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# Pribilof Islands Blue King Crab

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NOAA FISHERIES

# Changes From 2016 Assessment

- Same approach to OFL
  - Tier 4 status determination
  - Tier 5 OFL, ABC
- Random effects model smoothing survey MMB as part of estimating MMB-at-mating for  $B_{MSY}$ , current B
- Revised handling mortality for fixed gear bycatch (0.5 -> 0.2)
- New Fishery Data for 2016/17
  - directed fishery
    - no catch
  - crab fishery bycatch
    - updated
  - groundfish fisheries
    - 2009/10-2015/16 updated
    - 2016/17 new
- New survey data
  - updated w/ 2017 EBS Trawl Survey
  - abundance, biomass
  - size compositions by sex, shell condition, maturity



# Management Performance

Overfishing DID NOT occur in 2016/17.  
 Stock remains overfished.

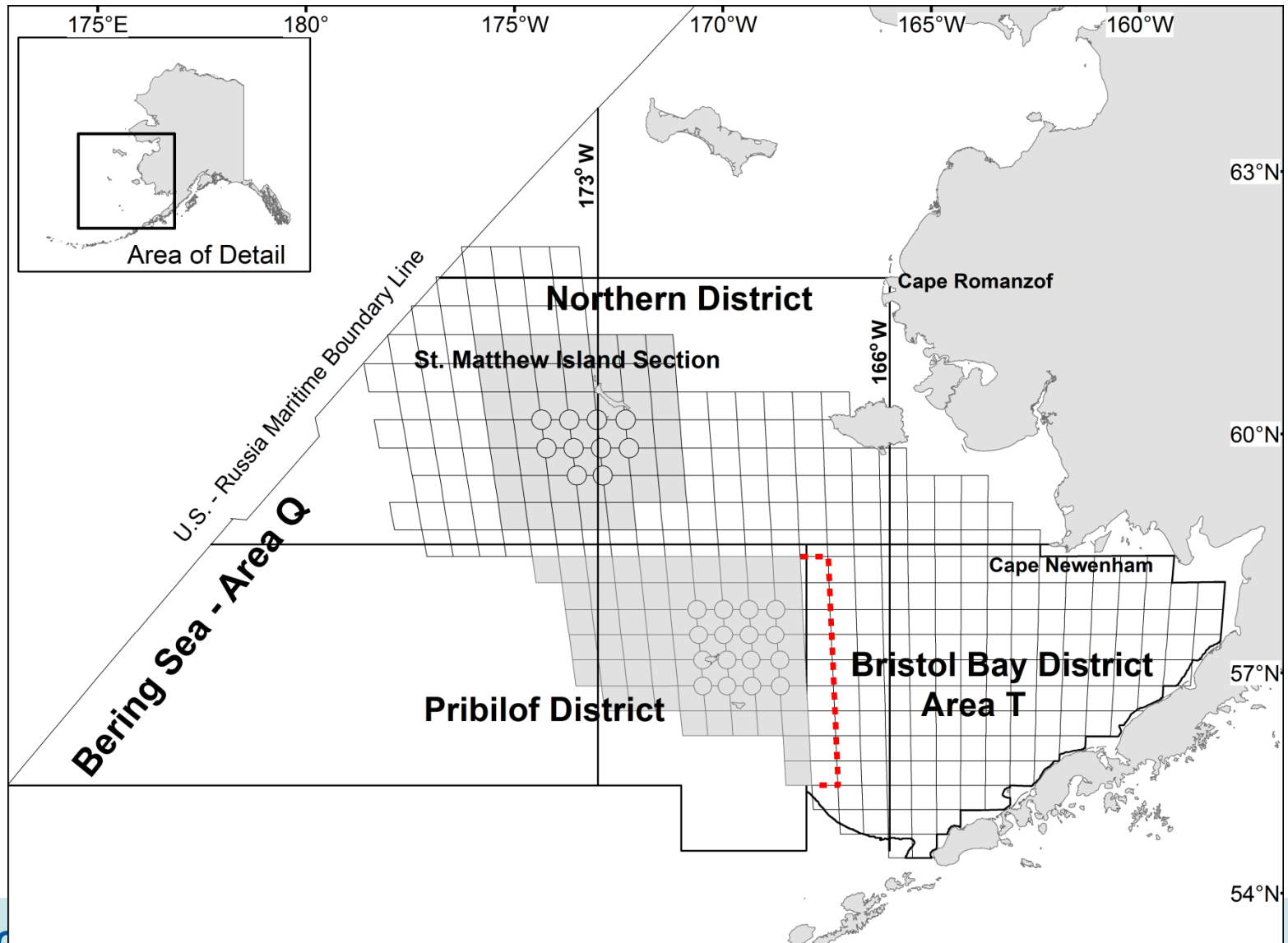
units in metric tons

Year	MSST	Biomass (MMB <sub>mat</sub> )	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2013/14	2,001 A	225 A	closed	0	0.03	1.16	1.04
2014/15	2,055 A	344 A	closed	0	0.07	1.16	0.87
2015/16	2,058 A	361 A	closed	0	1.18	1.16	0.87
2016/17	2,054 A	233 A	closed	0	0.38	1.16	0.87
2017/18	--	230 B	--	--	--	1.16	0.87

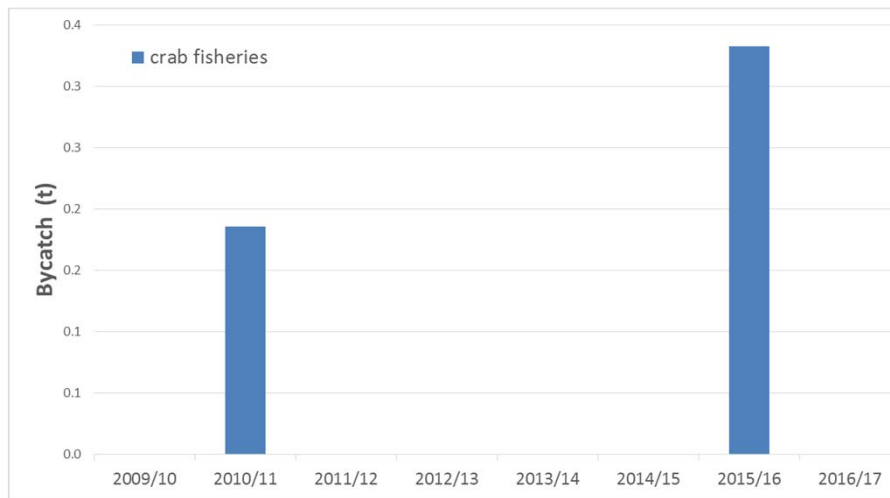
- OFL based on average catch (1999/2000-2005/06)
- ABC based on 25% buffer (CPT rec'd, SSC approved 2014)
- Revised handling mortality for fixed gear bycatch (0.5 -> 0.2)



# Management Area & Stock Definition



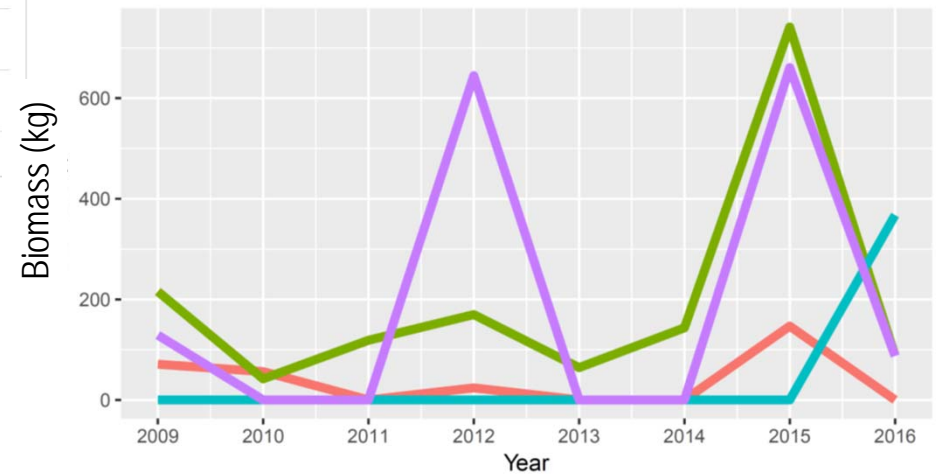
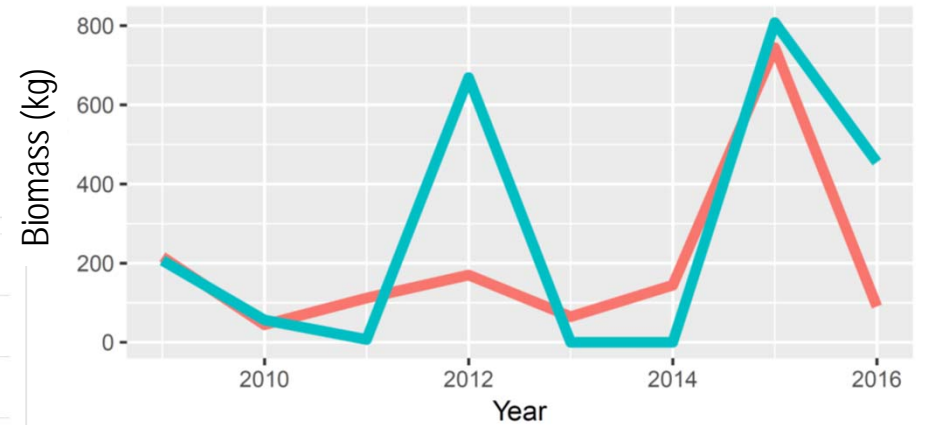
# PIBKC Bycatch in Non-target Fisheries



$$HM_{\text{fixed}} = 0.2 \text{ (was 0.5)}$$

$$HM_{\text{trawl}} = 0.8$$

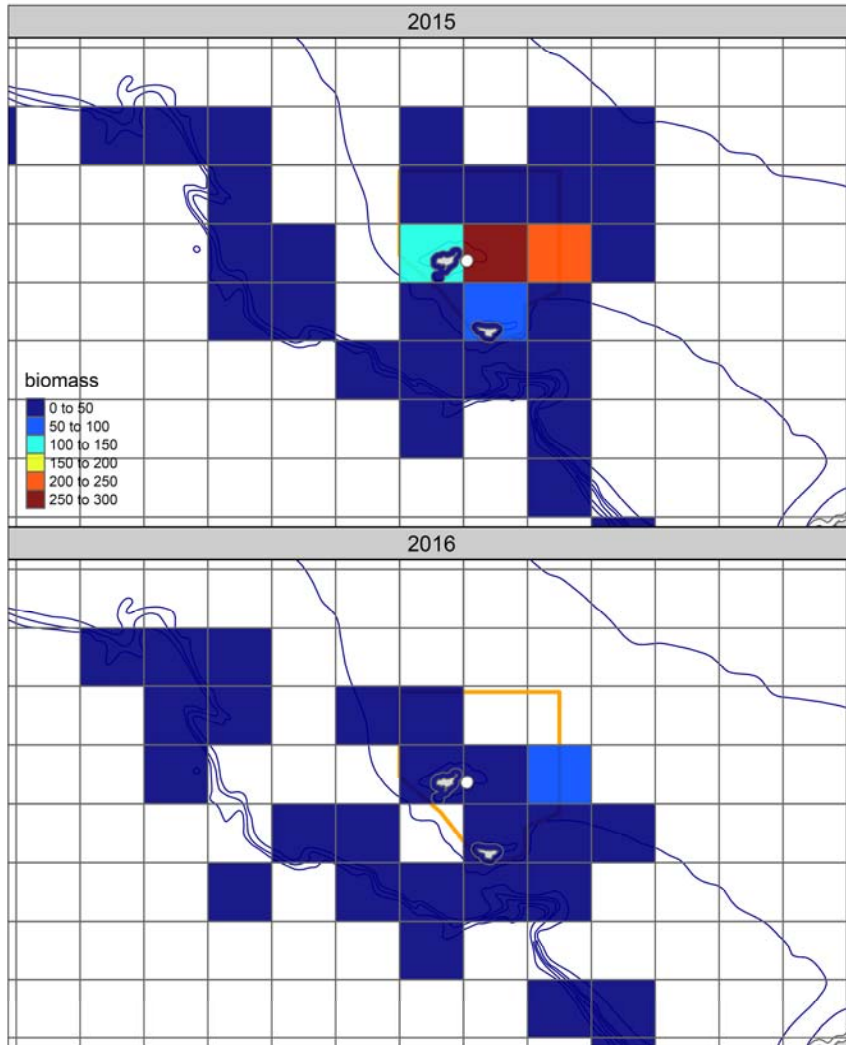
## Groundfish Fisheries



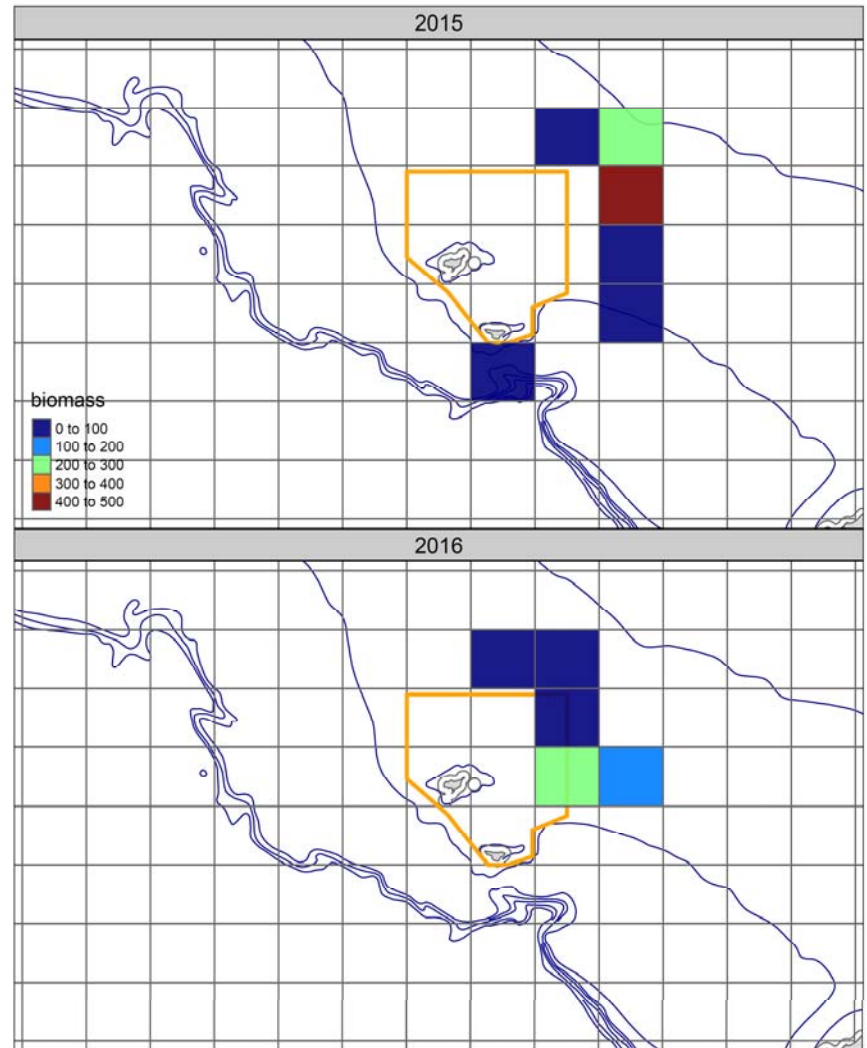
target  
 Flathead Sole    Rock Sole - BSAI  
 Pacific Cod    Yellowfin Sole - BSAI

# PIBKC Bycatch in Groundfish Fisheries

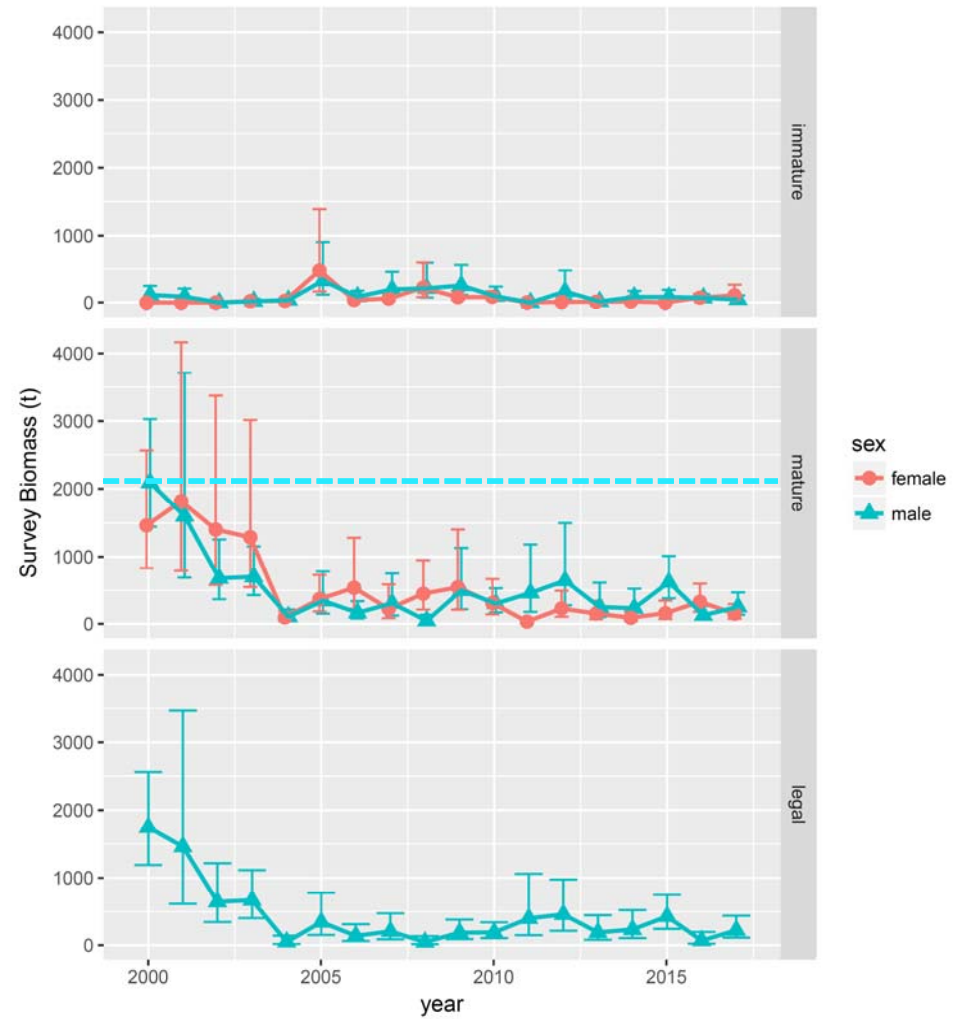
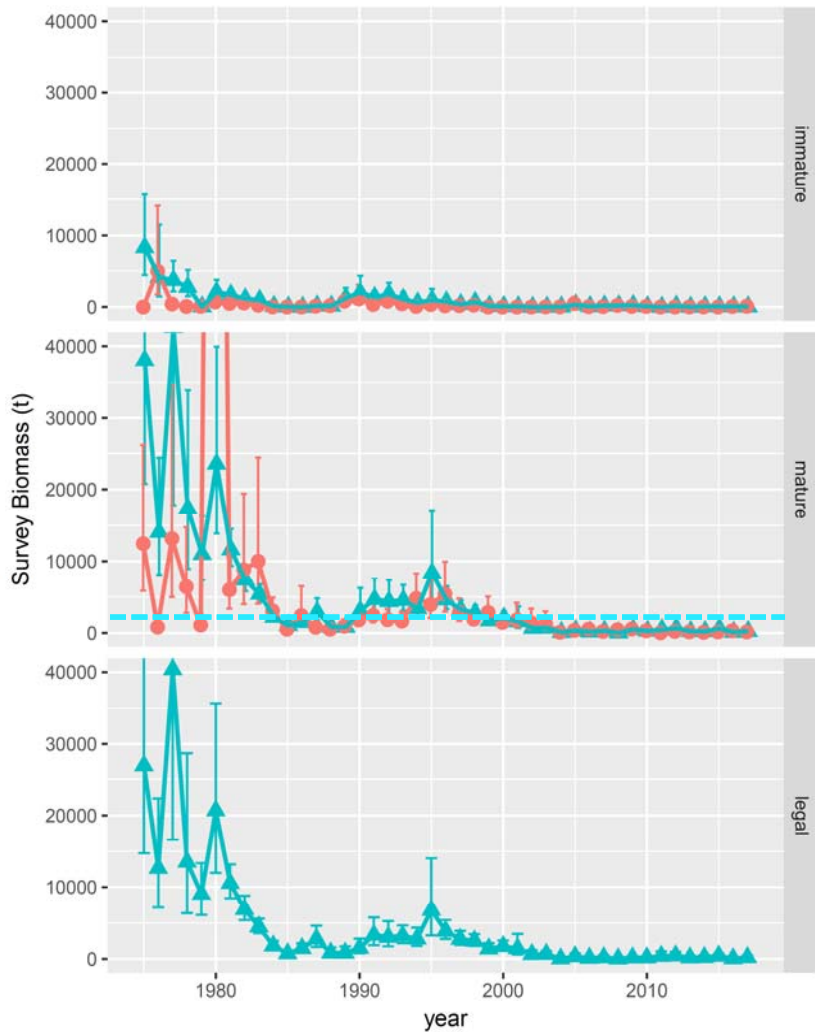
fixed gear



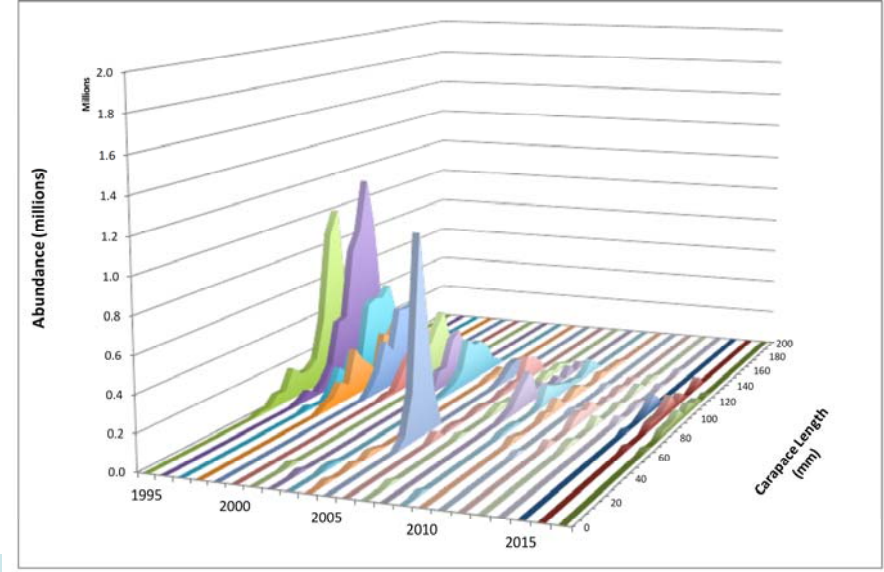
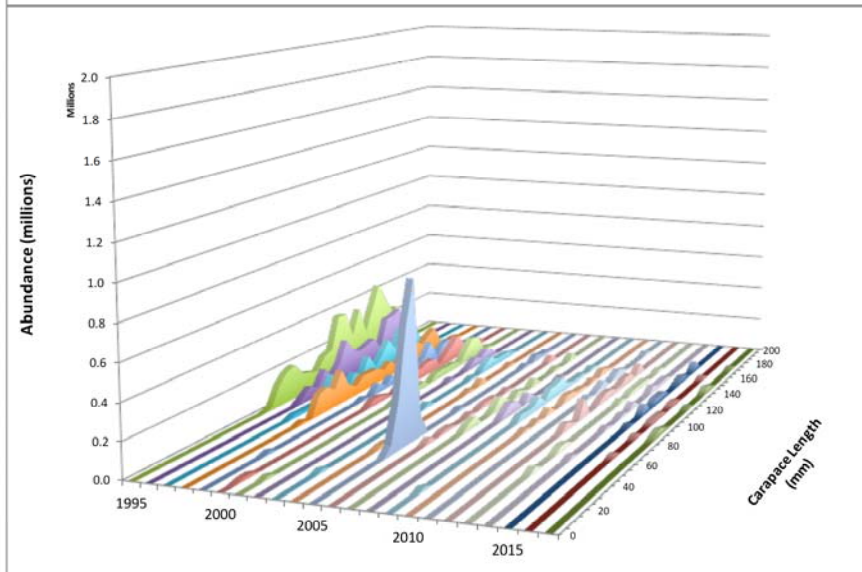
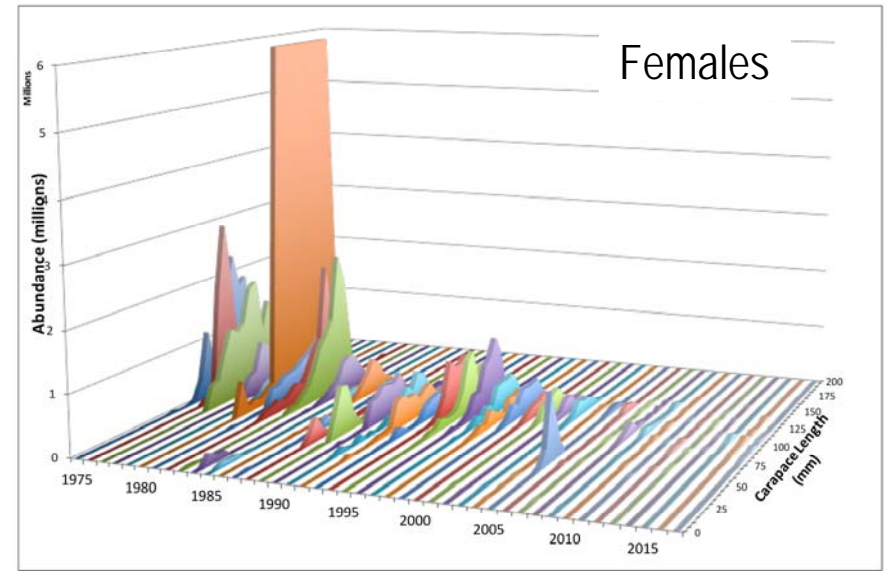
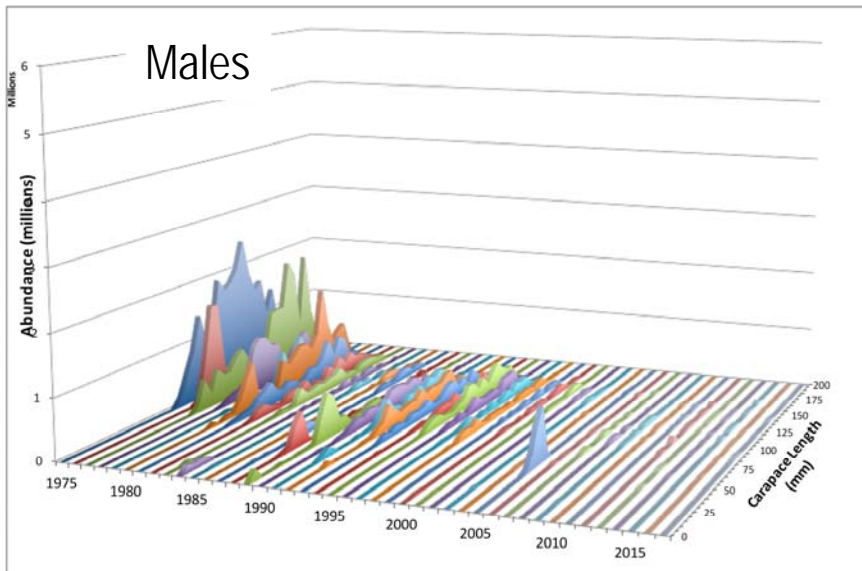
trawl gear



# NMFS EBS Trawl Survey: Survey Trends



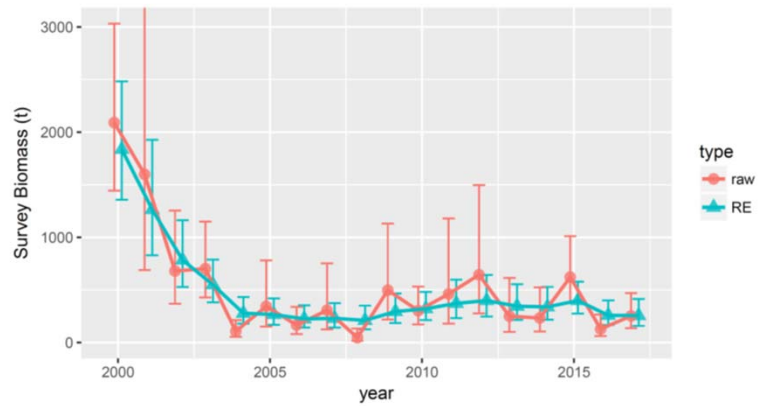
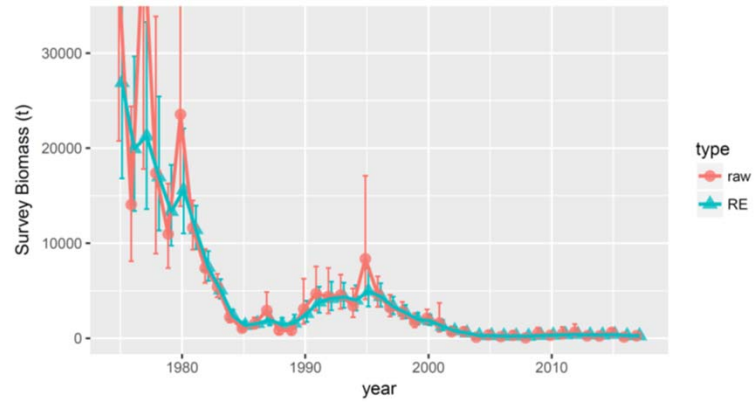
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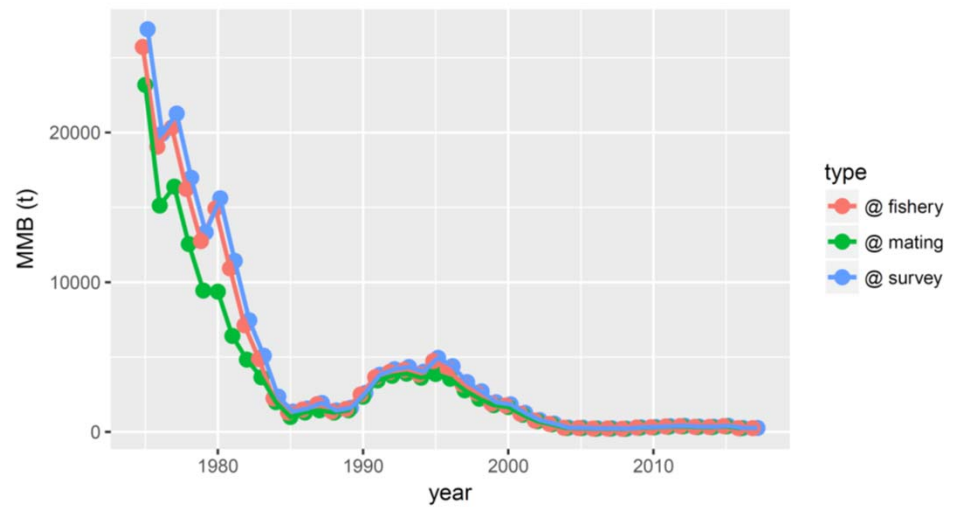


# MMB-at-mating

in survey



at mating



## $B_{MSY}$ and “Current” MMB-at-mating

- $B_{MSY}$  = mean(MMB-at-mating) over 1980-1984, 1990-1997
- “Current” B is projected MMB-at-mating for 2017/18 assuming OFL is taken

Year	Tier	$B_{MSY}$	Current MMB <sub>mating</sub>	$B/B_{MSY}$ (MMB <sub>mating</sub> )	$\gamma$	Years to define $B_{MSY}$	Natural Mortality	P*
2013/14	4c	3,988	278	0.07	1	1980/81-1984/85 &1990/91-1997/98	0.18	10% buffer
2014/15	4c	4,002	218	0.05	1	1980/81-1984/85 &1990/91-1997/98	0.18	25% buffer
2015/16	4c	4,109	361	0.09	1	1980/81-1984/85 &1990/91-1997/98	0.18	25% buffer
2016/17	4c	4,116	233	0.06	1	1980/81-1984/85 &1990/91-1997/98	0.18	25% buffer
2017/18	4c	4,108	230	0.06	1	1980/81-1984/85 &1990/91-1997/98	0.18	25% buffer



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