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Sustaining a Long-Term Monitoring Program: Three Keys to Success

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Director, Center for Sponsored Coastal Ocean Research and
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NOAA's Ocean Service

Presentation



- **Brief Introduction to the National Ocean Service (NOS) and its priorities**
- **Three Keys to Success**

NOS Today



marine
navigation



coastal
decision-making
tools and
technologies



oil
and chemical
spills



coastal
ecosystem
science



international
collaboration



coastal
management



national
marine
sanctuaries



global
positioning



ocean
exploration



tides
and currents

***Our diversity is our strength,
Our people are our most valuable resource ...***

A New Vision for NOS: GLIMO

**Global
Leader
Integrated
Management
Ocean**

Dr. Richard W. Spinrad
Assistant Administrator
NOAA's Ocean Service

- We are a global society
- Oceans are global ecosystems



GLIMO Themes



- **Observations** (see IOOS presentations Thurs AM)
- Modeling
- Watersheds
- **Partnerships**
- **Technology**

Sustaining a Long-Term Monitoring Program: Three Keys to Success:

- Relevancy
- Robust Methodology/Technology
- Partnerships

For Each, Three Questions:

- What is it?
- How do you get there?
- How do you know when you're there?



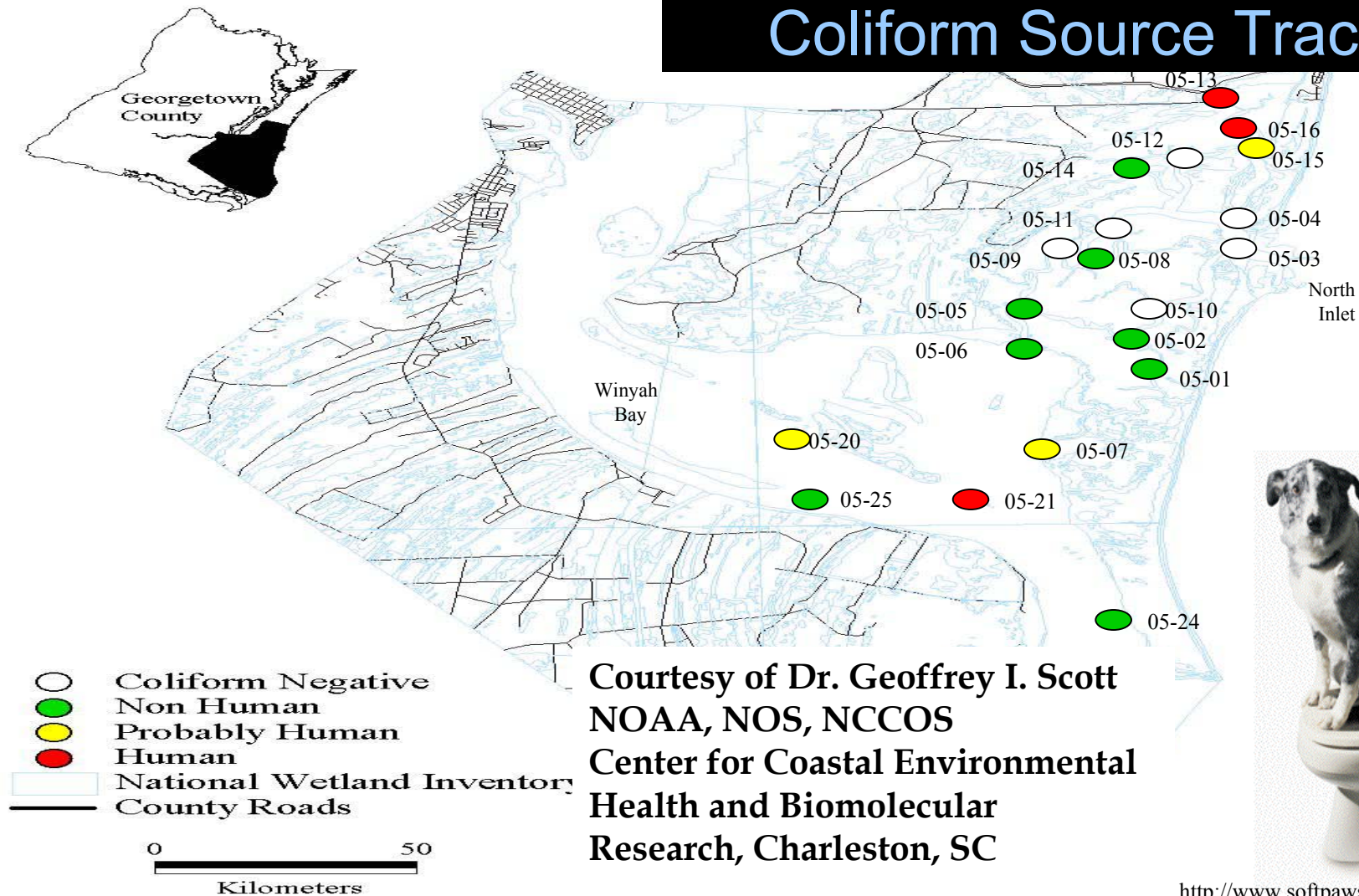
Relevancy – What is it?

- Clearly articulated management uses and customers
- Useful information is delivered “early and often”
- Monitoring information is sufficient by itself or a key component with other information (modeling, research) to make a management decision

North Inlet MAR for May 2001

Grosso Master Thesis, Summer 2001
Norman J. Arnold School of Public Health
University of South Carolina

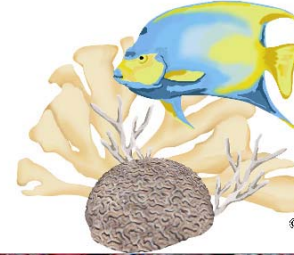
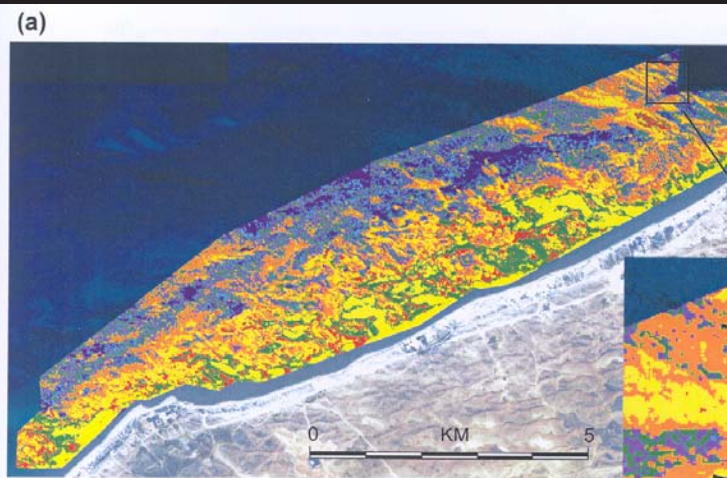
Using Diagnostics to Increase Management Relevance – Biomolecular Methods for Coliform Source Tracking



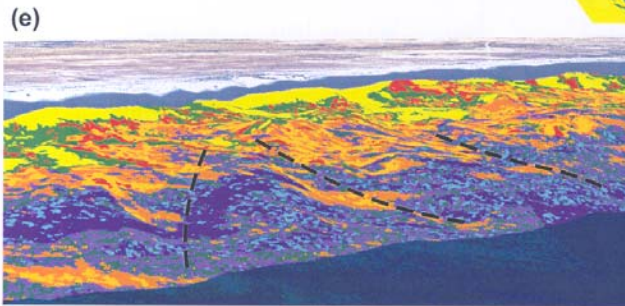
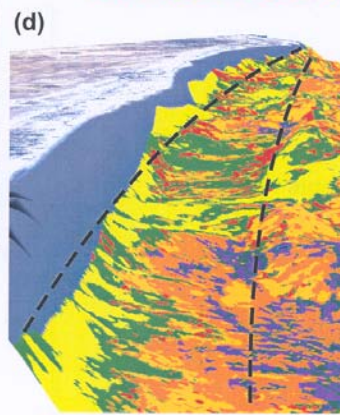
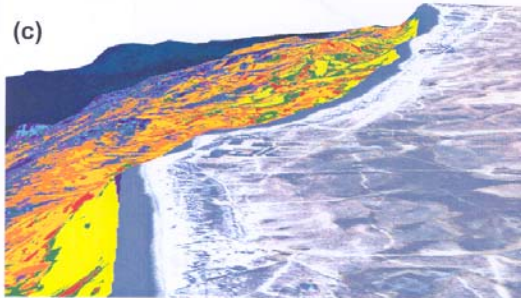
Courtesy of Dr. Geoffrey I. Scott
NOAA, NOS, NCCOS
Center for Coastal Environmental
Health and Biomolecular
Research, Charleston, SC



Habitat Assessments Often Require Spatially-Explicit Data to be Relevant



NCRI
NATIONAL CORAL REEF INSTITUTE



- Dense live coral
- Dense dead coral
- Sparse coral
- Seagrass
- Shallow algae
- Deep algae
- Hardground
- Sand



Nova Southeastern University with State, Local and Academic Partners
Funding: NOS/Center for Sponsored Coastal Ocean Research

Relevancy – How Do You Get There?

- Use “management questions” to dissect management issues and frame clear and relevant objectives
- Limit objectives – for monitoring they usually bin into three:
 - status/characterization
 - change/trend
 - processes/modeling
- Work closely with management agencies – don't assume



Relevancy – How Can You Tell When You're There?

- Management agencies ask for your data and information
- Management agencies willing to shoulder all or a portion of the monitoring program cost
- Management agencies use information as part of the basis for making a management decision
- System condition improves as a result of the above



Robust Methodology/Technology

– What is it?

- Methodologies and technologies that are accurate & precise, low maintenance, cost-effective, and close to state-of-art
- The full “chain” from field collection/sensors, lab analysis, data management, data analysis, data interpretation, information delivery, and QA/QC
- Providing consistent data through time



Instrumentation for Continuously Recording Water Quality:

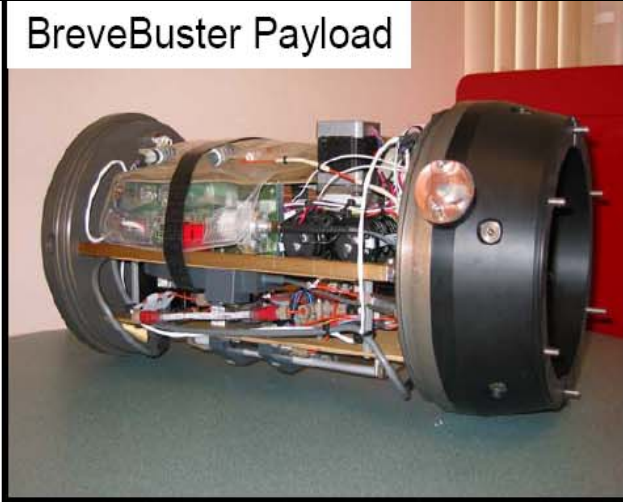
D.O., Sal., Temp., pH,
Chlor., Turbidity

MD DNR Chesapeake Bay
Monitoring Program



“BreveBuster”- Equipped AUVs Detecting Red Tides in the Gulf of Mexico

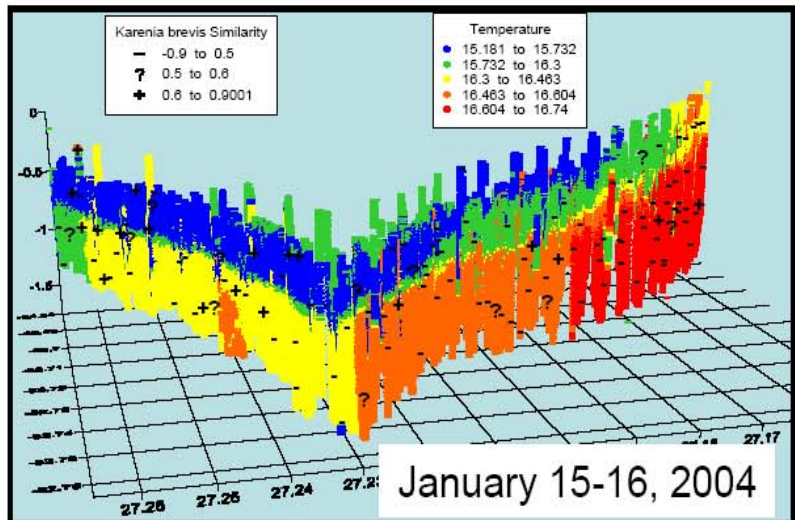
BreveBuster Payload



REMUS – Propeller Driven



Glider – Buoyancy Driven



Dr. Gary Kirkpatrick, Mote Marine Laboratories
**Funding: NOS/Center for Sponsored Coastal Ocean Research/
ECOHAB Program**

Robust Methodology/Technology— How Do You Get There?

- Use what works from others
- Be cautious about the “latest and greatest” technology
- Insure enough resources to cover all elements in the “chain”; better to do a few things right
- Evaluate comparability with historical data
- Provide assistance for monitoring methods development



Robust Methodology/Technology – How Can You Tell When You're There?

- You are obtaining high quality data and information “at the end of the pipeline” in a timely manner
- You are still sane

Partnerships – What is it?

- Sharing monitoring responsibilities in large-scale ecosystem programs
- Sharing funding responsibilities
- Cooperating in analysis, interpretation and delivery of information to management arena



Olympic Region Harmful Algal Blooms

ORHAB PARTNERSHIP

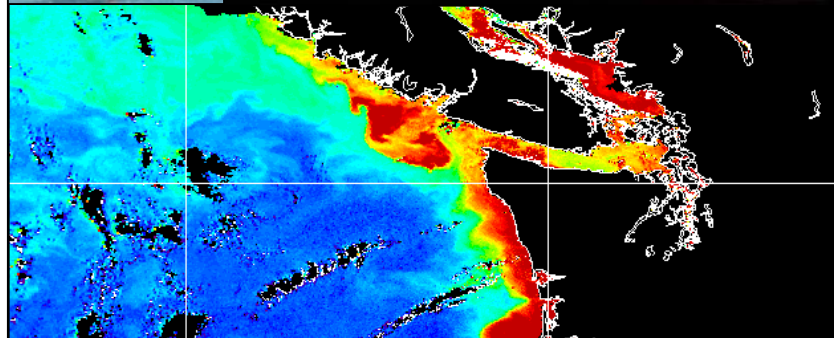
noaa's national ocean service



Clam opener canceled due to high toxin count

OLYMPIA — The first razor clam dig of the fall season has been postponed due to elevated levels of marine toxins on Washington's

Beaches affected by the health closure include Long Beach, Twin Harbors, Copalis, Mocrocks and Kalaloch.



Partners: State of Washington, Local Tribes, NOAA/PMEL, NOAA/CCFHR, Univ. Washington
Funding: NOS/Center for Sponsored Coastal Ocean Research/
MERHAB and ECOHAB Program

Photos: Dan Ayers

Partnerships – How Do You Get There?

- Key individuals in cooperating agencies sell concept to upper mgmt.
- Cooperators communicate frequently on all aspects of programs
- Produce results of use to all partners
- Establish a program-wide QA/QC and data management program



Partnerships – How Can You Tell When You're There?

- Components of monitoring program fit together in data analysis, interpretation and information delivery
- You're using the partnership to defend your budget when times are tough
- Your sanity is severely tested by all of the coordination meetings you're attending



Summary ...

Relevancy

Robust
Methodology/Technology

Partnerships

