Ecological Connections
SECOORA Annual Meeting
Panel Discussion

Dr. J. Christopher Taylor
NOAA National Centers for Coastal Ocean Science, Beaufort, NC
NOAA's SouthEast and Caribbean Regional Coordination Team

NOAA and Duke Laboratories@Pivers Island, Beaufort
Fisheries Ecosystem Management and Ocean Planning

- Living marine resource distribution and abundance linked to habitats and trophic interactions on the continental shelf
- Animal movements and habitat use through ontogeny and seasonal migrations
- Environment and climate drivers for shifts in species distribution or interactions

Common theme: Need better information on dynamics of habitats – both geophysical-seafloor and physicochemical-watercolumn - that support fisheries and ecosystem services
Habitat Mapping on the SE US Outer Continental Shelf

- Less than 10% of the OCS <100m depth has been surveyed using modern sonar technologies
- Less than 1% has been interpreted to seafloor habitats types
- NOAA and partners are working to prioritize mapping efforts in the region
Habitat Mapping on the SE US Outer Continental Shelf

- Less than 10% of the OCS <100m depth has been surveyed using modern sonar technologies
- Less than 1% has been interpreted to seafloor habitats types
- NOAA and partners are working to prioritize mapping efforts in the region
- Continue improving models of geology and hardbottom/reef habitats
Sand Resources as EFH

- Regional workshop identified mapping sand resources for mining and ecological impacts as one of top SE regional priorities
- Shoals are dynamic EFH, used seasonally by migrating fishes, sharks, turtles and marine mammals
- Management/regulatory review requires better data on species migration/movements across sand shoal habitats on the shelf
Connections Through Life-history and Migrations

Long-term Larval Fish Monitoring

- Beaufort Bridgenet Ichthyoplankton Sampling Program (BBISP)
- 30-year time series of larval ingress through Beaufort Inlet
- Joined with Belle Baruch Lab 35-year benthic plankton program
- Rutgers U. 25-year larval ingress monitoring program
Connections Through Life-history and Migrations

**Long-term Larval Fish Monitoring**
- Beaufort Bridgenet Ichthyoplankton Sampling Program (BBISP)
- 30-year time series of larval ingress through Beaufort Inlet
- Joined with Belle Baruch Lab 35-year benthic plankton program
- Rutgers U. 25-year larval ingress monitoring program
- Records phenology of recruitment for estuarine-dependent fishery species
Oceanography and Climate Drivers

- Evidence (or lack thereof) for species shifts in SE
  - Anecdotal evidence for blueline tilefish shifting northward, but evidence suggests is artifact from fisheries landings
  - Review of 30-year SEAMAP trawl data indicate just as many species moving N as S

- Evidence of changes in environmental drivers?
  - No evidence of temperature changes in last 30 years (N. Bacheler, NOAA, unpubl. data)
Requests for SECOORA Community

*The Problem:*
The ocean observation system is fragmented in the SEUSA resulting in limited information on large-scale patterns of environmental change in the SEUSA region.

- Improve ocean modeling to predict/map Gulf Stream dynamics, upwelling and bottom temperatures
- Improve mapping and predictive modeling to provide habitat maps at management-relevant scales
- Improve network of acoustic sensors for fish/animal tracking on the continental shelf
Requests of the SECOORA Community

- Increase ocean/wave glider missions
  - Provides improved space-time data for ocean modeling
  - Provides survey platform for biological sensors

Platforms of Opportunities = Opportunities to Collaborate:
NMFS SEFSC, NCCOS and partners have ongoing studies to evaluate acoustic sensors on gliders and autonomous platforms
Requests of the SECOORA Community

- Increase “biological” sensors on moorings
  - Provides improved temporal data for bio-ocean modeling at trophic levels above primary producers

Platforms of Opportunities = Opportunities to Collaborate:
NMFS SEFSC, NCCOS and partners have ongoing studies to evaluate acoustic sensors on gliders and autonomous platforms
Evolving 2016-20 U.S. Interagency Effort: Offshore U.S. Mid and South Atlantic

- Complement 2011-2015 effort
- Federal partners – NOAA, USGS, BOEM*
- Focus on offshore areas between Virginia and Georgia/Florida border
- Integrated science priorities:
  - Defining connectivity of vulnerable ecological communities
  - Tsunami prediction and coastal hazards
  - Science-based decision-making associated with living marine and energy resources
- Potential expansion into international TransAtlantic Campaign:

* Pending BOEM study development and contract procurement