

September 11, 2017

Questions for Pacific cod captains and others

To estimate the status of the stock of Pacific cod, stock assessment scientists use data collected by observers and by surveys. Sometimes patterns in the data emerge that are not easily explained and would benefit from the insights of participants in the fishery to identify fishing and environmental conditions that may help to explain the observations. We would appreciate your input to better understand your experiences in the fishery with the goal of improving the stock assessment and fishery management.

Currently, we are trying different approaches of how to best ask these types of questions, so along with your input we would appreciate any suggestions on the format of these questions. If there is something that we have not asked that you would like scientists to know, please tell us!

Below is a table of years from 1981 to the present with some major management changes and other information that may be useful when answering these questions.

- 1) Are there particular years where changes in Pacific cod fishing conditions (e.g., CPUE or selectivity/availability) occurred, and how would you describe those changes? For example, were there certain years or periods when fishing required much more effort or longer distances to fish, did the distribution of fish change, were different sizes of fish encountered, did gear specifications change, did management changes have a big effect, etc.?
- 2) What management changes have impacted your fishing the most? Please note the year on the table below.
- 3) It is very clear in observer and other fisheries data that fishing conditions change during the year. Is there a general manner in which you would describe these seasonal patterns? (Feel free to describe several patterns or variations if things have changed over the years.)
- 4) How do you decide to make a significant move within a fishing trip? Do you have rules that determine when you decide to move?
- 5) What other factors do you think that scientists should know about the fishing conditions that you experience?
- 6) Have you noticed changes in the biology of the fish? For example, periods of much shorter fish, fat fish, flesh condition, parasites?

What sector/ gear group are you part of?

What is your job / role in the fishery?

How long have you served in this role?

Year	Select Management Actions	Pacific cod TAC (1000t) (1)	Pacific cod Catch (1000t) (1)	Age 3+ biomass (1000t) (1)	First Wholesale Pacific cod price (\$ / round weight Lb)	West Coast No 2 Diesel Retail Prices Dollars per Gallon (3)	Ice cover index (4)	Sea Surface Temp (May) (4)	Bottom Temp Summer (4)
1981	U.S. domestic trawl fishery and several joint venture fisheries began operations in the EBS	79	64	766			0.47	3.44	
1982		79	70	1,073			8.18	4.04	2.27
1983		120	103	1,211			4.42	1.71	3.02
1984		210	133	1,090			7.49	2.92	2.33
1985		220	150	1,247			6.53	1.71	2.23
1986		229	143	1,195			6.57	1.5	1.86
1987		280	163	1,260			0	1.57	3.08
1988		200	208	1,296			9.98	2.81	2.17
1989		231	183	1,189			7.43	2.24	2.85
1990		227	180	983			7.62	2.39	2.27
1991	Foreign and joint venture fisheries entirely displaced by domestic fisheries	229	210	762			10.82	2.24	2.47
1992	Pollock CDQ program starts	182	164	666	0.38		18.22	2.12	1.86
1993		165	133	780	0.36		6.9	1.85	2.9

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1994	Amendment 24: established gear allocations. Authorized seasonal apportionments (1994-1996)	191	172	780	0.33		7.13	3.17	1.42
1995	Red King Crab Savings Area; Halibut/ Sablefish IFQ	250	228	881	0.34	1.23	16.22	1.98	1.58
1996		270	209	877	0.35	1.357	1.86	1.69	3.28
1997	Amendment 46, superseded A24. Replaced gear allocations	270	233	753	0.30	1.3	15.79	2.83	2.6
1998	Amendment 49, mandated retention and utilization of P-cod, CDQ expansion	210	159	617	0.40	1.114	18.87	1.96	3.14
1999	AFA in catcher processor sector	177	146	681	0.54	1.255	19.27	1.96	0.73
2000	AFA in shoreside & mothership sectors	193	151	738	0.54	1.603	16.97	1.22	1.99
2001		188	143	719	0.52	1.493	0.05	2.07	2.44

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2002		200	167	777	0.47	1.407	7.05	2.48	3.06
2003		208	175	803	0.53	1.613	0.34	2.68	3.67
2004		216	184	769	0.53	2.027	1.74	3.52	3.2
2005	Crab IFQ	206	183	702	0.66	2.571	0.02	3.29	3.29
2006		194	169	606	0.79	2.885	8.74	3.1	1.71
2007		171	140	519	0.95	3.042	15.45	1.29	1.64
2008	Amendments 80 & 85	171	140	467	0.93	3.868	32.27	1.22	1.15
2009		177	147	585	0.55	2.566	30.03	0.59	1.24
2010	Pcod LL coop starts	169	143	666	0.67	3.119	28.54	1.31	1.42
2011		228	209	925	0.76	3.999	14.64	0.68	2.33
2012		261	233	944	0.70	4.163	36.75	1.26	0.89
2013		260	237	978	0.56	4.051	23.57	-0.04	1.7
2014	Board of Fisheries for the State of AK established guideline harvest levels. The warm blob was present in the GOA	247	239	1,088	0.65	3.933	0.31	0.87	
2015		240	233	1,102	0.69	2.898	0.08		
2016		239	208	1,308		2.557			
2017									

(1) NPFMC Bering Sea and Aleutian Islands SAFE (December 2016)

(2) (2) NPFMC Economics SAFE (December 2016), from Table 27 (BSAI, average for all sectors).

(3) https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_R50_DPG&f=A

(4) <http://www.beringclimate.noaa.gov/data/index.php>