

An Introduction to OOS

OOS? What's that??

What is an Ocean Observatory? Why do we need them?

Woods Hole Oceanographic Institute (WHOI)

<http://www.whoi.edu/sbl/liteSite.do?litesiteid=7732&articleId=11728>

NOAA's Monitoring and Observing Tools

(Summary of NOAA's space, airborne, land-based, and water-based observing tools)

<http://www.noaa.gov/features/earthobs/tools.html>

NOAA's Undersea Research Program (NURP)

Undersea Technology: Tools for Research

<http://www.nurp.noaa.gov/Tech.htm>

What is...? ("glossary" of the main types of data collecting tools)

Southern California Coastal Ocean Observing System (SCCOOS)

<http://www.sccoos.org/cc-what.html>

"Popular" Articles about Observatories (from Oceanus, WHOI)

<http://www.whoi.edu/sbl/liteSite.do?litesiteid=7732&articleId=11610>

"Seeding the Floor with Observatories"

Oceanus Magazine, Woods Hole Oceanographic Institution

<http://www.whoi.edu/oceanus/viewArticle.do?id=2442>

Rutgers University COOL Room (Coastal Ocean Observing Lab)

Tutorials on measuring surface currents, satellite pictures of sea surface temp/chlorophyll, etc.

<http://marine.rutgers.edu/cool/>

Global and National OOS Programs, Initiatives, etc.

Global Ocean Observing System (GOOS) is an international effort to monitor the world's global ocean; it is part of the Global Earth Observation System of Systems (GEOSS)

<http://www.ioc-goos.org/>

Global Earth Observation System of Systems (GEOSS)

"The aim is to provide the right information, in the right format, to the right people, at the right time, to make the right decisions."

<http://www.noaa.gov/eos.html>

Integrated Ocean Observing System (IOOS) is the United States' contribution to GOOS

http://www.ocean.us/what_is_ioos

Ocean Observatories Initiative (OOI) is the National Science Foundation's contribution to IOOS.

http://www.joiscience.org/ocean_observing/initiative

Joint Oceanographic Institutions (JOI) was awarded money to support the development, installation and initial operation of the coastal and global components of OOI. Technical descriptions of the ocean-observing network in progress.

http://www.joiscience.org/ocean_observing

QuickTime™ and a
decompressor
are needed to see this picture.

NOAA's Undersea Research Program (NURP). Research using all manner of observing platforms (from manned submersibles to ROVs to networks of buoys).

<http://www.nurp.noaa.gov/index.htm>

NOAA National Buoy Data Center

<http://www.ndbc.noaa.gov/>

NOAA Tropical Atmosphere Ocean (TAO) Project

<http://www.pmel.noaa.gov/tao/index.shtml>

More OOS Programs

Coastal Ocean Observing Systems (COOS)

provides a view of real-time and recent data generated by NOAA observing systems through an

Internet Map Server and provides links to information about these systems

<http://www.ncddc.noaa.gov/COOS>

Pacific Coast Ocean Observing System (PaCOOS)

<http://www.pacoos.org/>



Oceanic Mapping Data for Pacific Coast - West Coast Habitat Server
<http://pacoos.coas.oregonstate.edu/>

Southern California Coastal Ocean Observing System (SCCOOS)
<http://www.sccoos.org/>

Ocean observatories at Monterey Bay Aquarium Research Institute (MBARI)
<http://www.mbari.org/moos/>

Monterey Accelerated Research System (MARS)
<http://www.mbari.org/mars/>

Santa Monica Bay Observatory (SMBO) buoy
http://quercus.igpp.ucla.edu/smbo/smbo_mooring.html

OOS Lesson Plans

Southern California Coastal Ocean Observing System (SCCOOS)
SSCOOS in the classroom
<http://www.sccoos.org/commclass.html>
Especially for Teachers
<http://www.sccoos.org/cc-EspTeachers.html>

EARTH (Education and Research: Testing Hypotheses)
Joint project of MBA & MBARI (Monterey Bay Aquarium & MBA Research Institute)
<http://www.mbari.org/earth/>

Santa Monica Bay Observatory (SMBO) buoy
Lesson plans by teachers based on the data from this buoy
http://quercus.igpp.ucla.edu/smbo/smbo_edu_teacher.html

Taking the Pulse of our Ocean
Lesson plans created by COSEE-Mid Atlantic to learn about using OOS & the data
http://www.cosee-ma.net/education/ocean_pulse/

C.O.O.L. Classroom (Coastal Ocean Observation Laboratory)
Lesson plans based on data from the Atlantic Ocean (near New Jersey)
http://www.coolclassroom.org/teachers_guide/teachersguide.html
“Having fun with data: Using COOL Data Education & Public Outreach (EPO)”
<http://www.marine.rutgers.edu/outreach/COSEE-MA%20Realtime%20Data%20Tips.pdf>
COOL Room Webcam
<http://marine.rutgers.edu/cool/coolcam.htm>
COOL YouTube Videos



http://www.youtube.com/results?search_query=RutgersCOOL

Center of Excellence for Coastal Ocean Observation and Analysis

<http://www.cooa.unh.edu/education.jsp>

A few lesson plans

<http://www.cooa.unh.edu/education/lessons.jsp>

SEA's K-12 lesson plans (Sea Education Association)

<http://www.sea.edu/academics/k12.asp>

The Unseen Ocean Floor

Your students try to piece together seafloor bathymetry by using "remote" sensing

<http://www.sea.edu/academics/k12.asp?plan=unseenoceanfloor>

Jason-1 "Voyage on the High Seas" Board Game

<http://sealevel.jpl.nasa.gov/education/jason-1-game.html>

OceanGLOBE Powerpoints (user name: ocean, password: globe)

<http://www.msc.ucla.edu/oceanglobe/slides.htm>

OceanGLOBE Investigations for grades 4-8 and 9-12

<http://www.msc.ucla.edu/oceanglobe/investigations.htm>

Break down by technology

Autonomus Underwater Vehicle (AUV) & other automated things

“Yellow Submarine Probes Undersea World”

Discovery Channel News

<http://dsc.discovery.com/news/2008/07/14/yellow-submarine-ocean-02.html>

NOAA Ocean Explorer AUV Fest 2008. Lesson plans for Grades 5-12 to complement the science, mathematics, marine archaeology and maritime heritage focus of AUVfest 2008

<http://oceanexplorer.noaa.gov/explorations/08auvfest/welcome.html>

“Underwater Robot Makes History Crossing Gulf Stream”

Scripps News, Scripps Institution of Oceanography

<http://scrippsnews.ucsd.edu/Releases/?releaseID=655>

“Arctic Voyage Tests New Robots for Ice-covered Oceans”

Oceanus Magazine, Woods Hole Oceanographic Institution

<http://www.whoi.edu/oceanus/viewArticle.do?id=40787§ionid=1000>

“Submerged Autonomous Launch Platforms”

Oceanus Magazine, Woods Hole Oceanographic Institution

<http://www.whoi.edu/oceanus/viewArticle.do?id=34106>

“Cytobot Gives Early Red Tide Warning”

Oceanus Magazine, Woods Hole Oceanographic Institution

<http://www.whoi.edu/oceanus/viewArticle.do?archives=true&id=46486>

Remotely Operated Vehicle (ROV) & equipment to put on them

Video of testing an ROV in MBARI’s test pool

<http://www.youtube.com/watch?v=qGFd-ygFgdM>

Video from the an ROV looking for new life in the depths of the Celebes Sea

<http://www.youtube.com/watch?v=JGXz9efC0QI>

NOAA Mission plan & logs from that cruise:

<http://oceanexplorer.noaa.gov/explorations/07philippines/welcome.html>

“Can’t Bring Deep-sea Samples Up? Send a Lab Down.”

Oceanus Magazine, Woods Hole Oceanographic Institution

<http://www.whoi.edu/oceanus/viewArticle.do?id=41566>



Satellites



Ocean Surface Topography Mission (OSTM) - Jason 2 satellite

Mission Overview: <http://topex-www.jpl.nasa.gov/mission/ostm.html>

Mission Fact Sheet: <http://topex-www.jpl.nasa.gov/mission/ostm-fact-sheet.html>

Delta II launch vehicle: <http://www.af.mil/factsheets/factsheet.asp?fsID=97>

NOAA National Environmental Satellite, Data and Information Service (NESDIS).

<http://www.nesdis.noaa.gov/>

National Oceanographic Data Center

<http://www.nodc.noaa.gov/>

Maps & other cool visuals

Google Ocean. 3-D visualizations of bathymetry, tide predictor and other interesting ocean related sections (ship wreck, etc.).

<http://www.justmagic.com/GM-GE.html>

Ocean circulation patterns

[http://www.windows.ucar.edu/cgi-](http://www.windows.ucar.edu/cgi-bin/tour_def/earth/Water/ocean_currents.html)

[bin/tour_def/earth/Water/ocean_currents.html](http://www.windows.ucar.edu/cgi-bin/tour_def/earth/Water/ocean_currents.html)

<http://www.onr.navy.mil/Focus/ocean/motion/currents1.htm>