

*Science, Service, Stewardship*



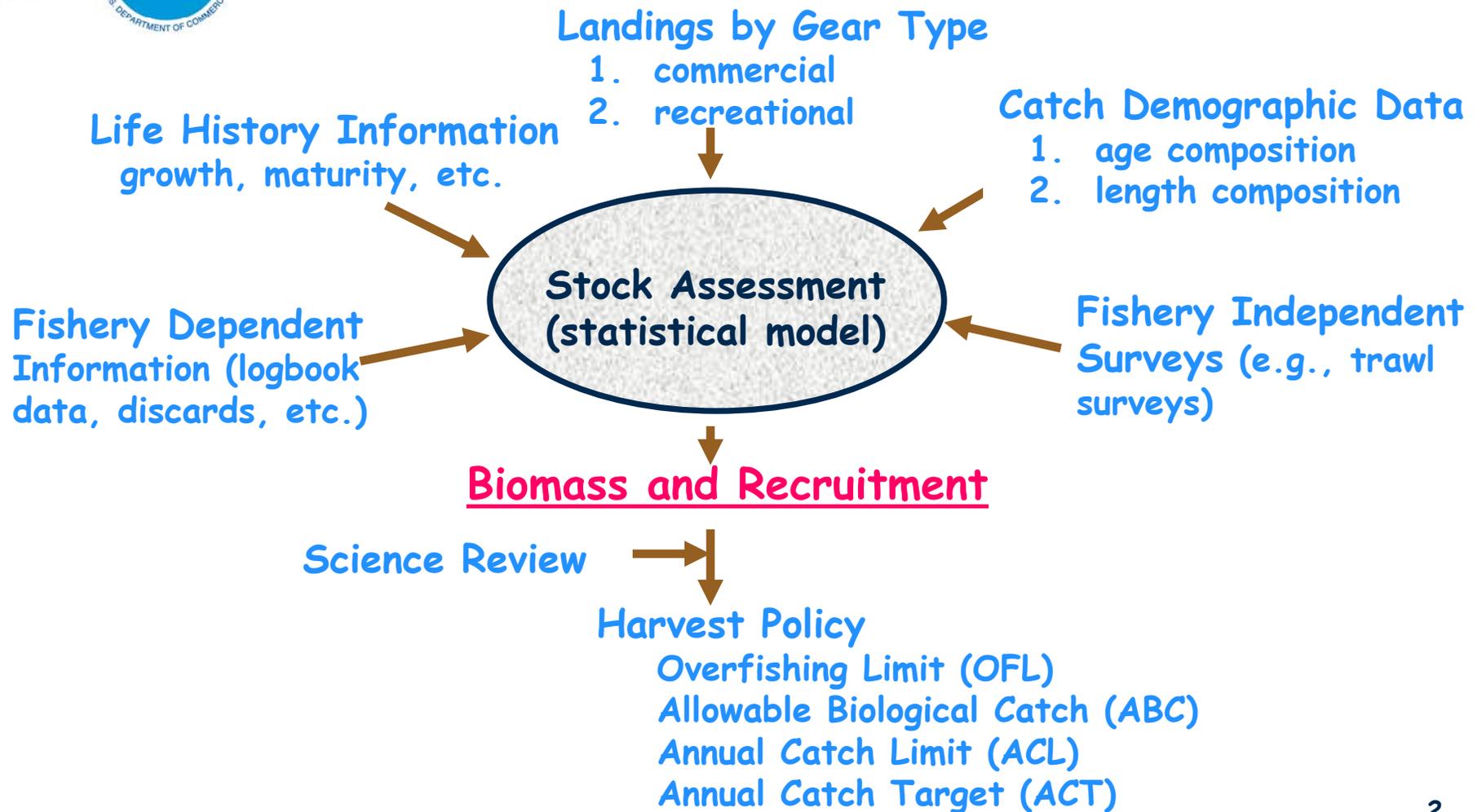
# Assessment Tempo and Peer Review

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**NOAA  
FISHERIES  
SERVICE**

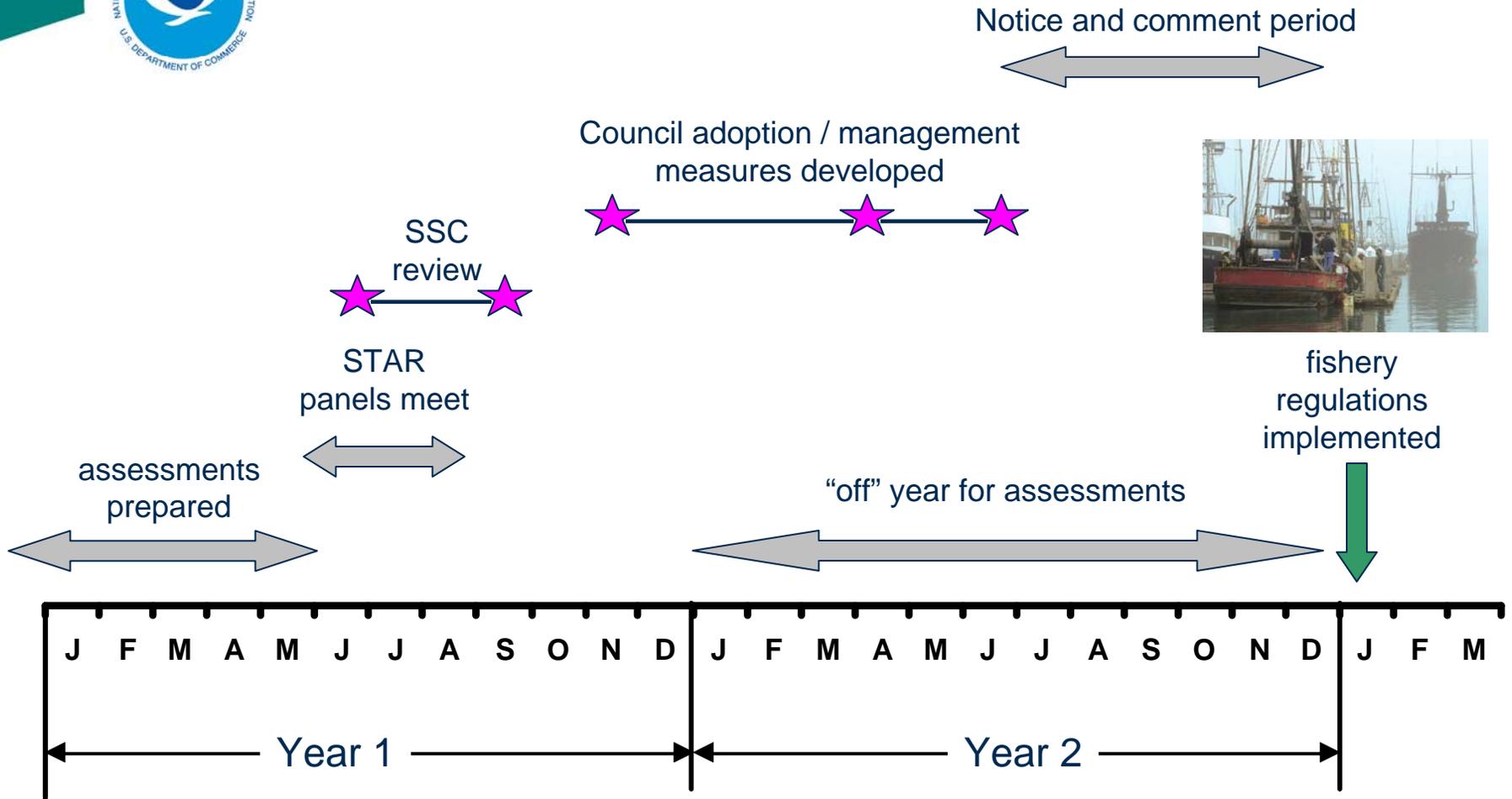


# Stock Assessment Provides a Scientific Basis for Management





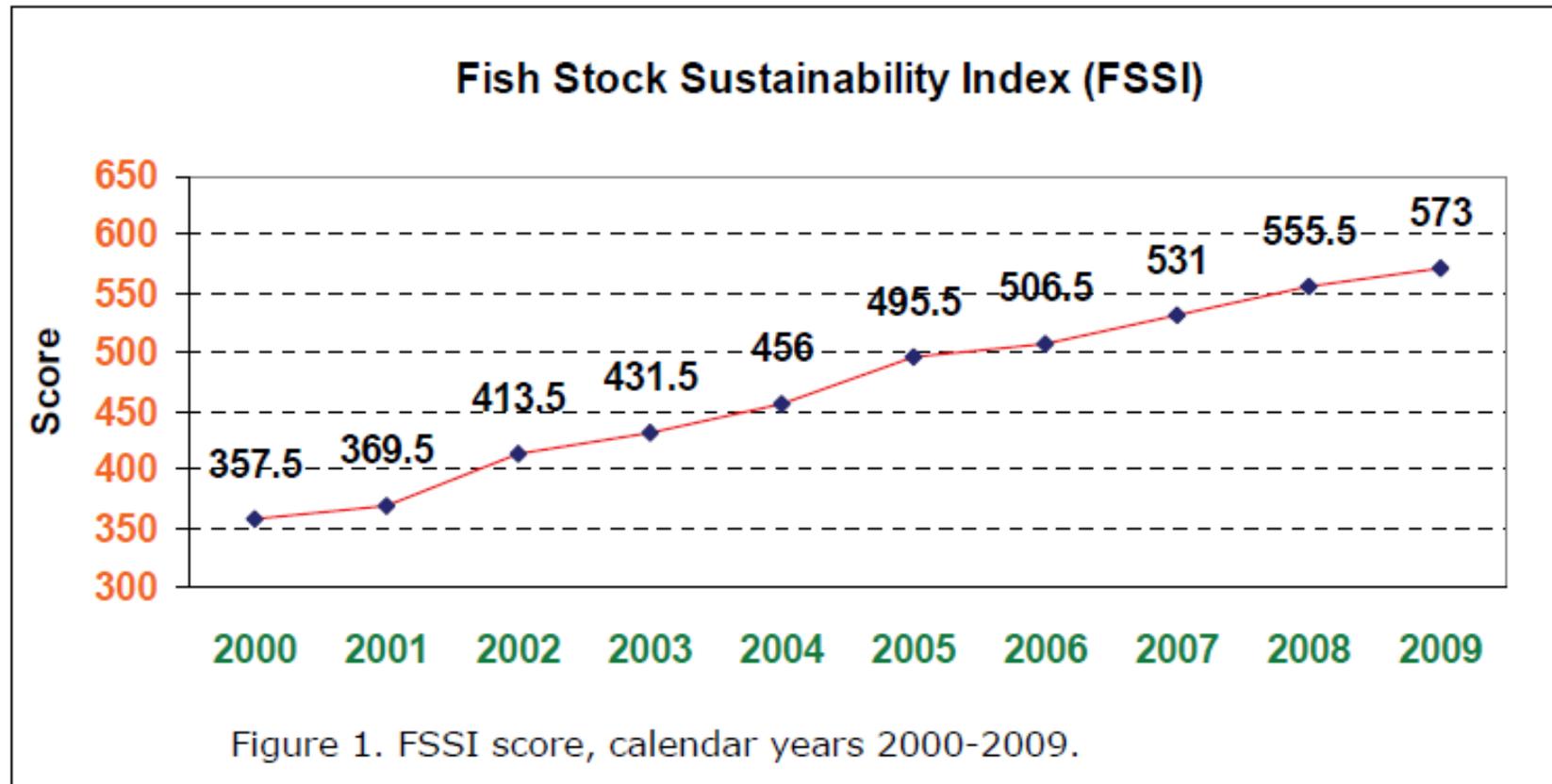
# Stock Assessments Occur Within a Larger Process



★ = regularly scheduled Council meeting



## FSSI - measuring success of the Expand Annual Stock Assessment initiative





## How FSSI Success is Scored

### FSSI Scoring Method

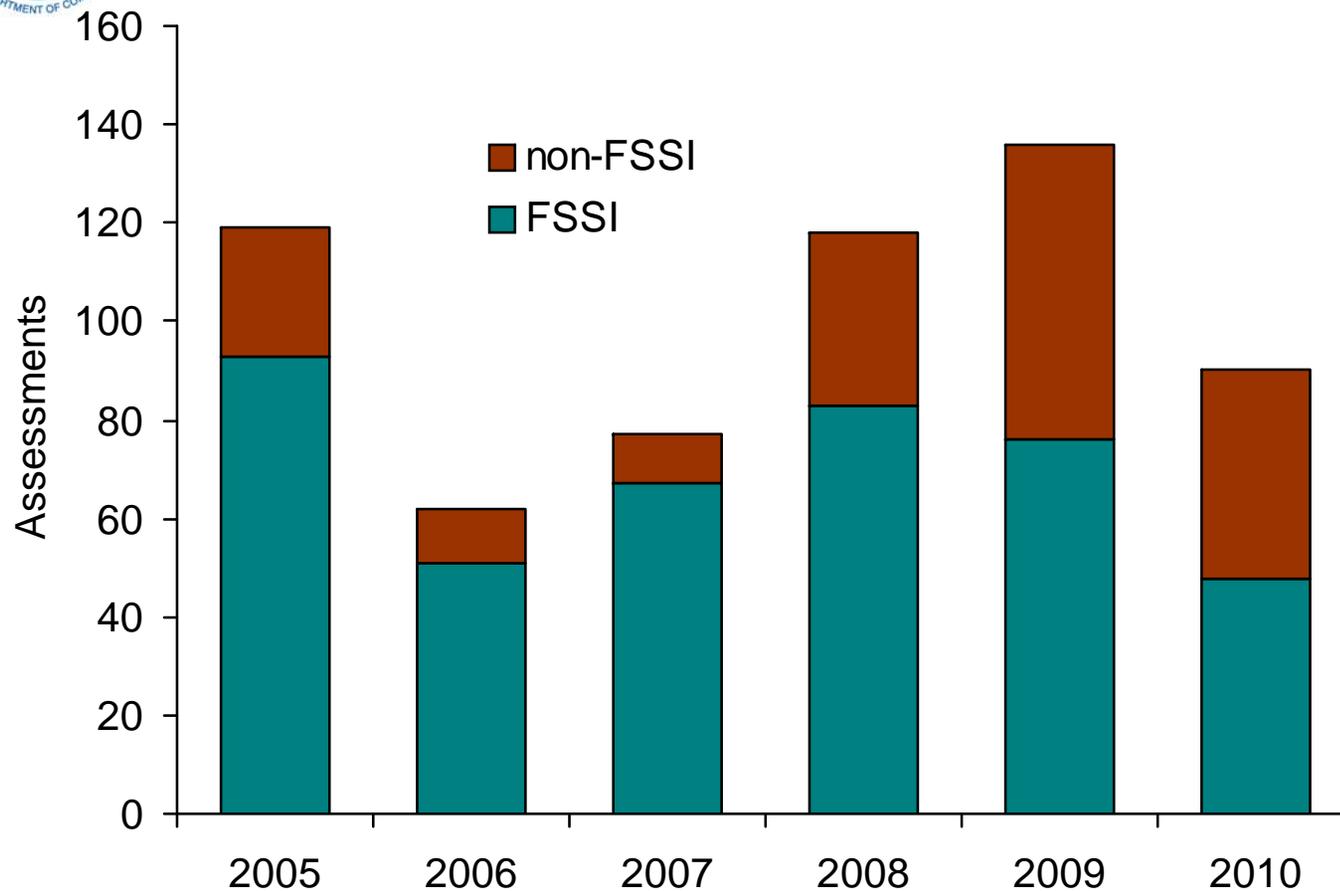
The FSSI is calculated by assigning a score for each fish stock based on the five following criteria:

<u>Criteria</u>	<u>Points Awarded</u>
1. "Overfished" status is known	0.5
2. "Overfishing" status is known	0.5
3. Overfishing is not occurring (for stocks with known "overfishing" status)	1.0
4. Stock biomass is above the "overfished" level defined for the stock	1.0
5. Stock biomass is at or above 80% of the biomass that produces maximum sustainable yield ( $B_{MSY}$ ) <sup>2</sup> <i>(this point is in addition to the point awarded for being above the "overfished" level)</i>	1.0

The maximum score each stock may receive is 4. The value of the FSSI is the sum of all 230 individual stock scores. The maximum total FSSI score is 920, achieved if all 230 stocks were to each receive a score of 4.



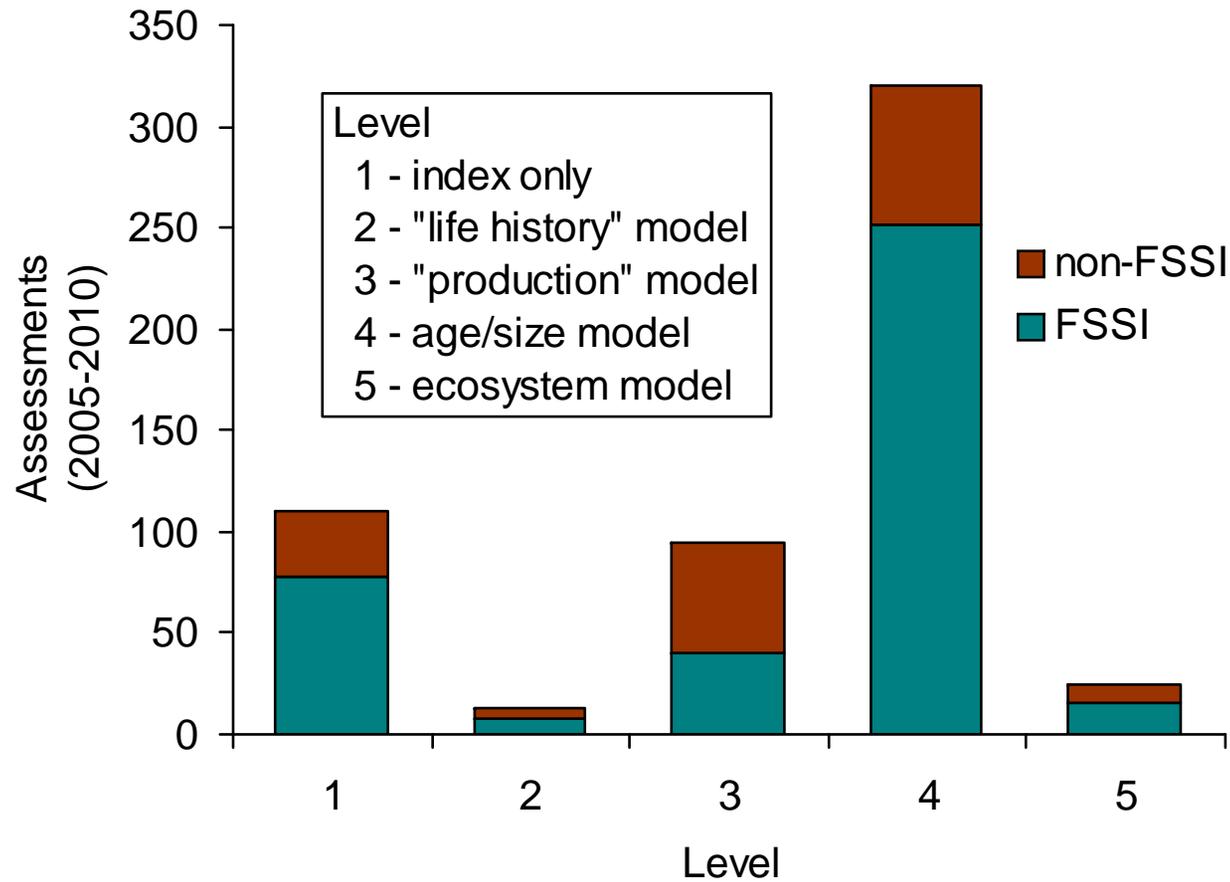
## Recent Trend in Total Assessments Completed



Pre-decisional analysis from Species Information System (SIS) – for information only

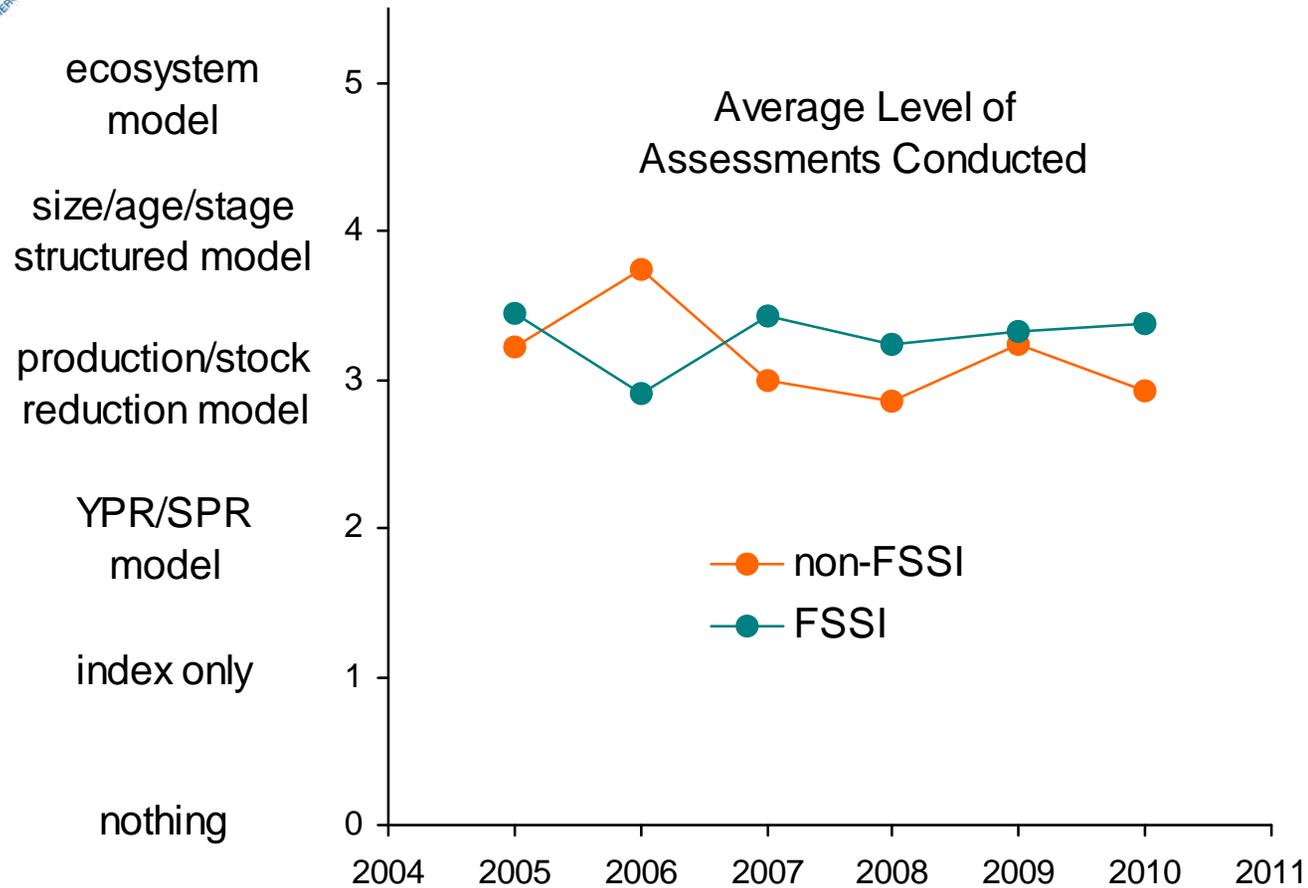


## Recent Assessment Complexity



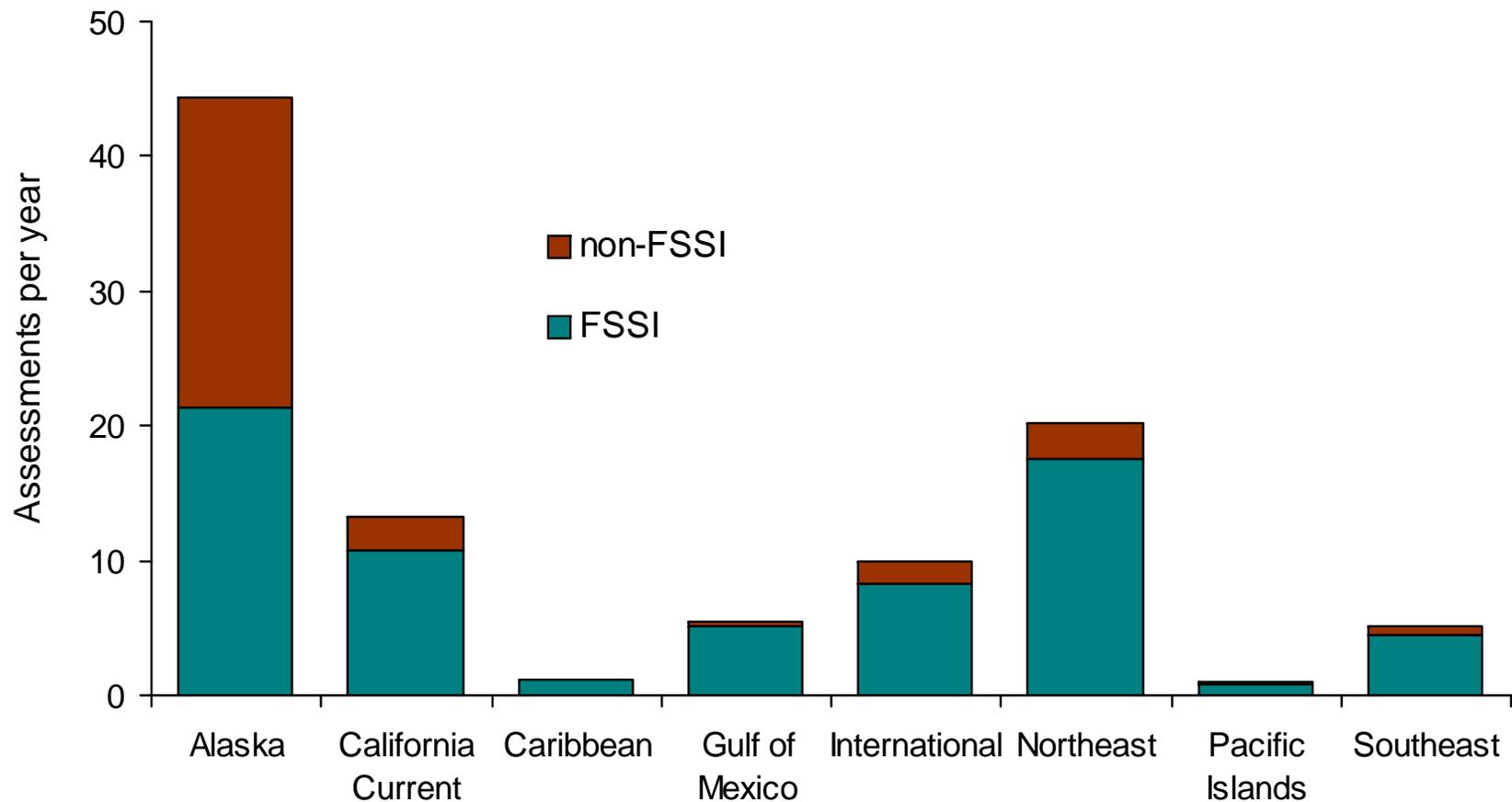


## Recent Trend in Assessment Complexity



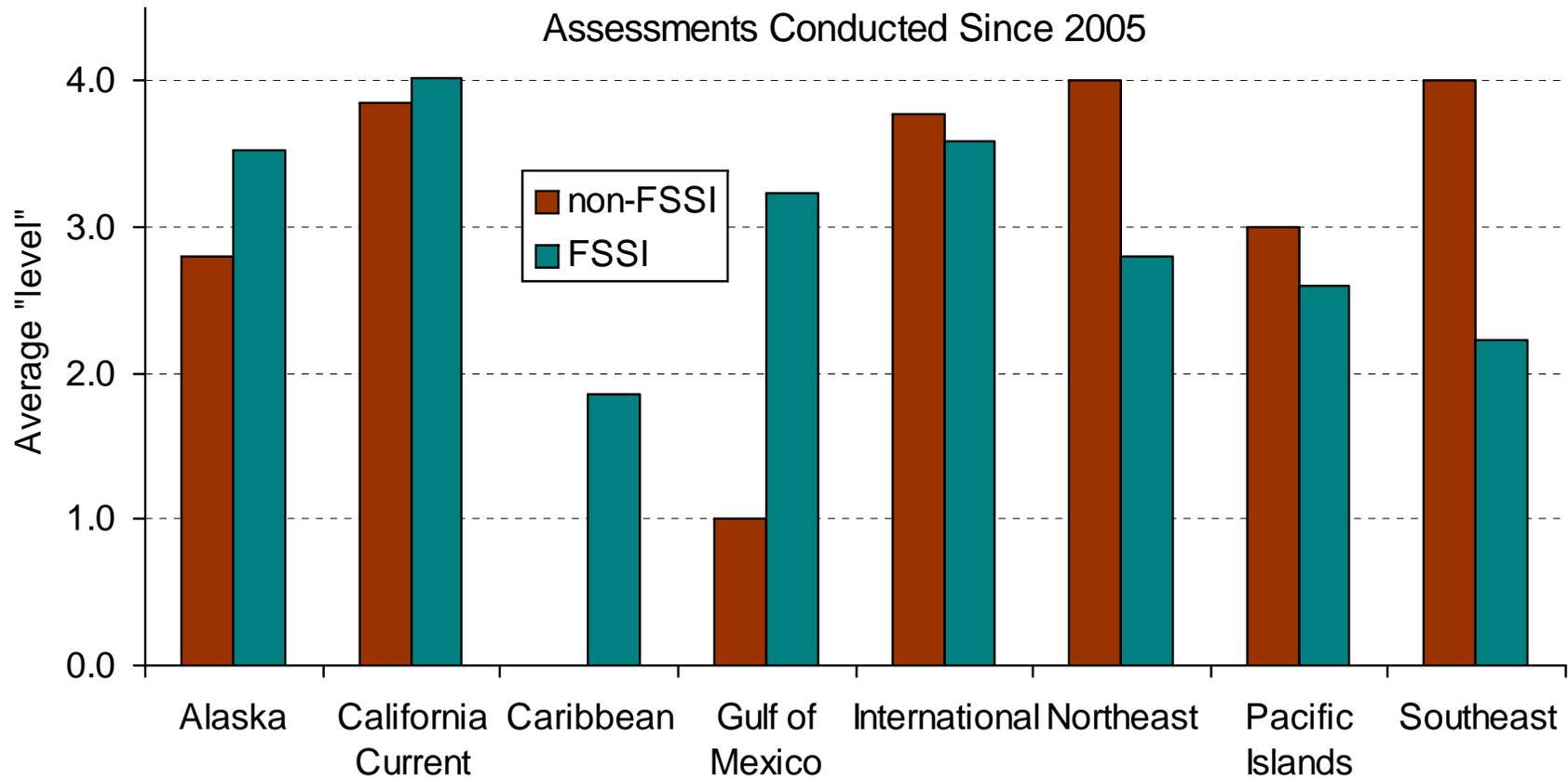


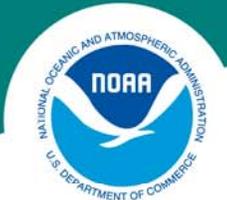
## Regional Variation in Assessment Throughput



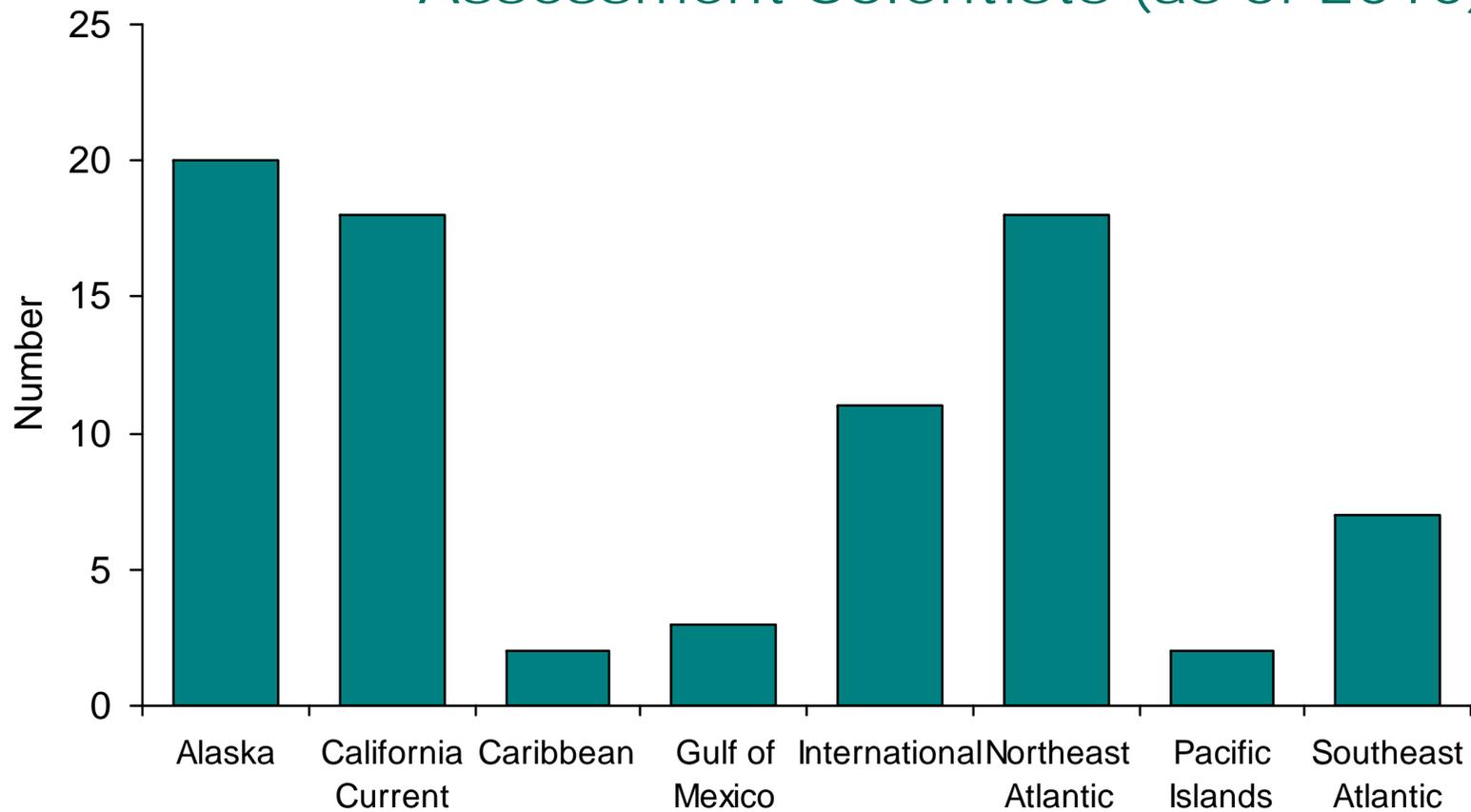


## Regional Variation in Assessment Complexity





## Regional Variation in NMFS Lead Assessment Scientists (as of 2010)





## Potential Criteria for Prioritizing Assessments

- Intensity of fishing (overfishing)
- Stock status (overfished)
- Assessment age (stale information)
- Stock importance (socioeconomic impacts)
- Synergistic factors (leveraging resources)
- Negative factors (e.g., transboundary issues)
- FSSI versus non-FSSI stock

# Scientific Review of Assessments



NOAA Fisheries Office of Science and Technology

## US Fishery Management Councils

- |   |                 |   |                |
|---|-----------------|---|----------------|
|  | North Pacific   |  | New England    |
|  | Pacific         |  | Mid-Atlantic   |
|  | Western Pacific |  | South Atlantic |
|  | Gulf of Mexico  |  | Caribbean      |



## National Standard 2: Best Scientific Information Available

- revised following MSA reauthorization
- BSIA should include an evaluation of uncertainty
- limitations on BSIA should not be used to delay action
- overly prescriptive definition should be avoided
- principles for evaluating BSIA include:
  - relevance
  - objectivity
  - timeliness
  - peer review
  - inclusiveness
  - transparency
  - verification / validation



## Peer Review

“Peer review is an organized method of review and evaluation using appropriate, objective, and relevant expertise to ensure high quality, credibility, and reliability of scientific information.”<sup>1</sup>

MSA and NS-2 specify the Secretary and each Council may establish a peer review process

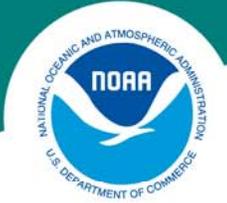
1 – Report of a National SSC Workshop on Establishing an Scientific Basis for Annual Catch Limits. St. Thomas, US Virgin Islands, November 10-13, 2009.

[http://www.alaskafisheries.noaa.gov/npfmc/misc\\_pub/SSCWorkshop09.pdf](http://www.alaskafisheries.noaa.gov/npfmc/misc_pub/SSCWorkshop09.pdf)



## Some Required Elements of an Acceptable Peer Review

- review should be transparent to the public
- review should be conducted early in the process
- review should not be duplicative
- clear terms of reference should be developed
- reviewer selection should provide appropriate expertise and balance
- reviewers must be independent
- reviewers must not have conflicts of interest



## A Regional Comparison of Stock Assessment Review Processes

Stock Assessment Review Committee (SARC) – New England & Mid-Atlantic Fishery Management Councils

Southeast Data Assessment Review (SEDAR) – South Atlantic, Gulf of Mexico, Caribbean Fishery Management Councils, and NMFS HMS

Stock Assessment Review (STAR) – Pacific Fishery Management Council

In House/Plan Team/SSC – North Pacific Fishery Management Council (groundfish)

Western Pacific Stock Assessment Review (WPSAR) – Western Pacific Fishery Management Council

## Regional Comparison of Peer Review Processes

Aspect of Peer Review	SARC	SEDAR "Review"	STAR	NPFMC Groundfish	WPSAR
Stock Selection	NRCC	steering committee	Council	all stocks	steering committee
TOR Authorship and/or Editing	consensus	SEDAR staff	SSC	AFSC	Council & PIFSC
Panel Chairperson	SSC	SSC	SSC	Planning Team	SSC
Use of Data and Modeling Groups	yes	yes	no	no	yes
BSIA Determination	SARC/peer review	SSC/NMFS	SSC	SSC	SSC
CIE Representation	3	3	2	no	2-3 independent
Regional Experts	no	yes	yes	yes	1-2 SSC
Assessments per Panel	1-5	1-3	2	~40 yr <sup>-1</sup>	2
Duration	5 d	4-5 d	5 d	2-4 weeks	
Open to Public	yes	yes	yes	yes	yes
Panel Report	each panelist	yes	yes	yes	yes
Frequency	semiannual	continuous	biennial	annual	set by steering committee

Pre-decisional analysis – for information only



# Impediments to Increasing Stock Assessment Throughput

Bottleneck	Northeast	Southeast	West Coast	Alaska	Pacific Islands
data/sample processing	Dark Blue	Light Blue	Light Blue	Dark Blue	Light Blue
peer review	Light Blue	White	Light Blue	White	White
insufficient/unqualified staff	Light Blue	Dark Blue	White	Light Blue	Dark Blue
inadequate data	White	Light Blue	White	White	White
difficult to survey stocks	White	White	Dark Blue	Light Blue	White
institutional coordination	White	White	White	White	Light Blue



decreasing priority



Pre-decisional analysis – for information only



## Some Trigger Questions

- Can a national consensus be developed on what constitutes a sufficient level of peer review?
- What is the minimum level of review needed for assessment updates if they are based on previously reviewed methods and benchmark assessments?
- Review processes are panel dependent; how can we better account for the effect of a review panel?
- What are the tradeoffs involved with “non-neutral” parties involved in the development of stock assessment models and their review?



## Trigger Questions (cont'd)

- What are the pros and cons of standardizing data processing and assessment algorithms to throughput?
- What are the tradeoffs to using simpler, less data-hungry assessment methods to increase assessment tempo?
- What is the best way to allocate limited resources to facilitate assessment throughput? Should we focus on a few comprehensive surveys or fishery dependent data?