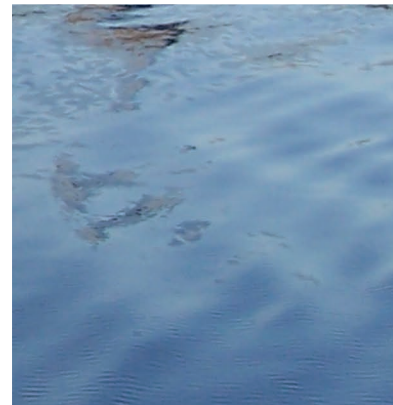
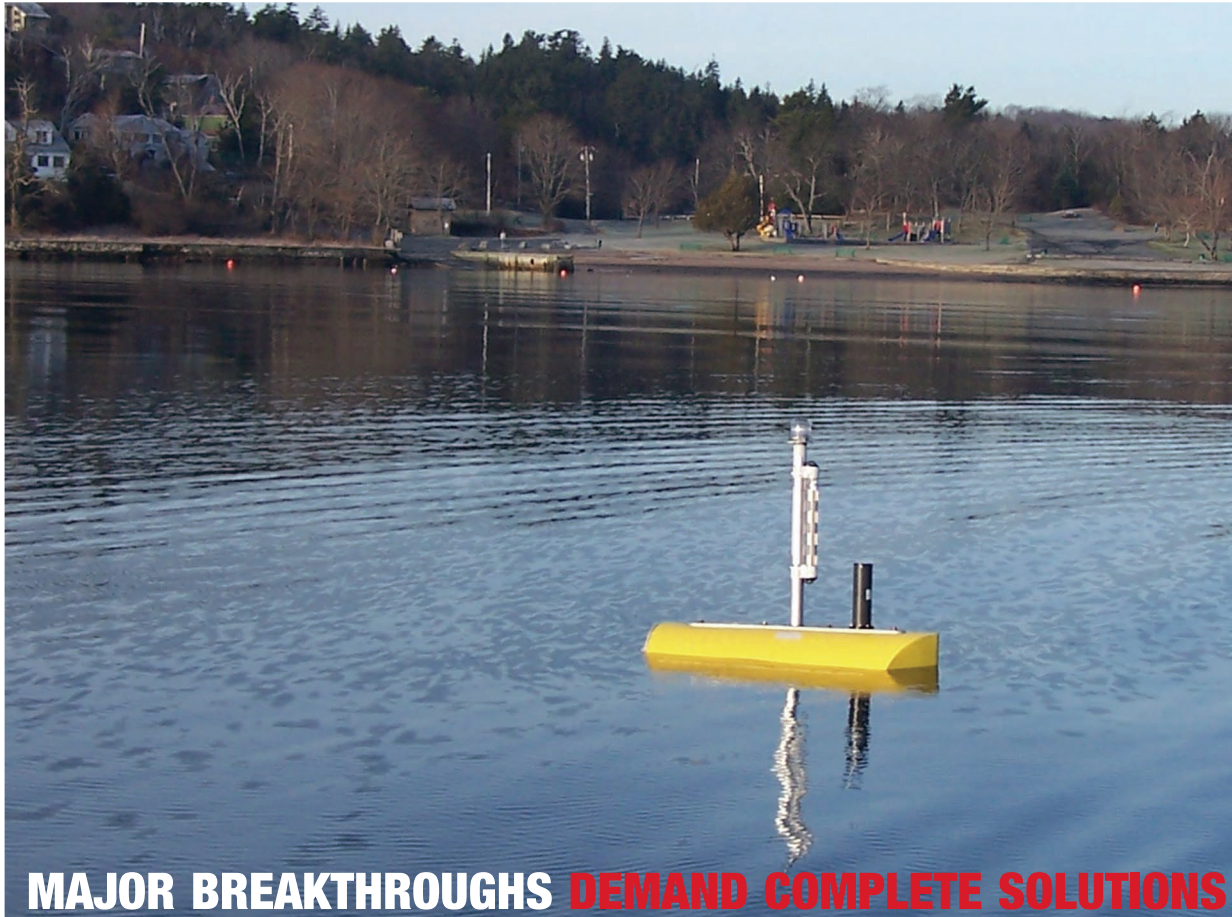
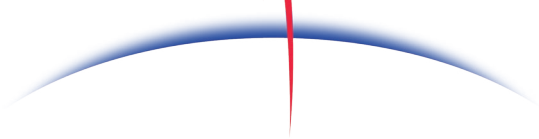


LAND/OCEAN BIOGEOCHEMICAL OBSERVATORY (LOBO)



MAJOR BREAKTHROUGHS DEMAND COMPLETE SOLUTIONS

S A T L A N T I C



HIGH QUALITY SENSORS WITH MULTI-TIERED ANTI-BIOFOULING

LOBO is an integrated real-time, water quality-monitoring package developed by Dr. Ken Johnson's team at the Monterey Bay Aquarium Research Institute (MBARI). LOBO provides routine, robust, and accurate water quality measurements, particularly in sensitive and diverse ecological areas such as estuaries and inland waters.

LOBO houses a suite of high quality, high temporal resolution in situ sensors to measure water properties including:

- ➔ **Physical:** temperature, depth, salinity (optional), current profiler (optional) and turbidity.
- ➔ **Chemical:** chromophoric dissolved organic matter (CDOM), nitrate, and dissolved oxygen.
- ➔ **Biological:** chlorophyll fluorescence with options for additional ancillary pigments.

LOBO comes complete with a floating platform, power and wireless telemetry system, integrated sensor suite, automated processing and archiving software, and web based data visualization and display software. Just deploy the platforms, install the software, configure the system using our custom software and your data is live on the web.

LOBO uses robust, high accuracy, high stability sensors with integrated anti-biofouling systems to maximize deployment time, minimize operational costs and provide high quality data sets.

The LOBO sensor suite options include:

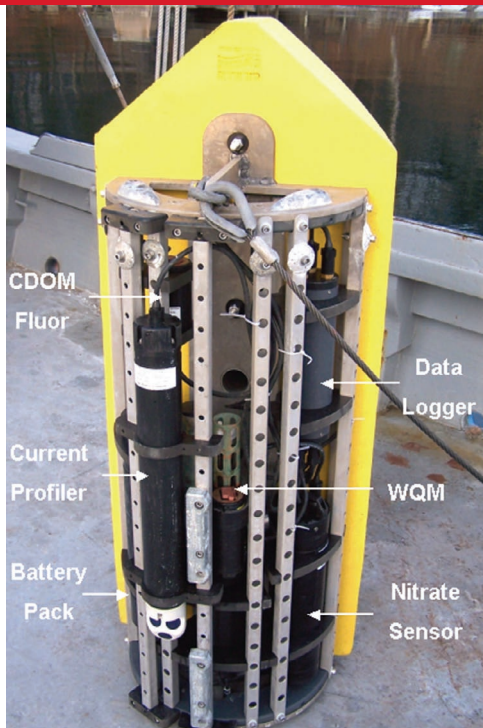
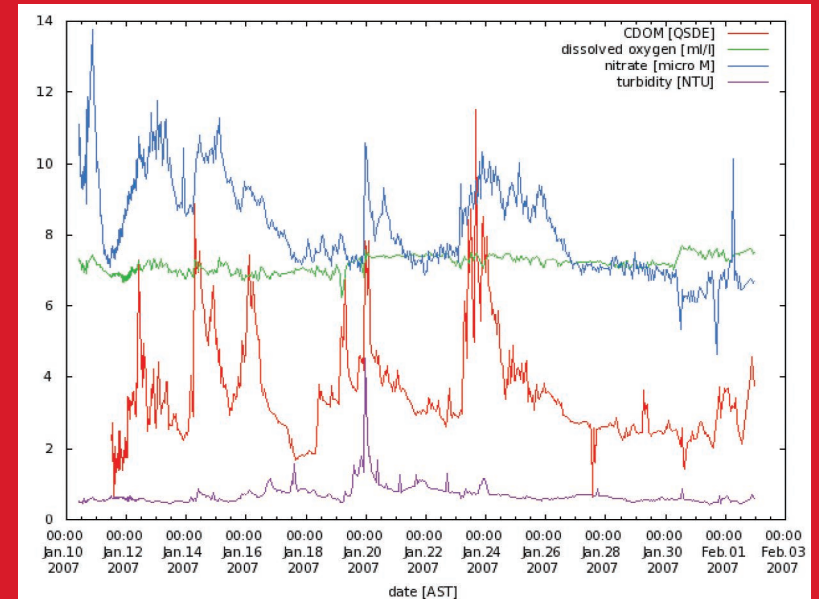
- ➔ Satlantic's chemical free nitrate sensor
- ➔ WET Labs WQM system with Chlorophyll fluorescence and Turbidity with integrated Bio-Wiper™
- ➔ Sea-Bird conductivity, temperature and depth sensors
- ➔ Sea-Bird dissolved oxygen
- ➔ ECO series fluorometers
- ➔ Nortek Aquadopp
- ➔ GPS tracking device
- ➔ Meteorological station



LOBOviz DATA MANAGEMENT SOFTWARE

A significant, value-added component of the LOBO system is LOBOviz, an integrated data visualization and display package for an entire network of monitoring sites. This powerful tool automatically collects, processes, archives, and publishes sensor data, enabling the user to compare multiple sensors at multiple sites simultaneously through a simple web interface.

- ➔ Automated data processing and data quality control
- ➔ Remote access to biogeochemical sensor measurements from multiple LOBO platforms
- ➔ Plot sensor data through a powerful data query interface on an easy-to-use web page
- ➔ Export tabular data to spreadsheet applications
- ➔ View latest measurements in Google Earth and from mobile wireless devices
- ➔ Integrate with existing web applications or your own custom web site



LOBO-0010 Northwest Arm http://lobo.satlantic.com/

SATLANTIC LOBO Land/Ocean Biogeochemical Observatory

HOME LOBOVIZ LOBOCAM WIRELESS GE ABOUT CONFIG CONTACT

Latest

2008-02-11 09:00:00 AST

Water Temperature	0.71 C
Current Out/In (+/-)	0.206 m/s
Salinity	29.64
Conductivity	2.55 S/m
Nitrate	4.3 µM
Turbidity	1.28 NTU
Dissolved O2	6.88 mM/l
O2 Saturation	8.19 mM/l
Dissolved Organics	2.85 QSDE
Chlorophyll	0.29 µg/l
Battery Voltage	13.00 Volts

2008-02-11 08:45:00 AST

Air Temperature	-4.4 C
Wind Speed	12.2 knots
Wind Direction	315 ° True
Wind Speed (Peak Gust)	22.6 knots
Pressure	987.1 mbar
Pressure Tendency	1.5 mbar/h
Rain	0.00 mm
Solar Radiation	27 W/m ²
UV Index	0.0
Humidity	88 %
Wind Chill	-10.7 C
Heat Index	-4.4 C

LOBO-0010 Northwest Arm, Halifax, Canada **44°37'44.7" N, 63°35'29.4" W**

The Northwest Arm defines the southwest edge of peninsular Halifax, and is heavily used for recreational purposes. It has a mean peak tidal velocity of 0.3 m/s that daily flushes anthropogenic effluents and turbid discharges into the greater harbor. LOBO is an ideal system for monitoring the water quality of this key estuarine resource.

This LOBO node is situated midway from the head to the mouth of the arm in order to measure trending relationships between cyclical vertical current flux and the nitrification of benthic and suspended microorganisms. The resulting data show how fluctuations in salinity and dissolved oxygen interact with biological processes over seasonal variations in temperature and available light.

Configuration

Manufacturer	Instrument	Serial	Measurements
Satlantic	ISUS Nitrate	0096	Nitrate Concentration
WET Labs	ECO-CDS	0620	Colored Dissolved Organic Matter (CDOM)
WET Labs	WQM Water Quality Monitor	0004	Salinity, Temperature, Dissolved Oxygen, Turbidity, Chlorophyll Concentration
Nortek	Aquadopp Profiler	2051	Water current velocity

Archived Data
Use LOBOviz to graph and download archived data from this LOBO node.

Other LOBO Systems
See other LOBO systems in action:

- SCCP RECON Florida
- Yaquina Bay Oregon
- Elkhorn Slough California

NEW Check out this white paper (PDF) on the Northwest Arm LOBO deployment that was presented at MTS/IEEE Oceans 2007 in Vancouver.

RECENT LOBO DEPLOYMENTS



Elkhorn Slough National Estuarine Research Reserve

A network of five systems has been deployed in the Elkhorn Slough National Estuarine Research Reserve for over four years.

www.mbari.org/lobo/loboviz.htm

North West Arm, Halifax, Nova Scotia

The North West Arm LOBO, deployed midway from the head to the mouth of the arm, has been online continuously since January 2007.

<http://lobo.satlantic.com/>



Yaquina Bay, Newport, Oregon

The Yaquina Bay LOBO has been capturing key seasonal events since October 2007.

<http://yaquina.satlantic.com/>

SCCF River Estuary and Coastal Observing Network (RECON)

(RECON) is a network comprised of seven fixed DockLOBOs and one mobile RiverLOBO system deployed at sites throughout the Caloosahatchee system and the Gulf of Mexico.

<http://recon.sccf.org>

