

Panel 4 Coastal Issues: Jeff Payne

Key Issues (see slide)

- Coastal demographics and socio-economics – more people in coastal zone and different levels of resilience
- Frequency, intensity, and track of coastal storms – catastrophic impacts
- Changing water levels – Sea Level Rise (SLR) and drop in Great Lakes
- Coastal precipitation, temperature, and circulation patterns – drought, fire, supply, loss of sea ice
- Ecosystem integrity and demand for ecosystem services – provisioning, regulating and supporting services, phenology, Living Marine Resources (LMR), migration patterns, habitat fragmentation, invasive species, disease, Ocean Acidification (OA)

Illustrative Needs

- Systems approach
- Monitoring data, predictions, and projections
- Risk and vulnerability assessment – adaptive management
- Decision support tools, maps, and visualizations
- Communication and literacy

Systems in play/socioeconomic factors/climate impact these systems

SARP

- understand needs and gaps of climate info and improve decision support capacity
- FY11 like to expand coastal work
- Possibly expand to LMR

RISA

- Partnering in long-term relationship with stakeholders
- Not all touch coast (CAP and ACCAP examples)
 - Work on sea ice, best management practices (BMPs), SLR projections
 - CIG – assessing impacts to coasts, research on impacts
 - Carolinas – extend science based info to stakeholders
 - Look to expand coastal work

TRACS

- Small budget, fund drought and water resource and one coastal project for emergency management
- Increase support for sectors
- Better transitioning of applications

Coastal Services Center (CSC)

- Coastal resource management and emergency management are customers
- Understand customer needs and wants to develop validated requirements

- See slide for key audiences and partners
- Contribute high-resolution data, training (work with NERRS, Sea Grant, utilize GIS), tools and technical assistance (human dimension component, “science sings”)
- Future: looking to work more regionally, incorporate climate considerations into all aspects of work, focus on inundation issues
- National approach to develop SLR visualization tools and ability to analyze impacts
- Capacity to engage stakeholders

NOAA Coastal Strategy

- Combined NOAA groups (see slide)
- Focus future NOAA investments for integrated planning
- Goal (see slide)
- Priorities:
 - Reduce vulnerability of coastal community and ecosystems to hazards of climate change

Identify Gaps:

- Predictive capability for SLR
- Address land use and adaptation
- Assess and implement regional priorities for habitat
- National coastal policy and incentives for states
- FY09 – SLR visualization tools
- CIPA working with Coastal Strategy

Integrate Coastal with NOAA Climate Portal: populate with tools, training, data, and resources

- Coastal will be represented with feature articles, access to data and services, coastal data and services, development of coastal sector
- Coastal Climate tools and training

Teeing it Up

Are we still programming or do we need to be designing?

- How critical is the coastal sector as a focus for immediate attention?
- How do we deal with many outputs and systematically adopting insights?
Knowledge management?
- Decisions will be made even with uncertainty. How will we understand what it means to make an acceptable decision with respect to climate impacts (nature and scale)?

Jean Brennan, Review Team

- **Question on tools and training** – NIDIS opportunity for users to add data and add to virtual space, can your constituents add to this interface?

Jeanine Jones, Review Team: Sea Grant funded through OAR at about \$55M, they are natural partners

Len Pietrafesa, Review Team: in approach to working with coastal communities, do you interact with town councils and mayors? We have done some of that in NC and the locals don't know that NOAA exists the way states do, many city and town leaders are developers and need to be accounted for

Answer: interact with council of mayors, governors, and local governments, try to reach end users and group doing the work

External Panelists

1. Mike Beck, The Nature Conservancy

- Points are spread between coastal and ecosystems and doesn't see much difference
- TNC Marine Conservation Priorities
- US Coasts and Oceans, Eastern Caribbean, Pacific Islands, Coral Triangle
- Challenging to poll the group
- Key Advice based on experience as client and partner
 - Advance Interactive Decision Support and Visualizations
 - Provide review of benefits & constraints of commonly used tools
 - Advance Predictions (or Help make existing predictions more accessible)
 - Most of these require collaborative ventures with developers and users; scientists and stakeholders, government and non-government

Coastal Resilience Project

- TNC, NASA, Pace Law, ASFPM
- Provide interactive decision support – show socio-economic and ecological conditions
- Realistic future scenarios, identify key impacts
- ID suite of options for adaptation
- Focus on local decision making
- www.coastalresilience.org
- Can do it real time

- It is a slow-moving problem “boiling frog problem”, need to be able to show problem

Example: Southern shores of long island through screen shots to demo tool

- Show different ecological characterizations, suite of socio-economic data (population densities, age, poverty, etc), what types of impacts, such as loss of marshlands and which have migration barriers, can also look at scale of economic impacts
- And then do scenario mapping – storm surge, SLR, emissions scenarios
- Looking for joint opportunities between natural resources and hazard mitigation
- Identify different suites of solutions to provide range of options
- For a variety of these problems, need interactive decision support tools and need to get beyond proof of concept
- Need some standardization but not stifle innovation, and this is important role for NOAA to play
- Make information more accessible, in other cases have some of the information available but not all that is needed

LMR advice:

- Support finding solutions – testing adaptation responses
 - Need cost/benefit of different approaches
 - Green vs. grey shoreline protection
 - Resilient Marine Protected Areas (MPA)
 - Restoration projects can be examples
 - Could use NERRS network
 - Support states to develop and implement some of these area-based management plans that include climate adaptation

2. Betsy Blair, Hudson River Research Reserve, New York

Roles: regulator, land manager, resource manager, policy maker, provider of tools and information, generator of climate adaptation related information, researcher, educator and trainer

Climate change adaptation initiatives – NY state and Hudson Valley

- NY State SLR task force
- NY Ocean and Great Lakes Initiative
- NY Energy Research Development Authority – climate change impact assessment
- Rising waters scenario planning
- Hudson Valley climate change network
- The Nature Conservancy (TNC) coastal resilience project

Experience working with NOAA – CSC

- Habitat mapping, benthic mapping to do better storm surge models, social sciences – characterization of hazard resilience, training

Vital Products and Services

- Support for monitoring vital trust resources
- Better understand habitat responses to SLR and CC including migration and accretion
- Better understand ecosystem services and value of services, especially coastal
- These are 2-way collaborations – states are already doing some of this but looking at leveraging, assistance and collaboration

NERRS sites – network to promote better coastal management through stewardship (27 sites)

- Internally, between and regionally integrated trainings

Sentinel Site Characteristics – SLR Initiative

Vulnerability Assessments

- High resolution topography
- Bathymetric data
- Predictive models of inundation, water shed inputs
- Local, detailed projections of coastal storm impacts

Support for adaptation planning (see slide)

- Interactive decision support tools including ecological impacts

Shoreline Management decisions

Key Components

- Identify tradeoffs in ecosystem functions and services of shoreline treatment options
- Economic analysis
- Transfer new knowledge to stakeholders and user
- Done in NY and NC

Need good training models

- New CSC training course: Planning for Climate Change – CSC, RISA, Sea Grant in King County
 - To be delivered by all NERRS

Biggest Immediate Needs

- High resolution topographic mapping (LIDAR), difficult to integrate, diff resolutions, fragmented
- Integration within and among public agencies

- Don't have decision maker attention until they can see visualization of impacts and economic costs
- Hope that it can be done on regional basis

Discussion

Len Pietrafesa, Review Team: mentioned SLR, what are projections based on?

Answer: Projections by NASA Goddard on IPCC – B1, A2, and 3rd

Michael Crimmins, Review Team: How did you know about CSC? What does CSC provide in terms of capacity building?

Betsy Blair, Answer: They get out to NERRS and other coastal meetings and explaining what they have. We use their 7 trainings, with documentation, courses such as project design, process skills, help us develop common language, invited them in 24 times, other trainings are geospatial tools and others

Jeff Payne, Panelist: add, legacy capacity building process for incorporating GIS into their working abilities, working with ESRI, developing data layers, training and maintenance which took 3 years.

Jeanine Jones, Review Team: Storm surge analysis can be site specific, how do you view the role of NOAA vs. others in this area

Betsy Blair, Answer: In NY, identify constellation of interested partners, and needed steps like complete bathymetry, then see role for NE climate RCC, Goddard and bring these groups and NOAA at table to provide technical assistance

Margaret Davidson, Program Manager:

- National Weather Service (NWS) and Coastal have interest in geodetic elevations and tide gauge, integrated NOAA strategy for storm surge, sub-committee on disaster reduction.
- On inundation, work out common standards and framework, and JSOST reports to CEQ and OSTP established WG on communications.
- Workshop for storm surge framework, protocols and interoperability. Ex DE had 8 versions of LIDAR of just coast

Jake Rice, Review Team: context – governance process is important, decision making is also social choice including regulation, risk tolerance can vary, how do we get consistency of regulatory frameworks with different risk tolerances? How do you manage that?

Jeff Payne, Answer: lessons learned evolve to relationships, need to be trusted and credible, need to get users to believe you are there for their best interest, look at Kellog Ruberick, CSC not there to advocate a position but provide information, ex. In Pacific must observe social traditions, must be socialization of information

Jean Brennan, Review Team: For Mike, there are many tools, need to build off of them, are they proprietary or open source?

Answer: They are open and can be taken and used in other contexts, need these type of tools to bring together the information/data out there in a common platform in interactive way, more fundamental problem is what data to use for storm surge and is that data available in format needed.

Anthony Janetos, Review Team: Where coastal projects are mentioned, why is Gulf Coast absent? It is currently a gap and encouraging in the SE to look at mix of issues

Mary Culver, Panelist: There are a series of workshops in Gulf Coast, USGS and NOAA led stakeholder workshops, USGS, ACE, MS Sea Grant, met with group of 30 stakeholders, understand need for SLR info, and listening session for GCRP, don't want to talk about climate change but will talk about storms, need for local info, interested in tools, 2nd piece is not just put on web but need to do training and outreach

Anthony Janetos, Review Team: how does that get wrapped into the planning for this part of the program?

Answer: There are FY11 alternatives for coastal priorities