



Scientific Excellence • Resource Protection & Conservation • Benefits for Canadians  
Excellence scientifique • Protection et conservation des ressources • Bénéfices aux Canadiens

**LIST OF DFO-SPONSORED PUBLICATIONS  
SCIENCE BRANCH - GULF REGION  
REVISED EDITION**

**LISTE DES PUBLICATIONS SUBVENTIONNÉES PAR LE MPO  
DIRECTION DES SCIENCES - RÉGION DU GOLFE  
ÉDITION REVUE ET CORRIGÉE**

**1982 - 1992**

Christa Bourque and/et Paulette Lévesque

Gulf Fisheries Center  
Department of Fisheries and Oceans  
P.O.Box 5030  
Moncton, N.B. E1C 9B6

Centre des pêches du Golfe  
Ministère des pêches et des océans  
C.P. 5030  
Moncton, N.-B. E1C 9B6

July / juillet 1993

**CANADIAN MANUSCRIPT REPORT  
FISHERIES AND AQUATIC SCIENCES  
NO. 2210**

**RAPPORT MANUSCRIT CANADIEN  
DES SCIENCES HALIEUTIQUES  
ET AQUATIQUES  
NO. 2210**



Fisheries  
and Oceans

Pêches  
et Océans

Canada

## **Canadian Manuscript Report of Fisheries and Aquatic Sciences**

Manuscript reports contain scientific and technical information that contributes to existing knowledge but which deals with national or regional problems. Distribution is restricted to institutions or individuals located in particular regions of Canada. However, no restriction is placed on subject matter, and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries and aquatic sciences.

Manuscript reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report is abstracted in *Aquatic Sciences and Fisheries Abstracts* and indexed in the Department's annual index to scientific and technical publications.

Numbers 1-900 in this series were issued as Manuscript Reports (Biological Series) of the Biological Board of Canada, and subsequent to 1937 when the name of the Board was changed by Act of Parliament, as Manuscript Reports (Biological Series) of the Fisheries Research Board of Canada. Numbers 901-1425 were issued as Manuscript Reports of the Fisheries Research Board of Canada. Numbers 1426-1550 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Manuscript Reports. The current series name was changed with report number 1551.

Manuscript reports are produced regionally but are numbered nationally. Requests for individual reports will be filled by the issuing establishment listed on the front cover and title page. Out-of-stock reports will be supplied for a fee by commercial agents.

## **Rapport manuscrit canadien des sciences halieutiques et aquatiques**

Les rapports manuscrits contiennent des renseignements scientifiques et techniques qui constituent une contribution aux connaissances actuelles, mais qui traitent de problèmes nationaux ou régionaux. La distribution en est limitée aux organismes et aux personnes de régions particulières du Canada. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du ministère des Pêches et des Océans, c'est-à-dire les sciences halieutiques et aquatiques.

Les rapports manuscrits peuvent être cités comme des publications complètes. Le titre exact paraît au-dessus du résumé de chaque rapport. Les rapports manuscrits sont résumés dans la revue *Résumés des sciences aquatiques et halieutiques*, et ils sont classés dans l'index annuel des publications scientifiques et techniques du Ministère.

Les numéros 1 à 900 de cette série ont été publiés à titre de manuscrits (série biologique) de l'Office de biologie du Canada, et après le changement de la désignation de cet organisme par décret du Parlement, en 1937, ont été classés comme manuscrits (série biologique) de l'Office des recherches sur les pêcheries du Canada. Les numéros 901 à 1425 ont été publiés à titre de rapports manuscrits de l'Office des recherches sur les pêcheries du Canada. Les numéros 1426 à 1550 sont parus à titre de rapports manuscrits du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom actuel de la série a été établi lors de la parution du numéro 1551.

Les rapports manuscrits sont produits à l'échelon régional, mais numérotés à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page du titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Canadian Manuscript Report of  
Fisheries and Aquatic Sciences No.  
Rapport Manuscrit Canadien des  
Sciences Halieutiques et Aquatiques no.  
July\Juillet 1993

List of DFO-Sponsored Publications Science Branch

Gulf Region

1982-1992

List des publications subventionnées par le MPO

Direction des Sciences

Région du Golfe

1982-1992

Revised Edition/Édition revue et corrigée

compiled by/compilée par

Christa Bourque et Paulette Lévesque

Gulf Fisheries Centre/Centre des pêches du Golfe  
Department of Fisheries and Oceans/  
Ministère des pêches et des océans  
Moncton, New Brunswick/Nouveau-Brunswick  
CANADA E1C 9B6

(c) Minister of Supply and Services Canada 1993  
(c) Ministère des Approvisionnements et Services Canada 1993  
Cat. No. Fs 97-4/2210 ISSN: 0706-6473

correct citation for this publication:  
on devra citer cette publication comme suit:

Bourque, C. and P. Lévesque (eds) 1993. List of DFO-Sponsored Publications Science Branch - Gulf Region 1982-1992/Liste des publications subventionnées par le MPO direction des sciences - région du golfe 1982-1992. Can. Manuscr. Rep. Fish. Aquat. Sci. 2210 / Rapp. manus. can. sci. halieut. aquat. 2210; i+44p.

## ABSTRACT

Bourque, C. and P. Lévesque. 1993. List of DFO-Sponsored Publications Science Branch - Gulf Region 1982-1992 / Liste des publications subventionnées par le MPO direction des sciences - région du golfe 1982-1992. Can. Manusc. Rep. Fish. Aquat. Sci. Rapp. manus. can. sci. halieut. aquat. 2210: i+44p.

The scientific and technical publications of the staff of the Gulf Region, Science Branch, including both reports and reprints of papers published in periodicals and books, are listed.

## RÉSUMÉ

Bourque, C. and P. Lévesque. 1993. List of DFO-Sponsored Publications Science Branch - Gulf Region 1982-1992 / Liste des publications subventionnées par le MPO direction des sciences - région du golfe 1982-1992. Can. Manusc. Rep. Fish. Aquat. Sci. Rapp. manus. can. sci. halieut. aquat. 2210: i+44p.

Le présent ouvrage contient une liste des travaux scientifiques et techniques publiés par les scientifiques de la Région du golfe, Direction des sciences, comprenant à la fois des rapports et des tirés à part qui ont parus dans des revues et des livres.

TABLE OF CONTENTS  
TABLES DES MATIERES

|                                   |    |
|-----------------------------------|----|
| <b><u>INTRODUCTION</u></b> .....  | i  |
| <b>LIST/LISTE</b>                 |    |
| <b><u>1982</u></b> .....          | 1  |
| <b><u>1983</u></b> .....          | 2  |
| <b><u>1984</u></b> .....          | 4  |
| <b><u>1985</u></b> .....          | 8  |
| <b><u>1986</u></b> .....          | 11 |
| <b><u>1987</u></b> .....          | 15 |
| <b><u>1988</u></b> .....          | 19 |
| <b><u>1989</u></b> .....          | 22 |
| <b><u>1990</u></b> .....          | 27 |
| <b><u>1991</u></b> .....          | 31 |
| <b><u>1992</u></b> .....          | 35 |
| <b>APPENDIX A/ANNEXE AF</b> ..... | 41 |
| <b>APPENDIX B/ANNEXE BF</b> ..... | 42 |
| <b>APPENDIX C/ANNEXE CF</b> ..... | 43 |

## INTRODUCTION

This report has been prepared to provide a list of the sponsored publications of the staff of the Science Branch of the Gulf Region.

This report covers publications produced by the staff between 1982 - 1992.

### FORMAT

The Gulf region's sponsored publications are recorded under the following format: primary and secondary, on the basis of the following criteria.

**PRIMARY** - Formally refereed published articles that normally appear in recognized primary scientific journals; scientific monographs e.g. books, CJFAS special publication series and refereed symposium proceedings.

**SECONDARY** - Published scientific and technical reports of agencies such as CAFSAC, NAFO reports, DFO fisheries and aquatic sciences series; book reviews in recognised scientific journals.

Excluded are working papers, unpublished contract reports and published abstracts.

A complete description of primary and secondary publications is contained in Appendix A and a description of sponsored publications contained in Appendix B.

The bibliographic citations are in accordance with the recommendations of the Canadian Journal of Fisheries and Aquatic Sciences. (Appendix C)

Le présent rapport contient une liste des publications patronnées du personnel de la Direction des sciences de la Région du Golfe.

Le présent rapport énumère les publications du personnel parues entre 1982 - 1992.

### FORMAT

Les publications patronnées de la région du golfe sont classées selon le format suivant: primaire et secondaire en se basant sur les critères qui suivent:

**PRIMAIRE** - Articles formellement arbitrés normalement publiés dans les revues scientifiques; les monographies scientifiques; les publications spéciales du MPO et les comptes rendus arbitrés des symposium.

**SECONDAIRE** - Les rapports scientifiques et techniques des organismes tels: CSCPCA, NAFO et les collections des sciences halieutiques et aquatiques du MPO; les recensions de livres dans les revues scientifiques.

Sont exclus les documents de travail, les rapports de contrat non publiés et les résumés publiés.

Une description de publication primaire et secondaire se trouve en Annexe A, et une définition de publication patronnée en Annexe B.

Les références bibliographiques sont conformes aux recommandations publiées dans le Journal canadien des sciences halieutiques et aquatiques. (Annexe C)

**LIST OF DFO SPONSORED PUBLICATIONS  
SCIENCE BRANCH - GULF REGION**

**LISTE DES PUBLICATIONS SUBVENTIONNÉES PAR LE MPO  
DIRECTION DES SCIENCES - RÉGION DU GOLFE**

**1982-1992**

**1982**

**SECONDARY PUBLICATIONS SECONDAIRES**

Alexander, D.R. and P. Galbraith. 1982. A plan to reestablish a natural population of Atlantic salmon in the Point Wolf River, Fundy National Park. Can. MS Rep. Fish. Aquat. Sci. 1667: 8p.

Chadwick, E.M.P. 1982. 1SW Atlantic salmon harvests predicted one year in advance. ICES C.M. 1982/M:20: 10p.

Chadwick, E.M.P. 1982. Recreational catch as an index of Atlantic salmon spawning escapement. ICES C.M. 1982/M:43: 5p.

Conan, G.Y., D.G. Robinson and D.R. Maynard. 1982. Growth at molt of lobsters in two areas of Northumberland Strait, Canada. ICES C.M. 1982/K:35: 19p.

Cormier, R.J. 1982. Fishing trends on the Gulf of St. Lawrence and eastern Scotian shelf of the Maritime shrimp fishery for 1981 and shrimp biomass review for eastern Scotian shelf. CAFSAC Res. Doc. 83/48: 19p.

Marshall, T.L., J.L. Peppar and E.J. Schofield. 1982. Prediction of 2-SW and older Atlantic salmon returning to the Millbank trap, Miramichi River, N.B. CAFSAC Res. Doc. 82/51: 10p.

Peppar, J.L. 1982. Atlantic salmon smolt investigations, Restigouche River system, New Brunswick. Can. MS Rep. Fish. Aquat. Sci. 1641: 15p.

Schofield, E.J. and J.L. Peppar. 1982. Some biological statistics on Atlantic salmon from the Miramichi River system, New Brunswick. Can. Data Rep. Fish. Aquat. Sci. 322: 13p.

Shotton, R. and R.G. Randall. 1982. Results of acoustic surveys of the southwest Nova Scotia (NAFO Division 4WX) herring stock during February and July, 1981. CAFSAC Res. Doc. 82/44: 29p.



## 1983

PRIMARY PUBLICATIONS PRIMAIRES

Moriyasu, M. 1983. La pêche du homard, (Homarus americanus), au Canada. La mer 21: 225-230.

SECONDARY PUBLICATIONS SECONDAIRES

Alexander, D.R. and A.H. Vromans. 1983. Status of the Miramichi River estuary gaspereau fishery (1982). CAFSAC Res. Doc. 83/37: 40p.

Bailey, R. et R. Cormier. 1983. Evaluation du stock de crabe des neiges exploité par le Nouveau-Brunswick dans le sud-ouest du Golfe Saint-Laurent. CAFSAC Res. Doc. 83/54: 45p.

Bailey, R. and R. Cormier. 1983. Review of snow crab resources in western Cape Breton (area 1 and 7) for 1982. CAFSAC Res. Doc. 83/55: 16 p.

Bailey, R. et R. Cormier. 1983. Revue du stock de crabe des neiges exploité par le Nouveau-Brunswick en 1983 dans le sud-ouest du Golfe Saint-Laurent. CAFSAC Res. Doc. 83/79: 34p.

Chadwick, E.M.P. and R.G. Randall. 1983. Assessment of the Restigouche River salmon stock in 1982. CAFSAC Res. Doc. 83/30: 20p.

Chadwick, E.M.P. and G.T. Evans. 1983. Influence of variations in freshwater growth on yield of Atlantic salmon. CAFSAC Res. Doc. 83/85: 8p.

Chadwick, E.M.P. 1983. Prediction of ISW Atlantic salmon returns statistical area N, 1984. CAFSAC Res. Doc. 83/84: 8p.

Clay, D. and G. Nielsen. 1983. American plaice (Hippoglossoides platessoides F.) stock update for NAFO Division 4T in 1982. CAFSAC Res. Doc. 83/84: 16p.

Clay, D. and G. Nielsen. 1983. Flatfish statistics in the Gulf of St. Lawrence, with a review of 4T white hake. CAFSAC Res. Doc. 83/75: 15p.

Conan, G.Y. and D.R. Maynard. 1983. An aerial survey of fishing effort in the lobster fishery of northern Northumberland Strait. CAFSAC Res. Doc. 83/28: 15p.

Conan, G.Y. and D.R. Maynard. 1983. Aerial survey of spatial distribution of effort in lobster fishery of southern Gulf of St. Lawrence. ICES C.M. 1983/K:13: 13p.

Davidson, K.A., R.W. Elnor and J.C. Roff. 1983. Discrimination of Atlantic snow crab, (Chionoecetes opilio), populations: a problem of management application. NAFO SCR Doc. 82/IX/86: 13p.

- Ferdinand, H.T.I., J. Hunt, J. Moller Jensen, K. Kosswig, J.V. Magnusson and P. Rubec. 1983. Report of the redfish (*S. mentella*, *S. marinus*) ageing workshop. ICES C.M. 1983/G:2: 2p.
- Hurlbut, T. and J.J. Maguire. 1983. Preliminary analysis of the Canadian Atlantic bluefin tuna fishery during 1983. ICCAT SCRS/83/61: 9p.
- Maguire, J.J., J.-P. Lussuiaa-Bedou and P. Rubec. 1983. The 1982 stock status and 1983-84 yield projections for 4RST redfish. CAFSAC Res. Doc. 83/50: 39p.
- Maguire, J.J., D. Lever and L. Waite. 1983. Assessment of cod in NAFO division 4T and subdivision 4Vn (Jan.-Apr.) for 1983. CAFSAC Res. Doc. 83/51: 38p.
- Maguire, J.J. and T.R. Hurlbut. 1983. Bluefin tuna sex proportion at length in the Canadian samples 1974-1983. ICCAT SCRS/83/84: 11p.
- Messieh, S. 1983. Fisheries in the UEA: present status and future outlook. FAO. ROME. RAB/80/01514: 62p.
- Messieh, S., R. Pottle, P. MacPherson and T. Hurlbut. 1983. Herring spawning bed survey in Miramichi Bay, N.B. in spring 1983. CAFSAC Res. Doc. 83/70: 21p.
- Moriyasu, M. 1983. Biologie et pêche des octopodes I. Analyse des statistiques des pêches des octopodes en Méditerranée française. La Pêche Maritime 1264: 382-387.
- Moriyasu, M. 1983. Biologie et pêche des Octopodes II. L'expédition des octopodes au Japon. La Pêche Maritime 1265: 452-457.
- Moriyasu, M. 1983. Détermination des stades de maturation sexuelle des males d'*Eledone cirrhosa* LAM. du golfe du Lion. Rapp. Comm. Mer Médit. 28: 283-284.
- Peppar, J.L. 1983. Adult Atlantic salmon (*Salmo salar*) investigations, Restigouche River system, New Brunswick, 1972-80. Can. MS Rep. Fish. Aquat. Sci. 1695: 33p.
- Peppar, J.L. 1983. Adult Atlantic salmon stocks in statistical areas K and L, western Newfoundland, 1983. CAFSAC Res. Doc. 84/19: 36p.
- Pickard, R.P. 1983. Ages of adult Atlantic salmon, sampled from various Restigouche River sources, 1972-81. Can. Data Rep. Fish. Aquat. Sci. 420: 25p.
- Pickard, R.P. and J.L. Peppar. 1983. Ages of adult Atlantic salmon samples from the Dalhousie trap, Restigouche River system, 1972-80. Can. Data Rep. Fish. Aquat. Sci. 393: 11p.
- Pickard, R.P., R.S. Blair and J.L. Peppar. 1983. Habitat spot-check surveys, Restigouche River system, 1981. Can. Data Rep. Fish. Aquat. Sci. 378: 25p.
- Porter, T.R. and E.M.P. Chadwick. 1983. Assessment of Atlantic salmon stocks in statistical areas K and L, western Newfoundland, 1982. CAFSAC Res. Doc. 83/87: 86p.
- Randall, R.G. and E.M.P. Chadwick. 1983. Assessment of the Miramichi River salmon stock in 1982. CAFSAC Res. Doc. 83/21: 24p.

- Randall, R.G. and E.J. Schofield. 1983. Biological assessment of Atlantic salmon in the Miramichi River, N.B. CAFSAC Res. Doc. 83/83: 18p.
- Randall, R.G. and P.R. Pickard. 1983. Biological assessment of Atlantic salmon in the Restigouche River. CAFSAC Res. Doc. 83/88: 18p.
- Schofield, E.J. and J.L. Peppar. 1983. Habitat spot-check surveys Miramichi River system, 1980. Can. Data Rep. Fish. Aquat. Sci. 377: 17p.
- Schofield, E.J., G. Stahl, E.J. Loudenslager and R.L. Saunders. 1983. Electrophoretic study on Atlantic salmon populations from the Miramichi River system, Canada. ICES C.M. 1983/M: 20: 14p.
- Townshend, R.E. and J.M. Worms. 1983. Introduction of a new pectinid species Argopecten irradians to the Gulf of St. Lawrence, Canada. ICES C.M. 1983/K:44: 13p.
- Worms, J.M. and G.A. Chouinard. 1983. Status of southern Gulf of St. Lawrence scallop stocks-1982. CAFSAC Res. Doc. 83/68: 52p.

## 1984

### PRIMARY PUBLICATIONS PRIMAIRES

- Davidson, K.A., J.C. Roff and R.W. Elnor. 1984. Morphological, electrophoretic and fecundity characteristics of Atlantic snow crab, (Chionoecetes opilio), and implications for fisheries management. Can. J. Fish. Aquat. Sci. 42: 474-482.
- Evans, G.T., J.C. Rice and E.M.P. Chadwick. 1984. Patterns in growth and smolting of Atlantic salmon (Salmo salar) parr in a southwestern Newfoundland river. Can. J. Fish. Aquat. Sci. 42: 539-543.
- Genot, G.Y. Conan, L. Barthelemy and C. Peyraud. 1984. Effects of 5HT Serotonin on spontaneous locomotor activity of eels. Comparative Biochemistry and Physiology 79C, 1: 189-192.
- Messieh, S., Y. deLafontaine, M.I. El-Sabh, M. Sinclair et J.-D. Lambert. 1984. Structure océanographique et distribution spatio-temporelle d'oeufs et de larves de poissons dans l'estuaire maritime et la partie ouest du Golfe Saint-Laurent. Sciences et Techniques de L'eau. 14: 43-49.
- Randall, R.G. 1984. First record of a pink salmon (Oncorhynchus gorbushcha) in the Miramichi River, New Brunswick. Naturaliste Can. 111: 455-457.

SECONDARY PUBLICATIONS SECONDAIRES

- Ahrens, M. and G. Nielsen. 1984. An assessment of the 4T herring stock. CAFSAC Res. Doc. 84/64: 35p.
- Alexander, D.R. and A.H. Vromans. 1984. Status of the Miramichi River estuary gaspereau fishery (1983). CAFSAC Res. Doc. 84/23: 23p.
- Alexander, D.R. 1984. Status of the Margaree River gaspereau fishery (1983). CAFSAC Res. Doc. 84/17: 19p.
- Chadwick, E.M.P., C. Léger and D. Brazeau-Carrier. 1984. Harvest at selected sport camps an index of river escapement on Restigouche River. CAFSAC Res. Doc. 84/85: 10p.
- Chouinard, G.A. 1984. Growth of sea scallop (Placopecten magellanicus) on the Tormentine bed, Northumberland Strait. CAFSAC Res. Doc. 84/61: 16p.
- Clay, D., T. Hurlbut and L. Currie. 1984. Biological studies on bluefin tuna (Thunnus thynnus L.) in Canadian waters during 1982 and 1983, with a preliminary look at some 1984 statistics. ICCAT SCRS/84/45: 14p.
- Clay, D. and L. Currie. 1984. Food and feeding of silver hake (Merluccius bilinearis Mitchill), on the Scotian shelf with special reference to cannibalism. NAFO SCR Doc. 84/VI/86. Serial N876: 26p.
- Clay, D., T. Hurlbut and L. Currie. 1984. Interspecific relationship between silver hake (Merluccius bilinearis) and haddock (Melanogrammus aeglefinus) on the Scotian shelf. CAFSAC Res. Doc. 84/22: 8p.
- Clay, D., G.A. Chouinard, T. Hurlbut and L. Currie. 1984. Stock report for American plaice (Hippoglossoides platessoides) (Fabricius) and other flatfishes in the Gulf of St. Lawrence. Including a discussion of discard levels and mesh selectivity of plaice. CAFSAC Res. Doc. 84/76: 30p.
- Clay, D., T. Hurlbut and L. Currie. 1984. White hake (Urophycistenius Mitchill) status during 1983 in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 84/82: 9p.
- Conan, G.Y. et al. 1984. Diving and underwater television observations on Nephrops norvegicus in Bantry Bay, Ireland. ICES C.M. 1984/K:48: 12p.
- Conan, G.Y. 1984. Do assumptions commonly used for modelling populations of finfish apply to shellfish species? ICES C.M. 1984/K:48: 12p.
- Conan, G.Y., D. Buestel, Y. Guennegan and J.P. Hillis. 1984. Monitoring the foraging activity of lobsters and associated species by underwater television. ICES C.M. 1984/K:45: 13p.
- Conan, G.Y. et D.R. Maynard. 1984. Reconnaissance aérienne de l'effort de pêche pour la pêcherie de homard dans la partie nord du Déroit de Northumberland. Variations annuelles et variations saisonnières de la distribution spatiale de l'effort de pêche. Essai d'évaluation de l'effort déployé. ICES C.M. 1984/K:46: 16p .
- Conan, G.Y., D.R. Maynard and Y.J. Chiasson. 1984. Recapture rates for lobsters first captured by trapping vs diving. Shellfish Committee C.M. 1984/K:43: 18p. and CAFSAC Res. Doc. 84/97: 18p.

- Conan, G.Y., D.R. Maynard and R. Cormier. 1984. Preliminary density estimates of snow crab, (Chionoecetes opilio), by underwater television. CAFSAC Res. Doc. 84/98: 16p. and Shellfish Committee, ICES C.M. 1984/K44: 16p.
- Cormier, R.J. 1984. A preliminary analysis of the New Brunswick snow crab (Chionoecetes opilio) fishery in the southwestern part of the Gulf of Saint Lawrence. CAFSAC Res. Doc. 84/83: 10p.
- Cormier, R.J. and R. Bailey. 1984. Review of the Cape Breton area 7 snow crab (Chionoecetes opilio) fishery. CAFSAC Res. Doc. 84/35: 18p.
- Gray, R.W. and E.M.P. Chadwick. 1984. Assessment of Margaree River salmon stocks in 1983. CAFSAC Res. Doc. 84/36: 12p.
- Gray, R.W. and R.E. Cutting. 1984. Assessment of the status of the Atlantic salmon of the LaHave River, Nova Scotia. CAFSAC Res. Doc. 84/40: 44p.
- Hurlbut, T., D. Clay and L. Currie. 1984. Age of bluefin tuna (Thunnus thynnus L.) in Canadian waters. ICCAT SCRS/84/46: 9p.
- Kosswig, K. and P. Rubec. 1984. Report of the workshop on ageing of redfish. ICES C.M. 1984/G:2: 10p.
- Landry, T. 1984. Parasites de l'aloise d'été, Alosa aestvalis (Mitchill, 1815) et du gaspareau, Alosa pseudoharengus (Wilson 1811) de la rivière Miramichi, Nouveau-Brunswick. Thèse de Maitrise. Moncton, Université de Moncton.
- Lever, D. and L. Waite. 1984. Assessment of cod in NAFO Division 4T and subdivision 4Vn (Jan-Apr) for 1984. CAFSAC Res. Doc. 84/52: 26p.
- Lutzac, T. 1984. Assessment of the Nepisiguit River salmon stock in 1983. CAFSAC Res. Doc. 84/2: 16p.
- Maynard, D.R. and G.Y. Conan. 1984. Preliminary monitoring on short term movements for lobsters, (Homarus americanus), in the Bideford River, Prince Edward Island, using ultrasonic telemetry. CAFSAC Res. Doc. 84/99, ICES C.M. 1984/K:47.
- Messieh, S.N., J.I. McMillan, R.N. O'Boyle and L. Cleary. 1984. Compilation of landing statistics of the southern Gulf of St. Lawrence herring (Clupea harengus) for 1967-1982. Can. Data Rep. Fish. Aquat. Sci. 468: 231p.
- Messieh, S. 1984. Recent changes in fishing effort and catch rates of inshore herring fisheries in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 84/59: 34p.
- Messieh, S. and C. MacDougall. 1984. Spawning groups of Atlantic herring in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 84/74: 28p.
- Moriyasu, M. 1984. Length-weight relationship of lobster (Homarus americanus) in three areas of the northern Northumberland Strait. CAFSAC Res. Doc. 84/94: 12p.
- Moriyasu, M. 1984. Molting season and growth at molt of lobsters in the Bideford river estuary, Prince Edward Island. CAFSAC Res. Doc. 84/92 and ICES C.M. 1984/K:41: 18p.

- Moriyasu, M. 1984. La perte de pince chez le homard (Homarus americanus) de l'estuaire de la Rivière Bideford, Ile-du-Prince-Edouard. CSCPCA document de la recherche 84/93 et CIEM C.M. 1984/K:42: 21p.
- O'Neil, S.F., M. Bernard and P.A. Gallop. 1984. 1983 Atlantic salmon commercial catch statistics, Maritime Provinces. Fisheries Research Branch, Scotia Fundy Region, Halifax: 73p.
- O'Neil, S.F., M. Bernard and J. Singer. 1984. 1983 Atlantic salmon sport catch statistics, Maritime Provinces. Fisheries Research Branch, Scotia Fundy Region, Halifax.
- Peppar, J.L. 1984. Assessment of Atlantic salmon stocks in statistical areas K and L, Western Newfoundland, 1983. CAFSAC Res. Doc. 84/19: 36p.
- Pickard, P.R. and J.L. Peppar. 1984. Densities of freshwater fishes (non-Atlantic salmon), Restigouche River system, New Brunswick, 1979-1981. Can. Data Rep. Fish. Aquat. Sci. 434: 17p.
- Pickard, P.R. and J.L. Peppar. 1984. Juvenile Atlantic salmon densities, Restigouche River system, New Brunswick, 1979-81. Can. Data Rep. Fish. Aquat. Sci. 433: 15p.
- Randall, R.G. 1984. Number of salmon required for spawning in the Restigouche River, New Brunswick. CAFSAC Res. Doc. 84/16: 15p.
- Randall, R.G. and E.J. Schofield. 1984. Biological assessment of Atlantic salmon in the Miramichi River, 1983. CAFSAC Res. Doc. 83/83: 18p.
- Roff, J.C., K.G. Davidson, G. Pottle and M. Dadswell. 1984. A guide to the Marine Flora and Fauna of the Bay of Fundy and Scotian Shelf: Larval Decapoda: Brechyura. Can. Tech. Rep. Fish. Aqua. Sci. 1322: 57p.
- Rubec, P.J., J. Wright and A. Boudreau. 1984. The 1983 stock status and 1984-85 yield projections for division 4RST redfish. CAFSAC Res. Doc. 84/80: 28p.
- Rubec, P.J. and R. Jon Planck. 1984. The development of a portable fish measuring station for electronic data acquisition in the field. NAFO SCR Doc. 84/VI/89 No.N880: 11p.
- Rubec, P.J. and K. Kossig. 1984. Report of the workshop on ageing of red fish. ICES C.M. 1984/G:2. Demersal fish committee: 9p.
- Worms, J.M. 1984. Scallop biomass and density estimates in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 84/90: 26p.
- Worms, J.M. and G.A. Chouinard. 1984. Status of southern Gulf of St. Lawrence scallop stocks-1983. CAFSAC Res. Doc. 84/57: 48p.

**1985****PRIMARY PUBLICATIONS PRIMAIRES**

- Chadwick, E.M.P. and J.M. Green. 1985. Atlantic salmon (Salmo salar L.) production in a largely lacustrine Newfoundland watershed. Internationale Vereinigung Fur Theoretische und Angewandte Limnologie. Vol. 22: 2509-2515.
- Chadwick, E.M.P. 1985. Fundamental research problems in the management of Atlantic salmon, (Salmo salar L.) in Atlantic Canada. J. Fish. Bio. 27 (suppl. A): 9-25.
- Chadwick, E.M.P. 1985. The influence of spawning stock on production and yield of Atlantic salmon (Salmo salar) in Canadian rivers. Aquaculture and Fisheries Management 1985: 111-119.
- Conan, G.Y. 1985. Periodicity and phasing of molting. In W.E. Wenner (ed.) Crustacean growth. American crustacean society. A.A. Balkema publishers, Rotterdam Netherland.
- Evans, G.T., J.C. Rice and E.M.P. Chadwick. 1985. Patterns of growth and smolting of Atlantic salmon (Salmo salar L.) parr in a southwestern Newfoundland river. Can. J. Fish. Aquat. Sci. 42(3): 539-543.
- Hurlbut, T.R., W.E. Hogans and J. Bratney. 1985. Pennella filosa and pennella instructa (Copepoda: pennellidae) on swordfish (Xiphias gladius L.) from the northwest oceans. Research notes. American Society of Parasitologists, 71: 111-112.
- MacCrimmon, H.R. and R.R. Claytor. 1985. Meristic and morphometric identity of baltic stocks of Atlantic salmon (Salmo salar). Can. J. Zool. 63: 2032-2037.
- McGladdery, S.E. and M.D.B. Burt. 1985. The potential of parasites for use as indicators of migration, feeding and spawning behaviour of northwestern Atlantic herring, (Clupea harengus). Can. J. Fish. Aquat. Sci. 42: 1957-1968.
- Messieh, S., R. Pottle, P. MacPherson and T. Hurlbut. 1985. Spawning and exploitation of Atlantic herring at Escuminac in the southwestern Gulf of St. Lawrence, spring 1983. J. Northw. Atlan. Fish. Sci. 6: 125-133.

**SECONDARY PUBLICATIONS SECONDAIRES**

- Ahrens, M. 1985. Annual assessment of herring in NAFO division 4T. CAFSAC Res. Doc. 85/46: 18p.
- Ahrens, M. 1985. Two phase sampling of the herring fishery. CAFSAC Res. Doc. 85/46: 18p.

- Alexander, D.R. 1985. Gaspereau: the Sunday fish. Conservation 9: 1-4.
- Alexander, D.R. and A.H. Vromans. 1985. Status of the Margaree River gaspereau fishery (1984). CAFSAC Res. Doc. 85/91: 17p.
- Alexander, D.R. and A.H. Vromans. 1985. Status of the Miramichi River estuary gaspereau fishery (1984). CAFSAC Res. Doc. 85/92: 25p.
- Chadwick, E.M.P., D.G. Reddin and R.F. Burfitt. 1985. Fishing and natural mortality rates for 1SW Atlantic salmon. ICES C.M. 1985/M:18: 11p.
- Chadwick, E.M.P. and J.L. Peppar. 1985. Forecast of 1SW Atlantic salmon returns statistical area N, 1985. CAFSAC Res. Doc. 85/41: 9p.
- Chadwick, E.M.P., D. Brazeau-Carrier and C. Léger. 1985. Historical catches of Atlantic salmon (Salmo salar) at four sport fishing lodges on Restigouche River, N.B. Can. Tech. Rep. Fish. Aquat. Sci. 1362: 27p.
- Chadwick, E.M.P. 1985. Index rivers: an important tool for managing anadromous fish. Atlantic Salmon Journal 34: 10-11.
- Chouinard, G.A. and D. Clay. 1985. Assessment of the 4TVn (Jan-Apr) cod stock for 1985. CAFSAC Res. Doc. 85/82: 35p.
- Chouinard, G.A. and K.I. Metuzals. 1985. Discards of cod (Gadus morhua) and American plaice (Hippoglossoides platessoides) in NAFO Division 4T during 1984. CAFSAC Res. Doc. 85/84: 20p.
- Clay, D. and G. Nielsen. 1985. Age specific M and its effects on VPA: Div. 4VWX silver hake. NAFO SCR Doc. 85/77 N1035: 13p.
- Clay, D. and A. Sinclair. 1985. Bluefin tuna statistics (inshore and offshore) within the Canadian fishing zone (1981 to 1984). ICCAT SCRS Doc. 85/23: 13p.
- Clay, D. 1985. Catch and effort in the Canadian inshore bluefin tuna fishery. ICCAT SCRS Doc, 85/23: 11p.
- Clay, D. and T. Hurlbut. 1985. Catch-at-age and estimates of growth of Canadian bluefin tuna. ICCAT SCRS Doc 85/24: 13p.
- Clay, D., L. Currie and T. Hurlbut. 1985. A first assessment of Gulf white hake: NAFO Division 4T/1985. CAFSAC Res. Doc. 85/64: 38p.
- Clay, D. and G. Nielsen. 1985. Grey seal (Halicholineas grypus) distribution during 1983/84 in the Gulf of St. Lawrence as observed by aerial survey. Can. MS Rep. Fish. Aquat. Sci. 1936: 8p.
- Clay, D., T. Hurlbut, L. Currie and J.M. Murchison. 1985. Sampling Gulf white hake: 1970 to 1984 in NAFO Division 4T. CAFSAC Res. Doc. 85/65: 34p.
- Clayton, R.R. and E.M.P. Chadwick. 1985. Assessment of Atlantic salmon (Salmo salar) in the Margaree River, Nova Scotia, 1985. CAFSAC Res. Doc. 85/103: 25p.



- Comeau, M. 1985. Détermination de la maturité sexuelle par morphométrie chez le crabe des neiges (Chionoecetes opilio). CAFSAC Res. Doc. 85/81: 15p.
- Conan, G.Y. 1985. Assessment of shellfish stocks by geostatistical techniques. ICES C.M. 1985/K:30: 19, 5p.
- Conan, G.Y., D.R. Maynard and E. Wade. 1985. Estimates of lobster fishing efforts by aerial surveys. NAFO SCR Doc. 85/86 serial No. N1061: 20p.
- Conan, G.Y., D.R. Maynard and R. Cormier. 1985. Estimates of snow crab (Chionoecetes opilio) abundance by underwater television. NAFO SCR Doc. 85/85: 68p.
- Conan, G.Y. and D.R. Maynard. 1985. Monitoring the foraging activity of lobsters and associated species by underwater television. CAFSAC Res. Doc. 85/7: 16p.
- Gray, R.W. 1985. Integration of wild and hatchery production in management and restoration of Atlantic salmon. p. 168-174. In W.M. Carter and A. Needler (ed.) Proceedings of the 1985 Northeast Atlantic Salmon Workshop. Moncton.
- Lanteigne, M. 1985. Distribution spatio-temporelle des larves de crabe appartenant aux genres chionoecetes et Hyas, dans la baie des Chaleurs, Canada, Moncton. Thèse de Maitrise. Moncton, Université de Moncton.
- Lutzac, T. 1985. Assessment of the Nepisiguit River salmon stock in 1984. CAFSAC Res. Doc. 85/101: 35p.
- Lutzac, T. 1985. Déplacement des saumons noirs dans le réseau de la rivière Miramichi pendant l'hiver 1984-85. p. 6 Dans G. Walsh, Y. Vigneault et G. Shooner. Compte rendu de l'atelier sur les perspectives de recherche sur le saumon noir à Québec, tenu à Québec le 29 mars 1985. Rap. Manus. Can. Sci. Halieut. Aquat. 1855.
- Maynard, D.R., G.Y. Conan and E. Wade. 1985. Calibration of aerial surveys of lobster fishing effort. ICES C.M. 1985/K: 31: 23p.
- Messieh, S. and C. MacDougall. 1985. A computer based method for separating herring spawning groups using digitized otolith morphometrics. CAFSAC Res. Doc. 85/106: 13p.
- Messieh, S., V. Anthony and M. Sinclair. 1985. Fecundities of Atlantic herring (Clupea harengus) populations in the northwest Atlantic. ICES C.M. 1985/H:8: 27p.
- Messieh, S., R. Pottle, P. MacPherson and C. Bourque. 1985. Herring spawning bed survey in Miramichi Bay, N.B. in spring 1984. CAFSAC Res. Doc. 85/40: 18p.
- Messieh, S. 1985. Spawning locations and spawning times of Atlantic herring Clupea harengus populations in the northwest Atlantic. ICES C.M. 1985 H: 8: 28p.
- Metuzals, K.I. 1985. Biological stock update (for 1984) for American plaice in NAFO Division 4T. CAFSAC Res. Doc. 85/88: 27p.
- O'Neil, S.F., M. Bernard and P.A. Gallop. 1985. 1984 Atlantic salmon commercial catch statistics, Maritime Provinces. Fisheries Research Branch, Scotia Fundy Region, Halifax: 57p.

- O'Neil, S.F., M. Bernard and J. Singer. 1985. 1984 Atlantic salmon sport catch statistics, Maritime Provinces (Redbook). Can. Data Rep. Fish. Aquat. Sci. 530: v, 98p.
- Peppar, J.L. and C.C. Mullins. 1985. Status of Atlantic salmon stocks in statistical areas K and L, western Newfoundland, 1984. CAFSAC Res. Doc. 85/86: 20p.
- Randall, R.G. 1985. Spawning potential and spawning requirements of Atlantic salmon in the Miramichi River, New Brunswick. CAFSAC Res. Doc. 85/86: 18p.
- Randall, R.G., E.M.P. Chadwick and P.R. Pickard. 1985. Status of Atlantic salmon in the Restigouche River, 1984. CAFSAC Res. Doc. 85/1: 18p.
- Randall, R.G., E.M.P. Chadwick and E.J. Schofield. 1985. Status of Atlantic salmon in the Miramichi River, 1984. CAFSAC Res. Doc. 85/2: 21p.
- Rubec, P.J., R. Jon Planck and S.N. Messieh. 1985. New developments computerized field data acquisition equipment for groundfish surveys. NAFO SCR Doc. 85/104 No. N1080: 19 p.
- Sephton, T.W. and C.F. Bryan. 1985. A preliminary assessment of the American surf/bar clam in Prince Edward Island, 1984. CAFSAC Res. Doc. 85/33: 19p.
- Worms, J.M. and M. Lanteigne. 1985. Status of southern Gulf of St. Lawrence scallop stocks-1984. CAFSAC Res. Doc. 85/66: 31p.

## 1986

### PRIMARY PUBLICATIONS PRIMAIRES

- Alexander, D.R., J.J. Kerekes and B.C. Sabeau. 1986. Description of selected lake characteristics and occurrence of fish species in 781 Nova Scotia lakes. Proc. N.S. Inst. Sci. 36: 63-106.
- Chadwick, E.M.P. et C. Leger. 1986. Avalaison des tacons (Salmo salar) dans une petite rivière de Terre-Neuve. Naturaliste Can. 113: 55-60.
- Chadwick, E.M.P., R.G. Randall and C. Leger. 1986. Ovarian development of Atlantic salmon (Salmo salar) smolts and age at first maturity. p. 15-23. In D.J. Meerburg (ed.) Salmonid age at maturity. Can. Spec. Publ. Fish. Aquat. Sci. 89.
- Chadwick, E.M.P. and R.G. Randall. 1986. A stock-recruitment relationship for Atlantic salmon in the Miramichi River, New Brunswick. N. Am. J. Fish. Manag. 6: 200-203.
- Chenoweth, J., S.E. McGladdery, C.J. Sindermann, T.K. Sawyer and J.W. Bier. 1986. An investigation into the usefulness of parasites as tags for herring stocks in the Gulf of Maine area, with emphasis on use of the larval nematode, Anisakis simplex. J. Northwest Atl. Fish. Org. 7: 23-33.

- Clay, D. and T. Hurlbut. 1986. Bluefin tuna. Underwater World. Fact Sheet 55. Communication directorate. Fisheries and Oceans, Ottawa, Canada: 8p.
- Conan, G.Y. and M. Comeau. 1986. Functional maturity of male snow crab, (Chionoecetes opilio). Can. J. Fish. Aquat. Sci. 43: 1710-1719.
- Conan, G.Y. 1986. Summary of session 5: recruitment and enhancement. International workshop on lobster recruitment. Can. J. Fish. Aquat. Sci. 43: 2384-2388.
- MacCrimmon, H.R. and R.R. Claytor. 1986. Possible use of taxonomic characters to identify Newfoundland and Scottish stocks of Atlantic salmon, Salmo salar L. Aquaculture and Fisheries Management 17: 1-17.
- McGladdery, S. E. 1986. Anisakis simplex (Nematoda: Anisakidae) infection of the musculature and body cavity of Atlantic herring, (Clupea harengus harengus). Can. J. Fish. Aquat. Sci. 43: 1312-1317.
- Moriyasu, M. and P. Mallet. 1986. Molt stage of the snow crab, (Chionoecetes opilio), by observations of morphogenesis of setae on the maxilla. J. of Crustacean Biology 6: 709-718.
- Randall, R.G., J.E. Thorpe, R.J. Gibson and D.G. Reddin. 1986. Biological factors affecting age at maturity in Atlantic salmon (Salmo salar). p. 90-96. In D.J. Meerburg (ed.) Salmonid age at maturity. Can. Spec. Publ. Fish. Aquat. Sci. 89.
- Randall, R.G. and E.M.P. Chadwick. 1986. Density as a factor affecting the production of juvenile Atlantic salmon, (Salmo salar), in the Miramichi and Restigouche Rivers, New Brunswick. Polskie Archiwum Hydrobiologii 33: 392-409.
- Worms, J.M. and L.A. Davidson. 1986. Some cases of hermaphroditism in the sea scallop (Placopecten magellanicus Gmelin) from the southern Gulf of St. Lawrence, Canada. Japanese Journal of Malacology 45: 116-1256.

#### SECONDARY PUBLICATIONS SECONDAIRES

- Alexander, D.R. and A.H. Vromans. 1986. Status of the Margaree River gaspereau fishery (1985). CAFSAC Res. Doc. 86/31: 17p.
- Alexander, D.R. and A.H. Vromans. 1986. Status to the Miramichi River gaspereau fishery (1985). CAFSAC Res. Doc. 86/36: 25p.
- Chadwick, E.M.P., D.R. Alexander, R.W. Gray, T.G. Lutzac, J.L. Peppar and R.G. Randall. 1986. 1983 research on anadromous fishes, Gulf Region. Can. Tech. Rep. Fish. Aquat. Sci. 1420: 69p.
- Chadwick, E.M.P. and G. Nielsen. 1986. Assessment of Atlantic herring in NAFO Division 4T, 1986. CAFSAC Res. Doc. 86/38: 47p.
- Chouinard, G.A. and G. Nielsen. 1986. Assessment of the 4TVn (Jan-Apr) cod stock for 1986. CAFSAC Res. Doc. 86/88: 55p.

- Clay, D., T. Hurlbut and L. Currie. 1986. Assessment of Gulf white hake: NAFO Division 4T/1986.
- Clay, D. 1986. Biomass and population biology as observed from research surveys in the southern Gulf of St. Lawrence: cod, white hake, haddock, plaice, herring and redfish. CAFSAC Res. Doc. 86/83: 66p.
- Clay, D. 1986. Simulation of sampling for cod (Gadus morhua): 1 for 1 versus 3 for 3 stratified sampling. CAFSAC Res. Doc. 86/85: 15p.
- Clay, D. and G. Chouinard. 1986. Southern Gulf of St. Lawrence herring: stock status report 1985. CAFSAC Res. Doc. 86/4: 50p.
- Clay, D. and T.J. Kenchington. 1986. World bibliography of the redfishes and rockfishes (Sebastinae, scorpaenidae). Can. Tech. Rep. Fish. Aquat. Sci. 1429: iii, 303p.
- Clayton, R.R. and C. Léger. 1986. Assessment of Atlantic salmon (Salmo salar) in the Margaree River, Nova Scotia, 1986. CAFSAC Res. Doc. 89/93: 21p.
- Conan, G.Y. 1986. Mating and terminal molt in the genus chionoecetes. Incidence of fishery management. ICES C.M. 1986/K:19: 29p.
- Davidson, K.G., M. Comeau, P. Mallet and M. Moriyasu. 1986. Fishery trends and stock assessment for four snow crab (Chionoecetes opilio) fisheries in the Gulf of St. Lawrence - 1985. CAFSAC Res. Doc. 86/51: 50p.
- Gray, R.W. 1986. Biological characteristics of Atlantic salmon (Salmo salar) in the upper LaHave River basin. Can. Tech. Rep. Fish. Aquat. Sci. 1437: 45p.
- Hunt, J.J., G. Martin and G.A. Chouinard. 1986. The effect of freezer storage on herring length and maturity stage determination. CAFSAC Res. Doc. 86/89: 13p.
- Landry, T. 1986. 1986 stock assessment of American plaice. In NAFO Division 4T. CAFSAC Res. Doc. 86/91: 32p.
- Lanteigne, M., L.A. Davidson and J. Worms. 1986. Status of the Icelandic scallop, (Chlamys islandica) in the northeastern Gulf of St. Lawrence, 1985. CAFSAC Res. Doc. 86/91: 13p.
- Maynard, D.R. and Y. Chiasson. 1986. Dispersion of tagged lobsters (Homarus americanus) in two areas of Northumberland Strait. CAFSAC Res. Doc. 86/72: 10p.
- Maynard, D.R., G.Y. Conan and Y. Chiasson. 1986. Estimates of immediate losses as a result of an increase in the legal carapace size limit for lobsters (Homarus americanus) in district 7B1. CAFSAC Res. Doc. 86/74: 6p.
- Maynard, D.R. and Y. Chiasson. 1986. Lobster (Homarus americanus) movement, as a consideration in the planning of further divisions of lobster district 7B1. CAFSAC Res. Doc. 86/73: 10p.
- Maynard, D.R. and D.A. Robichaud. 1986. Short term movements of snow crab (Chionoecetes opilio) in the Bay of Islands, Newfoundland as monitored by ultrasonic tracking. CAFSAC Res. Doc. 86/50: 15p.

- McGladdery, S.E. 1986. Differentiation between herring stocks in the Gulf of St. Lawrence and delineation of their migration patterns, using parasites as biological indicators. CAFSAC Res. Doc. 85/227: 43p.
- Messieh, S. 1986. Herring spawning bed surveys in Fisherman's Bank in fall 1985. CAFSAC Res. Doc. 86/78: 16p.
- Messieh, S. and R. Pottle. 1986. Distribution of gillnets and spring spawning grounds of Atlantic herring in the southern Gulf of St. Lawrence as inferred from aerial surveys. Can. Tech. Rep. Fish. Aquat. Sci. 1504: 57p.
- Messieh, S. 1986. The enigma of Gulf herring recruitment. NAFO SCR Doc. 86/103: 22p.
- Messieh, S. and H. Rosenthal. 1986. Mass mortality of herring eggs on spawning beds on and near Fishermen's Bank, Gulf of St. Lawrence (NAFO Div. 4T) during fall 1985. ICES C.M. 1986/H4: 22p.
- Moriyasu, M. and P. Mallet. 1986. Practical key for molt stage determination of the snow crab (Chionocetes opilio), by means of setal development observation in the endite of the maxilla. CAFSAC Res. Doc. 86/18: 18p.
- Moriyasu, M. 1986. Tag loss and mortality of the American lobster (Homarus americanus) in relation to molt stage at tagging. ICES C.M. 1986/K:22: 12p.
- O'Neil, S.F., M. Bernard and J. Singer. 1986. 1985 Atlantic salmon sport catch statistics, Maritime Provinces. Can. Data Rep. Fish. Aquat. Sci. 600: v, 71p.
- Randall, R.G., E.M.P. Chadwick and P.R. Pickard. 1986. Status of Atlantic salmon in the Restigouche River, 1985. CAFSAC Res. Doc. 86/1: 22p.
- Randall, R.G., E.M.P. Chadwick and E.J. Schofield. 1986. Status of Atlantic salmon in the Miramichi River, 1985. CAFSAC Res. Doc. 86/2: 23p.
- Worms, J.M. and M. Lanteigne. 1986. The selectivity of a sea scallop, (Placopecten magellanicus) Digby Dredge. ICES C.M. 1986/K:23: 26p.
- Worms, J.M. 1986. Status of the southern Gulf of St. Lawrence scallop stocks-1985. CAFSAC Res. Doc. 86/55: 46p.
- Worms, J.M. and L.A. Davidson. 1986. The variability of southern Gulf of St. Lawrence sea scallop meat weight-shell height relationship and its implications for resource management. ICES C.M. 1986/K:24: 33p.

1987PRIMARY PUBLICATIONS PRIMAIRES

- Chadwick, E.M.P. 1987. Causes of variable recruitment of a small Atlantic salmon stock. p. 390-401. In Common Strategies of Anadromous and Catadromous fishes. Amer. Fish. Soc. Symp. 1.
- Chadwick, E.M.P., R.R. Claytor, C.E. Leger and R.L. Saunders. 1987. Inverse correlation between ovarian development of Atlantic salmon (Salmo salar) smolts and sea age. Can. J. Fish. Aquat. Sci. 44: 1320-1325.
- Chadwick, E.M.P. 1987. Relationship between Atlantic salmon smolts and adults in Canadian rivers. In D. Mills and D. Piggins (ed.) Third International Symposium. Timber Press, Oregon.
- Conan, G.Y. and D.R. Maynard. 1987. Estimates of snow crab (Chionoecetes opilio) abundance by underwater television a method for population studies of benthic fisheries resources. Journal of Applied Ichthyology 4: 158-165.
- Gray, R.W., J.D. Cameron and A.D. McLennan. 1987. Artificial reconditioning, spawning and survival of Atlantic salmon (Salmo salar), kelts in salt water and survival of their progeny. Aquat. Fish. Manag. 18: 93-110.
- Gray, R.W. and J.D. Cameron. 1987. A deep-substrate streamside incubation box for Atlantic salmon eggs. The Prog. Fish-cult. 49: 124-129.
- Gray, R.W., J.D. Cameron and A.D. McLennan. 1987. Artificial reconditioning, spawning, and survival of Atlantic salmon, (Salmo salar), kelts in saltwater and survival of their F1 progeny. Aquat. Fish. Manag. 18: 309-326p.
- Johnston, C.E., R.W. Gray, A.D. McLennan and A. Paterson. 1987. Effects of photoperiod, temperature and diet on the reconditioning response, blood chemistry, and gonad maturation of Atlantic salmon kelts, (Salmo salar L.), held in freshwater. Can J. Fish. Aquat. Sci. 44: 702-711.
- McGladdery, S.E. 1987. Potential of Eimeria sardinae (Apicomplexa Eimeridae) oocysts for distinguishing between spawning groups and between first and repeat spawning Atlantic herring. Can. J. Fish. Aquat. Sci. 44: 1379-1385.
- Messieh, S., D.S. Moore and P. Rubec. 1987. Estimation of age and growth of larval Atlantic herring as inferred from examination of daily growth increments of otoliths. p. 433-442. In R.C. Summerfield and G.E. Hall (ed.) The age and growth of fish. The Iowa State University Press, Ames, Iowa.
- Messieh, S. and M.I. Elsabh. 1987. Man-made environmental changes in the southern Gulf of St. Lawrence and their possible impact on inshore fisheries. p. 481-505. In D. Reidel. Natural and manmade Hazards.

- Messieh, S.N. 1987. Some characteristics of Atlantic herring (Clupea harengus) spawning in the southern Gulf of St. Lawrence. NAFO Sci. Coun. Studies 11: 53-61.
- Quinn, T.P., R.F. Tallman. 1987. Seasonal environmental predictability and homing in riverine fishes. Environ. Biol. Fish. 18: 155-159.
- Randall, R.G., M.C. Healey and J. Brian Dempson. 1987. Variability in length of freshwater residence of salmon, trout and char. Amer. Fish. Soc. Symp. 1: 27-41.
- Sephton, T.W. 1987. The reproductive strategy of the Atlantic surf clam, (Spisula solidissima), in Prince Edward Island, Canada. J. Shellfish Res. 6: 97-102.

#### SECONDARY PUBLICATIONS SECONDAIRES

- Alexander, D.R. and A.H. Vromans. 1987. B) Status of the Margaree River gaspereau fishery (1986). CAFSAC Res. Doc. 87/18: 16p.
- Alexander, D.R. and A.H. Vromans. 1987. A) Status of the Miramichi River gaspereau fishery (1986). CAFSAC Res. Doc. 87/15: 21p.
- Chadwick, E.M.P. and G. Nielsen. 1987. Assessment of Atlantic herring in NAFO Division 4T, 1987. CAFSAC Res. Doc. 87/80: 48p.
- Chouinard, G.A. and A.F. Sinclair. 1987. Assessment of the 4TVn (Jan-Apr) cod stock for 1987. CAFSAC Res. Doc. 87/93: 48p.
- Chouinard, G.A. and A.F. Sinclair. 1987. Impact of the 4Vn winter fishery on the yield of the southern Gulf of St. Lawrence cod stock. CAFSAC Res. Doc. 87/92: 10p.
- Chouinard, G.A., L. Currie and J. Murphy. 1987. Re-examination of 4TVn (Jan-Apr) cod otoliths collected in the period 1982-1985 for age. (Including a report of the 4TVn (Jan-Apr) cod ageing workshop held in Moncton, June 22-24, 1987). CAFSAC Res. Doc. 87/99: 34p.
- Clay, D. 1987. Assessment of Gulf white hake from NAFO Division 4T in 1987 (including an investigation of otolith size to fish length relationship). CAFSAC Res. Doc. 87/81: 57p.
- Clay, D. 1987. Bibliography programs for creating a bibliography with accompanying KWIC index. Can. MS Rep. Fish. Aquat. Sci. 1910: iii, 37p.
- Clay, D. 1987. Catch rates in the Canadian Atlantic bluefin fishery. ICCAT SCRS Doc 87/59: 12p.
- Clay, D. 1987. Fat, water, protein and composition of bluefin tuna collected in the Gulf of St. Lawrence. ICCAT SCRS Doc. 87/61: 14p.
- Clay, D. 1987. National Report of Canada. ICCAT SCRS Doc. 87/45: 3p.

- Clayton, R.R. and H.R. MacCrimmon. 1987. Partitioning size from morphometric data: a comparison of five statistical procedures used in fisheries stock identification research. *Can. Tech. Rep. Fish. Aquat. Sci.* 1531: 23p.
- Clayton, R.R. and C.C. Mullins. 1987. Status of Atlantic salmon stocks, Gulf Region, Newfoundland and Labrador, 1987. CAFSAC Res. Doc. 88/01: 44p.
- Clayton, R.R., C. Leger and R. Gray. 1987. Stock composition of Northumberland Strait, Nova Scotia Atlantic salmon, (Salmo salar), commercial fisheries. *Can. Tech. Rep. Fish. Aquat. Sci.* 1563: viii, 19p.
- Clayton, R.R., G.J. Chaput and T.G. Lutzac. 1987. Assessment of Atlantic salmon, (Salmo salar), in the Margaree River, 1987. CAFSAC Res. Doc. 87/105: 36p.
- Comeau, M. and K.G. Davidson. 1987. Prince Edward Island snow crab fishery stock assessment for 1986. CAFSAC Res. Doc. 87/51: 16p.
- Conan, G.Y. 1987. A generalized model for predicting size-specific retention of lobster in traps fitted with an escape gap. *ICES C.M.* 1987/K:24: 22p.
- Conan, G.Y. 1987. Proposal for a symposium on "shellfish life histories and shellfishery models". Description and modelling of life cycles for assessment and management of invertebrate stocks. *ICES C.M.* 1984/K:45: 13p.
- Conan, G.Y. 1987. The paradigm of random sampling patches and the genesis of lognormal and negative binomial related models. *ICES C.M.* 1987/K:25: 10p.
- Conan, G.Y. 1987. A generalized model for selectivity of lobster traps. CAFSAC Res. Doc. 87/: 8p.
- Davidson, K.G., M. Comeau, P. Mallet and M. Moriyasu. 1987. Fishery trends and stock assessments for four snow crab, (Chionoecetes opilio), fisheries in the Gulf of St. Lawrence, 1985. CAFSAC Res. Doc. 86/51: 50p.
- Davidson, K.G. and M. Comeau. 1987. An overview of catch, effort and biological trends for the 1986 snow crab, (Chionoecetes opilio), fisheries in areas 18 and 19, western Cape Breton Island. CAFSAC Res. Doc. 87/53: 35p.
- Fréchet, A. et G.A. Chouinard. 1987. Recrutements partiels, biomasses exploitables et rendements observés des diverses flottes de pêche à la morue du Golfe du Saint-Laurent. (3Pn, 4Rs et 4T-Vn (jan à avr)). CAFSAC Res. Doc. 87/98: 22p.
- Hurlbut, T. and D. Clay. 1987. A review of age and growth of Canadian giant bluefin as estimated from otoliths. *ICCAT SCRS Doc.* 87/60: 7p.
- Lanteigne, M. and L.A. Davidson. 1987. Status of the Icelandic scallop, (Chlamys islandica) in the northeastern Gulf of St. Lawrence, 1986. CAFSAC Res. Doc. 87/83: 21p.
- Lanteigne, M. and L.A. Davidson. 1987. Status of the southern Gulf of St. Lawrence scallop stocks - 1986. CAFSAC Res. Doc. 87/84: 44p.



- Mallet, P., M. Moriyasu and H. Lacroix. 1987. Histological observations of the reproductive and accessory organs of male snow crab, (Chionoecetes opilio), in relation to functional maturity. ICES C.M. 1987/K20: n.p.
- Maynard, D.R., N. Branch, Y. Chiasson and G.Y. Conan. 1987. Comparison of three lobster (Homarus americanus) trap escape mechanisms and application of a theoretical retention curve for three devices in the southern Gulf of St. Lawrence lobster fishery. CAFSAC Res. Doc. 87/87: 34p.
- Maynard, D.R., N. Branch and G.Y. Conan. 1987. Estimates of immediate effects of escape gaps in traps on the lobster catch in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 87/: 10p.
- Maynard, R.D. and D.M. Webber. 1987. Monitoring the movement of snow crabs (Chionoecetes opilio) with ultrasonic telemetry. Proceedings Oceans 87: 962-966.
- McGladdery, S.E. 1987. Parasites and their relevance to Aquaculture. p.99-105. In J.F. Roach (ed) Atlantic Canada Aquaculture Workshop - Proceedings. General Education Series #5.
- Messieh, S. 1987. The effects of environmental conditions on the time of herring arrival on the spawning grounds in the Gulf of Saint Lawrence. p. 17-29. In R.I. Perry and K.T. Frank (ed.) Environmental effects on recruitment of Canadian Atlantic fish stocks. Can. Tech. Rep. Fish. Aquat. Sci. 1556.
- Messieh, S. 1987. Factors influencing recruitment of Atlantic herring in the Gulf of St. Lawrence (NAFO Div. 4T). ICES C.M. 1987/H:16: 30p.
- Messieh, S., R. Pottle, P. MacPherson and C. Bourque. 1987. Herring spawning bed surveys in Fisherman's Bank, P.E.I., fall 1986. CAFSAC Res. Doc. 87/41: 15p.
- Messieh, S. 1987: Some characteristics of Atlantic herring (Clupea harengus) spawning in the southern Gulf of St. Lawrence. NAFO Sci. Coun. Studies 11: 53-61.
- Moriyasu, M., G.Y. Conan, P. Mallet, Y. Chiasson and H. Lacroix. 1987. Growth at molt, molting season and mating of snow crab (Chionoecetes opilio) in relation to functional and morphometric maturity. ICES C.M. 1987/K:21: 14p.
- Nicolajsen, A. and G.Y. Conan. 1987. Assessment by geostatistical techniques for populations of Iceland scallop (Chlamys islandica) in the Barents Sea. ICES C.M. 1987/K: 14: 22p.
- O'Neil, S.F., M. Bernard, P. Gallop and R. Pickard. 1987. 1986 Atlantic salmon sport catch statistics, Maritime Provinces. Can. Data Rep. Fish. Aquat. Sci. 663: v, 69p.
- Randall, R.G., G. Landry, A. Madden and R. Pickard. 1987. Status of Atlantic salmon in the Restigouche River, 1986. CAFSAC Res. Doc. 87/6: 30p.
- Saunders, R.L., E.M.P. Chadwick, D.E. Knox and H. Freeman. 1987. Rearing environment modifies age at sexual maturity in Atlantic salmon (Salmo salar). Proceedings of the Third International Symposium on Fish Reproduction, St. John's, Newfoundland.
- Sephton, T.W. and C.F. Bryan. 1987. A summary of commercial catch rate data for the 1986 Prince Edward Island bar clam (Spisula solidissima) fishery. CAFSAC Res. Doc. 87/32: 13p.

- Shotton, R.L., E.M.P. Chadwick and J. Wright. 1987. Results of the acoustic surveys of herring stock in NAFO Division 4T and 4Vn, November 1986. CAFSAC Res. Doc. 87/88: 22p.
- Sinclair, A. and S.J. Smith. 1987. Assessment of 4VSW cod. CAFSAC Res. Doc. 87/72: 62p.
- Waite, L. and R.F. Tallman. 1987. American plaice in NAFO Division 4T: A biological update. CAFSAC Res. Doc. 87/89: 22p.

## 1988

### PRIMARY PUBLICATIONS PRIMAIRES

- Adams, N.J., D.R. Barton, R.A. Cunjak, G. Power and S.C. Riley. 1988. Diel patterns of activity and substrate preference in young Arctic char from the Koroc River, northern Quebec. Can. J. Zool. 66: 2500-2502.
- Blouw, N., S.D. Saxon and E.M.P. Chadwick. 1988. Temporal variation of meristic trails within an Atlantic salmon stock (Salmo salar) and implications for stock identification. Can. J. Fish. Aquat. Sci. 45: 1330-1339.
- Clayton, R.R. and H.R. MacCrimmon. 1988. Morphometric and meristic variability among North American Atlantic salmon (Salmo salar). Can. J. Zool. 66: 310-317.
- Conan, G.Y., M. Comeau, M. Moriyasu and R. Cormier. 1988. Reply to Donaldson and Johnson. Can. J. Fish. Aquat. Sci. 45: 1501-1503.
- Cunjak, R.A. 1988. Behavior and microhabitat of young Atlantic salmon (Salmo salar) during winter. Can. J. Fish. Aquat. Sci. 45: 2156-2160.
- Cunjak, R.A. 1988. Physiological consequences of overwintering in streams: the cost for acclimatization? Can. J. Fish. Aquat. Sci. 45: 443-452.
- McGladdery, S.E. and C.E. Johnston. 1988. Egg-development and control of the gill parasite, (Salmincola salmoneus), on Atlantic salmon kelts, (Salmo salar), exposed to four different regimes of temperature and photoperiod. Aquaculture 68: 193-202.
- Moriyasu, M. 1988. Analyse de la maturation sexuelle d'Eledone cirrhosa, (Cephalopoda: Octopoda) du Golfe de Lion. Aquatic Living Resources 1: 59-65.
- Randall, R.G. 1988. Effects of sea-age on the reproductive potential of Atlantic salmon in eastern Canada. Can. J. Fish. Aquat. Sci. 46: 2210-2218.
- Tallman, R.F. 1988. Coevolution, fish and fisheries. Genome 23: 536-537.

SECONDARY PUBLICATIONS SECONDAIRES

- Alexander, D.R. and A.H. Vromans. 1988. Status of the Margaree River alewife (Alosa pseudoharengus) fishery 1987. CAFSAC Res. Doc. 88/25: 25p.
- Alexander, D.R. and A.H. Vromans. 1988. Status of the Miramichi River fishery (1987) for alewife (Alosa pseudoharengus) and blueback herring (Alosa aestivalis). CAFSAC Res. Doc. 88/27: 30p.
- Cairns, D.K., J.A. Wright and E.M.P. Chadwick. 1988. Acoustic backscatter estimated and school behaviour of herring in NAFO Divisions 4T and 4Vn, November 1987. CAFSAC Res. Doc. 88/46: 41 p.
- Cairns, D.K., E.M.P. Chadwick and C. Bourque. 1988. Catch rates by index fishermen in the 4T herring fishery, 1986-1987. Can. Tech. Rep. Fish. Aquat. Sci. 1660: v, 19p.
- Chadwick, E.M.P. and D.K. Cairns. 1988. Assessment of Atlantic herring in NAFO Division 4T, 1987. CAFSAC Res. Doc. 88/38: 54p.
- Chadwick, E.M.P. 1988. Herring fishermen and biologists, their roles in stock assessment. Can. Ind. Rep. Fish. Aquat. Sci. 183: vii, 131p.
- Chaput, G.J. and R.R. Claytor. 1988. Sport catch of Atlantic salmon from Margaree River, Inverness County, Nova Scotia 1947-87. Can. Data Rep. Fish. Aquat. Sci. 678: iv, 50p.
- Chiasson, Y., M. Comeau and M. Moriyasu. 1988. Assessment of the areas 18 and 19, western Cape Breton Island snow crab, (Chionoecetes opilio), fisheries, 1987. CAFSAC Res. Doc. 88/34: 34p.
- Chouinard, G.A. and A.F. Sinclair. 1988. Assessment of the 4TVn cod stock for 1988. CAFSAC Res. Doc. 88/28: 47p.
- Clay, D. and T. Hurlbut. 1988. Assessment of Gulf white hake from NAFO Division 4T in 1988. CAFSAC Res. Doc. 88/63: 46p.
- Clay, D. and T. Hurlbut. 1988. Catch and effort for Canadian Atlantic bluefin tuna (Thunnus thynnus L.). ICCAT SCRS Doc. 88/71: 15p.
- Clay, D. and T. Hurlbut 1988. National Report of Canada. ICCAT SCRS Doc. 88/70: 9p.
- Claytor, R.R. and G.J. Chaput. 1988. Status of Atlantic salmon (Salmo salar) in the Margaree River, 1988. CAFSAC Res. Doc. 88/75: 42p.
- Claytor, R.R. and C.C. Mullins. 1988. Status of Atlantic salmon stocks, Gulf Region, Newfoundland and Labrador, 1987. CAFSAC Res. Doc. 88/1: 44p.
- Comeau, M., Y. Chiasson and M. Moriyasu. 1988. Prince Edward Island snow crab, (Chionoecetes opilio), fishery stock assessment for 1987. CAFSAC Res. Doc. 88/31: 16p.
- Conan, G.Y., M. Moriyasu, E. Wade and M. Comeau. 1988. Assessment and spatial distribution surveys of snow crab stocks by geostatistics. ICES C.M. 1988/K:10: 23p.

- Conan, G.Y., U. Buerkle, E. Wade, M. Chadwick and M. Comeau. 1988. Geostatistical analysis of spatial distribution in a school of herring. ICES C.M. 1988/D:21: 18p.
- Conan, G.Y., M. Moriyasu, M. Comeau, P. Mallet, R. Cormier, Y. Chiasson and H. Chiasson. 1988. Growth and maturation of snow crab, (Chionoecetes opilio). p. 45-66. In G.S. Jamieson and W.D. McKone (ed.) Proceedings of the International Workshop on Snow Crab Biology. Can. MS Rep. Fish. Aquat. Sci. 2005.
- Lanteigne, M. and L.A. Davidson. 1988. Status of the northern Gulf of St. Lawrence Iceland scallop, (Chlamys islandica), stock - 1987. CAFSAC Res. Doc. 88/54: 19p.
- Lanteigne, M. and L.A. Davidson. 1988. Status of the southern Gulf of St. Lawrence Giant scallop, (Placopecten magellanicus), stock - 1987. CAFSAC Res. Doc. 88/55: 39p.
- Legault, J.A. 1988. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 2 Water and Sediment Chemistry Data. Can. Data Rep. Fish. Aquat. Sci. 724 (vol.2): 47p.
- Mallet, P., Y. Chiasson and M. Moriyasu. 1988. A review of catch, fishing effort and biological trends for the 1987 southwestern Gulf of St. Lawrence snow crab, (Chionoecetes opilio) fishery. CAFSAC Res. Doc. 88/32: 39p.
- Maynard, D.R. and N. Branch. 1988. Retention of (Homarus americanus) in three compartment wire traps as a function of escape mechanisms. CAFSAC Res. Doc. 88/40: 10p.
- Maynard, D.R., A.W. Landsburg and Y. Chiasson. 1988. Movement of lobsters (Homarus americanus) in St. George's Bay, effect on the standing stock. CAFSAC Res. Doc. 88/33: 7p.
- Moriyasu, M. and G.Y. Conan. 1988. Aquarium observation on mating behaviour of snow crab, (Chionoecetes opilio). ICES C.M. 1988/K9: 21p.
- Moriyasu, M., Y. Chiasson and C. Bourgeois Godbout. 1988. Prince Edward Island snow crab, (Chionoecetes opilio), fishery stock assessment - 1988 spring season. CAFSAC Res. Doc. 88/56: 20p.
- Nielsen, G.A. 1988. The 1987 4T herring gillnet questionnaire. CAFSAC Res. Doc. 88/51: 26p.
- O'Neil, S.F., K. Newbould and M. Pickard. 1988. 1987 Atlantic salmon sport statistics, Maritime Provinces. Can. Data Rep. Fish. Aquat. Sci. 770: 23p.
- Randall, R.G., G. Landry, A. Madden and P.R. Pickard. 1988. Status of Atlantic salmon in the Restigouche River, 1987. CAFSAC Res. Doc. 88/41: 37p.
- Randall, R.G. and E.J. Schofield. 1988. Status of Atlantic salmon in the Miramichi River, 1987. CAFSAC Res. Doc. 88/49: 37p.
- Sephton, T.W. and C.F. Bryan. 1988. Abundance, distribution and dynamics of the American oyster population of the public fishing area of Caraquet Bay, New Brunswick. Can. Tech. Rep. Fish. Aquat. Sci. 1654: vi, 18p.
- Sinclair, A., J.T. Anderson, E.M.P. Chadwick, J. Gagné, W.D. McKone, J.C. Rice and D. Ware. 1988. Report from the National Workshop on Recruitment. Can. Tech. Rep. Fish. Aquat. Sci. 1626: 261p.

Tallman, R.F. and A. Sinclair. 1988. Assessment of 4T American plaice. CAFSAC Res. Doc. 88/45: 47p.

Tallman, R.F., J.S. Campbell, G. Chouinard and L. Waite. 1988. A key to the commercial flatfish species of the Atlantic region of Canada. Dept. of Fisheries and Oceans, Special Publication 4020: 16p.

## 1989

### PRIMARY PUBLICATIONS PRIMAIRES

Bates, S.S. et al. 1989. The pennate diatom Nitzschia pungens as the primary source of domoic acid, a toxin in shellfish from eastern Prince Edward Island. Can. J. Fish. Aquat. Sci. 46: 1203-1215.

Chadwick, E.M.P. and R.R. Claytor. 1989. Run timing of pelagic fishes in Gulf of St. Lawrence: area species effects. J. Fish. Biol. 35 (Supplement A): 1-9.

Clay, D., W. Stobo, B. Beck and P. Hurley. 1989. Growth and inshore-offshore movements of juvenile pollock (Pollacius virens) along the Atlantic coast of Canada. J. Northw. Atlan. Fish. 9: 37-43.

Clay, D. 1989. Oogenesis and fecundity of haddock (Melanogrammus aeglefinus) from the Nova Scotia shelf. Journal du Conseil 46: 24-34.

Clay, D. 1989. Tagging demersal marine fish in subzero temperatures along the Canadian Atlantic coast. Proc. Internat. Sym. on Fish Marking Tech., Seattle, WA, USA.

Cunjak, R.A., R.G. Randall and E.M.P. Chadwick. 1989. Snorkeling versus electrofishing: a comparison of census techniques in Atlantic salmon rivers. Naturaliste Can. 115: 89-93.

Cunjak, R.A., E.M.P. Chadwick and M. Shears. 1989. Downstream movements and estuarine residence by Atlantic salmon (Salmo salar). Can. J. Fish. Aquat. Sci. 46: 1466-1471.

Johnston, C.E., S.R. Farmer, R.W. Gray and M.J. Hambrook. 1989. Reconditioning and reproductive responses of Atlantic salmon kelts to photoperiod and temperature manipulation. Can. J. Fish. Aquat. Sci. 47: 701-709.

Naidu, K.S., R. Fournier, P. Marsot and J. Worms. 1989. Culture of the sea scallop, (Placopecten magelanicus), opportunities and constraints. p. 211-242. In A.D. Boghen (ed) Cold Water Aquaculture in Atlantic Canada. C.I.R.R.D.

Randall, R.G., M.F. O'Connell and E.M.P. Chadwick. 1989. Fish production in two large rivers: Miramichi and Exploits. p. 292-308. In D.P. Dodge (ed.) Proceedings of the International Large Rivers Symposium. Can. Spec. Publ. Fish. Aquat. Sci. 106.

Sephton, T.W. and C.F. Bryan. 1989. Changes in the abundance and distribution of the principal American oyster public fishing grounds in the southern Gulf of St. Lawrence, Canada. *J. Shellfish Res.* 8: 375-385.

#### SECONDARY PUBLICATIONS SECONDAIRES

Alexander, D.R. and M.M. Niles. 1989. Variation of some meristic characters in alewives, (*Alosa pseudoharengus*), from three rivers in the southern Gulf of St. Lawrence. *Can. Tech. Rep. Fish. Aquat. Sci.* 1688: iv, 6p.

Alexander, D.R. and H. Mayhew. 1989. An evaluation of juvenile gaspereau production in Giant Lake, Nova Scotia. *Can. Tech. Rep. Fish. Aquat. Sci.* 1705: 10p.

Angus, R.B., J.C. Smith, M.F. Stephenson, S. Myers, P. Cormier and S.S. Bates. 1989. Production of domoic acid by the diatom *Nitzschia pungens* in mass, culture. p. 14. In S.S. Bates and J. Worms (ed.) *Proceedings of the 1st Canadian Workshop on Harmful Marine Algae*, Sept. 1989. *Can. Tech. Rep. Fish. Aquat. Sci.* 1712.

Bates, S.S. and J. Worms. 1989. *Proceedings of the 1st Canadian Workshop on Harmful Marine Algae*, Gulf Fisheries Centre, Moncton, N.B. Sept. 27-28, 1989. *Can. Tech. Rep. Fish. Aquat. Sci.* 1712: 58p.

Bates, S.S., A.S.W. de Freitas, R. Pocklington, M.A. Quilliam and J.C. Smith. 1989. Factors influencing the production and release of domoic acid by the diatom *Nitzschia pungens*: nutrient and light limitation. p. 13. In S.S. Bates and J. Worms (ed.) *Proceedings of the 1st Canadian Workshop on Harmful Marine Algae*, Sept. 1989. *Can. Tech. Rep. Fish. Aquat. Sci.* 1712.

Battaler, E.E., A.D. Bogen and M. Moriyasu. 1989. A histological and ultrastructural study of the Y-organ in immature and mature male snow crab, (*Chionoectes opilio*). *Aquaculture '89*, Feb. 12-16, 1989, Los Angeles, USA.

Cairns, D.K. 1989. Gear types, seasonal distribution of effort, and bycatch of the smelt fishery in the southern Gulf of ST. Lawrence. *Can. Tech. Rep. Fish. Aquat. Sci.* 1668: v, 20p.

Cairns, D.K., J.A. Wright and E.M.P. Chadwick. 1989. Distribution and acoustic backscatter of herring in NAFO Divisions 4T and 4Vn, November-December 1988. *CAFSAC Res. Doc.* 89/42: 51p.

Caissie, D. et N. El-Jabi. 1989. Application de l'analyse stochastique des crues au Canada. p. 171-183. Dans *Proceedings of the Annual Conference and the 9th Canadian Hydrotechnical Conference of the Canadian Society for Civil Engineering*, June 8-10, St. John's, Nfld.

Caissie, D., N. El-Jabi et P.J. LeBlanc. 1989. Etude comparative entre la régionalisation et la transposition des informations hydrologiques pour l'analyse des crues. *Can. Tech. Rep. Fish. Aquat. Sci.* 1683: 39p.

Caissie, D. and J. Conlon. 1989. Suspended Sediment Analysis for three P.E.I. Streams using sediment rating curves. *Can. Tech. Rep. Fish. Aquat. Sci.* 1704: 16p.

- Caissie, D. et N. El-Jabi. 1989. Régionalisation de l'écoulement de base des rivières canadiennes. p. 157-170. Dans Proceedings of the Annual Conference and the 9th Canadian Hydrotechnical Conference of the Canadian Society for Civil Engineering, June 8-10, St. John's, Nfld.
- Chadwick, E.M.P., D.K. Cairns and H.M. Dupuis. 1989. Assessment of Atlantic herring in NAFO Division 4T, 1988. CAFSAC Res. Doc. 89/63: 60p.
- Chadwick, E.M.P. 1989. An analysis of 1SW to MSW salmon returns in Gulf of St. Lawrence Rivers. CAFSAC Res. Doc. 89/75: 9p.
- Chadwick, E.M.P. 1989. Benchmark aquatic ecosystems in National Parks. p. 77-81. In D. Harvey, S. Woodley and A. Hawoth (ed.) Proceedings of a workshop sponsored by the Canadian Parks Service and the Heritage Resources Centre held at the University of Waterloo, November 15-18, 1988. Heritage Resource Center, University of Waterloo, Ont.
- Chaput, G.J. and D.R. Alexander. 1989. Mortality rates of alewife in the southern Gulf of St. Lawrence. CAFSAC Res. Doc. 89/38: 23p.
- Chiasson, Y., P. Degrâce and M. Moriyasu. 1989. Review of the snow crab, (Chionoectes opilio) resource in western Cape Breton Island (Areas 18 and 19) for 1988. CAFSAC Res. Doc. 89/13: 30p.
- Chouinard, G.A. 1989. Comparative growth and morphology of the sea scallop (Placopecten magellanicus Gmelin) in the southern Gulf of St. Lawrence. M.Sc. Thesis, Mount Allison University, Sackville, N.B.: xi, 115p.
- Comeau, M., G.Y. Conan and A.D. Jones. 1989. Fluctuations in mating, reproduction and recruitment of the snow crab population in Bonne Bay: Implications to Fisheries Management. CAFSAC Res. Doc. 89/79: 38p.
- Conan, G.Y., R.W. Elnor and M. Moriyasu. 1989. Review of the literature on life-histories in the genus Chionoectes in the light of recent findings on growth and maturity of C. opilio in eastern Canada. p. 163-179. In: Proceedings of the International Symposium on King and Tanner Crabs, Alaska USA, Nov. 28-30.
- Conan, G.Y., M. Moriyasu, D.R. Maynard and Y. Chiasson. 1989. Factors influencing egg production in decapod crustacea with two case studies: Chionoectes opilio and Homarus americanus in the Gulf of St. Lawrence. ICES Shellfish Committee C.M. 1989/mini.04: 53p.
- Conan, G.Y. and D. Stolyarenko. 1989. Report of the workshop on spatial statistical techniques. 16-19 May 1989, Brest, France. ICES C.M. 1989/K:38: 42p.
- Conlon, J.H. and D. Haché. 1989. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 1 Hydraulic and Physiographic, Data Can. Data. Rep. Fish. Aquat. Sci. 724 (vol. 1): 132p.
- Currie, L. and M. Comeau. 1989. Overview of lobster (Homarus americanus) research conducted in Malpeque Bay, P.E.I.: Research recommendations for 1989/90. CAFSAC Res. Doc. 89/71: 9p.
- Currie, L., G. Roach, D. Ferron and W. Landsburg. 1989. Preliminary results of lobster (Homarus americanus) minimum carapace size increase program in the Gulf Cape Breton, N.S. fisheries. CAFSAC Res. Doc. 89/74: 14p.

- Davidson, L.A. and J. Worms. 1989. Stages of gonad development in the sea scallop (Placopecten magellanicus) based on both macroscopic and microscopic observation of the gametogenic cycle. Can. Tech. Rep. Aquat. Sci. 1686: v, 20p.
- de Freitas, A.S.W., S.S. Bates, R. Pocklington, M.A. Quillam and J.L.C. Wright. 1989. Domoic acid: some biological and ecological considerations on the production of the neurotoxic secondary metabolite by the diatom Nitzschia pungens. p. 12. In S.S. Bates and J. Worms (ed.) Proceedings of the 1st Canadian Workshop on Harmful Marine Algae, Sept. 1989. Can. Tech. Rep. Fish. Aquat. Sci. 1712.
- Gray, R.W., J.D. Cameron and E.M.J. Jefferson. 1989. Physiography and potential for Atlantic salmon production. Can. Tech. Rep. Fish. Aquat. Sci. 1710: 58p.
- Johnson, G.R. and S.E. McGladdery. 1989. Diseases of Mussels. In M. Brylinsk (ed.) Biology of the Blue Mussel, (Mytilus edulis): A Manual Prepared for Participants of the Water Quality Monitoring Program for Mussel Growers". Acadia Centre for Estuarine Research Publ. No.9.
- Landry, T. 1989. American smelt, (Osmerus mordax), as host indicator of sealworm, (Pseudoterranova decipiens), abundance in the Gulf of St. Lawrence, Canada. p. 37-41. In H. Moller (ed.) Nematode problems in North Atlantic Fish. Rep. from Workshop on Nematode Problems in North Atlantic Fish. Kiel, FRG. 3-4 April. ICES C.M./F:6.
- Lanteigne, M. et L.A. Davidson. 1989. Evaluation de la pêcherie du pétoncle géant, (Placopecten magellanicus), dans le sud du Golfe du Saint Laurent - 1988. CSCPCA document de recherche 89/20: 22p.
- Lanteigne, M. and L.A. Davidson. 1989. Status of the northern Gulf of St. Lawrence Iceland scallop, (Chlamys islandica) stock - 1988. CAFSAC WP 89/53: 5p.
- Mallet, P., E. Wade, Y. Chiasson, P. Degrâce, G.Y. Conan et M. Moriyasu. 1989. La pêche du crabe des neiges, (Chionoectes opilio) dans le sud-ouest du Golfe Saint-Laurent en 1988: L'analyse de prises, de l'effort de pêche et l'estimation de la biomasse. CSCPCA document de recherche 89/25: 59p.
- McGladdery, S.E. 1989. Lepeophtheirus salomus - sea-lice. AVC-DFO Aquaculture Information Sheets: 2p.
- Moriyasu, M., Y. Chiasson, E. Wade, P. DeGrâce and G.Y. Conan. 1989. Prince Edward Island snow crab, (Chionoectes opilio), fishery stock assessment - 1988 fall season. CAFSAC Res. Doc. 89/27: 20p.
- Moriyasu, M., Y. Chiasson, P. DeGrâce and G.Y. Conan. 1989. Preliminary study on catchability and size structure of snow crab, (Chionoectes opilio) in relation to trap type. ICES Shellfish Comm. C.M. 1989/K:4: 19p.
- Nielsen, G.A. 1989. An analysis of the day versus night catches of the southern Gulf of St. Lawrence groundfish cruises 1985-1988. CAFSAC Res. Doc. 89/54: 18p.
- Nielsen, G.A. 1989. The 1988 herring gillnet questionnaire. CAFSAC Res. Doc. 89/26: 29p.
- Randall, R.G., P.R. Pickard and D. Moore. 1989. Biological assessment of Atlantic salmon in the Miramichi River, 1988. CAFSAC Res. Doc. 89/73: 36p.



- Randall, R.G., G. Landry, A. Madden and R. Pickard. 1989. Biological assessment of Atlantic salmon in the Restigouche River, 1988. CAFSAC Res. Doc. 89/33: 43p.
- Ritchie, W.B. 1989. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 4 Species Composition and Relative Abundance of Benthic Macro-invertebrates. Can. Data Rep. Fish. Aquat. Sci. 724 (vol.4): 45p.
- Ritchie, W.B. 1989. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 3 Estimated Fish Densities and Biological Data for Salmonid Specimens. Can. Data Rep. Fish. Aquat. Sci. 724 (vol.3): 81 p.
- Sephton, T.W. and C.F. Bryan. 1989. Changes in the abundance and distribution of the American oyster population of the Dunk River public fishing area of Bedeque Bay, P.E.I.. Can. Tech. Rep. Fish. Aquat. Sci. 1677: v, 21p.
- Smith, J.C., R. Angus, K. Pauley, P. Cormier, S.S. Bates, L. Hanic, J. Worms and T.W. Sephton. 1989. Toxic blooms of the domoic acid-containing diatom Nitzschia pungens in eastern P.E.I. in the fall of 1988 and late summer of 1989. p. 11. In S.S. Bates and J. Worms (ed.) Proceedings of the 1st Canadian Workshop on Harmful Marine Algae, Sept. 1989. Can. Tech. Rep. Fish. Aquat. Sci. 1712.
- Tallman, R.F. 1989. Assessment of American plaice in NAFO Division 4T to 1988. CAFSAC Res. Doc. 89/79: 45p.
- Vromans, A. and D. Caissie. 1989. Fish Habitat Improvement in the Valleyfield River, P.E.I. (1988): Biological, Chemical and Physical Aspects. Can. Data Rep. Fish. Aquat. Sci. 740: 47p.
- Worms, J., L. Hanic, J.C. Smith and K. Pauley. 1989. Distribution of toxic phytoplankton species in the southern Gulf of Saint Lawrence coastal waters. p. 28. In S.S. Bates and J. Worms (ed.) Proceedings of the 1st Canadian Workshop on Harmful Marine Algae, Sept. 1989. Can. Tech. Rep. Fish. Aquat. Sci. 1712.

## 1990

### PRIMARY PUBLICATIONS PRIMAIRES

- Chadwick, E.M.P., and R.N. O'Boyle. 1990. L'analyse des données de capture et d'effort. p. 77-99. Dans J.C. Brêthes and R.N. O'Boyle. Méthodes d'évaluation des stocks halieutiques. Projet CIEO.-860060. Halifax, Centre international d'exploitation des océans.
- Chadwick, E.M.P. 1990. L'unité de gestion et la notion de stock. p. 31-40 Dans J.C. Brêthes et R.N. O'Boyle. Méthodes d'évaluation des stocks halieutiques. Projet CIEO.-860060. Halifax, Centre d'exploitation des océans.

- Chadwick, E.M.P., D.K. Cairns, H.M. Dupuis, K.V. Ewart, M.H. Kao and G.L. Fletcher. 1990. Plasma antifreeze levels reflect the migratory behavior of Atlantic herring (Clupea harengus harengus) in the southern Gulf of St. Lawrence. *Can. J. Fish. Aquat. Sci.* 47: 1534-1536.
- Chadwick, E.M.P. and R.R. Claytor. 1990. Predictability in a small commercial Atlantic salmon fishery in Western Newfoundland. *Fisheries Research*: 1-13.
- Chouinard, G.A. 1990. Le recrutement partiel. p. 509-549. Dans J.C. Brêthes et R.N. O'Boyle. Méthodes d'évaluation des stocks halieutiques. Projet CIEO-860060. Halifax, Centre international d'exploitation des océans.
- Chouinard, G.A. 1990. Les stratégies d'exploitation. p. 813-820. Dans J.C. Brêthes et R.N. O'Boyle. Méthodes d'évaluation des stocks halieutiques. Projet CIEO 860060. Halifax, Centre international d'exploitation des océans.
- Cunjak, R.A., R.L. Saunders and E.M.P. Chadwick. 1990. Physiological variations in the smolt status of juvenile Atlantic salmon (Salmo salar) from estuarine and riverine environments. *Can. J. Fish. Aquat. Sci.* 47: 813-820.
- Johnston, C.E., S.R. Farmer, R.W. Gray and M.J. Hambrook. 1990. Reconditioning and reproductive responses of Atlantic salmon kelts (Salmo salar) to photoperiod and temperature manipulation. *Can. J. Fish. Aquat. Sci.* 47: 701-710.
- Landry, T. and G.M. Hare. 1990. Abundance of sealworm (Pseudoterranova decipiens) in rainbow smelt (Osmerus mordax) from the Southwestern Gulf of St. Lawrence. p. 119-127. In W.D. Bowen (ed.) Population biology of sealworm (Pseudoterranova decipiens) in relation to its intermediate and seal hosts. *Can. Bull. Fish. Aquat. Sci.* 222.
- McGladdery, S.E., L. Murphy, B.D. Hicks and S.K. Wagner. 1990. The effects of *Stephanostomum tenue* (Digenea Acanthocolpidae) on Marine Aquaculture of the Rainbow Trout, (Salmo gairdneri). 305-315. In F.O. Perkins and T.C. Cheng (ed.) Pathology in Marine Science, Acad. Press, NY.
- McGladdery, S.E. 1990. Shellfish diseases relevant to Canadian bivalve aquaculture. *Bull. Aqua. Assoc. Can.* 3: 7-13.
- McGladdery, S.E. 1990. Shellfish parasites and diseases of the east coast of Canada. *Bull. Aqua. Assoc. Can.* 3: 14-19.
- Pocklington, R., J.E. Milley, S.S. Bates, C.J. Bird, A.S.W. de Freitas and M.A. Quilliam. 1990. Trace determination of domoic acid in seawater and phytoplankton in high-performance liquid chromatography of the flurenylmethoxycarbonyl (FMOC) derivative. *Inter. J. Environ. Anal. Chem.*, 38: 351-368.
- Sephton, T.W., and C.F. Bryan. 1990. Age and growth rate determinations for the Atlantic surf clam, (Spisula solidissima), in Prince Edward Island. *J. Shellfish Res.* 9: 177-185.
- Smith, J.C., P. Odense, R. Angus, S. Bates, C. Bird, P. Cormier, A. de Freitas, C. Léger, D. O'Neil, K. Pauley and J. Worms. 1990. Domoic acid levels in field and laboratory populations of Nitzschia pungens forma multiseriis and Nitzschia pungens forma pungens. *Bull. Aqua. Assoc. Can.* 90: 27-31.

Smith, J.C., R. Cormier, J. Worms, C. Bird, M. Quilliam, R. Pocklington, R. Angus and L. Hanic. 1990. Toxic blooms of the domoic acid containing diatom Nitzschia pungens in the Cardigan River, P.E.I., in 1988. p. 227-232. In E. Graneli, B. Sundstrom, L. Elder and D.M. Anderson (Ed.) Proc. of the 4th Int. Conf. Tox. Mar. Phytoplankton, Elsevier, NY.

Subba Rao, D.V., A.S.W. de Freitas, M.A. Quilliam, R. Pocklington and S.S. Bates. 1990. Rates of production of domoic acid, a neurotoxic amino acid, in the pennate diatom Nitzschia pungens. p. 413-471. In E. Graneli, B. Sundstrom, L. Elder and D.M. Anderson (Ed.) Proc. of the 4th Int. Conf. Tox. Mar. Phytoplankton, Elsevier, NY.

#### SECONDARY PUBLICATIONS SECONDAIRES

Armellin, A., M. Castonguay, F. Gregoire and D.K. Cairns. 1990. Enquête sur la pêche au maquereau (Scomber scombrus) à la senne dans le sud du Golfe du Saint-Laurent. Can. Ind. Rep. Fish. Aquat. Sci. 202: 27p.

Cairns, D.K. and J.A. Wright. 1990. Distribution and acoustic backscatter of herring in NAFO Division 4T, November 1989. CAFSAC Res. Doc. 90/72: 20p.

Caissie, D., et N. El-Jabi. 1990. Effet de la transposition vs régionalisation des informations hydrologiques sur l'analyse des crues. p. 110-129. Dans Proceedings of the 9th Annual CSCE and 1st Biennial Environmental Speciality Conference, May 16-18, 1990, Hamilton, Ont.

Chadwick, E.M.P. 1990. Proceedings of Gulf habitat science workshop/Compte rendu de l'atelier sur les sciences de l'habitat du Golfe. Can. Ind. Rep. Fish. Aquat. Sci. 206: 66, 72p.

Chadwick, E.M.P. 1990. A review of diadromy in fishes. Copeia. 1990: 271-273.

Chadwick, E.M.P. 1990. A review of New World New Mind. Dimensions.

Chaput, G.J., and C.H. LeBlanc. 1990. Assessment of the Margaree gaspereau fishery, 1989. CAFSAC 90/33: 38p.

Chaput, G.J., and C.H. LeBlanc. 1990. Evaluation of the 1989 gaspereau fishery Alosa aestivalis and A. pseudoharengus from the Miramichi River, New Brunswick. CAFSAC Res. Doc. 90/32: 43p.

Chaput, G.J. and R.G. Randall. 1990. Striped bass (Morone saxatilis) from the Gulf of St. Lawrence. CAFSAC Res. Doc. 90/71: 29p.

Chiasson, Y., and M. Hébert. 1990. Literature review on stock delimitations pertaining to the western Cape Breton Island snow crab (Chionoecetes opilio) and advice on a spring fishery in Area 18. CAFSAC Res. Doc. 90/65: 17p.

Chiasson, Y., P. DeGrâce and M. Moriyasu. 1990. Review of the snow crab, (Chionoecetes opilio), fishery in Areas 18 and 19 (Western Cape Breton Island) for 1989. CAFSAC Res. Doc. 90/28: 29p.

Chouinard, G.A., and J.M. Hanson. 1990. Southern Gulf cod (4T and 4Vn (Jan.-Apr.)) p. 54-60. In Report of the ICES Study Group on cod stock fluctuations. Appendix 111. Synthesis of Atlantic cod stocks. ICES C.M. 1990/G:50.

- Chouinard, G.A., G.A. Nielsen, L.G. Currie and J.P. Murphy. 1990. Stock status of the southern Gulf of St. Lawrence cod stock (4T and 4Vn (Jan.-Apr.)) in 1990/Etat du stock de morue du sud du Golfe du St. Laurent (4T et 4Vn (jan.-avr.)) en 1990. CAFSAC Res. Doc. 90/46: 58p.
- Clay, D. and T. Hurlbut. 1990. White hake (*Urophycis tenuis*) from the southern Gulf of St. Lawrence: a review of the fishery in 1989. CAFSAC Res. Doc. 90/74: 42p.
- Claytor, R.R., E.M.P. Chadwick and H.M.C. Dupuis. 1990. Assessment of Atlantic herring in NAFO Division 4T, 1989. CAFSAC Res. Doc. 90/73: 67p.
- Claytor, R.R., and R. Jones. 1990. Assessment of Atlantic salmon, (*Salmo salar*), in the Margaree River, 1989. CAFSAC Res. Doc. 90/27: 22p.
- Claytor, R.R., and S.F. O'Neil. 1990. Interpreting Atlantic salmon (*Salmo salar*) angling statistics on the Margaree River, Nova Scotia. CAFSAC Res. Doc. 90/24: 33p.
- Claytor, R.R., and C.C. Mullins. 1990. Status of Atlantic salmon stocks, Gulf Region, Newfoundland and Labrador, 1989. CAFSAC Res. Doc. 90/22: 49p.
- Claytor, R.R., and C.C. Mullins. 1990. Status of Atlantic salmon stock, Area K, Gulf Region Newfoundland 1989. CAFSAC Res. Doc. 90/16: 24p.
- Claytor, R.R., and H.M.C. Dupuis. 1990. Effects of revising 4T herring catch-at-age matrices in the 1989 assessment. CAFSAC Res. Doc. 90/49: 39p.
- Cunjak, R.A., D. Caissie and N. El-Jabi. 1990. The Catamaran Brook habitat research project: project description and general design of study. Can. Tech. Rep. Fish. Aquat. Sci. 1751: 14p.
- Davidson, K.G., and E. Chin. 1990. A comparison of the taxonomic characteristics and duration of laboratory reared larval of snow crabs, (*Chionoecetes opilio*) (O. Fabricius) and toad crabs, *Hyos* sp. from Atlantic Canada. Can. Tech. Rep. Fish. Aquat. Sci. 1762: 21p.
- DeGrâce, P., Y. Chiasson and M. Moriyasu. 1990. Prince Edward Island snow crab, *Chionoecetes opilio* fishery stock assessment - 1989. CAFSAC Res. Doc. 90/26: 18p.
- Hurlbut, T. and D. Clay. 1990. An investigation of white hake (*Urophycis tenuis*) population structure in the southern Gulf of St. Lawrence NAFO Division 4T using morphimetric and meristic characters. CAFSAC Res. Doc. 90/68: 58p.
- Landry, T., 1990. Annual and geographical variations in sealworm, (*Pseudoterranova decipiens*), larvae in rainbow smelts, (*Osmerus mordax*), from the Gulf of St. Lawrence. Can. Tech. Rep. Fish. Aquat. Sci. 1734: vii, 10p.
- Mallet, M. 1990. Guide d'utilisation du logiciel : modèle multiplicatif. Rapp. tech. can. sci. hal. aquat. 1741: 35p.
- Moriyasu, M., Y.J. Chiasson and P. DeGrâce. 1990. Study on catchability and size structure of snow crab, (*Chionoecetes opilio*), in relation to three different trap types. CAFSAC Res. Doc. 90/29: 16p.
- Nielsen, G. 1990. The 1989 herring gillnet questionnaire. CAFSAC Res. Doc. 90/91: 30p.

- Power, G., R.A. Cunjak, J.F. Flanagan and C. Katapodis. 1990. Biological effects of river ice. In State-of-the-Art report on environment effects of river ice. Ottawa, National research council of Canada.
- Randall, R.G. 1990. Effect of the 1984 to 1988 management plan on harvest and spawning levels of Atlantic salmon in the Restigouche and Miramichi rivers, New Brunswick. CAFSAC Res. Doc. 90/45: 26p.
- Randall, R.G., D.M. Moore and P.R. Pickard. 1990. Status of Atlantic salmon in the Miramichi River during 1989. CAFSAC Res. Doc. 90/4: 36p.
- Randall, R.G., G. Landry, A. Madden and R. Pickard. 1990. Status of Atlantic salmon in the Restigouche River in 1989. CAFSAC Res. Doc. 90/2: 37p.
- Shelton, P.A., J.B. Dempson and E.M.P. Chadwick. 1990. Counts of 1SW and MSW salmon returned as an index of marine survival. CAFSAC Res. Doc. 90/69: 10p.
- Tallman, R. and I. Forest-Gallant. 1990. Assessment of American plaice, Hippoglossoides platessoides, in NAFO Division 4T. CAFSAC Res. Doc. 90/66: 68p.
- Tallman, R.F. 1990. Reduction of uncertainty caused by discarding in the fisheries of the Gulf of St. Lawrence. NAFO SCR Doc. 90/110: 20p.

## 1991

### PRIMARY PUBLICATIONS PRIMAIRES

- Bates, S.S., A.S.W. de Freitas, J.E. Milley, R. Pocklington, M.A. Quilliam, J.C. Smith and J. Worms. 1991. Controls on domoic acid production by the diatom Nitzschia pungens f. multiseries in culture: nutrients and irradiance. Can. J. Fish Aquat. Sci. 48: 1136-1144.
- Cairns, D.K., G. Chapdelaine and W.A. Montevecchi. 1991. Prey exploitation by seabirds in the Gulf of St. Lawrence. p.277-291. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.
- Caissie, D. and N. El-Jabi. 1991. A stochastic study of floods in Canada: truncation level by region. Can. J. Civ. Eng. 18: 328-330.
- Caissie, D. and N. El-Jabi. 1991. A stochastic study of floods in Canada: frequency analysis and regionalization. Can. J. Civ. Eng. 18: 225-236.

- Chadwick, E.M.P. and A. Sinclair. 1991. Fisheries production in the Gulf of St. Lawrence: patterns in availability. p. 125-136. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.
- Chaput, G.J. et C.H. LeBlanc. 1991. Les pêches commerciales de poissons dans les baies, estuaires et rivières du sud-ouest du golfe du Saint-Laurent. p. 293-301. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.
- Chouinard, G.A. and P.V. Mladenov. 1991. Comparative growth of the sea scallop (Placopecten magellanicus) in the southern Gulf of St. Lawrence. p. 261-267. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.
- Clay, D. 1991. Atlantic bluefin tuna (Thunnus thynnus (L.)): a review. p. 89-180 in World meeting on stock assessment of bluefin tunas: strengths and weaknesses. Special report I-ATTC. 7.
- Clay, D. 1991. Seasonal distribution of demersal fish (Osteichthyes) and Skates (Chondrichthyes) in the southeastern Gulf of St. Lawrence. p. 241-259. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.
- Clayton, R.R., H.R. MacCrimmon and B.L. Gots. 1991. Continental and ecological variance components of European and North American Atlantic salmon (Salmo salar) phenotypes. Biol. J. of Linn. Soc. 44: 203-229.
- Clayton, R.R. and E. Verspoor. 1991. Phenotypic divergence between sympatric anadromous and resident Atlantic salmon (Salmo salar) populations. Can. J. Zool. 69: 2846-2852.
- Clayton, R.R. and S.F. O'Neil. 1991. Using small creel surveys and mark-recapture experiments to interpret angling statistics. Trans. Am. Fish. Soc. Sym. 12: 195-205.
- Cunjak, R. and S.E. McGladdery. 1991. The parasite-host relationship of glochidia (Mollusca: Margaritiferidae) on the gills of young-of-the-year Atlantic salmon (Salmo salar). Can. J. Zool. 69: 353-358.
- Doyon, J.F., C. Hudon, R. Morin and F.G. Whoriskey. 1991. Bénéfices à court terme des mouvements anadromes saisonniers pour une population d'omble de fontaine (Salvelinus fontinalis) du Nouveau-Québec. Can. J. Fish. Aquat. Sci. 48: 2212-2222.
- McGladdery, S.E., R.J. Cawthorn and B.C. Bradford. 1991. Perkinsus karlssoni n. sp. (Apicomplexa) in bay scallops Argopecten irradians. Dis. Aquat. Org. 10: 127-137.
- Morin, R. 1991. Atlantic salmon (Salmo salar) in the lower Nastapoka river, Quebec: distribution and origins of salmon in eastern Hudson Bay. Can. J. Zool. 69: 1674-1681.
- Riddell, B.E. and D.P. Swain. 1991. Competition between hatchery and wild coho salmon (Oncorhynchus kisutch); genetic variation for agonistic behaviour in newly-emerged wild fry. Aquaculture 98: 161-172.
- Swain, D.P. and B.E. Riddell. 1991. Domestication and agonistic behaviour in coho salmon: reply to Ruzzante. Can. J. Fish. Aquat. Sci. 48: 520-522.

- Swain, D.P., B.E. Riddell and C.B. Murray. 1991. Morphological differences between hatchery and wild populations of coho salmon (Oncorhynchus kisutch): environmental versus genetic origin. Can. J. Fish. Aquat. Sci. 48: 1783-1791.
- Tallman R.F. and M.C. Healey. 1991. Phenotypic differentiation in seasonal ecotypes of chum salmon, Oncorhynchus keta. Can. J. Fish. Aquat. Sci. 48: 661-671.
- Tallman, R.F. 1991. Reduction of uncertainty caused by discarding in the fisheries of the Gulf of St. Lawrence. NAFO Scientific Council Studies 16: 39-48.
- Tallman, R.F. 1991. Causes of within-season decline in the size at age of American plaice, (Hippoglossoides platessoides). p. 269-275. In J.-C. Therriault (ed.) The Gulf of St. Lawrence: small ocean or big estuary? Can. Spec. Publ. Fish. Aquat. Sci. 113.

## SECONDARY PUBLICATIONS SECONDAIRES

- Bastien-Daigle, S., A. Vromans and M. MacLean. 1991. A guide for fish habitat improvement in New Brunswick/Guide d'amélioration de l'habitat du poisson au Nouveau-Brunswick. Can. Tech. Rep. Fish. Aquat. Sci./Rapp. tech. can. sci. halieut. aquat. 1786: 109, 118p.
- Bourque, C. and/et P.Lévesque. 1991. List of DFO-sponsored publications Science branch-Gulf region / Liste des publications subventionnées par le MPO Direction des sciences-Région du golfe. Can. Manus. Rep. Fish. Aquat. Sci./Rapp. manus. can. sci. halieut. aquat. 2122: 1, 34p.
- Bourque, C. and T.W. Sephton. 1991. Canadian connection: focus on Canadian Department of Fisheries and Oceans, Gulf region. Quart. Newsl. National Shellfish. Assoc. Fall issue: 5-6.
- Brylinsky, M. and T.W. Sephton. 1991. Development of a computer simulation model of a cultured blue mussel (Mytilus edulis) population. Can. Tech. Rep. Fish. Aquat. Sci. 1805: viii, 81p.
- Caissie, D. 1991. A computer software package for instream flow analysis by the flow duration method. Can. Tech. Rep. Fish. Aquat. Sci. 1812: 21p.
- Caissie, D. 1991. The importance of groundwater to fish habitat : base flow characteristics for three Gulf Region rivers. Can. Data Rep. Fish. Aquat. Sci. 814: 25p.
- Chaput, G. and R. Jones. 1991. Assessment of Atlantic salmon (Salmo salar) in the Margaree river, Nova Scotia 1990. CAFSAC Res. Doc. 91/3: 31p.
- Chaput, G. and C. Mullins. 1991. The status of the Atlantic salmon stock of Humber river/Bay of Islands Newfoundland. CAFSAC Res. Doc. 91/14: 28p.
- Chaput, G., C. LeBlanc and G. Nielsen. 1991. Assessment of the Margaree river gaspereau fishery, 1990. CAFSAC Res. Doc. 91/12: 24p.
- Chaput, G. and R. Jones. 1991. Evaluating spawning requirements, returns, escapements and surpluses to conservation levels of Atlantic salmon for selected Gulf Nova Scotia rivers. CAFSAC Res. Doc. 91/73: 23p.

- Chiasson, Y., C. Gallant, P. Degrâce and M. Moriyasu. 1991. Stock assessment and fishery trends of the Prince Edward Island snow crab (Chionoecetes opilio) fishery - 1990. CAFSAC Res. Doc. 91/24: 15p.
- Chiasson, Y., M. Hébert, E. Wade, C. Gallant, P. DeGrâce, P. Mallet et M. Moriyasu. 1991. La pêche au crabe des neiges Chionoecetes opilio dans le sud-ouest du golfe Saint-Laurent en 1990 : Etat de la ressource et l'estimation de la biomasse. CSCPCA Document de recherche 91/27: 22p.
- Chiasson, Y., M. Hébert and M. Moriyasu. 1991. A review of the southern Gulf of St. Lawrence snow crab (Chionoecetes opilio) management zone boundaries. CAFSAC Res. Doc. 91/75: 15p.
- Chouinard, G.A., J.M. Hanson and G. Nielsen. 1991. Definition of juvenile areas for the 4T-Vn (January-April) cod stock. CAFSAC Res. Doc. 91/6: 24p.
- Clay, D. and T. Hurlbut. 1991. Northwest Atlantic tuna : identification and size conversion. Can. Tech. Rep. Fish. Aquat. Sci. 1820: iv, 49p.
- Clay, D. and H. Clay. 1991. Determination of age and growth of white hake (Urophycis tenuis Mitchell) from the southern Gulf of St. Lawrence, Canada (including techniques for commercial sampling). Can. Tech. Rep. Fish. Aquat. Sci. 1828: vi, 29p.
- Clayton, R.R., R.G. Randall and G.J. Chaput. 1991. Forecasting preseason and inseason Atlantic salmon returns to the Miramichi river : parametric and non-parametric approaches. CAFSAC Res. Doc. 91/15: 72p.
- Clayton, R.R., C.C. Mullins and R.A. Jones. 1991. Commercial Atlantic salmon catch for West Newfoundland and South Labrador, Gulf Region: Annual summaries, 1974-1988 and weekly catches, 1987-1988. Can. Data Rep. Fish. Aquat. Sci. 838: vii, 80p.
- Clayton, R.R., G. Nielsen, H.M.C. Dupuis and D.K. Cairns. 1991. Assessment of Atlantic herring in NAFO division 4T, 1990 / Evaluation du hareng de l'Atlantique dans la division 4T de l'OPANO, 1990. CAFSAC Res. Doc. 91/66: 76p.
- Clayton, R.R., E.M.P. Chadwick, G.A. Nielsen, G.J. Chaput, D.K. Cairns, S.C. Courtenay and H.M.C. Dupuis. 1991. Index programs: their value in southern Gulf of St. Lawrence fish stock assessments. ICES C.M. 1991/D1: 16p.
- Comeau, M., G.Y. Conan, G. Robichaud and R.A. Jones. 1991. Life history patterns and population fluctuations of snow crab Chionoecetes opilio in the fjord of Bonne Bay on the west coast of Newfoundland, Canada - from 1983 to 1990. Can. Tech. Rep. Fish. Aquat. Sci. 1817: ix, 73p.
- Courtenay, S.C., G. Landry, A. Madden and R. Pickard. 1991. Status of Atlantic Salmon in the Restigouche river in 1990. CAFSAC Res. Doc. 91/13: 40p.
- Davidson, K.G. and E.A. Chin. 1991. A comparison of the taxonomic characteristics and duration of the laboratory reared larvae of snow crab, Chionoecetes opilio (O. Fabricius) and toad crabs, *Hyas* sp. from Atlantic Canada. Can. Tech. Rep. Fish. Aquat. Sci. 1762: 21p.
- Dupuis, H.M.C. 1991. The effects of using a gonadosomatic index as a method of spawning-group assignment on the catch-a-age matrices for 4T herring. CAFSAC Res. Doc. 91/7: 29p.



- Hanson, J.M., G.A. Chouinard, G.A. Nielsen and/et L.G. Currie. 1991. Stock status of the southern Gulf of St. Lawrence cod stock (4T and 4Vn (Jan.-Apr.)) in 1991 / Etat du stock de morue du sud du golfe du Saint-Laurent (4T et 4Vn(de jan. a avr.)) en 1991. CAFSAC Res. Doc. 91/49: 70p.
- Hanson, J.M., G.A. Chouinard and G.A. Nielsen. 1991. Status of the 4T-Vn (Jan.-Apr.) cod stock - a mid year look. CAFSAC Res. Doc. 91/82: 26p.
- Lanteigne M. and L.-A. Davidson. 1991. Catch and effort statistics for the giant scallop (Placopecten magellanicus) fishery in the southern Gulf of St. Lawrence - historical review from 1923 to 1989. Can. Tech. Rep. Fish. Aquat. Sci. 1804: 59p.
- LeBlanc, C., G. Chaput and G. Nielsen. 1991. Evaluation of the 1990 gaspereau fishery (Alosa pseudoharengus) and (A. aestivalis) from the Miramichi river, New Brunswick. CAFSAC Res. Doc. 91/4: 40p.
- LeBlanc, C.H. and/et G.J. Chaput. 1991. Landings of estuarine fishes in the Gulf of St. Lawrence 1917-1988 / Débarquements de poissons estuariens dans le golfe du Saint-Laurent 1917-1988. Can. Data Rep. Fish. Aquat. Sci. / Rapp. stat. can. sci. halieut. aquat. 842: 101p.
- McGladdery, S.E. and M.F. Stephenson. 1991. Parasites and diseases of suspension and bottom-grower shellfish from eastern Canada. Bull. Aquacult. Assoc. Can. 91: 64-66.
- Moore, D.S., S. Courtenay and P.R. Pickard. 1991. Status of Atlantic salmon in the Miramichi river during 1990. CAFSAC Res. Doc. 91/8: 33p.
- Mullins, C.C. and R.A. Jones. 1991. Status of Atlantic salmon stocks, Gulf Region, Newfoundland and Labrador. CAFSAC Res. Doc. 91/10: 56p.
- Nielsen, G. 1991. The 1990 4T herring gillnet questionnaire. CAFSAC Res. Doc. 91/33: 37p.
- Randall, R.G., J.A. Wright, P.R. Pickard and W.G. Warren. 1991. Effect of run timing on the exploitation by anglers of Atlantic salmon in the Miramichi river. Can. Tech. Rep. Fish. Aquat. Sci. 1790: vii, 80p.
- Sephton, T.W. 1991. Summer mortality of cultured mussels in Prince Edward Island, Canada. Bull. Aquacult. Assoc. Can. 91-2: 43-46.
- Sinclair, A.F. and G.A. Chouinard. 1991. Analysis of research survey catch at age data using a multiplicative model. ICES C.M. 1991/D:39: 8 p.
- Swain, D.P. 1991. Annual variation in the distribution of cod (Gadus morhua) in the southern Gulf of St. Lawrence. NAFO SCR Doc. 91/104: 20 p.
- Tallman, R. and I. Forest-Gallant. 1991. Assessment of American Plaice, Hippoglossoides platessoides, in NAFO Division 4T. CAFSAC Res. Doc. 91/76: 21p.
- Tallman, R. and I. Forest-Gallant. 1991. A biological update of witch flounder, Glyptocephalus cynoglossus, in NAFO Divisions 4R and 4S. CAFSAC Res. Doc. 91/74: 42p.

1992PRIMARY PUBLICATIONS PRIMAIRES

- Cairns, D.K. 1992. Bridging the gap between ornithology and fisheries science : use of seabird data in stock assessment models. *Condor* 94: 811-824.
- Cairns, D.K. 1992. Diving behavior of black guillemots in northeastern Hudson Bay. *Colonial Waterbirds* 15: 245-248.
- Cairns, D.K. 1992. Population regulation of seabird colonies. *Current Ornithol.* 9: 37-61.
- Caissie, D. et N. El-Jabi. 1992. Etude sur le choix du seuil de troncature en analyse des séries de durées partielles : application au Canada. *Rev. Sci. Eau* . 5: 291-307.
- Cawthorn, R.J., R.J. MacMillan and S.E. McGladdery. 1992. Epidemic of Pseudoclossia sp. (Apicomplexa) in bay scallops Argopecten irradians maintained in a warm water recirculation facility. *American Fisheries Society Newsletter* 19: 5p.
- Chaput, G.J., C. LeBlanc and C. Bourque. 1992. Evaluation of an electronic fish measuring board. *ICES J. Mar. Sci.* 49: 335-339.
- Comeau, M. and G.Y. Conan. 1992. Morphometry and gonad maturity of male snow crab, Chionoecetes opilio. *Can. J. Fish. Aquat. Sci.* 49: 2460-2468.
- Cunjak, R.A. 1992. Comparative feeding growth and movements of Atlantic salmon (Salmo salar) parr from riverine and estuarine environments. *Ecology of Freshwater Fish.* 1: 26-34.
- Douglas, D.J., and S.S. Bates. 1992. Production of domoic acid, a neurotoxic amino acid, by an axenic culture of the marine diatom Nitzschia pungens f. multiseriis Hasle. *Can. J. Fish. Aquat. Sci.* 49: 85-90.
- Hanson, J.M. and G.A. Chouinard. 1992. Evidence that size-selective mortality affects growth of Atlantic cod (Gadus morhua L.) in the southern Gulf of St. Lawrence. *J. Fish Biol.* 41: 31-41.
- Holtby, L.B., and D.P. Swain. 1992. Through a glass, darkly: a response to Ruzzante's reappraisal of mirror image stimulation studies. *Can. J. Fish. Aquat. Sci.* 49: 1968-1969.
- Johnston, C.E., M.J. Hambrook, R.W. Gray, and K.G. Davidson. 1992. Manipulation of reproductive function in Atlantic salmon (Salmo salar) kelts with controlled photoperiod and temperature. *Vol. 49: 2055-2061.*
- Landry, T., A.D. Boghen and G.M. Hare. 1992. Les parasites de l'aloise d'été (Alosa aestivalis) et du gaspareau (Alosa pseudoharengus) de la rivière Miramichi, Nouveau-Brunswick. *Can. J. Zool.* 70: 1622-1624.
- Locke, A. 1992. Factors influencing community structure along stress gradients: Zooplankton responses to acidification. *Ecology* 73: 903-909.

- McGladdery, S.E., A.D. Boghen and J. Allard. 1992. Ultrastoma cyprinae (tubellaria) in eastern oyster crassostrea virginica - population dynamics and effects. Bull. Aquacult. Assoc. Can. 92-3: 1-3.
- McGladdery, S.E., N. MacNair, M.F. Stephenson and R.J. Cawthorn. 1992. An intracellular ciliate of blue mussels Mytilus edulis (Abstract). Can. Bull. Society of Zoologists 23: 84.
- Montevecchi, W.A., V.L. Birt-Friesen and D.K. Cairns. 1992. Reproductive energetics and prey harvest of Leach's storm-petrels in the Northwest Atlantic. Ecology 73: 823-832.
- Morin, R. and D.W. Doidge. 1992. Application of matrix population models to anadromous coregonid life cycles. In T.N. Todd and M. Luczynski (eds). Biology and management of coregonid fishes. Pol. Arch. Hydrobiol. 39: 345-352.
- Morse, J.C., G.L. Harp, D.R. Lenat, T.W. Sephton and C.A. Wright. 1992. Ad hoc committee on human resources. Bulletin of North American Benthological Society 9: 212-213.
- Morse, J.C., G.L. Harp, D.R. Lenat, T.W. Sephton and C.A. Wright. 1992. Publications regarding job opportunities for benthic biologists. Bulletin of North American Benthological Society 9: 238-241.
- Parsons, G.J., M.C. Robinson, R.C. Chandler, L.A. Davidson, M. Lanteigne and M.J. Dadswell. 1992. Intra-annual and long-term patterns in the reproductive cycle of giant scallop, Placopecten magellanicus (Bivalvia: Pectinidae) from Passamaquoddy Bay, New Brunswick, Canada. Mar. Ecol. Prog. Ser. 80: 203-214.
- Prévost, E., E.M.P. Chadwick and R.R. Claytor. 1992. Influence of size, winter duration and density on sexual maturation of Atlantic salmon (Salmo salar) juveniles in Little Codroy River (southwest Newfoundland). J. Fish Biol. 41: 1013-1020.
- Schwalme, K. 1992. A quantitative comparison between diet and body fatty acid composition in wild northern pike (Esox lucius L.). Fish Physiol. Biochem. 10: 91-98.
- Scott, W., M.M. Ferguson and R.F. Tallman. 1992. Genetic population structure of American plaice (Hippoglossoides platessoides) from the Gulf of St. Lawrence, Canada. Can. J. Fish. Aquat. Sci. 49: 2538-2545.
- Sinclair, A.F. 1992. Fish distribution and partial recruitment; the case of eastern scotian shelf cod. J. Northw. Atl. Fish Sci. 13: 15-24.
- Swain, D.P. 1992. The functional basis of natural selection for vertebral traits of larvae in the stickleback Gasterosteus aculeatus. Evolution 46: 987-997.
- Swain, D.P. 1992. Selective predation for vertebral phenotype in Gasterosteus aculeatus: reversal in the direction of selection at different larval sizes. Evolution 46: 998-1013.
- Wirgin, I.I., G.-L. Kremer, C. Grunwald, K. Squibb, S.J. Garte, and S. Courtenay. 1992. Effects of prior exposure history on cytochrome P4501A mRNA induction by PCB congener 77 in Atlantic tomcod. Mar. Envir. 34: 1-6.

## SECONDARY PUBLICATIONS SECONDAIRES

- Boghen, A., J. Allard, P. Beninger, E. Bataller, S. McGladdery, M.C. Mehra, T. Sephton. 1991. Manuel technique à l'usage des ostréicultures et rapport annuel du programme de monitoring pour la côte est du Nouveau-Brunswick: édition 1990-1991. Centre de recherche en science de l'environnement: vii, 93p.
- Bourque, C. and/et P. Lévesque. 1992. List of DFO sponsored publications Science Branch - Gulf Region 1982-1991. Rev. ed. / Liste des publications subventionnées par le MPO Direction des Sciences - Région du golfe 1982-1991. Ed. revue et corr. Can. Manusc. Rep. Fish. Aquat. Sci. 2173E / Rapp. manus. can. sci. halieut. aquat. 2173F: 38p.
- Caissie, D., N. El-Jabi, R.A. Cunjak and G. Bourgeois. 1992. Étude hydra-biologique du bassin Catamaran (N.-B.). pp. 407-422. In, Proceedings, Canadian Hydrological Symposium, No. 19 June 15-17, 1992, Winnipeg, Manitoba.
- Chaput, G. 1992. Estimating and incorporating parameter uncertainty when returns of Atlantic salmon are derived from angling catches. CAFSAC Res. Doc. 92/1: 20p.
- Chaput, G. and C. Mullins. 1992. The status of the Atlantic salmon stock of Humber river/Bay of Islands, Newfoundland, 1991. CAFSAC Res. Doc. 92/28: 34p.
- Chaput, G., R. Jones and L. Forsythe. 1992. Assessment of Atlantic salmon in the Margaree river, Nova Scotia, 1991. CAFSAC Res. Doc. 92/26: 40p.
- Chiasson, Y., M. Hébert and M. Moriyasu. 1992. Snow crab (Chionoecetes opilio) fishery assessment for Western Cape Breton in 1992. CAFSAC Res. Doc. 92/118: 32p.
- Chiasson, Y.J., M. Hébert, M. Moriyasu, A. Bourgoïn and D. Noël. 1992. A retrospective look at the development and expansion of the southwestern Gulf of St. Lawrence snow crab, Chionoecetes opilio, fishery. Can. Tech. Rep. Fish. Aquat. Sci. 1847: iv, 23p.
- Chiasson, Y., P. DeGrâce, C. Gallant and M. Moriyasu. 1992. The Prince Edward Island snow crab (Chionoecetes opilio) stock assessment for 1991. CAFSAC Res. Doc. 92/12: 16p.
- Chiasson, Y., R. Campbell and M. Moriyasu. 1992. Review of the western Cape Breton Island snow crab (Chionoecetes opilio) fishery for 1990 and 1991. CAFSAC Res. Doc. 92/11: 40p.
- Chiasson, Y., C. Gallant, P. DeGrâce and M. Moriyasu. 1992. Assessment of Prince Edward Island (zone 25 and 26) snow crab (Chionoecetes opilio) stock for 1992. CAFSAC Res. Doc. 92/110: 18p.
- Chiasson, Y.J., M. Hébert, M. Moriyasu, A. Bourgoïn et D. Noël. 1992. Une analyse rétrospective du développement et expansion de la pêcherie du crabe des neiges, Chionoecetes opilio, dans le sud-ouest du Golfe du Saint-Laurent. Rapp. tech. can. sci. halieut. aquat. 1847F: iv, 24p.
- Chouinard, G.A. 1992. Expected yield for the southern Gulf of St. Lawrence cod stock with and without a winter fishery. CAFSAC Res. Doc. 92/104: 12p.

- Chouinard, G.A., J.M. Hanson and G.A. Nielsen. 1992. Examination of the status of the southern Gulf of St. Lawrence cod stock following the 1992 fall groundfish survey / Examen de l'état du stock de morue du sud du Golfe du St. Laurent après le relevé sur les poissons de fond de l'automne 1992. CAFSAC Res. Doc. 92/105: 30p.
- Chouinard, G.A., T. Hurlbut, B. Morin, J. Baird and C. Bishop. 1992. The Lumpfish (Cyclopterus lumpus) resource in Atlantic Canada. CAFSAC Res. Doc. 92/106: 19p.
- Chiasson, Y., M. Hébert and M. Moriyasu. 1992. Snow crab (Chionoecetes opilio) fishery assessment for Western Cape Breton in 1992. CAFSAC Res. Doc. 92/118: 32p.
- Clay, D., M.M. Ferguson, T. Hurlbut and W. Stott. 1992. An allozyme survey of white hake (Urophycis tenuis) from the southern Gulf of St. Lawrence. Can. Tech. Rep. Fish. Aquat. Sci. 1908: 12p.
- Claytor, R., G. Nielsen, H.M.C. Dupuis and F. Mowbray. 1992. Assessment of Atlantic herring in NAFO division 4T, 1991 / Evaluation du hareng de l'Atlantique dans la division 4T de l'OPANO, 1991. CAFSAC Res. Doc. 92/76: 88p.
- Courtenay, S.C., D. Moore and P. Pickard. 1992. Surpluses to salmon spawning requirements in Gulf N.B. rivers. CAFSAC Res. Doc. 92/13: 13p.
- Courtenay, S.C., R. Pickard, G. Landry, A. Madden and G. Nielsen. 1992. Status of Atlantic salmon in the Restigouche river in 1991. CAFSAC Res. Doc. 92/14: 59p.
- Cunjak, R.A. 1992. The Catamaran Brook project: a working example of integrated resource management. pp.29-34. Proceedings, Integrated Resource Management Seminar, April 7-8, 1992. Fredericton, New Brunswick. Forestry Canada - Maritimes Region. 105p.
- Cunjak, R.A. and E. Chin. 1992. Estuaries as rearing environments for Atlantic salmon (Salmo salar) parr pp. 63-68. In Y. de LaFontaine et al. [ed.]. Juvenile stages: the missing link in fisheries research. Report of a Workshop. Can. Tech. Rep. Fish. Aquat. Sci. 1890.
- Davidson K. and A.T. Bielak. 1992. An update on the biological characteristics and status of Atlantic salmon in the Morell river, Prince Edward Island. CAFSAC Res. Doc. 92/40: 11p.
- Dupuis, H.M.C. and S.C. Courtenay. 1992. Distribution of spring- and fall-spawned juvenile herring (Clupea harengus harengus) in the southern Gulf of St. Lawrence. pp. 76-83 In: de LaFontaine, Y., T. Lambert, G.R. Lilly, W.D. McKone, and R.J. Miller. [ed.] 1992. Juvenile Stages: The Missing Link in Fisheries Research. Report of a Workshop. Can. Tech. Rep. Fish. Aquat. Sci. 1890.
- Giguère, M. et T. Landry. 1992. L'utilisation de l'hydroacoustique comme outil d'échantillonnage pour les relevés sur les mollusques : résultat préliminaires. CAFSAC Res. Doc. 92/95: 13p.
- Hambrook, M.J. and T.G. Lutzac. 1992. A method of counting Atlantic salmon (Salmo salar) smolt without handling during downstream migration. Can. Tech. Rep. Fish. Aqua. Sci. 1859: 5p.
- Hanson, J.M. and G.A. Nielsen. 1992. Catches of 4T-Vn (Jan.-Apr.) cod in the 4Vs winter fishery, 1980-1992. CAFSAC Res. Doc. 92/51: 31p.

- Hanson, J.M., and G.A. Chouinard. 1992. Distribution and feeding of juvenile cod (Gadus morhua) in the principal nursery area of the southern Gulf of St. Lawrence. p. 93-103. In de Lafontaine, Y., T. Lambert, G.R. Lilly, W.D. McKone, and R.J. Miller [ed.] Juvenile Stages: the Missing Link in Fisheries Research. Report of a Workshop. Can. Tech. Rep. Fish. Aquat. Sci. 1890.
- Hanson, J.M., G.A. Chouinard, G.A. Nielsen and L.G. Currie. 1992. Status of the 4T-Vn (Jan.-Apr.) cod stock in 1992. CAFSAC Res. Doc. 92/55: 76p.
- Hébert, M., G. Gallant, Y. Chiasson, P. Mallet, P. DeGrâce et M. Moriyasu. 1992. Le suivi du pourcentage de crabes mous dans les prises commerciales de crabe des neiges (Chionoecetes opilio) dans le sud-ouest du golfe du Saint-Laurent (zone 12) en 1990 et 1991. Rapp. tech. can. sci. halieut. aquat. 1886: v, 18p.
- Hébert, M., Y. Chiasson, P. Mallet, P. DeGrâce, C. Gallant et M. Moriyasu. 1992. Evaluation de l'état du stock de crabe des neiges (Chionoecetes opilio) dans le sud-est du golfe du Saint-Laurent (zone 12) en 1992. CAFSAC Res. Doc. 92/109: 22p.
- Hurlbut, T. and G. Chouinard. 1992. White hake (Urophycis tenuis) from the southern Gulf of St. Lawrence: a review of the fishery in 1990 and 1991. CAFSAC Res. Doc. 92/82: 36p.
- Jones, R.A. and C.C. Mullins. 1992. Commercial Atlantic salmon catch for western Newfoundland and southern Labrador, Gulf Region: annual summaries, 1974-1990 and weekly catches, 1989-1990. Can. Data Rep. Fish. Aquat. Sci. 893: vi, 74p.
- Landry, T., E. Wade et M. Giguère. 1992. Evaluation de gisements de mactre de stimpson, Mactromeris polynyma, dans le Golfe du Saint-Laurent : résultats préliminaires. CAFSAC Res. Doc. 92/86: 29p.
- Lanteigne, M. and L.A. Davidson. 1992. Status of the giant scallop (Placopecten magellanicus) fishery in the southern Gulf of St. Lawrence (Fisheries and Oceans, Gulf Region) - 1990 update. Can. Manuscr. Rep. Fish. Aquat. Sci. 2148: vi, 21p.
- Lanteigne, M. and L.A. Davidson. 1992. Status of the Iceland scallop (Placopecten magellanicus) fisheries on the western coast of Newfoundland (Fisheries and Oceans, Gulf Region) -1990 update. Can. Manuscr. Rep. Fish. Aquat. Sci. 2154: vi, 10p.
- Lanteigne, M. et L.A. Davidson. 1992. Aperçu des rendements par casier et de la taille à maturité sexuelle de buccins communs du nord, Buccinum undatum, capturés le long de la côte est du Nouveau-Brunswick. Rapp. tech. can. sci. halieut. aquat. 1896: 27p.
- Lanteigne, M., L. Lanteigne et A. Noël. 1992. Inventaire de la ressource en oursins pour les régions nord et est du Nouveau-Brunswick: I- Etude par questionnaire. Rapp. manus. can. sci. halieut. aquat. 2181: 25p.
- Mallet, P., M. Hébert, C. Gallant et M. Moriyasu. 1992. Evaluation de l'état du stock de crabe des neiges (Chionoecetes opilio) dans le sud-ouest du golfe du Saint-Laurent en 1991. CAFSAC Res. Doc. 92/19: 21p.
- Maynard, D., F. Savoie, W. Landsburg, G. Roach and E. Wade. 1992. The Cape Breton experiment on legal minimum lobster size increase: an intermediate report. CAFSAC Res. Doc. 92/64: 47p.

- Moore, D.S., S.C. Courtenay, R. Claytor and R. Pickard. 1992. Status of Atlantic salmon in the Miramichi river in 1991. CAFSAC Res. Doc. 92/38: 40p.
- Mullins, C.C., and R.A. Jones. 1992. The status of Atlantic salmon stocks in Gulf region, Western Newfoundland and Southern Labrador, 1991. CAFSAC Res. Doc. 92/78.
- Nielsen, G. 1992. The 1991 4T herring gillnet questionnaire. CAFSAC Res. Doc. 92/30: 32p.
- Sephton, T.W. 1991. Summer mortality of cultured mussels in Prince Edward Island, Canada. Atelier de travail sur la mortalité estivale des moules aux Iles-de-la-Madelaine, Québec. Conseil de l'aquiculture et des pêches du Québec, Québec, April 23-25, 1991: 151-157.
- Sephton, T.W. and D.A. Booth. 1992. Physical oceanography and biological data from the study of the flushing of oyster (*Crassostrea virginica*) larvae from Caraquet Bay, New Brunswick. Can. Manuscr. Rep. Fish. Aquat. Sci. 2162: vii, 61p.
- Sephton, T.W. and T. Landry. 1992. The effects of different fishing methods on the mortality of eastern oysters (*Crassostrea virginica*). Can. Tech. Rep. Fish. Aquat. Sci. 1862: v, 10p.
- Sinclair, A. and G.A. Chouinard 1992. Analysis of research survey catch at age data using a multiplicative model. p. 105-112 in de Lafontaine, Y.T. Lambert, G.R. Lilly, W.D. McKone, and R.J. Miller [ed.] Juvenile stages: the missing link in the fisheries research. Can. Tech. Rep. Fish. Aquat. Sci. 1890.
- Sinclair, A. and G.A. Chouinard. 1992. Application of a multiplicative model to research survey data from two cod stocks. CAFSAC Res. Doc. 92/66: 25p.
- Sinclair, A. 1992. Preliminary analysis of research and commercial indices for 4TVn cod up to 1992. CAFSAC Res. Doc. 92/100: 9p.

## APPENDIX A/ANNEXE A

| <u>CATEGORIES</u> | <u>DESCRIPTION</u>   | <u>EXAMPLES</u>   |
|-------------------|--|---|
| <u>Primary</u>    | <ul style="list-style-type: none"> <li>- original findings</li> <li>- first disclosure</li> <li>- syntheses</li> <li>- formally refereed</li> <li>- usually refereed</li> <li>- wide distribution</li> <li>- abstracted</li> </ul> | <ul style="list-style-type: none"> <li>- journal series</li> <li>- special proceedings</li> <li>- critical reviews</li> <li>- all books and book chapters</li> <li>- CJFAS perspectives</li> <li>- DFO bulletins</li> <li>- DFO special publications</li> </ul>   |
| <u>Secondary</u>  | <ul style="list-style-type: none"> <li>- not usually refereed externally</li> <li>- produced locally</li> <li>- limited distribution</li> </ul>  | <ul style="list-style-type: none"> <li>- Technical reports</li> <li>- Data reports</li> <li>- Industry reports</li> <li>- Manuscript report</li> <li>- Contract reports</li> <li>- ICES reports</li> <li>- CAFSAC research document</li> <li>- INPFC documents</li> <li>- NAFO SCR documents</li> <li>- workshop reports</li> <li>- Thesis</li> </ul> |

---

| <u>CATEGORIE</u>  | <u>DESCRIPTION</u>   | <u>EXEMPLES</u>  |
|-------------------|--|--|
| <u>Primaire</u>   | <ul style="list-style-type: none"> <li>- découvertes originales</li> <li>- primeur scientifique</li> <li>- arbitré officiellement</li> <li>- arbitré ordinairement</li> <li>- grande distribution</li> <li>- indexé</li> </ul> | <ul style="list-style-type: none"> <li>- articles de revue</li> <li>- comptes rendus spéciaux</li> <li>- monographie</li> <li>- chapitre de monographie</li> <li>- perspectives JCSHA</li> <li>- bulletin du MPO</li> <li>- publications spéciales du MPO</li> </ul>   |
| <u>Secondaire</u> | <ul style="list-style-type: none"> <li>- non arbitrée officiellement</li> <li>- publiée localement</li> <li>- distribution limitée</li> </ul>  | <ul style="list-style-type: none"> <li>- Rapports techniques</li> <li>- Rapports de données</li> <li>- Rapports à l'industrie</li> <li>- Rapports de contrat</li> <li>- Rapports de l'ICES</li> <li>- Documents de CSPCA</li> <li>- Documents de l'INPFC</li> <li>- Documents de NAFO</li> <li>- Rapports d'atelier</li> <li>- Thèses</li> </ul> |



## APPENDIX B/ANNEXE B

GULF REGION SPONSORED PUBLICATIONS

Gulf Region Science Branch sponsored publications means the work is supported by the region. This includes work done by staff, joint research with other agencies, and publications by consultants as long as the work was sponsored by Fisheries and Oceans. The list does not include publications of work done by staff before they joined Fisheries and Oceans unless such work was in fact sponsored by Gulf Region Science Branch.

PUBLICATIONS PATRONNÉES DE LA RÉGION DU GOLFE

Une publication patronnée par la Direction des sciences de la Région du Golfe est le résultat d'un travail supporté par la région. Sont inclus dans cette définition, les travaux du personnel, les recherches faites conjointement avec d'autres organismes et les publications préparées par des consultants en autant que le travail est patronné par Pêches et Océans. La liste n'inclut pas les publications du personnel avant leur embauche par le Ministère des pêches et des océans, à moins que ces publications aient été supportées par la Direction des sciences de la Région du Golfe.

## APPENDIX C/ANNEXE C

Bibliographic citations for the Gulf Region's sponsored publications

The following bibliographic citations illustrate the punctuation, style, and abbreviations (according to Serial Sources for the BIOSIS Data Base) for references.

## Journal article

Peterman, R.M. 1982. Model of salmon age structure and its use in pre-season forecasting and studies of marine survival. *Can. J. Fish. Aquat. Sci.* 39: 1444-1452

## Entire issue of journal

Gordon, D.C. Jr., and A.S. Hourston [Ed.] 1983. Proceedings of the Symposium on the Dynamics of Turbid Coastal Environments. *Can. J. Fish. Aquat. Sci.* 40(Suppl. 1):1-365

## Book in a series

Scott, W.B., and E.J. Crossman. 1973. Freshwater fishes of Canada. *Bull. Fish. Res. Board Can.* 184:966p.

## Book not in a series

LeBlond, P.H., and L.A. Mysak. 1989. Waves in the ocean. Elsevier, New York, NY. 602p.

## Part of book

Healey, M.C. 1980. The ecology of juvenile salmon in Georgia Strait, British Columbia. p. 203-229. In W.J. Neil and D.C. Himsworth [ed.] *Salmonid ecosystems of the North Pacific*. Oregon State University Press, Corvallis, OR.

Liste de références pour les publications subventionnées de la Région du Golfe

La liste qui suit donne des exemples de ponctuation, de style et d'abréviations utilisés (d'après les Serial Sources for the BIOSIS Data Base).

## Article du journal

Archambault, D. et E. Bouget. 1983. Importance du régime de dénudation sur la structure et la succession des communautés intertidales de substrat rocheux en milieu subarctique. *Can. J. Fish. Aquat. Sci.* 40: 1278-1292.

## Numéro complet du journal

Gordon, D.C. Jr et A.S. Hourston [Ed.] 1983. Proceedings of the Symposium on the Dynamics of Turbid Coastal Environments. *Can. J. Fish. Aquat. Sci.* 40: (Suppl. 1): 1-365.

## Livre dans une série

Hilton, J.W. et S.J. Slinger. 1981. Nutrition et alimentation de la truite arc-en-ciel. *Publ. spéc. can. sci. halieut. aquat.* 55: 17p.

## Livre ne faisant pas partie d'une série

Forrester, W.D. 1983. Manuel canadien des marées. Ministère des Pêches et des Océans. Service hydrographique du Canada, Ottawa, (Ont.) 148p.

## Partie d'un livre

Aubert, M.J. Aubert, S. Daniel et N. Desirotte. 1982. État actuel de la pollution bactérienne au large des côtes françaises, p.36-40. Dans M. Ruivo [éd.] *La pollution des mers et les ressources biologiques*. Fishing News (Books) Ltd., Londres.

**Corporate author**

American Public Health Association, American Water Works Association, and Water Pollution Control Federation. 1975. Standard methods for the examination of water and waste water. 14th ed. Washington, DC. 1193p.

**Theses**

Kutty, M.N. 1966. Some studies on the respiratory quotient in goldfish and rainbow trout. Ph.D. thesis, Univ. Toronto, Toronto, Ont. 102p. Natl. Libr. Can., Can. Theses Microfilm No. 646

**Reports**

Smith, J.E. 1981. Catch and effort statistics of the Canadian groundfish fishery on the Pacific coast in 1980. Can. Tech. Rep. Fish. Aquat. Sci. 1032: 90p.

**Translation**

Koike, A., and M. Ogura. 1977. Selectivity of meshes and entrances of shrimp traps and crab traps. J. Tokyo Univ. Fish. 64: 1-11. (Transl. form Japanese by Can. Transl. Fish. Aquat. Sci. 4950. 1983.

**Corporation-auteur**

American Public Health Association, American Water Works Association and Water Pollution Control Federation. 1975. Standard methods for the examination of water and waste water. 14e éd. Washington, DC. 1193p.

**Thèse**

Deliste, C. 1969. Écologie, croissance et comportement de l'éperlan du Lac Heney, Comté de Gatineau ainsi que la répartition en eau douce du Québec. Thèse doctorale, Univ. Ottawa, (Ont.). 161p.

**Rapports**

Dutil, D.J., M. Fortin et Y. Vigneault. 1982. L'importance des zones littorales pour les ressources halieutiques. Mémoire émis au Conseil consultatif de l'environnement du Québec. Rapp. manus. can. halieut. aquat. 1653: 29p.

**Traduction**

Koike, A. et M. Ogura. 1977. Selectivity of meshes and entrances of shrimp traps and crab traps. J. Tokyo Unvi. Fish. 64: f1-11. (Traduit du japonais par Can. Transl. Fish. Aquat. Sci. 4950, 1983)

•

•

•

•

•

•