

A Proposed Role for JCOMM in the Standardization of Data Structures and Formats

A Client's Perspective

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Outline

- MetOc Halifax
- Problem Definition
- MetOc Halifax needs
- Recommendations
- “The Perfect Client” Scenario
- Questions

Meteorology and Oceanography (MetOc) Halifax

- MetOc Halifax composed of a Meteorological (Met) and an Oceanographic (Oc) section
- Staff consists of:
 - 13 civilian personnel
 - Weather Service Centre Halifax (WSC)
 - 9 Environment Canada (EC) forecasters
 - 4 administrative personnel
 - 21 military personnel
 - 16 Meteorological Technicians (Met Techs)
 - 3 Sonar Operators (Sonar Ops)
 - 2 Naval Officers (MARS Officers)

MetOc Halifax

- Meteorological Section
 - WSC Halifax (civilians forecasters)
 - Produce all met products iaw Service Provision Agreement (SPA)
 - Met Techs (military)
 - Disseminate products to customers via an unclassified broadcast and classified internal and remote networks
 - Provide specialized mission products and briefing services

MetOc Halifax

- Oceanography section
 - provides oceanographic support to our customers
 - Produces SST and Ocean Feature Analysis (OFA)
- “Canadian Oceanographic Centre of Excellence”
 - Underway
 - Ocean Workstation (OWS) Development
 - Ocean Modelling
 - MODIS imagery
 - RADARSAT derived wind speed and direction
 - Automation of some services and procedures
 - Soon to be undertaken
 - Nova Scotian Committee on Ocean Data Sharing (NSCODS)
 - OWS / GIS cooperation in product development

MetOc Halifax

- Our customers:
 - Joint Task Force Atlantic (JTFA) / MARLANT (ships, subs, integral and lodger units)
 - Maritime Security Operations Centre (MSOC)
 - RCC / Canadian Coast Guard (CCG)
 - EC
 - BIO and Dal
 - DRDC(A)
 - Naval Engineering and Test Establishment (NETE)
 - NATO / Allied warships
 - Halifax Regional Municipality (HRM) Emergency Operations
 - All mariners receiving our HF meteorological broadcast (C14L)

Formats

- Weather Products
 - Canadian Meteorological Centre (CMC) provides:
 - GriB Edition 1 data, BUFR Edition 2
 - Text data is provided to users upon request
 - WMO has clearly established GriB, BUFR and text data formats
 - International variations are minor and can usually be accommodated through script changes

Formats

- Oceanographic products (major systems)
 - OWS ingests .txt and .php files, and stores data in .dat
 - Sonar Operators interpret images to create SST, OFA
 - MODIS imagery saved as .jpeg, .tif
 - Global Command Control System (GCCS) uses .otg formatted data
 - Modelling systems use .txt data and specifically designed formatted data streams
- Numerous minor systems / software packages use various formats

MetOc Halifax Data Sources

- North America
 - Weather data
 - CMC
 - Oceanographic data
 - NOAA
 - SeaSpace
 - US (NAVO, FNMOC, NLMOC, GODAE)
 - EC
 - APL Ocean Remote Sensing
 - NASA
 - Argos
- International operations require that MetOc Halifax data forage wherever data is available

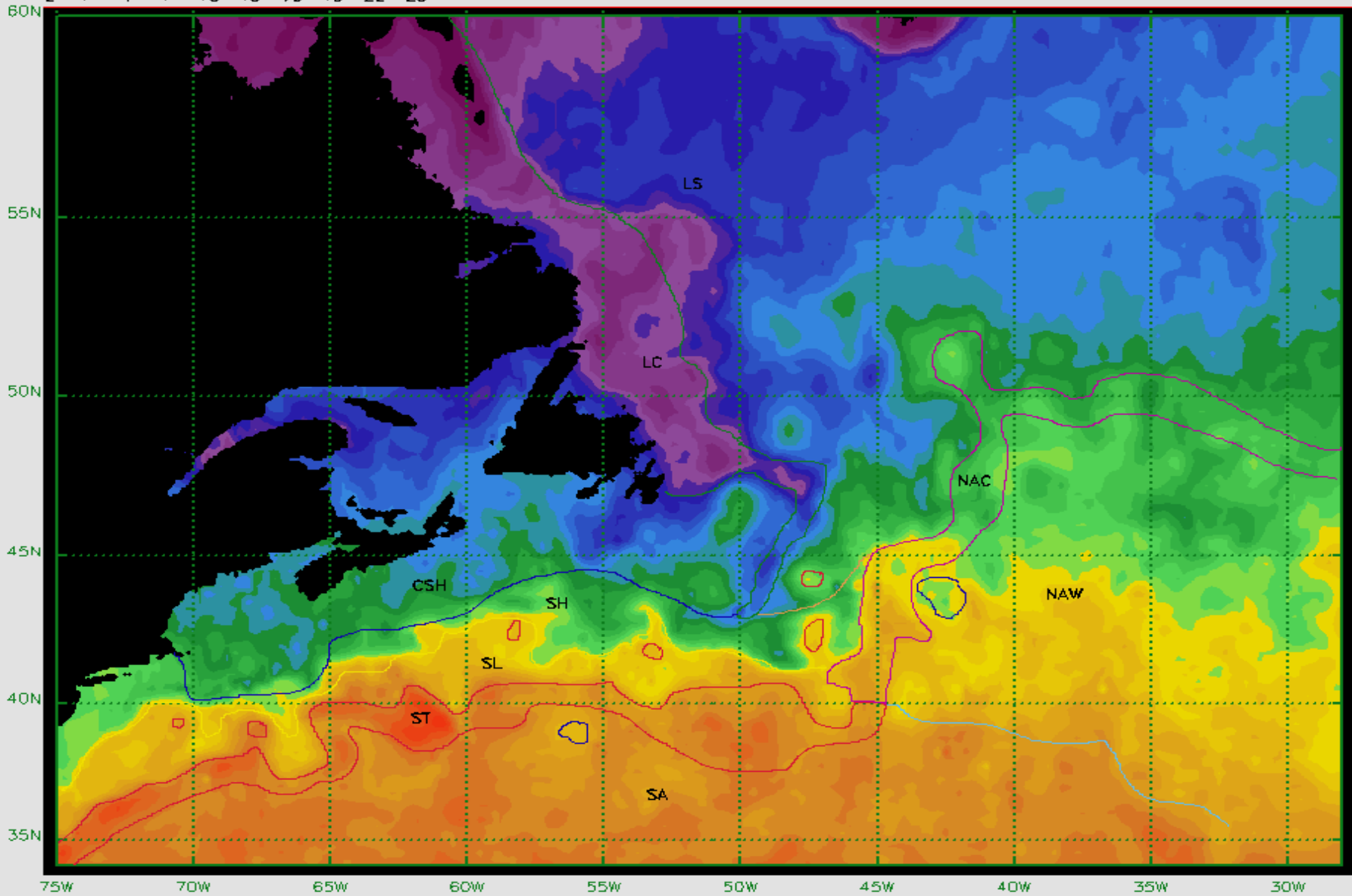
SST

From:2004-NOV-02 1423

To:2004-NOV-05 0936

Length Scale: 100. km

Trial Field:002NOV_PREV.SST



Problem Definition

- Transitioning from an organization-centric view to a broader community-based view
- Community-based view is driven by:
 - Operational requirements
 - Enabling technology
 - Realize community has common data requirements
- Academia, scientific community, military and other government departments beginning to share data and information through web-based delivery systems

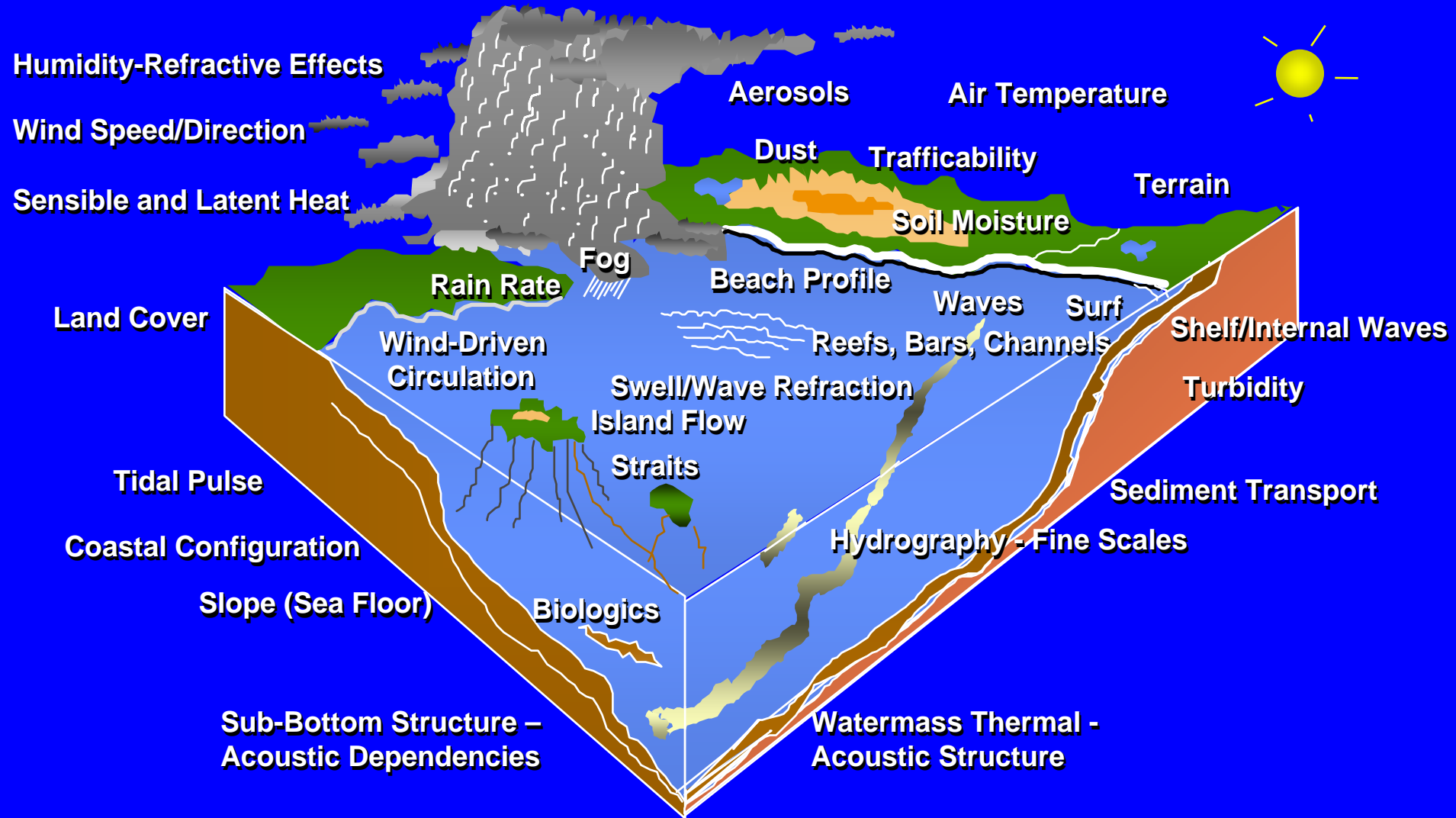
Problem Definition

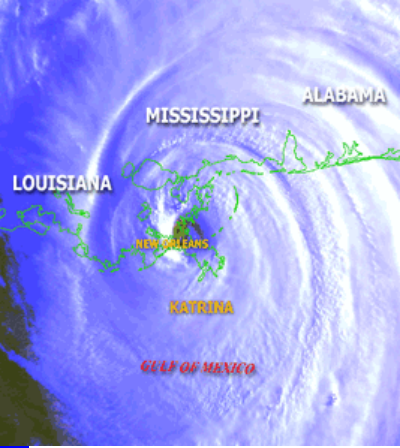
- “Data serving” replacing “image serving”
- National / International cooperation is essential
- Oceanographic data foragers / foragees
 - Have their own formats and data structures
 - Need to ensure its data in desirable formats
 - Not all Schemas published or easily deciphered
 - Compatibility between Schemas non-existent

MetOc Halifax Needs...

- Rapid Environmental Assessment (REA) requires access to national / international data sources
- Data reception must be in operational time frame
- Minimal number of formats and structure(s)
- Data sources must be easy to find and navigate
- Compatibility issues must be easily resolved
- Direction needed on MetOc as a data source

Littoral Ops





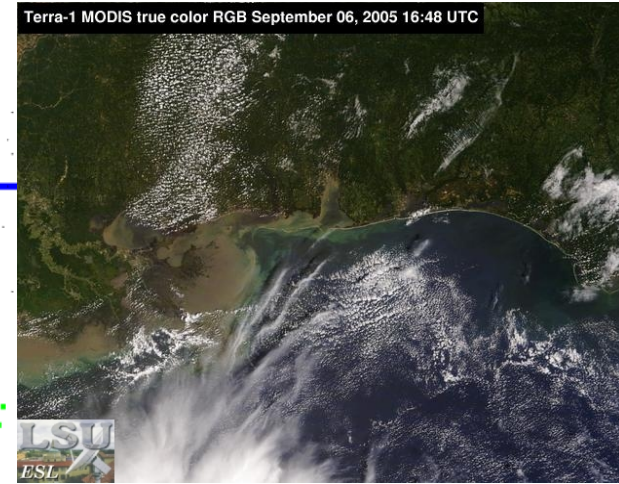
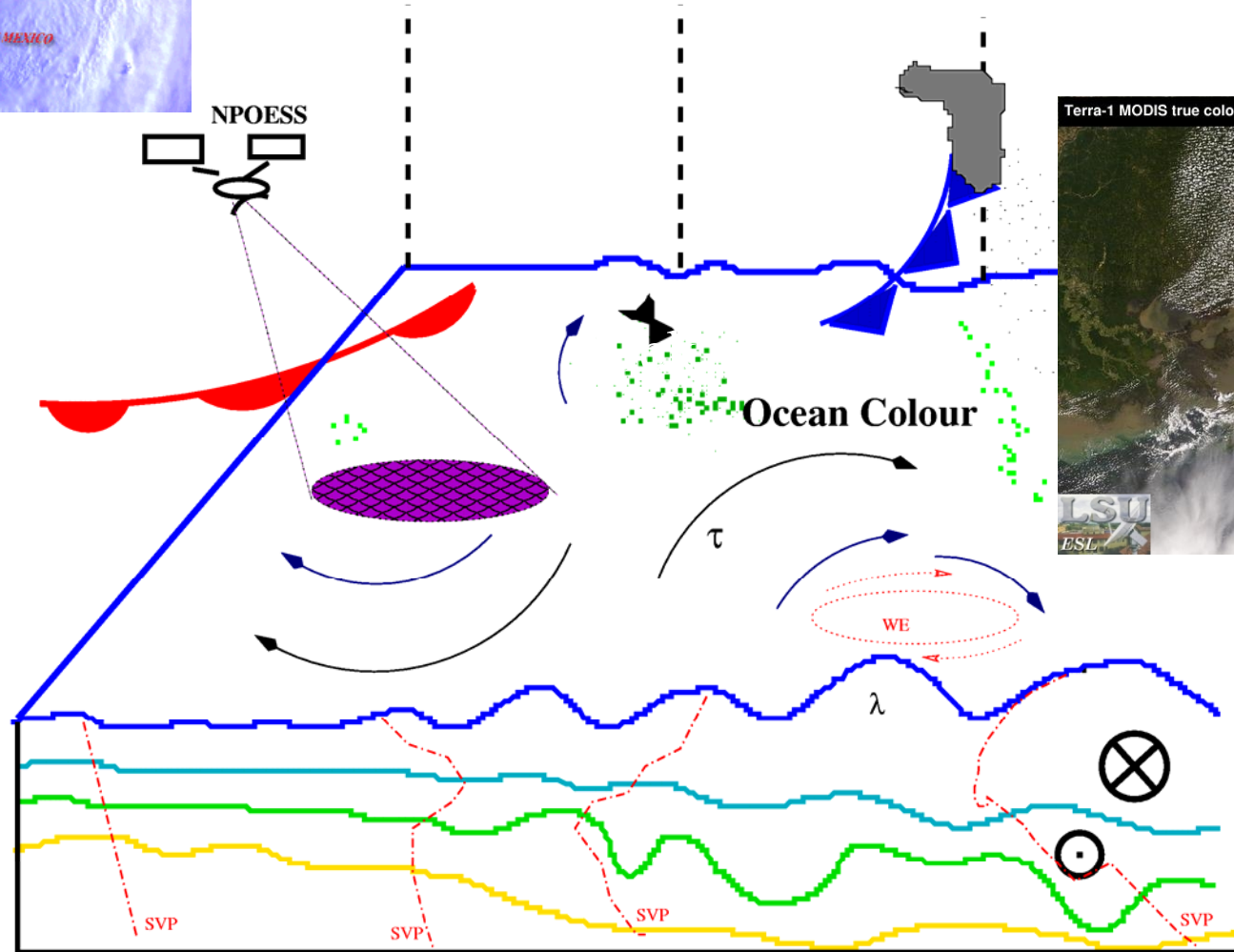
MODELLED FORECAST



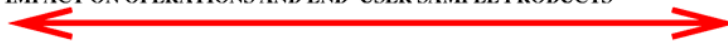
NOWCAST

24 HRS

48 HRS



DERIVED IMPACT ON OPERATIONS AND END-USER SAMPLE PRODUCTS

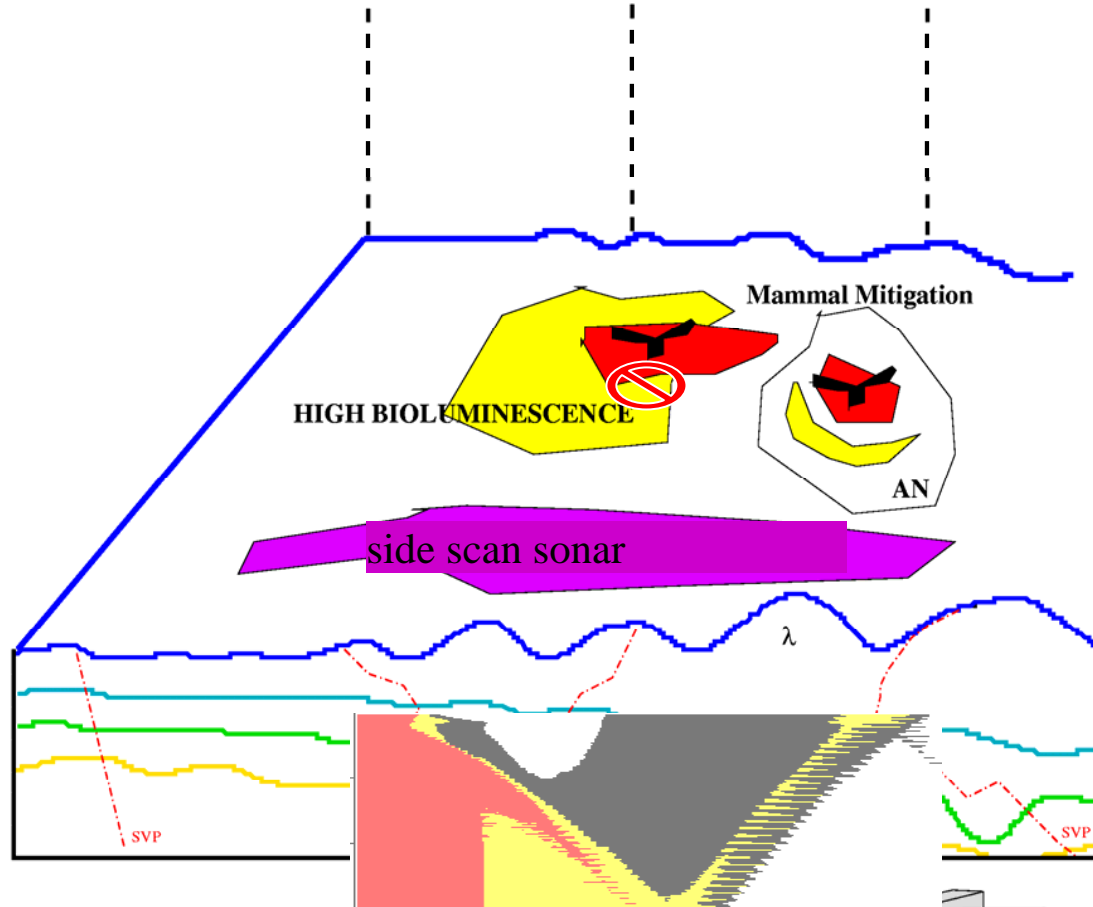


MODELLED FORECAST

NOWCAST

24 HRS

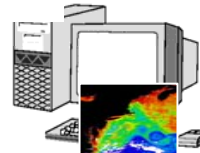
48 HRS



MCOIN/DATABASE

ENVIRONMENTAL DATABASES

OWS



Recommendations

- Establish criteria for JCOMM Compliance
- JCOMM should provide
 - Listing of JCOMM compliant organizations
 - Standards for JCOMM compliant site maps
 - Listing of JCOMM Compliant data structures (minimum set)
 - Common tool sets
 - JCOMM Data Quality Assurance

“The Perfect Client” Scenario

- Hurricane KATRINA – OP UNISON
 - Searching for data on Gulf of Mexico
 - Visit JCOMM to find listing of JCOMM compliant organizations in region which have desired data
 - JCOMM ratings indicate which organization has best / most reliable data
 - Indicated websites are JCOMM compliant therefore navigation easy and scripts “know” where to access data

“The Perfect Client” Scenario

- At website, desired data format is JCOMM compliant but not the format desired
- Visit JCOMM website to obtain script to convert data to desired format
- Download data, convert to desired format and use
- As a good client, resulting data (i.e. from model run) posted i.a.w. JCOMM compliance

Questions?