MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

Spiny Dogfish

ASMFC

October 2018

jdidden@mafmc.org

Outline

1. Stock Status and Biological Reference Points
2. ABC Projections and Staff/SSC Recommendations

Stock Status

- Last benchmark: SARC 43 (2006)
  - Maybe 2021 for next benchmark
- 2018 assessment update
  - Not overfished in 2018, overfishing not occurring in 2017.

(Had 2018 biomass estimate in August but not 2018 catch, so fishing mortality is from 2017)

Biological Reference Points

- Update:
  - Overfishing not occurring
    - F_{2017}: 0.202 (F_{MSY}: 0.2439)
  - Not overfished
    - B_{2018}: 106,753 mt (B_{MSY}: 159,288 mt)
    - 67% of target

SSB

- Spawning stock biomass scales directly with the spring NEFSC survey.
  - Includes information on the average number of pups per female by length interval
- Incorporates survey variance.
  - Environmental factors affecting availability spatially and re: depth
- 3-year averaging addresses variability

SSB

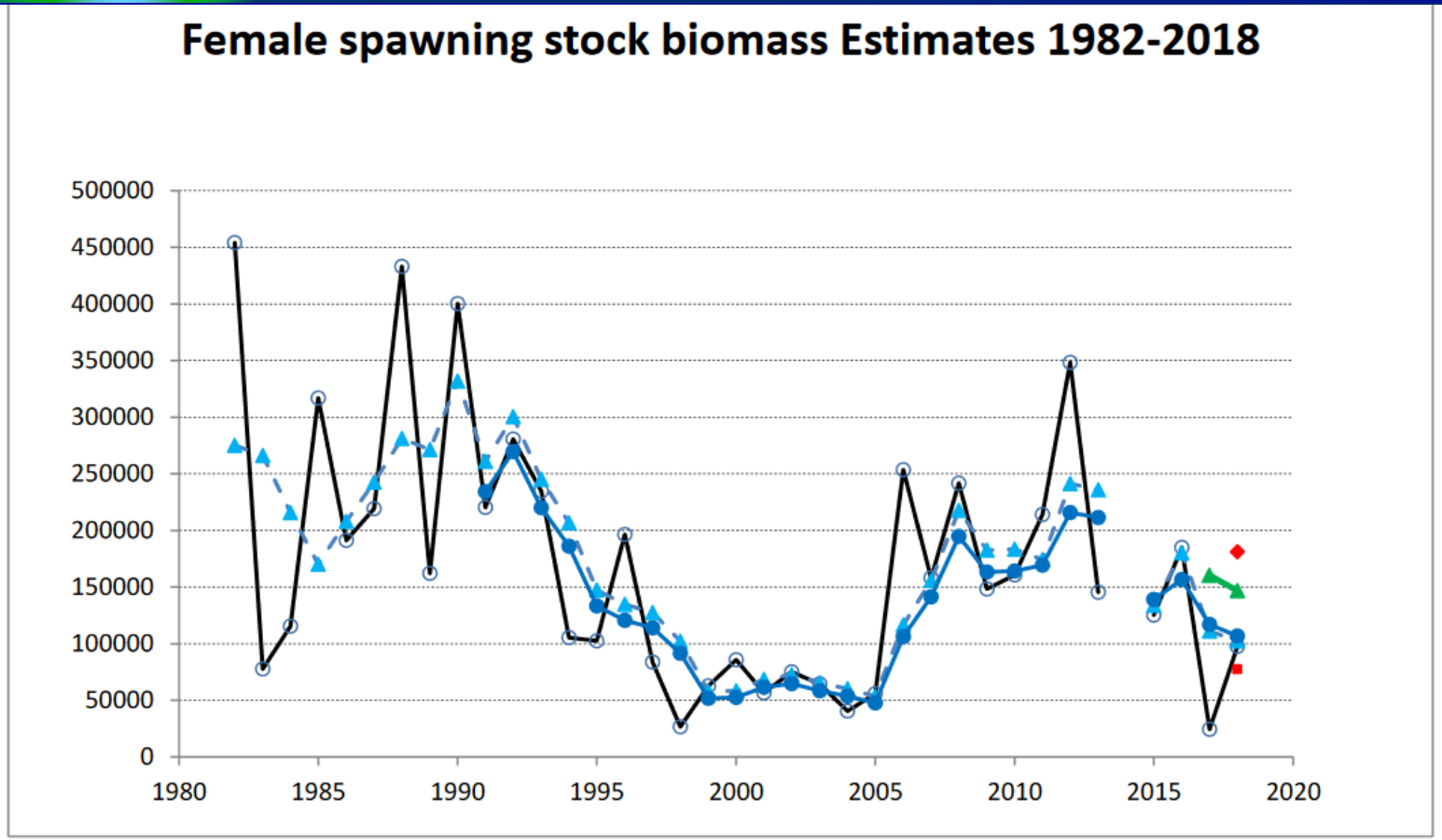
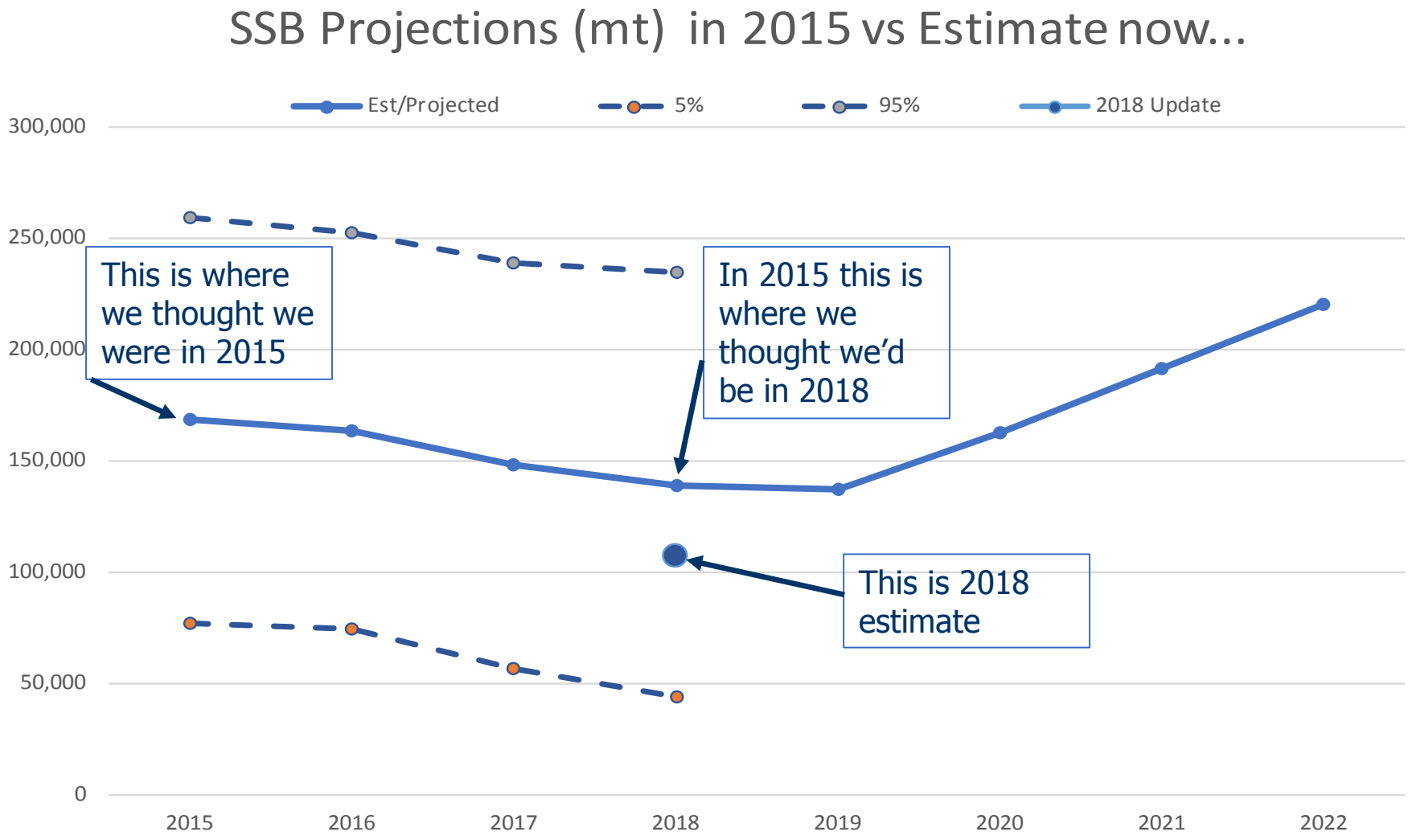


Figure 12. Comparison of alterative swept area estimates of female spawning stock biomass, 1982-2015. Stochastic SSB estimates are available for 1991 to 2018, except 2014. The open circles are the swept area SSB estimates, the blue triangles are the 3-year moving average of the swept area estimates, the closed blue circles are the stochastic SSB estimates including 2017but not adjusting for the Kalman, the green triangles are the stochastic estimates not including 2017 and not adjusting for the Kalman, and the red triangle (no 2017) and square (with 2017) are the stochastic estimates adjusting for the Kalman. Year refers to the terminal year in the three point moving average.

2015 Projection (how close?)



Fishing Mortality

- Reference points use information and assumptions about growth, recruitment, and the sizes/lengths of dogfish in landings vs. unfished population

- Estimates - based on the ratio of total catch to the spawning stock biomass

Fishing Mortality

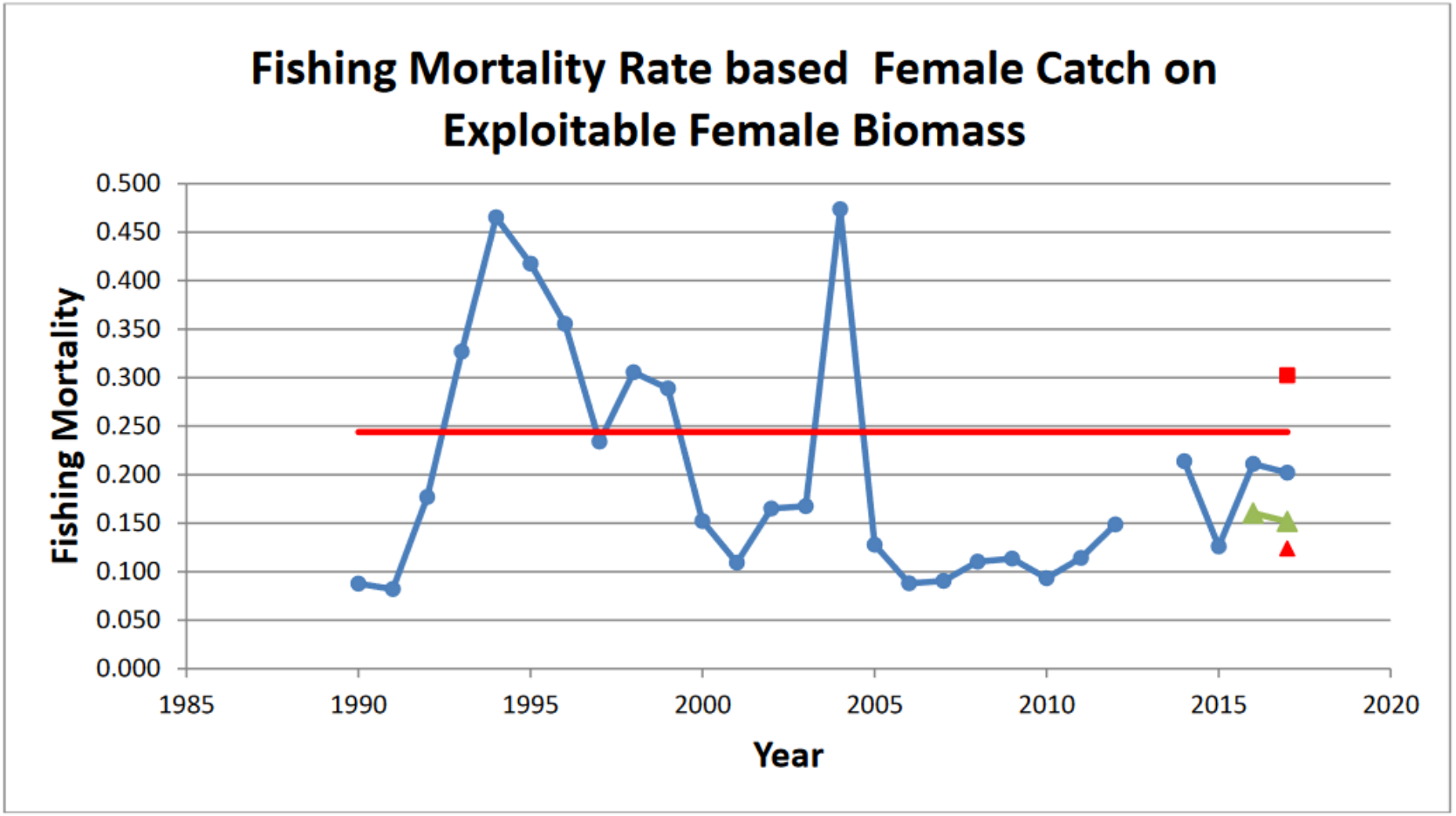


Figure 14. Estimated stochastic fishing mortality rates for female catch from the exploitable female stock biomass, 1990-2017. Estimate for 2013 not available. The blue circles are the non-Kalman adjusted values including 2017, the green triangles are the non-Kalman adjusted values not including 2017 and the red square (with 2017) and triangle (no 2017) are the Kalman adjusted values. F threshold is defined as 0.2439.

Pup Production

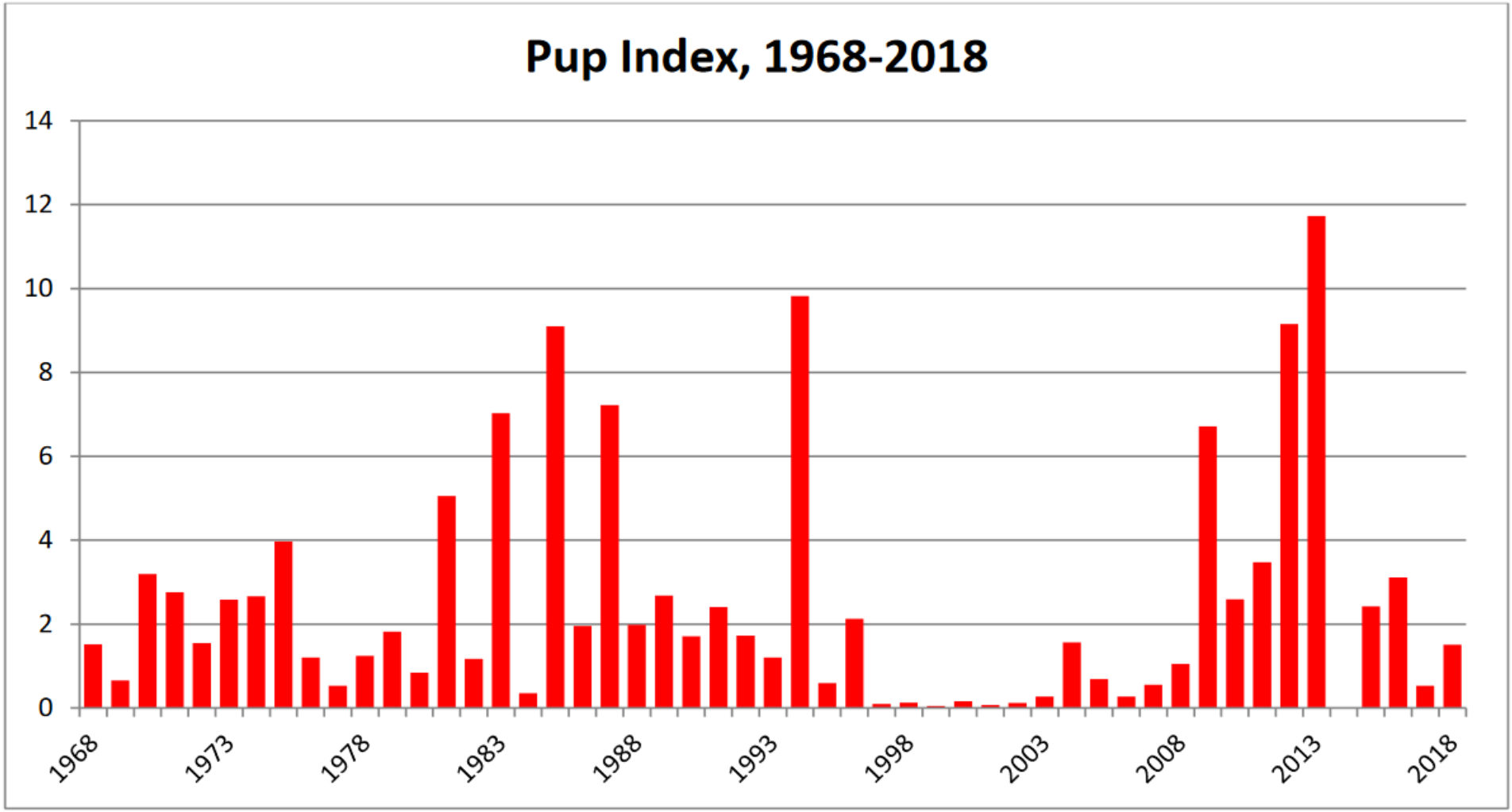


Figure 6. Estimated swept area biomass (mt) of total pups (spiny dogfish <=35 cm) captured in the NEFSC spring bottom trawl survey, 1968-2018. Survey was incomplete in 2014; no estimate available.

Projections – Fish out, Fish in

- Length-based model
  - Sex-specific rates of growth
  - Sex-specific rates of fishing mortality
  - Reproduction scales with biomass levels.
  - Includes the growth dynamics and predicted reproduction by length class using observed pups per female
  - Natural mortality is fixed for males and females

Projections – Fish out, Fish in

- Length-based model
  - Length and sex based estimates of fishing mortality derived from observed patterns of selectivity in the fishery.
  - Discard mortality varies by gear type.
  - The "specific harvest level" is based on a biological reference point model that includes examination of historical stock recruitment data and the influence of maternal size on pup survival.

Staff ABC Recommendation

- Start with biomass using standard 3-year smoothing
- Consistent with ABC projections in assessment update, which are based on Council Risk Policy
- Council Risk Primer – several things working together…

Council Risk Primer – Stock Size

Low stock size…catch is lower…

a) smaller stock, b) lower tolerated chance (risk) of overfishing

Like entering flashing school zone…slow down for 2 reasons…

a) Lower speed limit
b) Avoid speed trap (risk)

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Council Risk Primer, CV

Accurate Speedometer/Assessment = low CV

Speeding ticket = overfishing
Speed limit = 55

Speedometer says 60, low chance of ticket

C.V. = coefficient of variation

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Council Risk Primer, CV

Inaccurate Speedometer/Assessment = high CV

Speeding ticket = overfishing
Speed limit = 55

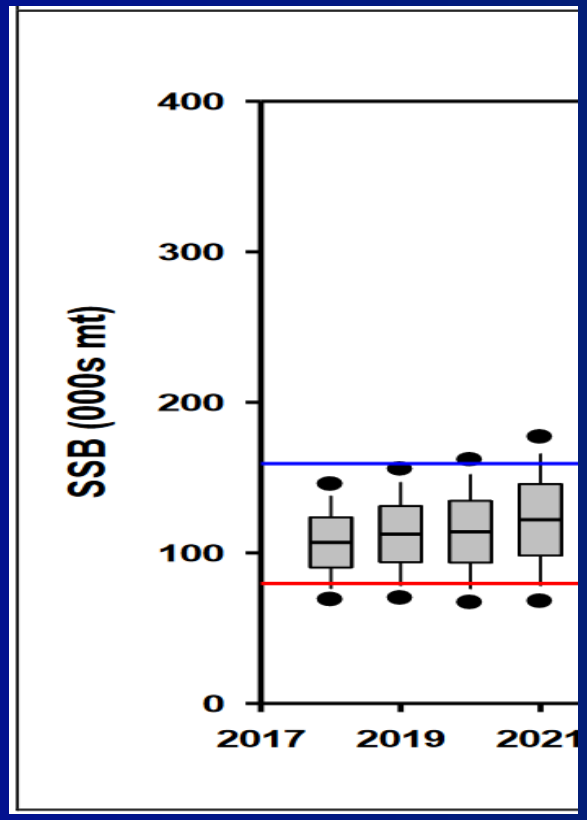
Speedometer still says 60 but less certain of real speed, maybe slow down a bit more…

C.V. = coefficient of variation

Staff/SSC ABC Recommendation

- P* 26.9%, 27.4%, 29.6% (below target)
  - P* = Probability of overfishing
- 100% C.V. for OFL distribution
- 12,914 MT for 2019; 14,126 MT for 2020; 16,043 MT for 2021
  - SSC Recommended

P*, 3-YEAR, NO KALMAN SSB PROJECTION



SSC Details

- Courtesy of Dr. John Boreman, SSC Chair

Most Significant Sources of Scientific Uncertainty

- Large changes in interannual abundance are most likely driven by poorly understood changes in availability rather than true changes in abundance or the short-term effects of fishing activity.
- Uncertainty in the current size structure, which has important implications for informing harvest strategies.
- The size- and sex-specific selectivity of the fishery landings and discards may change with market conditions and availability.

Most Significant Sources of Scientific Uncertainty

- Uncertainty in the estimated survival of discarded dogfish is not currently incorporated in the assessment.
- Uncertainty in the biomass and pup abundance estimates.
- The disagreement for recent year estimates among different analysis methods is unresolved. This is a substantial source of uncertainty as it affects the status of the stock with respect to management reference points.
- The current assessment method does not include other surveys (e.g., NEAMAP) in the region.

QUESTIONS?

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Spiny Dogfish Federal Commercial Trip

October 23, 2018
New York, New York

Outline

- Background
- Recent Action (MAFMC & NEFMC)
- Considerations for 2019-2021 Specifications
- Next Steps

Background

- Federal Specification Process: Commercial Quota and *Federal Trip Limit
  - Set by MAFMC & NEFMC (Joint Federal FMP) for multi-year
  - *Not a requirement of Federal FMP
- State Specification Process: Quotas and Trip Limit
  - Established through initial FMP (2002)
  - Multi-year specifications allowed (Add II, 2005)
  - Northern region (ME-CT) Trip Limit (Add III, 2011)
  - NY-NC set trip limits on their own, based on quota (Add III, 2011)

Background Cont'd

- Not setting a Federal Trip Limit would require a framework or amendment to Federal FMP

- Federal Trip limit over time
  - 2007-2012; 3,000 lbs
  - 2013-2014; 4,000 lbs
  - 2014-2015; 5,000 lbs
  - 2016-2018; 6,000 lbs

Recent Actions

- **September**
  - Letter sent to Board & MAFMC requesting Monitoring Committee consider adjustments to Federal Trip Limit, including removal
  - NEFMC recommended MAFMC increase Federal Trip Limit to 8,000 lbs and an action be considered regarding removal of the measure
- **October**
  - MAFMC recommended 2019-2021 Federal Trip Limit at 6,000 lbs (status quo)
  - MAFMC motion made to address Federal Trip Limit through action, including removal, by adding it to 2019 MAFMC Priorities (for consideration in December 2018)

Next Steps

- Board Discussion on recommendations regarding Federal Trip Limit
- Board sets 2019-2021 Specifications for state waters
- December
  - NEFMC will set 2019-2021 Specifications, including recommending Federal Trip Limit
  - If disagreement between Councils, NOAA Fisheries sets trip limit
  - MAFMC will set 2019 work Priorities

Questions?

Spiny Dogfish Board

2019-2021 Fishery Specifications

October 23, 2018

New York, New York

Overview

- Background
- AP Fishery Performance Report
- Landings Update
- Specifications Approved by MAFMC

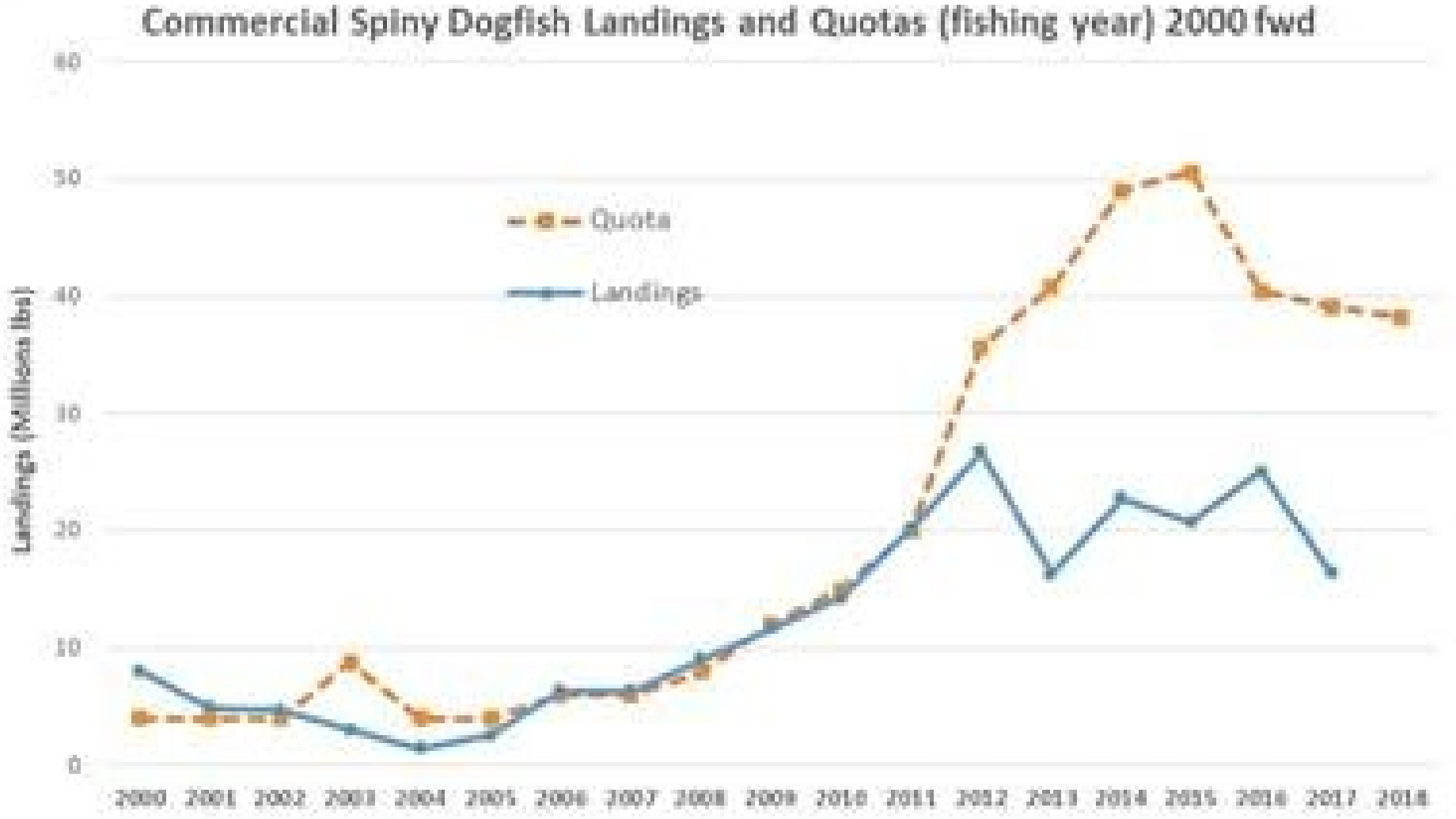
Background

- Jointly managed between the Mid-Atlantic and New England Councils
  - ASMFC Interstate FMP is complimentary
- Ending 3-year specs cycle
  - May 1, 2016 – April 30, 2019
- Board to set fishery specifications for the 2019-2021

AP Fishery Performance Report

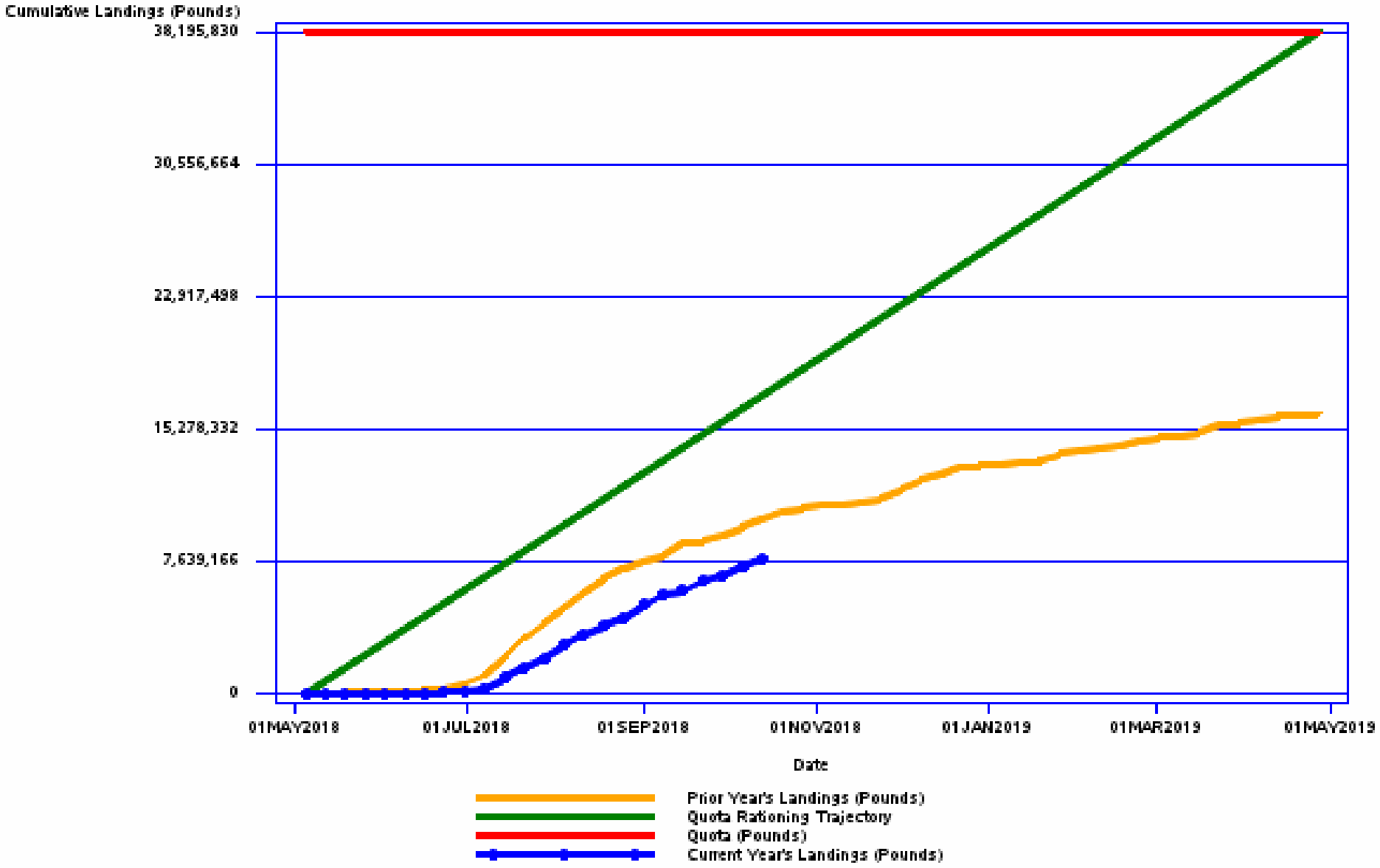
- Market/demand driven fishery
  - Currently weak market demand
- Abundance does not drive catch
  - Boats have no problem obtaining trip limit
- Issues taken with data from NEFSC in understanding stock size
  - Sense that survey and assessment doesn't reflect what they see
- Some want slow and steady approach to changing regulations

Landings Update



Landings Update

Spiny Dogfish Quota Monitoring Report



2018 State and Regional Landings

States/Regions	Trip Limit	ASMFC Allocation	2018/2019 Quota	Prelim 2018 Landings in lbs thru October 17 (NOAA Quota Monitoring Page)	Percentage of Quota
ME	5,000	58%	22,153,577	0	0.00%
NH	6,000			492,534	2.22%
MA	6,000			7,184,813	32.43%
RI	6,000			105,237	0.48%
CT	6,000			4,980	0.02%
ME-CT				7,787,564	35.15%
NY	6,000	2.707%	1,033,961	38,622	3.74%
NJ	6,000	7.644%	2,919,689	6,401	0.22%
DE	10,000	0.896%	342,235	0	0.00%
MD	up to 10,000*	5.920%	2,261,193	993	0.04%
VA	6,000	10.795%	4,123,239	0	0.00%
NC	20,000	14.036%	5,361,166	66	0.00%
	Total	**100%**	**38,195,822**	**7,833,646**	**20.51%**

Northern Region

2018 Specs Recommendations

- SSC: Applied Council Risk Policy, ABC calculated based on 100% CV
- Monitoring Committee: No changes to the ABC and Quota from SSC Recommendation
- MAFMC: Approved Commercial Quota as derived from SSC recommended ABC

MAFMC Approved ABC & Quota

Specifications	Basis	2019 (pounds)	2019 (mt)	2020 (pounds)	2020 (mt)	2021 (pounds)	2021 (mt)
OFL (from SSC)	Projected Catch at Fmsy	0	0	na	na	na	na
ABC (from SSC)	Council Risk Policy	28,470,497	12,914	31,142,499	14,126	35,368,761	16,043
Canadian Landings	= 2017 estimate	108,027	49	108,027	49	108,027	49
Domestic ABC	= ABC – Canadian Landings	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994
ACL	= Domestic ABC	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994
Mgmt Uncert Buffer	Ave pct overage since 2011	0	0	0	0	0	0
ACT	= ACL - mgmt uncert buffer	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994
U.S. Discards	=3 year average 15-16-17	7,661,064	3,475	7,661,064	3,475	7,661,064	3,475
TAL	ACT – Discards	20,701,406	9,390	23,373,409	10,602	27,599,671	12,519
U.S. Rec Landings	= 2017 estimate	178,574	81	178,574	81	178,574	81
Comm Quota	TAL – Rec Landings	20,522,832	9,309	23,194,835	10,521	27,421,096	12,438

Summary

- Catch is driven by markets and price
- Assessment Update shows a decline in 2017, slight increase in 2018
  - Questions of tracking abundance or availability
- Landings through first half of year at ~21% of Coastwide Quota
- MAFMC: approved specs for 2019-2021 and recommended federal trip limit 6,000 pounds
  - 2019-2020 Quota is 46% decrease from current quota

Next Steps

- Set Commercial Quotas for 2019-2021
- Set Northern Region Trip Limit in state waters

Questions