

# Atlantic Deep-Sea Red Crab Specifications FY 2020-2023 Decision Document

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**Council Meeting**  
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# Goal of Specifications Package

- Establish specifications for fishing years 2020-2023 based on the best available information, and SSC review and recommendations
- Change the specifications cycle from 3 years to 4 years



# Management Unit Terms

- Target stock: **Deep sea red crab**
- Non-target species: **None**
- Ecosystem Component Species: **None**
- State/federal ACL issues: **None**

# Background

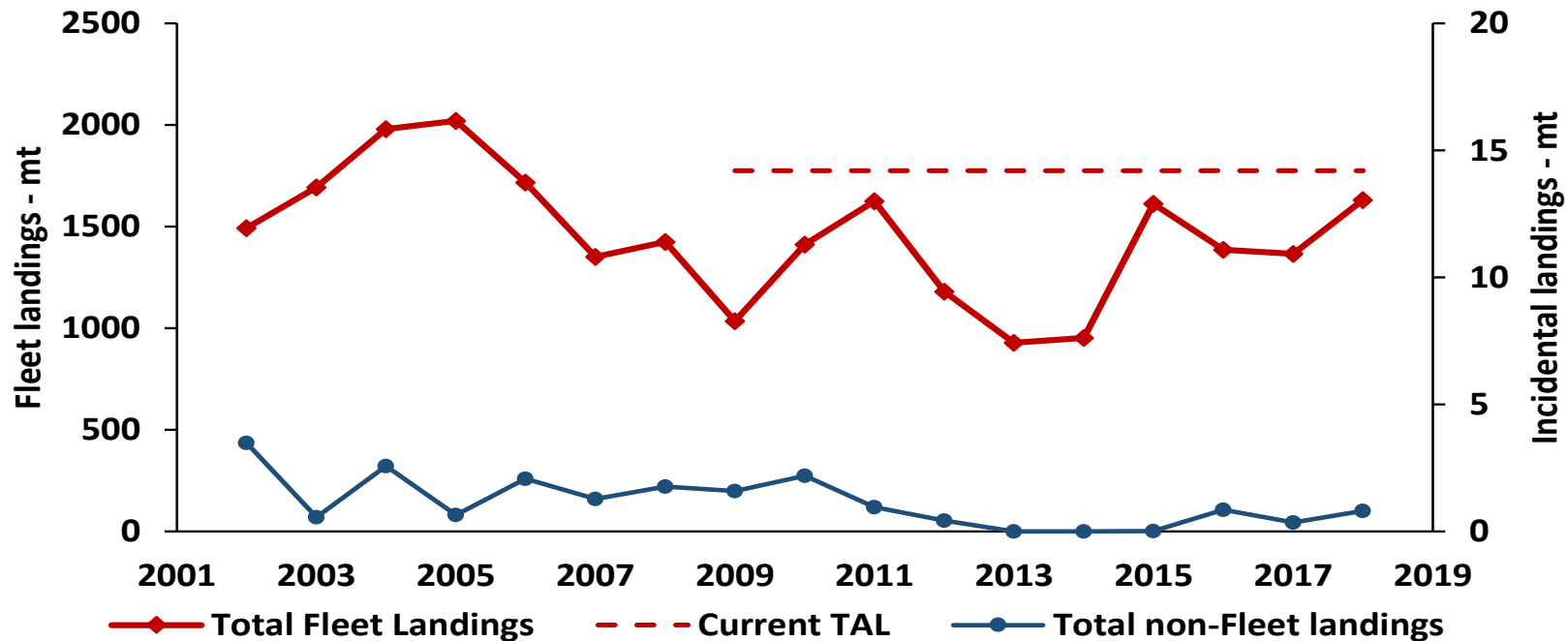
- 2018 – Amendment 2: OHA2
- 2016 – Specifications for FY 2017-2019 remained status quo (1,775)
- 2015 – Amendment 4: revised SBRM
- 2013 – Specifications for FY 2014-2016 remained status quo (1,775 mt)
- 2011 – Amendment 3 modified the specification components to include ABC, ACL, or TAL
  - Specifications for FY 2011-2013 were 1,775 mt
- 2007 – Amendment 1: SBRM
- 2005 – FW 1: established 3-year specifications
- 2002 – Atlantic Deep-Sea Red Crab FMP developed

# Specifications for FY 2017-2019

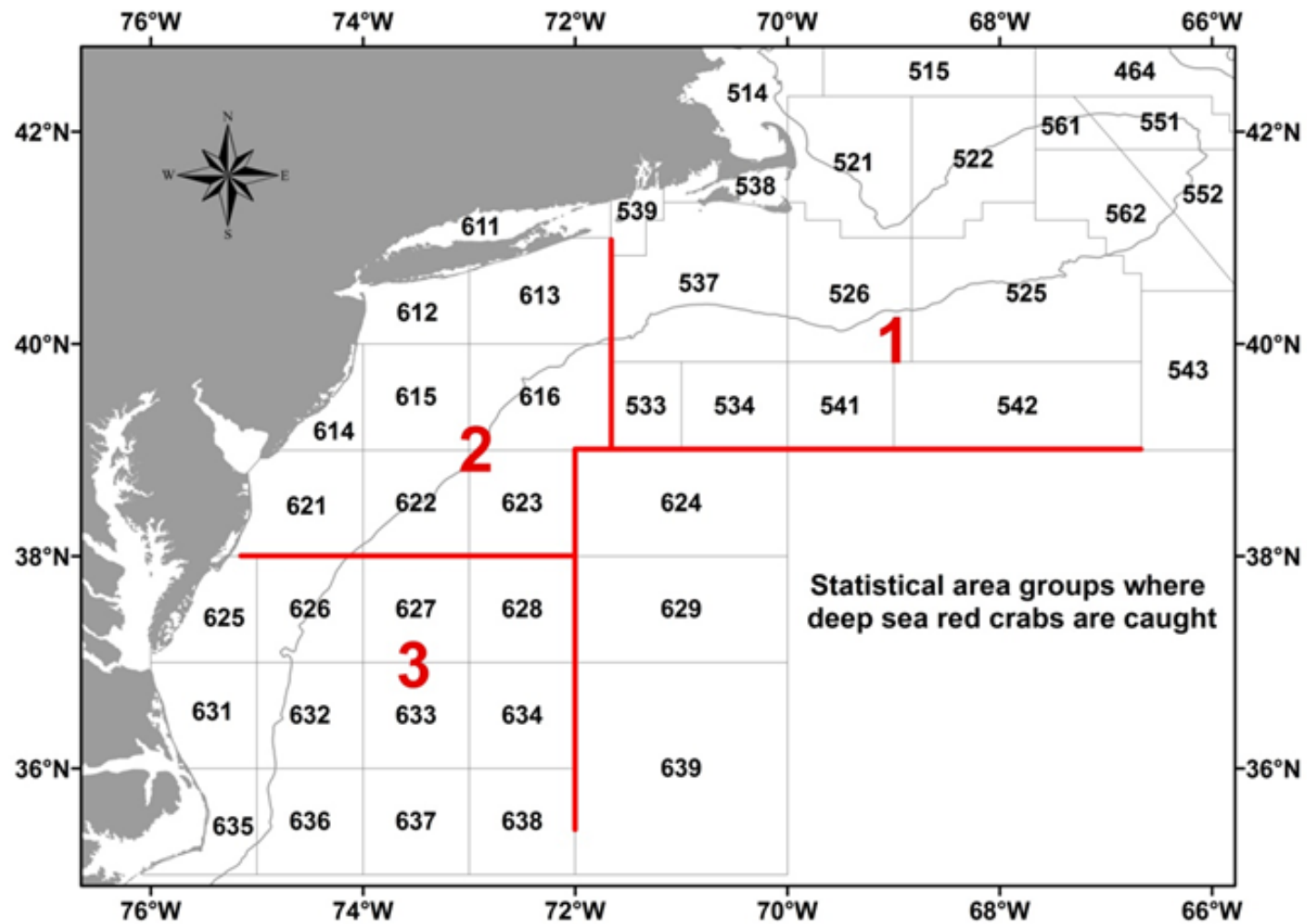
	Approved Measure
MSY (mt)	Undetermined
OFL (mt)	Undetermined
OY (mt)	Undetermined
ABC (mt)	1,775
ACL (mt)	1,775
TAL (mt)	1,775

# Updated Landings Data (Section 5.1.1)

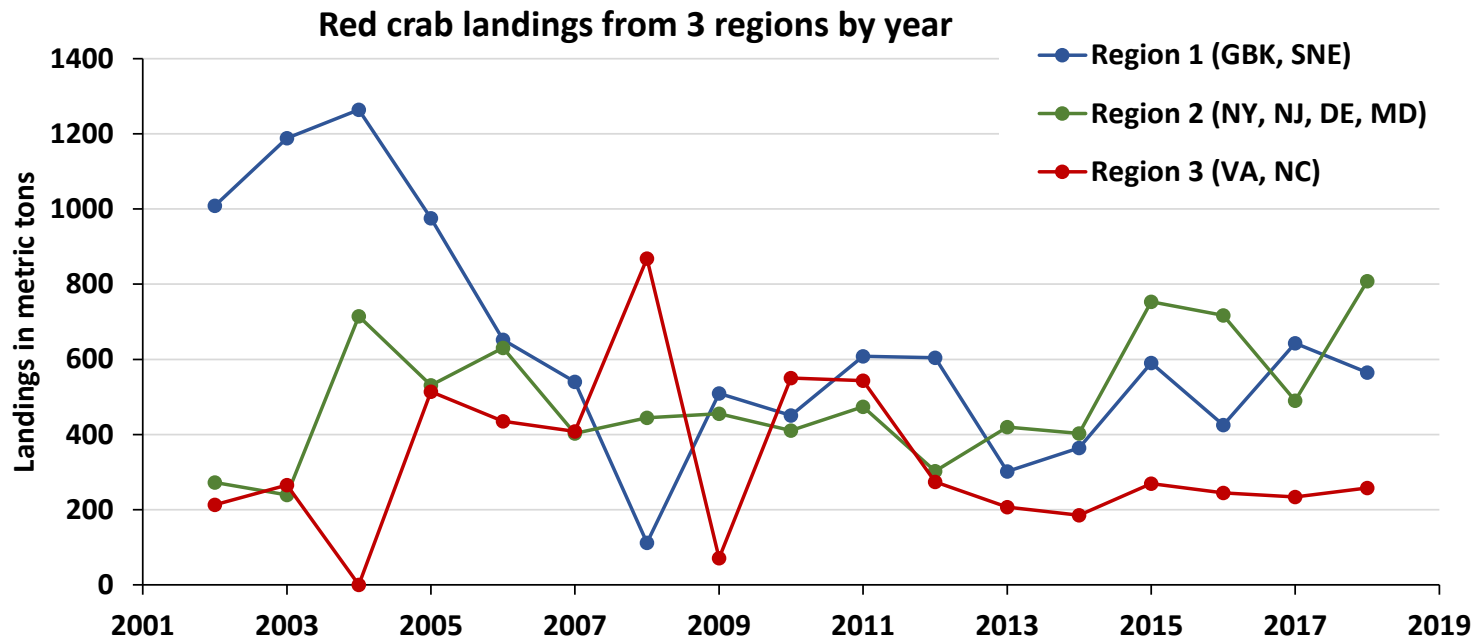
Red crab landings 2002-2018 - VTR



- Landings have remained relatively stable from 2016-2018, with an increase in 2018
- Landings remain below the TAL
- Market-driven fishery



# Updated Landings by Region

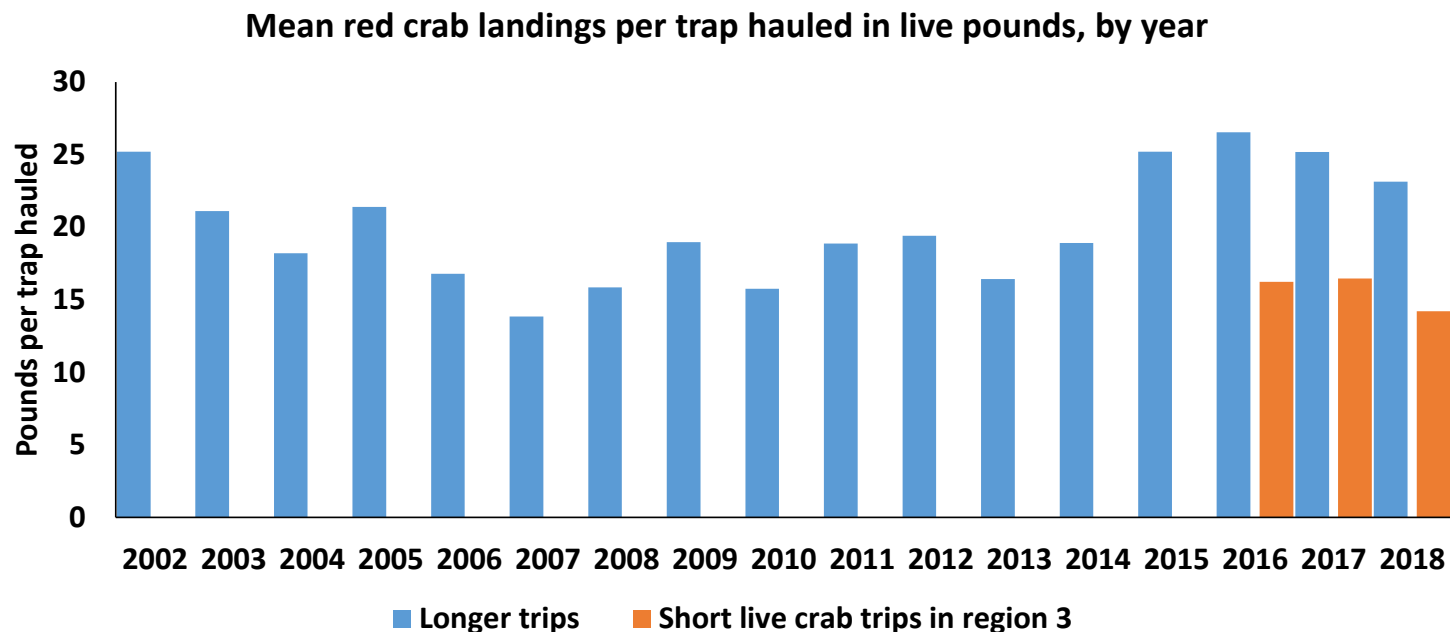


- Landings have recently started increasing in Region 2
- Previously the majority of landings were concentrated in Region 1 (GBK and SNE)
- Landings in Region 3 have stabilized since 2013



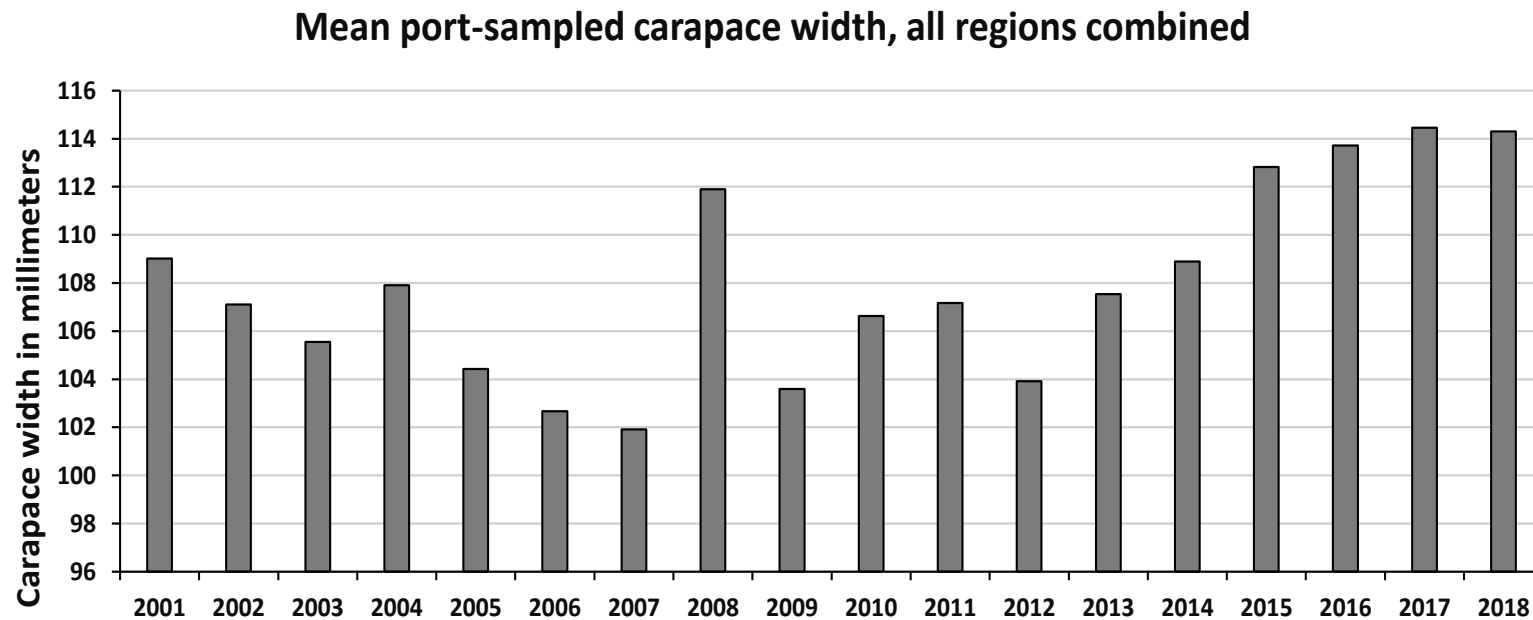
# Updated LPUE Information

(estimated using VTR-reported haul and gear data)



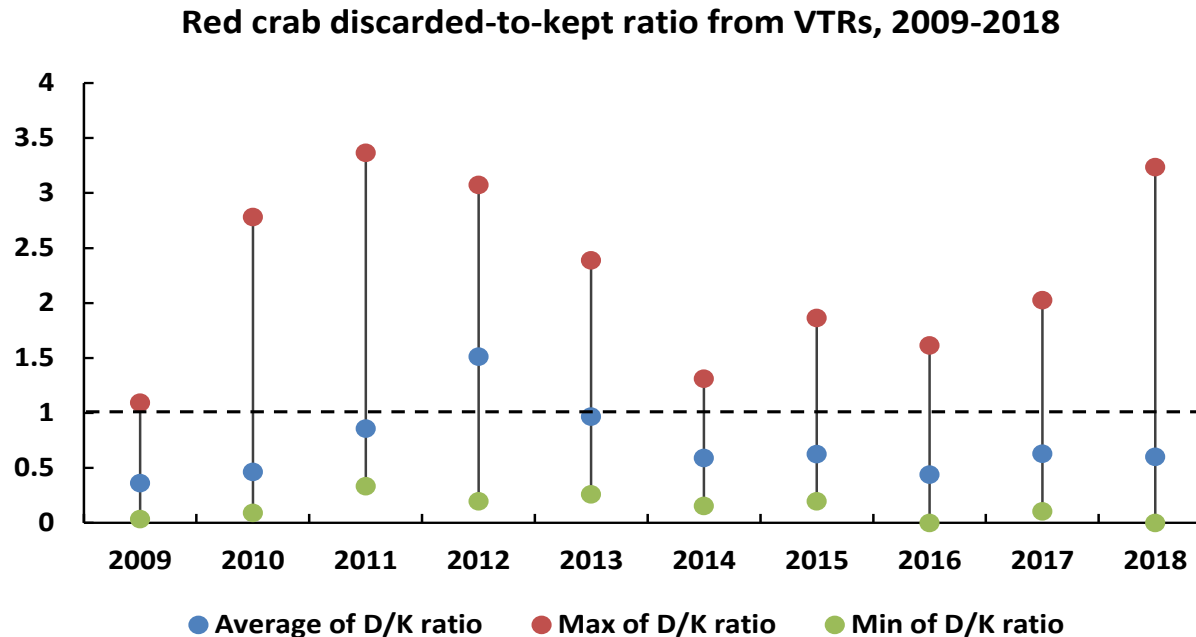
- On average, LPUE has fluctuated between 15-25 lbs/trap
- LPUE has been fairly consistent overall and across regions (for similar trips), though there has been a slight decrease in LPUE since 2017.
- The orange columns represent a single vessel that makes short trips for the live market in Region 3.

# Updated Port Sample Information



- Size of landed males has followed an increasing trend since 2013, likely due to market demand.

# Updated Discard Information (Section 5.1.2)



- Discard rates are highly variable
- The annual mean estimated discarded-to-kept ratios from 2009-2018 vary from 0.24 to 1.51, with a mean of 0.72.

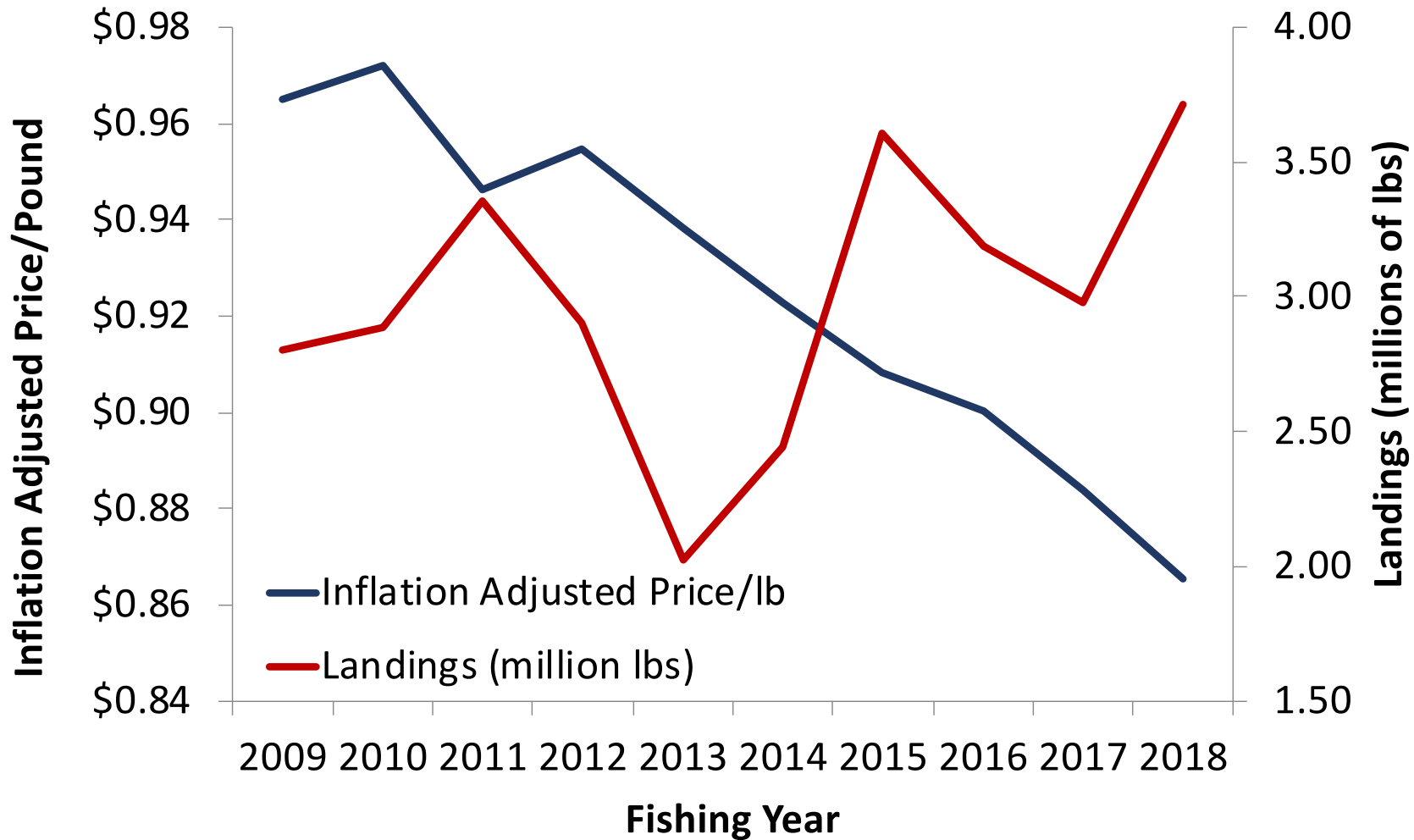
# Observer Data

- Observers have been on some red crab trips in the past (notably 2007 and 2008), but there has been an increase in coverage since 2016. The PDT reviewed data from 48-observed trips in July 2016 through February of 2019, which would reflect current conditions of the fishery.
- Observers estimate and record discarded red crabs, measure and sex all the crabs caught in a subset of traps, note females that are carrying eggs, and measure and record species caught other than red crab, among other things. Their data allow us to evaluate fishery parameters that we could not with only landed crabs and VTR reports for information.
- As an example, there has been some concern over potential sperm limitation in the red crab population, as has been seen in other male-only fisheries, especially after it was noted that red crabs engage in a copulatory embrace that requires the male to be larger than the female. Using observer data in various ways, we can look for evidence of sperm limitation such as larger females having eggs at a lower rate than smaller females, or a lack of recruitment of smaller crabs to the fishery.
- It is acknowledged that the time series of observer data is short and spatial coverage is not perfect, but what we can learn about the red crab population and the fishery from observer data is invaluable.

**Red crab landings, estimated revenue, price per pound, and  
inflation adjusted price for all permit categories, FY 2009-2018**  
(Section 5.5)

<b>Fishing Year</b>	<b>Total Landings (live lbs)</b>	<b>Dealer Landings (live lbs)</b>	<b>Dealer Revenue</b>	<b>Nominal Price</b>	<b>2010 CPI Inflation Adjusted Price</b>
<b>2009</b>	2,890,058	2,804,735	\$2,685,393	\$0.96	\$0.97
<b>2010</b>	2,884,484	2,882,807	\$2,811,807	\$0.98	\$0.97
<b>2011</b>	3,358,997	3,358,517	\$3,262,627	\$0.97	\$0.95
<b>2012</b>	2,901,427	2,901,252	\$2,900,394	\$1.00	\$0.95
<b>2013</b>	2,024,420	2,024,420	\$2,024,420	\$1.00	\$0.94
<b>2014</b>	2,441,033	2,440,974	\$2,440,974	\$1.00	\$0.92
<b>2015</b>	3,609,779	3,609,774	\$3,586,613	\$0.99	\$0.91
<b>2016</b>	3,189,964	3,189,963	\$3,189,504	\$1.00	\$0.90
<b>2017</b>	2,978,799	2,978,729	\$2,978,797	\$1.00	\$0.88
<b>2018</b>	3,713,982	3,713,947	\$3,711,759	\$1.00	\$0.87
<b>FY 2009-2018 Annual Average</b>	2,999,294	2,990,512	\$2,959,229	\$0.99	\$0.93

# Red Crab Landings, Revenue and Inflation-Adjusted Price (DMIS data)<sub>(Section 5.5)</sub>



# New Research/Pending Regulations

- New research is available on red crab reproductive biology (Martinez Rivera 2018)
- Biological Opinion – pending release of the draft in late 2019/early 2020
- ALWTRP – proposed rules are expected in late 2019/early 2020
- National Monument – 7-year exemption for red crab fishery expires September 2023

# **SSC Recommendations for Red Crab**

August 21, 2019

- 1. The SSC states that the OFL remains unknown.**
- 2. The SSC recommends that the ABC should not exceed 2,000 MT for FY 2020-2023.**
- 3. The SSC recommends that the LPUE should be monitored in the interim years of this catch advice and if LPUE drops 15% below the lowest observed value in the timeseries, this should trigger a reconsideration of the catch advice during the specification period.**
- 4. Additional information, including the outcomes of industry-funded research, could potentially be incorporated into a revised control rule. New approaches should be evaluated, perhaps as a Council research priority or through a research track assessment.**



# Proposed Specifications for 2020-2023:

(Section 3.0)

	Proposed Measure
MSY (mt)	Undetermined
OFL (mt)	Undetermined
OY (mt)	Undetermined
ABC (mt)	2,000
ACL (mt)	2,000
TAL (mt)	2,000

# Council Action

- Approve a TAL limit that does not exceed 2,000 mt males for fishing years 2020-2023 (SSC recommended ABC)
- Approve the administrative change to the frequency of management specifications from 3 years to 4 years

# Questions?

