

Science, Service, Stewardship



# Fish Stock Assessments



Richard Methot  
Office of Science & Technology

**NOAA  
FISHERIES  
SERVICE**



## Mandate From MSFCMA

### National Standard 1:

- Conservation and management measures shall *prevent overfishing* while achieving...the *optimum yield* from each fishery...

### Fishery Management Plans must:

- specify objective and measurable criteria for identifying when a fishery is overfished
  - how the criteria were determined
  - relationship of criteria to reproductive potential

### Thus:

- stock assessments and fishery monitoring



## Assessments Support Management

**Optimum Yield:** What harvest level would maximize long-term benefits while protecting marine ecosystem?

**Rebuilding:** What harvest level will allow a stock to rebuild to its target abundance level?

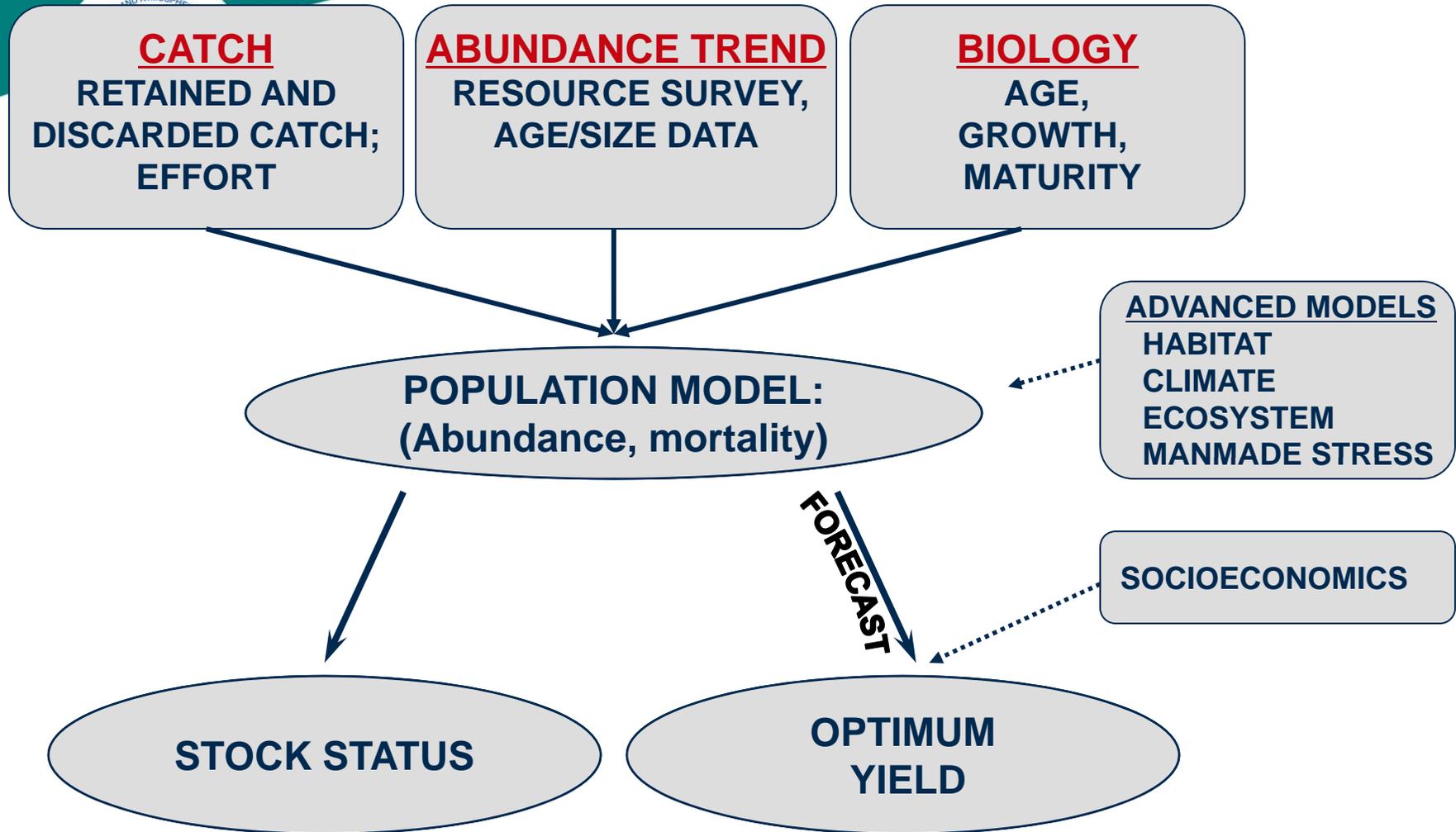
**Status Determination:**

—Did overfishing occur last year?

—Is abundance below the overfished limit?

**Forecasting:** What level of catch next year would implement the target harvest policy and have no more than a **X%** chance of causing overfishing?

# Stock Assessment Process





## Bang for the Buck

Budgets are tight, but the Expand Annual Stock Assessments budget has been increasing because it is closely linked to production of needed stock assessments

Performance Measures provide a tangible indication of our success

Continued success depends upon demonstrating that we are choosing wisely in which assessments to conduct, and are truly expanding the assessment output

But the cost of status quo also is going up, especially the costs of ship-based surveys



## Performance Measures

In 2005, 230 stocks were identified as an important set to form the Fish Stock Sustainability Index (FSSI)

In addition to the FSSI, we separately track the % of FSSI Stocks with Adequate Assessments

### Adequate Means:

- Assessment capable of providing minimal status determination and ABC forecasting needs
- Assessment has passed review process
- Assessment has been updated within past 5 years



## Prioritization of Assessments

### **Candidate Prioritization Factors**

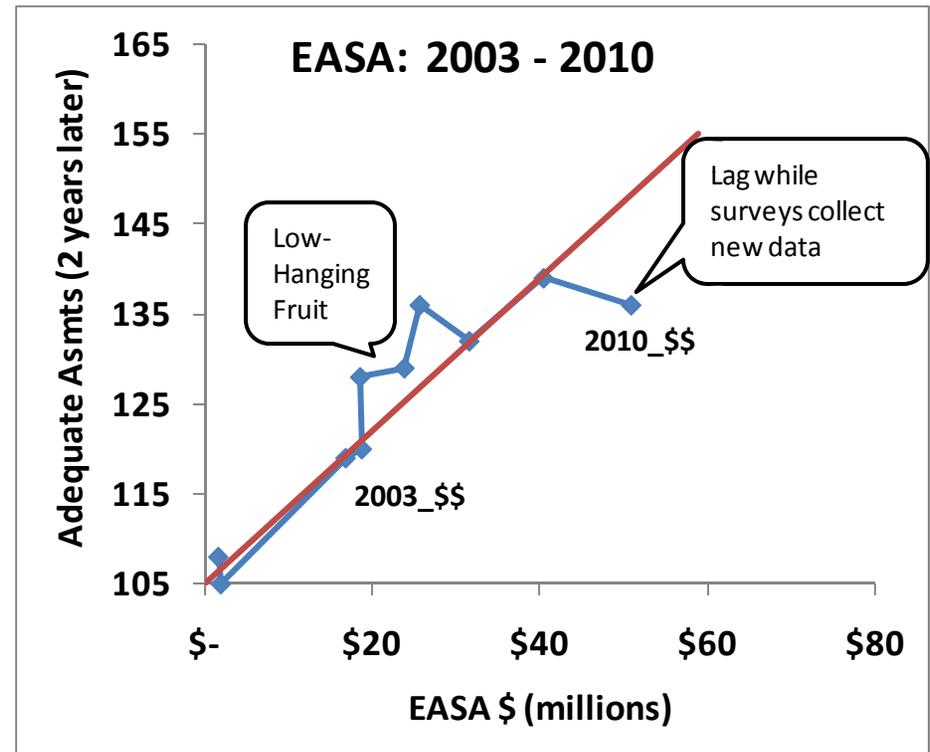
- **Intensity of fishing – approaching overfishing?**
- **Stock abundance – approaching overfished?**
- **Assessment frequency – out of date?**
- **Stock importance to fishery or ecosystem**
- **Synergy factors – data in place? Coop research Candidate?**
- **Impeding factors – Jurisdictional or technical problem?**

In 2011, we'll work on refinement of these factors



## How Are We Doing for the 230 FSSI Stocks?

Year	Assess- ments Done	Stocks with Adeq. Asmt.
2000	37	106
2001	53	111
2002	64	106
2003	60	107
2004	63	108
2005	104	121
2006	71	121
2007	78	129
2008	76	131
2009	84	137
2010	TBD	132
2011	TBD	139
2012	TBD	136





## Prospects for 2013

	Never adeq asmt	Adeq in 2013	Once Adeq, updateable	Total	%Adeq
Alaska	3	31	1	35	89%
Cal. Current	9	25	11	45	56%
Caribbean	8			8	0%
Gulf of Mexico	5	14	4	23	61%
International - Atl		5	3	8	63%
International - Pac	5	12	1	18	67%
Northeast	17	22	9	48	46%
Pacific Islands	4	2	1	7	29%
Southeast	13	16	9	38	42%
<b>ALL</b>	<b>64</b>	<b>127</b>	<b>39</b>	<b>230</b>	<b>55%</b>



## Assessment – Survey Linkage (as of 2007)

### Primary Survey

Ecosystem	Primary Survey				
	FSV	CHARTER	Comm-CPUE	Recr-CPUE	NON-NMFS
Alaska	2	27			
Cal. Current	4	16	2	8	
Caribbean					3
Gulf of Mexico	8		3		1
International - Atl	1		7		
International - Pac			11		
Northeast	21		1		1
Pacific Islands			3		
Southeast	10		1	1	9
<b>ALL</b>	<b>46</b>	<b>43</b>	<b>28</b>	<b>9</b>	<b>14</b>



## Assessments Needed in 2011 to Reach Performance Measure Targets

<b>Stock</b>	<b>Assessment Need</b>
Golden king crab - Aleutian Islands	New
Southern Tanner crab - Bering Sea	New
Blackgill rockfish - Southern California	update after sunset last year
Dover sole - Pacific Coast	update after sunset last year
Spiny dogfish - Pacific Coast	New
Gray triggerfish - Gulf of Mexico	update before sunset
Greater amberjack - Gulf of Mexico	update before sunset
Vermilion snapper - Gulf of Mexico	update before sunset
Yellowedge grouper - Gulf of Mexico	New
Albacore - North Pacific	update before sunset
Longfin inshore squid - Georges Bank / Cape Hatteras (Loligo)	upgrade from level 1 to level 3
winter flounder - Gulf of Maine	to restore adequacy after rejected asmt in 2008
Black seabass - Southern Atlantic Coast	update after sunset last year
Tilefish - Southern Atlantic Coast	update



## Expand Annual Stock Assessments

**GOAL: More frequent, more precise assessments for more stocks**  
**Achievable with a continuing expanding program that can:**

- Hire more assessment scientists
- Improve survey methodology and efficiency through advanced technology
- Streamline the data / assessment / review / implementation process
  - Emphasize review of standardized methods, not review of each result

### **Challenges:**

- Funding shortfalls are limiting access to full potential of NOAA survey vessels
- Unfilled assessment scientist positions due to shortage of candidates