



Bering Sea Corals and Canyons

North Pacific Fishery Management Council meeting
October 2015

Canyons are not unique

- Canyons occur all along the contour (shelf break) of the continental shelf and are not rare. There are 239 canyons along the Pacific shelf break.
- The Bering Sea has the largest concentrations of canyons.
- The AFSC study found that fish species and invertebrates are distributed all along the Bering Sea shelf break and are not unique to the areas identified as canyons.
- The invertebrates found in this region are not rare.

Coral Density in the Bering Sea

Of the 250 transects completed in the AFSC camera drop survey, only 32 found any coral.

TRANSECTS WHERE CORAL LOCATED. 32 OUT OF 250 TRANSECTS.										ATTACHMENT #1
Sample	Haul	Survey Transect (meters)		Transect Area (m ²)	# Coral in Transect	Coral Density in Transect		depth in mtrs		
		Distance	Width			# Coral / m ²	# m ² / Coral			
1	43	211.62	2.83	598.885	1	0.0017	598.9	713.88		
2	129	287.68	3.18	914.822	1	0.0011	914.8	712.73		
3	141	310.60	3.24	1,006.344	1	0.0010	1,006.3	769.87		
4	50	435.75	3.00	1,307.250	1	0.0008	1,307.3	532.69		
5	76	326.24	2.37	773.189	2	0.0026	386.6	473.96		
6	172	223.10	3.56	794.236	2	0.0025	397.1	401.53		
7	117	554.65	2.74	1,519.741	2	0.0013	759.9	284.99		
8	67	598.29	3.75	2,243.588	2	0.0009	1,121.8	260.91		
9	113	84.86	2.52	213.847	3	0.0140	71.3	725.78		
10	88	511.21	3.17	1,620.536	4	0.0025	405.1	311.49		
11	96	215.21	3.09	664.999	5	0.0075	133.0	759.27		
12	28	268.69	3.34	897.425	7	0.0078	128.2	528.62		
13	71	280.14	2.00	560.280	9	0.0161	62.3	760.24		
14	27	290.25	3.74	1,085.535	10	0.0092	108.6	659.03		
15	73	582.61	2.46	1,433.221	11	0.0077	130.3	349.29		
16	115	664.29	2.33	1,547.796	11	0.0071	140.7	210.23		
17	161	370.03	3.73	1,380.212	12	0.0087	115.0	694.93		
18	53	839.27	3.59	3,012.979	17	0.0056	177.2	446.37		
19	31	499.59	5.43	2,712.774	18	0.0066	150.7	327.14		
20	116	748.88	2.61	1,954.577	22	0.0113	88.8	207.13		
21	54	774.07	4.36	3,374.945	24	0.0071	140.6	435.09		
22	74	387.02	1.79	692.786	27	0.0390	25.7	263.78		
23	119	346.48	3.56	1,233.469	34	0.0276	36.3	759.62		
24	97	468.36	3.24	1,511.006	36	0.0238	42.0	455.19		
25	30	459.52	3.98	1,828.890	47	0.0257	38.9	394.02		
26	70	512.98	2.15	1,102.907	101	0.0916	10.9	398.57		
27	72	248.64	2.34	581.818	114	0.1959	5.1	761.13		
28	40	542.86	3.42	1,856.581	124	0.0668	15.0	211.89		
29	66	445.64	3.50	1,559.740	174	0.1116	9.0	200.67		
30	41	499.36	3.03	1,513.061	196	0.1295	7.7	215.08		
31	42	361.24	3.59	1,296.852	220	0.1696	5.9	531.72		
32	29	240.55	3.32	798.626	227	0.2842	3.5	524.34		
Sum of Hauls with Corals Observed				43,592.894	1,465	0.0336	29.8			
Average per Sample Haul				1,362.278	46	0.0336	29.8 m ²			
Minimum Density						0.0008	1,307.3 m ²			
Maximum Density						0.2842	3.5 m ²			

Numbers in red are densities expressed as 1 coral per noted m².

If there were 250 sample hauls with an overall average of 0.005 corals / m² - then:

Est Area Covered in Survey 293,000.000 1,465 0.0050 200.0 m²

Average depth of transects: 450 meters. Depth of pollock fishing: 100-200 meters.

Hauls marked yellow are hauls where 2 damaged corals found.

Average coral height is 20 cm or 8 inches.

Coral size and depth in the Bering Sea

- The corals were small, averaging about 8 inches in height.
- Corals occurred at depths up to 750 meters. The average depth where coral occurred was 450 meters, far deeper than where most fishing occurs.
- Pollock fishing generally occurs between 100-200 meters.

Damage due to fishing

Species	% Damaged	% Damaged where evidence of fishing	# Damaged where evidence of fishing
CORAL	2.9%	0%	0
SPONGES	.3%	.2%	5
SEA WHIPS	9%	2.1%	94

Conclusion

- The North Pacific Fishery Management Council has already implemented actions that provide habitat protections to 1.2 million square miles of ocean, including 277,000 sq miles in the Aleutian Islands to protect corals.
- We cannot expect the annual harvest of 2 million metric tons of seafood to have zero impact on habitat but, based on the evidence gathered by the AFSC, we seem to be very close to that mark in the Bering Sea.
- Based on this data, we feel that no further protective action is necessary at this time to protect the sparse distribution of corals in the Bering Sea.