Scientific Stewardship and Integration of Ocean Acidification Data

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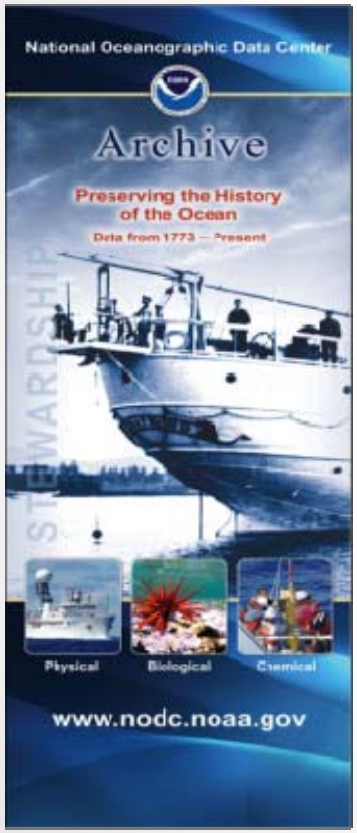
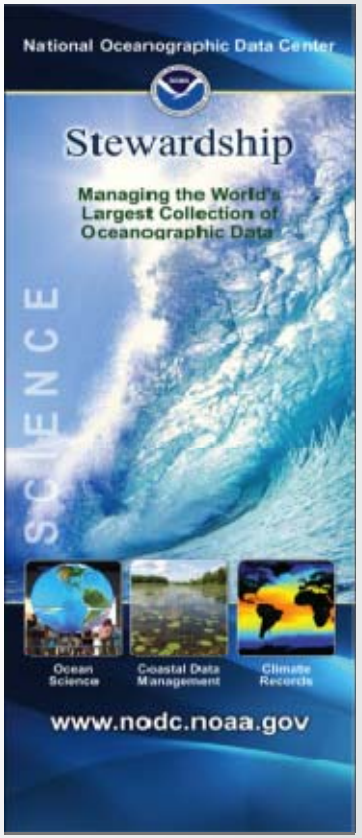
Scientific Data Stewardship

The application of an integrated suite of functions to preserve and exploit the full scientific value of environmental data and information over the long-term (decades).

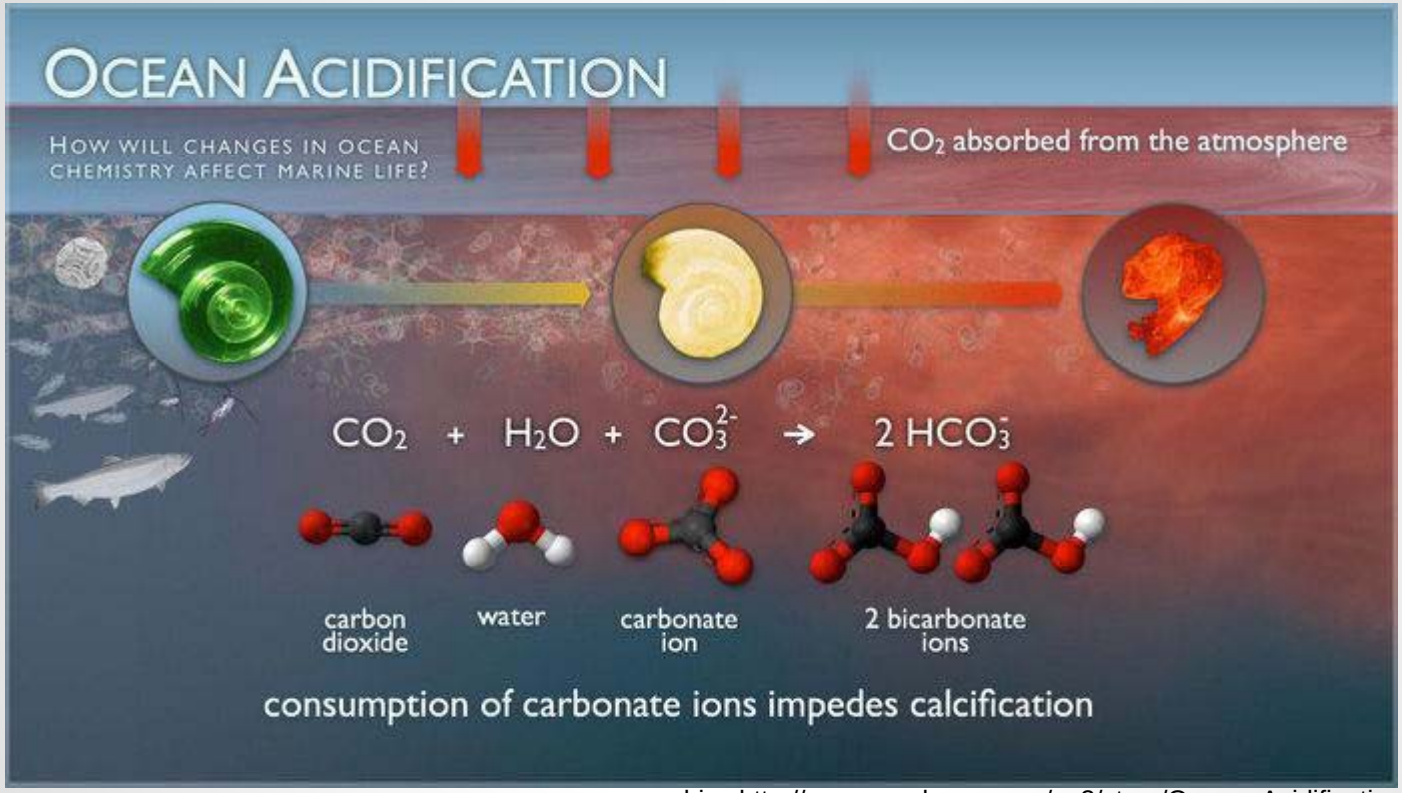




Scientific Data Stewardship requires subject matter expertise!

Archived Data as a Platform for Science and Applications

Ocean Acidification



graphic: http://www.pmel.noaa.gov/co2/story/Ocean+Acidification

- In response to the 2009 FORAM Act, NOAA established a NOAA Ocean Acidification Program in 2011, with the hiring of Dr. Libby Jewett as the Program Director.
- NODC is being funded as the data focal point for NOAA ocean acidification data.

Ocean Acidification Data Stewardship (OADS)

OADS Data Flow

OADS ISO metadata/ netCDF

NODC Data Web Discovery /Access

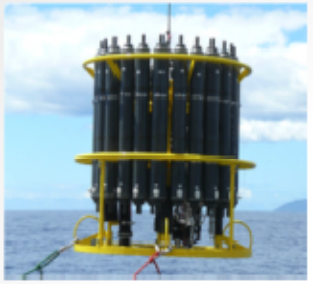
Stewardship:
Ocean Acidification

Core services:

- Lead the community in development of community stewardship standards
- Conduct diagnostic and variability studies based on internally consistent QC data sets
- Derive high-quality, integrated reference OA data sets that can be regularly updated from sustained observations (e.g.,automated data streams)
- Put research-quality historical and modern OA data in common data formats and provide initial QC
- Describe OA data to facilitate discovery and use with community agreed upon metadata;
- Retrieve and archive quality-defined OA data

Ocean Acidification Program: NODC is the designated federal archive for chemical, physical, and biological oceanographic data

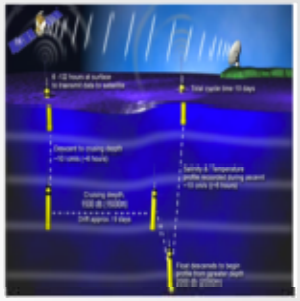
Underway



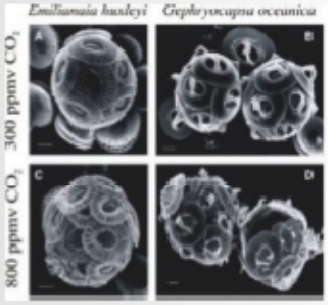
CTD/Niskin

Buoys

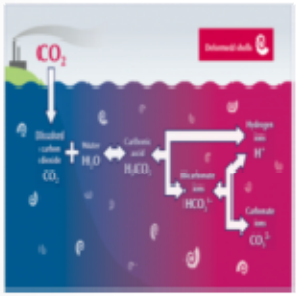
Plankton



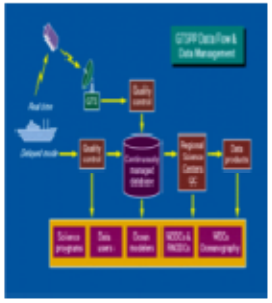
Argo



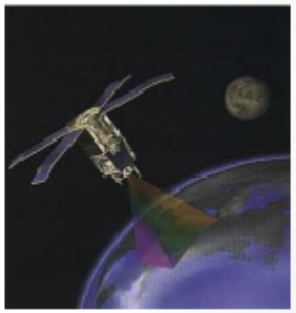
experimental



model



GTSPP



satellite

Glider

Coral Reef Information System

Instrumented Animals

SeaSor

How do we define an OA data set?

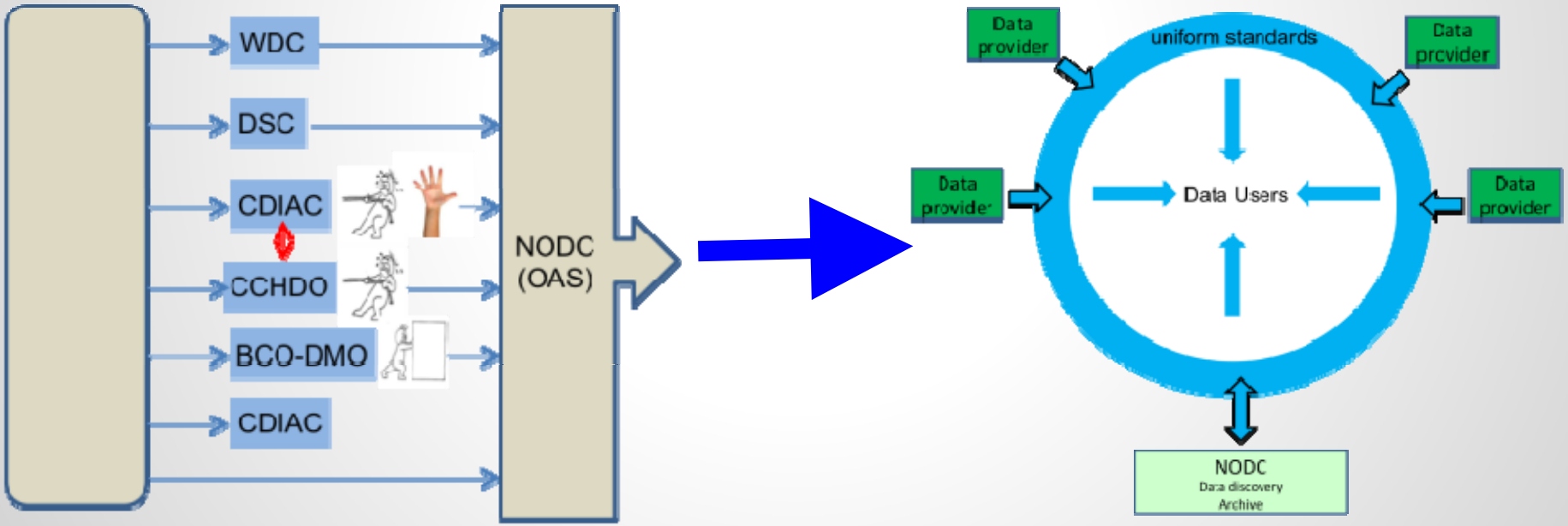
OADS Data Flow coordination

Present

Improvements needed in data flow, data versioning coordination, and data integration

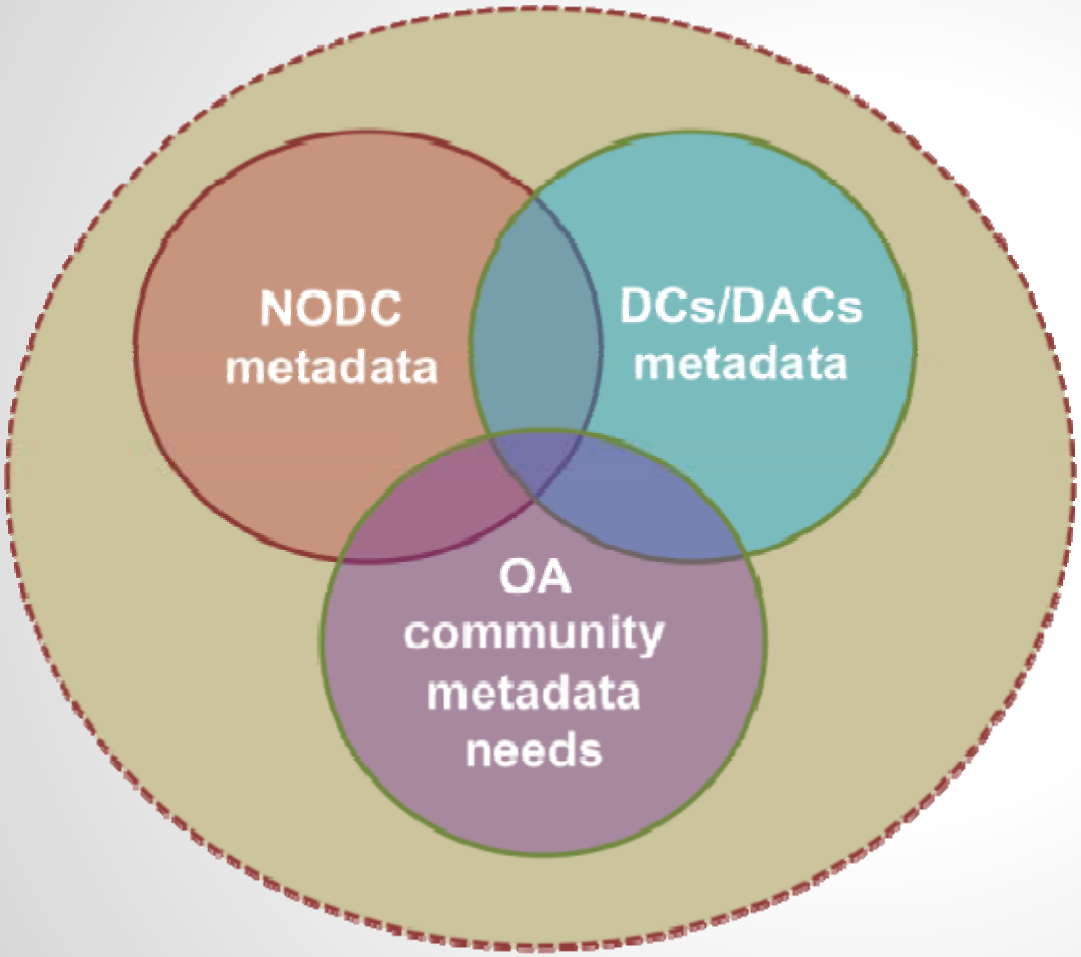
Proposed

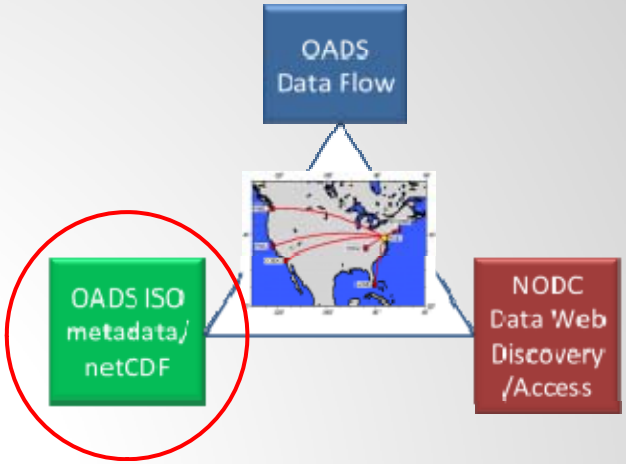
Coordinated data flow using uniform standards and web services



With limited resources, how do we implement common standards and more coordinated data flow?

OADS Metadata





OADS will build on and expand on existing metadata to address OA community needs (ISO 19115)

Challenges: Building the best metadata for OA data discovery and data stewardship; agreeing on consistent vocabulary; investing time and effort into using a common standard.

Discussion

Challenges to providing transparent and timely data access, discovery, and data integration of OA data:

- Defining an OA data set
- Implementing standard metadata templates that facilitate the use of web services (mitigation)
  - Content standard (OA metadata elements)
  - Format standard (FGDC or ISO format, etc)
- Provide the most user-friendly OA data query interface
- Keeping track of who at NOAA is doing what with OA related data for optimal networking, integration, and efficiency

Would a Biological and Chemical Data steering committee be useful to help coordinate data access and integration across NOAA?

- Utilize the ad hoc interagency biodiversity working group