

Chapter 4 Socioeconomic Tables

Socioeconomic Table 4-1: Summary of Criteria for Evaluating Socioeconomic Consequences of the Alternatives (updated since Draft EIS).

Component of the Socioeconomic Environment	Analyses	Variables used to assess impact
Fisheries	Trawl revenues put at risk, quantitative and qualitative discussion of other sectors	Change in gross commercial revenues and costs, distribution of effects, trawl revenues put at risk, displacement of commercial and recreational effort, and impacts on other fisheries
Processors and Buyers	Qualitative discussion of impacts and analysis of changes in landed catch volume where able	Available product type and volume
Consumers	Qualitative analysis of changes in market price, product availability	Availability of seafood and changes in market price
Safety	Qualitative analysis of changes in incentives related to safety and ability to pay for equipment	Injury and fatality at sea
Management and Enforcement	Discussion of changes in demands placed upon relevant agencies	Administrative burdens
Communities	Identification and discussion of factors that may affect communities	Employment and income impacts as a result of changes to processor and fishing revenues and volume.
Non-market values	Identification and discussion of factors that may affect non-market values	The public's perception of future ecosystem viability
Non-fishing values	Identification and discussion of factors that may affect the economic viability of non-fishing sectors	Financial burdens imposed through the consultation process

Socioeconomic Table 4-2. Estimated Limited Entry Bottom Trawl Revenues at Risk by Impact Minimization Alternative (Total Revenues over a 4 year period) (updated since Draft EIS).

Alternative Set	Alternative	Revenues at Risk for total 10x10 block areas (\$)	Revenues at Risk for proportioned 10x10 block areas (\$)
Final Preferred Alternative		36,292,783	8,523,085
	C.4.1	88,941	88,941
Preliminary Preferred Alternatives	C.4.2	88,941	88,941
	C.9	NA	NA
	C.10	5,886,370	5,644,512
	C.11	NA	NA
	C.12	46,252,563	19,242,920
	C.13	46,252,563	19,242,920
	C.14	46,252,563	19,242,920
Other Alternatives	C.1	NA	NA
	C.2.1	UNKN	UNKN
	C.2.2	UNKN	UNKN
	C.2.3	UNKN	UNKN
	C.3.1	1,011,952	178,745
	C.3.2	1,531,975	928,950
	C.3.3	52,943,052	5,041,431
	C.3.4	87,931,024	59,044,440
	C.5	NA	NA
	C.6	78,094,177	41,622,276
	C.7.1	29,471,349	12,601,536
	C.7.2	29,471,349	12,601,536
	C.8.1	UNKN	UNKN
	C.8.2	UNKN	UNKN

Socioeconomic Table 4-3. Summary of Impacts on the Socioeconomic Environment for Council Preferred Alternatives Pertaining to Impact Minimization (updated since the Draft EIS).

Alt.	Portion of the Socioeconomic Environment					
	Fisheries	Mgmt and Enfrcmt	Processors	Communities	Consumers	Safety
Final Preferred	\$8,523,085 of twl revenues at risk. Non-twl comm and rec fisheries impacted. Eliminate the potential for fishery expansion. More vessels required to carry VMS	Agencies would need to verify compliance with area closures and unfished area boundary	Processors may be negatively impacted if revenues at risk are partially lost	May be negatively impacted if there are reductions in landed catch and net revenue	No expected effect	Safety may be enhanced if more vessels carry VMS, but may decrease if revenues decrease
C.4.1	\$88,941 of revenues at risk. Eliminate potential for fishery expansion. More vessels may need VMS	Agencies would need to verify compliance with unfished area boundary	Little or no expected effect	No expected effect	No expected effect	Safety may be enhanced if additional vessels are required to carry VMS
C.4.2	\$88,941 of revenues at risk. Eliminate potential for fishery expansion. More vessels may need VMS	Agencies would need to verify compliance with unfished area boundary	Little or no expected effect	No expected effect	No expected effect	Safety may be enhanced if additional vessels are required to carry VMS
C.9	Vessels may be required to incur additional costs. May displace some small fisheries	Agencies would need to verify compliance with equipment and area requirements	Little or no expected effect	No expected effect	No expected effect	No expected effect
C.10	\$5,644,512 - \$5,886,370 of revenues at risk. Additional vessels may need to carry VMS	Agencies would need to verify compliance with trawl closures	Processors near project area negatively impacted if landings decline	Communities near project area negatively impacted by reduction in landings & revenue	No expected effect	Safety may be enhanced if additional vessels are required to carry VMS
C.11	Non-negative effect on fishing revenues. Slope trawl effort may decrease	Difficulties in predicting and managing target and non-target species. Increased probability of disaster tows	Non-negative impact expected if landed volume doesn't change. If volume changes, effect unknown	Non-negative impact expected if landed volume doesn't change. If volume changes, effect unknown	No expected effect	Non-negative impact expected. If vessel revenues increase, safety may benefit
C.12	\$18,471,193 - \$44,198,927 of revenues at risk. More vessels may need VMS.	Agencies would need to verify compliance with additional closed areas	Processors may be negatively impacted if revenues at risk are partially lost	May be negatively impacted if there are reductions in landed catch and net revenue	No expected effect	Safety may be enhanced if more vessels carry VMS, but may decrease if revenues decrease
C.13	\$18,471,193 - \$44,198,927 of revenues at risk. More vessels may need VMS.	Agencies would need to verify compliance with additional closed areas	Processors may be negatively impacted if revenues at risk are partially lost	May be negatively impacted if there are reductions in landed catch and net revenue	No expected effect	Safety may be enhanced if more vessels carry VMS, but may decrease if revenues decrease
C.14	\$18,471,193 - \$44,198,927 of revenues at risk. More vessels may need VMS.	Agencies would need to verify compliance with additional closed areas	Processors may be negatively impacted if revenues at risk are partially lost	May be negatively impacted if there are reductions in landed catch and net revenue	No expected effect	Safety may be enhanced if more vessels carry VMS, but may decrease if revenues decrease

Socioeconomic Table 4-4. Final Preferred Alternative LE Bottom Trawl Revenue and Pounds at Risk by Species Groups (4 year period) (added since Draft EIS)

SPECIES GROUP	Proportioned 10x10 Block Area		Total 10x10 Block Area	
	GROSS REVENUE \$	LANDED POUNDS	GROSS REVENUE \$	LANDED POUNDS
OTHER FLATFISH	526,409	1,788,448	2,556,767	9,179,855
OTHER FISH	296,983	581,622	1,601,950	3,053,664
ROCKFISH	611,817	1,165,649	2,509,714	4,785,398
OTHER GROUND FISH	397,428	1,199,611	1,686,877	5,047,105
DOVER SOLE / THORNYHEAD / SABLEFISH	5,722,536	8,625,036	23,688,435	36,017,619
PETRALE SOLE	826,102	932,160	4,249,040	4,765,667
Total	8,381,276	14,292,526	36,292,783	62,849,308

Socioeconomic Table 4-5. Alternative C.4.1 LE Bottom Trawl Revenue and Pounds at Risk by Species Groups (4 year period)

SPECIES GROUP	Proportioned 10x10 Block Area		Total 10x10 Block Area	
	GROSS REVENUE \$	LANDED POUNDS	GROSS REVENUE \$	LANDED POUNDS
OTHER FLATFISH	14,784	17,322	14,784	17,322
OTHER FISH	1,579	3,289	1,579	3,289
ROCKFISH	6,064	10,855	6,064	10,855
OTHER GROUND FISH	513	921	513	921
DOVER SOLE / THORNYHEAD / SABLEFISH	62,672	96,518	62,672	96,518
PETRALE SOLE	3,328	3,745	3,328	3,745
Total	88,941	132,650	88,941	132,650

Socioeconomic Table 4-6. Alternative C.4.2 Displaced LE Bottom Trawl Revenue and Pounds by Species Groups (4 year period)

SPECIES GROUP	Proportioned 10x10 Block Area		Total 10x10 Block Area	
	GROSS REVENUE \$	LANDED POUNDS	GROSS REVENUE \$	LANDED POUNDS
OTHER FLATFISH	14,784	17,322	14,784	17,322
OTHER FISH	1,579	3,289	1,579	3,289
ROCKFISH	6,064	10,855	6,064	10,855
OTHER GROUND FISH	513	921	513	921
DOVER SOLE / THORNYHEAD / SABLEFISH	62,672	96,518	62,672	96,518
PETRALE SOLE	3,328	3,745	3,328	3,745
Total	88,941	132,650	88,941	132,650

Socioeconomic Table 4-7. C.11 Change in Total Exvessel Revenue if Trawl Vessels Switch to Fixed Gear

Hypothetical Scenario	Range of Additional DTS Revenue	
	Upper Bound Additional Exvessel Revenue (\$)	Lower Bound Additional Exvessel Revenue (\$)
Hypothetical Amount of Trawl Sablefish caught w/Fixed Gear (mt)		
250	522,730	-169,550
500	1,049,708	-334,852
1,000	2,107,794	-661,326
2,000	4,181,842	-1,356,397

Socioeconomic Table 4-8. C.11 Hypothetical Incidental Catch Impacts from Allowing Trawl Vessels to Switch to Fixed Gear

Hypothetical Scenario	Incidental Catch Implications			
	Additional Canary Mortality (mt)	Remaining Canary OY (mt)	Additional Yelloweye Mortality (mt)	Remaining Yelloweye OY (mt)
Hypothetical Amount of Trawl Sablefish caught w/Fixed Gear (mt)				
250	0.1	2.4	0.1	5.2
500	0.1	2.4	0.3	5
1,000	0.2	2.3	0.5	4.8
2,000	0.5	2	1	4.3

Socioeconomic Table 4-9. C.12 Bottom Trawl Pounds and Revenue at Risk by Species Group over a Four Year Period

SPECIES GROUP	Proportioned 10x10 Block Area		Total 10x10 Block Area	
	GROSS REVENUE \$	LANDED POUNDS	GROSS REVENUE \$	LANDED POUNDS
DOVER SOLE / THORNYHEAD / SABLEFISH	11,022,644	17,650,150	25,937,429	40,957,084
OTHER FISH	318,235	689,548	865,384	1,782,547
OTHER FLATFISH	1,911,679	7,834,045	4,944,494	18,315,619
OTHER GROUND FISH	974,861	3,540,701	2,547,307	8,797,578
PETRALE SOLE	2,960,208	3,361,432	6,706,577	7,544,813
ROCKFISH	1,283,566	2,824,941	3,197,735	6,915,209
Grand Total	18,471,193	35,900,817	44,198,927	84,312,850

Socioeconomic Table 4-10. C 12 Bottom Trawl Revenues at Risk by Proposed Closed Area over a 4 year Period

AREA	Revenue At Risk (\$)	
	Total 10 x 10 blocks	Proportioned 10 x 10 blocks
Astoria Canyon	2,963,671	1,848,170
Biogenic area_1	803,053	477,566
Biogenic area_11	332,603	25,049
Biogenic area_12	922,838	240,264
Biogenic area_13	961,846	49,930
Biogenic area_2	359,632	44,525
Biogenic area_3	C	C
Biogenic area_6	167,116	37,112
Biogenic area_7	1,541,517	296,876
Biogenic area_8	401,506	75,921
Channel Islands	232,244	66,370
Cordell Bank	1,623,286	555,935
Cowcod conservation area_east	-	-
Cowcod conservation area_west	C	C
Daisy Bank	573,048	46,056
Davidson Seamount	-	-
Eel River Canyon	3,772,635	2,488,998
Grays Canyon	828,166	234,938
Guide Seamount	C	C
Gumdrop Seamount	-	-
Hard bottom feature_1	584,621	56,323
Hard bottom feature_2	1,012,825	177,877
Hard bottom feature_3	408,215	17,455
Hard bottom feature_4	1,004,895	155,567
Hard bottom feature_5	161,872	12,631
Hard bottom feature_6	174,247	11,946
Heceta Bank	2,616,548	1,396,418
Mendocino Ridge	1,928,193	1,131,165
Monterey Bay and Canyon	2,393,781	1,825,593
Morrow ridge	1,528,399	469,232
Olympic_1	6,650,238	3,317,651
Olympic_2	5,656,804	2,166,960
Pioneer Seamount	C	C
President Jackson Seamount	-	-
Ridges_biogenic area_10	960,321	159,319
Ridges_biogenic area_9	235,165	52,799
Ridges_biogenic_area_5	2,287,370	675,296
Rogue Canyon	3,117,766	1,115,697
San Juan Seamount	-	-
Taney Seamount	-	-
Thompson Seamount	-	-
Grand Total	44,198,927	18,471,193

note: sum of all areas does not equal grand total because some 10x10 blocks intersect with more than one area

Socioeconomic Table 4-11: Summary of the Social and Economic Consequences of the Impacts Minimization and Research and Monitoring Alternatives.

Direction of Alternative Impacts on the Socioeconomic Environment

Environmental Component	Past and Present	External and Non-Fishing Factors	Reasonably Foreseeable Future	Impact Minimization														Research and Monitoring			
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4
Trawl Fisheries	Many trawl fisheries have been constrained by rebuilding species. Buyback will help many vessels increase revenues.	Unknown	Rebuilding species constraints are expected to continue. Shelf flatfish opportunities are expected to increase	0	E-	E-	0	0	E-	E-	E-	E-	U	E-/E+	E-	E-	E-	0	0	E-	E-/0
Fixed Gear Fisheries	Fixed gear revenues have increased due to tier and permit stacking. Rebuilding species constraints are expected to continue.	Unknown	Constraints due to rebuilding species are expected to continue	0/U	E-	E-/E+	0	0	E-	E-/0	0/E-	E-	U	E-/E+	0	E-	E-	0	0	E-	E-/0
Recreational Fisheries	Recreational fisheries have been expanding, but are constrained by rebuilding species.	Unknown	Recreational fisheries will continue to be constrained by rebuilding species. Future growth is unknown.	0	0	0	0	0	E-	0/E-	0/E-	E-	U	0	0	0	E-	0	0	E-	E-/0
Tribal Fisheries	Tribal groundfish fisheries have been expanding.	Unknown	Tribal fisheries are expected to continue expanding.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Fisheries	Conditional. Some fisheries have been expanding, while some have been contracting due to rebuilding species concerns.	Unknown	Rebuilding species will continue to be a constraint.	0	0	E-	0	0	E-	0/E-	0/E-	E-	U	0	0	0	E-	0	0	E-	E-/0
Consumers	Consumers have been consuming increasing amounts of seafood	Unknown	Consumers are expected to continue consuming more seafood.	0	0	0	0	0	0	0	0	0	U	0	0	0	0	0	0	0	U
Safety	Safety has been generally increasing	Unknown	The number of fishing related accidents are expected to continue decreasing.	0	U	E+	E+	0	E+	E+	E+	0	U	U	0	0	0	0	0	E+	U
Buyers and Processors	Groundfish buyers and processors have been consolidating in recent years	Unknown	The supply of groundfish to buyers and processors is expected to remain relatively stable	0	E-	0	0	0	0	0	0	0	0	0/E+	U	U	U	0	0	0	U
Communities	Many coastal communities are becoming less reliant on fishing-related activity	Unknown	As coastal economies grow and diversify, their reliance on fishing will continue to decrease.	0	0	0	0	0	0	0	0	0	U	0/E+	U	U	U	0	0	0	U
Management and Enforcement	The level of management and enforcement needed for recent management actions have been increasing in complexity	Unknown	The current level of management and enforcement is expected to continue	0	U	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	0	E-/E+	E-	E-
Non-Fishing Activities	The trends in non-fishing activities are unknown.	NA	Unknown	0	U	U	U	U	U	U	U	U	U	U	U	U	U	0	U	U	U
Non-Fishing Values	The trend in non-fishing values has likely been negative.	Unknown	Unknown	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

Socioeconomic Table 4-12. Multiplicative Impact to Processors and States from LE Trawl Vessel Landings (Impact by Round Pounds of Landed Species)

Species	Oregon		Washington		California	
	Processor	State	Processor	State	Processor	State
Groundfish	0.83	1.16	0.62	0.84	0.81	1.14
Lingcod	0.96	1.30	0.87	1.19	1.20	1.70
Other rockfish and perch	0.67	1.18	0.67	0.91	0.63	0.88
Thornyheads	1.13	1.53	0.86	1.17	1.10	1.57
Sablefish	1.71	2.35	1.74	2.39	1.53	2.19
Sharks	0.49	0.63	0.54	0.69	0.78	1.10
Skates	0.56	0.71	0.49	0.62	0.60	0.84
Arrowtooth flounder	0.34	0.45	0.32	0.42	0.38	0.53
Dover sole	0.59	0.81	0.57	0.78	0.58	0.80
English sole	0.56	0.77	0.56	0.76	0.60	0.83
Other sole/flounder	1.05	1.45	0.67	0.92	1.05	1.46
Petrale sole	1.23	1.70	1.20	1.68	1.17	1.62
Rex sole	0.66	0.90	0.58	0.79	0.68	0.94
Sanddabs	0.55	0.76	0.48	0.65	0.58	0.81
Pacific whiting	0.17	0.19	0.25	0.30	0.24	0.28
Surimi	0.15	0.16	0.00	0.00	0.00	0.00
H&G	0.25	0.31	0.25	0.30	0.24	0.28

Notes Marginal impacts are measured as total personal income generated at the state level.
Marginal impacts are estimated using the PFMC Fisheries Economic Assessment Model (FEAM) developed for 2000 fisheries and adjusted to 2003 landings and ex-vessel prices. The FEAM uses 1998 IMPLAN coefficients and multipliers.
Marginal impacts are weighted across product forms and individual species using pounds.

Source Research Group, The. 2004. Fisheries Economic Assessment Model. The Research Group, Corvallis, OR
Year 2003 landings from PacFIN annual vessel summary tables August 2004 extraction

Socioeconomic Table 4-13. Multiplicative Impact to Processors, Communities, States and Region from LE Trawl Non-whiting Groundfish Landed Round Pounds in West Coast Communities

State	Community	Multiplier			
		Processor	Community	State	West Coast
Oregon	Astoria	0.81	0.94	1.10	1.17
	Tillamook	1.00	1.11	1.39	1.48
	Newport	0.85	0.97	1.20	1.28
	Coos Bay	0.85	0.98	1.20	1.27
	Brookings	0.89	0.97	1.21	1.29
Washington	North Puget Sound	0.59	0.72	0.82	0.89
	South Puget Sound	0.00	0.00	0.00	0.00
	Coastal WA North	0.70	0.79	0.98	1.06
	Coastal WA South	0.65	0.76	0.88	0.96
California	Crescent City	0.86	1.04	1.21	1.23
	Eureka	0.84	1.02	1.19	1.21
	Fort Bragg	0.80	0.97	1.13	1.15
	Bodega Bay	0.85	1.17	1.18	1.20
	San Francisco	0.82	1.11	1.12	1.13
	Monterey	0.71	0.87	0.96	0.97
	Morro Bay	0.82	1.08	1.22	1.24
	Santa Barbara	0.00	0.00	0.00	0.00
	Los Angeles	1.91	2.89	2.94	2.97
	San Diego	3.41	4.77	4.87	4.92

Notes: Marginal impacts are measured as total personal income generated at the state level.
 Marginal impacts are estimated using the PFMC Fisheries Economic Assessment Model (FEAM) developed for 2000 fisheries and adjusted to 2003 landings and ex-vessel prices.
 The FEAM uses 1998 IMPLAN coefficients and multipliers.
 Marginal impacts are weighted across product forms and individual species using pounds.

Source: Research Group, The. 2004. Fisheries Economic Assessment Model. The Research Group, Corvallis, OR
 Year 2003 landings from PacFIN annual vessel summary tables August 2004 extraction

Socioeconomic Table 4-14 Comparison of Protected Area and Trawl Revenues at Risk by Alternative (updated since Draft EIS)

DEIS Alternative	Description	% of EEZ	Area (ha)	Area (sq nm)	Revenues at Risk for total 10x10 block areas (\$)	Revenues at Risk for proportioned 10x10 block areas (\$)
C.1	No Action				NA	NA
Final Preferred	Close Areas to various gear types	81.72%	67,237,011	196,031	36,292,783	8,523,085
C.10	Central CA No-Trawl Zones	3.48%	2,862,458	8,345	5,886,370	5,644,512
C.11	Relax Gear Endorsements			0	NA	NA
C.12	Close Ecological Important Areas to Bottom Trawl	90.36%	74,350,701	216,769	46,252,563	19,242,920
C.13	Close Ecological Important Areas to Bottom-contacting gear	90.36%	74,350,701	216,769	46,252,563	19,242,920
C.14	Close Ecological Important Areas to Fishing	90.36%	74,350,701	216,769	46,252,563	19,242,920
C.2.1	Depth Based Gear Restrictions Option 1 - Large Footrope Depth Restriction - 200 fm	9.86%	8,109,479	23,643	UNKN	UNKN
C.2.1	Depth Based Gear Restrictions Option 1 - Fixed Gear Depth Restriction - 100/150 fm	8.46%	6,958,174	20,287	UNKN	UNKN
C.2.2	Depth Based Gear Restrictions Option 2 - Large Footrope Depth Restriction - EEZ	100.00%	82,281,491	239,892	UNKN	UNKN
C.2.2	Depth Based Gear Restrictions Option 2 - Fixed Gear Depth Restriction - 100/150 fm	8.46%	6,958,174	20,287	UNKN	UNKN
C.2.3	Depth Based Gear Restrictions Option 3 - Large Footrope Depth Restriction - 200 fm	9.86%	8,109,479	23,643	UNKN	UNKN
C.2.3	Depth Based Gear Restrictions Option 3 - Fixed Gear Depth Restriction - 60 fm	5.62%	4,620,408	13,471	UNKN	UNKN
C.3.1	Close Sensitive Habitat - Option 1	2.19%	1,805,105	5,263	1,011,952	181,973
C.3.2	Close Sensitive Habitat - Option 2	16.85%	13,861,398	40,413	1,531,975	934,794
C.3.3	Close Sensitive Habitat - Option 3	2.70%	2,221,323	6,476	47,115,054	3,723,698
C.3.4	Close Sensitive Habitat - Option 4	23.18%	19,069,623	55,597	82,895,532	58,458,226
C.4.1	Prohibit Geographic Expansion of Fishing - Option 1	82.83%	68,150,527	198,693	88,941	88,941
C.4.2	Prohibit Geographic Expansion of Fishing - Option 2	74.21%	61,060,253	178,021	88,941	88,941
C.5	Prohibit Krill Fishery			0	NA	NA
C.6	Close Hotspots	7.77%	6,389,460	18,628	78,094,177	41,622,276
C.7.1, C.7.2	Close Areas of Interest	3.67%	3,017,148	8,796	29,471,349	12,601,536
C.8.1, C.8.2	Zoning Fishing Activities, options 1 and 2	74.21%	61,060,253	178,021	UNKN	UNKN
C.9	Gear Restrictions			0	NA	NA

Socioeconomic Table 4-15. Preferred Alternative LE Bottom Trawl Revenue and Pounds at Risk by Species Groups (4 year period) (added since Draft EIS).

SPECIES GROUP	Proportioned 10x10 Block Area		Total 10x10 Block Area	
	GROSS REVENUE \$	LANDED POUNDS	GROSS REVENUE \$	LANDED POUNDS
OTHER FLATFISH	526,409	1,788,448	2,556,767	9,179,855
OTHER FISH	296,983	581,622	1,601,950	3,053,664
ROCKFISH	611,817	1,165,649	2,509,714	4,785,398
OTHER GROUND FISH DOVER SOLE / THORNYHEAD / SABLEFISH	397,428 5,722,536	1,199,611 8,625,036	1,686,877 23,688,435	5,047,105 36,017,619
PETRALE SOLE	826,102	932,160	4,249,040	4,765,667
Total	8,381,276	14,292,526	36,292,783	62,849,308