

# AQUACULTURE



Select photos courtesy of BC Salmon Farmers Association

## EARTH OBSERVATION APPLICATIONS FOR THE AQUACULTURE INDUSTRY

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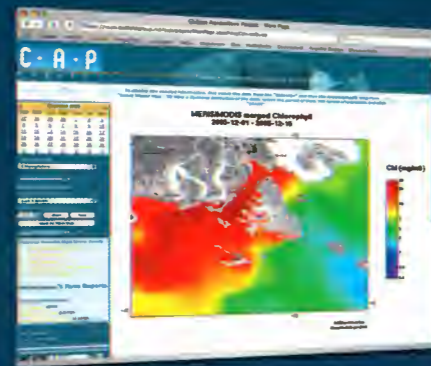
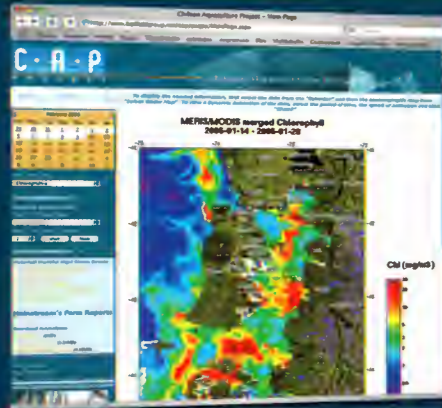
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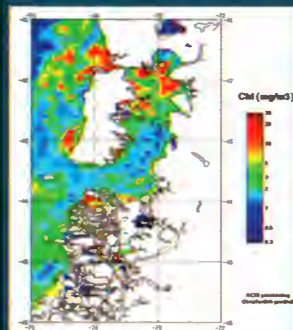


**Hatfield Consultants Ltd (Hatfield)** in collaboration with **ACRI-st** and **Apolloni Virtual Studio (AVS)** implemented an environmental information system for Harmful Algal Bloom (HAB) monitoring in Chile using Earth Observation (EO) data, hydrodynamic modelling and in situ monitoring data. Funding was provided by the **European Space Agency (ESA)** through the Earth Observation and Market Development Program (EOMD).



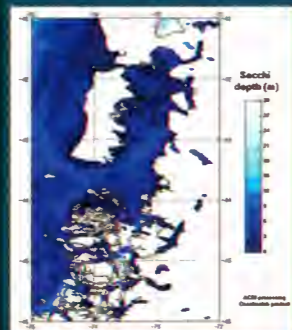
➤ Main page of the CAP web portal with images of the X and XI regions of Chile. User can zoom into Chonchi and Calbuco areas. Geographic information layers are added to EO and modelling images to enhance a users understanding of the area of interest. Dynamic animation of the historical and forecast data is available in the CAP web portal.

2005-02-23 - 2005-03-02



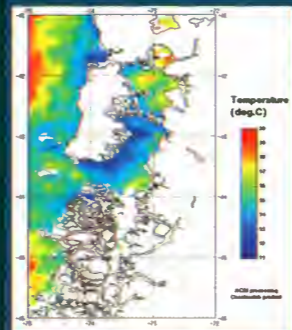
Chlorophyll-a Pigment Concentration obtained merging data extracted from MERIS and MODIS, presented in a composite image showing the last available data, over a period of 15 days. Data distributed daily to the end users

2005-02-16 - 2005-03-02



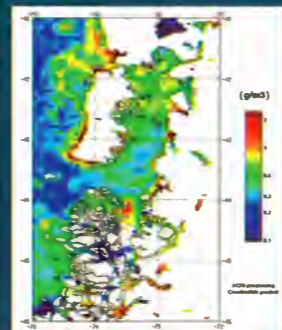
Secchi Depth Transparency obtained from data extracted from MERIS presented in a composite image showing the last available data over a period of 15 days. Data distributed daily, with an achieved precision of  $\pm 2m$

2005-02-23 - 2005-03-02



Sea Surface Temperature obtained from data extracted from MODIS, presented in a composite image showing the last available data over a period of 15 days. Data distributed daily with an achieved precision of  $\pm 0.5^{\circ}C$ .

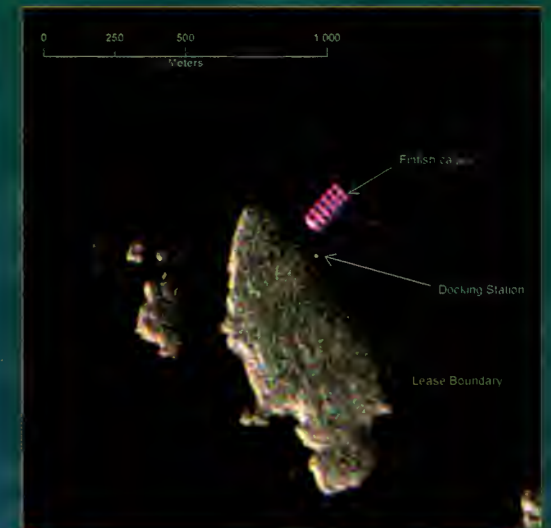
2005-03-02



Suspended Particulate Matter obtained from data extracted from MERIS, presented in a composite image showing the last available data over a period of 15 days. Data distributed daily to the end users

**Earth Observation and GIS has the potential to support aquaculture management including:**

- Aquaculture Site Inventory (coastal and offshore): Verify concession boundaries and monitor facilities.
- Aquaculture Site Monitoring: Environmental and water quality monitoring.
- Aquaculture Site Selection: Historical EO and GIS data for optimal site selection and risk management.
- Coastal Mapping and Topographic Data: Monitor the expansion and distribution of aquaculture sites and impacts.
- Harmful Algal Bloom Monitoring: Risk management and monitoring.



➤ Radar image to locate farm sites in relation to lease boundaries in British Columbia, Canada. Image courtesy of the Canadian Space Agency

➤ High resolution images for identifying salmon facilities in Lake Llanquihue, Chile. Image courtesy of the Space Imaging