

# Tim C. Edgell, B.Sc., Ph.D.

## Aquatic Ecologist

Dr. Edgell is an ecologist and analytical biologist with experience in communicating complex ideas using simple language. His specialties include population ecology, species' adaptation and fitness (survivorship and reproduction), aquatic ecology, invasive species, endangered species management, and study design and analysis. Recently, Dr. Edgell has been involved in multiple projects about Pacific salmon ecology, including Fraser River sockeye salmon run modelling and within-season tracking of the 2009 Fraser sockeye run to assess potential migration interruption during Port Mann Bridge construction. He has written or reviewed twenty-nine articles for leading scientific journals, and his research has been presented at 13 international scientific conferences.

### EDUCATION

2007-2008	Post-doc Marine Ecology, Bamfield Marine Sciences Centre (BC) & U of Alberta (AB)
2003-2007	Ph.D. Ecology and Evolutionary Biology, University of New Brunswick (NB)
1997-2002	B.Sc. Biology, University of Victoria (BC)

### RECENT PROFESSIONAL EXPERIENCE

**Since January 2009** LGL Ltd. environmental research associates

- Fraser River sockeye salmon run re-construction, modelling
- Assessed effects of Port Mann Bridge construction on 2009 Fraser sockeye salmon run, within-season tracking
- Radio-tagged sockeye salmon and steelhead trout to assess impact of a Columbia River hydro dam on fish passage
- Assessed biological impacts of pink salmon translocation in southern Vancouver Island and Georgia Strait, BC
- Orchestrated the installation of radio telemetry towers along the Peace River (AB) to collect baseline data about fish migrations prior to a hydroelectric development
- Assessed the impact of underwater noise on fish assemblages in the Caspian Sea, relating to oil and gas development
- Assessed the risk of a marine geophysical survey on deep sea fishes along the Endeavour Ridge (Pacific Ocean)
- Planned an endangered species recovery effort for Northern Leopard Frogs (ongoing) and Great Basin Spadefoots in interior British Columbia

- Scientific leader, benthic ecology, for a long-term endangered western gray whale study along Sakhalin Island, related to major oil and gas development
- Technical and Safety Crew Leader for nearshore Arctic cruise, relating to oil and gas exploration
- Arctic offshore sampling: Collected benthic invertebrates and zooplankton from nearshore to 1000+ m water depths to explore biodiversity; oversaw operation of box coring, Agassiz (bottom) trawls, plankton tows, and core sampling from seafloor expulsion features
- Monitored disturbances to marine mammals in relation to military training activities, southern Vancouver Island

**2007-2008** Bamfield Marine Sciences Centre and the University of Alberta

- Postdoctoral Fellow, Marine Invertebrate Ecology
- Studied how native species adapt to introduced enemies

**2007** University of New Brunswick, NB, Canada

- Lecturer, Introduction to Marine Sciences
- Developed and delivered curriculum including physical, chemical, and biological oceanography, air-sea interface, currents and global energy transport

**2007–present** Invited referee:

- Ecology (1); Estuarine, Coastal and Shelf Science (1); Evolution (1); Functional Ecology (1); Journal of Evolutionary Biology (2); Journal of Experimental Marine Biology and Ecology (1); Journal of Molluscan Studies (4); Marine and Freshwater Research (1); Marine Biology (1); Marine Ecology Progress Series (4); Oecologia (1); Proceedings of the National Academy of Sciences, USA (1)

## TECHNICAL REPORTS AND PUBLICATIONS

TC Edgell, RC Bocking (2010) Ecological, Genetic, and Biological risk assessment for pink salmon net pen projects near Sidney, BC, and in the Strait of Georgia: Aquatic Organisms Risk Analysis. Prepared for Freshwater Fisheries Society of B.C. (FFSBC)

TC Edgell, J Hollander (2010) The evolutionary ecology of European green crab *Carcinus maenas* in North America. *In*: B Galil, P Clarke (eds) Alien Marine Crustaceans – distribution, biology and impacts. Springer Series

TC Edgell (2010) Past predation risk induces an intertidal whelk (*Nucella lamellosa*) to respond to more dilute concentrations of its predator's scent. **Marine Biology** 157(1): 215-219

VC Hawkes, TC Edgell (2009) A Strategic and operational framework for reintroducing the Northern Leopard Frog (*Lithobates pipiens*) to the Rocky Mountain Designatable Unit in British Columbia.

- Phase 1 – Information Review and Reintroduction Strategy Outline. LGL Project EA3144. By LGL Limited environmental research associates for BC Hydro, Nelson, BC. 68 pp + Appendices
- MW Demarchi, K Tuttle, TC Edgell (2009) Environmental assessment and environmental indicators for selected range and training areas overseen by Area Support Unit Chilliwack. Prepared for PWGSC on behalf of ASU Chilliwack
- TC Edgell, R Rochette (2009) Prey-induced changes to a predator's behaviour and morphology: implications for shell-claw covariance in the northwest Atlantic. **Journal of Experimental Marine Biology and Ecology** 382(1): 1-7
- TC Edgell, BR Lynch, GC Trussell, AR Palmer (2009) Experimental evidence for the rapid evolution of behavioural canalization in natural populations. **The American Naturalist** 174(3): 434-440
- TC Edgell, T Miyashita (2009) Shell shape and tissue withdrawal depth in 14 species of temperate intertidal snail. **Journal of Molluscan Studies** 75(3): 235-240
- TC Edgell, C Brazeau, JW Grahame, R Rochette (2008) Simultaneous defense against shell entry and shell crushing in a snail faced with the predatory shorecrab, *Carcinus maenas*. **Marine Ecology Progress Series** 371: 191-198
- TC Edgell, CJ Neufeld (2008) Experimental evidence for latent developmental plasticity: Intertidal whelks respond to a native but not an introduced predator. **Biology Letters** 4(4): 385-387
- TC Edgell, R Rochette (2008) Differential snail predation by an exotic crab and the geography of shell-claw covariance in the northwest Atlantic. **Evolution** 62(5): 1216-1228
- TC Edgell, R Rochette (2007) Geographic correlation between reciprocally-adaptive traits of an exotic decapod predator and native gastropod prey: Evidence of an arms race? **Evolutionary Ecology Research** 9(4): 579-597
- R Rochette, SP Doyle, TC Edgell (2007) Interaction between an invasive decapod and a native gastropod: predator foraging tactics and prey architectural defences. **Marine Ecology Progress Series** 330: 179-188