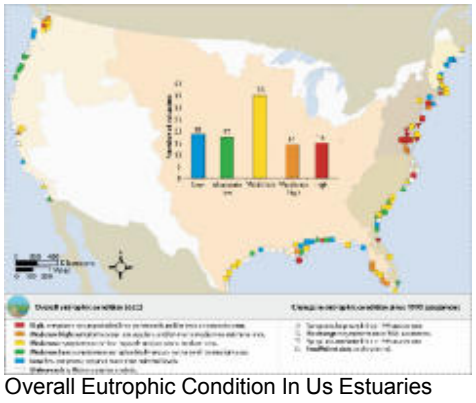
ASSETS Eutrophication Assessment: Method and Application

The Assessment of Estuarine Trophic Status (ASSETS) assessment method is a Pressure-State-Response model that has been used most recently to complete the update of the National Estuarine Eutrophication Assessment (NEEA), an examination of a decade of change in nutrient related impacts in 141 U.S. estuaries. It has also been applied to systems from Europe and Asia and shows that similar eutrophic symptoms occur in coastal waterbodies around the globe. The model includes three components: Influencing Factors which are a combination of natural system susceptibility and human-related nutrient loads, Overall Eutrophic Condition based on the combined status of five indicators (chlorophyll a, macroalgae, dissolved oxygen, seagrass distribution, and nuisance/toxic blooms), and Future Outlook which examines how conditions will change in the future. The three components are then combined into a single rating for a system.

Application of DISCO in ASSETS

The typology approach was created by the Land-Ocean Interactions in the Coastal Zone (LOICZ) project, designed for global application, with the recognition that it would be applied to many data-poor regions. Fortunately, the NEEA effort had a detailed database for U.S. systems including estuarine and catchment variables and system specific indices, and thus was a good demonstration for how the LOICZ approach could work. For that purpose, the specific tool Deluxe Integrated System for Clustering Operations (DISCO) was built. It is a second generation LOICZ supported web-based geospatial clustering application that groups systems based on their similarity with regard to selected characteristics.



Overall Eutrophic Condition In Us Estuaries

The NEEA results show that eutrophication is a widespread problem in U.S. systems with 65% of assessed systems showing moderate to high level problems (Figure 1)

- Assets Eutropphication Assessment
- Report: Effects of nutrient enrichment in the nation's estuaries: A decade of change
- Deluxe Integrated System for Clustering Operations (DISCO)

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More information:

- ASSETS site, built in cooperation between NOAA and IMAR
- National Estuarine Eutrophication Assessment incl. NEEA Report
- Center for Coastal Monitoring and Assessment