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FISHERIES

Office of
Sustainable
Fisheries

Amendment 14 Domestic Shark Quota Management

Atlantic HMS Advisory Panel Meeting
September 2018

Outline



Background

Objectives

Management
Options

Acronyms

- ABC - Acceptable biological catch
- ACL- Annual catch limit
- ACT- Annual catch target
- AM - Accountability measure
- B_{MSST} - Minimum stock size threshold
- B_{OY} - Biomass at optimum yield
- F - Fishing mortality
- F_{MSY} - Fishing mortality at maximum sustainable yield
- F_{OY} - Fishing mortality at optimum yield
- MFMT- Maximum fishing mortality threshold
- MSY - Maximum sustainable yield
- PSE - Percent standard error
- SDC - Status determination criteria
- TAC - Total allowable catch
- OY - Optimum yield

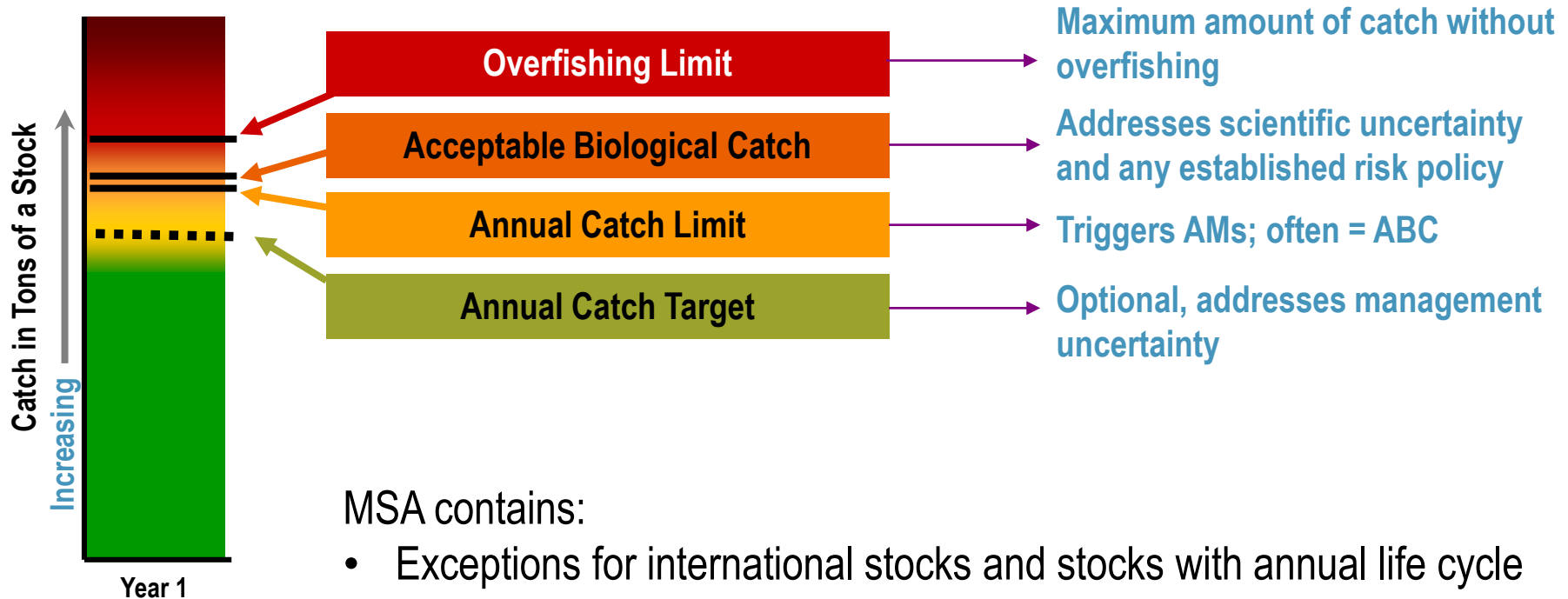
Background



National Standard 1 (NS1) Guidelines

- NS1 requires that management measures:
 - Prevent overfishing
 - Achieve OY, on a continuing basis
- NS1 guidelines provide guidance on how to achieve these requirements
- NS1 guidelines revised in 2016 to allow for increased management flexibility as a result of lessons learned through the implementation of ACLs and AMs
- Generally, $OFL > ABC > ACL$ (may consider $OFL=ABC=ACL$ if sufficient analysis and justification on preventing overfishing)

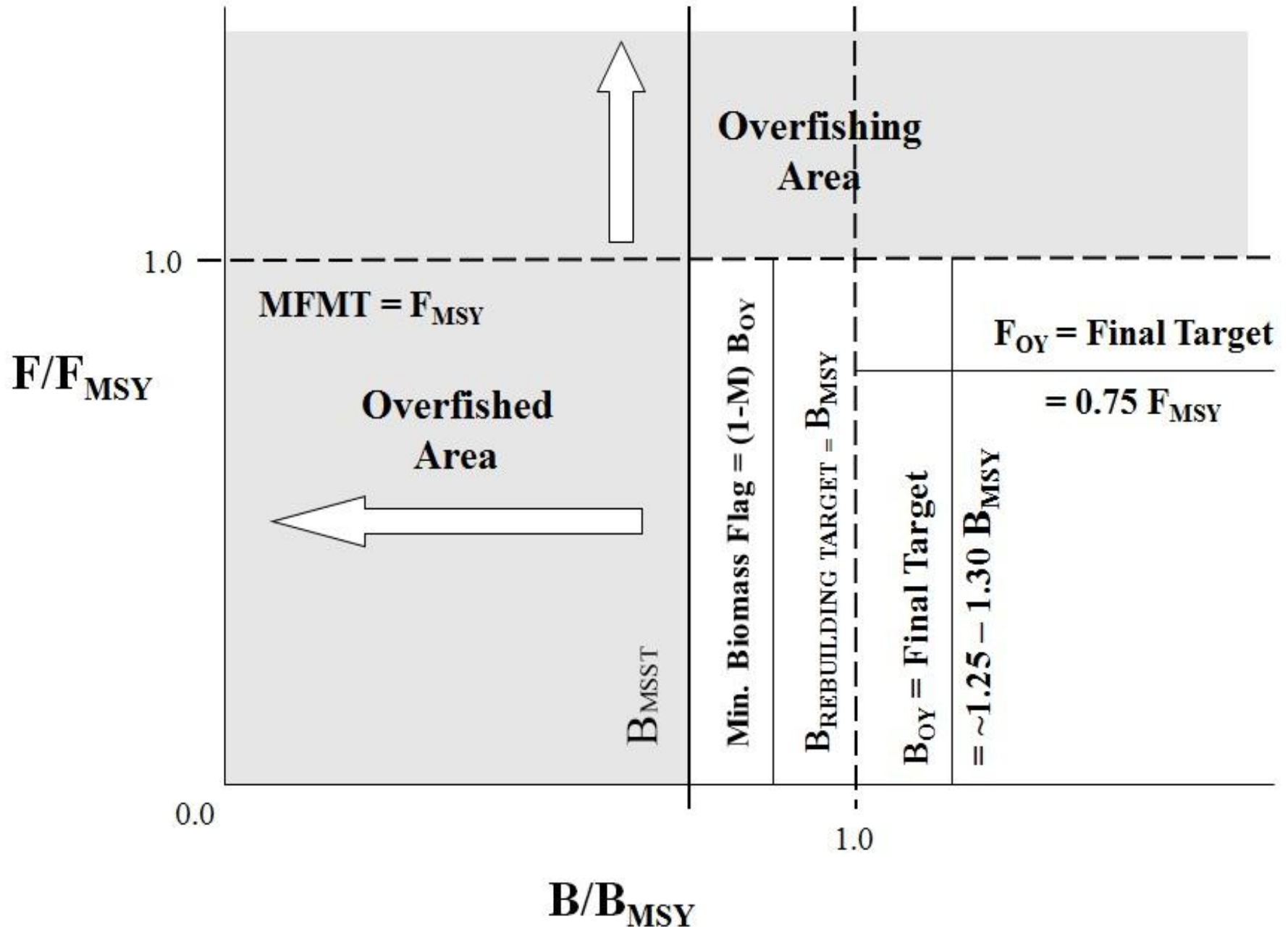
ACL Framework



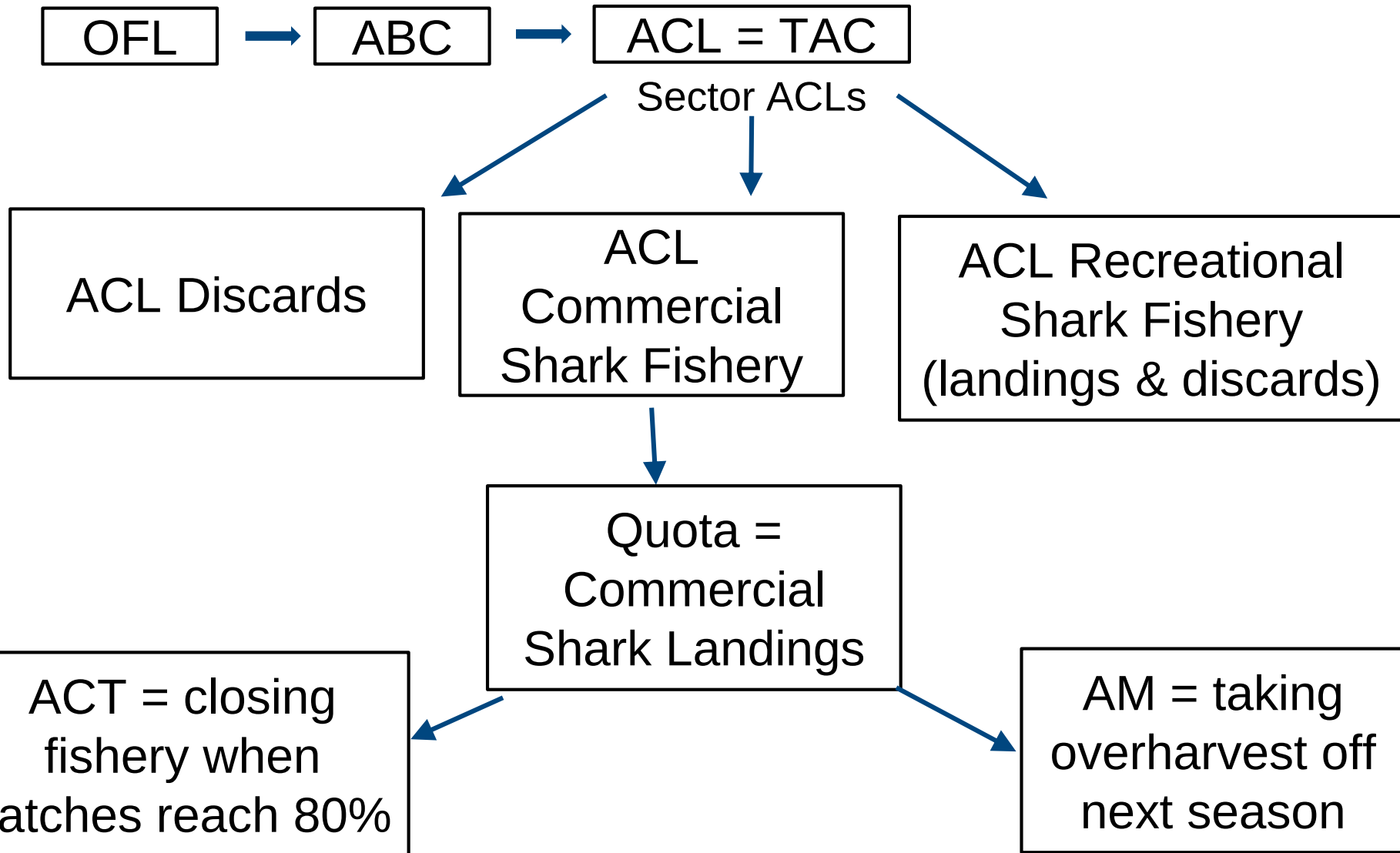
History of HMS SDCs and ACLs

- The 1999 FMP for Atlantic Tunas, Swordfish, and Sharks and the 1999 Billfish FMP Amendment 1 defined the SDCs
- The 2006 Consolidated Atlantic HMS FMP incorporated the SDCs without changes
- Amendment 3 established ACL mechanism for domestically managed sharks
- Amendment 5b clarified that the ACL for prohibited shark species = 0

Current HMS Domestic SDCs



TAC/ACL Mechanism for Non-Prohibited Sharks



Examples from 2015

Management Group	TAC	Total Harvest	Percentage of TAC
Non-Blacknose Small Coastal Sharks - Atlantic	489.3 mt dw	338.9 mt dw	69%
Blacktip Sharks – Gulf of Mexico	322.8 mt dw	298.4 mt dw	92%
Blacknose Sharks – Atlantic	21.2 mt dw	48.7 mt dw	229%

Total Harvest = Commercial landings + recreational harvest + discards



Objectives



Purpose and Need (Preliminary)

1. Shark harvest has historically been variable; need to review the process for setting HMS TACs, ABCs, and ACLs to determine if changes are needed
2. The 2016 NS1 guidelines provided guidance on phase-ins, carry-overs, and overfishing determinations; need to review current HMS process to determine if HMS should incorporate these changes

Draft Objectives for Amendment 14

1. Consider the need to revise the ABC control rule to ensure harvest does not exceed the OFL
2. Evaluate the process for establishing TACs and ACLs for all shark species managed domestically
3. Consider a process for addressing the distribution of under- and over-utilized sector ACLs for shark species managed domestically
4. Consider increasing management flexibility to account for changes in harvest of sharks by sector

To meet the Amendment 14 objectives, we anticipate focusing on:

- ABC Control Rules
- Phase-in ABC Provisions
- TACs and ACLs
- Carry-over ABC Provisions
- Multi-year Overfishing Determinations

Potential Management Options



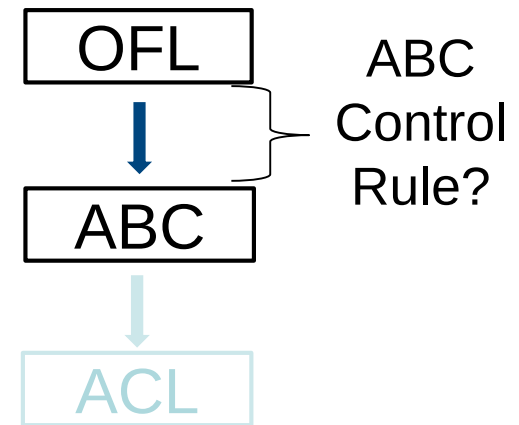
ABC Control Rule

ABC: a level of a stock or stock complex's annual catch, which is based on an ABC control rule that accounts for the scientific uncertainty in the estimate of OFL, any other scientific uncertainty, and any established risk policy.

Control Rule: is a policy for establishing a limit or target catch level that is based on the best scientific information available

ABC Control Rule Options

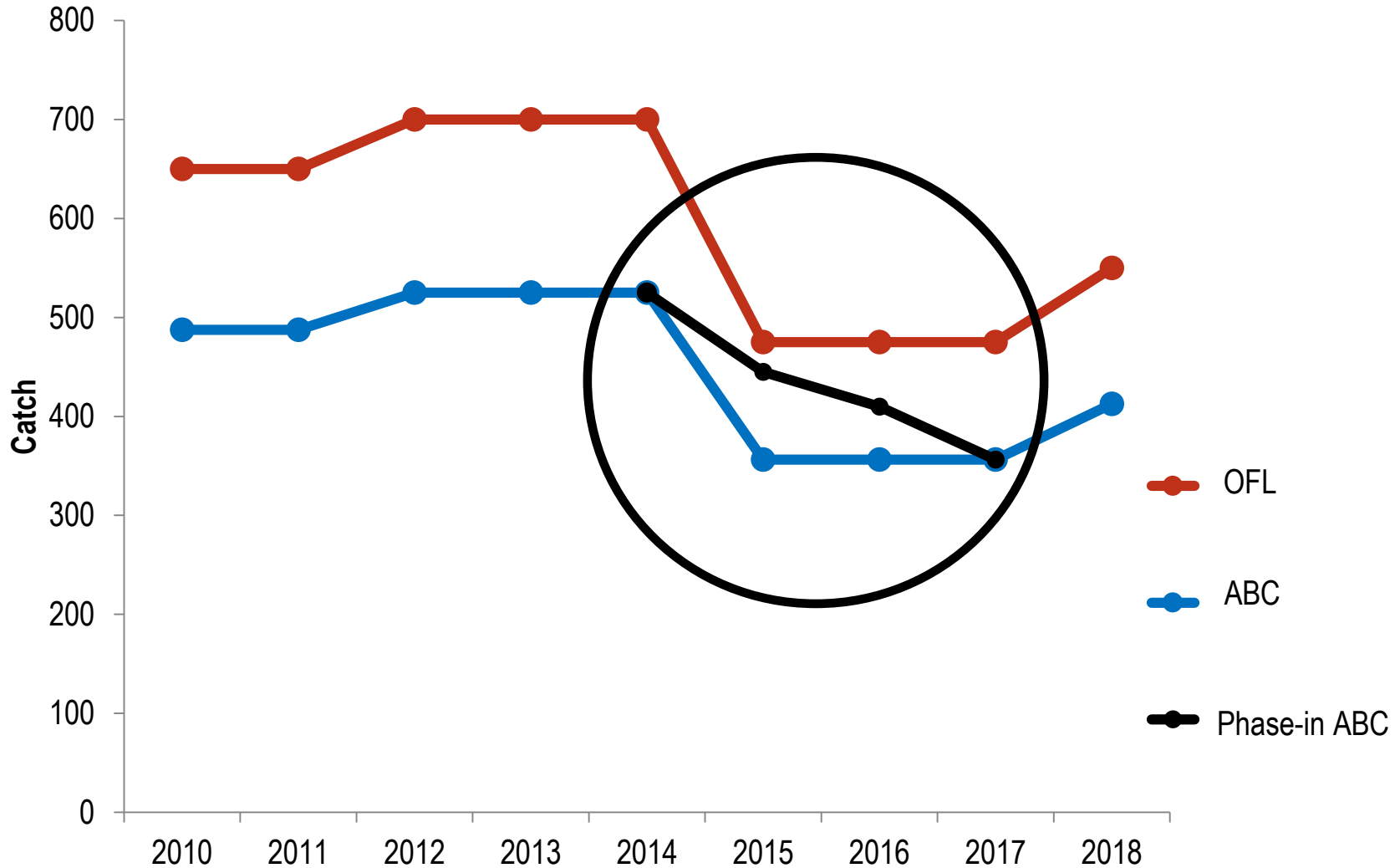
1. No Action; $OFL = ABC = TAC = \text{Sum of Sector ACLs}$
2. Create a standard ABC Control Rule for all domestically managed shark species (e.g., $ABC = X\% \text{ of OFL}$)
3. Create a tiered ABC Control Rule (e.g. assessed vs. unassessed) or based on the confidence in the stock vulnerability



Phase-in ABC Provisions

- Allows for gradual phase-in of changes to ABC over period of time to help stabilize catch levels
- Acknowledges concern with large changes in catch limits due to new scientific information
- Cannot exceed 3 years

Example: Phasing-in changes to catch levels

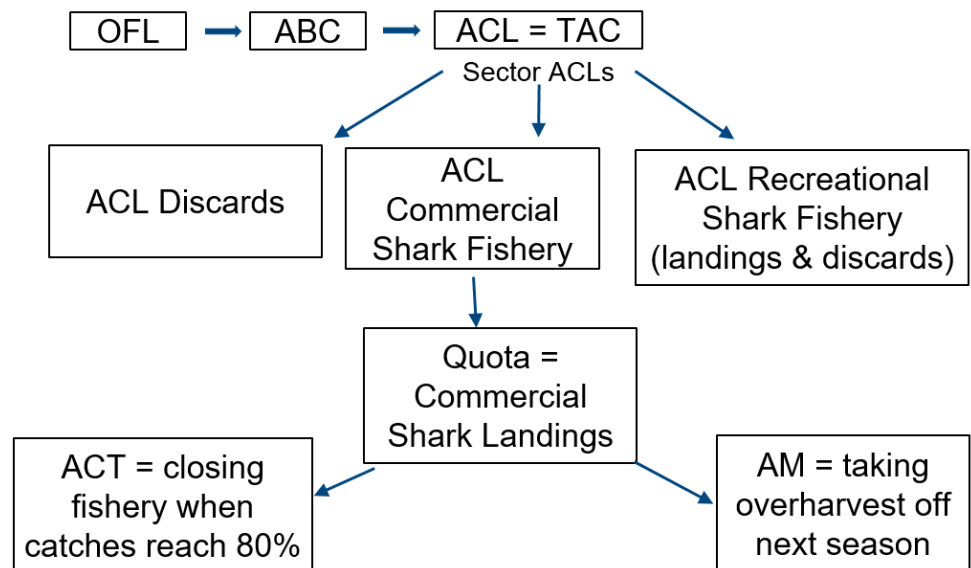


Phase-in ABC Control Options

1. No Action: Do not use phase-in ABC control rule tool.
2. Use phase-in approach for any decrease or increase in ABC
3. Use phase-in ABC control rule unless the stock is in an overfished or overfishing status
4. Use phase-in ABC control rule unless the stock is in both an overfished and overfishing status

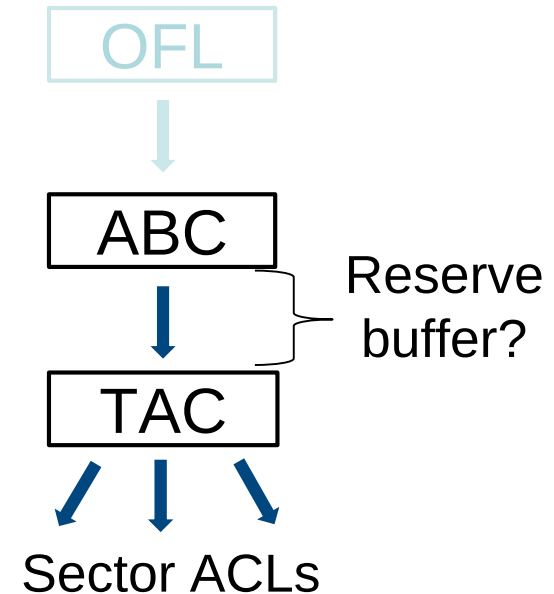
Establishing Shark TACs and ACLs

1. The current mechanism for establishing Shark TACs and ACLs was established in 2010
2. Changes to this mechanism may be necessary to facilitate implementation of any ABC control rule
3. Changes may be necessary for better management of shark TACs and ACLs



Shark TAC and ACL Options

1. No action. No change to current mechanism
2. Create and actively manage sector ACLs (recreational, commercial, discard)
3. Create a reserve quota to facilitate an ABC buffer creation, split TAC into sector ACLs, derive sector ACLs from proportions of historical landings
4. Create specific ACLs for complexes only, without regard to species
5. Create species-specific ACLs, without complex considerations



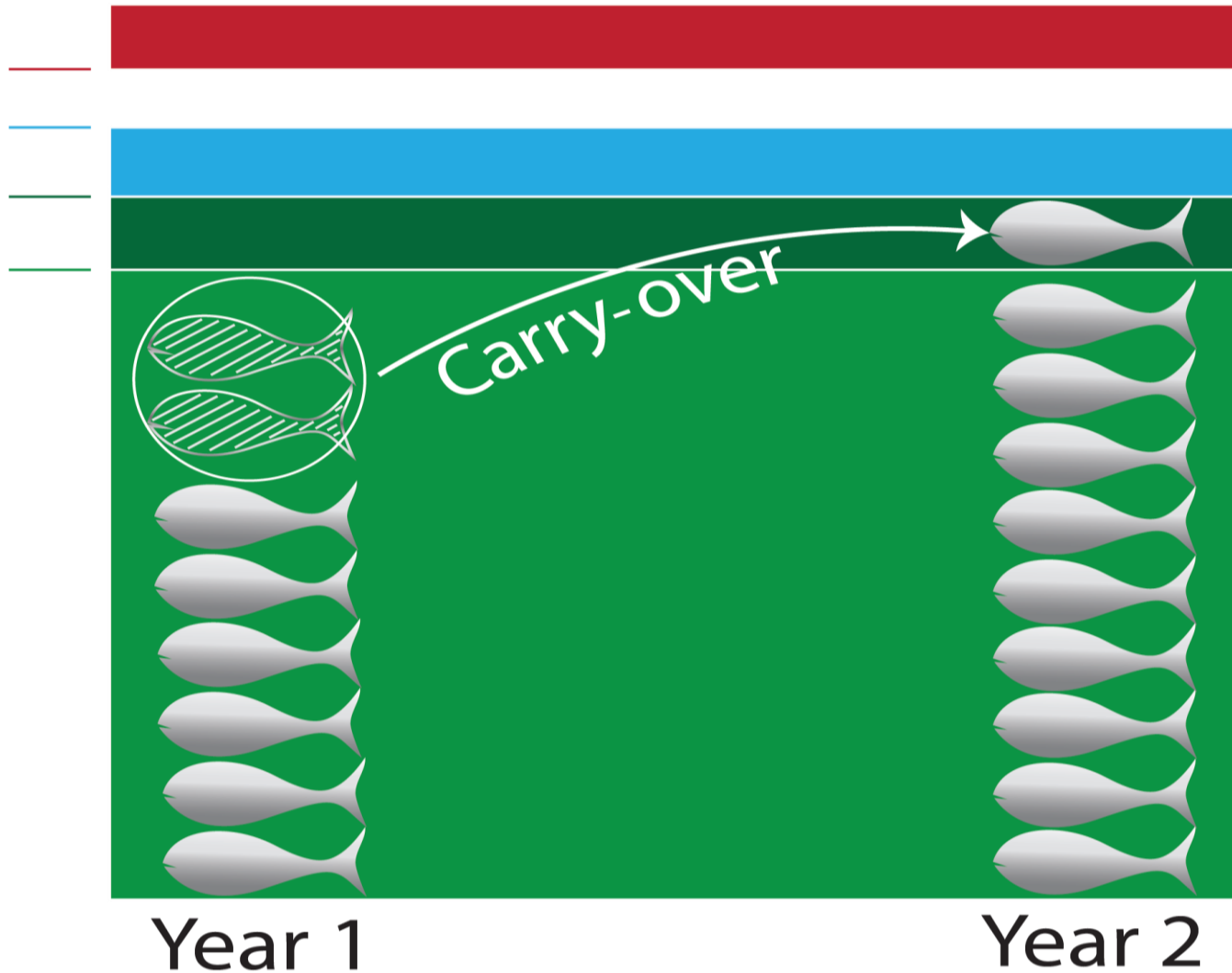
Carry-over Provisions

Overfishing
Limit

Acceptable
Biological
Catch

Annual
Catch
Limit year 2

Annual
Catch
Limit year 1



Carry-over Options

1. No Action: Allow up to 50% carry-over of TAC if stock is not overfished, not experiencing overfishing, or an unknown status
2. Allow for carry-over of any unused portion of TAC as long as the resultant TAC remains under the ABC
3. Distribute underharvest to the sector in which the underharvest occurred
4. Distribute underharvest based on the current regulatory ACL proportions for the stock that the underharvest occurred

Carry-over Overfished Stock Example

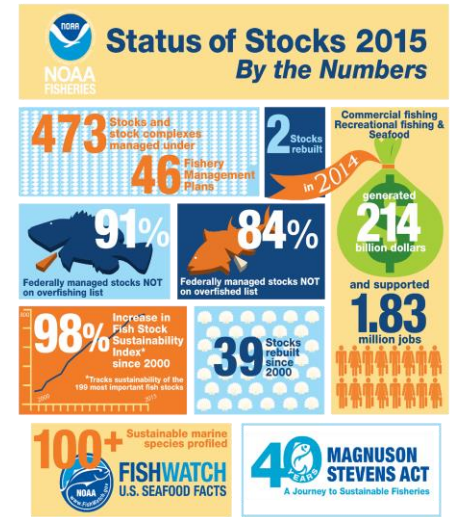
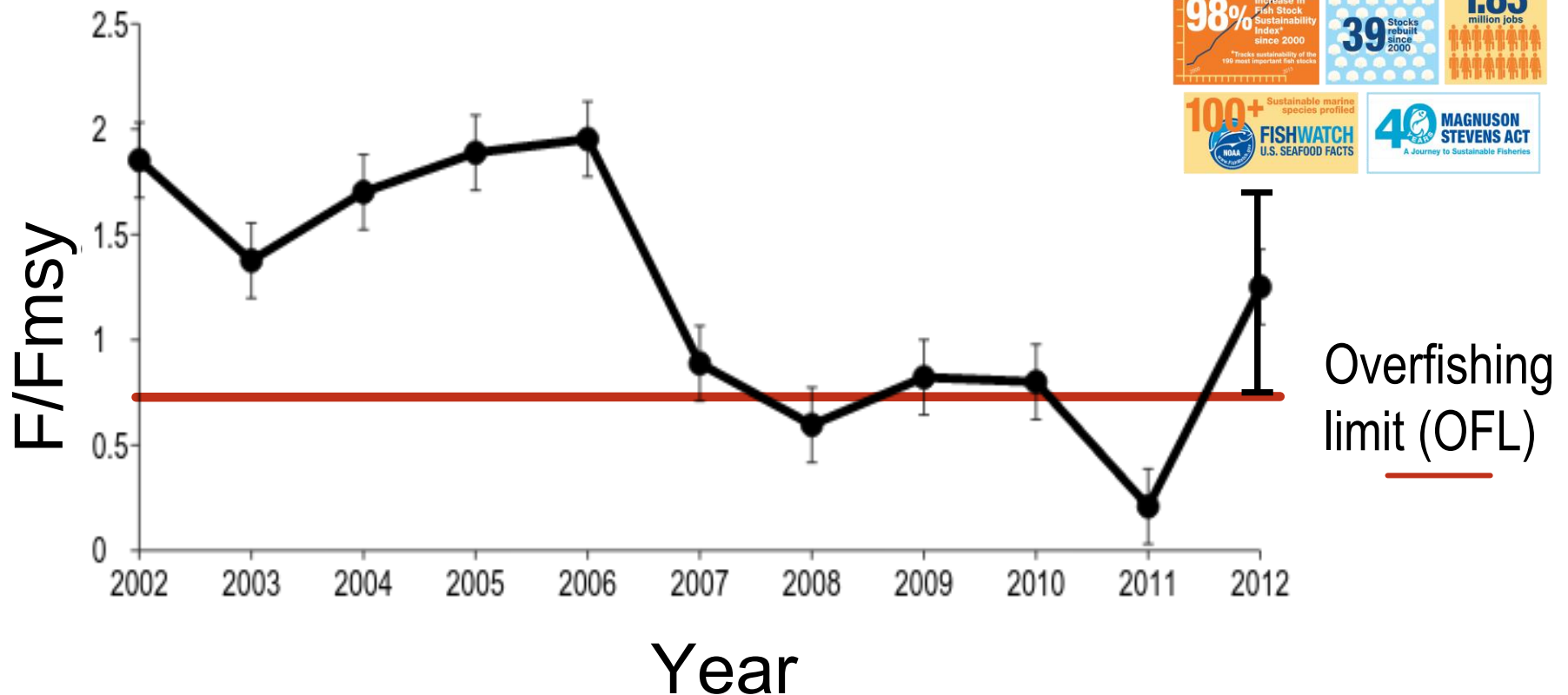
ABC = 700	Commercial Landings ACL = 250	Recreational Harvest ACL = 200	Dead Discard and Research Mortality ACL = 50	TAC = 500
Year 1 Landings	200	130	50	380
Underharvest	50	70	0	120
Option 1 (Status Quo)	250	200	50	500
Options 2 and 3	300	270	50	620
Option 4 (proportions)	310 (50%)	248 (40%)	62 (10 %)	620

Carry-over Not Overfished Stock Example

ABC = 700	Commercial Landings ACL = 250	Recreational Harvest ACL = 200	Dead Discard and Research Mortality ACL = 50	TAC = 500
Year 1 Landings	200	130	50	380
Underharvest	50	70	0	120
Option 1 (Status Quo)	300	270	50	620
Options 2 and 3	300	270	50	620
Option 4 (proportions)	310 (50%)	248 (40%)	62 (10 %)	620

Multi-Year Overfishing Status Determinations

- Agency determines stock status annually
- Last year of data is often the most uncertain



Multi-Year Overfishing Options

1. No Action: Do not allow for multi-year overfishing SDC; overfishing when $F > MFMT = FMSY$
 2. Compare a 3-year average of total harvest to the OFL to determine overfishing status
 3. Use a method, such as a PSE meta analysis, to account for variance in catch estimates (like the recreational sector), compare that 3-year average to the OFL to determine overfishing status
- *Note: Approach could be used to declare status is “experiencing overfishing” or “no longer experiencing overfishing”

Multi-Year Overfishing Example

Year	Total Harvest	OFL	Status
Year 1	490	500	Overfishing*
Year 2	467	500	Overfishing*
Year 3	515	500	Overfishing*
Average (3 Year)	489	500	No overfishing

* Overfishing status based on result of stock assessment

Discussion

1. What should the ABC Control Rule structure be?
2. Should we change the mechanism for establishing TACs and ACLs?
3. Should we implement phase-in and carry-over provisions?
4. Should we allow for multi-year overfishing designations?

Next Steps

A photograph of a shark lying on a dark, wet surface, likely the deck of a boat. A fishing net is visible in the upper left corner. A person's leg and foot are visible on the right side of the frame.

Late 2018: Scoping for Amendment 14
Spring 2019: Pre-draft of Amendment 14
Fall 2019: Proposed Amendment 14
2020: Final Amendment 14

Questions?



Ian Miller, ian.miller@noaa.gov

301-427-8503

Guy DuBeck, guy.dubeck@noaa.gov

301-427-8503

Karyl Brewster-Geisz, karyl.brewster-geisz@noaa.gov

301-427-8503



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