Ocean Observing Systems (OOS) Workshops: Scientist Education Outreach Using Real-Time Data

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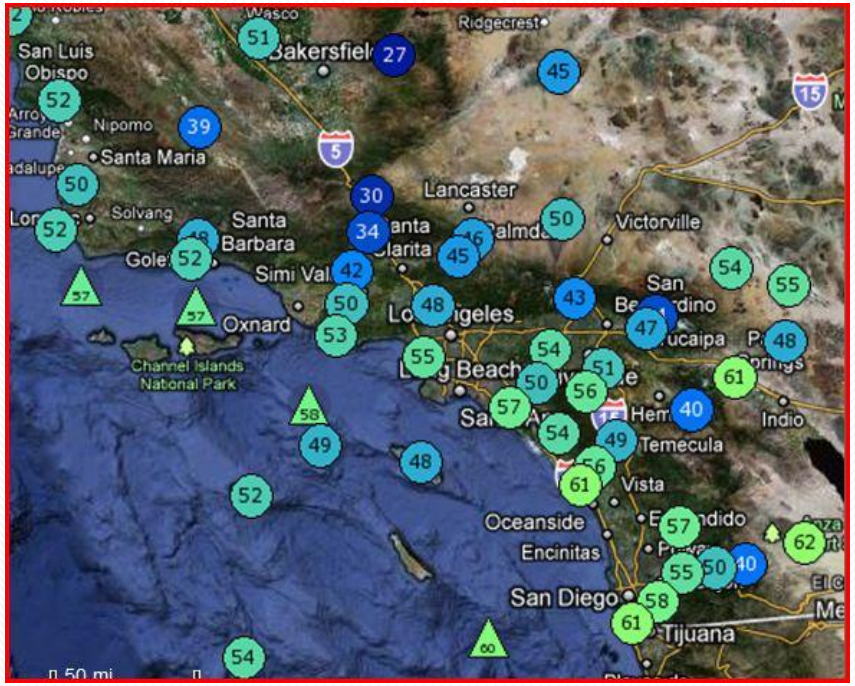
COSEE WEST

Ocean Sciences Meeting
February 2010

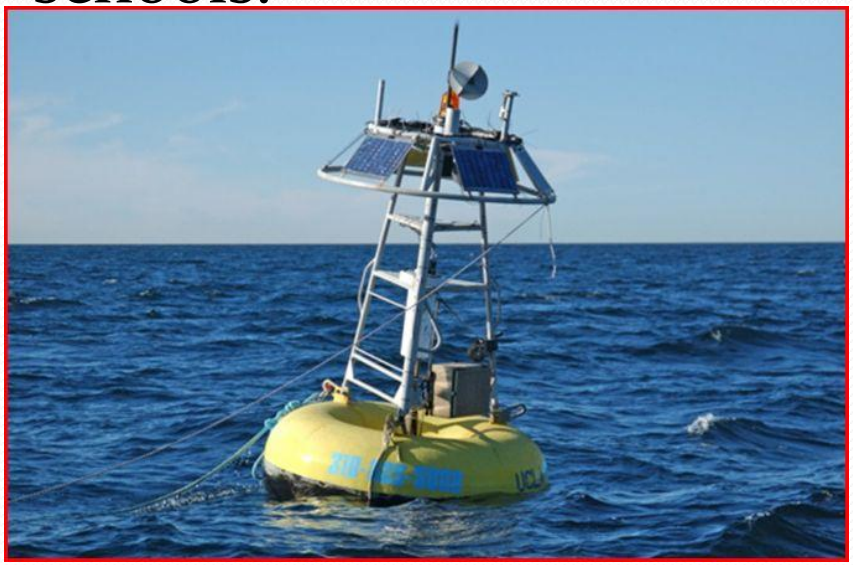
Five Day OOS Workshops

- COSEE-West hosted two five day OOS workshops in August 2008 and 2009
- Assist middle and high school teachers to develop ocean science curricula with real-time data
- Lectures, demonstrations, hands-on activities to use OOS data and Principles of Ocean Science Literacy



Workshop Format

- Variety of venues: USC, JPL, Cabrillo Marine Aquarium, Ocean Institute Dana Point, UCLA
- Introduce different opportunities and activities available to the teachers. They can develop lesson plans to supplement their curricula at local LA schools.



Scientist Participation

- Scientists from USC, UCLA, JPL, COSEE
- Explored active research programs using gliders, ROV's, remote sensing, OOS network assets.
- Familiarize teachers w/ Principles of Ocean Literacy
- Five-day workshop model for other COSEE Centers

OOS Workshop Participants

- Participants included COSEE-West teachers involved in Santa Monica Bay Observatories outreach program
- Teachers from other COSEE Centers – VA, MD, MI, IL
- Informal Educators from Guided Discoveries , LA Natural History Museum, Cabrillo Aquarium, Ocean Institute

Participant Demographics

Characteristic	Participants (%)
Knowledge at demonstration level	55
Elementary school teachers	7
Middle school teachers	45
High school teachers	66
Informal educators	3
Los Angeles teachers	84
Elsewhere	16

Participant Feedback

	Participants (%)
Workshop met expectations	95
Enhanced professional expertise	97
Content will be used in classroom	95
Integrate practical application of content	95
Share info with teachers/educators	100
Will be supported at my school	87
Content appropriate for my students	96
Content relates to CA content standards	95
Content relates to Nat content standards	97

Scientist Feedback

Responded Strongly Agree	Participants (%)
5 day workshop effective teaching method	67
Would participate in future summer workshops	100
Quality of interactions with participants high	100
Able to interact with more teachers/educators	100
Learned about presenting science content	33
More likely to work with teachers/educators/ students on science projects	67

Feedback on Scientists

	Participants (%)
Scientists knowledgeable about content	100
Scientists presented content effectively	98
Scientists integrated practical application of content	91
Scientist presentations interesting	96
Scientist presentations useful	97

Feedback on Hands-on Presenters

	Participants (%)
Presenters knowledgeable about content	97
Presenters integrated practical application of content	95
Presenters were interesting	93
Presenters were useful	92
Workshop activities useful for presenting to students	97

Benefits for Participants

- Increased content knowledge of Ocean Sciences and introduced teachers to Principles of Ocean Literacy
- Interacted with scientists/graduate students at local research institutions and visited several informal science centers. Learned of opportunities and resources available to supplement their class lessons
- One teacher presented an inservice workshop on OOS and wrote OOS lesson plan for teachers at her school

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Feedback

- "I learned a great deal about data. What I learned will enhance my classes."
- "Ocean Literacy was a nice approach to add to the standards we already have"
- "…a great job of organizing a very rich and complex workshop!
- "OOS is a fast evolving field, and things are changing on a day to day basis"
- "It was an invigorating way to end the summer and get ready for a new school year."

Future Workshop Additions

- Increase time for interactions with scientists
- More time to work hands-on with real time data
- Time to work on grade specific lesson plans
- Engage mentor teachers and have OOS teacher participants present OOS lesson plans they developed at future OOS workshops
- Opportunities for teachers to collaborate with scientist and other teachers during the school year

Next Steps

- Develop online OOS workshop to broaden participation
- Partner/Transfer the OOS model to other COSEE Centers
- Develop a deep ocean observing workshop with a new NSF/STC that will be start this summer - C-DEBI Center for Dark Energy Biosphere Investigations