contributions. pp. 108-113, In: Saulnier, A. (ed.) Phytoplankton manual, U.N.E.S.C.O. monograph on oceanographic methodology. 119-120, 190-191.
- 1979 The influence of the shelf-break front off Nova Scotia on phytoplankton standing stock in winter. J. Fish. Res. Bd. Canada 36: 1228- 1237 (and W. Van Det, J. S. Wilson, N. B. Hargreaves).
- 1979 Fish production and the marine ecosystems of the Scotian Shelf, Eastern Canada (with E. L. Mills). Mar. Biol. 54: 101-108.
- 1982 Gordon Riley -- The Elegant Scientist. In Wroblewski, J. S. (ed.) The selected works of Gordon A. Riley. Dalhousie University Press.
- 1984 Physical factors controlling summer distributions of chlorophyll A off southwestern Nova Scotia. Limnology and Oceanography 29(3):517-526 (and M. Van Det, N. B. Hargreaves, J. S. Wilson, T. A. Clair, and R. Ernst).
- 1984 Buoyancy fluxes and the fall distribution of chlorophyll A off southwestern Nova Scotia (and R. Ernst, B. Hargreaves, and D. Douglas) Can. J. Fish. Aquat. Sci. 41:1730-1738.
- 1985 Condition of larval cod (Gadus morhua) off southwest Nova Scotia, 1983, in relation to plankton concentration and temperature (with J. A. Koslow, S. Brault, J. Dugas, and P. Hughes). Mar. Biol. 86:113-121.
- 1987 Microautoradiography-based enumeration of bacteria with estimates of thymidine-specific growth and production rates (with D.J. Douglas & J.A. Novitsky) Mar. Ecol. Prog. Ser. 36:91-99.

PUBLICATIONS AND REPORTS (cont'd):

- 1988 Water 2020: Sustainable Use for Water in the 21st Century. Trans. Roy. Soc. Can. Ser V, 3:7-13
- 1989 Water 2020: Sustainable Use for Water in the 21st Century. Sci. Council of Canada, Rept. 40. 40pp.
- 1989 The Halifax Declaration. A report of the National Forum of Science and Technology Advisory Councils (with C.J. McMillian), Halifax, Nova Scotia 18pp.
- 1989 Structure and interannual variability of the plankton and its environment off southwest Nova Scotia in late spring and early summer (with J.A. Koslow, R.I. Perry & P.C.F. Hurley). C.J. Fish. Aquat. Sci. 46:44-54.
- 1989 Modelling the initiation of spring phytoplankton blooms: A synthesis of physical and biological interannual variability off southwest Nova Scotia, 1983-85 (with R.I. Perry, R.C.F. Hurley, P.C. Smith and J.A. Koslow) C.F. Fish. Aquat. Sci. 46:183-199.
- 1990 Final report of the Halifax Harbour Task Force (submitted to Nova Scotia Minister of the Environment) (with the Task Force Members), Halifax, Nova Scotia 84pp.
- 1990 Independent review of the state of the Northern Cod Stock (submitted to the Canadian Minister of Fisheries and Oceans) (with L. Harriss, D.L. Alverson, M.L. Peters, J.G. Pope & M. Short). 154pp plus appendices
- 1999 Ecoplata: An Uruguayan Multi-Institutional approach to Integrated Coastal Zone Management (with C. M. Martinez. Ocean and Coastal Management 42(2/4): 165-185.

Reports:

The following reports emanated from committee activities that I chaired or participated in as a member. Authorship was either committee-wide and difficult to specify or it was an assigned staff function, written in response to committee direction. They are presented here to help broaden understanding of my activities.

ELECTRICITY MARKETPLACE GOVERNANCE COMMITTEE

2003(July), Final Report

2003(March), Second Interim Report

2002 (Dec.), First Interim Report

NOVA SCOTIA ENERGY STRATEGY

2002 Research and Development, Part IX, in Seizing the Opportunity, Volume II.

NATIONAL ENERGY BOARD

1997 The Joint Public Review Panel Report: Sable Gas Projects (with K. W. Vollman, J. Sears, A. Cote-Verhaaf and J. Davies). 139pp

1997 Reasons for Decision: Sable Offshore Energy Project and Maritimes and Northeast Pipeline Project (with K. W. Vollman, A. Cote-Verhaaf). 28pp

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NATIONAL ADVISORY BOARD ON SCIENCE AND TECHNOLOGY:

- 1991 Statement on Competitiveness 15pp
- 1991 Science and Technology, Innovation and National Prosperity: The Need for Canada to Change Course (Report of the Committee on National Science and Technology priorities) 38pp
- 1990 Revitalizing Science and Technology in the Government of Canada (Report of Committee on Federal Science and Technology Expenditures) 200pp

PUBLICATIONS AND REPORTS (cont'd):

- 1988 Advancing the Commitment and Capability for Industry Driven Science and Technology (Report of Committee on Industry) 103pp

SCIENCE COUNCIL OF CANADA:

- 1989 Harnessing Science and Technology for Cold Regions 28pp
- 1988 Environmental Peace Keepers: Science and Technology and Sustainable Development in Canada 24pp
- 1988 Winning in A World Economy: University-Industry Interaction and Economic Renewal in Canada 84pp

NOVA SCOTIA ECONOMIC STRATEGY COMMITTEE:

- 1991 "Charting Our Own Future: A Nova Scotia Economic Strategy" 59pp
- 1991 Report on Public Consultation Process 22pp
- 1991 "Our Province, Our Future, Our Choice" Consultation Paper on Nova Scotia Economic Strategy 33pp

NOVA SCOTIA COUNCIL OF APPLIED SCIENCE AND TECHNOLOGY:

- 1991 Report on Government Financed Technology Institutes
- 1991 Report to the Council of Maritime Premiers on the role of technology in a Maritime Economic Union
- 1991 Report on spending priorities, criteria, and programs for the Nova Scotia First Fund
- 1990 Report in the use of Community Colleges as vehicles for technological diffusion in rural Nova Scotia
- 1990 Report considering Nova Scotia as a potential location for a foreign-owned Product Development Laboratory
- 1989 Report on proposed spending priorities for \$100 million Nova Scotia First Fund
- 1988 Report on the raising of public awareness of science and technology in Nova Scotia

1988 Report examining the factors that influence the location of high technology industrial development to Nova Scotia

1988 Report on the ways in which sulphur emissions from coal burning could be reduced in Nova Scotia

FISHERIES AND OCEANS

Northern Cod Review Panel

PUBLICATIONS AND REPORTS (cont'd):

1990 Independent Review of the State of the Northern Cod Stock

Research Advisory Committee (FORAC)

1989 Report on Canadian aquaculture 43pp

1988 Seal research in Canada 24pp

1988 Technology transfer from the Department of Fisheries and Oceans 23pp

1987 Report on the proceedings of a seminar on remote sensing with ocean and ocean resource applications 13pp

1987 Integrated Department of Fisheries and Oceans Arctic science program 11pp

1987 Enhancing the visibility of Department of Fisheries and Oceans Science 9pp

1987 Report to Minister of Fisheries and Oceans regarding the possible formation of National Marine Council to advise on ocean-related matters 25pp

1986 Fisheries and Oceans mechanisms for sponsoring and contracting research in Canadian universities 11pp