

# CURRICULUM VITAE

Name: Christopher M. Good  
Work Address: The Conservation Fund's Freshwater Institute  
1098 Turner Road  
Shepherdstown, WV 25443  
Work Phone: (304) 876-2815 x279  
Fax: (304) 870-2208  
Email: c.good@freshwaterinstitute.org

## EDUCATION

B.Sc. Biomedical Science (Sept. 1992 – June 1996)  
University of Guelph  
M.Sc. Veterinary Epidemiology (Sept. 1997 – Oct. 1999)  
Ontario Veterinary College  
D.V.M. Veterinary Medicine (Sept. 2001 – June 2006)  
Ontario Veterinary College  
Ph.D. Veterinary Epidemiology (Jan. 2000 – Dec. 2006)  
Ontario Veterinary College

## POSITIONS

*Sept. 1997 – Sept. 2003 Diagnostic Technician*  
Ontario Ministry of Natural Resources Fish Health  
Surveillance Laboratory

*Jul. 2006 – Dec. 2006 Laboratory Supervisor and Program Coordinator*  
West Nile Virus and Avian Influenza Surveillance Program,  
Canadian Cooperative Wildlife Health Center

*Jan. 2007 – 2009 Aquaculture Veterinarian*  
The Conservation Fund's Freshwater Institute

*Jan. 2010 – present Director of Aquatic Veterinary Research*  
The Conservation Fund's Freshwater Institute

## PROFESSIONAL LICENSURE

Licensed to practice veterinary medicine in West Virginia (License number 05-2007)

## PUBLICATIONS

### Peer-Reviewed Journals

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (*in review*). The effects of ozonation on performance, health, and welfare of rainbow trout *Oncorhynchus mykiss* in low-exchange water recirculation aquaculture systems. *Aquacultural Engineering*.

Pederson, L.F., Good, C.M., Pederson, P.B. (*in review*). Low-dose hydrogen peroxide application in closed recirculating aquaculture systems. *Aquaculture*.

Good, C., Vinci, B., Summerfelt, S., Snekvik, K., Adams, I., Dilly, S. (*in review*). Assessing the suitability of a partial water reuse system for rearing juvenile Chinook salmon *Oncorhynchus tshawytscha* for stocking in Washington State. *Journal of Aquatic Animal Health*.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2010). The effects of carbon dioxide on performance and histopathology of rainbow trout *Oncorhynchus mykiss* in water recirculation aquaculture systems. *Aquacultural Engineering*, 42, 51-56.

Good, C.M., Thorburn, M.A., Ribble, C.S., Stevenson, R.M.W. (2010). A prospective matched nested case-control study of bacterial gill disease outbreaks in Ontario, Canada government salmonid hatcheries. *Preventive Veterinary Medicine*, 95, 152-157.

Good, C., Davidson, J., Welsh, C., Brazil, B., Snekvik, K., Summerfelt, S. (2009). The impact of water exchange rate on the health and performance of rainbow trout *Oncorhynchus mykiss* in water recirculation aquaculture systems. *Aquaculture*, 294, 80-85.

Davidson, J., Good, C., Welsh, C., Brazil, B., Summerfelt, S. (2009). Heavy metal and waste metabolite accumulation and their effect on rainbow trout performance in a replicated water reuse system operated at low or high system flushing rates. *Aquacultural Engineering*, 41, 136-145.

Good, C.M., Thorburn, M.A., Ribble, C.S., Stevenson, R.M.W. (2009). Rearing unit-level risk factors for bacterial gill disease treatment in two Ontario, Canada government salmonid hatcheries. *Preventive Veterinary Medicine*, 91, 254-260.

Good, C.M., Thorburn, M.A., Stevenson, R.M.W. (2008). Factors associated with the incidence of bacterial gill disease in salmonid lots reared in Ontario, Canada government hatcheries. *Preventive Veterinary Medicine*, 83, 297-307.

Good, C.M., Thorburn, M.A., McEwen, S.A. (2001). Simulation modeling to evaluate the impact of eliminating routine bacterial screening from the Ontario provincial fish disease monitoring program. *Preventive Veterinary Medicine* 50, 101-108.

Good, C.M., Thorburn, M.A., Stevenson, R.M.W. (2001). Host factors associated with the detection of *Aeromonas salmonicida* and *Yersinia ruckeri* in Ontario (Canada) government fish hatcheries. *Preventive Veterinary Medicine* 49, 165-173.

#### Conference Papers, Technical Reports and Trade Press

Good, C. (2010). A qualitative risk assessment evaluating proposed changes to the Connetquot Hatchery and their potential associations with IPNV reintroduction. *Report to the New York State Office of Parks Recreation and Historic Preservation*, 21 pp.

Summerfelt, S.T., Davidson, J. T., Waldrop, T., Good, C. (2010). Rainbow trout attain good growth, health in tank-based recirculating systems. *Global Aquaculture Advocate* 13(2), 36-38.

Good, C., Davidson, J., Snekvik, K., Welsh, C., Summerfelt, S. (2009). Investigating bacterial gill disease outbreaks in rainbow trout *Oncorhynchus mykiss* raised in water recirculation aquaculture systems operated with or without ozonation. In: *Proceedings of the Flavobacterium 2009 Conference*, 3 pp.

Good, C. (2009). A biosecurity assessment for raising juvenile sockeye salmon at Chelan Hatchery (WA). *Report for the Chelan County Public Utility District Hatchery Committee, Wenatchee, WA*, 17 pp.

Good, C. (2009). A review of salmonid disease control policies and best management practices for aquaculture facility biosecurity. *Report for the Chelan County Public Utility District Hatchery Committee, Wenatchee, WA*, 27 pp.

Good, C., Vinci, B. (2009). An observational cohort study to assess performance, health, and welfare of juvenile Chinook salmon *Oncorhynchus tshawytscha* reared in partial water reuse vs. raceway environments. *Report for the Chelan County Public Utility District Hatchery Committee, Wenatchee, WA*, 17 pp.

Waldrop, T., Gearheart, M., Good, C. (2009). Disinfecting recirculating aquaculture systems: post-harvest cleaning. *Hatchery International* January/February 2009, pp.38-39.

Good, C., Davidson, J., Welsh, C., Brazil, B., Snekvik, K., Summerfelt, S.T. (2008). Performance and health assessments of rainbow trout *Oncorhynchus mykiss* in replicated recirculating systems operated at (1) low vs. high makeup rates, (2) low vs. high CO<sub>2</sub> concentrations, and (3) with or without ozonation at low makeup rates. In: *Proceedings of the Seventh International Conference on Recirculating Aquaculture*, pp.18-29.

Davidson, J., Good, C., Welsh, C., Brazil, B., Summerfelt, S.T. (2008). Water quality and treatment efficiency in replicated recirculating systems for salmonids operated under (1) high feed and low flushing conditions or (2) low flushing with or without ozonation. In: *Aquacultural Engineering Society Proceedings VI – 2008 AES Issues Forum*, pp.140-158.

Good, C.M., Barker, I.K. (2006). West Nile Virus Wild Bird Surveillance - Ontario, 2006. *Report on CCWHC Surveillance for West Nile Virus in Ontario*, 19 pp.

Good, C.M., Thorburn, M.A. (2004). A review of epidemiological investigations of bacterial gill disease in Ontario Ministry of Natural Resources fish hatcheries. *Proceedings of the Canadian Freshwater Aquaculture Symposium – Aquaculture Canada 2004*, pp.118-123.

#### Conference Proceedings Abstracts (Primary Author)

Good, C., Vinci, B., Snekvik, K., Adams, I., Summerfelt, S., Dilly, S. (2010). A comparison of the health, performance, and welfare of juvenile Chinook salmon *Oncorhynchus tshawytscha* raised in a pilot partial water reuse system versus a flow-through raceway [abstract]. Book of Abstracts, Aquaculture America 2010 (San Diego, California – March 1-5, 2010). p.393.

Good, C., Waldrop, T., Bæverfjord, G., Hjelde, K., Kenney, P.B., Snekvik, K., Summerfelt, S. (2010). Investigating swimming speed and dissolved oxygen concentration on rainbow trout performance and health [abstract]. Program of the 35<sup>th</sup> Annual Eastern Fish Health Workshop (Shepherdstown, West Virginia – May 24-28, 2010). p.42.

Good, C., Vinci, B., Snekvik, K., Adams, I., Summerfelt, S., Dilly, S. (2010). A comparison of the health, performance, and welfare of juvenile Chinook salmon *Oncorhynchus tshawytscha* raised in a pilot partial water reuse system versus a flow-through raceway [abstract]. Book of Abstracts, Aquaculture America 2010 (San Diego, California – March 1-5, 2010). p.393.

Good, C., Waldrop, T., Bæverfjord, G., Hjelde, K., Kenney, P.B., Snekvik, K., Summerfelt, S. (2010). A factorial study to investigate the effects of swimming speed and dissolved oxygen concentration on rainbow trout performance, health, and welfare [abstract]. Book of Abstracts, Aquaculture America 2010 (San Diego, California – March 1-5, 2010). p.394.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2009). The effects of ozonation on water quality and the health and performance of rainbow trout *Oncorhynchus mykiss* in low-exchange water recirculating aquaculture systems [abstract]. Book of Abstracts, World Aquaculture 2009 (Veracruz, Mexico – September

25-29, 2009). p.361.

Good, C., Davidson, J., Welsh, C., Summerfelt, S. (2009). Investigating bacterial gill disease outbreaks in rainbow trout *Oncorhynchus mykiss* raised in water recirculation aquaculture systems operated with or without ozonation [abstract]. Program and Abstracts, Flavobacterium 2009 (Paris, France – September 21-23, 2009). p.42.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2009). The effects of ozonation on water quality and the health and performance of rainbow trout *Oncorhynchus mykiss* in low-exchange water recirculating aquaculture systems [abstract]. Book of Abstracts, Aquaculture Europe 2009 (Trondheim, Norway – August 14-17, 2009). pp.239-240.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2009). The health and performance of rainbow trout *Oncorhynchus mykiss* in low-exchange recirculating aquaculture systems with high or low dissolved carbon dioxide [abstract]. Book of Abstracts, Aquaculture Europe 2009 (Trondheim, Norway – August 14-17, 2009). pp.241-242.

Good, C., Davidson, J., Welsh, C., Summerfelt, S. (2009). Assessing the health of rainbow trout *Oncorhynchus mykiss* in low-exchange recirculating systems operated with or without ozonation [abstract]. Book of Abstracts, Aquaculture America 2009 (Seattle, Washington – February 15-18, 2009). p.128.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2009). The effects of high vs. low dissolved carbon dioxide on the health and performance of rainbow trout *Oncorhynchus mykiss* in low-exchange recirculating aquaculture systems [abstract]. Book of Abstracts, Aquaculture America 2009 (Seattle, Washington – February 15-18, 2009). p.129.

Good, C. (2008). Recirculating aquaculture and the veterinarian's role in fish health management [abstract]. Proceedings of The Seventh International Conference on Recirculating Aquaculture (Roanoke, Virginia – July 25-27, 2008). p.192.

Good, C., Davidson, J., Welsh, C., Brazil, B., Snekvik, K., Summerfelt, S. (2008). Water quality, fish performance, and health assessment of rainbow trout *Oncorhynchus mykiss* in replicated recirculating systems operated at (1) low vs. high makeup rates, (2) low vs. high CO<sub>2</sub> concentrations, and (3) with or without ozonation at low makeup rates [abstract]. Book of Abstracts, World Aquaculture 2008 (Busan, South Korea – May 19-23, 2008). p.204.

Good, C.M., Waldrop, T.B., Keener, L.S., Barrows, F.T., Kenney, P.B., Snekvik, K.R., Summerfelt, S.T. (2008). The effects of rearing density and diet (fish meal- vs. grain-based) on fin condition, intestinal histopathology, and fillet quality of rainbow trout *Oncorhynchus mykiss* [abstract]. Program for the 33<sup>rd</sup> Annual Eastern Fish Health

Workshop (Atlantic Beach, North Carolina – March 31-April 4, 2008). p.78.

Good, C., Waldrop, T., Keener, L., Barrows, R., Summerfelt, S. (2008). A factorial study assessing production, fin condition, and fillet quality of rainbow trout *Oncorhynchus mykiss* reared at two different densities and fed fishmeal- or grain-based diets [abstract]. Book of Abstracts, Aquaculture America 2008 (Lake Buena Vista, Florida – February 9-12, 2008). p.133.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S. (2008). Evaluating the health of rainbow trout *Oncorhynchus mykiss* in recirculating aquaculture systems operated under high feed and low flushing conditions [abstract]. Book of Abstracts, Aquaculture America 2008 (Lake Buena Vista, Florida – February 9-12, 2008). p.134.

Good, C.M., Thorburn, M.A., Martin, S.W., Stevenson, R.M., Ribble, C.S. (2007). A prospective case-control study of bacterial gill disease outbreaks in Ontario, Canada government salmonid hatcheries [abstract]. Program for the 32<sup>nd</sup> Annual Eastern Fish Health Workshop (Gettysburg, Pennsylvania – June 18-22, 2007). p.75.

Good, C.M., Thorburn, M.A., Martin, S.W., Stevenson, R.M., Ribble, C.S. (2007). A prospective case-control study of bacterial gill disease outbreaks in Ontario, Canada government salmonid hatcheries [abstract]. Program and Abstracts, Flavobacterium 2007 (Shepherdstown, West Virginia – May 2-4, 2007). p.32.

Good, C.M., Davidson, J.W., Welsh, C., Summerfelt, S.T. (2007). The histopathological effects of low make-up water exchange rate on rainbow trout (*Oncorhynchus mykiss*) in recirculating aquaculture systems [abstract]. Program Guide and Abstracts, 15<sup>th</sup> Annual Northeast Farmed Fish Health Management Workshop (Calais, Maine – March 27, 2007). p.23.

Good, C.M., Thorburn, M.A., Martin, S.W., Stevenson, R.M., Ribble, C.S. (2007). A prospective case-control study of bacterial gill disease outbreaks in Ontario, Canada government salmonid hatcheries [abstract]. Program Guide and Abstracts, 15<sup>th</sup> Annual Northeast Farmed Fish Health Management Workshop (Calais, Maine – March 27, 2007). p.24.

## **SELECTED RECENT PRESENTATIONS**

Good, C. (2009). Principles of biosecurity; Fish health and disease. *Water Recirculation Aquaculture Workshop for Colombian trout farmers*, Bogota, Colombia.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S.T. (2009). Recirculating Aquaculture and the Veterinarian's Role in Fish Health Management. *U.S. Food and Drug Administration's Center for Veterinary Medicine*, Rockville, MD.

Good, C., Davidson, J., Welsh, C., Summerfelt, S.T. (2009). Investigating bacterial gill disease outbreaks in rainbow trout raised in water recirculation aquaculture systems operated with or without ozonation. *Flavobacterium 2009*, Paris, France.

Good, C. (2009). Biosecurity in Salmonid Aquaculture. *World Aquaculture 2009 (Invited presentation for special session with Mexican trout producers)*, Veracruz, Mexico.

Good, C., Davidson, J., Welsh, C., Snekvik, K., Summerfelt, S.T. (2009). Health and performance of rainbow trout *Oncorhynchus mykiss* in low-exchange water recirculating aquaculture systems with high or low dissolved carbon dioxide. *Aquaculture Europe 2009*, Trondheim, Norway.

Good, C. (2008). Recirculating aquaculture system culture environment and water quality; Biosecurity and fish health in recirculating aquaculture systems. *The Freshwater Institute's Short Course on Water Reuse for Intensive Fish Culture*, Campbell River, Canada.

Good, C. Davidson, J., Welsh, C., Brazil, B., Snekvik, K., Summerfelt, S. (2008). Water quality, fish performance, and health assessment of rainbow trout *Oncorhynchus mykiss* in replicated recirculating systems. *World Aquaculture 2008*, Busan, South Korea.

Good, C., Waldrop, T., Keener, L., Barrows, F., Summerfelt, S. (2008). A factorial study assessing production, fin condition, and fillet quality of rainbow trout *Oncorhynchus mykiss* reared at two different densities and fed fishmeal - or grain - based diets. *Aquaculture America 2008*, Lake Buena Vista, FL.

Good, C.M., Bebak, J., Vinci, B.J., Summerfelt, S.T. (2007). Engineering for Biosecurity. *Invited Seminar, Danish Institute of Fisheries Research, Hirtshals, Denmark.*