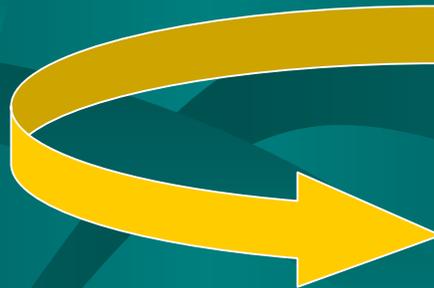


# Data Needs for Ecosystem Management South Atlantic Council



# Moving Towards Ecosystem Management

**Habitat Plan and  
Comprehensive  
Amendment  
(SAFMC, 1998)**



**Fishery  
Ecosystem Plan  
and  
Comprehensive  
Amendment**

# **NOAA Goals of Ecosystem Management**

- **Maintaining and/or improving ecosystem structure and function**
- **Conserving biodiversity**
- **Maintaining economic, social and cultural benefits from resources**

**Strategic goals for Regional Marine Ecosystem  
Strategy, NOAA 2004**

# Information needed for:

- **Catch, CPUE, Bycatch and Ability to Track Fishermen Across Fisheries (ACCSP)**
- **Habitat and Trophic Characterization**
- **Stock assessments**
- **Fishery/fishing gear impacts on habitat**
- **GIS work (mapping habitat, species, fisheries and management)**
- **Models of ecosystem (Ecopath, Marxan, etc..)**
- **Cumulative impacts (ecological and social/cultural/economic)**
- **Impacts of regulations (focus on humans)**
- **Other applicable law (NEPA, ESA, etc.)**

# Stock Assessment

- **Fishery-dependent:**
  - Accurate and complete landings
  - Adequate biological sampling (length, weight, age, sex...)
  - Bycatch and discard estimates
- **Fishery-independent:**
  - Reliable and complete surveys of abundance at size/age
- **Research:**
  - Trophic interactions
  - What is where when?
  - Life-history data
  - Discard mortality rates
  - Stock identification
  - Estimates of nat. mortality



# Impacts on Habitat

- **Habitat characterization and distribution**
  - **High resolution mapping and characterization of Coral, Coral Reefs and Live/Hardbottom Habitat (i.e., NURC AUV, OE Cruises, SEAMAP)**
  - **Habitat classification (i.e., ESDIM- Deepwater Coral and Benthic Habitats)**



# Impacts on Habitat



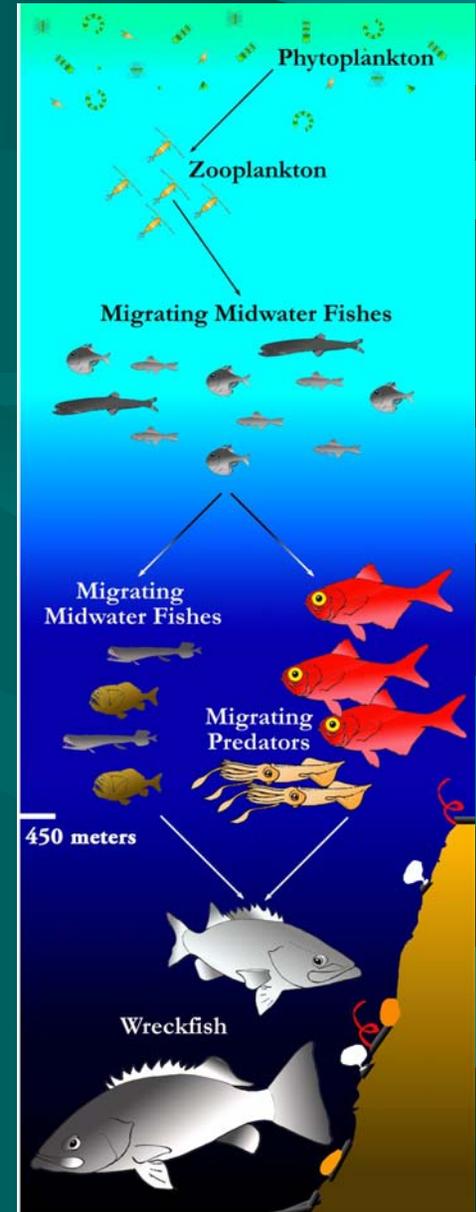
- **Habitat utilization by life history stage**
- **Ability to track vessels (e.g., trawl tracks)**
- **Monitoring (i.e., OOSs, passive acoustic arrays)**
- **Critical habitat for protected resources**

# GIS Work

- **GIS products to be integrated in Council's Ecosystem Internet Mapping System**
  - EFH and HAPCs
  - Catch/Bycatch Location
  - Habitat characterization (i.e., NBI data, MBES of deepwater habitats)
  - Species' distribution by life history stage
  - Spawning locations
  - Oceanographic data (OOSs, etc.)
  - Regulations (zoning)
  - Data on ecosystem health (i.e., pollution, HABs)

# Modeling

- **Ecopath with Ecosim**
  - Gut content analyses
  - Landings and CPUE (ACCSP)
  - Economic data
- **Connectivity modeling**
- **Benthic Complexity**



# Cumulative Ecological Impacts

- Includes Assessments of Abundance, Diversity and Complexity
- Includes Environmental Trends and Habitat Quantity and Quality
- Includes Multiple Human Impacts (Fishing and Non-fishing)
- Identifies Trophic Cascades, Regime Shifts and Impacts on Habitat that Change Functional Nature

# Other Immediate Needs

- **Who is Doing What?**
  - **Need to know planned, ongoing and completed activities applicable to ecosystem management**
- **Cooperative planning to prioritize research and monitoring**

# Socio-Econ Program

- NMFS Social Science Program, **Rita Curtis**
- Assessing stakeholder attitudes toward ecosystem management: a collaborative approach, **Kristy Wallmo**
- Ecosystem Management: Facts, fiction, or fantasy and something about menhaden, **Jim Kirkley**
- Linking recreational and commercial benefits to ecosystem changes, Doug Lipton
- Decision Models and Ecosystem Management, **David Tomberlin**
- A general equilibrium ecology/economy model applied to an Alaskan marine system: **John Tschirhart**