



MSB

Mackerel (mostly) & Squid

April 2018

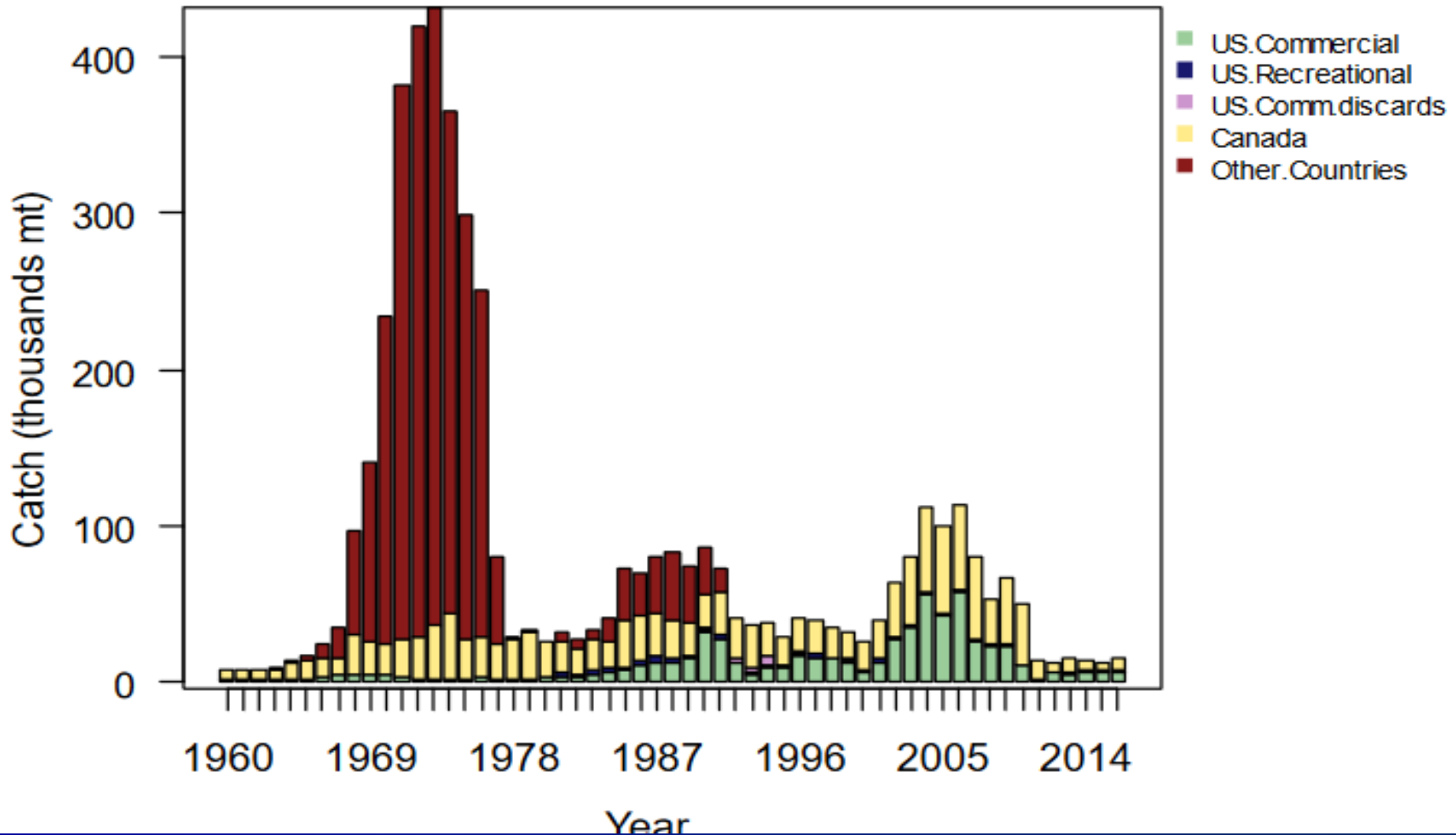
Overview

- Mackerel Rebuilding (FW Mtg 1)
 - Rebuilding alternatives
 - Specification details
 - RH/S Cap
 - Mackerel and Herring
- Mackerel and Herring in 2018
- Longfin Squid Trimester 2 2018

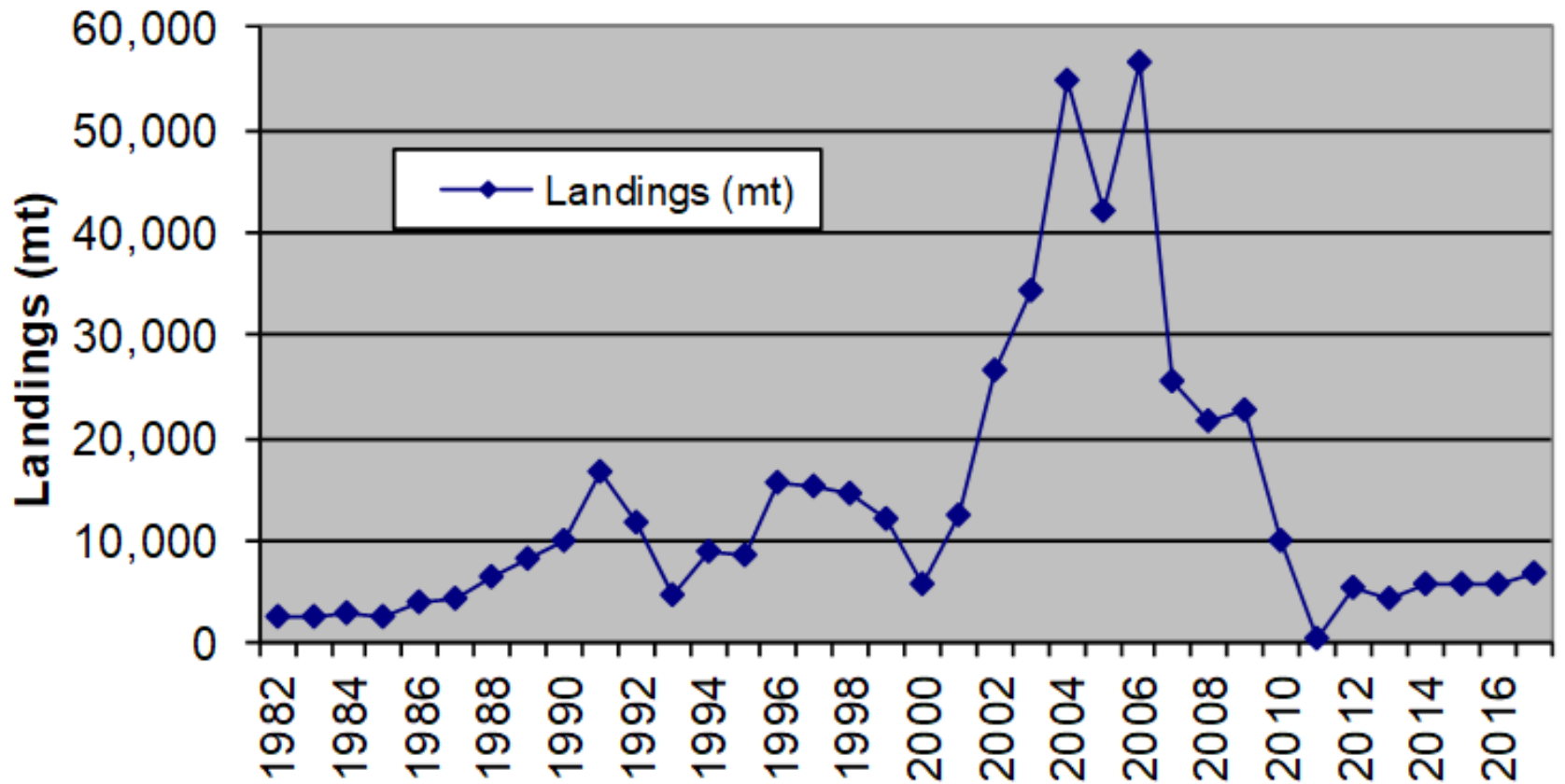
Mackerel Fishery

- Current ABC based on data limited approach
- Total catch limits reduced by 95% between 2005 and 2016
- Commercial: 3 limited access “Tiers” plus open access incidental
- Mackerel closes at 95% of DAH, or 95% of RH/S Cap (zero possession at 100%)
- Recreational fishery mostly in state waters, mostly MA-ME.

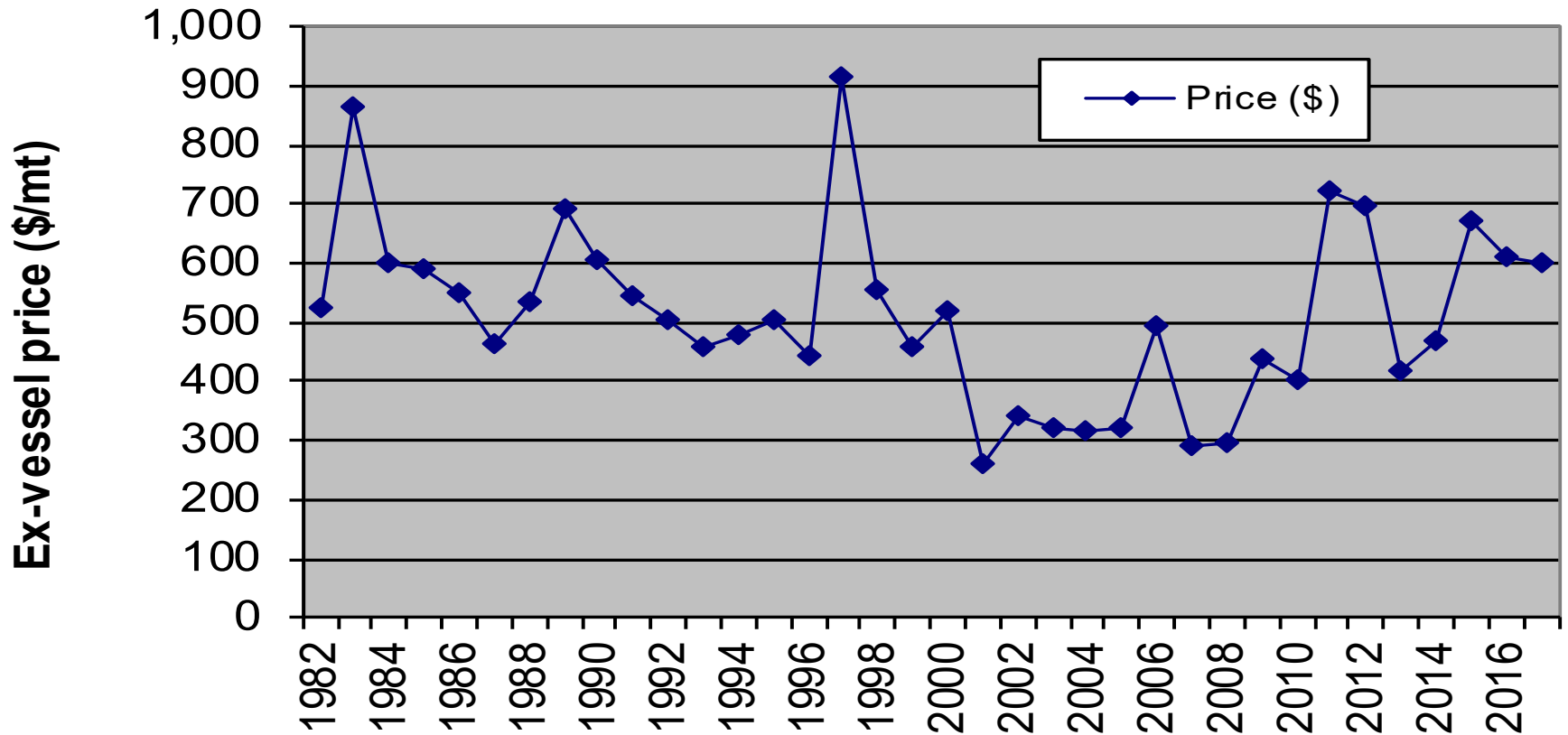
Historical Mackerel Fishery



Mackerel Fishery 1982-2017



Mackerel Fishery 1982-2017



**Inflation adjusted to 2017 dollars

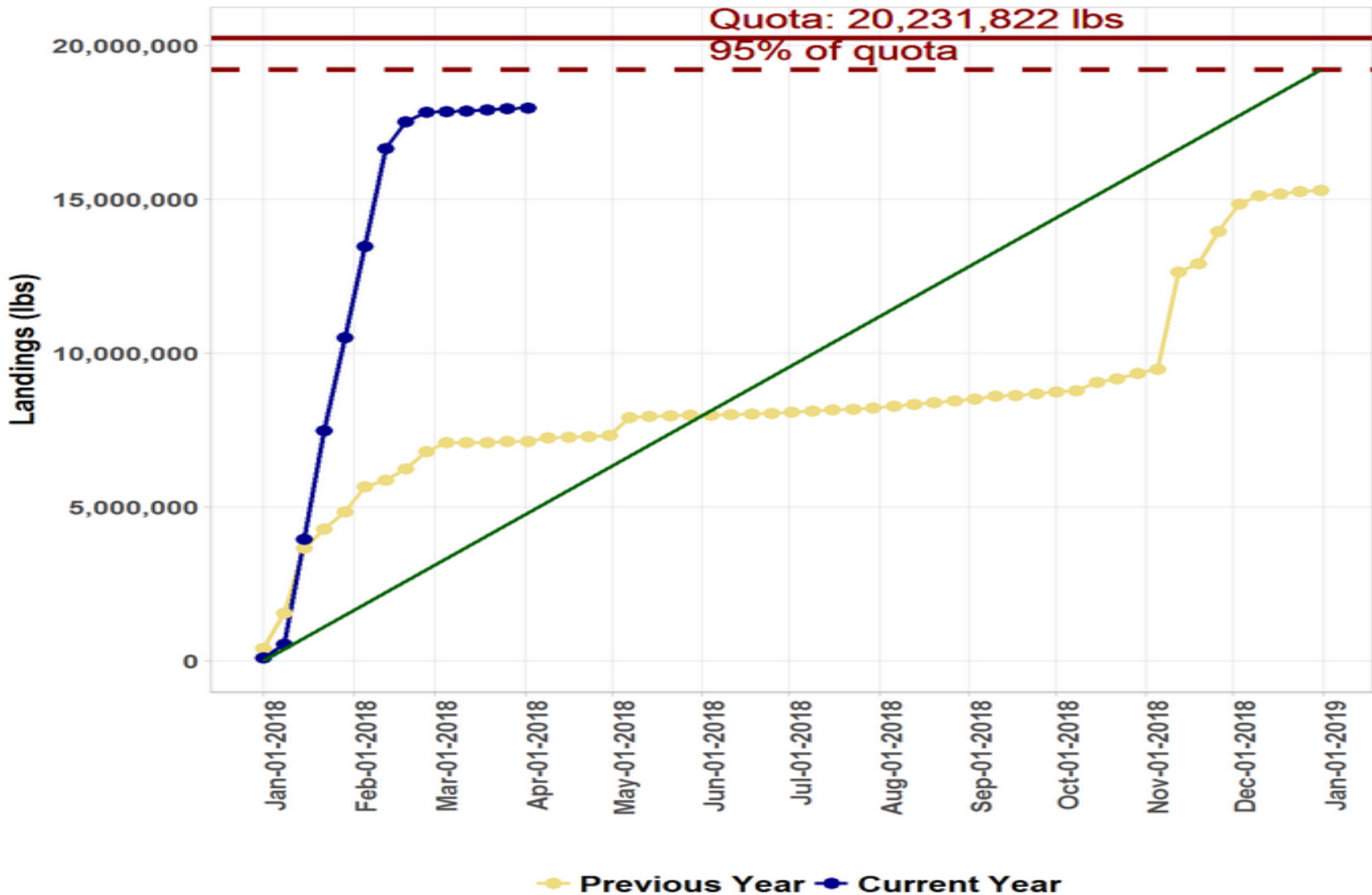
Mackerel Vessel Participation

Table 5. Vessels active in various annual mackerel landing ranges (pounds per vessel)

YEAR	Vessels 1 mil +	Vessels 100,000 - 1mil	Vessels 50,000 - 100,000	Vessels 10,000 - 50,000	Total
1982	0	10	10	43	63
1983	0	10	5	26	41
1984	0	11	14	29	54
1985	0	12	10	28	50
1986	1	10	5	37	53
1987	1	15	8	31	55
1988	2	20	8	40	70
1989	6	17	8	27	58
1990	6	16	7	39	68
1991	13	18	1	38	70
1992	9	17	13	48	87
1993	0	16	11	55	82
1994	2	27	14	44	87
1995	4	24	11	50	89
1996	7	45	15	53	120
1997	6	30	20	46	102

YEAR	Vessels 1 mil +	Vessels 100,000 - 1mil	Vessels 50,000 - 100,000	Vessels 10,000 - 50,000	Total
1998	9	16	6	39	70
1999	6	15	9	36	66
2000	5	3	0	26	34
2001	5	3	2	20	30
2002	12	3	1	22	38
2003	14	6	5	23	48
2004	18	6	1	14	39
2005	16	12	4	15	47
2006	21	12	5	10	48
2007	16	12	2	20	50
2008	15	5	1	17	38
2009	15	6	6	18	45
2010	10	9	2	13	34
2011	0	3	3	17	23
2012	3	9	1	9	22
2013	4	3	3	13	23
2014	6	5	1	13	25
2015	5	9	10	12	36
2016	3	16	7	26	52
2017	6	7	14	28	55

Mackerel 2018 (blue)



Mackerel Rebuilding

- Mackerel overfished with overfishing occurring in 2016.
 - Given projections, overfishing maybe ended
 - MSA: Rebuild by 2028
 - This action (FW) will establish rebuilding timeline and first 3 years of specifications
 - Includes management measures and RH/S cap
 - FW Mtg 1: ID issue and alternatives
 - Final action in August 2018
 - Implementation early 2019

Mackerel Rebuilding Target

- Proposed biomass reference point = spawning stock biomass (SSB) associated with $F_{40\%}$: prevents stock collapse
- $F_{40\%}$ produces 40% of the “SSB per recruit” relative to an unfished condition...or each fish produces 40% of eggs that would occur without fishing
- Commonly used proxy for SSB_{msy}, results in a target biomass around 20%-35% of an unfished biomass (Clark papers)

Mackerel Rebuilding

- Why change the risk policy?
- SSC currently directed to recommend rebuilding ABC or standard risk policy (P^*) ABC, whichever is lower.
- Rebuilding ABCs $>$ P^* ABCs
- Can't use rebuilding ABCs without a change due to current risk policy (in regulations)
- #1 and #2: no risk policy change
- #3 and #4: risk policy change

Mackerel Rebuilding

- Key recruitment assumptions:
- 2015 year class is real
 - Uncertain, but no retrospective error trends
 - Have only seen this year class for one year, will get more data on them as they get older (future assessments??)
- 2016 and beyond...recruitment typical

Mackerel Rebuilding

- #1: No risk policy change, 10 year rebuilding, P* version A: 2019=17,430 MT
- #2: No risk policy change, 10 year rebuilding, P* version B: 2019=22,577 MT
- #3: Risk policy change, 5 year rebuilding, 2019=29,184 MT
- #4: Risk policy change, 7 year rebuilding, 2019=30,868 MT

Mackerel Rebuilding

- ABCs go up in 2020-2021...
- Standard max ABC at rebuilt stock size (risk policy) probably around 36,000 MT (total).
- Rebuilding ABCs have higher chance of overfishing (40%-50%) than P^* (24%-38%) during 2019-2021.
- (F_s in BB for option 2 type-o)

Mackerel Rebuilding

- Decision #1:
- Is the Council OK with the 4 described rebuilding/specifications options? This includes two that alter the risk policy to allow the rebuilding ABCs that are higher than the P* ABCs. Other ideas? Does the Council want to ID a preliminary preferred?

Mackerel Specs

- Lots of details flow from the ABCs...

Mackerel Specs 2016-2018

Specification	Mackerel
Overfishing Limit (OFL)	Unknown
Total Acceptable Biological Catch (ABC) from SSC	19,898
Canadian Deduction (Quota and 10% Management Uncertainty)	8,889
U.S. ABC = Annual Catch Limit (ACL) (Canadian catch deducted)	11,009
Recreational Allocation (6.2% of ACL)	683
Recreational Annual Catch Target (10% less than allocation to account for management uncertainty)	614
Commercial Allocation (93.8% of ACL)	10,327
Commercial Annual Catch Target (10% less than allocation to account for management uncertainty)	9,294
Landings or "Domestic Annual Harvest" (1.26% less than Annual Catch Target to account for expected discards)	9,177

Mackerel Specs 2016-2018

- Tier 1: no trip limit; Tier 2: 135,000 pounds; Tier 3: 100,000 pounds and capped to 7%.
- At 95% of mackerel DAH or RH/S cap, T1/2/3 go to 20,000 pound trip limit
- Incidental permit: 20,000 pound trip limit until 100%
- At 100% of DAH, no possession for all permits

Mackerel Specs 2019-2021

- Decision #2:
- Is the Council OK with the US/Canada split (50%-50%)? Other ideas if not?

Mackerel Specs 2019-2021

- Decision #3:
- Is the Council OK with the described recreational approach? (1,209 MT set-aside)
Other ideas if not?

Mackerel Specs 2019-2021

- Decision #4:
- Is the Council OK with the 2 in-season options for mackerel in the Framework?

Mackerel Specs 2019-2021

In-Season #1

- 3% mngmt uncertainty buffer
- 1st Close at 80%, then...
 - Dir: 40,000 lb trip limit
 - Inc: 5,000 lb trip limit
- 2nd Close at 98% of DAH
 - All: 5,000 lb trip limit

In-Season #2

- 3% mngmt uncertainty buffer
- 1st Close at 85%, then...
 - Dir: 20,000 lb trip limit
 - Inc: 5,000 lb trip limit
- 2nd Close at 98% of DAH
 - All: 5,000 lb trip limit

*Comments

Mackerel Specs 2019-2021

- Decision #5:
- Is the Council OK with the RH/S options (status quo and scale cap up or down with the DAH as described)? Other ideas if not?

Mackerel Specs 2019-2021

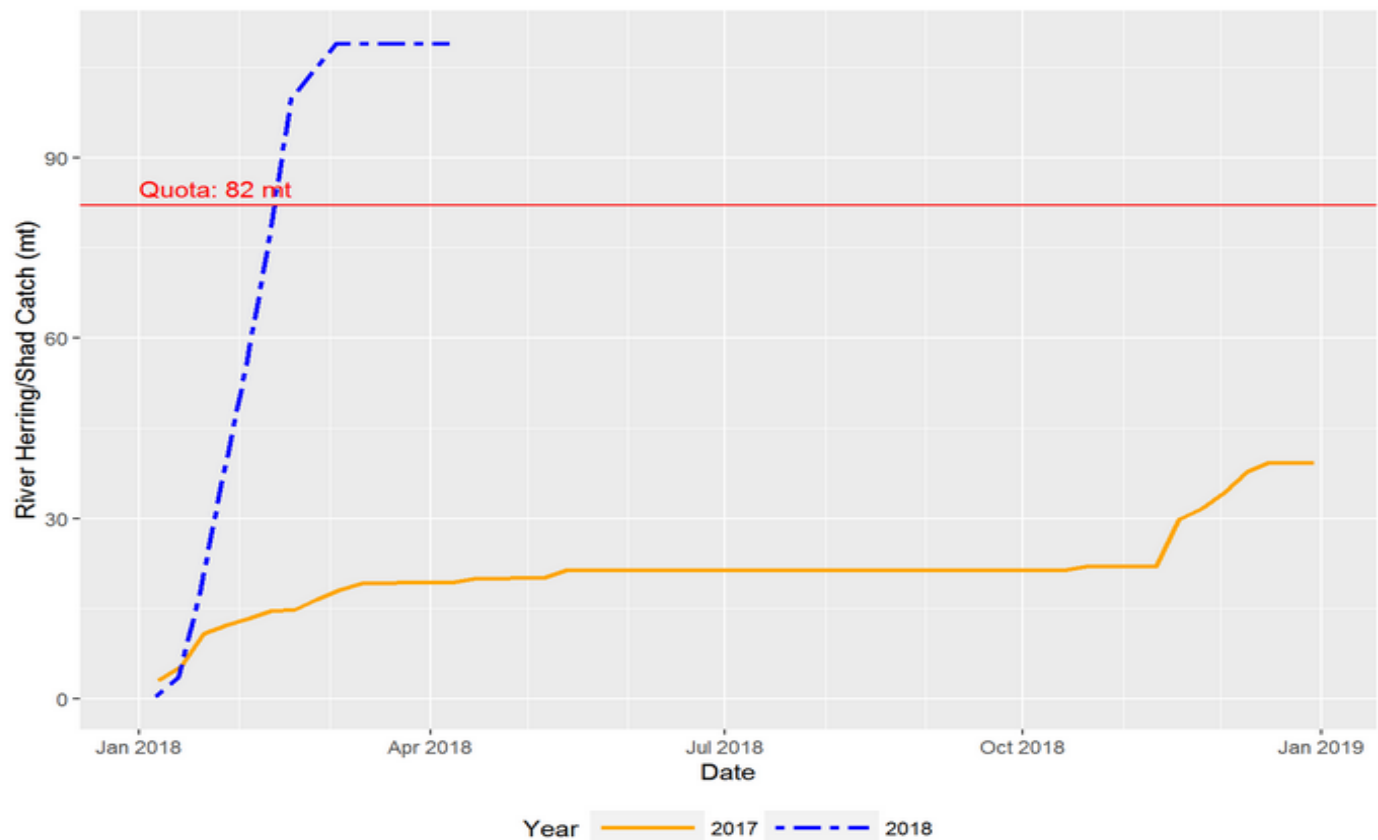
■ RH/S

River Herring / Shad

Report Run on: 2018-04-06

Quota Year: 2018 (January 1, 2018 to December 31, 2018)

Catch Cap	Quota (mt)	Cumulative Catch (mt)	Percent Quota Caught
Atlantic Mackerel River Herring/Shad	82	109	133%



Mackerel Specs 2019-2021, RHS

Table 1. Mackerel Fishery River Herring/Shad Catch Cap Performance, 2015-2018¹

Catch Cap	Year	Permit Count	Trip Count	RHS Catch Rate ²	Est. RHS (mt)	Herring (mt)	Mackerel (mt)	Total catch (mt)	Observed Trips	CV ⁴	Coverage Percent
RHS Mackerel	2015	13	55	0.1%	12	3,564	4,591	8,739	4	0.23	7%
	2016	13	55	0.1%	13	5,684	4,599	10,436	13	0.68	24%
	2017	17	71	0.3%	39	6,360	5,822	12,396	17	0.38	24%
	2018 ¹	12	57	0.9%	109	3,891	7,944	12,130	4	0.34	7%

¹ - 2018 data are preliminary.

² - RHS catch rate used to extrapolate RHS catch. Phased-in transition rates using some data from the previous year are used when < 5 observed trips occur.

³ - Coefficient of Variation (CV) of in-season observed trips.

Mackerel Specs 2019-2021

- Decision #5:
- Is the Council OK with the RH/S options (status quo and scale cap up or down with the DAH as described)? Other ideas if not?

Mackerel-Herring

- Decision #6:
- Does the Council want to ask for expedited/emergency action for 2018 (Atlantic Mackerel-Atlantic Herring Issue)?
- Action type: GARFO...

Mackerel-Herring

- Mackerel closed February 27, 2018 (RH/S cap)
- Trip limit = 20,000 (all permits)
- At 88.82% of quota (as of April 9)
- Zero possession at 100%
- Based on 2015-2017, reach 100% in early December (approximate & updated)
- Comments from herring fishery and small-scale participants

Mackerel-Herring (1,033 MT buffer)

Staff

- Mackerel trip limit to 5,000 pounds on November 1, or when DAH reaches 100%, whichever occurs first
- 160 MT over DAH (originally 250 MT but revised projection based on additional data)

NE Herring Committee

- Change the mackerel trip limit to 5,000 pounds when/if the mackerel quota reaches 100%.
- 250 MT over DAH

Both

- Re-clarify that encountering mackerel after 100% DAH not prohibited. (Fishing for/possession is prohibited.)

Mackerel-Herring

- Decision #6:
- Does the Council want to ask for expedited/emergency action for 2018 (Atlantic Mackerel-Atlantic Herring Issue)?
- Action type: GARFO...

Trimester 2 Longfin Squid

- Decision #7:
- Does the Council want to ask for expedited/emergency action for 2018 regarding Trimester 2 longfin squid
- Not an issue unless Trimester 2 catches full Trimester 2 quota (and then some)

Trimester 2 Longfin Squid

- Squid Amendment, assuming approval by NMFS, will reduce post-closure Trimester 2 trip limit from 2,500 pounds to 250 pounds.
- Originally hoped for implementation by 2018 Trimester 2. Implementation in early fall 2018, too late for Trimester 2.
- Not really emergency right now, but staff wanted to highlight timeline...

Trimester 2 Longfin Squid

- Decision #7:
- Does the Council want to ask for expedited/emergency action for 2018 regarding Trimester 2 longfin squid