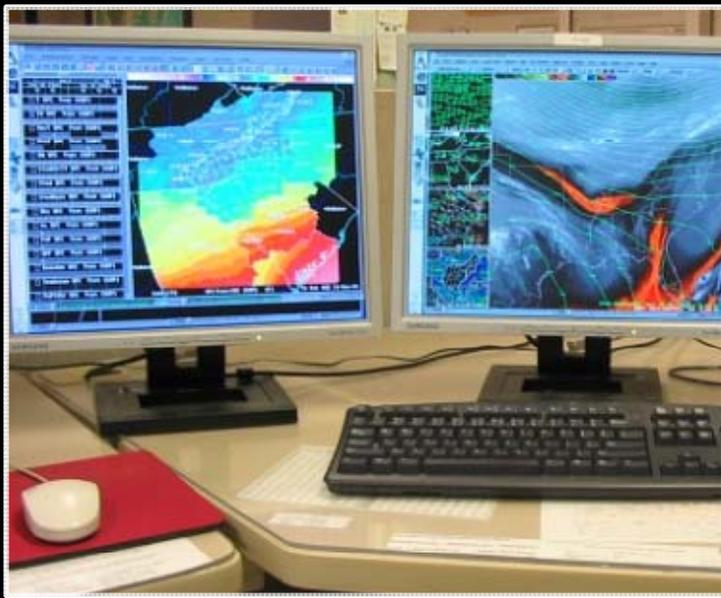


Maximizing the Value of NOAA's Environmental Data Assets

Office of the Chief Information Officer (OCIO)



Presentation to the NOAA Environmental Data Management Workshop
May 25, 2010



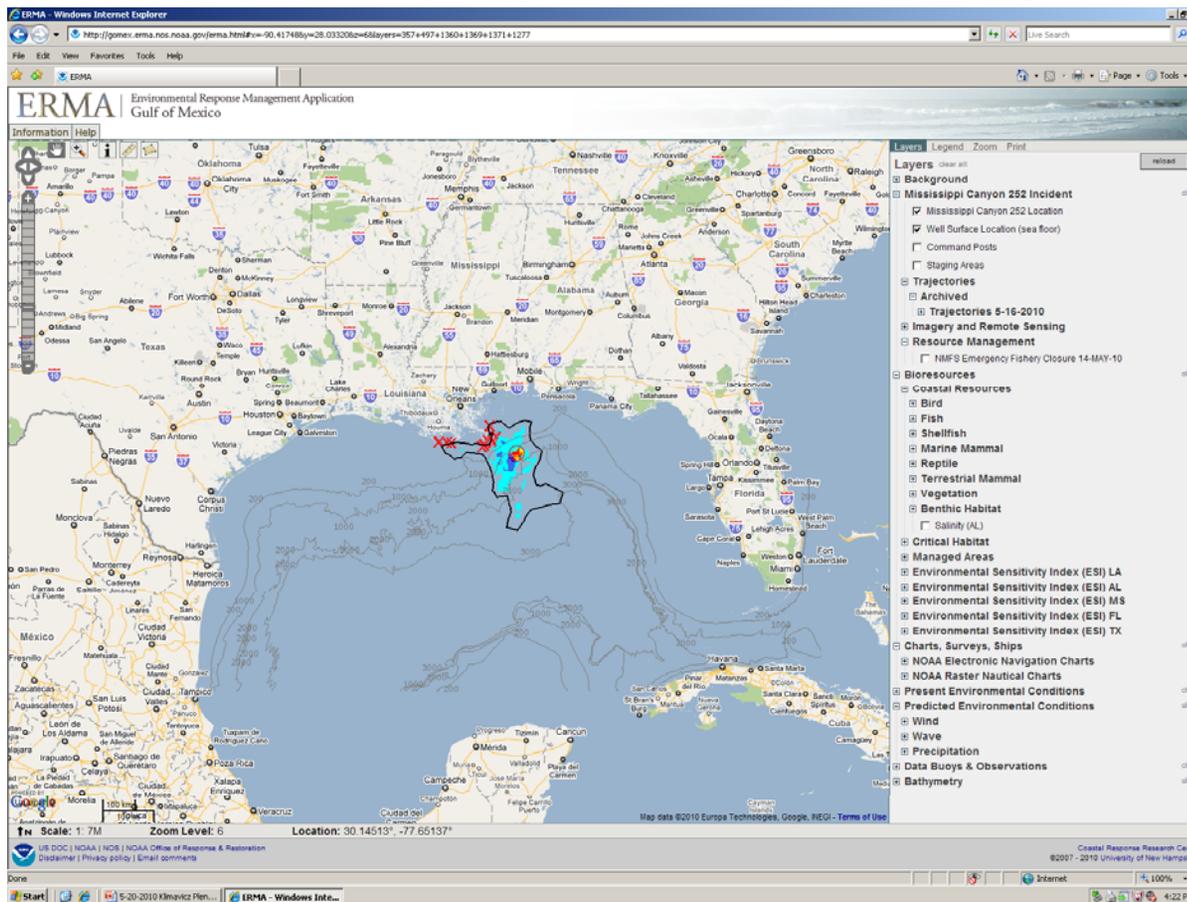
Enabling Results Through Sound Data Management



Environmental Response Management Application (ERMA)

Behind the Scenes Challenges

- ✓ Requires the ability to discover, access, & merge data from multiple sources
- ✓ No single authoritative answer
- ✓ Integration of data across multiple domains
 - 🌐 Ocean
 - 🌐 Weather
 - 🌐 Ecosystems / Fisheries
- ✓ Geo-enabling government data
- ✓ Quality of metadata for discovery & use (understanding the context)
- ✓ A common data architecture with consistent standards





Business Case for Improved Environmental Data Management



✓ NOAA's mission requirements:

- Most mission data has value beyond the originally intended purpose
- The future value of NOAA's data depends on sound stewardship today
- Data integration creates synergy across domains, programs & portals
- Data reuse eliminates the need for redundant data collection investments

✓ NOAA's customer demands:

- NOAA's data is currently accessible through a confusing mix of portals & web sites, resulting in an inconsistent customer experience
- Discovering NOAA's data often requires knowledge of our organizational or program structure, rather than inherent characteristics of the data itself



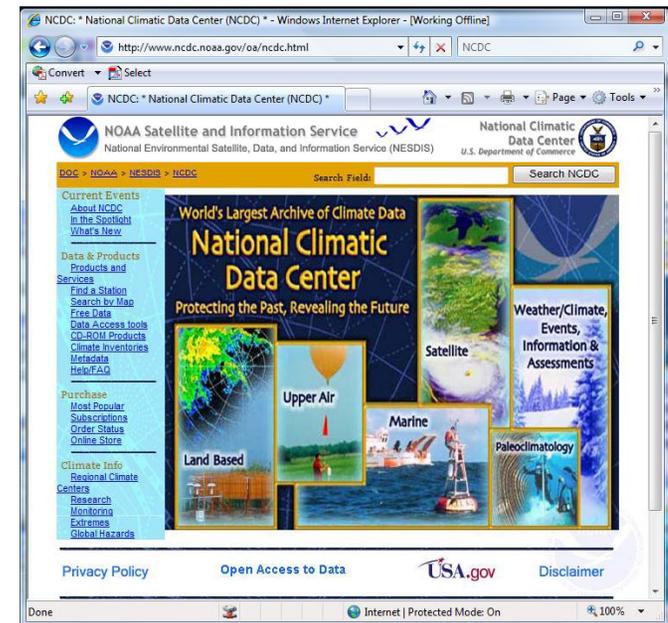
Business Case for Improved Environmental Data Mgt (Cont.)



The White House promotes & enables unlocking the value of agency data through Data.gov

NOAA set the precedent for Data.Gov & continues active participation

- NOAA data (including raw data) available via web sites
- Federal CIO Vivek Kundra encouraged federal agencies to follow NOAA's example
- Currently, Data.Gov contains extensive NOAA datasets or tools, & more on the way
- An entire industry of weather forecasting exists on a foundation of NOAA observations & data products



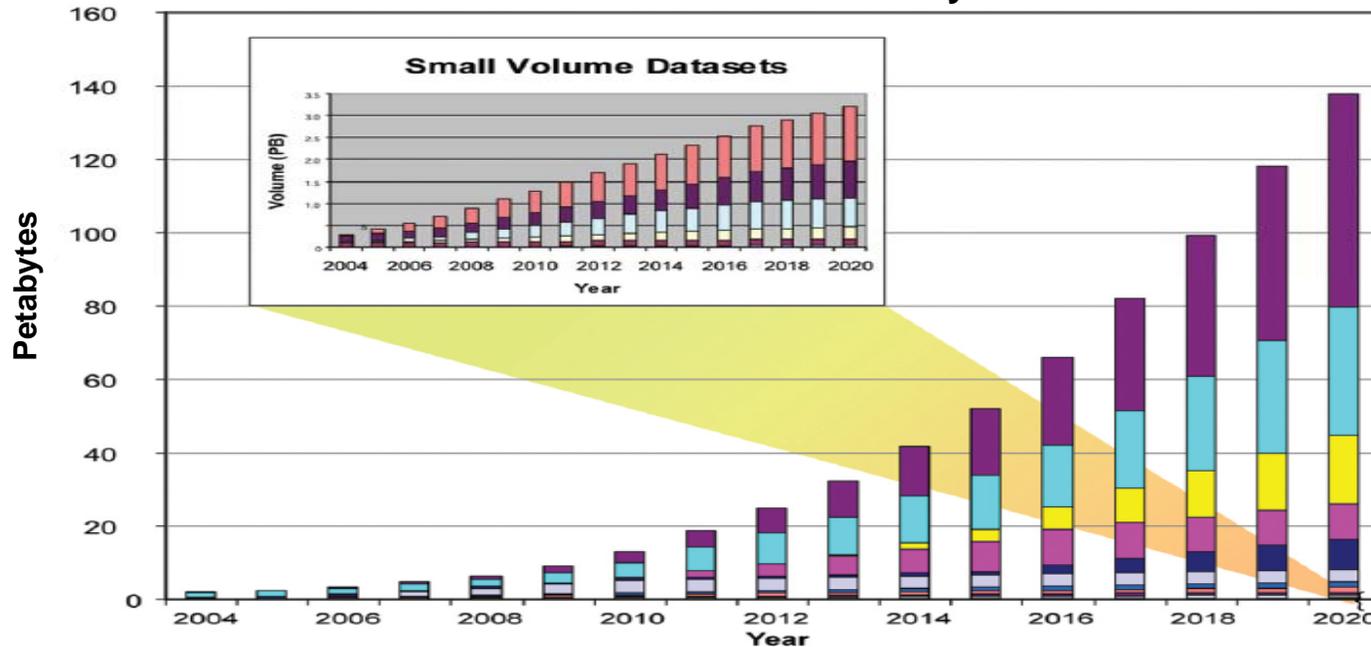


Business Case for Improved Environmental Data Mgt (Cont.)

Urgency Driven by Explosive Growth of Data Volumes



Total Data Volume in Petabytes



Large Volume Datasets

Space Based Data

- NOAA Polar-orbiting Operational Environmental Satellite System (NPOESS)
- NPOESS Preparatory Project (NPP)
- Geostationary Operational Environmental Satellites (GOES)
- NASA Earth Observing System(Moderate Resolution Spectroradiometer) (EOS MODIS)
- Meteorological Operational Satellite Program (MetOp)

Earth Based Data

- Weather Radar

Model Data

- Atmosphere & Ocean

Small Volume Datasets

Space Based Data

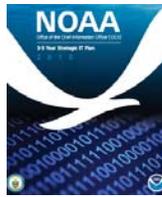
- Polar Orbiting Earth Satellites (POES)
- Defense Meteorological Satellites Program (DMSP)

Earth Based Data

- Atmosphere(Weather & Climate)
- Ocean (Weather & Climate)
- Continually Operating Reference Stations (CORS)
- Misc (Mesonets)



Driving Improved Data Management Through NOAA's IT Strategic Plan



NOAA IT Strategic Plan

STRATEGIC IT GOALS

- Secure the NOAA enterprise against Cyber security threats
- *Apply information technology to help accomplish the NOAA Mission*
- Meet the Mission's evolving computing needs
- *Apply a common architecture & framework for IT services and solutions*
- Develop & maintain the high-performing future IT workforce

KEY OBJECTIVES FOR DATA MGT

- ▶ *Facilitate implementation of an enterprise-wide data management architecture*
- ▶ *Facilitate information sharing across the enterprise*



Driving Improved Data Management Through NOAA's IT Strategy (Cont.)

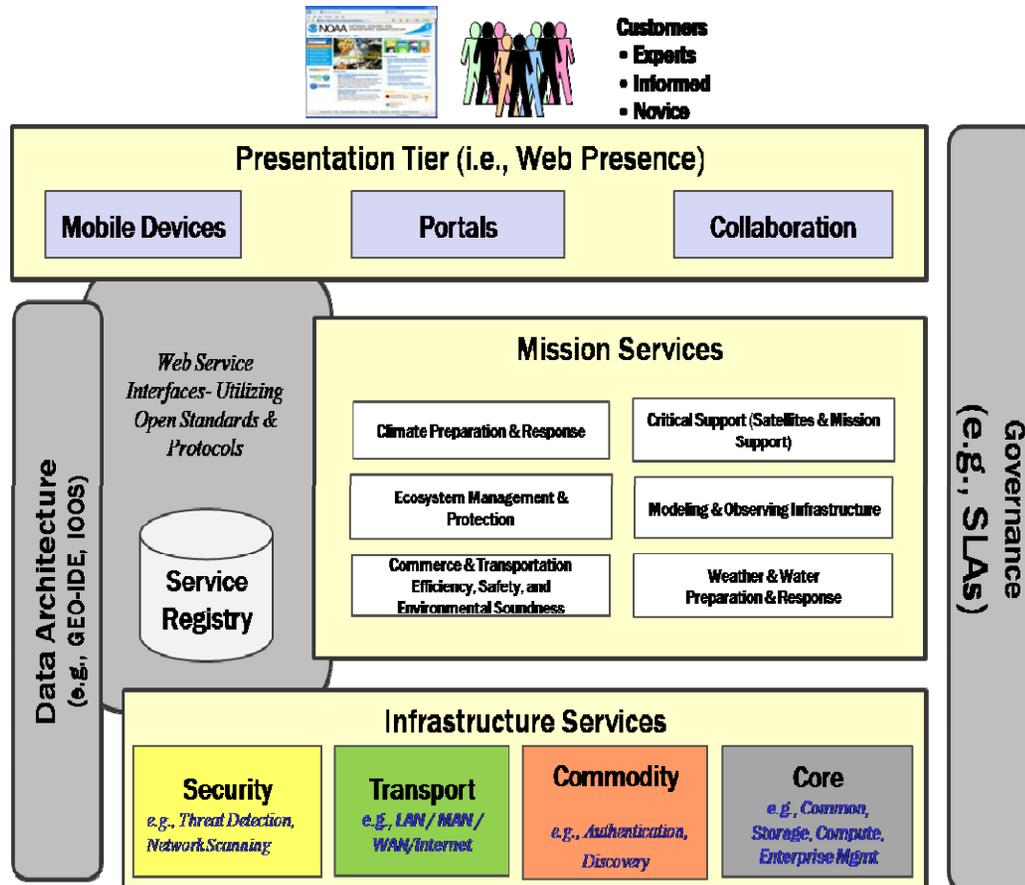


Key Approaches to Achieving Data Management Objectives

Objective	Approach	Example
Enterprise-wide data management architecture	Apply common data standards across NOAA to facilitate data exchange	GEO-IDE Fast Track Standards
	Design new mission systems to maximize the use of existing data sources	NEXTGEN 4D Weather Cube
	Provide mission-focused participation on Data Management committees & working groups	EDMC / DMIT
Information sharing across the enterprise	Develop NOAA Portal to enable all data & services to be readily available to all users	NOAA Portal Requirements & Strategy (in progress)
	Create comprehensive, optimized, & integrated data mgt processes across the full lifecycle of data observation, analysis, & dissemination	This workshop
	Establish clear governance for Data Management committees & working groups	Revised NAO 212-15



Architectural Approach



IT Services Focus

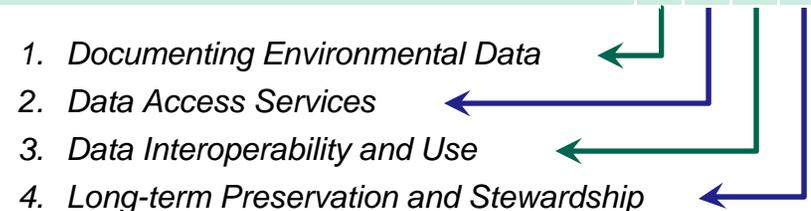
- **All NOAA services described using a common language**
 - Provides “apples-to-apples” comparison that exposes redundancy & opportunities to consolidate
- **Each service is:**
 - Specified in terms of scope, service levels, interfaces, etc.
 - Scaled to support *all* NOAA customers, rather than “one-off” programs or investments
 - Built with industry standard technical interfaces
 - Cataloged/registered for discovery & use by *all* NOAA programs
- **Requires NOAA-wide collaboration:**
 - Integrates work of IOOS, GEO-IDE, EDMC & others into a comprehensive & consistent framework



Key Data Management Challenges



Challenge	Breakout Group			
	1	2	3	4
Customer Expectations <ul style="list-style-type: none"> - Exponential growth in demand for data access from NOAA Web Farms - Rapidly increasing demand for timely, accurate & reliable data 		X	X	
Ease of discovery & access to NOAA's environmental data	X	X		X
Sufficiency & quality of metadata to ensure long-term utility & future value	X			X
Data integration & interoperability <ul style="list-style-type: none"> - Agreeing to, implementing & adhering to data standards & protocols 	X	X	X	
Implementing a full life-cycle data management process <ul style="list-style-type: none"> - Ensuring proper hand-off & transfer of accountability from one life-cycle phase to another 	X	X	X	X
Exponential growth in data volumes <i>(see earlier slide)</i>		X		X





Your Charge



- **Actively participate in the breakout sessions**
 - ✓ Be vocal - share your ideas, expertise & experience
 - ✓ Contribute to creative solutions
- **Keep a “One NOAA” perspective, because data is an enterprise asset**
- **Going forward (post workshop)**
 - ✓ Engage with & support your EDMC representative to develop efficient & effective data management procedures across NOAA
 - ✓ Champion (in your LO and program) and help evolve the solutions that emerge from the workshop

Questions?