

NEIL D. SCHUBERT

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EDUCATION

1971 - 1975 **Bachelor of Science (First Class Honours)**
Department of Biological Sciences, Simon Fraser University

EMPLOYMENT

Current **Head, Freshwater Ecosystems Section**
Science Branch
Fisheries and Oceans Canada, Burnaby, B.C.

As head of the Freshwater Ecosystems Section, I manage 14 scientists, biologists and technicians who acquire scientific information and deliver advice on the fresh water ecosystems of British Columbia and the Yukon Territory. The Section conducts research into limnology, habitat health and carrying capacity in relation to the effects of timber harvesting, agriculture, urbanization, water withdrawal, energy generation, invasive species, species at risk and fish physiology. Our staff provide expert advice to the public, resource managers, stakeholders and scientific agencies by means of public meetings, court cases, scientific publications and advisory processes. My interests include a broad range of topics related to salmon population dynamics, fish stock assessment and species at risk. I am also a member of the Cooperative Resource Management Institute, a partnership with Simon Fraser University that allows government agencies to interact with university faculty and graduate students to develop solutions to multidisciplinary problems in resource management. I chair the Cultus Sockeye Conservation Team, and co-ordinate Science Branch's role in the implementation of the Wild Salmon Policy.

2000 -2005 **Chief of Stock Assessment**
Lower Fraser Area
Fisheries and Oceans Canada, Delta, B.C.

I managed and set strategic goals and directions for a group of operational biologists and technicians responsible for the assessment of salmon populations in the Lower Fraser Area of British Columbia. The team worked with First Nations and other partners to evaluate the abundance and biological characteristics of various life stages of five salmon species to provide authoritative advice on population status to scientists and managers in the Department, government agencies, domestic and international organizations and the public. My duties included serving as management co-chair of the area occupational safety and health committee, and as chair of the Cultus Sockeye Recovery Team.

1994 - 2000 **Head, Fraser River Sockeye and Pink Program**
Stock Assessment Division, Science Branch
Fisheries and Oceans Canada, Delta, B.C.

As head of one of the Pacific Region's largest operational programs, I was responsible for 24 supervisory or professional positions and up to 100 casual positions, a budget of up to \$3 million, and a housing, boat and equipment inventory of \$4 million. The program delivered the Fraser River sockeye and pink salmon assessments as mandated by the 1985 *Pacific Salmon Treaty*. My duties included serving on the Pacific Salmon Commission Fraser Panel Technical Committee.

1977 - 1994 Fisheries Management Biologist

Management Biology Unit, Fraser River, NBC and Yukon Division
Fisheries and Oceans Canada, New Westminster, B.C.

I planned and directed the assessment of salmon populations and collected and analyzed data from commercial, First Nations and recreational fisheries to provide the scientific basis for recommendations and advice for managing Fraser River salmon populations and the fisheries that impact them. At various times I was responsible for different species and fisheries: coho salmon (1977-1994), First Nations fisheries (1982-1986), recreational fisheries (1984-1994) and chinook salmon (1986-1994). I designed, implemented, analyzed and reported on field studies, represented the Division on domestic and international technical committees and advisory panels, and provided managers the run size estimates and advice that formed the basis for decisions regarding opening and closing fisheries.

1975 - 1979 Assistant Fish Culturist

Capilano Hatchery, Salmonid Enhancement Program
Fisheries and Oceans Canada, North Vancouver, B.C.

As a student working summers and weekends, I supported hatchery operations by feeding fish, sampling juvenile and adult salmon, and conducting facility maintenance.

TRAINING

Staffing: A Resourcing Tool for Managers; *Canada School of Public Service*
Risk Management in the Public Service, an Overview; *Canadian Centre for Management Development*
Basic Finance, Administration, Contracting and Spending for Managers; *Fisheries and Oceans Canada*
Management Modernization Training for DFO Managers; *Fisheries and Oceans Canada*
Staffing Course for Delegated Managers; *Fisheries and Oceans Canada*
Managing Human Performance; *Canadian Centre for Management Development*
The Manager as a Career Coach; *Pacific Joint Career Transition Committee*
Career Development; *Fisheries and Oceans Canada*
Diversity in the Workplace; *Fisheries and Oceans Canada*
Interpersonal Skills; *Fisheries and Oceans Canada*
Critical Skills for Communicating in Conflict; *Justice Institute of B.C., Centre for Conflict Resolution*
Dealing with Interpersonal Conflict; *Justice Institute of B.C., Centre for Conflict Resolution*
Staff Relations for Managers and Supervisors; *Fisheries and Oceans Canada*
Alternate Dispute Resolution Techniques; *Pacific Council of Middle Managers*
Proactive Harassment Prevention: The Leader's Role; *Synergy Outcomes Ltd.*
Investigating Harassment Complaints; *Training and Development Canada, Public Service Commission*
Preventing Harassment in the Workplace; *Training and Development Canada, Public Service Commission*
Modern Safety Management for Supervisors and Managers; *Det Norske Veritas Ltd.*
Occupational Safety and Health Training for Supervisors/Managers; *Fisheries and Oceans Canada*
Riverine Sonar Short Course; *Alaska Department of Fish and Game*

PUBLICATIONS

- Schubert, N.D. 1982. A bi o-physical survey of thirty lower Fraser Valley streams. Can. MS Rep. Fish. Aquat. Sci. 1644: 130 p.
- Schubert, N.D. 1982. Trapping and coded wire tagging of wild coho smolts in the Salmon River (Langley), 1978 to 1980. Can. MS Rep. Fish. Aquat. Sci. 1672: 68 p.
- Schubert, N.D. 1983. The Indian food fishery of the Fraser River: catch summary, 1951 to 1982. Can. Data Rep. Fish. Aquat. Sci. 412: v + 357 p.
- Schubert, N.D. 1983. Trapping and coded wire tagging of wild coho salmon smolts in the Campbell River (Semiahmoo Bay), 1982. Can. MS Rep. Fish. Aquat. Sci. 1738: vii + 24 p.
- Schubert, N.D. 1984. A comparison of wild and cultured Salween Creek coho salmon: 1982 tagging summary. Can. MS Rep. Fish. Aquat. Sci. 1739: vii + 22 p.
- Schubert, N.D. 1984. The Indian food fishery of the Fraser River: 1983 summary. Can. Data Rep. Fish. Aquat. Sci. 479: v + 67 p.
- Schubert, N.D. 1985. The Indian food fishery of the Fraser River: 1984 summary. Can. Data Rep. Fish. Aquat. Sci. 512: 64 p.
- Schubert, N.D. 1986. The Indian food fishery of the Fraser River: 1985 summary. Can. Data Rep. Fish. Aquat. Sci. 560: 80 p.
- Schubert, N.D. 1988. An assessment of four upper Fraser River chinook salmon sport fisheries, 1986. Can. MS Rep. Fish. Aquat. Sci. 1890: 52 p.
- Schubert, N.D. 1989. An assessment of five upper Fraser River chinook salmon sport fisheries, 1987. Can. MS Rep. Fish. Aquat. Sci. 1983: 59 p.
- Schubert, N.D. 1990. An assessment of five upper Fraser River chinook salmon sport fisheries, 1988. Can. MS Rep. Fish. Aquat. Sci. 1983: 58 p.
- Schubert, N.D. 1992. Angler effort and catch in five Fraser River chinook salmon sport fisheries, 1989. Can. Manuscr. Rep. Fish. Aquat. Sci. 2128: 69p.
- Schubert, N.D. 1992. Angler effort and catch in the 1985-1988 lower Fraser River sport fishery. Can. Manuscr. Rep. Fish. Aquat. Sci. 2170: 140 p.
- Schubert, N.D. 1992. The 1985-1988 lower Fraser River sport fishery study: basic effort and catch data by study site. Can. Data Rep. Fish. Aquat. Sci. 886: 140 p.
- Schubert, N.D. 1993. Enumeration of the 1988-1992 Squamish River chinook salmon escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2187: 96 p.
- Schubert, N.D. 1995. Angler effort and catch in four Fraser River system sport fisheries, 1991. Can. Manuscr. Rep. Fish. Aquat. Sci. 2267: 40 p.
- Schubert, N.D. 1995. Angler effort and catch in two Fraser River chinook salmon sport fisheries, 1992. Can.

- Manuscr. Rep. Fish. Aquat. Sci. 2266: 29 p.
- Schubert, N.D. 1995. Angler effort and catch in four Fraser River chinook salmon sport fisheries, 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. 2274: 43 p.
- Schubert, N.D. 1995. Angler effort and catch in four Fraser River chinook salmon sport fisheries, 1994, and a retrospective on nine years of upper Fraser River sport fishery assessment and management. Can. Manuscr. Rep. Fish. Aquat. Sci. 2275: 93 p.
- Schubert, N.D. 1997. Estimation of the 1994 St. Lawrence River sockeye salmon (*Oncorhynchus nerka*) escapement: evaluation of pooled Petersen and stratified mark-recapture estimates of a known population. Can. Tech. Rep. Fish. Aquat. Sci. 2303: 56 p.
- Schubert, N.D. 1997. Estimation of the 1994 Seymour River system sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2430: 37 p.
- Schubert, N.D. 1997. Estimation of the 1994 Mitchell River system sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2429: 33 p.
- Schubert, N.D. 1997. Estimation of the 1994 Weaver Creek system sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2432: 34 p.
- Schubert, N.D. 1997. Estimation of the 1994 Fraser River sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Tech. Rep. Fish. Aquat. Sci. 2201: 62 p.
- Schubert, N.D. 2005. Avaliação de estoques de salmão – princípios Canadenses. Prepared for the São Francisco River Participatory Stock Assessment Workshop, February 3, 2005, Três Marias, Brazil. 20 p.
- Schubert, N.D., and Fanos, B. P. 1997. Estimation of the 1994 Chilko River and Chilko Lake sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2428: 54 p.
- Schubert, N.D., and Fanos, B. P. 1997. Estimation of the 1994 late run sockeye salmon (*Oncorhynchus nerka*) escapement to the Stuart River system. Can. Manuscr. Rep. Fish. Aquat. Sci. 2431: 66 p.
- Schubert, N.D., and Fanos, B. P. 1997. Estimation of the 1994 late run sockeye salmon (*Oncorhynchus nerka*) escapement to the Adams River system. Can. Manuscr. Rep. Fish. Aquat. Sci. 2433: 64 p.
- Schubert, N.D. and Fedorenko, A.J. 1985. Trapping and coded wire tagging of wild coho salmon juveniles in the upper Pitt River system, 1979 and 1980. Can. MS Rep. Fish. Aquat. Sci. 1815: 78 p.
- Schubert, N.D. and Fleming, J.O. 1989. An evaluation of the escapement and survival of selected lower Fraser River area wild coho salmon stocks. Can. MS Rep. Fish. Aquat. Sci. 2006: 121 p.
- Schubert, N.D. and Kalnin, L.W. 1990. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1986 tag application and 1987 spawner enumeration. Can. MS Rep. Fish. Aquat. Sci. 2053: 43 p.
- Schubert, N.D. and Lister, D.B. 1986. A comparison of the catch distribution, harvest rate and survival of wild and cultured Salween Creek coho salmon. Can. Tech. Rep. Fish. Aquat. Sci. 1425: 37 p.
- Schubert, N.D., and Scarborough, G.C. 1996. Radio telemetry observations of sockeye salmon (*Oncorhynchus nerka*) spawners in Chilko River and Chilko Lake : investigation of the role of stress in a mark-recapture study. Can. Tech. Rep. Fish. Aquat. Sci. 2131: 66 p.
- Schubert, N.D., and Tadey, J.A. 1997. Estimation of the 1994 Birkenhead River sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2399: 35 p.

- Schubert, N.D., and Vivian, N.J. 1997. Estimation of the 1994 Shuswap River system sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2427: 48 p.
- Schubert, N.D. and Whyte, I.W. 1992. Angler effort and catch in four Fraser River chinook salmon sport fisheries, 1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2142: 58 p.
- Schubert, N.D. and Zallen, M.R. 1990. An evaluation of the harvest distribution, survival and exploitation rate of selected wild coho salmon stocks of the lower Fraser River area. Can. MS Rep. Fish. Aquat. Sci. 2052: 97 p.
- Schubert, N.D., Rosberg, G.E., Cook, R.J., and Cronkite, G.M.W. 1985. A coded wire tag assessment of Birkenhead River coho salmon: 1982 tag application and 1984 spawner enumeration. Can. MS Rep. Fish. Aquat. Sci. 1816: 55 p.
- Schubert, N.D., Paterson, P.G., and McNair, C.M. 1988. The Fraser River chinook salmon test fishery: data summary, 1980-87. Can. Data Rep. Fish. Aquat. Sci. 709: 193 p.
- Schubert, N.D., Farwell, M.K., and Kalnin, L.W. 1993. Enumeration of the 1992 Harrison River chinook salmon escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2200: 25 p.
- Schubert, N.D., Farwell, M.K., and Kalnin, L.W. 1993. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1991 tag application and 1992-1993 spawner enumeration. Can. Manuscr. Rep. Fish. Aquat. Sci. 2079: 32 p.
- Schubert, N.D., Farwell, M.K., and Kalnin, L.W. 1994. Enumeration of the 1993 Harrison River chinook salmon escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2242: 27 p.
- Schubert, N.D., Farwell, M.K., and Kalnin, L.W. 1994. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1992 tag application and 1993-1994 spawner enumeration. Can. Manuscr. Rep. Fish. Aquat. Sci. 2241: 33 p.
- Schubert, N.D., Whitehouse, T.R., and Cass, A.J. 1997. Design and evaluation of the 1995 Fraser River pink salmon (*Oncorhynchus gorbuscha*) escapement estimation study. Can. Tech. Rep. Fish. Aquat. Sci. 2178: 75 p.
- Schubert, N.D., Cass, A.J., Cone, T.E., Fanos, B.P., Foy, M., Gable, J.H., Grout, J.A., Hume, J.M.B., Johnson, M., Morton, K.F., Shortreed, K.S., and Staley, M.J. 2002. Status of Cultus Lake sockeye salmon (*Oncorhynchus nerka*). PSARC Working Paper S2002-064: 109 p.
- Schubert, N.D., Candy, J.R., Cook, R., Greenbank, J., Lofthouse, D., McNicol, R., Parken, C.K., Sneddon, D., Tadey, J.A., and Wilson, K. 2006. Status of Birkenhead River Chinook salmon (*Oncorhynchus tshawytscha*). Canadian Science Advisory Secretariat Research Document S2006/002: 82 p.
- Bradford, M.J., Hume, J.M.B., Withler, R.E., Lofthouse, D., Barnetson, S., Grant, S., Folkes, M., Schubert, N.D., Huang, A-M. 2010. Status of Cultus Lake sockeye salmon. Can. Sci. Advis. Sec. Res. Doc. 2010/123: vi + 44 p.
- COSEWIC 2003. COSEWIC assessment and status report on the sockeye salmon, *Oncorhynchus nerka* (Cultus population) in Canada. Prepared by N.D. Schubert for the Committee on the Status of Endangered Wildlife in Canada. ix + 57 p.
- Farwell, M.K., Schubert, N.D., Wilson, K.H., and Harrison, C.R. 1987. Salmon escapements to streams entering statistical areas 28 and 29, 1951 to 1985. Can. Data Rep. Fish. Aquat. Sci. 601: 166 p.
- Farwell, M.K., Schubert, N.D., and Kalnin, L.W. 1990. Enumeration of the 1989 Harrison River chinook salmon escapement. Can. MS Rep. Fish. Aquat. Sci. 2078: 24 p.

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- Farwell, M.K., Schubert, N.D., and Kalnin, L.W. 1991. Enumeration of the 1990 Harrison River chinook salmon escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2111: 26 p.
- Farwell, M.K., Schubert, N.D., and Kalnin, L.W. 1991. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1989 tag application and 1990-91 spawner enumeration. Can. Manuscr. Rep. Fish. Aquat. Sci. 2114: 32 p.
- Farwell, M.K., Schubert, N.D., and Kalnin, L.W. 1992. Enumeration of the 1991 Harrison River chinook salmon escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2152: 24 p.
- Farwell, M.K., Schubert, N.D., and Kalnin, L.W. 1992. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1990 tag application and 1991-1992 spawner enumeration. Can. Manuscr. Rep. Fish. Aquat. Sci. 2153: 42 p.
- Houtman, R., and Schubert, N.D. 2000. Estimation of the 1995 Seymour River sockeye salmon (*Oncorhynchus nerka*) escapement. Can. Manuscr. Rep. Fish. Aquat. Sci. 2536: 41 p.
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- Hickey, D.G., Whyte, I.W., and Schubert, N.D. 1987. An assessment of the fall Vedder-Chilliwack River sport fishery, 1985. Can. MS Rep. Fish. Aquat. Sci. 1908: 25 p.
- Irvine, J.R., Gross, M.R., Wood, D.C., Holtby, L.B., Schubert, N.D., and Amiro, P.G. 2005. Canada's species at risk: an opportunity to protect endangered salmon. Fisheries 30 (12): 11-15.
- Kalnin, L.W. and Schubert, N.D. 1991. A coded wire tag assessment of Salmon River (Langley) coho salmon: 1987 tag application and 1988-89 spawner enumeration. Can. MS Rep. Fish. Aquat. Sci. 2068: 37 p.
- Starr, P.J. and Schubert, N.D. 1990. Assessment of Harrison River chinook salmon. Can. MS Rep. Fish. Aquat. Sci. 2085: 47 p.
- Whyte, I.W. and Schubert, N.D. 1990. An assessment of the fall Vedder-Chilliwack River sport fishery, 1988. Can. MS Rep. Fish. Aquat. Sci. 2050: 24 p.
- Whyte, I.W., Schubert, N.D., and Hickey, D.G. 1987. An assessment of the fall Vedder-Chilliwack River sport fishery, 1986. Can. MS Rep. Fish. Aquat. Sci. 1928: 22 p.