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ARD Data Management

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"Software Can't Transform Organizations That See Data Merely as a Thing to Be 'Managed'"

Brian Timoney
http://mapbrief.com/2012/07/22/software-cant-transform-organizations-that-see-data-merely-as-a-thing-to-be-managed/

DATA MANAGEMENT

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WE'RE NOT A BUSINESS, BUT SHOULD WE ACT LIKE ONE?

- http://www.youtube.com/watch?feature=endscreen&v=9eNnJl-L6u0&NR=1

- Evan Levy, SAS Systems

THINGS TO CONSIDER

- Companies that are good at data management are profitable….
  - They can find their data when they need to
  - They can investigate the data to figure out trends, get ahead of their competition, support their customers
- Where's ARD's data management 'sweet spot'?
- Can we reduce our "costs," free up our resources, and share data (x-Division, x-Organization, external)?
  - Improve communication
  - Provide faster outreach
  - Be leaders in data management, analysis and decision-making for case management, settlement, litigation

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ARD'S ROLES AND RESPONSIBILITIES

- 5 Branches:
  - Northwest (OR, WA, AK) and Great Lakes: Mary Baker
  - Southwest (CA and OCEANA): Rob Ricker
  - Southeast: Kevin Kirsch (Acting)
  - Northeast: Alyce Fritz
  - Spatial Data Branch: Amy Merten
- Natural Resource Trustee on behalf of the Public
  - Represent Department of Commerce
  - Baseline data collection/management
  - Legally defensible data
    - Chain of custody, data quality, 3rd party validation

DEFINITIONS

- Data – sample results, shoreline assessment
- Data Products – trajectories, satellite interpretations
- Data Management – spreadsheets, databases, systems
- Information Management – document management, map-making…etc. (ResponseLink)

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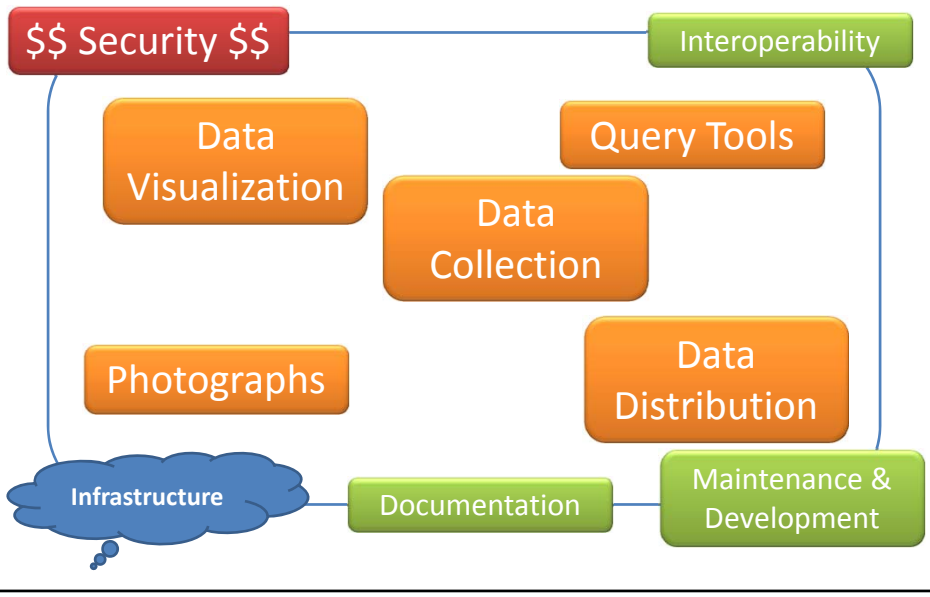

DWH History Lesson

- Pre-DWH:
  - Data = photos, chemistry samples (source oil, tissue, water, sediment), bioassays (?)
  - Data management tools:
    - Field Assessment and Support Techniques (FAST), QueryManager, Photologger, ERMA
  - Little to no public interest

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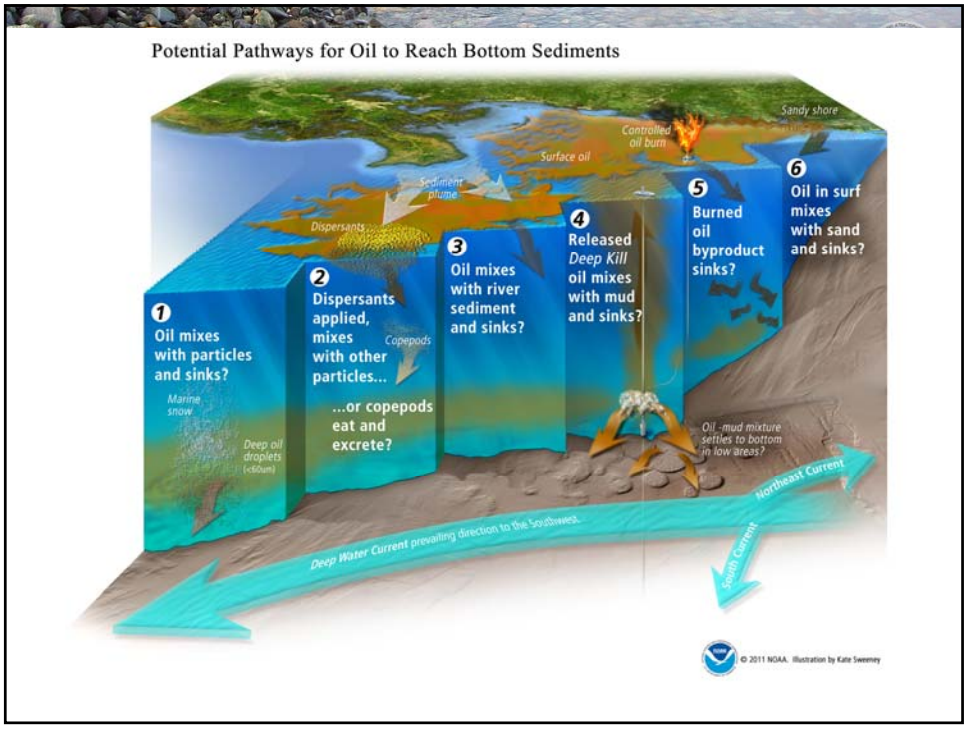
DWH – Day 1329

Analysis Status	Sample Count
Archived	16,924
Consumed	82
Consumed as Composite	88
Consumed as Split	5,779
In Analysis Queue	12,797
Lab Analysis Complete	17,381
No Analysis (i.e., Missing, Broken, Expired)	5,100
No Information Provided to Data Management	31,101
Not Applicable. Composite Part.	1,746
Pending	2,687
Pending - Composite	228
Results Available	51,678
Results Rejected	1,399
Grand Total	**146,990**

Collection Matrix	Sample Count
Drilling Mud	6
Filter	305
Floc	790
Net	47
Not Defined	105
Oil	613
Other	12
SPMD	96
Sediment	15,965
Slurp	256
Soil	1,031
Solid	31
Tarball	1,852
Tissue	3,883
Water	9,339
Wipe	63
Grand Total	**34,394**



Other Types of Data Managed (35 Labs)

- 100K's of photos
- Sensors/Instruments (e.g., CTDs)
- Plankton tows/analyses
- Remote sensing data
- Visual observations (above/belowground biomass, marine mammal/turtle observations, necropsies
- Telemetry
- Biological (demographics, genetics, histology, taxonomy, enumeration….)
- Toxicity tests
- Etc…….
- Lot's of Public Interest/responsibilities to make data available – This is our reality!

Data Warehouse
Business (Science) Intelligence

- Advanced and concurrent DM planning = standard templates/approaches = improved communication
  - Avoid confusion (and time loss) caused by *ad hoc* information gathering that does not match with other collections
  - Decrease preparation and deployment times
  - Clearer lines of responsibility
  - Documentation as you work rather than significant after the fact efforts

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Data Warehouse/Business (Science) Intelligence

- Faster <u>access</u> to information
  - Can automate the import of information into core data systems (the Business/Science Intelligence focus)
  - Focus the available results and provide ability to drill down to obtain greater detail
- Improve the <u>quality</u> of information and associated decisions
  - Ability to create self-checking approaches to improve confidence in data as they come in (e.g., values outside expected ranges, coordinate issues)
  - Improved capacity to draw in external sources of information

CHALLENGES

- Designing for Post-DWH (but don't forget DWH) → scalable solution, national in scope
- Modular? Connect systems/initiatives:
  - KMS, FAST, ERMA, DIVER, Photologger
- Technology moves fast; keeping up with changing software and hardware: flexible/adaptable; but also an opportunity
- Collection → Delivery
- Security (huge cost, but has to be done)

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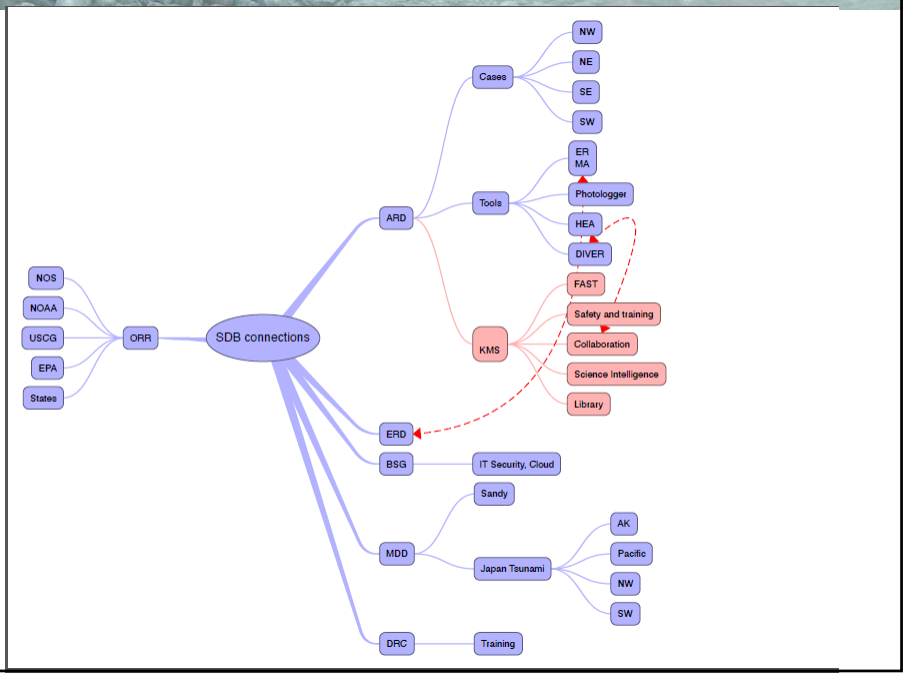

OUTCOMES OF WORKSHOP

- A lot of data☺
- Data will be synthesized into a strategy/road-map document.
  - Planning tool
  - Actual Data Management Plan for day to day ops as well as for next big event
  - Communications tool (internal/external)
  - Business development
  - What to pursue, what to stop doing, and why
  - Budget – limiting, but where do we need to be going?