

NRCC Stock Assessment Process

Improvements and Long Term Schedule

MAFMC SSC

March 2019

*Thank you and acknowledgement that much of presentation provided by Mike Simpkins, NEFSC

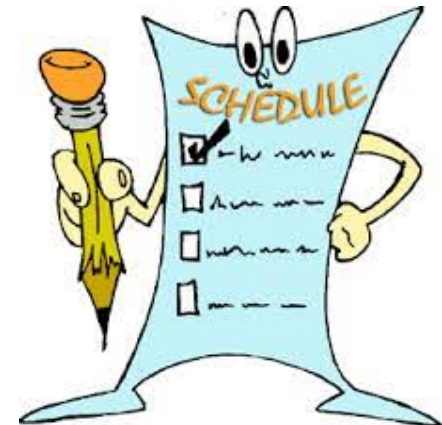
Benefits of New Process

- Improve the quality of assessments
- Allow more improvement to occur within the routine assessment process
- Provide more strategic and longer-term planning for research and workloads



Development

- Approximately two-year process, building on prior efforts
- NRCC working group developed and proposed improvements
- Working group also developed strawman and long-term schedules
- NRCC reviewed, negotiated, and approved process and schedules



Developed by NRCC Working Group

NRCC WG

- Mike Simpkins– Chair, NEFSC
- John Boreman– MAFMC SSC
- Pat Campfield– ASMFC
- Chris Kellogg– NEFMC
- Jay McNamee– NEFMC SSC
- Brandon Muffley– MAFMC
- Mike Ruccio– GARFO
- *Christopher/Heil– GARFO alt*

Rotating NEFSC support staff

- Jon Deroba
- Larry Alade
- Geret DePiper
- Dan Hennen
- Mike Ball
- Kiersten Curti
- Laurel Smith

Guidelines WG

- Jay McNamee– Chair; NEFMC SSC
- Paul Rago– MAFMC SSC
- Chris Legault– NEFSC
- Gary Shepherd– NEFSC
- Kiersten Curti– NEFSC

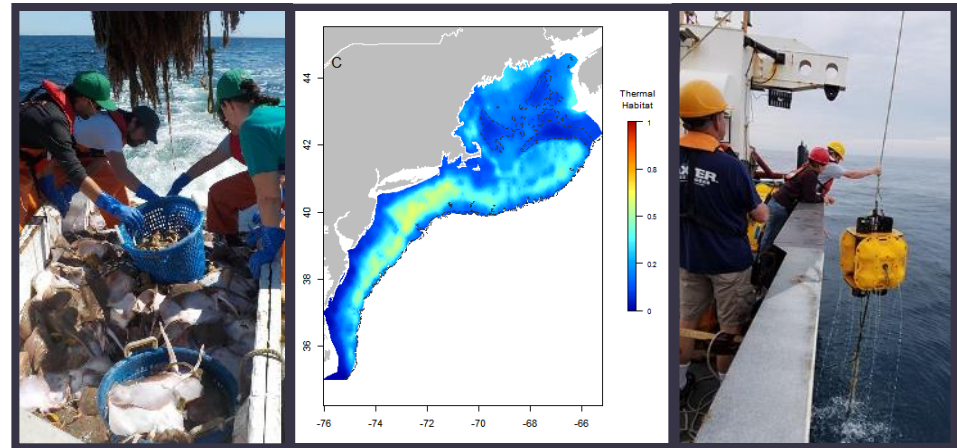


**Northeast Fisheries
Science Center
Greater Atlantic Region**



Process Improvements

- Two tracks of assessments:
 - Management Track - Routine updates
 - Research Track – Comprehensive evaluation
- Long-term schedule for research planning



Management track needs vs capacity

- WG considered research vs management track balance – defaulted to recent history
- Recent history and projected needs:
 - ~15-30 assmt updates (various) & 2 benchmarks (3-5 stocks)/yr
 - Sustainable balance= ~20-25 updates, 2 benchmarks (4 stocks)/yr
 - Given specification cycle and projected needs, every odd year could need 40+ updates (even years vary near 20)
- Clear need for scheduling and priority setting

											2020-2027 VALUES		
	2018*	2019*	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL	MEAN	SD
Mgt Track Assmts - WG Strawman	23	42	26	23	24	23	23	23	20	24	186	23.3	1.7
Mgt Track Assmts - Current spec schedule	23	42	15	32	7	37	9	27	16	26	169	21.1	10.9

Improvements – Management Track

- Routine updates with set cycles
 - Predictable, efficient
- Flexibility to improve assessments
 - 3 levels –simple update to fairly extensive changes
 - Guidelines for determining level and ensuring appropriate peer review for each level
- Can improve assessments without having to wait for a “benchmark”



Management Track Levels - Guidance

Level 1: Direct delivery to SSC

- Model that has been updated with revised data, with minor changes (such as small adjustments to data weights, fixing parameters estimated at bounds, correcting minor errors in previous model)
- Incorporation of updated data from recent years in the estimation of biological information (growth, maturity, length-weight relationship)
- If adding or revising data reveals problems in model performance, analyst should identify concerns that may need further analyses and/or review
- Standard QA/QC procedures employed by the NEFSC

Management Track Levels - Guidance

Level 2: Expedited peer review

- Updated discard mortality estimates, based on robust experimental evidence
- Recalibrated catch estimates (e.g., transition to Marine Recreational Information Program, area allocation tables, conversion factors (whole to gutted weight))
- Simple changes, corrections, or updates to selectivity, including but not limited to: (a) Changes to most recent selectivity stanza, (b) Changes to historical selectivity stanza if they are corrections or reinterpretations of previously used block timeframes
- Retrospective adjustment to management metrics
- Adjustment of method for estimating biological information (growth, maturation, sex ratio, changes to length-weight relationships, etc.), based on robust method development
- Changes to parameterization, but not the basis, for biological reference points

Management Track Levels - Guidance

Level 3: Enhanced peer review

- Inclusion of new or alternate interpretations of existing indices
- Evaluating effects of delayed seasonal surveys or missing strata on fishery independent measures of abundance
- Changes to estimation method of catchability, including but not limited to: (a) Empirical estimations; (b) Changes in habitat/availability/distribution on catchability; (c) Use of informed priors on catchability in a model
- Updating of priors based on new research if done on a previously approved model
- Significant changes to biological reference points, including but not limited to: (a) Change in the recruitment stanza; (b) Number of years to include for recent means in biological parameters; (c) Suggestions of alternate reference points based off similar modeling
Updating of historical selectivity stanzas

SSC Roles in Management Track Process

- **Assessment Oversight Panel (AOP)**
 - **Composition:**
 - Chief of Pop Dynamics Branch, NEFSC*
 - Chair of MAFMC and NEFMC SSC*
 - Chair of ASMFC Assessment Science Committee*
 - **Role:**
 - Review and approve MT assessment plans in context of guidelines for permissible changes under each level
 - As appropriate, review and approve any alternative (i.e. Plan B) approaches
- **Peer Review Panel – Level 2&3 MT assessments**
 - Two peer reviews a year – end of June and mid-September
 - SSC members from relevant Council(s); external experts
 - Level 2 assessment – expedited (1-2 hour) review
 - Level 3 assessment – enhanced (1/2 – full day) review
 - Summary reports addressing TORs developed

Improvements – Research Track

- 5 year schedule to allow strategic research planning
 - Time to identify research needs, garner resources, conduct research, and incorporate into assessment
- Species-specific and topical efforts
 - Topics can address common issues or improvements across several stocks at once
- Use of ranking process
- WG's
- Follow current “benchmark” SAW/SARC assessment process and timelines



Scoring Factors (averages of averages)

- M - Management Track
- R - Research Track
- B - Both

Management Needs	Fishery Importance	Stock Status and Trend	Ecosystem Importance	Assessment Information	Stock Biology
M Specification timing	B Commercial importance	B Relative stock abundance	M Trophic importance	B Unexpected changes to stock indicators	M Mean age in catch
	B Recreational importance	B Relative fishing mortality and trends	R Climate vulnerability	R New type of information	M Maximum age
	M Rebuilding status			R Research readiness	M Stock variability
	B Constituent demand			M Years overdue	
				R Model performance	

Input into Assessment Process

- With this process we have opportunity for effective two-way engagement and input
 - Always results to share and input to solicit for upcoming and out-year assessment efforts
- NRCC will use variety of outreach tools for regular engagement
- Input will be considered in developing assessment plans for both tracks



Management Track Cycles

Annual cycles

Stock	Start Year
Sea scallop - Northwestern Atlantic Coast	2020
Eastern GB Cod TRAC	2020
Eastern GB Haddock TRAC	2020
Yellowtail flounder - Georges Bank [TRAC]	2020

No Mid-Atlantic Council species on an annual cycle

Management Track Cycles

Two year cycles

Stock	Start Year
Acadian redfish	2020
American plaice	2020
Atlantic cod - Georges Bank	2020
Atlantic cod - Gulf of Maine	2020
Atlantic herring	2020
Atlantic mackerel	2020
Bluefish	2020
Butterfish	2020
Haddock - Georges Bank	2020
Haddock - Gulf of Maine	2020
Pollock	2020
Striped bass	2020
Witch flounder	2020

Stock	Start Year
Atlantic halibut	2021
Black sea bass	2021
Scup	2021
Skates (Barndoor, Clearnose, Little, Rosette, Smooth, Thorny, Winter)	2021
Summer flounder	2021
Windowpane - Gulf of ME / Georges Bank	2021
Windowpane - S NE / Mid-Atlantic	2021
Winter flounder - Georges Bank	2021
Winter flounder - Gulf of Maine	2021
Winter flounder - S NE / Mid-Atlantic	2021
Yellowtail flounder - Cape Cod / Gulf of ME	2021
Yellowtail flounder - S NE/ Mid-Atl	2021

Six Mid-Atlantic Council species on a 2-year cycle

Management Track Cycles

Longer cycles

Stock	Cycle	Start
Atlantic wolffish	3 yr	2020
Golden Tilefish	3 yr	2021
Goosefish – 2 stocks	3 yr	2021
Northern shortfin squid	3 yr	2020
Longfin inshore squid	3 yr	2022
Ocean pout	3 yr	2020
Red hake - Gulf of Maine / N Georges Bank	3 yr	2022
Red hake - S Georges Bank / Mid-Atlantic	3 yr	2022
Silver & Offshore hake	3 yr	2022
White hake - Gulf of Maine / Georges Bank	3 yr	2021

Stock	Cycle	Start
Atlantic surfclam	4 yr	2020
Red deepsea crab	4 yr	2020
Spiny dogfish	4 yr	2022
Northern shrimp	4 yr	2023
American lobster – 2 stocks	5 yr	2020
River herring	5 yr	2022
Sturgeon	5 yr	2022
Shad	5 yr	2024
Ocean quahog	6 yr	2020
Blueline Tilefish	NA	NA
Jonah Crab	NA	NA
Chub Mackerel	NA	NA

Three Mid-Atlantic Council species remain on a 3-year cycle

Two Mid-Atlantic Council species move to a 4-year cycle

One Mid-Atlantic Council species moves to a 6-year cycle

Research Track Schedule

YEAR	“SPRING” STOCKS/TOPIC	“FALL” STOCKS/TOPIC
2020	Red/Silver Hake stock structure	Evaluating Index Based Methods and Control Rules
2021	Haddock- GoM, GB, EGB (TRAC)	Butterfish and Longfin or Illex Squid
2022	American Plaice, Spiny Dogfish	Black Sea Bass, Bluefish
2023	<i>Cod- GoM, GB & EGB (TRAC)</i>	<i>Applying State-Space Models</i>
2024	<i>Golden Tilefish, Scallops</i>	<i>Yellowtail Flounder - CC/GOM, SNE/MA, and GB (TRAC)</i>

Data Updates

- Will continue and not “counted” in scheduling
 - Extensive/data intense data updates will need to be scheduled
- Need to highlight value of FMP indicating how data updates will be used
- Data updates do not run models, and do not inform stock status
- NEFSC working to have data updates “automated” by 2020
 - Info included: abundance index, survey length distribution, catch index
 - Catch by length and discards to be added later