MAR 535: Marine Fisheries Management

Course Overview: This course will provide an understanding of marine fisheries management by connecting basic fisheries biology and management science with actual management procedures currently utilized by federal and state authorities. Review of management principles and procedures, their applications and limitations and understanding of management including food web and predator prey relationships, socioeconomic needs of recreational and commercial fishermen and law enforcement issues will be included. Each student will be required to do a case study on historic and current management of an individual species or issue.

Learning objectives:

- Explain fundamentals of fisheries biology and practice.
- Describe tenents of management science.
- Recognize limitations to management paradigms .
- Apply management procedures to fisheries.
- Discriminate the differences between commercial and recreational fisheries.

Topics:

I. Introduction - Basic concepts
   Stocks and populations
   Stock and recruitment
   Surplus production and carrying capacity

II. Data Sources
   Fishery dependent data
      Commercial
      Recreational
      Biological
   Fishery Independent data
   Survey Design
   Gear and use

III. Life History and Biology
    Age & Growth
Feeding
Reproduction
Habitat and migration
Natural Mortality

IV. Populations Concepts
   Recruitment
   Growth
   Mortality

V. Stock Assessment Models
   Mathematical model introduction
   Catch Curve analysis
   Surplus Production Models
   Virtual population analysis
   Retrospective patterns in stock assessment models
   Statistical catch-at-age
   Multispecies models
   Tagging models

VI. Reference Points
   Yield-Based
   Spawning stock biomass per recruit & spawning potential ratio
   Replacement
   MSY; OSY

VII. Using Stock Assessments for Management
   Peer review
   Data limitations and uncertainty
   Management implications

VIII. Laws, Regulations and Management Bodies
   Environmental Conservation Law
   Commissions (ASMFC, GSFMC, PSFMC)
   Councils (MAFMC, NEFMC, SAFMC, etc.)

IX. Emerging Issues and Case Studies Review
   Climate Change
Magnuson-Stevens re-authorization
Summer flounder, Striped Bass, Menhaden, etc.

Possible Field Trips:
Marine Resources Advisory Council Meeting
NEAMAP Cruise
Montauk Dock
Cedar Beach Fishing Center