

Science, Service, Stewardship



# Topic I: Resource surveys and other data used for assessments



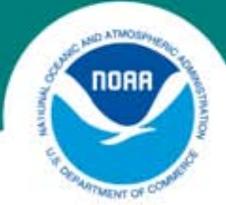
**NOAA  
FISHERIES  
SERVICE**

Northeast Fisheries Science Center



# NEFSC Science

- **Physical and Biological Oceanography**
- **Habitat**
- **Ecosystem Processes & Functioning**
- **Ecosystem Management and Marine Spatial Planning**
- **Ocean Acidification**
- **Protected Species Assessment & Management**
  - **Atlantic salmon, sturgeon**
  - **Sea Turtles**
  - **Marine Mammals**
- **Aquaculture Production and Enhancement**
- **Stock Assessment & Fisheries Management Support**



# Purposes of Stock Assessment

## *What is the state of the stock?*

An evaluation of the current state of the stock and the rate at which it is being exploited.

## *What has happened to the stock?*

A reconstruction of the dynamic history of the stock allowing an evaluation of its response to exploitation.

## *What will happen to the stock?*

Prediction of the response to future exploitation and the risks associated with harvesting strategies.



# Types of Stock Assessment

A progression from “data-poor” to “data-rich” situations:

- **Index Assessments:**

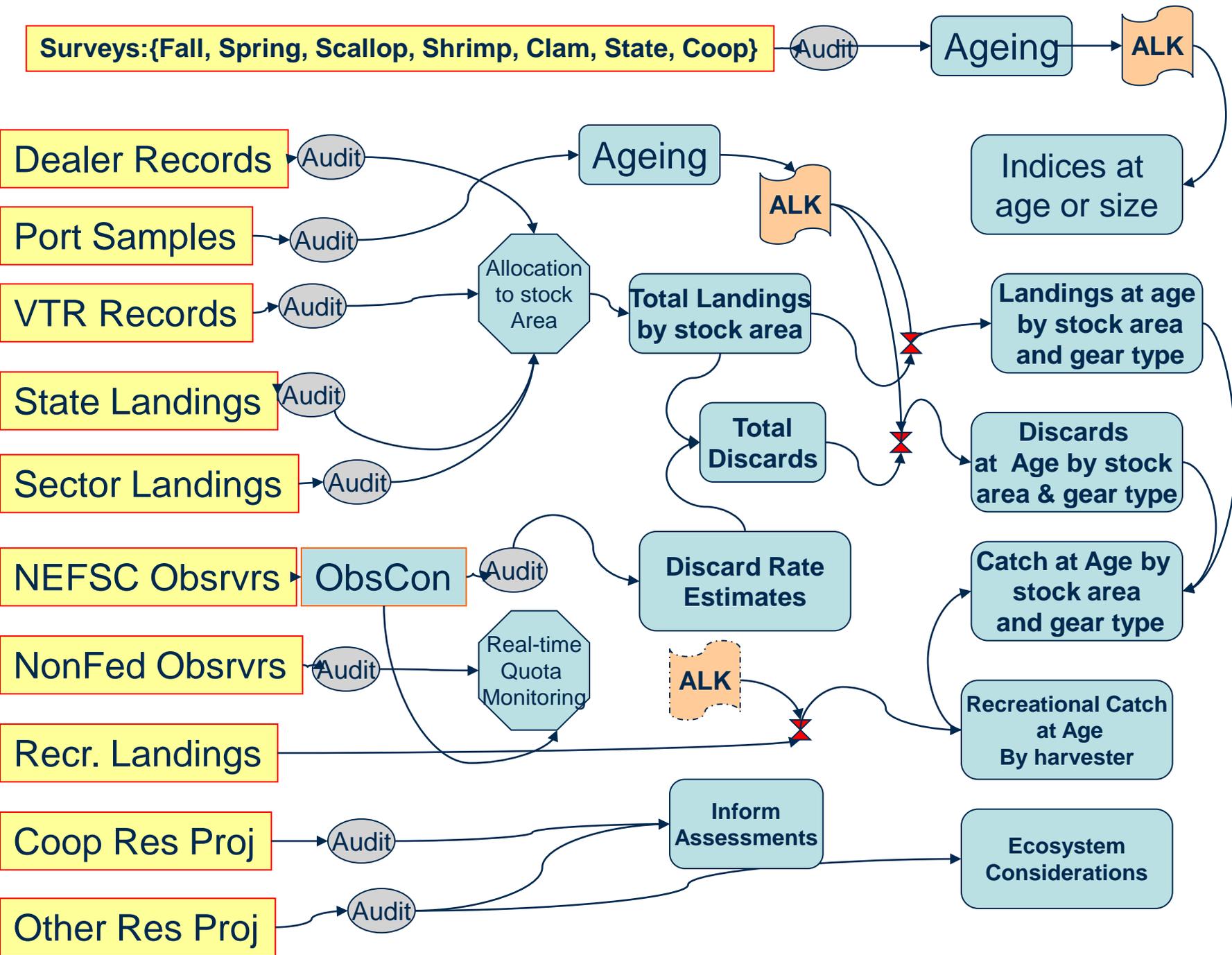
- Descriptive assessment of catch and survey data.

- **Production Assessments:**

- Combined analysis of catch and survey data with a simple population growth model.

- **Age-Based Assessments:**

- Accounting for abundance of year classes (cohorts) using age distribution of the catch, calibrated with survey indices.





# Fishery Independent Data

- **Federal / State / University Surveys**
  - **Federal**
    - NEFSC (multispecies bottom trawl, shrimp bottom trawl, clam dredge, scallop dredge, herring acoustics)
    - Department of Fisheries & Oceans Canada
  - **State / Interstate**
    - Maine-New Hampshire Inshore, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Virginia, ASMFC (NEAMAP) Inshore
  - **University and Private Companies**
    - University of Rhode Island, Virginia Institute of Marine Science, several utility companies



# Fishery Independent Data

## What does it tell us?

- **Species Composition**
- **Spatial distribution patterns**
- **Relative indices of abundance and biomass**
- **Size composition of populations**
- **Age composition of populations**
- **Patterns in sex ratios and maturation**
- **Diet composition**
- **Fecundity estimates**
- **Other biological and ecological data (e.g., genetics, habitat)**



# Fishery Dependent Data

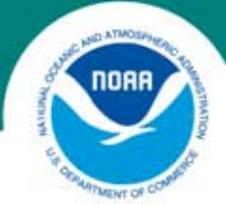
- Commercial Fishery Landings (VTR, Dealer & State Reporting)
- Recreational Fishery Landings (MRFSS, now MRIP)
- Catch per Unit Effort Data
- Commercial Discards (VTR & Observers)
- Recreational Discards (MRFSS)
- Biological Data (Port Sampling, MRFSS, Observer program, study fleets)



# Fishery Dependent Data

## What does it tell us?

- **Vessel Trip Reports**
  - How much fish was caught by species?
  - How much fish was landed?
  - Where was it caught?
- **Dealer Data**
  - How much fish was caught by species?
  - How much fish was landed?
- **Port, Observer & MRIP Biological Sampling**
  - Size composition of landings and discards
  - Age composition of landings and discards



# Cooperative Research

- **Collaborative Research Surveys**
  - Cooperative Monkfish Survey
  - IBS Cod & Yellowtail Surveys
- **Tagging Studies**
  - Cod, Yellowtail Flounder, Spiny Dogfish, Scallops
- **Gear Selectivity Studies**
- **Study Fleet** – detailed spatial data on catches
- **Special Biological Studies**
  - Maturation studies of summer, winter and yellowtail flounder and black sea bass



# Data Panel Members

## **Jim Gartland, Virginia Institute of Marine Science**

- NEAMAP Inshore Trawl Surveys

## **Robert Johnston, Northeast Fisheries Science Center**

- NEFSC Multispecies Bottom Trawl Surveys

## **Jeremy King, Massachusetts Division of Marine Fisheries**

- MADMF Inshore Bottom Trawl Surveys

## **Amy Van Atten, Northeast Fisheries Science Center**

- NEFSC Observer Program

## **John Williamson, Fishery Stakeholder**

- Marine Resource Education Program



# Session 1 Plan

- **Short introduction by each of the panel members (~ 30 minutes)**
- **Questions and Discussion from the audience (~ 90 minutes)**