

## Canadian Conference for Fisheries Research (CCFFR)

## Conférence Canadienne de Recherche sur les Pêches (CCRP)

4-6 January 2001 / les 4-6 janvier 2001

Royal York Hotel, Toronto, Ontario

### Thursday evening, 04 January 2001: CONCERT HALL

18:00 - ?	REGISTRATION / INSCRIPTION } SOCIAL MIXER /COCKTAIL } POSTERS
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### Friday AM, 05 January 2001: BALLROOM

<b>Joint CCFFR-SCL Session / Session Conjointe CCRP-SCL: <i>BALLROOM</i></b>	
Chair/President: <i>John Roff (Co-editor, Canadian Journal of Fisheries &amp; Aquatic Sciences)</i>	
08:15	<b>Welcome/Bienvenue:</b> <i>TBA (National Research Council of Canada)</i>
08:30	<b>F. H. Rigler Lecture/Conference F. H. Rigler</b>  <i>Peter Dillon:</i> The use of mass balance measurements in studies of lakes and their catchments.
09:15	<b>J. C. Stevenson Lecture / Conference J. C. Stevenson</b>  <i>Joe Rasmussen:</i> Battling Hydra, the nine-headed monster: understanding the variability of food webs and its importance for fisheries and ecosystem management.
10:00 - 10:30	<b>Break</b>
<b>Joint session (continued): Fisheries and aquatic science then and now</b>	
Chair/President: <i>John Roff (Co-editor, Canadian Journal of Fisheries &amp; Aquatic Sciences)</i>	
10:30	<i>David Schindler:</i> A freshwater crisis? In Canada?
11:15	<i>Carl Walters:</i> Tales from the foraging arena: are we finally able to develop useful predictive models for ecosystem management?
12:00 - 13:20	<b>LUNCH</b>

## Friday PM1, 05 January 2001

	CONFEDERATION 3	CONFEDERATION 4-5	LIBRARY
	<p><b>Life history variation and its implications for fisheries management</b></p> <p><b>Part 1 of 4</b></p> <p>Chair/President: <i>Michael Fox</i></p>	<p><b>Fish community ecology: patterns, explanations and fisheries applications</b></p> <p><b>Part 1 of 3</b></p> <p>Chair/President: <i>David Noakes</i></p>	<p><b>Quantitative predictions in fish ecology: meeting society's needs</b></p> <p><b>Part 1 of 3</b></p> <p>Chair/President: <i>Daniel Boisclair</i></p>
13:20	<p>Life history and conservation biology of marine fishes: perceptions and caveats</p> <p><i>Hutchings, J., and S. Rowe</i></p>	<p>Detecting environmental filters in community ecology: a quantitative approach</p> <p><i>Rodriguez, M.</i></p>	<p>Projecting regional impacts of climate change on freshwater fishes</p> <p><i>Minns, C., and B. Shuter</i></p>
13:40	<p>Temporal changes in the fecundity-size relationship of Atlantic cod, <i>Gadus morhua</i></p> <p><i>Jewett, T., and J. Hutchings</i></p>	<p>Artificial neural networks and the development of predictive models for temperate fish communities</p> <p><i>Olden, J., and D. Jackson</i></p>	<p>Effects of climate and global warming on year-class strength and relative abundance of smallmouth bass in eastern Lake Ontario</p> <p><i>Casselman, J., D. Brown, J. Hoyle, and T. Ecker</i></p>
14:00	<p>Testing for paternal effects on early life history success in Georges Bank haddock</p> <p><i>Rideout, R., M. Litvak, and E. Trippel</i></p>	<p>The temporal variations in piscivorous and planktivorous fish abundance during the nocturnal migration in a lake</p> <p><i>Girard, P., and D. Boisclair</i></p>	<p>Quantity of fisheries data and uncertainty in stock assessment and management</p> <p><i>Chen, Y.</i></p>
14:20	<p>The variation in early growth history and age at maturity in two smallmouth bass populations in Algonquin Provincial Park, Ontario</p> <p><i>Dunlop, E., B. Shuter, and H. Rodd</i></p>	<p>Evaluation of the patterns of stream fish community distribution in boreal forest catchments: implications for forest management</p> <p><i>Mackereth, R., and K. Armstrong</i></p>	<p>Predicting fish communities following wetland restoration</p> <p><i>Davis, J., and D. Jackson</i></p>
14:40	<p>Effect of temperature on the life history of Japanese medaka, independent of growth</p> <p><i>Dhillon, R., and M. Fox</i></p>	<p>Index of biotic integrity vs. multivariate statistical approaches: a case study using Great Plains stream fish communities</p> <p><i>Jackson, D., E. Marsh-Matthews, and W. Matthews</i></p>	<p>The ability of slimy sculpin (<i>Cottus cognatus</i>) to reflect local environmental conditions</p> <p><i>Gray, M., R. Cunjak, and K. Munkittrich</i></p>
15:00-15:20	<b>BREAK</b>		

## Friday PM2, 05 January 2001

	CONFEDERATION 3	CONFEDERATION 4-5	LIBRARY

	<p><b>Life history variation and its implications for fisheries management</b></p> <p><b>Part 2 of 4</b></p> <p>Chair/President: <i>Michael Fox</i></p>	<p><b>Fish community ecology: patterns, explanations and fisheries applications</b></p> <p><b>Part 2 of 3</b></p> <p>Chair/President: <i>Bill Tonn</i></p>	<p><b>Quantitative predictions in fish ecology: meeting society's needs</b></p> <p><b>Part 2 of 3</b></p> <p>Chair/President: <i>Daniel Boisclair</i></p>
15:20	<p>Grow big or go home: a direct test of fitness trade-offs using pumpkinseed sunfish forms</p> <p><i>Jastrebski, C.</i></p>	<p>Perspective of the predator-prey relationship through different spatial scales using horizontal hydroacoustic scanning approach</p> <p><i>Guénard, G., and D. Boisclair</i></p>	<p>Can large scale questions be answered with small scale field sampling?: juvenile Atlantic cod in coastal habitat</p> <p><i>Gregory, R., D. Schneider, J. Brown, and J. Anderson</i></p>
15:40	<p>Genetic comparison between sympatric life histories of <i>oncorhynchus mykiss</i> (anadromous steelhead and freshwater-resident rainbow trout) in British Columbia</p> <p><i>Docker, M.F., and D. Heath</i></p>	<p>Habitat factors affecting fish community structures: an ecological note on southwestern Ontario streams</p> <p><i>Chowdhury, M., and F. Beamish</i></p>	<p>The relative performance and transferability of habitat suitability and probabilistic indices to predict fish distribution patterns in rivers!</p> <p><i>Guay, J-C., D. Boisclair, M. Lapointe, and M. Leclerc</i></p>
16:00	<p>Comparative reproductive life history characteristics of walleye and sauger in Lake Winnipeg, Manitoba</p> <p><i>Johnston, A., W. Leggett, and W. Lysack</i></p>	<p>Exploring the morphological and phylogenetic diversification of fishes in the eastern Brazilian streams: a comparative study</p> <p><i>Peres-Neto, P., C. Bizerril, and D. Jackson</i></p>	<p>Incorporating spatial uncertainty into St. Marys River sea lamprey control decisions</p> <p><i>Haeseke, S., and M. Jones</i></p>
16:20	<p>Influence of a large fjord lake on the migratory patterns of Atlantic salmon smolts</p> <p><i>Dietrich, J., and R. Cunjak</i></p>	<p>Impacts of low-head barriers on stream fishes: taxonomic affiliations and morphological correlates of sensitive species</p> <p><i>McLaughlin, R., L. Porto, and D. Noakes</i></p>	<p>Conserving fish by catching fewer</p> <p><i>Marshall, C., and N. Yaragina</i></p>

### Friday PM3, 05 January 2001

16:45-19:00	<b>POSTER SESSION (see titles below): CONCERT HALL</b>
17:30	<b>CCFFR Business Meeting / Assemblée annuelle de la CCRP: TERRITORIES ROOM</b>
19:00	<b>CCFFR-SCL Buffet Dinner / Buffet CCRP-SCL: IMPERIAL ROOM</b>

### Saturday AM1, 06 January 2001

	<b>CONFEDERATION 3</b>	<b>CONFEDERATION 4-5</b>	<b>LIBRARY</b>
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	<p><b>Life history variation and its implications for fisheries management</b></p> <p><b>Part 3 of 4</b></p> <p>Chair/President: <i>Nigel Lester</i></p>	<p><b>Fish community ecology: patterns, explanations and fisheries applications</b></p> <p><b>Part 3 of 3</b></p> <p>Chair/President: <i>Bill Tonn</i></p>	<p><b>Quantitative predictions in fish ecology: meeting society's needs</b></p> <p><b>Part 3 of 3</b></p> <p>Chair/President: <i>Ed Trippel</i></p>
<b>08:30</b>	<p>Ecotypic variation in morphology of rainbow trout from British Columbia</p> <p><i>Keeley, E., E. Parkinson, and E. Taylor</i></p>	<p>Effects of rainbow smelt invasion on mercury concentrations of predatory fishes in lakes of northwestern Ontario and Manitoba</p> <p><i>Johnston, T., W. Leggett, R. Bodaly, R. Doucett, and R. Cunjak</i></p>	<p>Modeling effects of the coastal marine environment on recruitment across multiple stocks of three species of Pacific salmon</p> <p><i>Mueter, F., B. Pyper, and R. Peterman</i></p>
<b>08:50</b>	<p>Life history variation in Ontario yellow perch (<i>Perca flavescens</i>)</p> <p><i>Purchase, C., B. Henderson, and N. Collins</i></p>	<p>Trophic positions and mercury concentrations of native forage fishes and rainbow smelt in lakes of northwestern Ontario</p> <p><i>Swanson, H., T. Johnston, W. Leggett, R. Bodaly, R. Doucett, and R. Cunjak</i></p>	<p>Modeling the effect of spawning site location on recruitment of lake trout in Lake Superior</p> <p><i>Netto, J., and M. Jones</i></p>
<b>09:10</b>	<p>Management of walleye (<i>Stizostedion vitreum</i>) populations in northeastern Ontario</p> <p><i>Morgan, G., and M. Malette</i></p>	<p>Predicting the spread and impact of introduced fishes in Algonquin Park, Ontario</p> <p><i>Mandrak, N.</i></p>	<p>Using models and data to assess alternate management strategies for sustaining recreational fishing</p> <p><i>Post, J., C. Mushens, A. Paul, and M. Sullivan</i></p>
<b>09:30</b>	<p>Effect of surplus energy on the maturation of walleye: individual and population effects</p> <p><i>Henderson, B., and G. Morgan</i></p>	<p>Prey size of salmonid fishes in streams, lakes and oceans</p> <p><i>Keeley, E., and J. Grant</i></p>	<p>Quantifying juvenile Atlantic cod habitat across spatial scales</p> <p><i>O. M., D. Schneider, and R. Gregory</i></p>
<b>09:50</b>	<p>Ciscoe de fumage: a life history synthesis of bloater chub (<i>Coregonus hoyi</i>)</p> <p><i>Clemens, B., and S. Crawford</i></p>	<p>Winterkill cascade: top-down effects of fish on littoral fauna in boreal plains lakes</p> <p><i>Langlois, P., W. Tonn, E. Prepas, A. Danylchuk, and C. Paszkowski</i></p>	<p>Biological reference points for the management of Bay of Quinte, Lake Ontario walleye</p> <p><i>Stewart, T., J. Bowlby, J. Hoyle, A. Mathers, and T. Schaner</i></p>
<b>10:10-10:40</b>	<b>BREAK</b>		

## Saturday AM2, 06 January 2001

	<b>CONFEDERATION 3</b>	<b>CONFEDERATION 4-5</b>	<b>LIBRARY</b>
	<p><b>General Contributions</b></p> <p><b>Part 1 of 6</b></p> <p>Chair/President: <i>Nigel Lester</i></p>	<p><b>Behavioural ecology and its application to fisheries and aquaculture, Part 1 of 3</b></p> <p>Chair/President: <i>Cindy Pazkowski</i></p>	<p><b>General Contributions</b></p> <p><b>Part 2 of 6</b></p> <p>Chair/President: <i>Jason Schreer</i></p>

10:40	Energetic and morphometric patterns in migrating Fraser River sockeye salmon: the role of migratory distance and elevation  <i>Crossin, G., and S. Hinch</i>	Metapopulations in cod: using tagging data to empirically challenge genetic structure  <i>Smedbol, R., C. Taggart, and R. Stephenson</i>	Does radio-tagging affect the stress physiology of Atlantic salmon smolts?  <i>Connors, B., V. Mathilakath, and R.S. McKinley</i>
11:00	Dynamics of size-structured populations: the importance of overwintering in stream-dwelling salmonid populations  <i>Paul, A., and J. Post</i>	Evidence for spawning site fidelity of Atlantic cod from an acoustic tagging study  <i>Robichaud, D., and G. Rose</i>	Contrasts in the seawater tolerance of freshwater and anadromous inconnu  <i>Howland, K., W. Tonn, and G. Goss</i>
11:20	Home range of adult lake trout in Lake Opeongo, Ontario  <i>Flavelle, L.S., R.S. McKinley, M.R. Ridgway, and T. Middel</i>	Reducing live food requirements for the larviculture of atlantic cod ( <i>Gadus morhua</i> ): using behaviours to compare the effects of prey density and duration of prey availability  <i>Temple-Banner, S., and J. Brown</i>	Measurement of fatigue and recovery using EMG telemetry in rainbow trout ( <i>Onchorhynchus mykiss</i> ) exposed to acute chlorine stress  <i>Hunter, K.J., and R.S. McKinley</i>
11:40	The impact of piscivorous birds on rainbow trout populations in lakes  <i>Beckmann, C., P. Biro, and J. Post</i>	Brood-specific mortality patterns in smallmouth bass: quantifying underlying mechanisms within and among years  <i>Friesen, T., and M. Ridgway</i>	A comparison of the swimming and cardiac performance of farmed and wild atlantic salmon throughout the spawning season  <i>Dunmall, K.M., J.F. Schreer, B. Finstad, and R.S. McKinley</i>
12:00	Implications of life history review for management of lake whitefish ( <i>Coregonus clupeaformis</i> ) fisheries in Lake Huron  <i>Crawford, S.S., and J.A. Holmes</i>	Spatial ecology and density-dependent processes in smallmouth bass  <i>Ridgway, M., and B. Shuter</i>	The physiological response of diploid and triploid brook trout ( <i>Salvelinus fontinalis</i> ) to exhaustive exercise  <i>Hyndmann, C., J. Kieffer, and T. Benfey</i>
12:20-13:20	<b>LUNCH</b>		

## Saturday PM1, 06 January 2001

	CONFEDERATION 3	CONFEDERATION 4-5	LIBRARY
	<b>General Contributions</b>  <b>Part 3 of 6</b>  Chair/President: <i>Nick Collins</i>	<b>Behavioural ecology and its application to fisheries and aquaculture, Part 2 of 3</b>  Chair/President: <i>Cindy Pazkowski</i>	<b>General Contributions</b>  <b>Part 4 of 6</b>  Chair/President: <i>Bob Gregory</i>
13:20	Variation in lake trout growth rates in canadian shield lakes with contrasting food web structures  <i>Bentzen, E., S. Good, and B. Hickie</i>	In situ analysis of feeding motions of juvenile atlantic salmon in relation to turbulent flow structures  <i>Enders, E., T. Buffin-Bélanger, D. Boisclair, and A. Roy</i>	Age 0+ cod abundance increases with habitat complexity  <i>Simmonds, N., D. Schneider, and R. Gregory</i>

13:40	The influence of predation risk on the overwinter mortality and energetic relationships of young-of-the-year walleye  <i>Pratt, T., and M. Fox</i>	Effect of visual isolation on territory size and population density of juvenile rainbow trout ( <i>Oncorhynchus mykiss</i> )  <i>Imre, I., E. Keeley, and J. Grant</i>	Eelgrass increases abundance and reduces predator risk in juvenile cod: an experimental field manipulation  <i>Laurel, B., R. Gregory, and J. Brown</i>
14:00	Influence of food web structure on the bioenergetics of lake trout  <i>Pazzia, I., M. Trudel, M. Ridgway, and J.B. Rasmussen</i>	Energy use and behaviour of up-river migrating adult salmon in the Fraser Canyon: assessing the effects of river features using EMG telemetry  <i>Standen, E., and S. Hinch</i>	Should Gilbert Bay cod be managed as a local population?  <i>Morris, C., and J. Green</i>
14:20	An energetic analysis of polymorphism in lake whitefish  <i>Trudel, M., A. Tremblay, R. Schetagne, and J.B. Rasmussen</i>	Factors affecting the reproductive success of female brook trout  <i>Blanchfield, P., and M. Ridgway</i>	Patterns of population structure in Atlantic herring ( <i>Clupea harengus</i> ): reconciliation with the retention hypothesis  <i>McPherson, A., P. O'Reilly, M. Jones, C. Reiss, and C. Taggart</i>
14:40	Population consequences of behaviour: density-dependent mortality is mediated by adaptive foraging activity for young fish in whole-lake experiments  <i>Biro, P., and J. Post</i>	Status-dependent reproductive activity in male fathead minnows ( <i>Pimephales promelas</i> ): influence of population density  <i>Danylchuk, A., and W. Tonn</i>	Conservation genetics of coaster brook trout  <i>D'Amelio, S., and C.C. Wilson</i>
15:00-15:20	<b>Break</b>		

## Saturday PM2, 06 January 2001

	CONFEDERATION 3	CONFEDERATION 4-5	LIBRARY
	<b>General Contributions</b>  <b>Part 5 of 6</b>  Chair/President: <i>Steve Crawford</i>	<b>Behavioural ecology and its application to fisheries and aquaculture, Part 3 of 3</b>  Chair/President: <i>Nick Collins</i>	<b>General Contributions</b>  <b>Part 6 of 6</b>  Chair/President: <i>Daniel Heath</i>
15:20	Sample size for estimating age class proportions  <i>Morrison, B., J. Hubert, E. Carter, T. Nudds, and S. Crawford</i>	Adaptive behaviour of individuals and the intrapopulation diversification of lake fishes  <i>McLaughlin, R.</i>	Influence of moon phase on the spatial patterns of fish in Lake D $\heartsuit$ Anney, France  <i>Gaudreau, N., J. Guillard, and D. Boisclair</i>
15:40	The effectiveness of isolated (dry) pipeline water crossing techniques to mitigate sediment impacts on brook trout ( <i>Salvelinus fontinalis</i> ) streams  <i>Reid, S., S. Stoklosar, S. Metikosh, and J. Evans</i>	Fitness consequences of habitat use for juvenile cutthroat trout: energetic costs and benefits in pools and riffles  <i>Rosenfeld, J., and S. Boss</i>	Direct field tests of competition among possibly diverging stickleback taxa  <i>Gray, S.</i>

16:00	Growth rate and recruitment of rainbow smelt larvae, <i>Osmerus mordax</i> , in Lac Saint-Jean  <i>Sirois, P., and M. Legault</i>	Growth and foraging rates in relation to habitat used by young-of- the-year atlantic salmon ( <i>Salmo salar</i> )  <i>Girard, I., J. Grant, and S. Steingrimsson</i>	Molecular genetic structure and management of steelhead trout populations in British Columbia  <i>Heath, D., S. Pollard, and C. Herbinger</i>
16:20	Distribution and abundance of whitefish near Douglas Point, Lake Huron  <i>Holmes, J., S. Crawford, D. Noakes, D. Wismer, and C. Gubala</i>	Differences in competitive ability and mortality risk of growth-enhanced transgenic and non-transgenic salmon  <i>Vandersteen, W., M. Abraham, and R. Devlin</i>	Population status of Inner Bay of Fundy Atlantic salmon ( <i>Salmo salar</i> )  <i>Amiro, P.</i>
16:40	Putting the experiment into 'experimental' gillnets  <i>Muir, A., S. Crawford, and P. Vecsei</i>	Swimming kinematics of the flatfish, American plaice  <i>Winger, P., S. Walsh, and P. He</i>	Issues in Great Lakes fish disease monitoring  <i>Good, C., and M. Thorburn</i>
17:00	<b>THE END / FINIS</b>		

## Posters: Thursday and Friday evenings (04 and 05 Jan.) in the CONCERT HALL

1. Posters should go up just before or during the welcoming mixer, on Thursday evening (04 Jan) so that they may be viewed during the mixer.

2. Authors should attend their posters during the "official" poster session on Friday evening, 05 Jan from 16:45 to 19:00.

3. Posters can/should be on display during the entire meeting.

1. Analysis of optical quality, mitochondria and anatomy of lenses of four teleost species. *Bantseev, V., K. Moran, and J. Siva*
2. Fish biodiversity in the Great Lakes. *Berends, M.P., and M.R. Gross.*
3. Community and environmental effects on walleye (*Stizostedion vitreum*) life history variation. *Binks, J., and G. Morgan*
4. Metaallicus - a whole-ecosystem experiment to determine the relationship between atmospheric deposition of mercury and mercury concentrations in fish. *Blanchfield, P., C. Podemski, M. Paterson, J. Rudd, C. Kelly, and R. Harris*
5. Watershed hydrology and the habitat of brook trout in lake ecosystems. *Borwick, J. A. and M. Ridgway*
6. Optimal guarded area in the convict cichlid (*Cichlasoma nigrofasciatum*). *Breau, C. and J. Grant*
7. Can we accurately estimate fish abundance using hydroacoustic? *Brind'Amour, A., and D. Boisclair*
8. Effects of silt on cardiac output of riverine and lacustrine rock bass. *Bunt, C., Cooke S., Schreer J. and Philipp D.*
9. Genetic characterization of an alternative life history strategy in chinook salmon (*Oncorhynchus tshawytscha*). *Busch, C., and D. Heath.*
10. Stable isotope analysis of two brook charr forms (*Salvelinus fontinalis*) in relation with fish morphology and diet composition. *Caron, M., G. Cabana and P. Magnan*
11. Sperm traits and body condition of male bluegills. *Casselmann, S.J., and R.D. Montgomerie*

12. Livewell retention of smallmouth bass: opportunities for minimizing stress and enhancing recovery. Cooke, S., D. Philipp, D. Wahl, and J. Schreer
13. Nest choice by male round goby, *Neogobius melanostomus*. Corkum, L.D., and K.L. Stammer
14. Breeding Ecology of Pacific Salmon in Lake Ontario. Craine, J., M.P. Berends, and M.R. Gross
15. Reaction of ruffe to an electrical barrier at various voltage and pulse settings. Dawson, H., J. Savino and U. Reinhardt
16. Age 0 sea lamprey emergence, dispersal, and movements: the potential for compensatory mechanisms. Derosier, A.L., and M.L. Jones
17. Dispersal of queen conch (*Strombus gigas*) from key nursery grounds: implications for designing no-take fishing reserves. Danylchuk, A., K. Baldwin, and M. Rudd
18. Movements of an Invader in the Saint John River System: the muskellunge, *Esox masquinongy*. Doherty, C. and R.A. Curry
19. Genetic relatedness of early and late run sockeye salmon (*Oncorhynchus nerka*) from the Klukshu River, Canada, using microsatellite markers. Fillatre, E., and D. Heath
20. A comparison of the estimates and precision of sampling obtained using two different fish habitat assessment methods in lakes. Frezza, T.L., N. Lester, L. Carl, and K. Smokorowski
21. Size segregation of atlantic redfish with depth. Gauthier, S., and G.A. Rose
22. Predation-risk of age 0 Atlantic cod with respect to eelgrass patch characteristics. Gorman, A.M., D.C. Schneider, and R.S. Gregory
23. Daily activity patterns and habitat use of juvenile atlantic salmon (*Salmo salar*) in winter. Hiscock, M.J., D.A. Scruton, and J.A. Brown
24. Sex determination in guppies: genes and environment. Hodgins, K., and M.R. Gross
25. Seasonal and diel variation in lake trout (*Salvelinus namaycush*) activity and implications for gillnet catchability. Janoscik, T., N.P. Lester, and N.C. Collins
26. Statistical methods for examining fish density and habitat relationships. Johnson, P.
27. Genetic studies of american lobster (*Homarus americanus*). Jones, M., E. Kenchington, P. Prodohl, P. O'Reilly, A. McPherson, and C. Taggart
28. Temperature induced changes of early life-history traits of Atlantic cod (*Gadus morhua*) larvae. Jordaan, A., and L. Kling
29. Anthropogenic influences on fish communities of the Gull River drainage, Ontario. Kelly, E., and N. Mandrak
30. Do rainbow trout (*Oncorhynchus mykiss*) biomagnify and biotransform chiral polychlorinated biphenyls (PCBs) and organochlorine pesticides enantioselectively? Lau, F., C. Wong, M. Clark, S. Mabury, and D. Muir
31. Management implications of life history variation in northern pike (*Esox lucius*) populations in northeastern Ontario. Malette, M., and G. Morgan
32. The development of a national freshwater fish distribution database: an update. Mandrak, N.
33. Estimation of energetic costs associated to feeding in littoral and pelagic habitats by juvenile brook charr, (*Salvelinus fontinalis*). Marchand, F., P. Magnan, and D. Boisclair
34. Habitat utilization in a trophically polymorphic pumpkinseed (*Lepomis gibbosus*) population. McCairns, R., and M. Fox
35. Development of a hydroacoustic survey method to monitor the status of lake trout populations in Ontario. Middel T.A., N.P. Lester, and C.P. Gubala
36. The bioenergetic basis for anadromy in brook trout (***Salvelinus fontinalis***). Morinville, G.R., and J. Rasmussen
37. Habitat preferences and movements of coaster brook trout in Lake Superior. Mucha, J.M., and R.W. Mackereth
38. Potential effects of selenium on the reproductive fitness of salmonids downstream of an endpit lake. Palace V., P. Siwik, G. Sterling, R. Evans, C. Barons, and J. Holm
39. Pond experiments investigating the effects of small-bodied fish species on growth and survivorship of wood frog larvae. Paszkowski, C., B. Eaton, T. Gartner, and B. Gingras
40. A comparison of four aging techniques for aging the brook trout, *Salvelinus fontinalis*, in Newfoundland. Perry, R., and D. Keefe
41. Potential genetic benefits of mate selection in chinook salmon (*Oncorhynchus tshawytscha*). Pitcher, T., A. Rubaszek, and G. Anderson



42. Performance of two forms of lacustrine brook charr, *Salvelinus fontinalis*, in the pelagic zone. Proulx, R., and P. Magnan
43. An analysis of walleye pollock stock structure in the Bering Sea and North Pacific Ocean using microsatellite DNA markers. O'Reilly, P., M. F. Canino, K.M. Bailey, and P. Bentzen
44. Optimal foraging in juvenile salmon under predation risk: how adding biological realism changes a dynamic foraging model. Reinhardt, U.
45. Demographic issues in the conservation of sturgeon. Robertson, C.T., and M.R. Gross
46. A possible non-sexual origin of a mate preference: are male guppies mimicking fruit? Rodd, H., K. Hughes, G. Grether, and C. Baril
47. The mating system of Atlantic cod. Rowe, S.
48. Innovative techniques for stock discrimination and production estimation in great lakes percid fisheries. Sale, P., B. Fryer, B. Dixon, T. Johnson, T. Pratt, K. Hedges, and M. Latimer
49. The effect of habitat complexity on the abundance of juvenile Atlantic cod (*Gadus morhua*) using artificial reefs. Sargent, P., R. Gregory, and D. Schneider
50. Preliminary comparisons of cardiac function in several fish species. Schreer, J., S. Cooke, K. Dunmall, C. Bunt, and D. Philipp
51. Estimating the impact of wave exposure on fish density in the nearshore zone. Seifried, K., and N. Collins
52. Rainbow trout (*Oncorhynchus mykiss*): sampled by repeated caudle puncture and dorsal aorta cannulation. Singer, T.D., G.N. Wagner, and R.S. McKinley
53. Effects of lipid extraction on the stable isotope signatures (**delta 13C and delta 15N**) of fish: implications for food-web studies. Sotiropoulos, M., W. Tonn, and L. Wassenaar
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