2010-2015
ACCOMPLISHMENTS PART 2

Data Management and Communications

SECOORA
Southeast Coastal Ocean Observing Regional Association

IOOS
INTEGRATED OCEAN OBSERVING SYSTEM

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Data Management and Communication Subsystem

- **Goal 4: Enhance the Data Management and Communication (DMAC) Subsystem**

- Service data providers and capture data
- Provide information to users and stakeholders rapidly and effectively
- Coordinate/collaborate data management efforts with US Integrated Ocean Observing System (IOOS®)
- Achieve operational status (Limited implementation due to funding levels)

Data Management and Communication Subsystem (as originally designed and implemented)

Data Management Coordinating Committee

DMAC Team

University of South Carolina (Charlton, Jeremy, Dan, Jeff, Susanne, Charlton)

University of North Carolina Chapel Hill (Sarah, Chris)

Skidaway Institute of Oceanography (Julie)

University of North Carolina Wilmington (Xiaoyan)

University of Miami (Liz)

USF (Vembu, Jeff)

Data Management and Communication Subsystem (as originally designed and implemented)

Data Management Coordinating Committee

- Consisted of PIs and stakeholders
- Coordinated and prioritized DMAC activities
- Identified products
- Met in person at least once a year

DMAC Team

- **Consisted of data management, web design and data collection folks**
- **Centralized hub for data assimilation and access**
- **Emphasized and supported data management at the local/site level**
- **Met in person at least once and usually twice a year**

Data Management and Communication Subsystem (as currently implemented)

University of South Carolina

- Maintain SECOORA DMAC infrastructure
- Maintain and upgrade interactive maps and data portal
- Provide service and support to data providers, data users, products users, etc.
- Engage in IOOS DMAC
- Collaborate with SECOORA product development contractor

University of North Carolina Chapel Hill

- Support IOOS vocabulary efforts

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Maintain SECOORA DMAC infrastructure:

• This includes appropriate staffing, equipment, rigorous documentation of code, tools, and program developments to facilitate their wider use, and increased public awareness of SECOORA DMAC data, products and services.

•The ultimate goal of the DMAC is to achieve sufficient consistency, reliability, and usability to become an operational asset in support of the data and information management needs of SECOORA end users.

• An IOOS / SECOORA reality is within the constraints of funding and resources, the SECOORA DMAC team is working with the RCOOS PIs, identified additional end users, and SECOORA staff to identify prioritized activities and scheduling.

• Identifying and implementing efficiency measures is a constant effort. Consolidation of core DMAC infrastructure (hardware, software, personnel) to a single entity (USC). For core DMAC processes, we have streamlined operations by identifying opportunities for centralizing, outsourcing, and/or virtualization of server operations. Unnecessary redundancies have been eliminated, and only those required to maintain the documented service level are maintained. Additionally, routine processes (e.g., QA/QC, report generation, etc.) have been automated, where possible.

• Documenting all practices on Google docs and github.

Engage in IOOS DMAC:

• The SECOORA DMAC team has been actively engaged in IOOS Program Office activities in support of national IOOS DMAC efforts. These have included …

- Working with NDBC to use ncSOS feeds and to support NODC archival effort for non-federal data
- Overall compliancy with IOOS standards
- Participating in the Eye on Earth initiative which has evolved in to the IOOS pyOOS related services software review
- NGDC Web Accessible Format (WAF) catalog
- QARTOD
- New initiative funded by NOS to integrate NERRS with IOOS

Service data providers and capture data:

21 IN-SITU STATIONS

UNCW
- Buoys – 7
- Coastal Pier station – 1

USF
- Surface buoys: 3 (c10, c12 and c13)
- Sub surface moorings –2 (C11 and C15)
- Coastal Tower – 1 (C21)
- Coastal Stations – 6

UGA ($102,658 from NOAA OAP**)**
- OA Buoy – 1

5 MODELING PROJECTS

NCSU
- SABGOM
- Storm Surge

UF
- Storm Surge

USC
- Beach Water Quality

ROFFS
- Fisheries Habitat Modeling

15 HF RADARS

USC (two WERA HFR)
- Georgetown, SC
- Caswell Beach, NC

UM (four WERA HFR)
- Crandon Park, FL
- Virginia Key, FL
- Broad Key, FL
- Dania Beach, FL

UNC-CH (three CODAR HFR)
- Duck, NC
- Cape Hatteras, NC
- Core Banks, NC

USF (four CODAR HFR)
- Redington Shores, FL
- Venice, FL
- Naples, FL
- Site location TBD

UGA SKIO (two WERA HFR)
- St. Catherine, GA
- Jekyll Island, GA

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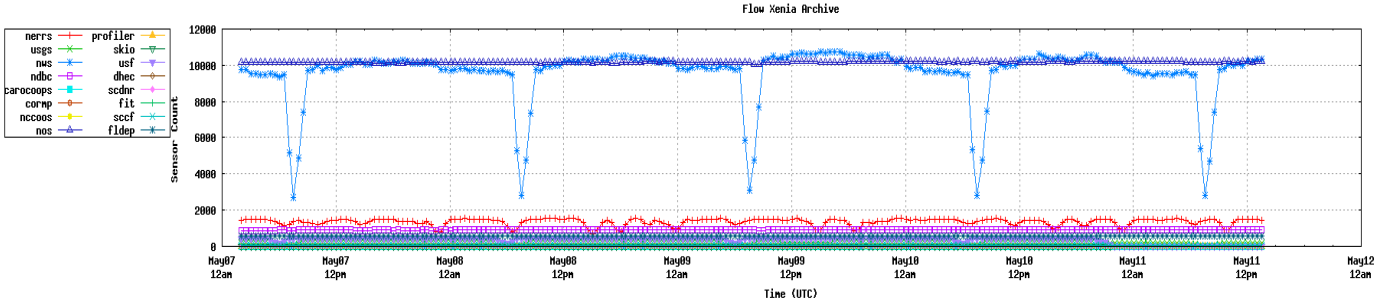
Provide information to users and stakeholders rapidly and effectively:

- The present SECOORA data repository (aka “commons”) collects data from:
  - Approximately 2,000 fixed platforms, moored buoys and gliders with 5,000 observations/hour, (including data from some common federal backbone observing systems e.g., NOAA NDBC, NOS, NERRS, NWS, and USGS, as well as sub-regional programs e.g., Carolinas-RCOOS, COMPS and state agencies),
  - Four (4) ocean conditions (NCSU*2, USF, UF) and one (1) water quality (USC) model providers,
  - Fifteen (15) radar systems (Skidaway, UNC, USC, USF, UM),
  - Non-federal include FLDEP, SCCF, Everglades National Park, FAU, LBHMC, FWRI, FIT, USF totaling over 50 stations.
  - Drifters from NEFSC and Horizon Marine

Provide information to users and stakeholders rapidly and effectively:

- Challenges include:
  - Keeping track of data streams being up and down via database checks and email notifications
  - Determining the best mechanisms for viewing, querying and accessing data via a website. (Data pushes and pulls are much easier to handle.)
  - Supporting data management, in particular QA/QC and documentation, at the local level



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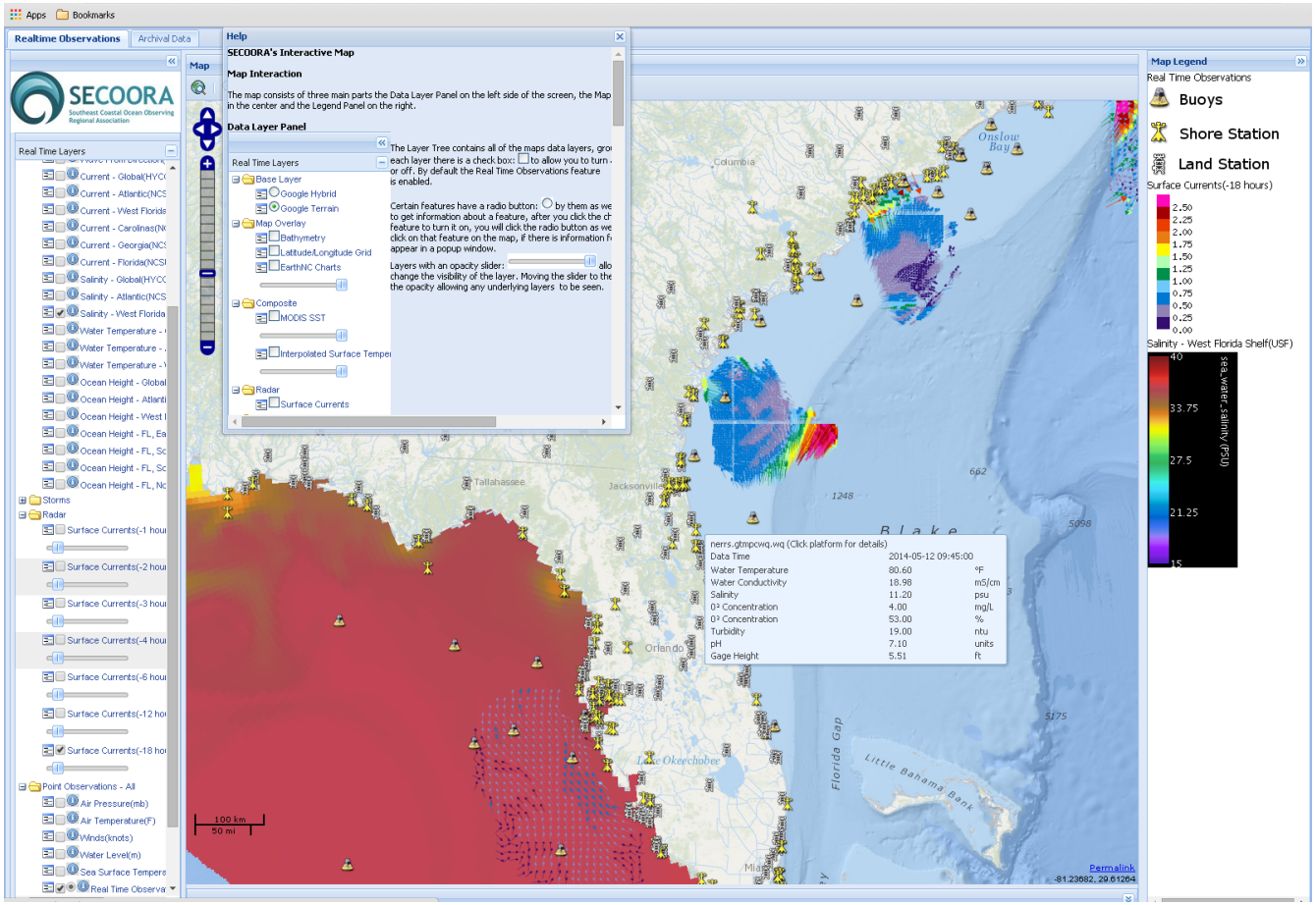
Provide information to users and stakeholders rapidly and effectively:

- Based on experiences, user opinions, consistency with other IOOS RA and ROP efforts we are moving from …



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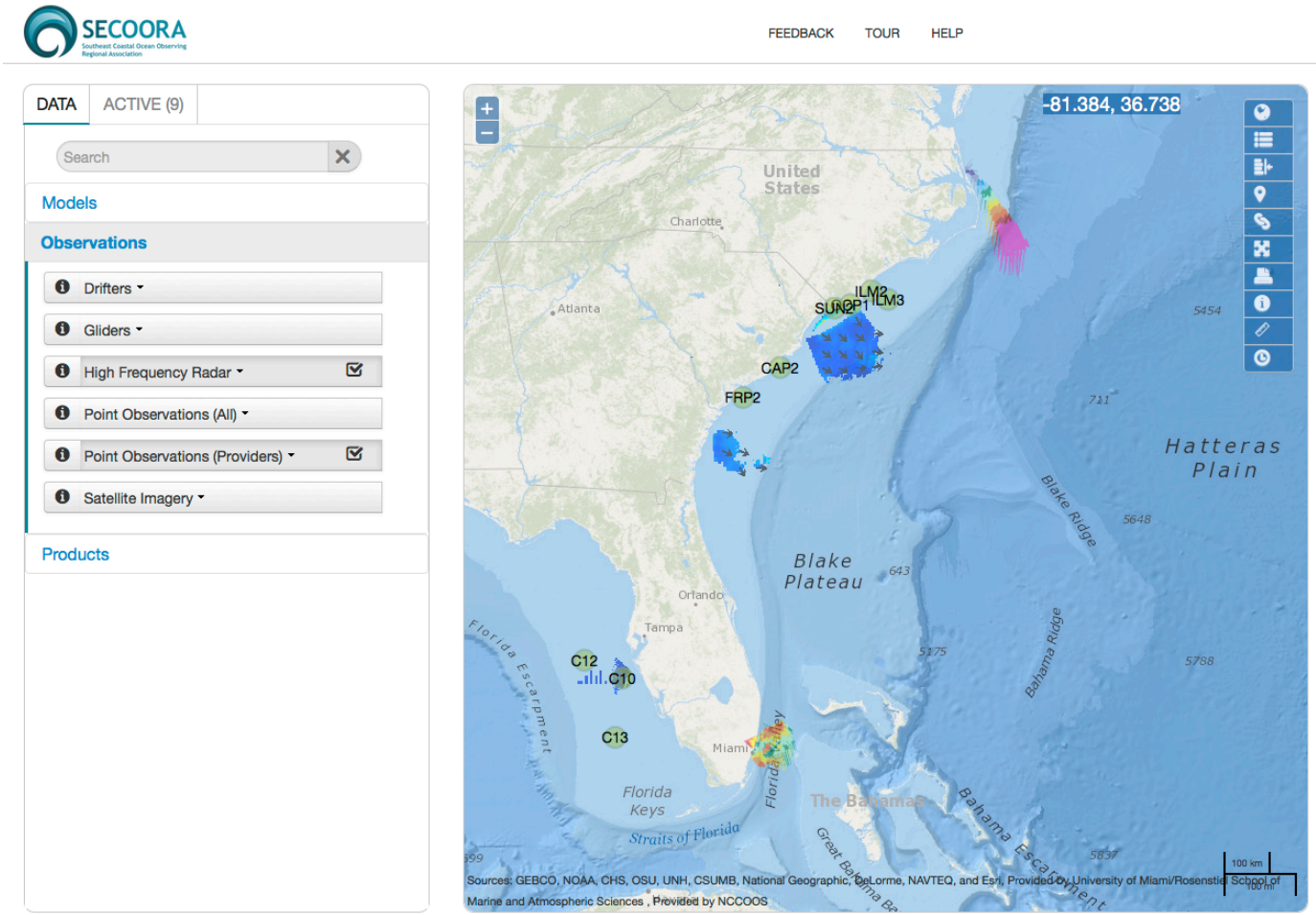
Provide information to users and stakeholders rapidly and effectively:

- … to a more intuitive catalog approach providing the user greater control over content.



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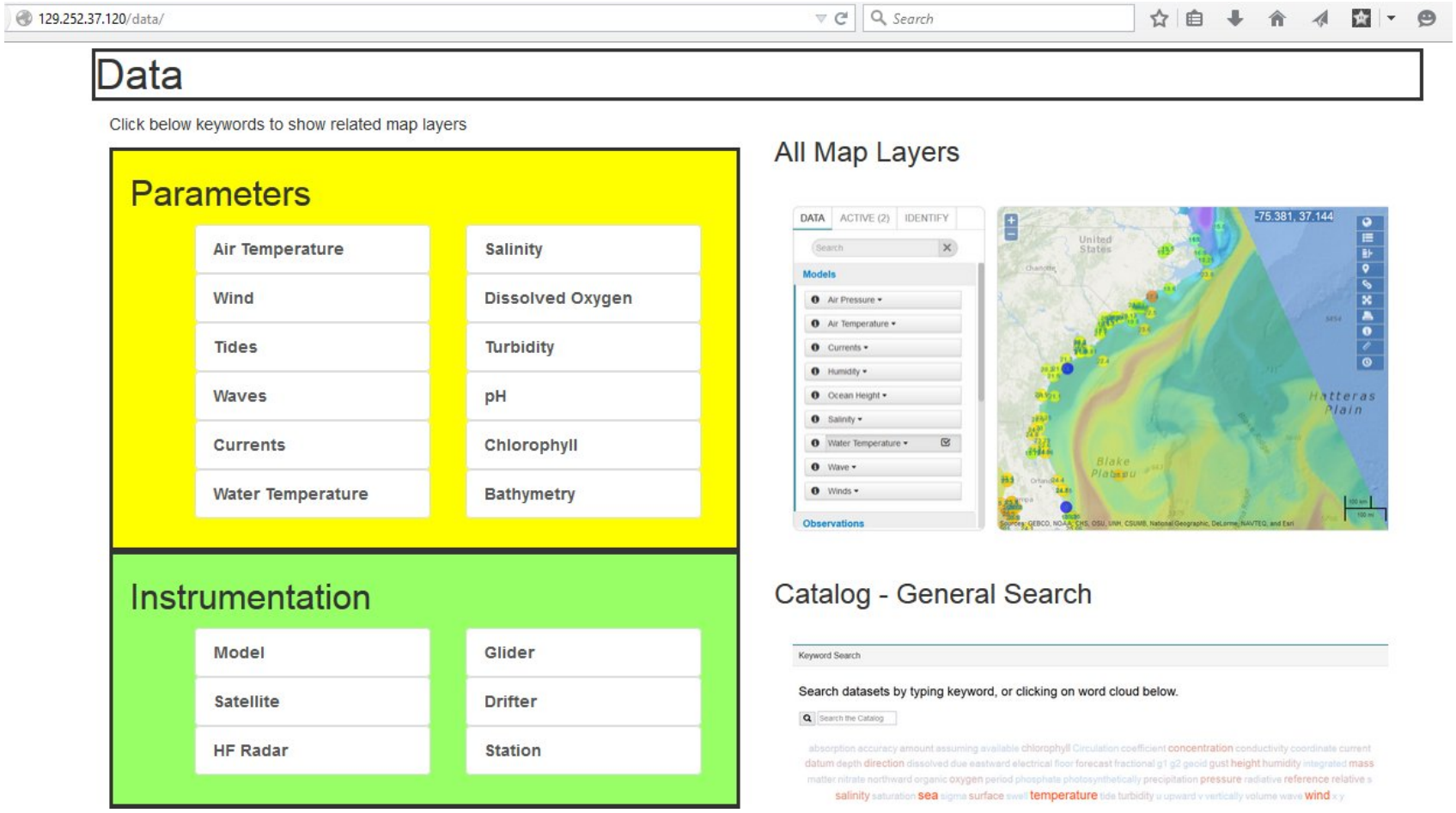

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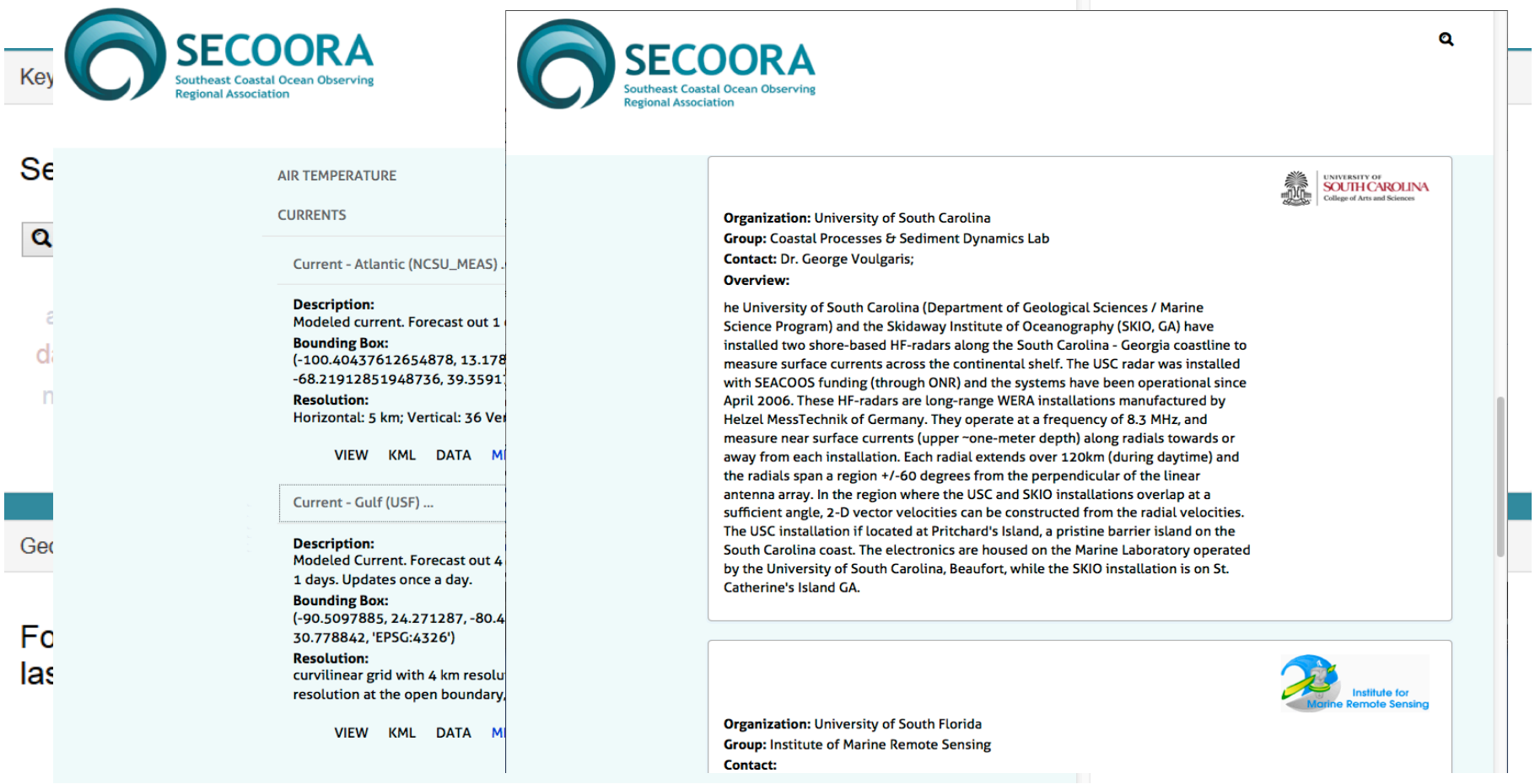

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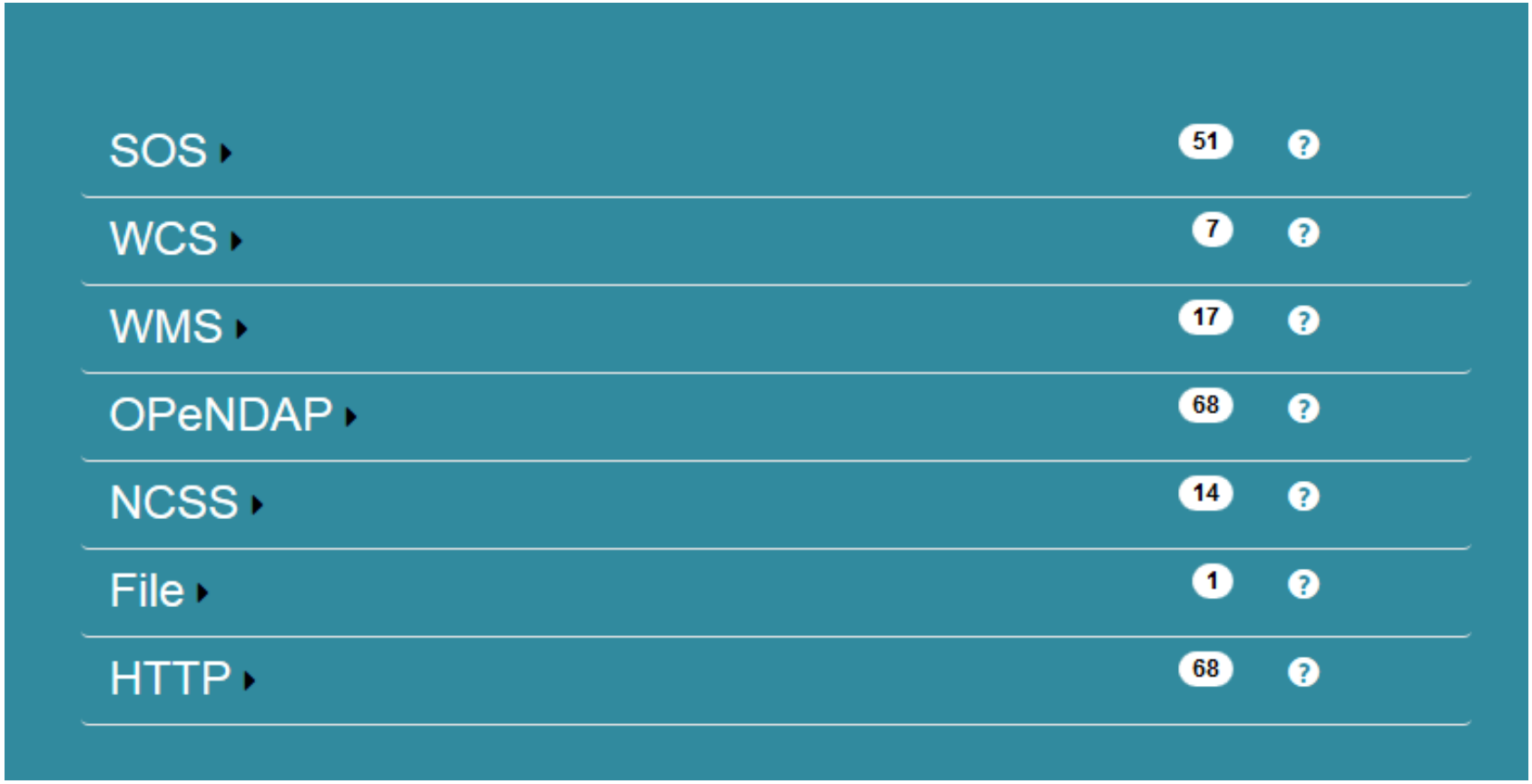

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Provide information to users and stakeholders rapidly and effectively:

SECOORA PIs, Members and Staff

NOAA: IOOS Program Office, National Estuarine Research Reserve System, Oceans and Human Health Initiative, National Data Buoy Center, Data in the Classroom, Chesapeake Bay Interpretive Buoy System, National Coastal Data Development Center, National Weather Service Hydrometeorological Automated Data System, NWS Regional Forecast Offices, National Centers for Coastal Ocean Science, Coastal Services Center, ….

Regional Associations: NANOOS, NERACOOS, AOOS, MARACOOS, GCOOS, CARA, …

Others: Estuaries.Gov, US Coast Guard, Pacific Shellfish Growers Association, San Diego State University Field Stations Program, Stockton College, Maryland DNR, Chesapeake Bay Eyes on the Bay, Georgia Forestry Commission, Georgia Coastal Ecosystems LTER, Center for Integrative Coastal Observation, Research and Education, Environmental Monitoring Sensor Intelligence Corp, SC Department of Health and Environmental Control, Smithsonian Institute, MBARI EARTH, South Brunswick High School, European Environment Agency, State of New Hampshire, Hudson River Environmental Observatory, Gulf of Maine Research Institute, The Nature Conservancy, EcoTrust, Governors' South Atlantic Alliance, University of Maryland, SC Department of Natural Resources, Duke University, Georgia Tech, ….

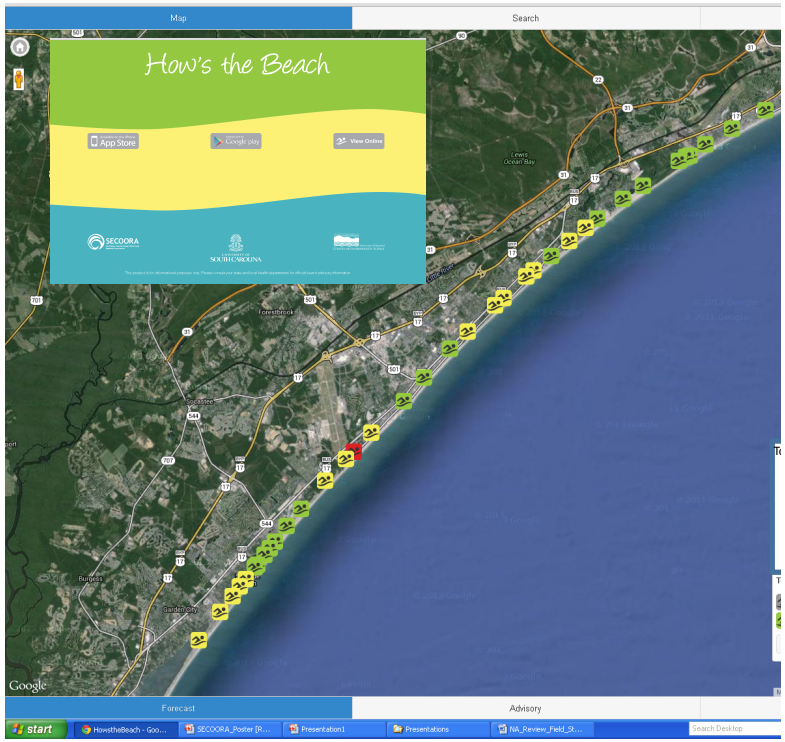
Provide information to users and stakeholders rapidly and effectively:

• Focusing on “in reach” the past couple of years, the DMAC team has been working with …

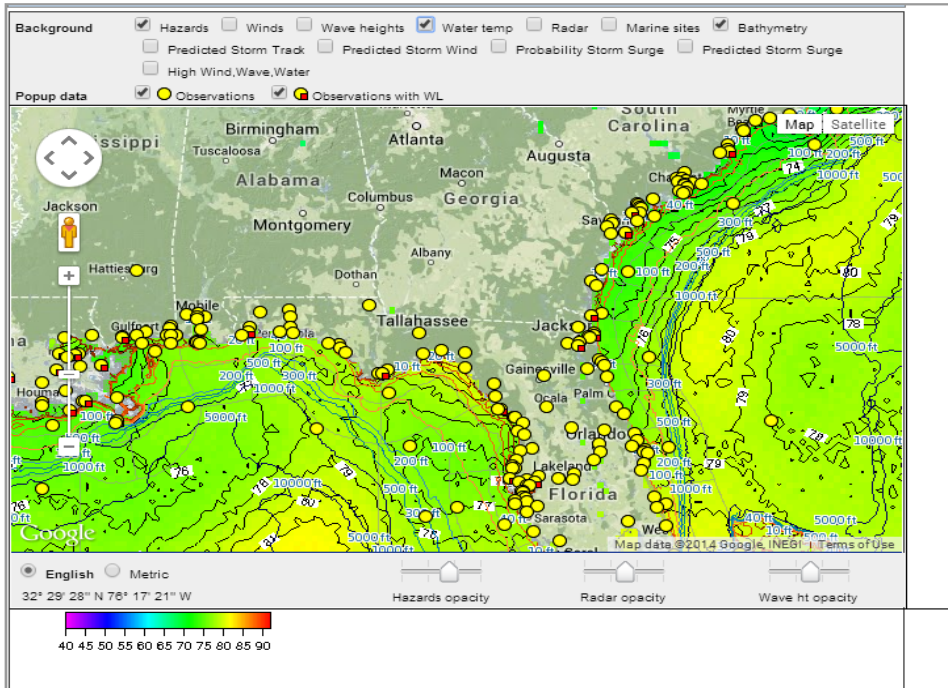
- USF, NCSU and UF on THREDDS data access
- USF COMPS on buoys and coastal station data issues
- FAU LOBO
- FIT on ADCP data issues
- USF on gliders
- UM radar data issues
- ROFF’S for model output access
- FWRI to re-instate data streams after redeployments

Provide information to users and stakeholders rapidly and effectively:

- Supporting product development and access, efforts have focused on …



Marine Weather Portal



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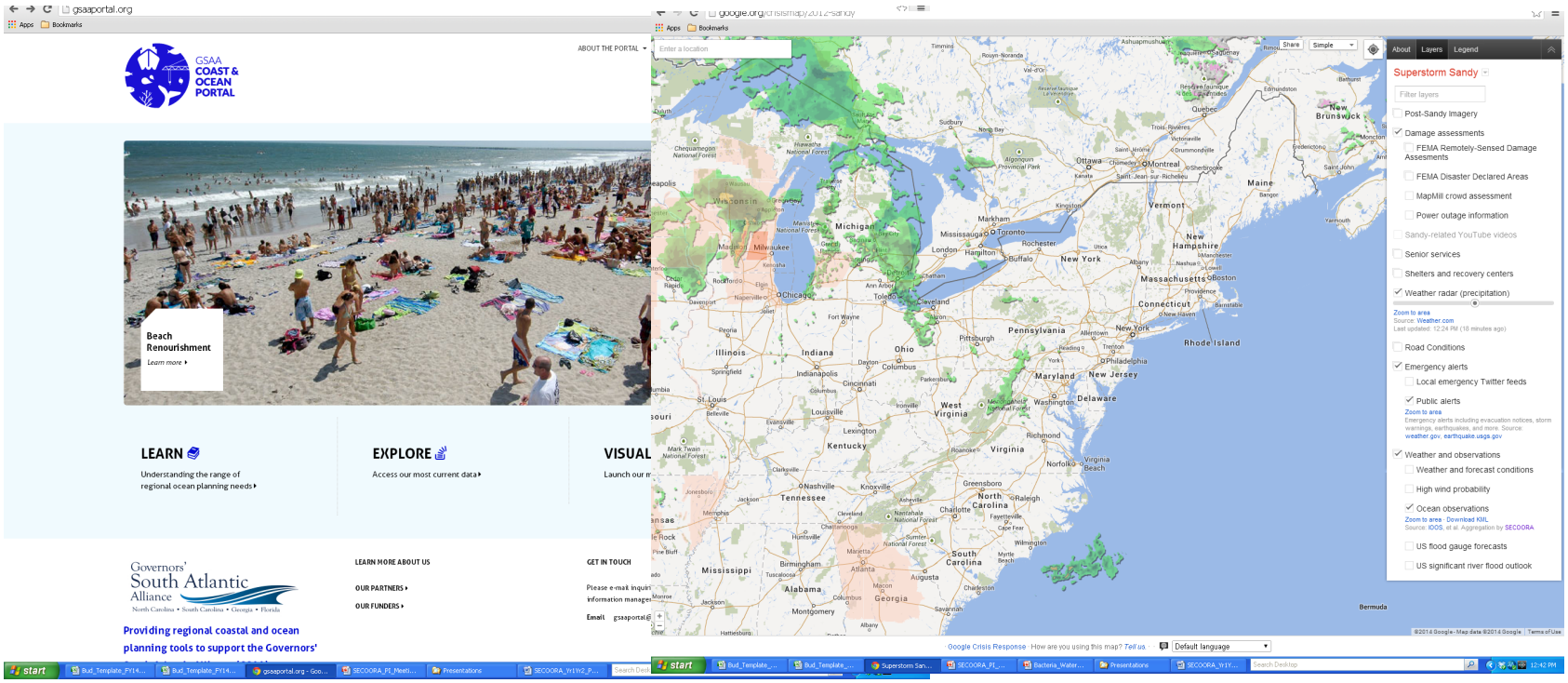

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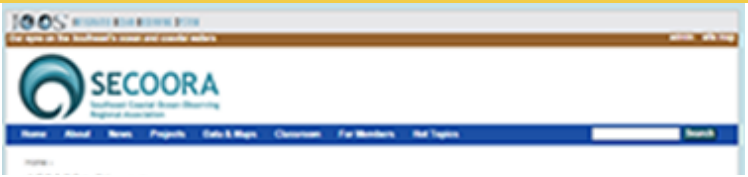

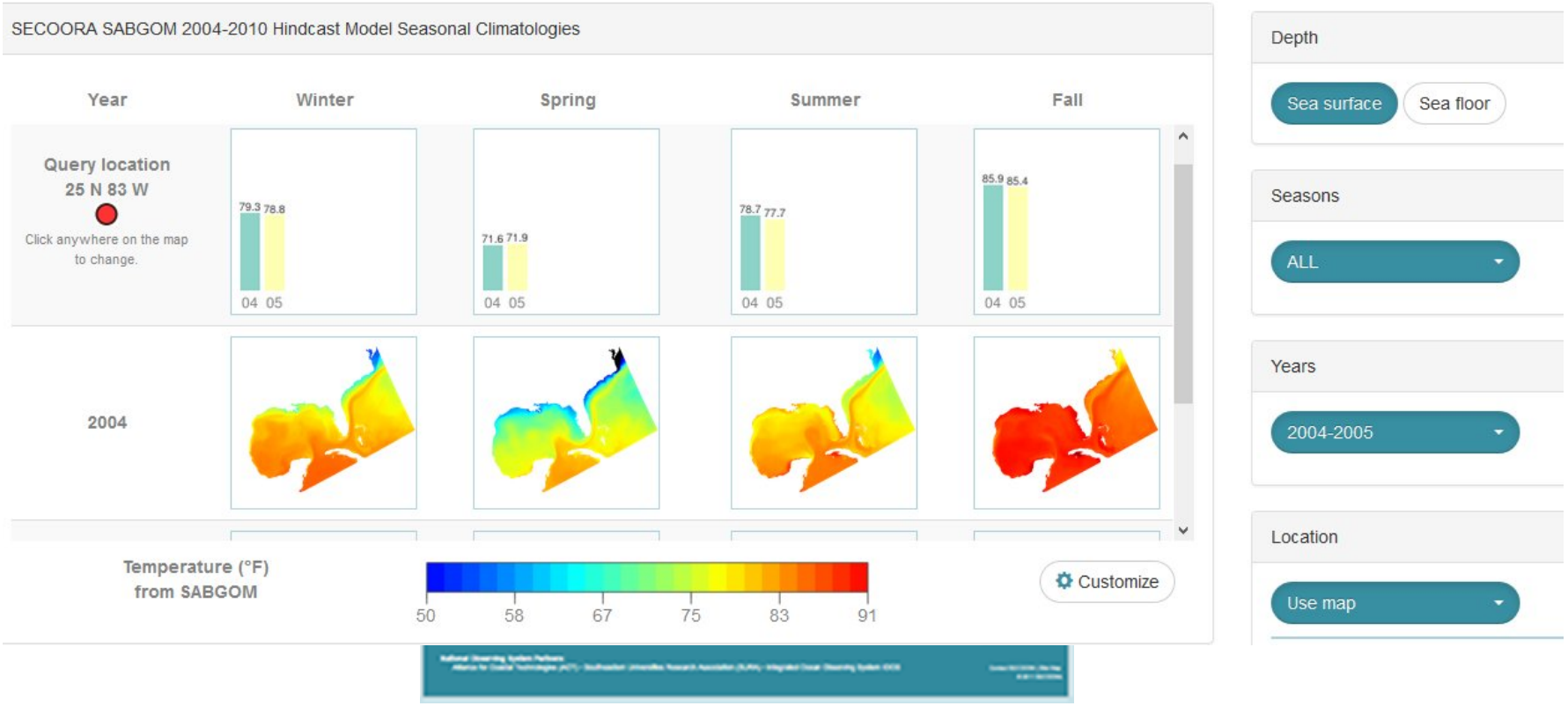

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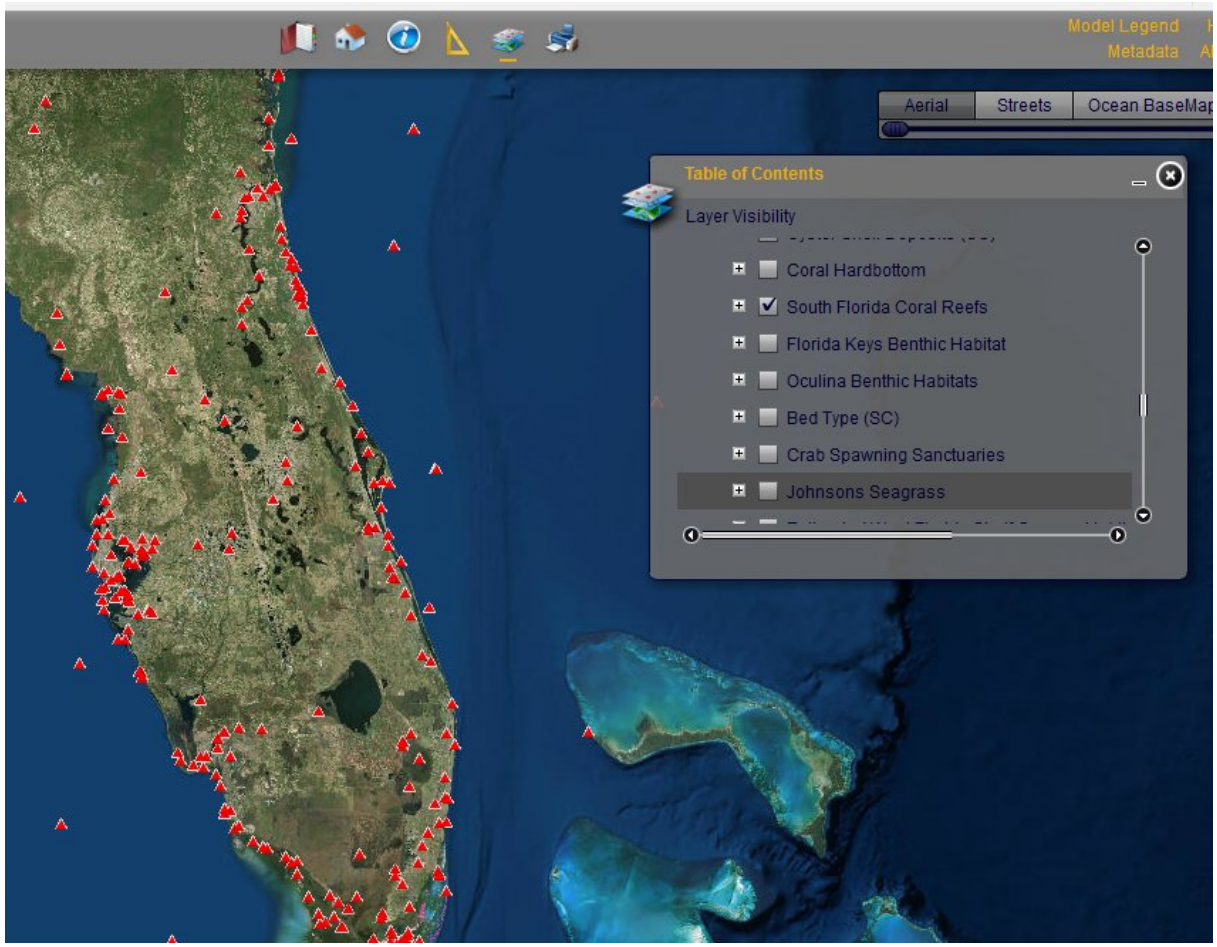

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Data Management and Communication Subsystem

Lessons learned over the years:

- know/find your audience/needs/advocates

- beneficial being able to learn, share and reuse from others doing similar work via conference calls, online documentation (wikis) and source code (github)

- standardized vocabularies and services/API's for data discovery / access

- repeated 'heavy' processing/performance/expertise tends to favor a centralized or DAC (Data Assembly Center) approach - building capacity

- singular audience used in the selection/assembly/access/display of products tends to favor localized approach - providing context

- know your unique/required dependencies/costs while also understanding where constantly changing technology/resources can reduce dependencies/cost

Data Management and Communication Subsystem

- Challenges moving forward
  - Data management vs. data management maintenance
  - Data management and product development are not one in the same
  - Data providers must be supported for local data management activities