NOAA water quality monitoring: Links to the National Monitoring Network

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NOAA National Centers for Coastal Ocean Science

NOAA water quality monitoring: Links to the National Monitoring Network

- Integrated Ocean Observing System (IOOS)
- National Estuarine Research Reserve System (NEERs)
- National Marine Sanctuaries
- National Centers for Coastal Ocean Science

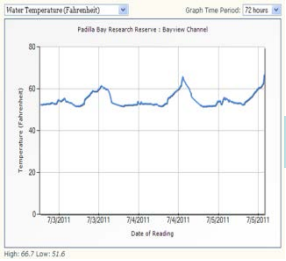
US IOOS

REGIONAL COMPONENT

FEDERAL COMPONENT

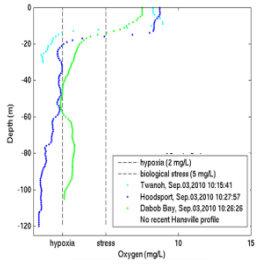
IOOS OBSERVING SYSTEMS

Shellfish Growers



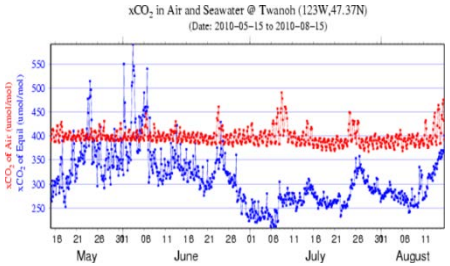
Temp

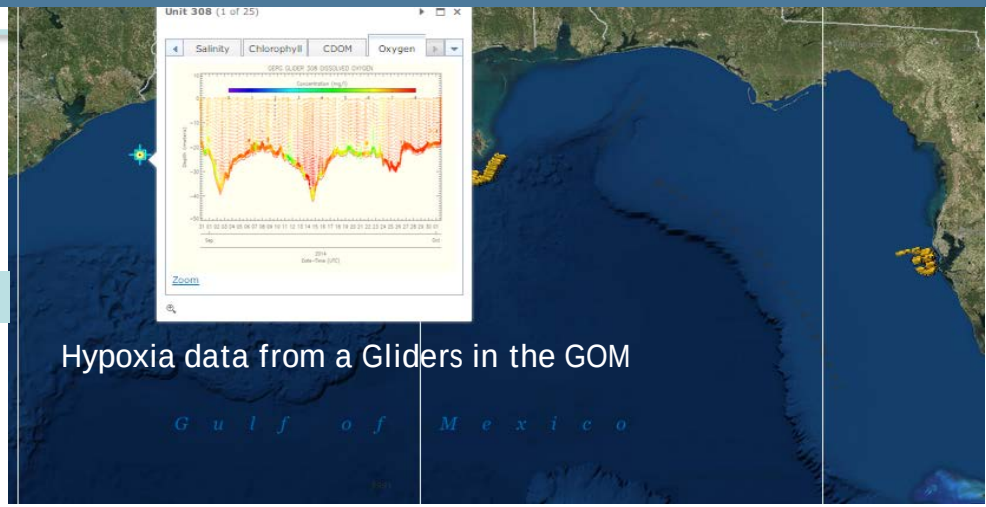
Fishery Managers



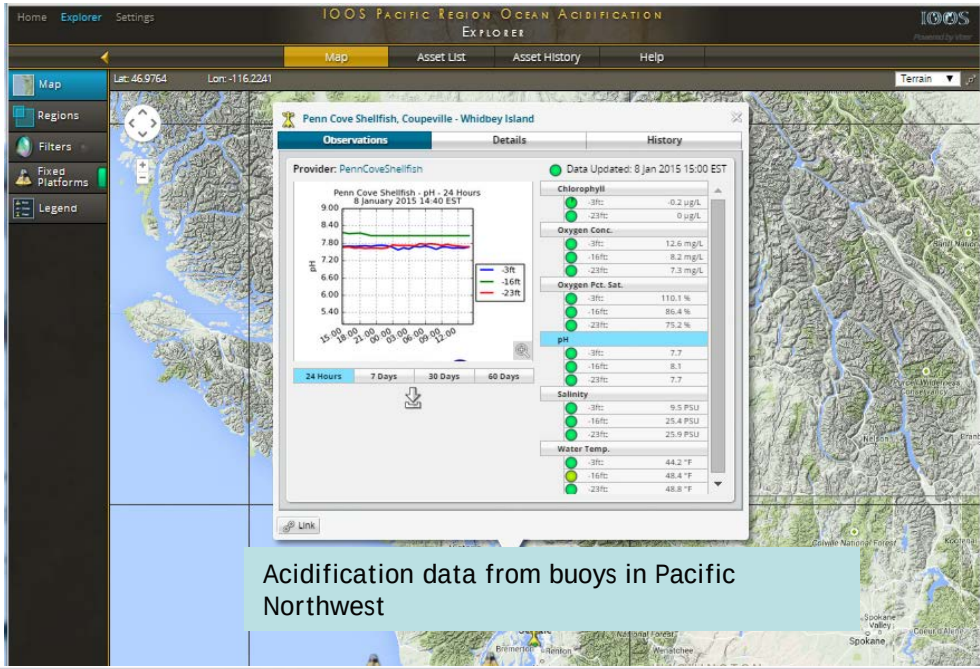
DO

Acidification Researchers





Hypoxia data from a Gliders in the GOM



Acidification data from buoys in Pacific Northwest

IOOS DATA

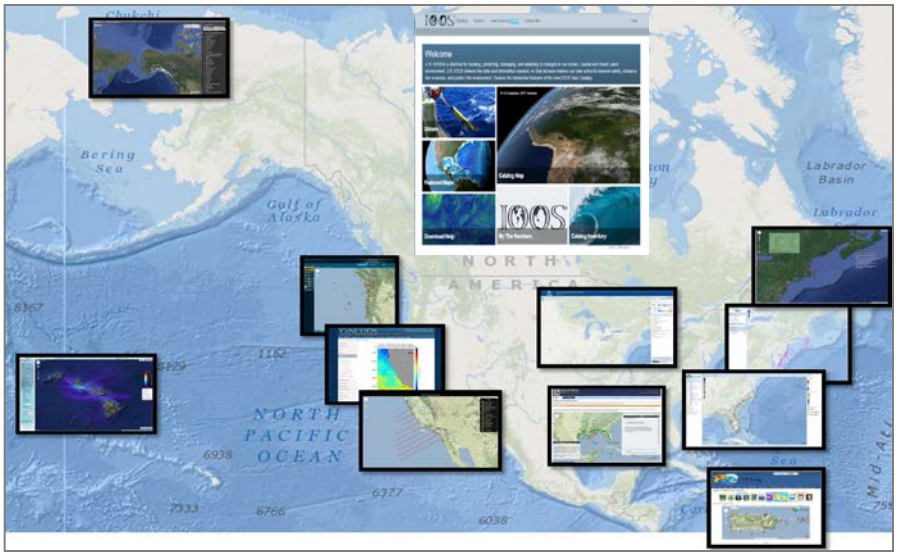
Data Integration and Management

Contribute Your Data

Guidance for
Becoming an
IOOS Data Provider

Regional Data Portals

National Data Portals



http://www.ioos.noaa.gov/data/dmac/about_dmac.html

NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

System-Wide Monitoring Program (Integrated Components)

Abiotic Monitoring

Water Quality & Nutrients

Weather Parameters

Biological Monitoring

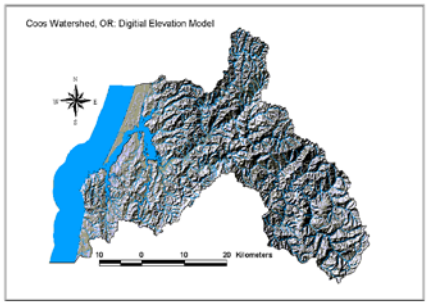
Habitat Change

Biodiversity

Land Cover/Use and Habitat Change

Spatial Patterns

Human Impacts



System-Wide Monitoring Program (Integrated Components)

Example products
- system-wide temperature trends
- climatological vulnerability

SWMP database is "big"!!!
(http://cdmo.baruch.sc.edu/)

28 Reserves - 20 years of data

Water Quality & Nutrient Data:
112 water quality stations (4 per reserve)
39 telemetered, real-time data

Meteorological Data:
28 weather stations (1 per reserve), all telemetered via GOES

> 45 million water quality and weather observations
> 70 thousand dissolved nutrient values

System-wide Monitoring (SWiM) program

- 14 MPAs covering >170,000 sq mi
- Consistent design, tailored for resource and human use

Water quality monitoring: nutrients, HAB, chemical contaminants, temperature, salinity, bacterial loads

- Offshore Sanctuaries tend to have better water quality
- Two Sanctuaries reported temperature increases
- Terrestrial runoff as biggest threat to Sanctuary water quality
  - -- Bacterial loads, toxin bioaccumulation

http://sanctuaries.noaa.gov/education/teachers/data.html

National Status & Trends Program

Mussel Watch program

- nationwide since 1986
- program redesign
- GLRI AOCs

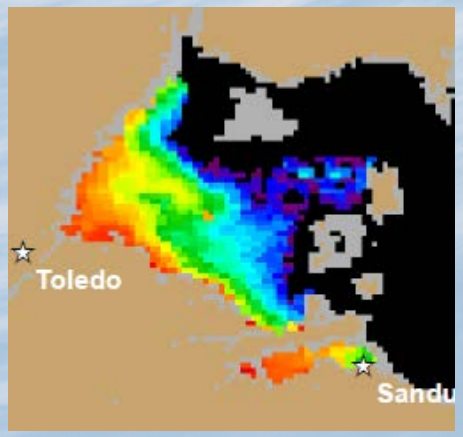
Bioeffects program

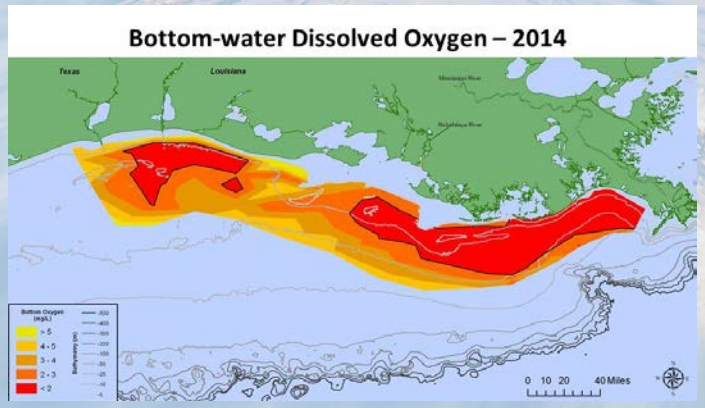
-- sediment quality triad
-- biomarkers
-- seafood assessments

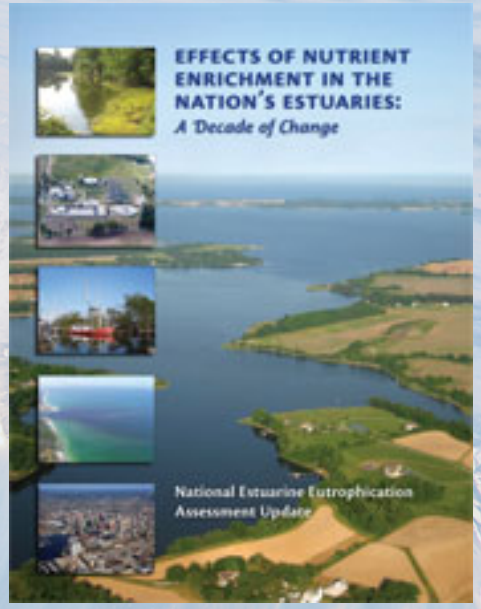
National comparability: core analytes, regardless of studies

http://egisws02.nos.noaa.gov/nsandt/#

Other water quality efforts







HAB forecasts:
-Gulf of Mexico
-Lake Erie
-Gulf of Maine

Hypoxia Monitoring: Gulf of Mexico

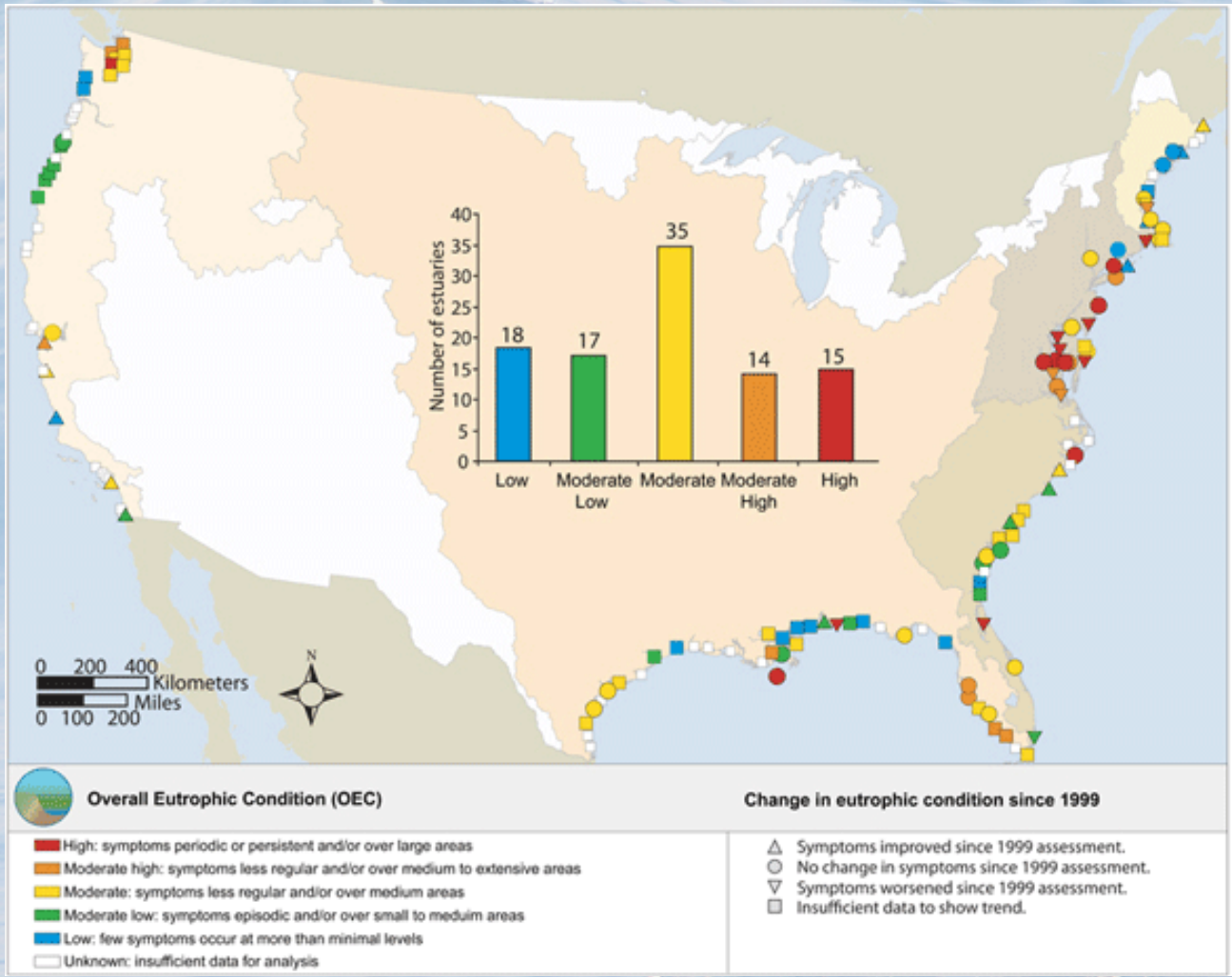
National Estuarine Eutrophication Assessment

http://tidesandcurrents.noaa.gov/hab/resources.html#northeast

http://www.ncddc.noaa.gov/hypoxia/

http://ian.umces.edu/neea/

Other water quality efforts



National Estuarine Eutrophication Assessment 2007