



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Chair in
Global Environmental
Changes

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UNESCO Chair - Global Environmental Changes

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Inland waters: Research for sustainable use

The UNESCO Chair in Global Environmental Changes is looking at the roles - past, present and future - played by inland aquatic ecosystems to understand the overall long-term dynamics. This will help predict the impact of environmental changes and ensure the sustainable use of this resource.

The Chair purports to:

- Identify water resources and their role in the global carbon budget;
- Inform and educate people on the quality of lake water;
- Develop technological tools to monitor these ecosystems more effectively;
- Fuel social debate for sustainable use of these resources;
- Guide national water policies.

Objectives

- Quantify the present and future importance of inland waters in the global greenhouse gas budget
- Develop simple tools to institute a volunteer global network to monitor the quality of inland waters
- Develop methodologies to evaluate the environmental footprint of hydroelectric reservoirs
- Facilitate public debate on the responsible and sustainable use of aquatic resources in the world

Activities & Projects

Aquatic ecosystems and greenhouse gases: The vast majority of the planet's lakes and rivers are known to emit significant amounts of greenhouse gas into the atmosphere. Despite the small fraction of the landscape they occupy, their effect is similar but opposite to that of all the oceans combined. But what is the impact of different types of lakes and different regions of the world? Our research aims to verify these emissions worldwide.

Hydroelectricity: Society's energy needs must not only be maintained by renewable resources, but be environmentally sustainable as well. This project looks at developing models to anticipate the environmental viability of hydroelectric project greenhouse gas emissions prior to impoundment.

Monitoring network: We are developing a simple tool so that anyone with a smartphone anywhere in the world can collect data on surface water quality and provide the scientific community with information on the degradation/improvement of bodies of water.

Seminars: Organizing and participating in conferences to distribute and discuss research.

Partners:

NSERC: Promotes and supports postsecondary research and training in the natural sciences.

International Hydropower Association: Models greenhouse gas emissions from hydroelectric reservoirs.

Earthwatch Foundation (tentative): A global network that monitors the quality of inland waters.