

Doug Holdway, PhD

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Leading groundbreaking research to preserve water quality and develop rapid response systems to potential aquatic threats

Next to oxygen, water is the most essential element to human life. Our ability to monitor and provide real-time testing is critical to protecting our water sources from environment threats such as oil spills, toxic industrial chemicals or other harmful contaminants.

Protecting our water quality is the life's work of Douglas Holdway, PhD. As Canada Research Chair in Aquatic Toxicology and Professor of Ecotoxicology at the University of Ontario Institute of Technology, Dr. Holdway and his research team are making major breakthroughs in our understanding of the impact threatening contaminants have on aquatic life. Equally important, they are developing the right tools to help us rapidly respond to potential threats.

Threats to our aquatic ecosystem can come from a variety of sources including the chemicals found in pharmaceuticals and personal care products such as drugs, cosmetics and soaps. And while much has been written about these chemicals and rising rates in breast cancer, asthma, autism and reproductive problems in humans, very little has been done to study their impact on the broader environment, specifically aquatic life. That's where Dr. Holdway and his team come in.

In his research, Dr. Holdway is carrying out comprehensive laboratory studies to investigate the effects of short and long-term exposures to contaminants on the survival, growth, and reproduction of aquatic organisms such as fish at various life stages and under a variety of environmental conditions.

The discoveries arising from Dr. Holdway's research are contributing to improving environmental regulations concerning chemical usage and land-use practices involving agriculture and urban development. The development of rapid real-time water pollution sensors has enormous potential to provide significant social, environmental and financial benefits for Canada.

Maritime, Renewables and Environmental, Research, Environmental Services, Education/Learning, Biotechnology

Biosensors of Water Contaminants, Detecting Pulse Exposure and Its Effects, Pulse Exposure of Aquatic Organisms to Toxicants, Water Pollution, Effect of Chemical Usage On the Environment, Effect of Land-Use Practices On the Environment, Aquatic Toxicology, Effects of Toxicants On Aquatic Organisms, Fish Physiology, Pulp Mill Effluents

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