



## Diving into a Sea of Ocean Data

### Scientists Get a “Fish-Eye” View From Their Desktops

**Project Name:** Oceans 2.0

**Project Lead:** University of Victoria, British Columbia

**CANARIE Contribution:** \$ 1.4 M

#### Participants:

- Memorial University, St. John's, Newfoundland and Labrador
- McGill University, Montreal, Quebec

#### What is Oceans 2.0?

Oceans 2.0 is a virtual Web-based environment where ocean scientists work with interactive, real-time access to data from a broad range of instruments located on the sea floor, via CANARIE's high-speed network.

These instruments are part of the VENUS and NEPTUNE Canada Ocean Observatory Networks and provide scientists and researchers with an unprecedented view of ocean ecosystems. Access to multiple applications and instruments is made simple via a Web portal that even allows users to share findings through blogs and chats.

Research collaboration using these massive datasets and visualizations increases our knowledge of the ocean and its inhabitants.

#### Value to Research and to Canada:

- Accelerates the understanding of ocean dynamics that have huge impacts: underwater volcanic processes, earthquakes and tsunamis
- Furthers knowledge of our ecosystem: ocean-atmosphere interactions, pollution, and climate change
- Leverages the government's investment in NEPTUNE and VENUS (Canada's underwater ocean observatory networks) by greatly expanding access to data that helps researchers understand and protect our oceans

#### Did you know?

Data from more than 50 instruments at five “node sites” on the ocean floor are transmitted to scientists near and far via CANARIE's high-speed network.



The Controlled-Source Electro-Magnetic Experiment (CSEM), guarded by two large crabs and a rattail.

Source: NEPTUNE



This map shows the distribution of NEPTUNE test nodes along Canada's west coast. The shallowest node is 50-100 metres deep, and the deepest is at 2.5 kilometres below the surface.