



Creating a Marine Geospatial Data Infrastructure at the Bedford Institute of Oceanography



BIO and the MGDI

- Map Layer Services
 - Applications
 - Desktop Mapping Tools
 - Secure IT Infrastructure



BIO and the MGDI - Map Layer Services

- *Bathymetry and Coastlines*

Coastline (1:1,000,000 & 1:250,000)

GEBCO Global grid (1 min.) & Global contours

CHS Atlantic Bathymetric Compilation (15 arc-sec)

USGS Gulf of Maine (15 arc-sec)

IBCAO Arctic (1 min.)

- *Ocean Currents*

Observed Seasonal Currents

Seasonal Circulation over the Newfoundland and Scotian Shelf

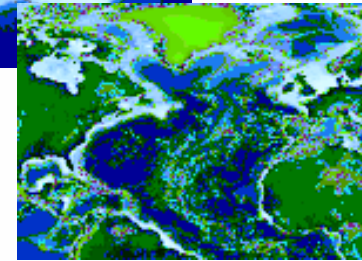
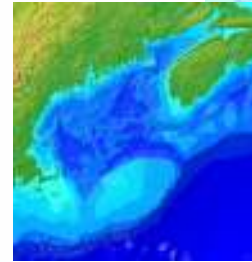
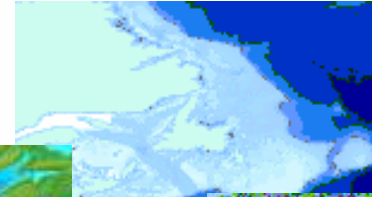
- *Wave Forecasts*

48 hour predictions for North Atlantic, East Coast, Gulf of Maine

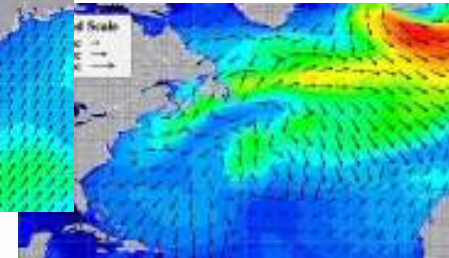
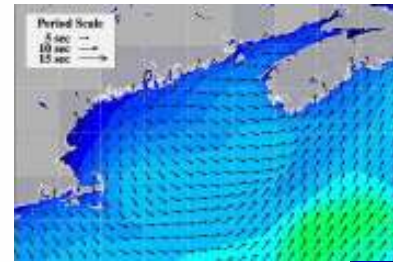


BIO and the MGDI - Map Layer Services

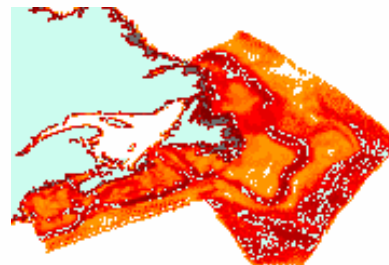
Bathymetry and Coastlines



Wave Forecasts



Ocean Currents





BIO and the MGDI – Applications

Coastal Time Series

coastal temperature data from DFO and fishing industry

user specified spatial temporal queries

products include maps, data retrieval, variety of plots

The screenshot displays the 'Oceanographic Databases Coastal Time Series' web application. At the top, there is a navigation menu with links for 'Home', 'What's New', 'DFO National', 'Site Map', and 'Media'. Below the navigation is a search bar and a 'Canada Site' link. The main content area is titled 'Ocean Sciences' and 'Oceanographic Databases Coastal Time Series'. It features a 'Query Definitions' section with various input fields: 'Date dd/Mon/yyyy' (01/Jun/1985 to 27/Sep/2005), 'Month from' (JAN to DEC), 'Sample Depth' (0.0 to 10000.0), 'Water Depth' (0.0 to 10000.0), 'Water Type' (Salt Water/Fresh Water), and 'Parameters' (Temperature/Salinity). A 'Product Selection' dropdown is set to 'map stations'. A 'Run' button is located at the bottom of the query form. To the right of the query form is a 'Map Layers' panel with a list of layers and a 'Refresh' button. Below the query form, there are two plots: a line graph showing temperature and salinity over time, and a bar chart showing data for different months (MAY, JUN, JUL, AUG). A small table of data is visible on the right side of the interface.

http://www.mar.dfo-mpo.gc.ca/science/ocean/database/data_query.html



BIO and the MGDI – Applications

Real-time Water Levels

observed and predicted water levels

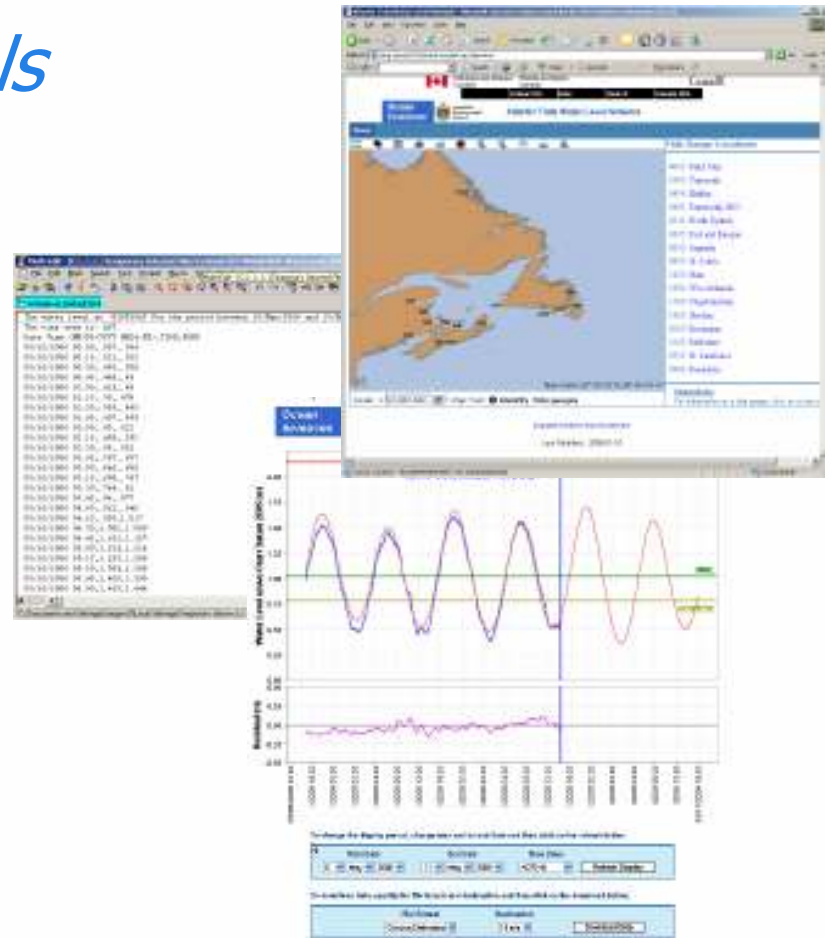
residuals (observe - predicted)

datum information

tsunami detection and warning

1 minute sampling, 10 minute polling

downloadable RTWL data





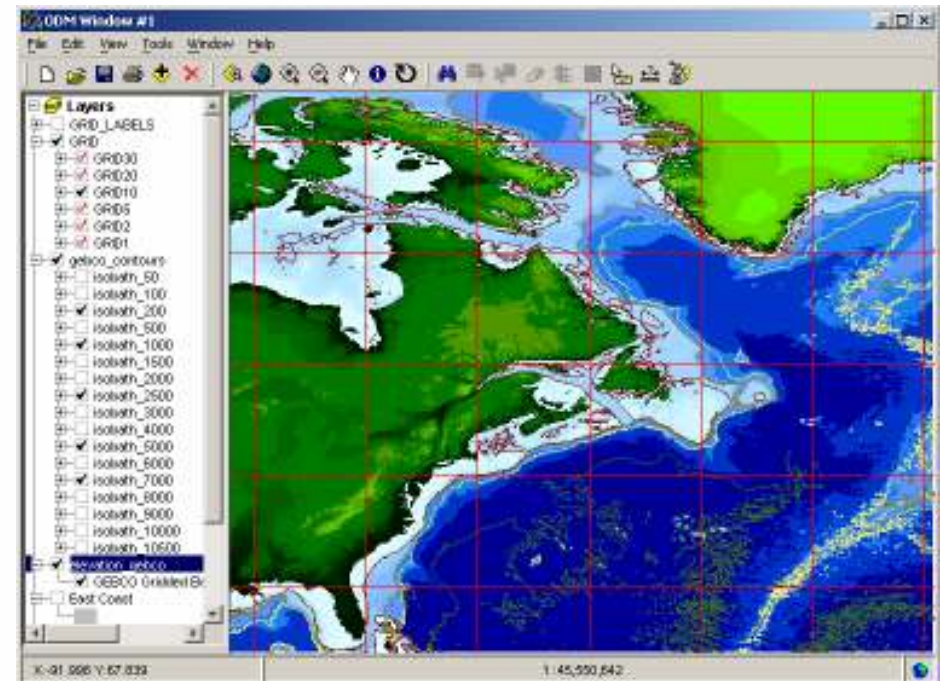
BIO and the MGDI – Desktop Mapping Tools

Ocean Data Mapper

“GIS for the rest of us”

java desktop mapper
supports ArcIMS, WMS, WFS,
ASCII(csv), Excel, ODBC, BSB
create simple shapefiles (lines,
point polygons)

use framework services from
the web and add your data
from your desktop



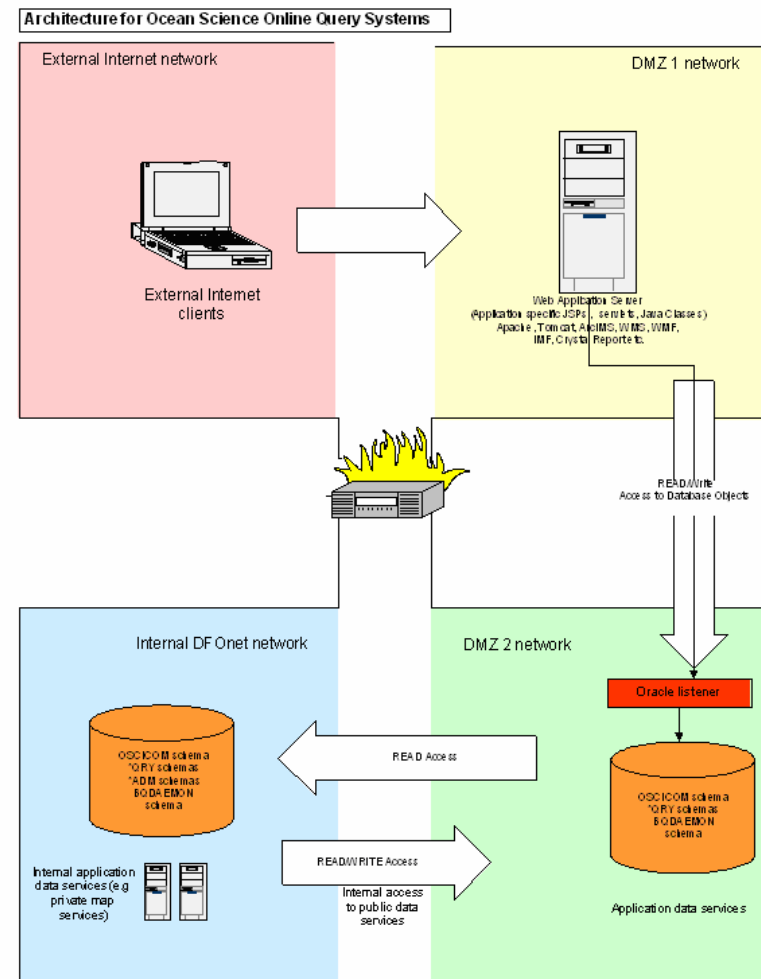


BIO and the MGDI – secure IT infrastructure

Secure infrastructure defined by Informatics and Science.

New applications now come on stream with less uncertainty surrounding security issues.

Thorough production (bluefin), testing (yellowfin) and staging (marbioims01) ARCIMS development environments.





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Thank you