Coastal and Ocean Data in the Classroom

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1. Data formats: examples

Numeric Waquoit "Bay Watchers" http://www.waquoitbayreserve.org/baywatch.htm
Graphical Chesapeake Bay monitoring http://www.dnr.state.md.us/bay/monitoring/index.html
Color coded Monterey Bay Aquarium Research Institute (MBARI)
http://dods.mbari.org/lasOASIS/main.pl
Image National Weather Service marine winds and waves http://www.opc.ncep.noaa.gov/

2. How to find data- some examples:

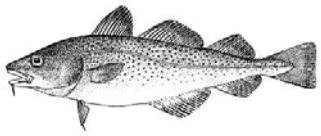
Physical NOAA Physical Oceanographic Real Time System (PORTS)
http://co-ops.nos.noaa.gov/d_ports.html
NOAA Coast Watch data products http://coastwatch.noaa.gov/cw_dataprod.html
http://coastwatch.noaa.gov/interface/interface.html sea surface temperatures and surface winds

3. Chemical

SWMP data sets http://cdmo.baruch.sc.edu/home.html
National Estuarine Research Reserve System Wide Monitoring Program Water quality data includingtemperature, conductivity, salinity, dissolved oxygen, pH, depth, and turbidity. Links to data from National Estuarine Research Reserves on Atlantic, Pacific, and Gulf coasts.

4. Biological

Whale Net Satellite tagging program
http://whale.wheelock.edu/whalenet-stuff/stop_cover.html



NOAA's Biogeography Program
http://biogeo.nos.noaa.gov/products/elmr/ Estuarine living marine resources site has links to seasonal abundance data for dozens of species of fish and invertebrates in many estuaries around the coasts of the US.

5. Geological

National Geophysical Data Center http://www.ngdc.noaa.gov/mgg/image/images.html
USGS Coastal and Marine Geology http://marine.usgs.gov/

6. Meterological

National Weather Service Ocean Prediction Center http://www.opc.ncep.noaa.gov/
Weather faxes, loops, predictions. Compare these with continental weather maps!

7. Best bets for frequent use:

National Data Buoy Center http://www.ndbc.noaa.gov/
Real-time data on wind and wave conditions is available from data buoys around the coasts of the US. Look at the graphs of recent conditions and try downloading data from the last 45 days.

IOOS data sources:

Gulf of Maine Ocean Observing System. http://www.gomoos.org/
Lots of links to remote sensing of our local ocean. Clear and easy to navigate. Especially check out the buoy data presentation formats, which include real-time conditions, recent conditions, and archived data to download and graph.

SouthEast Atlantic Coastal Ocean Observing System (SEACOOS)
http://seacoos.org/ Lots of real time and archived data as well as good lesson plans.

For more information contact: Pat Harcourt (508) 457-0495 x 106 pat.harcourt@state.ma.us
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8. NOAA and NASA

NOAA's National Oceanographic Data Center http://www.nodc.noaa.gov/
archives & provides public access to global oceanographic and coastal data

NOAA's Center for Operational Oceanographic Products and Services (CO-OPS)
http://co-ops.nos.noaa.gov/ observations and predictions of water levels and currents

NOAA El Nino/Southern Oscillation http://www.pmel.noaa.gov/tao/elnino/measurements.html

NASA Ocean links: http://www.jpl.nasa.gov/earth/ocean_motion/ocean_motion_index.cfm

Earth Observatory- oceans http://earthobservatory.nasa.gov/Topics/oceans.html

Sea level http://sealevel.jpl.nasa.gov/index.html

NASA SST links http://podaac.jpl.nasa.gov/sst/

From a Distance: An Introduction to Remote Sensing
http://education.ssc.nasa.gov/fad/default.asp

9. Education: lesson plans and expeditions

Best web site for marine education: The Bridge http://www.vims.edu/bridge/

Shipmates http://www.bigelow.org/shipmates/
A series of lesson plans from Bigelow Marine Labs with representative data sets and lesson plans for teaching ocean concepts. Great graphics, including photos of phytoplankton, and engaging lessons.

The COOL (Coastal Ocean Observation Laboratory) Classroom
http://www.coolclassroom.org/home.html
The COOL classroom, affiliated with Rutgers U, Institute of Marine and Coastal Sciences, has great lessons on the use of different parameters and data types, including real-time data.

When is Dinner Served? Predicting the Spring Phytoplankton Bloom in the Gulf of Maine
http://serc.carleton.edu/eet/phytoplankton/index.html
A detailed lesson plan using the graphing interface on GoMOOS

How to access and use SWMP data http://www.waquoitbayreserve.org/pdf/access_data.pdf

URI GSO Satellite Oceanography http://rs.gso.uri.edu/amy/avhrr.html General introductory lesson using archived images.

Eyes on the Bay http://mddnr.chesapeakebay.net/eyesonthebay/index.cfm Lots of easy to use links to Chesapeake Bay data. Link to lesson plans at bottom of page.

Dive and discover http://www.divediscover.whoi.edu/
Lots of background info on oceanographic topics and equipment

Ocean Explorers http://oceanexplorer.noaa.gov/welcome.html
Near real-time postings of expeditions; next one is April 2005

GLOBE www.globe.gov Student environmental monitoring, great for inland or coastal locations.

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