

Josh Korman, Ph.D.
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Professional Experience

2011 - Present **Adjunct Professor, Fisheries Centre, University of British Columbia**

1993 - Present **Fish Ecologist, Ecometric Research Inc.**

- statistical analysis of fisheries data;
- development of computer simulation models for resource management;
- experimental design for environmental monitoring;
- fisheries stock assessment (analysis and field work); and

1993 - 1994 **Research Associate, Dr. Randall M. Peterman, School of Resource and Environmental Management, Simon Fraser University.**

- performed numerous statistical analyses using fisheries/environmental data;
- applied decision theory and bayesian approaches to fisheries problems;
- developed and refined computer simulation models;
- summarized research in primary publications and oral presentations; and
- assisted graduate students in their research.

1990 - 1993 **Systems Ecologist, ESSA Environmental and Social Systems Analysts Ltd.**

- developed quantitative tools and methods for fisheries management and habitat assessment;
- designed and implemented data analyses to resolve complex management problems and evaluate environmental monitoring programs;
- facilitated workshops and technical meetings concerning modelling, environmental impact assessment, monitoring design, and multi-user natural resource conflicts; and
- managed projects, prepared project budgets, and supervised project team members.

1984 **Field Technician, Department of Biology, McGill University, Bryants Cove, Newfoundland.** Through an NSERC Undergraduate Fellowship, I joined a multi-year project investigating the effects of meteorological conditions and water mass changes on the survival of egg and larval stages of Atlantic Capelin.

Education

- **PhD Zoology**, Department of Zoology, University of British Columbia, Vancouver, B.C., 2005-2009. Thesis supervisors: Dr. 's Steve Martell and Carl Walters. Early life history dynamics of rainbow trout in a large regulated river.
- **MSc Biological Oceanography**, Department of Oceanography, University of British Columbia, Vancouver, B.C., 1987 - 1989. Thesis supervisor: Dr. T.R. Parsons. Studies focused on phytoplankton ecology, eutrophying effects of salmon farms, and statistical and simulation modelling of nutrient dispersion and harmful phytoplankton blooms.
- **BSc Biology (honours)**, Department of Biology, McGill University, Montreal, Quebec, 1981-1984. Thesis supervisor: Dr. V.H. Smith. Areas of specialization included fisheries biology, phytoplankton ecology and biostatistics.

Awards and Advisory Work

- NSERC Postgraduate Scholarship, 1987 - 1989
- NSERC Undergraduate Fellowship, 1984
- Faculty Scholar, McGill University, 1982 – 1983
- Science Advisor, Trinity River Restoration Program (2004-present)
- Independent Science Advisor, Dunvegan Hydro Electric Project, Peace River, Alberta (2009-present)
- Research Science Panel (Chair), Herring Conservation Research Society (2003-2008)

References

Dr. Carl Walters, University of British Columbia - (604) 822-6320
Dr. Randall Peterman, Simon Fraser University - (604) 291-4683
Dr. Gilles Lacroix, Department of Fisheries and Oceans - (506) 529 -8854

Primary Publications

Korman, J., Walters, C.J., Martell, S.J.D., Pine, W.E. III., and D. Dutterer. 2011. Effects of flow fluctuations on habitat use and survival of age-0 Rainbow trout in a large regulated river. *Can. J. Fish. Aquat. Sci.* 68:1097-1109

Korman, J., Martell, S.J.D., and C.J. Walters. 2011. Describing population dynamics for early life stages of rainbow trout using a stock synthesis model. *Can. J. Fish. Aquat. Sci.* 68:1110-1123.

Korman, J., Kaplinski, M., and T.S. Melis. 2011. Effects of fluctuation flows and a controlled flood on incubation success and early survival rates and growth of age-0 rainbow trout in a large regulated river. *Trans. Am. Fish. Soc.* 140: 487-505.

Korman, J., Decker, A.S., Mossop, B., and J. Hagen.2010. A comparison of electrofishing- and snorkelling-based mark-recapture methods for estimating detection probability and abundance of juvenile steelhead in a medium-sized river. *Nor. Am. J. Fish. Manage.* 30: 1280-1302.

Korman, J., Yard, M., Walters, C., and L.G. Coggins. 2009. Effects of fish size, habitat, flow, and density on capture probabilities of age-0 rainbow trout estimated from electrofishing at discrete sites in a large river. *Trans. Am. Fish. Soc.* 138:58-75.

- Korman, J., and S.E. Campana.** 2009. Effects of hydropeaking on nearshore habitat use and growth of age-0 rainbow trout in a large regulated river. *Trans. Am. Fish. Soc.* 138:76-87.
- Korman, J.** 2009. Early life history dynamics of rainbow trout in a large regulated river. Ph.D. thesis. Department of Zoology, University of British Columbia. 214 pp. <http://hdl.handle.net/2429/4127>
- Korman, J., Melville, C.C., and P.S. Higgins.** 2007. Integrating multiple sources of data on migratory timing and catchability to estimate escapement for steelhead trout (*Oncorhynchus mykiss*). *Can. J. Fish. Aquat. Sci.* 64:1101-1115.
- Korman, J., Wiele, S.M., and M. Torizzo.** 2003. Modelling effects of discharge on habitat quality and dispersal of juvenile humpback chub (*Gila Cypha*) in the Colorado River, Grand Canyon. *Riv. Res. Applic.* 12: 1-23.
- Korman, J., Ahrens, R.N.M., Higgins, P.S., and C.J. Walters.** 2002. Effects of observer efficiency, arrival timing, and survey life on estimates of escapement for steelhead trout (*Oncorhynchus mykiss*) derived from repeat mark-recapture experiments. *Can. J. Fish. Aquat. Sci.* 59: 1116-1131.
- Korman, J. and P.S. Higgins.** 1997. Utility of escapement time series data for monitoring the response of salmon populations to habitat alteration. *Can. J. Fish. Aquat. Sci.* 54:2058-2097.
- Korman, J., R.M. Peterman and C.J. Walters.** 1995. Empirical and theoretical analyses of time-series bias in stock-recruitment relationships of Sockeye salmon (*Oncorhynchus nerka*). *Can. J. Fish. Aquat. Sci.* 52:2174-2189.
- Korman, J., D.R. Marmorek, G. Lacroix, P.G. Amiro, J.A. Ritter, W.D. Watt, R.E. Cutting, and D.C.E. Robinson.** 1994. Development and evaluation of a biological model to assess regional scale effects of acidification on Atlantic salmon. *Can. J. Fish. Aquat. Sci.* 51: 662-680.
- Bradford, M.J., Higgins, P.S., Korman, J., and J. Sneepe.** 2011. Does more water mean more fish? Test of an environmental flow release in the Bridge River, British Columbia. *Freshwater Biology.*
- Melis, T.S., Korman, J., and T.A. Kennedy.** 2011. Abiotic and biotic responses of the Colorado River to a March 2008 controlled flood experiment at Glen Canyon Dam, AZ. *River Res. Appl.*
- Yard, M.D. Coggins, L.G., Baxter, C.V., Bennett, G.E., and J. Korman.** 2011. Trout piscivory in the Colorado River, Grand Canon: effects of turbidity, temperature, and fish prey availability. *Trans. Am. Fish. Soc.* 140:471-486.
- Hagen, J, Decker, A.S., Korman, J., and R.G. Bison.** 2010. Effectiveness of night snorkelling for estimating steelhead parr abundance in a large river basin. *Nor. Am. J. Fish. Manage.* 30: 1303-1314.
- Walters, C.J., Martell, S.J.D., and J. Korman.** 2006. A stochastic approach to stock reduction analysis. *Can. J. Fish. Aquat. Sci.* 63:212-223.
- Bradford, M.J., Korman, J., and P.S. Higgins.** 2005. Using confidence intervals to estimate the response of salmon populations (*Oncorhynchus* spp.) to experimental habitat alterations. *Can. J. Fish. Aquat. Sci.* 62: 2716-2726.
- Walters, C.J. and J. Korman.** 2001. Analysis of stock and recruitment data for deriving spawning threshold levels: models, fitting, precision, diagnostics, pitfalls. In Prévost, E. and G. Chaput [*Editors*]. *Stock, recruitment and reference points: Assessment and management of Atlantic salmon.* INRA Paris 2001.
- Walters, C., J. Korman, L. E. Stevens, and B. Gold.** 2000. Ecosystem modeling for evaluation of adaptive management policies in the Grand Canyon. *Conservation Ecology* 4(2): 1.
- Walters, C.J. and J. Korman.** 1999. Linking recruitment to trophic factors: revisiting the Beverton-Holt recruitment model from a life history and multispecies perspective. *Rev. Fish. Biol. Fisheries.* Vol 9: 1-16.

Walters, C.J. and J. Korman. 1999. Cross-scale modeling of riparian ecosystem responses to hydrologic management. *Ecosystems* 2:411-421.

Lacroix, G.L. and J. Korman. 1996. Timing of episodic acidification in Atlantic salmon rivers influences evaluation of mitigative measures and recovery forecasts. *Can. J. Fish. Aquat. Sci.* 53: 589-599.

Marmorek, D.R., Macqueen, R.M., Wedeles, C.H.R., Korman, J., P.J. Blancher and D.K. McNicol. 1996. Improving pH and alkalinity estimates for regional scale acidification effects: Incorporation of dissolved organic carbon. *Can. J. Fish. Aquat. Sci.* 53: 1602-1608.

Adkison, M.D., Peterman, R.M., Lapointe, M.F., D.M. Gillis and J. Korman. 1996. Alternative models of climatic effects on sockeye salmon (*Oncorhynchus nerka*) productivity in Bristol Bay, Alaska, and the Fraser River, British Columbia. *Fish. Oceanogr.* 5:137-152.

Marmorek, D.R. and J. Korman. 1993. The use of zooplankton in a biomonitoring program to detect lake acidification and recovery. *Water, Air, and Soil* 69: 223-241.

Korman, J. 1989. Enriching effects of salmon farms in British Columbia coastal waters and the influence of flushing and seasonality. Department of Oceanography, University of British Columbia, Vancouver, BC. MSc Thesis. 94 pp.

Selected Reports

Korman, J. 2008. Cheakamus River steelhead adult abundance, juvenile habitat use and abundance monitoring 2007-2008. Final Report. Reported prepared by Ecometric Research for BC Hydro. 99 p.
http://www.bchydro.com/etc/medialib/internet/documents/environment/pdf/wup_-_cheakamus_cmsmon-03.Par.0001.File.CMSMON_03_Cheakamus_Steelhead_Adult_Abundance_2007.pdf

Korman, J., and A. Tompkins. 2008. Estimating regional distributions of freshwater stock productivity, carrying capacity, and sustainable harvest rates for coho salmon using a hierarchical Bayesian modelling approach. PSARC report (in review) prepared by Ecometric Research for Fisheries and Oceans, Canada. 59 p.

Korman, J., and A. Tompkins. 2008. Comparison of the fishery and conservation performance of fixed- and abundance-based exploitation regimes for coho salmon in Southern BC. PSARC report (in review) prepared by Ecometric Research for Fisheries and Oceans, Canada. 47 p.

Korman, J., and J. Grout. 2008. Cultus Lake sockeye population viability analysis. Canadian Science Advisory Secretariat Research Document 2008/072. 51 p.

Wood, C.C., Sneep, D., McAdam, S., Korman, J., and T. Hatfield. 2007. Recovery potential assessment for white sturgeon populations listed under the Species at Risk Act. Canadian Science Advisory Secretariat Research Document 2007/003.

Walters, C.J., Korman, J., and S. McAdam. 2005. An assessment of white sturgeon stock status and trends in the Lower Fraser River. Canadian Science Advisory Secretariat Research Document 2006/066.

Korman, J. 2002. Simulating the response of aquatic and riparian productivity to reservoir operations: Description of the Vegetation and Littoral Components of BC Hydro's Integrated Response Model (IRM). Report prepared by Ecometric Research Inc. for B.C. Hydro, Burnaby, B.C.

Korman, J. and C.J. Walters. 2001. Nechako River white sturgeon recovery planning: Summary of stock assessment and Oct 2-3, Workshop. Report prepared by Ecometric Research Inc. for B.C. Fisheries, Victoria, B.C.

- Korman, J. 2001.** Report of the BC Herring stock assessment review workshop, June 12-14, 2001. Report prepared by Ecometric Research Inc. Dept. of Fisheries and Oceans, Nanaimo, B.C.
- Decker, A.S., J.M. Bratty, S.C. Riley, and J. Korman.** 1999. Estimating standing stock of juvenile coho salmon (*Oncorhynchus kisutch*) and cutthroat trout (*O. clarki*) in a small stream: a comparison of sampling designs. Canadian Technical Report of Fisheries and Aquatic Sciences. No. 2282.
- Lacroix, G., J. Korman, and D.D. Heath.** 1998. Genetic introgression of the domestic Atlantic salmon genome into wild populations: A simulation of requirements for conservation. Canadian Stock Assessment Secretariat Research Document 98/158.
- Korman, J., B. Bravender, and C.D. Levings.** 1997. Utilization of the Campbell River estuary by juvenile Chinook salmon (*Oncorhynchus tshawytscha*) in 1994. Canadian Technical Report of Fisheries and Aquatic Sciences. No. 2169.
- ESSA. 1993.** Review of salmon framing in British Columbia. Report prepared by ESSA Ltd. For BC Ministry of Agriculture, Fisheries, and Food. 109 pp.
- Korman, J., Webb, T., Walters, C.J., Digisi, J., and J. Sawada and L. Huato.** 1993. Small Lakes Integrated Management Model, SLIMM Version 1.0, User's Guide. Prepared by ESSA Ltd. for B.C. Ministry of Environment, Lands, and Parks, Fisheries Branch. 26 pp.
- Korman, J. and E. Parkinson.** 1993. Application of the Large Lakes Kokanee Model to Kootenay Lake, Okanagan Lake, and the Williston Reservoir. Prepared by ESSA Ltd for B.C. Ministry of Environment, Lands, and Parks, Fisheries Branch. 21 pp.
- Korman, J., T.M. Webb and E. Parkinson.** 1993. Large Lakes Kokanee Model, version 2.0, user's guide. Prepared by ESSA Ltd for B.C. Ministry of Environment, Lands, and Parks, Fisheries Branch. 70 pp.
- Korman, J., W.A. Kurz, and D.R. Marmorek.** 1992. Fish/forestry interaction model: workshop summary and model design. Prepared by ESSA Ltd., Vancouver, B.C. for Ministry of Forests, Research Branch, Vancouver, B.C., 79 pp.
- Korman, J., C.J. Perrin, and R.C. Wiegand.** 1990. The feasibility of fertilization of Kootenay Lake, North Arm. Limnotek Research and Development Inc. Prepared for B.C. Ministry of Environment, 108 pp.