



NOAA Technical Memorandum NMFS-AFSC-114

**Appendices to
The 1998 Pacific West Coast
Bottom Trawl Survey of Groundfish
Resources: Estimates of Distribution,
Abundance, and Length and
Age Composition**

by
M. E. Wilkins and F. R. Shaw

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center

May 2000

NOAA Technical Memorandum NMFS

The National Marine Fisheries Service's Alaska Fisheries Science Center uses the NOAA Technical Memorandum series to issue informal scientific and technical publications when complete formal review and editorial processing are not appropriate or feasible. Documents within this series reflect sound professional work and may be referenced in the formal scientific and technical literature.

The NMFS-AFSC Technical Memorandum series of the Alaska Fisheries Science Center continues the NMFS-F/NWC series established in 1970 by the Northwest Fisheries Center. The new NMFS-NWFSC series will be used by the Northwest Fisheries Science Center.

This document should be cited as follows:

M. E. Wilkins, and F. R. Shaw. 2000. Appendices to the 1998 Pacific west coast bottom trawl survey of groundfish resources: Estimates of distribution, abundance, and length and age composition. U. S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-114, 242 p.

Reference in this document to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.



NOAA Technical Memorandum NMFS-AFSC-114

**Appendices to
the 1998 Pacific West Coast
Bottom Trawl Survey of Groundfish
Resources: Estimates of Distribution,
Abundance, and Length and
Age Composition**

by

M. E. Wilkins and F. R. Shaw

Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Seattle, WA 98115-0070

U.S. DEPARTMENT OF COMMERCE

William M. Daley, Secretary

National Oceanic and Atmospheric Administration

D. James Baker, Under Secretary and Administrator

National Marine Fisheries Service

Penelope D. Dalton, Assistant Administrator for Fisheries

May 2000

This document is available to the public through:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

www.ntis.gov

Notice to Users of this Document

In the process of scanning the original printed document into Adobe Acrobat .PDF format, slight differences in formatting can occur; page numbers in the .PDF may not match the original printed document, and some characters or symbols may not translate.

This document is being made available in .PDF format for the convenience of users; however, the accuracy and correctness of the document can only be certified as was presented in the original hard copy format.

INTRODUCTION

The information appended in this volume is provided for those interested in the detailed results of the analyses performed on the catch and biological data collected during the National Marine Fisheries Service's 1998 West Coast triennial bottom trawl survey of groundfish resources. The format in which the information is presented in this document has not been scrutinized by editorial staff and thus should not be referenced in a scientific publication. The three appendices are intended to be used in association with the summaries included in NOAA Technical Memorandum NMFS-AFSC-114. These appendices provide summarized station and catch data, relative rankings and absolute catch rates in terms of CPUE (kg caught per hectare trawled) of fish and invertebrates within various International North Pacific Fisheries Commission (INPFC) areas and depth strata, and abundance estimates (population numbers and biomass) for the most commercially or ecologically important species.

To avoid excess printing, abundance and size and age compositions estimates have not been included for many of the less important fish and invertebrates, though these estimates can be easily calculated upon request. Electronic data files containing the results of any of these analyses are available from the authors or other staff listed below.

<i>To request data files or special analyses, please contact:</i>		
Frank Shaw	(206) 526-4120	frank.shaw@noaa.gov
Mark Wilkins	(206) 526-4104	mark.wilkins@noaa.gov
Ken Weinberg	(206) 526-6109	ken.weinberg@noaa.gov
Bob Lauth	(206) 526-4121	bob.lauth@noaa.gov
Mark Zimmermann	(206) 526-4119	mark.zimmermann@noaa.gov

TABLE OF CONTENTS

Appendix A. Haul and Catch Data Summary	A-1
Table A-1. Station and catch data for stations sampled by the F/V <i>Dominator</i>	A-2
Table A-2. Station and catch data for stations sampled by the R/V <i>Vesteraalen</i>	A-29
Appendix B. Relative Abundance of Species by Area and Depth Stratum	B-1
Tables B-1 through B-4, the INPFC Conception Area	B-2
Tables B-5 through B-8, the INPFC Monterey Area	B-15
Tables B-9 through B-12, the INPFC Eureka Area	B-32
Tables B-13 through B-16, the INPFC Columbia Area	B-46
Tables B-17 through B-20, the U.S. Portion of the INPFC Vancouver Area	B-65
Tables B-21 through B-24, the Canadian Portion of the INPFC Vancouver Area	B-74
Tables B-25 through B-28, the INPFC Vancouver Area	B-85
Tables B-29 through B-32, the U.S. Portion of the Survey Area	B-98
Tables B-33 through B-36, the Entire Survey Area	B-127
Appendix C. Estimates of Abundance in Numbers and Biomass	C-1

APPENDIX A

HAUL AND CATCH DATA SUMMARY

Appendix A contains information from the 1998 West Coast triennial bottom trawl survey data about each haul's location, depth, performance codes, measures of effort in time and distance, and amount caught (kg) for selected important species or species groups. Geodetic positions are displayed in the table as degrees and decimal minutes, e.g. 123°46.39' corresponds to 123°46.39'W longitude. Appendix Table A-1 contains information from the F/V *Dominator* and Table A-2 contains information from the F/V *Vesteraalen*.

Haul performance is coded as to any problems which occurred during the trawl haul and whether or not the haul was accepted as a successful sample; negative codes indicate unsuccessful hauls. Performance codes that appear in this appendix are as follows:

<u>Code</u>	<u>Explanation</u>
-5.6	Unsatisfactory performance, codend not closed properly
-5.41	Unsatisfactory performance, doors digging or falling over
-5.1	Unsatisfactory performance, net came off bottom
-2.4	Unsatisfactory performance, belly damaged
0	Good performance
3	Satisfactory performance, gear conflict, unspecified
3.1	Satisfactory performance, caught pot, unspecified type
4	Satisfactory performance, caught unspecified object
4.1	Satisfactory performance, caught large rock
4.3	Satisfactory performance, caught debris or wreckage
5.1	Satisfactory performance, net came off bottom

Table A-1.--Station and catch data (kg caught) by major species groups for stations fished by the Dominator.

Haul	1	2	3	4	5	6	7	8	9	10	11
Start date & time	6/8/1998 8:28	6/8/1998 12:42	6/8/1998 16:28	6/9/1998 7:19	6/9/1998 9:24	6/9/1998 15:07	6/9/1998 18:00	6/10/1998 6:53	6/10/1998 9:09	6/10/1998 12:12	6/10/1998 14:43
Station	7G	7F	5H	5G	5F	5E	5D	5D	5C	5B	5A
Start latitude	3503.10	3503.02	3453.98	3453.60	3454.18	3454.57	3453.94	3454.46	3453.98	3454.18	3453.81
Start longitude	12127.88	12122.95	12125.13	12119.34	12118.04	12102.39	12056.95	12056.97	12054.38	12051.40	12044.70
End latitude	3504.72	3503.94	3455.43	3454.12	3455.19	3455.89	3455.46	3456.02	3455.50	3455.82	3455.61
End longitude	12128.99	12124.65	12125.67	12120.93	12119.64	12103.83	12056.84	12056.82	12054.09	12051.11	12044.95
Bottom depth (m)	454	471	462	456	474	462	314	319	237	173	70
Duration (hr)	0.63	0.58	0.5	0.49	0.57	0.6	0.52	0.53	0.52	0.54	0.59
Distance fished (km)	3.475	3.106	2.817	2.714	3.078	3.281	2.82	2.906	2.926	3.091	3.377
Net width (m)	12.049	11.532	11.881	12.487	13.031	11.724	13.091	12.997	12.164	12.412	10.89
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	4.3	-5.1	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish								1.1			4.6
Skates	9.0	4.1	8.3	7.8	4.6	2.5	4.0	2.8	4.5	0.1	0.1
Spotted ratfish							0.6	1.5	0.3	0.6	0.7
Other elasmobranchs			0.8	1.3		0.4	0.8	2.4	0.1		1.1
Pacific sanddab										2.9	1.0
Arrowtooth flounder											
Pacific halibut											
Petrale sole							1.3		1.9	1.4	0.8
English sole							2.4	2.2	1.1	3.2	0.4
Dover sole	96.9	166.0	205.3	178.8	200.9	104.5	27.5	39.7	5.4	0.4	
Rex sole	20.5	14.6	29.2	33.6	37.4	30.1	101.9	130.4	10.7	3.3	0.4
Other flatfish	0.0			0.0			1.3	4.0	8.4	1.1	3.7
Sablefish	1.7	0.7	6.8	9.0	30.3	9.8	4.5	5.6	1.9	1.0	
Pacific cod											
Lingcod											
Pacific whiting	61.8	138.1	58.7	50.7	54.5	63.4	95.5	142.6	41.1	32.1	0.6
Other roundfish	6.5	8.8	5.8	4.7	9.5	7.7	4.4	7.5	4.6	2.2	22.9
Shortspine thornyhead	5.7	2.6	2.7	2.2	2.5	0.7	0.2	0.3			
Longspine thornyhead	32.6	16.8	31.4	21.8	24.3	6.0					
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish											
Yellowtail rockfish				0.2		0.4	99.5	116.3	27.4	9.9	
Chillipepper									8.7	0.2	
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	50.6	20.1	57.6	13.0	45.5	19.0	0.9		61.9	13.5	6.4
Jellyfish											
Shrimps	0.0	0.0				0.0	0.6	0.1	1.7	16.4	0.1
Crabs									1.5	2.5	
Octopuses			0.1		0.3	1.9	0.1	6.2	0.3	0.2	
Squids	13.9	15.9	3.4	37.5	15.4	4.5	4.8	22.0	22.0	0.0	0.2
Sea stars	0.5	0.1	0.1	0.1	0.2	0.1	0.0	1.0	0.2	0.9	2.4
Sea urchins	7.5	1.2	39.9	3.5	50.3	43.7	3.2	9.2	35.2	6.3	
Total catch weight	333.1	392.8	456.1	366.4	481.0	295.5	353.5	474.2	242.2	106.6	39.3

Table A-1.--Continued.

Haul	12	13	14	15	16	17	18	19	20	21	22
Start date & time	6/11/1998 7:05	6/11/1998 9:40	6/11/1998 11:17	6/11/1998 13:11	6/11/1998 15:26	6/12/1998 6:48	6/12/1998 8:48	6/12/1998 10:14	6/12/1998 12:34	6/12/1998 16:21	6/12/1998 17:55
Station	9A	9B	9B	9C	9D	13D	13C	13B	13A	16C	
Start latitude	3512.93	3513.69	3513.72	3513.92	3513.89	3634.43	3633.90	3634.05	3633.92	3652.32	3652.66
Start longitude	12057.62	12100.92	12101.00	12103.52	12107.36	12123.22	12117.23	12115.93	12111.97	12132.84	12131.11
End latitude	3514.49	3515.09	3515.15	3515.22	3515.15	3635.56	3634.91	3635.20	3635.04	3653.85	3654.40
End longitude	12058.63	12101.65	12101.62	12104.46	12108.40	12124.25	12118.79	12117.42	12113.50	12133.27	12131.55
Bottom depth (m)	153	268	273	377	480	491	237	160	95	387	248
Duration (hr)	0.6	0.53	0.54	0.49	0.53	0.51	0.53	0.56	0.57	0.52	0.6
Distance fished (km)	3.304	2.823	2.939	2.794	2.841	2.608	3.011	3.145	3.128	2.916	3.314
Net width (m)	13.053	13.371	12.808	13.615	14.238	14.198	12.755	12.754	11.973	13.312	12.793
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	-5.6	0	0	0	0	0	0	0	5.1	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	2.9							14.9		7.2	5.2
Skates	0.0			1.3	18.9	17.5	4.1	1.1	0.3	9.1	0.1
Spotted ratfish	1.1	0.4		0.2	2.3	5.3	1.1	3.3	0.9	13.4	4.6
Other elasmobranchs	1.1				5.7	2.9	0.1	1.0	5.2	3.5	
Pacific sanddab	0.5							0.6	40.0		
Arrowtooth flounder											
Pacific halibut								5.7	2.6	1.8	1.2
Petrale sole	0.5								12.0		
English sole								0.6	0.2	59.3	1.9
Dover sole	0.1		0.2	2.2	46.8	2.2	0.7	0.6	0.2	10.3	0.5
Rex sole	0.2			0.8	3.4	1.7	0.1	4.4	0.2		0.2
Other flatfish	6.0			3.3	29.3	21.6		1.2		16.7	1.3
Stablefish								0.3			
Pacific cod								4.5	0.4		
Lingcod								1.6		124.1	70.1
Pacific whiting	29.4	17.7	94.4	481.9	105.9	147.6	0.7	32.4	37.7	10.9	1.3
Other roundfish			0.2	2.0	15.8	22.1	0.0			0.9	
Shortspine thornyhead				0.0	8.6	12.1					
Longspine thornyhead					11.3						
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish											
Yellowtail rockfish											
Chillipepper	3.3	0.5	29.2	0.2			82.0	0.0	0.4	99.3	195.5
Bocaccio	0.5						3.6	103.4			20.3
Canary rockfish								0.4			4.2
Redstripe rockfish											
Stripetail rockfish			30.9				151.7	45.1	0.3	3.2	260.7
Other rockfish	3,515.0	48.7	0.2	0.9	72.2	120.0	2.2	43.5	0.4		1.5
Jellyfish											
Shrimps			0.1	0.0		0.0	0.2			0.0	0.2
Crabs	0.0		1.0			4.9	0.4	0.6			2.9
Octopuses			0.8	0.9	0.6	0.7	0.1			0.2	
Squids	0.0	0.4		12.3	28.7	6.7		0.1	0.0	0.1	10.2
Sea stars	0.1	12.4	0.1		2.1	0.0		1.5		0.5	
Sea urchins	0.0	0.7	10.0	6.4	5.6	0.0	0.1	0.1		13.3	
Total catch weight	3,561.0	102.6	166.9	944.1	362.2	375.6	247.4	254.5	115.5	374.7	521.9

Table A-1.-Continued.

Haul	23	24	25	26	27	28	29	30	31	32	33
Start date & time	6/12/1998 19:47	6/13/1998 10:32	6/14/1998 14:02	6/14/1998 16:21	6/15/1998 6:40	6/15/1998 8:09	6/15/1998 10:05	6/15/1998 11:54	6/15/1998 16:18	6/15/1998 18:28	6/16/1998 7:06
Station	16A	21C	21A	21B	24A	24B	24C	24D	24E	24F	
Start latitude	3556.27	3644.01	3646.14	3642.70	3703.72	3704.03	3704.16	3703.66	3704.36	3703.26	3725.70
Start longitude	12131.22	12158.58	12151.59	12155.95	12221.42	12226.22	12232.55	12238.06	12238.71	12241.19	12258.48
End latitude	3557.92	3642.43	3644.25	3644.43	3704.86	3705.07	3704.92	3704.93	3705.58	3704.51	3726.99
End longitude	12130.77	12159.04	12152.04	12155.74	12222.89	12227.77	12234.37	12239.28	12240.80	12242.11	12259.25
Bottom depth (m)	112	239	67	97	66	95	113	144	199	379	387
Duration (hr)	0.59	0.53	0.59	0.57	0.55	0.54	0.55	0.55	0.55	0.52	0.5
Distance fished (km)	3.283	3.297	3.58	3.231	3.057	3.063	3.08	2.995	3.037	2.7	2.691
Net width (m)	12.222	11.403	12.499	12.655	12.852	12.796	12.58	12.396	12.57	12.923	12.526
Net measured?	Y	Y	N	Y	Y	Y	Y	Y	N	N	N
Performance	0	-5.1	0	0	0	0	0	0	5.1	5.1	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	0.4		2.9	4.7			4.2	0.4		12.6	19.6
Skates		0.1	0.2		0.0	0.9			0.5	0.4	5.8
Spotted ratfish	0.4	3.2		0.3		0.7				0.8	2.3
Other elasmobranchs	1.5		3.2	3.6	2.5	5.1	1.2	4.4			
Pacific sanddab	6.6	0.2	20.4	7.7	25.2	6.5	721.4	112.4	2.6		
Arrowtooth flounder											
Pacific halibut											
Petrale sole	14.3	0.3	7.1	2.1		0.7		0.5			1.1
English sole	5.3	0.5	10.7	28.1	6.8	13.0	15.0	2.2	8.2		
Dover sole	0.2	1.9	0.0	0.0		0.5	0.7	8.0	5.7	114.3	180.1
Rex sole	0.2	1.5	0.1	0.1	2.7	2.2	2.5	10.3	9.2	80.3	59.9
Other flatfish		0.4	0.2		7.1	0.4	0.5	0.7	1.2	2.9	
Sablefish										13.6	20.2
Pacific cod		4.0	1.8	0.2	2.8	0.1	0.2	1.0			
Lingcod		1.6	1.0	6.5		1.8	4.3	40.1	28.7	194.5	88.4
Pacific whiting	5.0				444.9	27.6	25.1	12.3	18.9	17.2	7.7
Other roundfish	465.6	0.2	772.3	1,229.1						4.0	2.0
Shortspine thornyhead		0.5									
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish											
Yellowtail rockfish											
Chilipepper		10.1							3.4	154.6	247.3
Bocaccio	139.3	203.5					14.5	82.8	7.3		
Canary rockfish	1.1	603.9						1.5	0.7		
Redstripe rockfish		1.5								1.0	
Stripetail rockfish	4.0	4.2	0.0	0.1			0.4	107.1	156.3		
Other rockfish	0.6	59.5		0.3		0.0	1.8	6.5	4.7	6.5	10.7
Jellyfish											0.1
Shrimps		2.7							0.2		
Crabs	0.4	0.9	0.5	0.4	0.9	0.6		0.1		0.0	0.3
Octopuses								36.2			
Squids			0.1	7.0	0.0	0.1					0.1
Sea stars	0.7		0.3	0.1	1.0	12.6	2.9	0.6	0.2	0.0	0.0
Sea urchins						0.2				0.2	0.0
Total catch weight	647.4	900.9	820.8	1,290.5	507.1	80.7	795.6	427.1	247.7	603.1	648.4

Table A-1.--Continued.

Haul	34	35	36	37	38	39	40	41	42	43	44
Start date & time	6/16/1988 10:41	6/16/1988 12:47	6/16/1988 14:44	6/16/1988 16:12	6/16/1988 17:54	6/16/1988 19:26	6/17/1988 6:34	6/17/1988 8:18	6/17/1988 9:55	6/17/1988 11:21	6/17/1988 14:46
Station	28E	28D	28C	28C	28B	28A	32D	32C	32B	32A	36A
Start latitude	3724.17	3723.59	3723.74	3723.76	3724.57	3724.49	3743.99	3744.53	3744.55	3745.08	3804.65
Start longitude	12256.04	12248.26	12243.72	12243.75	12240.56	12237.93	12309.41	12305.13	12259.33	12256.18	12307.31
End latitude	3725.34	3725.15	3725.00	3725.19	3725.94	3725.87	3745.15	3744.56	3744.78	3743.96	3806.44
End longitude	12255.78	12249.27	12245.04	12245.00	12241.59	12239.00	12310.80	12306.86	12301.29	12257.69	12307.14
Bottom depth (m)	319	101	88	88	88	73	119	70	62	57	76
Duration (hr)	0.47	0.61	0.58	0.61	0.55	0.57	0.57	0.46	0.54	0.55	0.56
Distance fished (km)	2.619	3.274	3.071	3.237	2.981	3.04	3.046	2.582	2.942	3.037	3.355
Net width (m)	12.313	12.718	12.505	12.505	12.837	12.638	12.984	12.237	12.514	11.937	13.014
Net measured?	N	N	N	N	N	N	N	N	N	N	N
Performance	0	0	-5.6	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	0.8	3.1	3.0	7.2	1.8						0.2
Skates	7.4	0.1	0.9			0.8	5.3	0.4			1.2
Spotted ratfish	2.4										0.8
Other elasmobranchs	0.1	0.6	22.5	0.4	2.8	2.2					4.4
Pacific sanddab		26.0	20.0	26.4	12.7	19.9	16.4	41.5	22.3	45.4	9.8
Arrowtooth flounder											
Pacific halibut											
Petrale sole		0.3	0.3	0.9	1.1	0.1			3.2	0.5	6.1
English sole	75.8	18.8	6.1	4.9	8.8	5.4	10.0	5.2	9.0	9.8	4.1
Dover sole		1.6	1.4	0.5	2.3	0.5					0.0
Rex sole	9.5	6.6	3.5	3.5	2.9	3.6	9.9	0.8	2.8	1.1	2.8
Other flatfish		0.4	0.6	0.4	2.2	0.5	0.1	5.5	5.9	6.7	2.9
Sablefish	28.0					0.0					
Pacific cod			0.2		0.9	0.7	13.7	1.1	1.1		6.0
Lingcod	80.2	2.3	2.3	4.2	7.9	1.7	46.5	0.5	0.5		199.0
Pacific whiting	10.0	168.3	48.5	111.8	319.9	138.7	5.2	1.7	20.6	45.3	
Other roundfish	2.1	0.1									
Shortspine thornyhead											
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish	0.7										
Spitnose rockfish	8.6										
Yellowtail rockfish											
Chillipepper		126.3					6.8		0.0		
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	0.1	0.5		0.0	0.1		0.6		0.0	0.0	
Jellyfish				0.3			3.0				
Shrimps											
Crabs	0.3	0.9		0.8	0.4		1.8				0.9
Octopuses											
Squids	0.0	0.1	0.1	0.3	0.2	0.3	0.4	0.0	1.2	0.4	0.1
Sea stars	11.3	0.4	3.8	6.2	5.7	5.1	0.1	0.3	0.1		1.5
Sea urchins	0.9										
Total catch weight	239.1	356.3	114.9	170.3	371.2	188.4	119.7	57.7	66.8	109.4	247.0

Table A-1.--Continued.

Haul	45	46	47	48	49	50	51	52	53	54	55
Start date & time	6/17/1988 16:12	6/17/1988 17:43	6/18/1988 6:50	6/18/1988 8:27	6/18/1988 10:20	6/18/1988 12:44	6/18/1988 15:49	6/18/1988 18:39	6/19/1988 7:12	6/19/1988 9:06	6/19/1988 12:35
Station	36B	36C	36D	36E	36F	36G	36H	36I	36G	38F	38E
Start latitude	3805.04	3805.28	3803.79	3804.10	3804.99	3804.53	3804.99	3805.60	3824.03	3823.98	3823.86
End latitude	12310.82	12314.62	12317.90	12320.77	12322.31	12325.72	12331.11	12331.64	12337.16	12333.24	12329.77
End longitude	3803.40	3803.63	3805.33	3805.62	3806.42	3804.81	3806.14	3806.80	3825.57	3825.05	3825.16
Bottom depth (m)	12311.17	12314.52	12317.92	12320.80	12322.80	12327.66	12329.85	12330.54	12337.50	12334.58	12330.47
Duration (hr)	98	113	71	167	210	135	220	390	472	219	179
Distance fished (km)	0.55	0.55	0.5	0.52	0.56	0.5	0.53	0.54	0.55	0.54	0.51
Net width (m)	3.105	3.05	2.868	2.816	2.848	2.904	2.868	2.778	2.917	2.787	2.718
Net measured?	13.07	12.849	12.826	12.831	13.293	13.176	12.717	12.826	12.764	13.089	12.981
Performance	N	N	N	N	N	N	N	N	N	N	N
Gear	0	0	0	0	0	0	0	0	0	0	0
	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	1.8	3.4				2.2		6.9	3.8		1.7
Skates					9.0	15.3		5.4	0.6		0.1
Spotted ratfish	0.4						0.9	8.1	1.8		
Other elasmobranchs	6.8						0.0	1.3	4.4		36.3
Pacific sanddab	8.4	142.6	185.8	0.3		11.4					
Arrowtooth flounder											5.9
Pacific halibut											
Petrale sole	1.5	6.9	2.3	1.7	6.2	6.4		4.0		1.0	
English sole	4.4	3.1	20.7	10.6	21.9	10.5	24.1	62.6	74.7	7.4	7.3
Dover sole			0.3	0.3	6.7	2.7	10.6	190.0	13.9	18.5	2.6
Rex sole	3.1	1.7	2.1	14.9	40.9	6.8	3.9			11.1	10.5
Other flatfish	0.8	0.6	0.1	0.4	2.2	5.6	1.7	4.7	0.1	0.8	0.2
Stablefish			1.0	1.2	3.6		2.3	29.7	26.0	12.2	3.6
Pacific cod											
Lingcod	0.1		1.9	5.7		60.2	5.4			37.6	
Pacific whiting	70.0	20.4	41.8	158.8	569.2		319.2	175.9	13.3	2,329.3	165.0
Other roundfish	94.0	18.3	31.4	53.2	21.2	11.0	14.6	26.1	5.8		11.1
Shortspine thornyhead								16.7	5.8	0.3	
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch								0.6			
Silvergray rockfish											
Darriblotched rockfish											
Splittnose rockfish					2.0		26.9	36.4		2.6	0.7
Yellowtail rockfish											
Chillipepper											
Bocaccio		0.0	44.0	18.6	17.9	697.5	304.7			1,754.0	467.7
Canary rockfish			0.5	4.1	2.7	140.8	7.3				
Redstripe rockfish						16.5					
Stripetail rockfish		0.1		34.4	95.5	0.1	346.3			241.3	147.1
Other rockfish		0.1	3.8	66.0	5.9	243.9	179.7	5.1	13.8	291.3	35.6
Jellyfish											
Shrimps					0.0		1.6		0.0		0.3
Crabs	0.4		0.7	0.9	9.3	4.3	0.5	0.1	0.1		0.0
Octopuses											
Squids	0.3	0.2						6.4	0.1		2.0
Sea stars	1.5	0.9	0.4	0.3	0.3		0.0	0.4	0.4		0.2
Sea urchins	1.1	0.1	0.0						0.2		0.2
Total catch weight	198.4	198.8	338.8	372.5	814.4	1,240.9	1,249.7	581.9	167.3	4,748.0	862.9

Table A-1.-Continued.

Haul	56	57	58	59	60	61	62	63	64	65	66
Start date & time	6/19/1998 14:57	6/19/1998 16:48	6/20/1998 6:40	6/20/1998 9:04	6/20/1998 13:02	6/20/1998 14:56	6/20/1998 16:30	6/20/1998 18:19	6/21/1998 7:06	6/21/1998 10:30	6/21/1998 12:09
Station	38D	38C	38B	38A	40A	40B	40C	40D	40E	42E	42D
Start latitude	3823.57	3823.76	3825.17	3825.10	3845.62	3843.90	3843.84	3843.82	3844.62	3904.57	3905.05
Start longitude	12325.66	12319.72	12316.84	12312.51	12336.50	12340.96	12344.39	12348.51	12351.42	12358.55	12357.71
End latitude	3824.94	3825.32	3823.81	3823.88	3844.63	3845.18	3845.23	3845.18	3843.70	3903.28	3903.56
End longitude	12326.37	12320.40	12315.76	12310.90	12334.90	12342.26	12345.51	12349.60	12350.83	12358.13	12357.42
Bottom depth (m)	138	114	98	71	78	120	130	244	423	410	298
Duration (hr)	0.51	0.51	0.54	0.58	0.54	0.53	0.53	0.53	0.34	0.44	0.5
Distance fished (km)	2.761	3.069	2.973	3.271	2.976	3.061	3.053	2.972	1.91	2.485	2.804
Net width (m)	13.025	12.911	12.38	11.367	12.394	13.087	12.987	13.18	12.149	13.183	12.758
Net measured?	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	3.7	2.9	3.2	0.3	0.4	11.1	3.8	6.5	0.7	0.8	16.6
Skates	0.1	0.1	0.4	0.9	0.9	0.4	1.9	2.8	0.9	12.9	12.9
Spotted ratfish	0.4	0.4	1.0	1.5	0.8	0.8	1.5	0.6	0.9	28.4	28.4
Other elasmobranchs			1.8	5.8	0.9	1.2	1.0	0.6	0.7	0.8	0.7
Pacific sanddab	13.7	7.9	10.4	5.8	1.8	4.6	24.1				0.8
Arrowtooth flounder											
Pacific halibut											
Petrale sole			0.1	0.4		2.4	2.1	1.3			1.9
English sole	3.3	1.5	5.5	2.4	4.3	1.0	19.7	8.9			135.8
Dover sole	1.8	0.2	0.3			0.1	0.1	17.1	39.7	22.0	53.5
Rex sole	11.0	7.1	2.1			4.2	2.0	15.1	37.6	8.7	0.6
Other flatfish	0.1	1.1	0.2	14.5	0.7	0.7	0.3	5.6	0.2	0.6	48.5
Sablefish								9.0	9.2	51.6	
Pacific cod											
Lingcod						0.3	0.6				
Pacific whiting	14.8	13.7	6.4	13.3	17.8	6.0	12.6	514.4	121.1	57.5	161.2
Other roundfish	52.9	26.9	172.4	110.3	52.5	9.3	6.5	0.8	-5.9	17.3	5.9
Shortspine thornyhead								1.5	3.5	4.7	1.5
Longspine thornyhead									0.4	0.1	
Rougheye rockfish									1.2	1.5	
Pacific ocean perch										0.6	
Silvergray rockfish											
Darkblotched rockfish							0.2				0.9
Spitnose rockfish								5.5			29.3
Yellowtail rockfish								242.9			
Chillipepper	23.0	0.0			4.6	0.0		60.5		0.8	
Bocaccio	3.0										
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish	1.1	0.0	0.0			0.2	0.0	38.3			
Other rockfish	7.5	0.1		0.3		0.0	1.9	1.5	10.7	13.1	4.3
Jellyfish		0.9		0.1			0.2				
Shrimps								0.8	0.0	0.0	0.1
Crabs	0.4				0.5				0.0	0.7	0.3
Octopuses											
Squids	0.2	0.7	0.0	0.0	0.1	0.1	0.0	2.5	0.6	1.1	0.1
Sea stars	0.8	1.9	0.7	0.6	1.4	9.8	6.6	0.0			2.2
Sea urchins	0.1	4.8	2.8	0.1	0.5	0.0	0.0	0.0	0.0	2.6	6.5
Total catch weight	138.7	74.3	208.1	155.8	85.0	55.3	145.5	935.9	232.8	192.4	512.6

Table A-1.-Continued.

Haul	67	68	69	70	71	72	73	74	75	76	77
Start date & time	6/21/1988 13:39	6/21/1988 15:25	6/21/1988 16:49	6/22/1988 6:48	6/22/1988 8:41	6/22/1988 10:23	6/22/1988 12:01	6/22/1988 15:29	6/22/1988 17:10	6/22/1988 19:01	6/23/1988 6:37
Station	42C	42B	42A	44D	44C	44B	44A	46D	46C	46B	46A
Start latitude	3903.89	3903.73	3905.16	3925.17	3925.06	3925.50	3925.33	3943.95	3943.71	3944.48	3945.34
Start longitude	12355.21	12350.49	12346.99	12400.41	12358.91	12357.55	12355.03	12403.78	12402.77	12400.37	12353.83
End latitude	3905.54	3905.43	3903.62	3923.77	3923.51	3923.98	3923.79	3945.33	3945.21	3945.98	3943.94
End longitude	12355.35	12350.38	12347.60	12400.33	12358.86	12357.41	12354.76	12404.64	12403.61	12401.80	12352.81
Bottom depth (m)	131	101	84	453	328	164	128	402	318	162	97
Duration (hr)	0.51	0.53	0.53	0.46	0.51	0.5	0.5	0.5	0.55	0.56	0.54
Distance fished (km)	3.055	3.159	2.989	2.612	2.878	2.82	2.896	2.847	3.045	3.743	2.983
Net width (m)	12.883	13.012	12.485	11.512	11.471	12.429	12.162	13.535	13.361	13.186	12.723
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	37.0	8.3	5.7	1.2	22.0	116.3	47.7	6.4	785.2	18.6	
Skates	0.0	4.5	0.2	0.6	0.4	0.3	0.6	5.1	1.6	8.1	1.5
Spotted ratfish			1.3	6.2	0.4	0.3		1.3	4.2	11.0	1.1
Other elasmobranchs				2.5	2.0	13.5		1.3	2.3	8.0	
Pacific sanddab	14.6	16.4	3.0	0.8			12.2				2.5
Arrowtooth flounder											
Pacific halibut						8.8					
Petrale sole	3.9	3.0	1.2			1.8	2.5	0.4		1.7	4.5
English sole	8.6	5.4	4.6			18.0	2.3			27.9	0.4
Dover sole	0.4	0.4		47.9	29.8	9.5	5.3	80.7	34.5	25.7	
Rex sole	4.3	1.0	0.2	20.6	7.7	9.4	4.8	39.4	49.7	2.7	0.4
Other flatfish	0.7	1.5	0.7	26.7	0.9	1.0	1.2	1.6	2.2	1.2	0.2
Sablefish					12.4	1.1		64.4	49.0		
Pacific cod	4.7	0.7								11.1	
Lingcod	6.2	11.7	12.2	30.6	128.0	1,115.4	198.2	55.0	327.2	609.0	91.5
Pacific whiting	7.2	112.1	8.2	3.1	4.6	1.6	1.9	12.9	6.7	1.3	214.0
Other roundfish				5.2	2.5	0.1		5.8	3.6		
Shortspine thornyhead				1.5	0.0			0.0			
Longspine thornyhead											
Roughieye rockfish											
Pacific ocean perch						0.7		1.4	1.2		
Silvergray rockfish											
Darkblotched rockfish											
Spitnose rockfish					0.5		0.0	0.7	4.5		
Yellowtail rockfish					10.0		1.4	0.6	11.2	0.5	
Chilipepper	2.0					8.7	0.8			1,988.3	
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish						36.9	0.3		0.4	154.8	0.1
Other rockfish	1.2	0.1	0.0	39.0	1.3	0.6		5.2	0.4	65.2	
Jellyfish											
Shrimps	0.2			0.3	0.0	0.1	0.1	0.0		2.2	1.5
Crabs	0.1		0.7	0.1	0.0	0.5	0.9	0.5	0.7	0.6	2.3
Octopuses											
Squids	10.6	0.0	0.1	0.7	5.3	1.8	0.4	0.0	0.3	1.1	0.1
Sea stars	2.8	9.8	2.6	8.6	4.2	0.1	0.1	0.0	3.3		0.2
Sea urchins		2.5	0.0		0.8	0.0	0.0	0.0	0.6		
Total catch weight	106.1	177.8	40.9	200.8	232.9	1,348.6	285.5	279.7	509.8	3,706.0	339.2

Table A-1.-Continued.

Haul	78	79	80	81	82	83	84	85	86	87	88
Start date & time	6/23/1998 9:53	6/23/1998 11:37	6/23/1998 13:22	6/23/1998 15:19	6/23/1998 17:42	6/24/1998 7:09	6/24/1998 9:37	6/24/1998 14:05	6/24/1998 16:09	6/24/1998 17:34	6/25/1998 6:47
Station	48A	48C	48D	48E	48F	50D	50B	52D	52C	52B	53D
Start longitude	12408.28	12413.15	12412.79	12416.00	12417.86	12437.53	12434.13	12430.08	12430.42	12427.80	12429.33
End latitude	4002.04	4004.57	4004.95	4005.03	4004.57	4027.67	4027.68	4046.49	4044.81	4045.23	4055.71
End longitude	12408.13	12411.30	12414.39	12417.00	12418.47	12437.92	12434.89	12430.84	12426.79	12426.79	12429.24
Bottom depth (m)	63	128	139	250	427	449	116	410	205	99	425
Duration (hr)	0.6	0.52	0.55	0.52	0.47	0.42	0.54	0.44	0.51	0.55	0.52
Distance fished (km)	3.195	3.021	3.053	2.87	2.515	2.417	3.005	2.55	2.938	3.102	2.924
Net width (m)	12.79	12.58	13.148	13.1	13.303	12.557	12.294	12.34	12.84	12.39	12.292
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	0.4	21.6	33.5	47.5	10.7	0.5		18.4	69.0	1.6	17.7
Skates	70.2	5.2	13.8	7.4	1.8	3.6	1.8		24.6	13.2	
Spotted ratfish	5.4	0.5	2.0	21.7	9.3	54.1	0.1	0.6	7.9	0.3	1.1
Other elasmobranchs					6.0	3.2	0.1	8.0	0.7		65.1
Pacific sanddab	4.8	0.6					28.9			20.5	
Arrowtooth flounder			0.9		0.4	1.1		2.2	0.8		1.9
Pacific halibut									12.4		
Petrale sole	8.8	1.9	13.9				15.6	0.9	0.9	2.2	
English sole	7.7	0.6	1.9				11.5	70.4	70.4	16.0	
Dover sole	1.4	1.8	12.0	317.7	61.5	170.0	42.6	28.6	154.1	10.6	51.0
Rex sole	7.0	2.8	8.2	63.3	11.3	44.3	11.8	115.9	37.3	4.2	68.4
Other flatfish		1.7	1.2	2.8	0.8	0.8	3.0	0.0	1.3	2.1	0.3
Sablefish		1.6		21.8	72.9	21.2		53.8	3.3		86.9
Pacific cod											
Lingcod									0.2		
Pacific whiting	6.4	247.8	129.7	677.8	18.3	27.7	271.9	40.8	122.7	4,815.8	196.7
Other roundfish	7.9	3.2	6.3	7.1	2.5	41.6	4.8	9.2	4.2	2.8	19.9
Shortspine thornyhead				3.8	1.7	0.5		5.7	4.6		1.7
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splittnose rockfish			0.0	2.3					6.3		
Yellowtail rockfish			0.1	23.0					46.4		
Chillipepper		1.2	59.0	1.4			5.7		1.9		
Bocaccio		0.9	3.0	1.3			1.7		1.5		
Canary rockfish		0.2	0.5	1.3							
Redstripe rockfish		0.6	3.2	0.1	4.4	18.1	0.7	21.2	30.1		
Stripetail rockfish			0.0						18.8		
Other rockfish	0.9		0.0								28.1
Jellyfish	0.4	2.1	0.5		0.1	0.0	0.0	0.1	1.2	0.0	0.2
Shrimps	0.5			0.0		0.2	0.1	0.2	2.1	0.5	0.1
Crabs						2.8	0.1	0.0	0.5		0.2
Octopuses						0.1	0.0	0.1	0.5		0.8
Squids	0.1	0.1	6.0	2.4	1.3	57.4	3.4	0.5	0.6		0.0
Sea stars	1.3	2.0	0.2	0.2	0.2	0.7		4.3	1.0		1.1
Sea urchins		0.9	0.2	0.2	0.1	0.7					
Total catch weight	124.8	298.7	297.2	1,203.4	203.7	454.0	409.4	311.0	627.3	4,892.0	542.1

Table A-1.--Continued.

Haul	89	90	91	92	93	94	95	96	97	98	99
Start date & time	6/25/1998 8:40	6/25/1998 10:27	6/27/1998 7:06	6/27/1998 11:47	6/27/1998 15:08	6/27/1998 18:16	6/28/1998 6:44	6/28/1998 11:56	6/28/1998 14:38	6/28/1998 16:21	6/28/1998 18:05
Station	53C	53B	52a	54D	54C	54B	54A	56a	56D	56C	56B
Start latitude	4054.24	4054.65	4043.80	4103.71	4103.61	4103.43	4103.88	4121.94	4123.38	4123.63	4123.80
Start longitude	12425.21	12420.71	12424.94	12424.62	12421.86	12421.24	12417.86	12428.54	12424.02	12420.47	12416.99
End latitude	4055.95	4053.15	4045.18	4105.22	4105.20	4104.89	4105.64	4123.52	4124.97	4125.14	4125.24
End longitude	12424.76	12421.15	12424.12	12424.08	12421.61	12420.92	12417.73	12428.95	12424.70	12421.28	12418.06
Bottom depth (m)	217	106	64	367	191	168	103	222	117	94	82
Duration (hr)	0.55	0.51	0.54	0.52	0.54	0.54	0.56	0.54	0.55	0.55	0.54
Distance fished (km)	3.243	3.062	2.809	2.913	2.989	2.798	3.275	3.008	3.084	3.031	2.815
Net width (m)	12.535	12.047	12.111	13.487	13.073	12.49	13.214	13.37	13.773	12.572	12.429
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	38.4	49.4	1.7	0.7	1.8	1.1	12.6	113.0	1.3	8.0	13.9
Skates	11.4	2.4	3.2	0.7	2.9	6.6	10.0	3.8	6.1	1.3	3.6
Spotted ratfish	0.2	0.2	0.5	0.5	0.8	0.3	0.8	0.3			
Other elasmobranchs	0.7	0.0		44.4							
Pacific sanddab		69.8	24.4				14.8	4.6	2.7	2.8	6.7
Arrowtooth flounder				3.3	2.6		1.2		1.4	0.4	
Pacific halibut		6.8			15.5						
Petrале sole	0.5	2.0	9.1			1.3					1.1
English sole	2.3	27.6	5.4		2.8		0.3	8.0	0.5	0.8	11.4
Dover sole	50.7	3.9		80.6	37.2	72.7	15.1	123.6	4.1	2.3	1.1
Rex sole	23.9	2.2	4.3	115.8	28.0	28.7	22.3	9.3	19.3	8.1	4.6
Other flatfish	2.7	1.7	0.1	3.3	1.2	6.8	2.7	0.5	0.4	0.4	0.1
Sablefish				155.3	3.1			3.4	0.5		
Pacific cod											
Lingcod	1.1						2.3	2.7		4.1	
Pacific whiting	142.4	2,105.7	2,461.0	225.5	830.0	739.9	827.9	102.2	210.0	557.0	1,433.0
Other roundfish	4.5	2.8	0.9	33.3	2.8	1.5	16.9	10.5	13.6	8.2	2.9
Shortspine thornyhead	2.0			12.6				1.0			
Longspine thornyhead											
Rougheye rockfish	4.2			1.7				0.8			
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish	1.6			1.0	5.1	1.2	0.0	12.7			
Spitnose rockfish	1.2				32.7	8.7		29.0			
Yellowtail rockfish											
Chilipepper	0.5										
Bocaccio											
Canary rockfish		2.1				1.6					
Redstripe rockfish											
Stipetail rockfish	47.0				40.4	29.8	0.1	4.1	0.1		
Other rockfish	16.5	0.1		16.7	3.4	0.7	0.2	1.4	0.1	0.1	
Jellyfish			0.0					0.5			
Shrimps	0.0	0.0			0.8	2.2	0.7	0.2	0.3	0.1	
Crabs	2.5	0.4		0.2		5.7	2.2	0.7			3.4
Octopuses	0.1	0.1		0.6	0.1		0.1		0.1	0.1	
Squids		0.1		0.1	0.9	0.4		2.6		0.0	0.1
Sea stars	0.9	0.5	0.4	0.3	0.1	0.9	0.1	10.0	2.1	3.7	4.6
Sea urchins	2.9	0.0		12.1	4.0	19.1		0.3	0.0		
Total catch weight	360.6	2,278.4	2,521.8	709.9	1,015.3	936.1	930.7	445.3	263.2	602.0	1,487.9

Table A-1.-Continued.

Haul	100	101	102	103	104	105	106	107	108	109	110
Start date & time	6/29/1998 6:44	6/29/1998 10:44	6/29/1998 13:43	6/29/1998 16:23	6/29/1998 18:24	6/30/1998 7:05	6/30/1998 10:12	6/30/1998 12:30	6/30/1998 14:40	6/30/1998 16:47	7/1/1998 7:04
Station	56A	58D	58C	58B	58A	60E	60D	60C	60B	60A	62E
Start latitude	4123.50	4145.29	4143.99	4143.86	4143.73	4202.54	4203.98	4203.69	4205.15	4205.40	4223.55
Start longitude	12413.62	12431.93	12428.25	12423.70	12420.03	12438.86	12436.66	12430.48	12427.42	12424.92	12446.00
End latitude	4125.11	4146.84	4145.68	4145.44	4145.40	4204.10	4205.47	4205.37	4203.57	4203.88	4225.01
End longitude	12414.17	12431.85	12428.24	12423.63	12420.37	12438.95	12436.84	12430.59	12427.69	12424.62	12446.81
Bottom depth (m)	68	447	208	107	77	469	335	115	101	81	471
Duration (hr)	0.55	0.5	0.56	0.54	0.57	0.51	0.5	0.56	0.53	0.51	0.54
Distance fished (km)	3.093	2.887	3.154	2.948	3.163	2.891	2.788	3.111	2.952	2.85	2.959
Net width (m)	12.765	14.641	13.372	13.481	12.23	13.956	14.034	13.081	12.938	12.378	13.306
Net measured?	N	Y	Y	Y	Y	Y	Y	N	N	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	34.9	0.6	16.2	8.0	8.3	4.7	4.7	1.2	13.8	14.2	1.5
Skates		1.1	11.1	8.0	0.4	0.4	0.8	0.8	0.3		3.2
Spotted ratfish			2.6		0.6			0.3		0.7	
Other elasmobranchs		30.0	0.3	0.1		20.2	5.6				
Pacific sanddab	114.2	11.7	2.7	4.9	18.3	7.7	7.3	4.5	7.8	12.7	6.5
Arrowtooth flounder			0.5	1.4	2.4			0.8	0.9	11.0	
Pacific halibut	12.7	20.8	3.7	6.5	33.0			0.8	3.0	21.7	
Petrale sole	2.9	144.2	79.5	4.7	0.7	397.2	10.8	7.6	2.4	0.9	398.5
English sole	9.5	101.0	75.4	39.8	3.2	51.9	34.9	35.0	11.9	3.1	49.5
Dover sole	0.7		13.7	4.3	1.5		0.5	4.1	1.4	0.1	1.3
Rex sole			17.3			146.7	122.7				105.1
Other flatfish		158.7									
Sablefish											
Pacific cod	0.6		0.3		7.2			5.5			
Lingcod	288.9	18.8	253.2	506.7	842.0	18.5	5.8	309.2	467.4	834.4	32.6
Pacific whiting	9.4	36.9	1.5	15.0	11.7	48.9	16.9	3.0	3.8	3.1	66.6
Other roundfish		29.9	1.9			23.4	7.2				12.3
Shortspine thornyhead		2.1	0.1			8.4					
Longspine thornyhead											
Rougheye rockfish							3.7				
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish			4.5				2.6				
Splittnose rockfish			0.8				74.7				
Yellowtail rockfish											
Chillipepper			19.2				0.4				
Bocaccio											
Canary rockfish								2.3			
Redstripe rockfish											
Stripetail rockfish			46.8					0.1			
Other rockfish		11.6	3.6		0.0	9.0	2.5	0.4			
Jellyfish						0.1					
Shrimps		0.3	1.3	0.0		0.0	0.0	0.2	0.0	3.9	1.2
Crabs	1.5	2.3	0.4	1.5	6.0	0.1	0.3	0.2		0.1	1.2
Octopuses	0.1	3.2	0.1			0.4	0.1			0.0	0.2
Squids		3.8				0.7	0.1			0.8	1.3
Sea stars	3.3	4.6		4.4	2.9	2.1	3.2	2.5	0.7	0.8	2.2
Sea urchins		28.6	14.2	5.8	1.6	18.7	14.3	0.1			
Total catch weight	503.5	599.7	570.9	614.6	943.6	761.3	319.5	379.3	514.0	908.5	704.5

Table A-1.-Continued.

Haul	111	112	113	114	115	116	117	118	119	120	121
Start date & time	7/11/1988 9:24	7/11/1988 12:28	7/11/1988 14:14	7/12/1988 6:53	7/12/1988 8:55	7/12/1988 11:24	7/12/1988 13:42	7/12/1988 17:43	7/13/1988 6:55	7/13/1988 9:26	7/13/1988 13:20
Station	62D	62B	62A	64D	64C	64B	64A	66D	66F	66E	66C
Start latitude	4223.28	4224.04	4225.01	4241.84	4242.38	4241.97	4243.67	4304.26	4303.88	4305.10	4303.95
Start longitude	12443.95	12434.06	12431.58	12445.58	12442.67	12436.75	12434.65	12447.00	12453.84	12451.74	12437.32
End latitude	4224.65	4225.55	4226.54	4243.28	4243.86	4243.07	4244.57	4305.07	4305.35	4306.50	4305.56
End longitude	12445.11	12434.94	12432.57	12445.32	12442.98	12438.10	12436.35	12448.62	12453.54	12450.56	12437.21
Bottom depth (m)	248	79	63	465	192	109	76	204	429	257	125
Duration (hr)	0.53	0.54	0.58	0.59	0.54	0.54	0.56	0.49	0.51	0.54	0.55
Distance fished (km)	3.002	3.054	3.145	3.092	2.814	2.792	2.871	2.668	2.777	3.055	3.002
Net width (m)	13.262	12.611	12.416	12.482	13.156	12.767	11.445	12.716	13.923	13.153	13.364
Net measured?	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	3	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	20.9	8.8		3.0	3.0	0.5	2.6	0.2	1.2	2.2	9.9
Skates	30.9		1.3	12.1	13.7	22.8	0.3	5.6	5.7	4.3	25.2
Spotted ratfish	2.9		0.6		1.4	7.1	0.8			1.0	1.6
Other elasmobranchs	1.0			12.1					8.9		
Pacific sanddab		22.8	48.8			0.3	5.5				2.5
Arrowtooth flounder	3.1			8.3	9.2				2.5	0.9	25.2
Pacific halibut	7.8				11.3					27.2	22.8
Petrale sole	5.7	7.4	2.1		0.6	1.6	1.0				6.7
English sole		30.6	11.7		14.7	252.4	13.4	34.3		19.2	31.3
Dover sole	143.0		0.0	59.7	76.6	22.6	0.1	32.7	55.4	77.4	88.1
Rex sole	44.9	2.6	4.7	2.0	32.4	19.3	3.0	37.3	22.5	87.6	36.0
Other flatfish	2.5	0.1	1.6		2.8	2.7	0.0	6.9	0.5	5.5	4.2
Sablefish	75.8			62.4	18.1			11.7	146.9	52.3	9.9
Pacific cod											
Lingcod	0.9		0.3		4.8		0.2				2.5
Pacific whiting	28.2	63.5	1.4	37.9	543.9	84.6	408.0	691.1	26.6	304.7	460.3
Other roundfish	3.6	48.5	37.1	10.0	12.4	4.4	22.0	4.5	13.8	17.2	6.9
Shortspine thornyhead	3.2			10.8	0.7			2.5	14.6	10.1	
Longspine thornyhead				0.5					1.7		
Roughye rockfish											
Pacific ocean perch	1.9							78.3		3.8	
Silvergray rockfish									0.9		
Darkblotched rockfish	1.7				4.6			6.8		7.6	
Spitnose rockfish	3.9				2.0			5.2		254.5	
Yellowtail rockfish											
Chillipepper											2.1
Bocaccio								1.0			0.0
Canary rockfish				10.2				1.3			
Redstripe rockfish	0.4				0.8						
Stripetail rockfish	0.3				48.8			35.2			0.2
Other rockfish	0.1			3.2	10.7	0.7	11.8	18.0	9.6	64.3	0.5
Jellyfish		0.7				7.5					
Shrimps		0.0		0.1	0.0	0.1		0.4	0.0	4.9	1.0
Crabs	0.5	10.5		0.9	1.5	1.5	1.0	0.5	2.2	0.0	1.1
Octopuses	0.0			0.1		0.0			0.6		
Squids		0.0					0.2		4.8	4.2	0.0
Sea stars	16.7	1.0	0.5	3.1	1.7	6.4	4.5	2.2	1.5	5.8	2.0
Sea urchins	3.6		4.5	7.4					19.0	1.6	0.1
Total catch weight	421.7	199.0	115.9	232.0	816.7	448.8	475.2	975.8	342.1	958.7	743.2

Table A-1.-Continued.

	122	123	124	125	126	127	128	129	130	131	132
Start date & time	7/3/1988 16:06	7/3/1988 17:52	7/4/1988 7:00	7/4/1988 9:31	7/4/1988 12:25	7/4/1988 14:18	7/4/1988 16:25	7/5/1988 7:08	7/5/1988 9:38	7/5/1988 11:57	7/5/1988 15:12
Station	66B	66A	68E	68D	68C	68B	68A	70F	70E	70D	70C
Start latitude	4302.41	4303.49	4322.31	4323.50	4323.46	4323.65	4324.20	4342.51	4343.38	4343.60	4341.84
Start longitude	12434.98	12430.84	12443.93	12438.74	12432.34	12428.10	12424.93	12442.95	12438.70	12432.98	12427.81
End latitude	4303.90	4305.05	4323.87	4325.02	4325.06	4325.22	4325.63	4344.02	4344.93	4345.14	4343.34
End longitude	12434.22	12430.52	12443.63	12438.09	12432.22	12427.66	12423.89	12442.96	12438.76	12432.65	12428.21
Bottom depth (m)	101	66	481	188	117	101	85	486	342	176	126
Duration (hr)	0.55	0.55	0.53	0.54	0.55	0.54	0.55	0.5	0.5	0.51	0.53
Distance fished (km)	2.965	2.929	2.963	2.942	2.966	3.028	2.995	2.82	2.889	2.875	3.046
Net width (m)	12.984	12.18	13.903	13.527	13.158	11.375	12.525	13.555	13.316	13.256	13.577
Net measured?	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
Performance	0	0	0	0	0	0	4	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	13.2	5.4		5.6	8.1	1.4	0.3		19.3	1.4	0.2
Skates	1.9	14.2	0.1	4.0	1.4	1.2	21.1	0.6	5.7	9.1	
Spotted ratfish		6.3				0.1	1.5		1.6		
Other elasmobranchs			19.0					15.4	0.6		
Pacific sanddab	8.5	3.3			9.0	23.8	36.6		16.8	1.6	28.5
Arrowtooth flounder	4.1		19.1	9.3	5.3	0.8			11.5	11.5	1.6
Pacific halibut		43.1							22.1	22.1	
Petrale sole	9.8			5.0	1.1	2.9	3.4		3.3	3.3	0.5
English sole	43.3	3.0		7.3	11.3	31.5	36.0		1.1	1.1	28.4
Dover sole	24.5		38.7	43.2	0.6	0.5	0.2	42.2	83.9	27.3	4.0
Rex sole	4.4	1.7	30.3	34.7	2.5	4.8	1.4	31.1	83.5	13.4	16.7
Other flatfish	2.3	5.5		3.0	0.5	0.3	0.1		1.0	1.8	2.1
Sablefish	3.9		148.3	4.4				76.4	48.7	15.9	
Pacific cod											
Lingcod	0.2			3.7	0.8						
Pacific whiting	270.8	871.9	29.6	395.1	553.4	912.0	259.3	72.8	162.5	1,267.0	25.4
Other roundfish	9.0	2.7	14.6	3.8	137.6	3.6	12.2	13.2	12.7		3.0
Shortspine thornyhead			91.2	7.3				22.9	33.4		
Longspine thornyhead			0.5					11.8			
Rougheye rockfish				0.1							
Pacific ocean perch											
Silvergray rockfish				1.9							
Darkblotched rockfish				5.4		0.0			14.8	3.8	
Spitnose rockfish										19.8	
Yellowtail rockfish	1.3					5.3					
Chillipepper											
Bocaccio				3.5							
Canary rockfish		0.7									
Redstripe rockfish				4.7							
Stripetail rockfish	0.0			30.7	1.0	0.0			0.5		
Other rockfish	0.0	0.1									
Jellyfish		0.5									
Shrimps	0.0		0.7	2.2				0.1	0.0		
Crabs	1.1		0.9	0.1		1.0	1.7	5.7	0.8	0.5	
Octopuses									0.1		
Squids	0.0	0.2	0.0	0.0	0.0	0.0		0.3	0.6		
Sea stars	3.1	1.1	2.9	0.2	2.6	2.1	4.1	2.1	0.5	0.1	0.0
Sea urchins	0.0		13.5	9.9	0.1	1.5		1.5	10.0	1.7	12.0
Total catch weight	405.0	971.8	412.5	585.1	737.1	893.6	387.7	299.5	498.1	1,425.2	135.7

Table A-1.--Continued.

	133	134	135	136	137	138	139	140	141	142	143
Start date & time	7/5/1988 16:46	7/5/1988 18:21	7/6/1988 7:17	7/6/1988 9:48	7/6/1988 12:12	7/6/1988 14:42	7/6/1988 16:31	7/6/1988 18:28	7/7/1988 7:01	7/7/1988 9:12	7/7/1988 10:52
Station	708	70A	72J	72I	72H	72H	72G	72F	72E	72D	72C
Start latitude	4343.80	4343.86	4404.10	4404.26	4404.27	4404.55	4405.19	4404.54	4404.70	4404.14	4403.78
Start longitude	12423.43	12418.87	12457.25	12455.95	12448.34	12449.80	12443.56	12434.19	12431.55	12427.56	12424.69
End latitude	4345.44	4345.39	4405.67	4405.88	4405.72	4403.76	4404.32	4404.38	4404.41	4405.30	4405.96
End longitude	12423.60	12418.57	12457.99	12456.25	12448.92	12448.68	12444.90	12436.36	12433.67	12429.12	12425.11
Bottom depth (m)	112	102	394	213	101	91	115	125	122	118	112
Duration (hr)	0.56	0.54	0.55	0.55	0.56	0.39	0.43	0.54	0.53	0.55	0.54
Distance fished (km)	3.06	2.881	3.115	3.019	2.984	2.21	2.413	2.97	2.895	3.015	3.006
Net width (m)	13.165	12.982	13.682	13.708	13.028	12.582	12.997	12.796	13.6	12.979	12.927
Net measured?	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	-2.4	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	1.0	5.7	15.1	1.3	1.2	0.5	0.7	2.1	2.0	4.4	12.7
Skates		3.4	13.1	0.8	0.8	4.0	0.8	4.5	2.0	5.1	0.0
Spotted ratfish	1.0		0.8	0.3	0.6	0.6		0.5	1.1	0.3	0.3
Other elasmobranchs	22.9		3.2	0.0		5.1					
Pacific sanddab	27.0	102.8		0.6	0.3	1.0	2.3	0.8	4.7	20.4	74.7
Arrowtooth flounder		0.7	15.0					1.8			
Pacific halibut											
Petrale sole	0.2	5.9		1.6	2.5	1.0		0.2	0.9	4.1	10.4
English sole	33.6	43.0		5.4		0.1	9.8	0.3		1.0	12.5
Dover sole	5.0	2.0	238.9	55.0		0.3	2.2	29.0	22.8	42.7	23.8
Rex sole	5.9	14.6	65.2	46.2	0.2		6.1	27.0	20.0	17.4	13.2
Other flatfish	0.8	1.5	3.9	19.5	0.9	4.1	0.7	1.2	0.8	0.8	0.4
Sablefish			247.7	206.6			3.0			3.2	2.4
Pacific cod	0.2	9.1			0.2	0.8	0.2			0.3	0.3
Lingcod	154.8	238.6	145.6	11.6	2.1	1.5	12.6	36.5	80.7	151.9	747.4
Pacific whiting			17.8	2.5	1.0	1.7	1.3	3.5	4.1	3.5	10.3
Other roundfish	54.6	8.1	14.4								
Shortspine thornyhead											
Longspine thornyhead											
Roughieye rockfish			1.7	2.6							
Pacific ocean perch											
Silvergray rockfish				0.9					2.5	0.5	1.3
Darkblotched rockfish				8.6			19.1		1.8	4.1	3.2
Spitnose rockfish		5.7			1.0	25.8					
Yellowtail rockfish											
Chillipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish				3.9		15.8	33.9				
Other rockfish	8.9	0.3	1.9	2.9	0.3	0.1	24.3	0.4	1.8	11.1	4.5
Jellyfish								0.2	0.2		
Shrimps			0.1					0.0	0.1		
Crabs	0.8	1.8	2.2	1.0				0.0	5.5	6.3	4.5
Octopuses											0.2
Squids		0.1									0.0
Sea stars	7.1	4.3	1.8	0.4	0.2	0.1	0.1	0.1	1.2	4.1	4.5
Sea urchins	5.5	2.8	2.3	1.2			0.1				
Total catch weight	336.5	456.7	798.6	372.9	10.4	63.1	117.3	108.4	152.2	285.4	928.8

Table A-1.-Continued.

Haul	144	145	146	147	148	149	150	151	152	153	154
Start date & time	7/7/1988 13:25	7/7/1988 15:15	7/7/1988 18:02	7/8/1988 7:09	7/8/1988 9:15	7/8/1988 11:49	7/8/1988 14:12	7/8/1988 16:33	7/8/1988 18:03	7/8/1988 6:49	7/8/1988 11:42
Station	72B	72A	74A	74I	74H	74G	74F	74E	74E	74D	74B
Start latitude	4403.77	4403.78	4424.05	4424.61	4424.66	4422.85	4422.69	4424.55	4424.55	4424.28	4422.67
Start longitude	12417.82	12412.38	12416.56	12450.47	12448.16	12446.30	12444.00	12435.98	12437.72	12433.57	12424.10
End latitude	4405.29	4405.39	4425.70	4425.86	4426.13	4424.32	4423.89	4424.35	4425.24	4425.83	4424.04
End longitude	12418.51	12412.44	12417.00	12451.73	12447.00	12445.29	12442.70	12437.95	12435.78	12432.59	12425.10
Bottom depth (m)	83	56	68	438	285	161	128	111	112	102	80
Duration (hr)	0.54	0.55	0.59	0.55	0.57	0.56	0.54	0.55	0.54	0.58	0.54
Distance fished (km)	2.97	3.004	3.117	3.059	3.221	3.077	3.185	3.185	2.907	3.168	2.883
Net width (m)	12.418	11.759	12.034	13.248	13.508	13.121	12.805	12.657	12.757	13.243	12.334
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	-5.1	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	2.1	9.2	9.3	3.8	1.4	11.5	5.2	1.3	0.6	0.9	4.7
Skates			4.6	3.8	1.4	14.0	5.8	16.4	11.1	4.3	0.0
Spotted ratfish	0.8	0.4		9.8	5.5	0.4	0.5			2.4	
Other elasmobranchs					0.1		0.2	4.5	50.0		
Pacific sanddab	106.5	27.0	420.6	18.8	32.8	2.8	18.7	37.1	36.7	1.2	27.7
Arrowtooth flounder											
Pacific halibut							4.9		4.3	29.6	
Petrale sole	0.5	0.4	2.3			0.9	0.4	0.5	0.4	0.1	1.3
English sole	18.7	35.6	20.0		3.1	14.1	35.0	49.0	27.5	4.1	47.9
Dover sole	0.2	0.1	0.4	47.4	98.9	12.6	43.1	0.4	1.0	10.0	2.6
Rex sole	11.2	15.0	38.4	4.8	40.9	14.7	9.1	8.0	4.9	3.7	18.2
Other flatfish	0.3	6.8	17.3	1.3	1.3	1.6	2.7	0.2	0.8	8.7	5.0
Sablefish				88.6	175.1	9.0	3.3				
Pacific cod	0.4								0.3	12.4	3.9
Lingcod	96.7	3.9	135.4	108.3	160.0	1,054.1	1,018.2	81.9	119.7	29.2	
Pacific whiting	1.0	4.8		6.4	3.9	5.9	24.5	1.1	1.4	0.9	0.1
Other roundfish				2.2	16.4						
Shortspine thornyhead											
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch					2.4		0.5		0.8	0.8	0.6
Silvergray rockfish											
Darkblotched rockfish					1.3						
Spitnose rockfish					10.7						
Yellowtail rockfish											
Chilipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	1.0			5.0	1.5	8.3	3.7			15.6	0.8
Jellyfish					0.5						
Shrimps				0.2							
Crabs	2.8	0.6	0.2	0.0	0.2	1.8	0.1	0.0		0.1	0.3
Octopuses				0.2							
Squids		0.5	0.1	0.6	4.1	0.6		0.0			0.2
Sea stars	0.2	0.4	0.1	0.9	0.3	0.9		0.0	0.5	0.4	1.8
Sea urchins				0.8	86.4					1.2	
Total catch weight	244.7	104.7	649.5	288.4	646.7	1,154.1	1,175.9	201.3	260.2	124.8	117.4

Table A-1.-Continued.

Haul	155	156	157	158	159	160	161	162	163	164	165
Start date & time	7/10/1998 16:36	7/10/1998 18:08	7/10/1998 19:36	7/11/1998 6:59	7/11/1998 9:10	7/11/1998 11:17	7/11/1998 14:57	7/11/1998 16:52	7/12/1998 6:55	7/12/1998 9:30	7/12/1998 13:03
Station	76A	76B	76C	76H	76C	76F	76E	76D	80I	80H	80C
Start latitude	4444.05	4443.90	4444.05	4445.18	4445.32	4445.42	4445.27	4443.71	4503.83	4504.57	4503.66
Start longitude	12415.92	12419.97	12423.22	12446.10	12443.45	12434.88	12433.08	12428.29	12444.17	12442.28	12435.31
End latitude	4445.19	4444.94	4444.91	4443.67	4444.05	4443.94	4445.43	4445.14	4505.08	4504.18	4505.14
End longitude	12414.25	12418.29	12421.33	12445.99	12442.35	12435.52	12430.91	12427.31	12445.74	12440.79	12436.30
Bottom depth (m)	80	101	110	388	323	212	161	131	483	291	405
Duration (hr)	0.56	0.54	0.54	0.52	0.51	0.53	0.53	0.55	0.57	0.54	0.54
Distance fished (km)	3.066	2.962	2.981	2.806	2.78	2.89	2.934	2.956	3.137	3.12	3.05
Net width (m)	12.322	12.465	12.579	13.748	13.95	13.552	13.172	12.827	12.808	12.903	12.875
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Performance	0	0	0	0	0	0	0	0	0	4.1	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	9.6	2.7	1.1	3.6	1.2	20.5	1.7	5.1	1.2	0.8	0.7
Skates	17.8	0.4	4.5	1.1	2.7	0.1	0.0	11.9	1.2	35.5	1.1
Spotted ratfish	0.5										
Other elasmobranchs									1.6	0.0	
Pacific sanddab	183.4	119.6	65.7				0.2	9.9			
Arrowtooth flounder				5.8	3.5	27.3	13.3	1.0			4.8
Pacific halibut		5.3	9.9				380.3	7.3		0.7	
Petrale sole	2.1	2.3	2.7				2.6	4.3			
English sole	34.9	12.6	19.8			0.6	1.2	9.4			
Dover sole	1.1	0.3	1.2	18.6	34.0	24.4	2.3	5.5	12.0	0.7	49.6
Rex sole	7.1	5.0	9.2	3.5	2.1	16.5	1.8	11.3	1.4	10.0	1.3
Other flatfish	3.7		0.1	0.1		2.2	4.7	0.5		0.0	
Sablefish				42.4	26.2	34.5	3.4	1.3	25.7	0.9	21.6
Pacific cod							15.4				
Lingcod	0.2		4.2			3.9	104.7	0.2			
Pacific whiting	8.5	4.1	242.3	130.2	419.8	3,632.7	9.8	1,780.6	133.2	206.6	93.1
Other roundfish	0.0	0.1	9.6	6.1	4.6	5.3	4.9	21.0	1.8	0.1	6.4
Shortspine thornyhead				64.2	41.0	5.5			38.2	6.5	31.2
Longspine thornyhead									12.2		
Rougheye rockfish				5.3							2.6
Pacific ocean perch					0.4	2.4				130.5	12.6
Silvergray rockfish						4.7				2.2	
Darkblotched rockfish						36.3				28.4	
Splitnose rockfish					1.7						
Yellowtail rockfish								1.5			
Chillipepper											
Bocaccio											
Canary rockfish							4.9				
Redstripe rockfish							2.1				
Stripetail rockfish						7.0					
Other rockfish				6.7	1.6	27.8	17.4	1.2		253.7	8.4
Jellyfish								0.1			0.4
Shrimps				0.2			0.1		0.3		0.2
Crabs		0.4		0.1		1.3	1.5		0.5		0.0
Octopuses									0.4	1.9	0.9
Squids	0.0	0.0	0.2		4.6			0.0		0.1	0.3
Sea stars	1.6	0.2	0.1	0.5	0.9	0.0	0.5	0.7	2.1	1.5	0.7
Sea urchins				0.3	1.4			0.0	0.5		1.9
Total catch weight	270.6	153.1	370.9	290.3	549.3	3,660.0	572.9	1,873.2	245.4	685.7	251.3

Table A-1.-Continued.

Haul	166	167	168	169	170	171	172	173	174	175	176
Start date & time	7/12/1988 15:01	7/12/1988 17:34	7/13/1988 6:52	7/13/1988 9:22	7/13/1988 11:45	7/13/1988 14:11	7/13/1988 17:26	7/14/1988 6:44	7/14/1988 9:19	7/14/1988 11:30	7/14/1988 13:47
Station	80F	80E	80D	80C	80B	80A	84a	84B	84C	84D	
Start latitude	4504.16	4504.02	4503.85	4503.54	4503.61	4503.30	4524.91	4525.34	4525.18	4525.05	4525.30
Start longitude	12432.10	12427.10	12422.55	12415.16	12411.41	12406.70	12406.72	12410.39	12413.36	12416.43	12423.08
End latitude	4505.28	4505.29	4505.31	4505.04	4505.23	4504.86	4523.37	4523.81	4523.61	4523.45	4523.95
End longitude	12433.18	12425.86	12421.70	12414.68	12410.95	12406.23	12406.51	12410.53	12413.74	12416.29	12422.45
Bottom depth (m)	346	330	245	154	122	83	99	122	148	165	202
Duration (hr)	0.53	0.51	0.54	0.53	0.55	0.55	0.54	0.55	0.53	0.55	0.47
Distance fished (km)	2.832	2.855	2.923	2.88	3.074	2.961	2.891	2.847	2.966	2.982	2.686
Net width (m)	12.393	14.138	13.764	13.642	12.589	12.214	12.264	13.226	13.528	13.753	13.883
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	3.4	2.2		8.7	29.9	9.3	27.7	10.2	2.4	5.1	0.8
Skates	1.5	3.5	0.8		2.5		0.7	1.4	3.4	4.0	0.8
Spotted ratfish				0.8	1.8		0.5	2.8	0.5	0.2	
Other elasmobranchs						2.1					
Pacific sanddab				10.7	34.5	34.5	10.7	22.8	14.5	16.9	6.1
Arrowtooth flounder		6.7	46.9	25.3	16.0			5.9	20.4		
Pacific halibut			100.2	10.9							
Petrale sole				2.2	7.0	2.4	13.0	5.0	2.1	2.8	
English sole				0.5	46.1	6.0	77.5	32.2		0.3	
Dover sole	63.9	22.3	24.4	18.2	1.7	0.2	3.3	23.2	32.4	21.2	8.8
Rex sole	13.7	3.7	66.5	16.7	2.1	14.7	15.6	16.0	20.0	12.9	
Other flatfish	0.4	0.8	5.9	1.7	0.2	7.5		1.3	0.9	2.9	1.2
Sablefish	6.9	30.1	16.8	9.1	2.4			641.6	29.7	11.0	4.3
Pacific cod											
Lingcod					3.8	2.2			2.3	3.9	
Pacific whiting	124.6	59.5	44.7	1,740.4	159.7		397.3	809.3	579.1	380.5	54.5
Other roundfish	2.2	7.9	0.8	26.4	108.4	1.3	2.4	16.6	5.0	4.7	1.7
Shortspine thornyhead	18.4	41.8	25.4						1.5	3.5	2.4
Longspine thornyhead											
Rougheye rockfish				0.2						2.9	0.1
Pacific ocean perch	3.3	0.6	6.7								
Silvergray rockfish									1.9	4.6	0.4
Darkblotched rockfish	1.9	13.9	18.9	0.7						0.0	0.8
Splitnose rockfish	2.3	46.0	4.8							0.0	
Yellowtail rockfish											
Chilipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish			0.3								19.9
Other rockfish	1.5	3.4	2.2	5.8	0.6		0.1	0.5	2.8	5.1	5.6
Jellyfish											
Shrimps	0.1	0.2	2.2						0.2	2.2	0.7
Crabs	0.5	0.7	0.7	1.6			0.6	0.7	2.5	5.5	1.2
Octopuses	0.2	0.1	0.1							0.0	0.1
Squids	34.6	29.9	15.3		0.2	0.0	0.0			0.0	
Sea stars	1.5	1.7	1.8	0.4	0.2	0.1	0.6	2.8	1.8	0.4	1.9
Sea urchins	12.5	2.9	17.7	0.9					1.3	12.6	8.6
Total catch weight	341.7	287.6	404.5	1,881.6	417.1	88.1	551.4	1,593.1	727.7	503.7	124.5

Table A-1.-Continued.

Haul	177	178	179	180	181	182	183	184	185	186	187
Start date & time	7/14/1988 16:39	7/14/1988 19:00	7/15/1988 7:01	7/15/1988 9:14	7/15/1988 13:26	7/15/1988 16:10	7/15/1988 17:52	7/15/1988 19:23	7/16/1988 6:54	7/16/1988 8:47	7/16/1988 11:00
Station	84F	84G	88J	88I	88H	88G	88F	88E	88D	88C	88B
Start latitude	4524.39	4525.39	4546.19	4545.72	4545.16	4546.27	4544.02	4545.21	4546.12	4543.55	4543.62
Start longitude	12430.40	12435.03	12445.27	12439.27	12437.17	12435.15	12430.50	12429.90	12420.52	12415.32	12411.92
End latitude	4524.59	4524.36	4544.72	4544.87	4543.65	4544.85	4545.24	4543.94	4544.94	4545.22	4545.21
End longitude	12432.64	12437.62	12446.02	12441.34	12436.51	12434.38	12431.87	12428.27	12421.84	12415.14	12411.75
Bottom depth (m)	412	422	403	235	207	193	183	174	144	132	111
Duration (hr)	0.53	0.52	0.51	0.58	0.54	0.54	0.55	0.55	0.54	0.53	0.56
Distance fished (km)	2.957	2.844	2.921	3.683	2.944	2.812	2.869	3.158	2.78	3.128	2.957
Net width (m)	13.961	13.781	13.91	13.828	13.563	13.415	13.563	13.257	13.766	13.23	12.526
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	2.3	1.5		0.7	2.5	1.4	2.4	6.2		10.2	12.1
Skates	6.3	1.9		7.4	4.7	0.8	1.6	3.9	10.2	1.7	1.1
Spotted ratfish				0.4	2.0		4.7	1.0	2.0	2.1	
Other elasmobranchs	2.4	0.4	3.2	0.2							3.0
Pacific sanddab								0.2	1.1	29.1	24.4
Arrowtooth flounder		3.8		4.8	3.8	2.0	15.4	11.5	12.1	17.1	11.7
Pacific halibut											
Petrale sole								1.1	1.1	6.8	11.1
English sole				0.5	0.4	1.2	2.1	0.3	0.6	1.6	27.1
Dover sole	40.2	0.9	23.5	83.6	49.0	13.6	40.0	54.3	17.4	35.6	5.2
Rex sole	1.1		0.3	45.6	18.5	25.6	49.6	43.0	22.0	10.6	6.9
Other flatfish				1.7	0.9	0.6	4.5	4.0	3.3	2.2	0.6
Sablefish	26.3	56.0	22.0	14.8	9.9	2.3	16.3	7.8	7.1	3.3	
Pacific cod								1.0			
Lingcod						9.7	6.7	4.6	4.9	8.4	3.2
Pacific whiting	5.3	7.0	63.6	52.6	51.5	298.6	118.3	55.3	22.2	341.6	238.1
Other roundfish	2.8	1.6	1.3	0.3	1.0	0.3	0.6	1.0	1.7	1.8	17.2
Shortspine thornyhead	36.8	35.4	11.1	4.7	5.2	8.7	23.6	12.9			
Longspine thornyhead	0.3	4.9	0.1								
Roughyea rockfish	3.9	0.7	10.0	1.8	10.4	0.7	2.3	0.4	0.1		
Pacific ocean perch		20.4	2.1								
Silvergray rockfish											
Darkblotched rockfish	0.6			22.7	34.0	7.7	0.7	18.2	0.2	1.1	
Splitnose rockfish	0.1			1,297.4	3.9	1.0	1.9	1.3			
Yellowtail rockfish						57.5	3.1			7.2	
Chilipepper											
Bocaccio											
Canary rockfish					3.0			1.7			3.9
Redstripe rockfish					0.3						
Stripetail rockfish					73.4	10.9					0.0
Other rockfish	5.9	6.1	0.5	1,060.3	24.8	17.1	5.8	7.9	1.5	10.3	1.3
Jellyfish			0.4	3.2	0.0	0.1				0.3	0.0
Shrimps	0.1	0.1	0.0	2.9	0.1	0.0	0.7	0.1	0.0	0.0	0.0
Crabs	0.0	0.3	0.3	2.8	0.8		0.4			1.1	1.3
Octopuses											
Squids		0.1	0.0	0.1	0.1	0.1		0.1	0.0	0.1	0.1
Sea stars	1.8	1.4	0.8	0.4	0.0	0.2	1.1	1.1	0.4	4.0	0.9
Sea urchins	0.9	3.1	0.1	8.0	49.9	14.8	25.7	18.5	28.9	8.9	
Total catch weight	142.0	169.2	164.5	2,626.2	350.3	474.9	328.4	257.6	137.4	518.1	358.3

Table A-1.-Continued.

Haul	188	189	190	191	192	193	194	195	196	197	198
Start date & time	7/18/1988 12:56	7/18/1988 10:13	7/18/1988 11:53	7/18/1988 14:06	7/18/1988 15:31	7/18/1988 17:05	7/18/1988 18:27	7/19/1988 6:46	7/19/1988 9:01	7/19/1988 11:52	7/19/1988 15:26
Station	90C	92a	92b	92c	92d	92e	92f	92g	92h	92i	96d
Start latitude	4555.22	4604.16	4603.76	4603.72	4603.93	4603.64	4603.93	4605.18	4603.66	4605.30	4625.12
Start longitude	12411.58	12406.11	12412.72	12422.74	12425.54	12428.95	12431.59	12438.18	12442.31	12445.82	12431.73
End latitude	4553.66	4605.85	4605.39	4604.95	4605.34	4605.04	4605.12	4603.59	4605.22	4604.59	4623.72
End longitude	12411.44	12406.98	12412.96	12424.24	12426.57	12429.98	12433.10	12438.13	12442.13	12447.36	12432.72
Bottom depth (m)	97	66	88	124	129	137	142	172	234	476	148
Duration (hr)	0.55	0.57	0.56	0.58	0.55	0.54	0.54	0.55	0.56	0.53	0.54
Distance fished (km)	2.919	3.325	3.044	2.999	2.968	2.92	2.942	2.97	2.929	2.978	2.903
Net width (m)	12.568	12.104	11.897	12.418	13.009	13.027	12.957	13.288	12.872	11.989	12.835
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	101.6	34.0	5.7	10.3	3.0	3.9	1.7	2.3	0.6		36.1
Skates	7.0			8.0	6.1	9.3		7.0	0.5	1.5	
Other elasmobranchs		3.7	0.9	4.7	3.3	3.8	1.1	0.0	0.3		
Pacific sanddab	15.1	58.9	9.8	1.3	0.9	2.9	4.6	0.3			1.6
Arrowtooth flounder	2.3			1.4	5.5	12.9	6.3	28.0	15.4	7.7	3.3
Pacific halibut		19.6					11.7		31.9		6.8
Petrale sole	4.2	3.4	8.9	5.2	6.8	4.4	0.9	0.6	0.5		0.7
English sole	58.9	27.5	26.8	1.1	0.2	0.2	0.4	0.6	0.5		28.4
Dover sole	2.6	1.7	1.4	68.7	83.6	28.9	17.1	28.4	7.1	17.7	7.2
Rex sole	11.2	43.4	38.9	20.4	24.5	19.6	14.6	42.6	51.9		15.9
Other flatfish	0.1		0.1	1.3	0.7	0.4	0.4	0.7	1.8		10.8
Sablefish				1.2	3.1	5.6	1.1	30.8	73.7	78.5	0.9
Pacific cod											
Lingcod			1.7			1.7					
Pacific whiting	1,910.4	19.7	66.2	177.4	49.9	38.9	43.0	92.5	587.3	30.4	288.4
Other roundfish	6.8	5.0	17.5	0.6	1.0	0.4	1.5	3.4	4.1	2.5	420.2
Shortspine thornyhead								0.7	0.2	14.3	
Longspine thornyhead								0.3		2.3	
Rougheye rockfish									359.9		
Pacific ocean perch											
Silvergray rockfish											
Darblotched rockfish					0.5	3.3	5.9	10.4	23.6		77.6
Splithnose rockfish						0.1			0.2		
Yellowtail rockfish				5.7	14.2	3.4	176.6				3.1
Chillipepper											
Bocaccio											
Canary rockfish							1.7	2.8			
Redstripe rockfish											
Stripetail rockfish											
Other rockfish				0.0	0.9	0.1	9.2	7.7	8.8	0.5	4.3
Jellyfish	0.1		4.4		0.2	4.9			0.9		
Shrimps				0.1	0.1				0.2	0.2	
Crabs	0.8	2.4	2.6	1.7	1.9					10.0	
Octopuses											
Squids		0.4	0.2		0.0				0.1	0.0	0.0
Sea stars	0.1			0.1	0.0	0.7		0.4	0.1	0.0	0.0
Sea urchins				0.0	0.1	0.0		0.1	4.2	1.2	1.7
Total catch weight	2,121.7	219.8	185.1	309.3	206.7	145.9	297.6	260.2	1,173.2	172.0	887.1

Table A-1.-Continued.

Haul	199	200	201	202	203	204	205	206	207	208	209
Start date & time	7/19/1998 18:01	7/20/1998 6:42	7/20/1998 8:30	7/20/1998 12:18	7/20/1998 13:37	7/20/1998 15:25	7/20/1998 17:40	7/21/1998 6:39	7/21/1998 6:53	7/21/1998 14:30	7/21/1998 17:40
Station	96c	96a	96b	96a	96b	96c	96d	96e	96f	101b	103a
Start latitude	4625.25	4623.17	4623.64	4643.45	4643.69	4643.56	4643.81	4644.52	4643.54	4703.53	4725.32
Start longitude	12427.97	12417.30	12424.93	12419.92	12424.00	12429.13	12438.12	12444.25	12448.01	12440.27	12438.44
End latitude	4623.67	4624.77	4625.21	4644.98	4645.25	4645.33	4645.22	4645.99	4644.96	4705.09	4723.70
End longitude	12428.24	12417.39	12425.29	12420.64	12424.64	12429.97	12439.23	12445.35	12449.39	12440.59	12437.98
Bottom depth (m)	126	69	108	69	82	98	137	158	194	103	82
Duration (hr)	0.55	0.59	0.57	0.57	0.56	0.6	0.53	0.55	0.58	0.57	0.56
Distance fished (km)	2.957	3.014	2.957	2.998	3.009	3.469	2.979	3.068	3.181	2.912	3.068
Net width (m)	12.981	11.929	13.067	12.465	12.364	12.678	13.888	13.696	13.416	13.074	12.555
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	52.4	63.5	85.8	15.5	39.1	22.8	13.0	9.0	3.2	53.7	26.8
Skates				1.5	3.9	1.0			12.6	1.8	0.9
Spotted ratfish	0.3	1.1							0.4		
Other elasmobranchs											
Pacific sanddab	16.4	22.7	7.0	68.5	32.7	20.5	10.0	0.3	7.5	14.1	14.8
Arrowtooth flounder	4.7		2.7		0.3	4.5	18.2	15.7		5.9	
Pacific halibut	6.3			11.7	7.6	6.5					13.7
Petrale sole	0.3	4.0	0.3	0.4	7.4	4.4	1.5			3.9	4.3
English sole	7.2	7.5	5.0	47.9	39.5	20.3	1.3	0.1	6.2	7.2	68.9
Dover sole	53.6	72.6	46.7	0.1	13.3	8.1	12.3	30.1	7.8	30.2	3.4
Rex sole	42.6	44.0	41.5	31.9	28.9	8.8	20.5	20.5	39.4	13.8	28.6
Other flatfish	4.2	0.3	0.3	0.1	0.2	0.1	0.3	2.2	0.3	0.7	0.1
Stablefish			7.2				3.5	11.1	12.5	1.4	
Pacific cod	1.3									1.3	4.5
Lingcod					0.0				109.3		
Pacific whiting	642.5	544.4	1,510.6	115.0	437.0	235.8	385.2	258.9	362.8	1,186.5	134.3
Other roundfish	0.9	21.7	0.6	20.5	14.8	31.3	39.5	25.6	38.2	37.0	0.5
Shortspine thornyhead											
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish	0.7					0.0	1.7	15.5	3.4		
Spitnose rockfish									7.9		
Yellowtail rockfish	84.0	0.8	45.4			9.7	13.4	14.2	30.7	5.2	1.4
Chilipepper											
Bocaccio											
Canary rockfish			1.2				1.1	1.1	22.5		
Redstripe rockfish											
Stripetail rockfish								0.3	36.1		
Other rockfish	0.7	1.0			16.6			36.2	18.4		
Jellyfish										0.2	
Shrimps		1.2	0.5	0.8	0.8				1.0	1.6	9.4
Crabs											
Octopuses		0.0	0.1	1.1	0.2	1.0	0.2	0.1		0.0	
Squids		0.7		0.2	0.0		0.8	0.2	0.7		0.8
Sea stars	0.3						0.2	0.1	3.0		
Sea urchins											
Total catch weight	918.5	785.5	1,754.7	315.2	625.8	374.9	527.6	441.2	725.8	1,364.4	312.6

Table A-1.-Continued.

Haul	210	211	212	213	214	215	216	217	218	219	220
Start date & time	7/22/1998 6:35	7/22/1998 8:53	7/22/1998 11:27	7/22/1998 14:08	7/22/1998 16:34	7/23/1998 7:01	7/23/1998 9:06	7/23/1998 11:28	7/23/1998 13:51	7/23/1998 17:08	7/23/1998 18:42
Station	104a	104b	104c	104d	104e	104f	105c	105d	105e	105b	105b
Start latitude	4733.69	4733.69	4733.71	4733.56	4735.92	4734.43	4743.82	4743.61	4743.75	4743.59	4745.15
Start longitude	12438.97	12449.93	12452.77	12455.98	12503.60	12506.44	12457.39	12500.37	12505.15	12446.34	12446.74
End latitude	4735.38	4735.18	4735.19	4734.98	4734.54	4735.65	4745.54	4745.25	4745.30	4745.17	4743.56
End longitude	12439.29	12450.99	12453.86	12457.03	12502.10	12507.23	12458.00	12501.48	12504.23	12446.59	12446.51
Bottom depth (m)	66	118	136	165	205	477	123	148	233	78	78
Duration (hr)	0.56	0.54	0.55	0.56	0.63	0.44	0.59	0.6	0.55	0.56	0.55
Distance fished (km)	3.165	3.101	3.059	2.948	3.182	2.67	3.333	3.457	3.189	3.088	2.979
Net width (m)	12.529	13.402	13.654	13.47	12.969	13.584	13.135	13.589	13.125	12.432	12.003
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	3.1	0	0	0	0	-5.1	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	47.5	142.2	115.5	10.0			219.0	47.5	7.5	36.5	123.6
Skates	20.8		3.6		8.6	0.5	25.9	11.5	2.3		0.9
Spotted ratfish				0.1	294.0	1.0	0.6	0.5	0.2	1.1	
Other elasmobranchs					3.8	0.7					
Pacific sanddab	358.5	8.1	2.2	0.1	15.1		16.3	1.9	93.7	54.8	58.7
Arrowtooth flounder		19.7	19.4	17.6	33.6		29.4	53.7			
Pacific halibut				9.6	4.7					45.5	26.6
Petrale sole	0.7	1.3	0.2				1.9			0.8	0.3
English sole	126.1	6.6	0.9	1.0			12.6	1.2	21.9	12.5	47.7
Dover sole	1.7	48.5	18.2	24.6	36.0	16.5	26.6	42.9	17.6	1.2	3.2
Rex sole	19.1	7.8	6.8	24.3	59.6	1.5	12.3	32.9	14.1	32.1	19.3
Other flatfish	0.6	2.6	3.3	1.3	1.5	0.6	5.4	9.3	5.1	5.4	1.5
Stablefish		22.8	61.6	52.5	88.3	4.5	2.7	12.5	44.4		
Pacific cod					4.3		1.7			0.9	
Lingcod			1.0	9.6	3.8				2.3		
Pacific whiting	72.3	2,772.7	3,657.7	847.5	79.4	16.7	1,902.1	847.2	70.0	188.9	78.5
Other roundfish	36.7	23.1	13.5	2.7	0.5	3.5	8.0	18.1	3.8	1.5	1.7
Shortspine thornyhead						9.6			7.9		
Longspine thornyhead			0.1	18.1		10.9					
Rougheye rockfish					25.5				84.1		
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish		2.1	3.1	2.8			1.8	6.3	17.0		
Spitnose rockfish				0.2	2.5				7.0		
Yellowtail rockfish		14.9	73.7	210.5	318.5		60.0	67.4	12.0		
Chillipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	4.5		3.1	18.4	0.5	0.3	0.6	0.6	3.1		
Jellyfish				0.6	26.1			0.5			
Shrimps			0.0	0.1	0.5	0.6	0.0	0.1	0.4	0.0	0.2
Crabs	3.6				0.1	0.6			0.0		
Octopuses						0.2					
Squids	0.0					0.7	0.1	0.1	0.0	0.0	0.6
Sea stars	0.3				0.2	0.5	0.9	0.4	3.8	0.5	
Sea urchins					0.1	0.5		0.4	2.5		
Total catch weight	692.6	3,072.4	3,984.0	1,251.6	1,007.5	70.0	2,327.9	1,154.5	420.4	384.1	363.4

Table A-1.-Continued.

Haul	221	222	223	224	225	226	227	228	229	230	231
Start date & time	7/24/1998 6:35	7/24/1998 8:43	7/24/1998 10:16	7/24/1998 11:56	7/24/1998 14:22	7/24/1998 16:10	7/24/1998 18:19	7/25/1998 7:15	7/25/1998 14:23	7/25/1998 17:10	7/26/1998 6:40
Station	105a	108a	106b	106c	106d	106e	106e	106g	108k	108l	108H
Start latitude	4743.62	4754.95	4755.32	4755.57	4755.21	4755.45	4752.80	4753.02	4807.41	4807.08	4803.78
Start longitude	12442.56	12450.15	12456.18	12503.06	12507.08	12511.37	12507.88	12516.87	12540.36	12538.90	12533.02
End latitude	4745.14	4753.58	4753.88	4754.14	4753.72	4753.85	4754.27	4751.95	4805.95	4805.62	4804.96
End longitude	12443.12	12449.16	12455.37	12502.49	12506.41	12510.85	12508.79	12515.26	12539.58	12537.86	12534.51
Bottom depth (m)	62	70	101	127	153	177	168	393	223	192	167
Duration (hr)	0.56	0.56	0.55	0.54	0.53	0.56	0.56	0.63	0.54	0.56	0.58
Distance fished (km)	3.015	2.949	2.963	3.247	3	3.058	3.058	3.603	3.02	3.086	3.12
Net width (m)	11.916	11.475	12.313	13.016	13.572	13.959	13.455	12.44	12.998	12.901	12.865
Net measured?	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N
Performance	0	0	0	0	0	-2.4	0	-5.41	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	38.4	24.0	121.5	35.1	8.3	8.3	5.8	11.8	4.7	5.4	1.9
Skates	0.4			6.1					0.2		
Spotted ratfish			0.6		0.6		2.7		1.5	0.1	5.4
Other elasmobranchs								2.2			
Pacific sanddab	178.1	78.5	35.9	28.3			6.2	8.3	44.1	22.6	285.7
Arrowtooth flounder			5.2	17.4	9.6				10.4		
Pacific halibut		9.1		6.2							
Petrале sole	0.2	3.6	2.4	1.0							1.4
English sole	66.2	67.9	31.4	3.1	1.8		0.9			0.7	
Dover sole	0.6	2.5	8.8	16.3	30.0	1.9	28.9	22.8	26.0	11.9	50.9
Rex sole	7.2	12.2	23.1	3.9	23.1	6.5	3.8	3.8	29.7	6.2	1.4
Other flatfish	2.0	0.8	0.6	3.6	6.6	0.1	6.1	0.2	3.6	1.8	1.8
Sablefish				4.4	26.7	11.9	30.8	5.4	67.8	18.1	60.7
Pacific cod			2.2			2.6				1.6	7.9
Lingcod		2.1	9.4	23.1		5.8	2.0				6.1
Pacific whiting	32.5	24.7	142.2	4,556.6	106.5	24.0	5.4	8.3	206.1	134.4	0.4
Other roundfish	11.6	13.3	11.8	11.3	3.9		4.0	0.1	21.0	1.9	
Shortspine thornyhead								2.6	0.5		
Longspine thornyhead											
Rougheye rockfish					1.5		0.3	1.5			
Pacific ocean perch						0.9	0.7	12.9	560.8	138.5	
Silvergray rockfish							2.9	0.7		1.5	10.7
Darkblotched rockfish				1.7	11.1				2.7	37.9	
Splitnose rockfish									10.0		
Yellowtail rockfish				73.8	99.6	31.4	69.8		5.1	33.9	3.6
Chilipepper											
Bocaccio									4.0	2.2	13.2
Canary rockfish							3.7		1.2	11.1	28.7
Redstripe rockfish										3.9	
Stripetail rockfish							0.2			0.8	
Other rockfish					8.1	14.3	44.2		334.6	50.2	61.7
Jellyfish		0.1	0.0		0.5			0.2		0.2	
Shrimps						0.2	0.1	0.1	0.3	0.0	
Crabs											1.8
Octopuses								1.1			
Squids	0.1	0.0					1.1	0.5		0.3	
Sea stars		1.4	0.3			0.2	0.6	0.8		0.1	
Sea urchins					0.1						
Total catch weight	337.6	242.0	396.3	4,793.0	338.2	93.4	223.3	90.1	1,334.5	485.5	554.6

Table A-1.--Continued.

Haul	232	233	234	235	236	237	238	239	240	241	242
Start date & time	7/26/1998 8:47	7/26/1998 11:10	7/26/1998 14:35	7/26/1998 17:06	7/27/1998 6:41	7/27/1998 8:39	7/27/1998 11:11	7/27/1998 13:51	7/27/1998 17:20	7/28/1998 6:43	7/28/1998 9:07
Station	108g	108f	108d	108c	108b	108a	110a	112a	112b	110b	110c
Start latitude	4807.41	4805.27	4804.68	4803.24	4805.89	4805.11	4815.41	4822.14	4824.12	4813.99	4814.58
Start longitude	12530.40	12524.60	12509.29	12504.95	12459.21	12457.80	12453.39	12449.43	12448.18	12457.80	12459.98
End latitude	4805.93	4806.87	4804.57	4804.36	4804.63	4803.52	4813.77	4823.34	4824.79	4815.42	4815.96
End longitude	12529.60	12524.75	12511.67	12506.28	12500.21	12458.48	12453.71	12447.68	12446.70	12456.98	12458.83
Bottom depth (m)	138	117	140	132	136	105	77	131	223	209	176
Duration (hr)	0.56	0.57	0.58	0.55	0.54	0.54	0.55	0.56	0.33	0.56	0.54
Distance fished (km)	3.149	3.418	3.08	3.007	2.923	3.299	3.202	3.274	2.252	2.988	2.99
Net width (m)	12.5	12.945	12.983	12.833	12.609	12.45	11.993	12.327	12.863	13.761	13.147
Net measured?	Y	N	Y	N	N	Y	Y	N	N	Y	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	16.1	34.7	16.0	124.2	263.1	240.9	8.3	24.0	28.9	59.1	16.1
Skates	0.0	16.3	4.3	56.4	1.0	1.9	48.9	1.3	62.4	7.4	186.2
Spotted ratfish	0.4	537.6	10.6	5.5			0.5	0.2	23.1	6.7	12.5
Other elasmobranchs											
Pacific sanddab	9.5	3.4	15.2	2.9		77.3	85.1		0.1		
Arrowtooth flounder	143.4	8.1	224.2	41.9	16.3	2.2	0.6	5.2	29.2	71.3	30.3
Pacific halibut	32.8	35.5	18.8	83.9		44.6					59.3
Petrale sole	30.2	22.0	5.0	18.2	9.2	2.9	0.2	9.3	0.6	0.4	
English sole	4.5	0.8	6.3	3.1	7.8	18.0	33.5	56.7	10.8	1.1	0.1
Dover sole	0.9	1.9	41.3	30.9	8.6	2.9	0.6	42.0	214.3	86.6	17.3
Rex sole	0.2		2.5	3.1	5.0	6.6	24.7	5.1	37.0	29.1	5.0
Other flatfish		62.2	6.1	1.9	1.0	1.0	0.8	0.8	7.8	4.1	
Sablefish	4.8		65.3		8.6	0.3			4.4	99.5	1.1
Pacific cod	6.6		3.9	6.2	1.1	8.7	1.1		5.0	39.1	5.9
Lingcod	16.3			15.5	1.8	0.9		0.9		1.8	35.3
Pacific whiting	310.7	0.7	2.3		320.5	4,716.9		1,059.4	73.2	44.4	3.3
Other roundfish	18.6	2.0	1.9		13.1	17.8	3.0	16.6	0.5	2.3	0.1
Shortspine thornyhead									2.7	23.3	9.4
Longspine thornyhead											
Roughye rockfish										0.0	
Pacific ocean perch										17.3	4.7
Silvergray rockfish											
Darkblotched rockfish										6.7	
Spitnose rockfish											
Yellowtail rockfish											
Chillipepper											
Bocaccio	23.1		93.9	1,028.6	308.2					3.5	
Canary rockfish	1.8	1.2		5.8	4.9						
Redstripe rockfish				0.2	11.4						
Stripetail rockfish											
Other rockfish	0.4	25.3	5.6	12.5	0.7			0.1	0.2	2.1	27.8
Jellyfish	0.1	0.0			0.1				0.3		
Shrimps					0.1				0.2	2.0	0.9
Crabs									0.5		
Octopuses											
Squids											
Sea stars		0.1	0.2	0.8	0.0		0.1	1.3	0.9	0.0	0.6
Sea urchins		0.0	0.3	0.1					3.4	0.5	1.2
Total catch weight	620.5	771.4	523.7	1,441.7	984.9	5,140.0	205.5	1,222.9	505.6	508.3	422.1

Table A-1.-Continued.

Haul	243	244	245	246	247	248	249	250	251	252	253
Start date & time	7/29/1998 11:33	7/29/1998 13:28	7/29/1998 15:48	7/29/1998 18:08	7/30/1998 6:40	7/30/1998 8:58	7/30/1998 11:03	7/30/1998 14:34	7/30/1998 16:07	7/30/1998 18:31	7/31/1998 7:34
Station	110d	110e	110f	110h	110g	110i	110j	110k	110l	110m	110p
Start latitude	4814.27	4814.15	4814.55	4817.27	4816.66	4812.59	4812.71	4814.00	4815.15	4811.51	4816.53
Start longitude	12502.42	12506.52	12509.45	12512.93	12509.91	12516.48	12519.79	12521.82	12527.13	12529.32	12548.68
End latitude	4815.66	4815.52	4813.47	4815.92	4818.05	4813.92	4814.21	4812.88	4813.56	4812.54	4815.13
End longitude	12502.51	12505.23	12510.91	12513.20	12508.61	12515.16	12517.98	12523.35	12527.21	12530.99	12547.52
Bottom depth (m)	294	121	213	202	120	122	126	108	132	148	199
Duration (hr)	0.51	0.58	0.56	0.54	0.59	0.6	0.66	0.56	0.55	0.58	0.56
Distance fished (km)	2.88	3.326	3.039	2.611	3.345	3.096	3.752	2.954	2.967	3.003	3.077
Net width (m)	12.57	12.814	13.21	14.147	12.131	12.631	12.989	12.669	12.347	12.287	12.728
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Performance	0	0	0	0	0	-2.4	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	21.9	109.6	9.0	10.4	84.6	17.5	29.5	16.8	1,639.8	794.7	
Skates	5.0		9.4	4.2	5.9		6.6		15.2	5.8	
Spotted ratfish	3.6	2.2	2.4	4.6	2.9	0.8	0.4	5.0			
Other elasmobranchs											
Pacific sanddab		3.1			0.6	0.7	17.3	10.0	6.3	0.6	
Arrowtooth flounder	17.1	28.6	59.6	132.4	56.7	48.2	76.5	1.6	106.6	1,292.2	64.4
Pacific halibut	16.9	109.0			71.5	45.6	16.0	66.7	138.5	6.5	17.4
Petrale sole		2.0			4.8	3.9	0.2	20.2	2.1	2.1	
English sole			0.7				8.8		14.5	18.7	4.6
Dover sole	33.5	7.6	120.9	47.1	34.8	20.8	18.5	5.6	3.0	14.4	68.0
Rex sole	0.7	2.5	36.4	36.7	1.8	2.6	1.0	0.2	0.2	1.8	48.1
Other flatfish	0.1	1.7	3.7	12.6	2.7	15.8	15.8	30.2	0.4	0.4	1.9
Sablefish	32.2	2.6	127.4	35.6	16.1	7.0	9.5		87.7	135.5	24.4
Pacific cod		4.2	2.8	7.5	2.4	6.2	20.5	1.6	21.0	4.2	17.1
Lingcod					4.9	16.8	2.0	1.8	14.7	42.2	1.7
Pacific whiting	17.6	12.7	72.7	49.4	2.4	29.7	58.8				23.1
Other roundfish	0.6	1.2	0.2	7.7	1.8	0.8	2.1	0.3	140.7	0.8	0.7
Shortspine thornyhead	21.3	0.4	6.4	13.8							0.6
Longspine thornyhead											
Rougheye rockfish	1.6			1.1	1.8						
Pacific ocean perch		0.1	51.8								576.4
Silvergray rockfish						3.1				4.1	20.0
Darkechoed rockfish		0.1		0.4							0.2
Spitnose rockfish											
Yellowtail rockfish		970.5	5.6		173.5	181.0	2,104.7		168.3	66.9	31.0
Chillipepper											
Bocaccio											
Canary rockfish			1.4		104.1	5.3	0.9		4.0	10.9	6.2
Redstripe rockfish		3.5				99.4	443.2		7.9	10.3	35.6
Stripetail rockfish										5.0	
Other rockfish	0.3	219.4	5.1	6.5	66.3	91.0	156.1		8.6	27.5	220.1
Jellyfish	0.2		0.5	1.2							
Shrimps	0.7		0.1	2.5	0.2		1.7				0.6
Crabs			1.6								
Octopuses											
Squids	1.6			0.4	0.2	0.0	1.6	0.2	0.1	0.1	
Sea stars		2.5		4.4	0.5	0.8	2.6				
Sea urchins	0.5	0.5		4.4	0.5	0.8	2.6				
Total catch weight	176.0	1,484.1	517.6	377.5	640.4	581.7	2,998.0	158.6	2,416.0	2,446.0	1,196.3

Table A-1.-Continued.

Haul	254	255	256	257	258	259	260	261	262	263	264
Start date & time	7/31/1998 13:02	7/31/1998 15:33	7/31/1998 18:07	8/1/1998 6:57	8/1/1998 9:16	8/1/1998 11:41	8/1/1998 13:47	8/1/1998 15:49	8/1/1998 18:05	8/2/1998 6:40	8/2/1998 8:37
Station	112r	112a	112p	112m	112i	112k	112j	112i	112h	112g	112f
Start latitude	4822.84	4827.87	4825.19	4825.19	4822.91	4823.82	4824.33	4825.89	4824.92	4824.94	4824.72
Start longitude	12607.96	12604.22	12556.84	12547.54	12547.56	12540.46	12530.52	12522.56	12519.41	12513.44	12514.04
End latitude	4824.13	4826.40	4825.08	4825.51	4824.42	4824.18	4824.19	4824.86	4823.45	4825.39	4823.10
End longitude	12609.61	12603.99	12559.10	12549.80	12547.48	12542.65	12532.67	12524.13	12520.86	12515.61	12514.50
Bottom depth (m)	372	196	188	141	152	141	136	166	125	178	197
Duration (hr)	0.58	0.55	0.55	0.55	0.57	0.57	0.53	0.56	0.59	0.55	0.54
Distance fished (km)	3.962	2.789	2.989	3.141	3.025	3.065	2.795	2.788	3.287	2.896	3.11
Net width (m)	12.705	12.722	13.114	13.009	13.009	12.553	13.12	13.842	12.573	14.087	13.692
Net measured?	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	-2.4	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	0.5	6.6	0.5	39.3	4.6	90.6	35.7	212.8	161.4	39.9	52.0
Skates	39.5	9.5	0.6	1.0				24.3	7.9	10.2	12.8
Spotted ratfish	0.6	1.6	1.4	2.7	0.6	0.3	0.4	7.4	3.5	3.7	11.7
Other elasmobranchs											
Pacific sanddab					0.1				0.1		
Arrowtooth flounder	67.9	270.6	98.2	47.2	36.3	10.5	19.5	52.8	51.7	26.4	14.2
Pacific halibut	10.5	35.6	18.0	0.3	0.3		12.9		0.6		
Petrale sole	4.6		2.3	0.3	1.9		0.8		0.6		
English sole	0.6		27.2	24.5	25.2	5.8			11.4	0.5	
Dover sole	51.3	20.6	79.0	143.2	143.9	102.3	104.8	76.1	34.6	31.9	45.5
Rex sole	32.5	6.6	44.5	61.4	18.0	31.6	42.4	59.0	17.1	8.8	3.4
Other flatfish	0.3	1.0	14.1	3.9	1.2	4.6	3.9	30.0	3.4	7.4	2.5
Sablefish	3.5	199.2	11.8	31.3	120.8	58.0	234.6	122.1	61.3	15.6	13.4
Pacific cod		3.2	7.7		5.1	0.4	0.6	2.6	9.4	28.3	
Lingcod		9.8		2.8							
Pacific whiting	10.7	2.9	44.8	14.7	7.2	14.1	149.0	90.4	125.4	49.4	76.8
Other roundfish	0.9	0.3	0.6	0.3	0.8	0.9	1.6	6.4	6.0	2.1	5.1
Shortspine thornyhead	18.4	0.3	19.1	1.0				0.4		8.0	7.8
Longspine thornyhead											
Rougheye rockfish	252.8	2.0	19.0			0.6		3.2	10.5	3.4	2.1
Pacific ocean perch	231.4										
Silvergray rockfish		14.8		4.8							
Darkblotched rockfish	4.1		1.0			1.0		7.5		9.7	2.6
Spitnose rockfish										0.4	0.1
Yellowtail rockfish		37.7	40.5	16.9	6.0	6.9	29.8	0.9	7.4		
Chilipepper											
Bocaccio											
Canary rockfish		86.2	32.3	13.5	5.1	1.2					
Redstripe rockfish		28.8	10.8	26.6	19.0	20.8					
Stripetail rockfish			0.2								
Other rockfish	2.8	55.1	21.2	14.6	17.3	62.9	24.7		1.5		
Jellyfish	0.8				0.1					1.0	1.2
Shrimps	0.4	0.1	0.1				0.0	9.0		2.7	2.0
Crabs			0.6								
Octopuses	1.0										
Squids											
Sea stars	0.1	0.1	2.0	0.3	0.2	0.4	0.7	0.9	0.2	0.7	0.4
Sea urchins			6.2	0.4	0.6	2.3	1.1	20.0	0.7	4.5	2.2
Total catch weight	739.4	792.3	504.5	454.5	414.0	415.0	662.5	725.8	514.8	254.7	256.0

Table A-1.--Continued.

Haul	265	266	267	268	269	270	271	272	273	274	275
Start date & time	8/2/1998 10:23	8/2/1998 12:06	8/2/1998 13:55	8/2/1998 15:59	8/2/1998 18:08	8/3/1998 6:51	8/3/1998 6:50	8/3/1998 10:49	8/3/1998 12:47	8/3/1998 15:11	8/3/1998 17:23
Station	112E	112d	112c	113a	113b	113d	113e	113f	113g	113h	
Start latitude	4825.30	4825.94	4824.79	4834.57	4833.55	4837.43	4835.47	4835.77	4835.66	4835.44	4836.57
Start longitude	12505.69	12504.26	12452.08	12447.32	12452.43	12504.31	12505.33	12517.37	12521.11	12523.86	12535.44
End latitude	4823.85	4824.91	4826.25	4834.15	4833.86	4836.05	4835.81	4834.70	4835.36	4835.53	4835.88
End longitude	12506.57	12503.19	12450.85	12445.06	12450.15	12503.25	12507.67	12515.50	12518.52	12526.16	12533.27
Bottom depth (m)	113	119	322	82	86	90	109	123	133	141	133
Duration (hr)	0.54	0.43	0.56	0.55	0.54	0.61	0.53	0.56	0.58	0.51	0.57
Distance fished (km)	2.893	2.345	3.131	2.935	3.016	2.934	2.96	3.055	3.164	2.839	2.975
Net width (m)	12.536	12.016	11.288	11.232	12.745	11.203	12.384	12.944	12.898	12.088	12.802
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	-2.4	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	355.7	339.9	73.8	13.5		615.9	1,181.8	654.6	340.7	254.0	347.3
Skates		8.4	28.4	0.8	3.7	8.5	7.0	18.1	6.8	17.6	26.1
Spotted ratfish		1.0	35.4	6.8				0.5	9.2	15.4	22.1
Other elasmobranchs			0.7								
Pacific sanddab	2.7		15.8	22.2	0.3	88.9	69.5	0.8		26.5	81.7
Arrowtooth flounder	50.9	17.6					4.5	41.8	21.1		
Pacific halibut	13.4	86.1									
Petrale sole	5.0	3.0									
English sole	55.0		0.3	3.6			0.8	0.8	0.4	0.5	0.1
Dover sole	26.9	1.1	56.9	3.6	0.9		29.2	39.5	73.2	83.2	151.4
Rex sole	16.7	0.1	2.0	1.8			13.3	11.5	34.0	41.3	114.4
Other flatfish	0.5			4.4	0.8	0.1	1.3	18.1	29.2	23.7	79.2
Sablefish	0.6	2.8	2.1				0.6	10.4	27.3	250.0	334.9
Pacific cod		2.4		0.2	3.9			1.2	2.0		
Lingcod	2.5	11.4	49.4	4.6			0.5				
Pacific whiting						4.4	43.3	1,085.9	399.4	162.5	66.4
Other roundfish	11.0		0.5	20.5	18.2	14.8	16.1	5.6	11.5	15.3	20.0
Shortspine thornyhead			0.6								
Longspine thornyhead											
Rougheye rockfish		0.1	5.3						0.6	0.6	
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish								0.2	0.6		
Splittnose rockfish											
Yellowtail rockfish		7.7			3.6			2.9			
Chillipepper											
Bocaccio											
Canary rockfish		4.6					2.3	0.8			
Redstripe rockfish											
Stripetail rockfish					0.4						
Other rockfish	0.7	0.5	8.2	8.7	6.7	0.3	0.1				
Jellyfish			0.3	2.1						0.9	0.3
Shrimps			3.8				0.0		0.1	0.6	3.3
Crabs											
Octopuses											
Squids		0.5	1.0	0.2			0.6	3.8	3.8	1.0	3.5
Sea stars		0.7	3.9					0.0	10.9	3.1	4.4
Sea urchins											
Total catch weight	541.6	487.9	288.6	129.7	36.6	803.3	1,372.0	1,896.7	971.1	896.1	1,256.1

Table A-1.--Continued.

	276	277	278	279	280	281	282	283	284	285	286
Start date & time	8/4/1998 9:36	8/4/1998 17:03	8/5/1998 6:41	8/5/1998 9:55	8/5/1998 12:22	8/5/1998 14:28	8/5/1998 16:56	8/6/1998 7:17	8/6/1998 9:09	8/6/1998 11:05	8/6/1998 14:55
Station	1130	1151	115h	115g	115f	115e	115d	115a	115b	115c	117a
Start latitude	4836.44	4852.26	4855.33	4854.95	4853.75	4853.12	4856.73	4854.78	4854.88	4854.68	4915.30
Start longitude	12607.38	12630.38	12629.03	12619.32	12614.41	12609.84	12608.44	12536.04	12542.65	12600.61	12625.21
End latitude	4834.91	4854.14	4854.02	4853.48	4855.34	4854.68	4855.29	4856.10	4854.15	4856.14	4916.59
End longitude	12606.28	12631.11	12627.72	12618.26	12615.30	12610.33	12607.01	12537.70	12545.23	12602.32	12627.01
Bottom depth (m)	158	188	169	144	127	107	89	100	108	74	66
Duration (hr)	0.54	0.65	0.56	0.55	0.56	0.55	0.58	0.56	0.62	0.6	0.55
Distance fished (km)	3.152	3.615	2.926	3.016	3.147	2.984	3.206	3.19	3.443	3.427	3.3
Net width (m)	12.775	12.648	13.019	13.428	13.112	12.561	12.334	13.022	12.879	12.3	12.835
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	111.4	5.3	6.0	106.5	53.7	317.5	432.0	19.4	130.7	295.9	56.1
Skates			6.5	1.5	1.6	1.2		3.3	6.7	2.8	2.2
Spotted ratfish		2.5						16.9	36.2		1.7
Other elasmobranchs											
Pacific sanddab							25.1				
Arrowtooth flounder	470.4	163.0	91.6	92.6	0.1	26.5	111.0	7.3		11.3	5.8
Pacific halibut		7.0	588.5	8.0	84.9	0.8	18.0	16.5	6.5	72.1	5.6
Petrale sole		1.0				4.7	8.7		4.3	1.2	5.1
English sole	3.2				0.4	0.6	23.5	3.8	85.9	75.0	8.2
Dover sole	40.9	3.0	3.3	8.4	7.9	1.4	1.3	83.5	90.3		0.4
Rex sole	29.2	2.3	0.2	22.3	11.4	2.1	3.0	15.3	30.4	10.5	3.1
Other flatfish	3.9			8.1	3.6	0.2		9.0	2.7	20.9	5.9
Sablefish	233.4	78.6	589.4	74.8	38.1	3.1	0.8	18.2	2.5	0.3	
Pacific cod	3.4	4.0					12.9	13.2	2.0	6.8	44.6
Lingcod	20.0	15.8	412.3	3.4	10.7	24.8		7.1	34.0		
Pacific whiting	11.5			2,242.0	1,274.7						
Other roundfish	1,013.4	0.2	0.0	2.1	22.9	1,304.0	29.2	12.5	13.3	25.7	12.4
Shortspine thornyhead											
Longspine thornyhead											
Rougheye rockfish		28.4		0.9							
Pacific ocean perch		129.0	5.8		0.7			1.0			
Silvergray rockfish	8.2										
Darkblotched rockfish				1.4							
Spitnose rockfish	29.8	1,772.2	1.5	51.3	302.0	31.0		0.9			
Yellowtail rockfish											
Chillipepper											
Bocaccio	14.6	33.3	8.2		0.9		13.2				0.4
Canary rockfish		475.1									
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	1.8	274.2	42.9	10.7			0.6		0.2		2.4
Jellyfish											
Shrimps		0.8	0.2	0.0				0.8	0.2	0.0	
Crabs											
Octopuses									0.5		
Squids								0.0	2.0	0.9	
Sea stars	0.7	0.3			0.0	0.1	0.0	3.9		0.5	
Sea urchins	0.2			0.1				0.1		0.0	
Total catch weight	1,996.0	2,996.0	1,767.2	2,636.0	1,816.0	1,726.1	679.4	233.7	458.2	523.9	153.8

Table A-1.-Continued.

Haul	287	288	289	290	291	292	293
Start date & time	8/6/1988 16:43	8/6/1988 18:21	8/7/1988 6:38	8/7/1988 9:01	8/7/1988 10:42	8/7/1988 12:46	8/7/1988 14:51
Station	117b	117c	117d	117e	117f	117g	117h
Start latitude	4914.75	4914.41	4913.89	4913.67	4914.09	4914.36	4913.31
Start longitude	12628.35	12632.11	12636.03	12646.59	12650.08	12654.86	12658.56
End latitude	4916.08	4915.67	4914.95	4915.16	4915.66	4915.95	4914.22
End longitude	12629.60	12633.74	12637.92	12647.52	12651.08	12655.77	12700.61
Bottom depth (m)	81	102	115	130	145	166	196
Duration (hr)	0.56	0.55	0.55	0.54	0.57	0.55	0.54
Distance fished (km)	2.906	3.069	3.034	2.982	3.161	3.16	3.033
Net width (m)	12.134	13.047	13.163	13.193	13.165	13.71	13.579
Net measured?	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172
Spiny dogfish	36.1	22.7	16.2	10.4	30.3	13.4	9.2
Skates	5.5	0.5	6.4	0.2	5.3	8.7	0.5
Spotted ratfish	0.1	1.3	1.5	0.2	0.4	0.2	
Other elasmobranchs							
Pacific sanddab	20.3	42.4	83.1	0.4	0.2		
Arrowtooth flounder		59.7	187.0	107.6	301.2	69.2	54.8
Pacific halibut		5.6					
Petrale sole	2.1	2.8	4.0		0.4		
English sole	50.1	58.3	10.7	1.8	0.4		1.1
Dover sole	2.4	17.3	45.0	24.3	20.0	0.5	41.8
Rex sole	18.3	34.9	23.2	43.4	66.9	8.5	46.7
Other flatfish	2.5	0.5	6.3	4.4	4.4	2.5	4.0
Sablefish		1.7	49.6		5.4	13.1	35.4
Pacific cod	0.4	15.7	14.9	0.3	11.5		
Lingcod	15.7	24.3	20.7	24.0	24.1	6.7	6.2
Pacific whiting		0.3	291.0	3.6	2.2	1.8	24.3
Other roundfish	3.9	10.6	6.1	0.2	0.2	0.3	4.9
Shortspine thornyhead							
Longspine thornyhead							
Rougheye rockfish							
Pacific ocean perch							
Silvergray rockfish				3.2		2.4	68.7
Darkblotched rockfish							67.0
Splitnose rockfish							5.9
Yellowtail rockfish		18.9	4.0	7.0	558.9	2.2	144.0
Chillipepper							
Bocaccio		3.6	7.2	77.1	7.6	6.9	12.4
Canary rockfish			3.2			4.2	6.5
Redstripe rockfish	56.3						38.2
Stripetail rockfish							
Other rockfish				13.7	9.0	2.1	14.0
Jellyfish	1.0			0.1			
Shrimps						1.8	
Crabs		0.0					
Octopuses							
Squids			0.0				
Sea stars	0.9	2.1	3.9	4.0	1.4	0.7	2.1
Sea urchins					3.5	2.5	44.9
Total catch weight	215.6	325.5	786.2	325.8	1,053.6	147.9	635.4

Table A-2.--Station and catch data (kg caught) by major species groups for stations fished by the Vesteraalen.

Haul	1	2	3	4	5	6	7	8	9	10	11
Start date & time	6/8/1998 6:36	6/8/1998 10:11	6/8/1998 12:15	6/8/1998 14:11	6/8/1998 16:05	6/8/1998 18:00	6/8/1998 6:17	6/8/1998 8:13	6/8/1998 10:45	6/8/1998 13:08	6/8/1998 15:04
Station	1F	1E	1D	1C	1B	1A	3A	3B	3C	3D	3E
Start latitude	3434.07	3435.31	3431.21	3434.04	3434.54	3433.48	3443.81	3443.50	3441.37	3443.17	3445.67
Start longitude	12052.79	12052.08	12048.30	12048.60	12045.20	12042.82	12044.63	12046.53	12049.07	12056.48	12058.75
End latitude	3435.67	3433.94	3432.29	3435.45	3435.85	3435.11	3445.49	3445.12	3442.92	3444.74	3444.20
End longitude	12053.09	12051.39	12049.40	12048.40	12046.31	12043.31	12044.09	12046.61	12049.40	12056.85	12058.47
Bottom depth (m)	392	331	372	208	107	78	72	88	115	311	368
Duration (hr)	0.53	0.52	0.49	0.5	0.55	0.6	0.56	0.56	0.52	0.54	0.5
Distance fished (km)	3.119	2.861	3.254	3.233	3.675	3.166	3.216	3.017	2.923	2.963	2.87
Net width (m)	15.107	14.245	14.76	15.067	13.68	13.711	14.187	14.257	15.015	14.965	15.108
Net measured?	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N
Performance	0	0	0	4	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	1.7	2.2	0.6	0.8	0.8	0.3	12.7	0.3	2.3	1.6	1.6
Skates	16.0	6.5	0.1	13.6	8.8	8.8	3.3	3.3	0.1	1.1	1.1
Spotted ratfish	4.2	2.1	0.3	0.3	0.3	0.3	8.5	0.1	12.1	2.7	0.8
Other elasmobranchs	20.3	4.2	3.5	0.0	44.3	10.1	8.5	61.7	367.2	2.7	0.8
Pacific sanddab					31.3	2.6	7.0				
Arrowtooth flounder											
Pacific halibut											
Petrale sole		2.1	0.9		2.5	0.5	0.2	0.7	0.5		0.5
English sole	185.0	48.9	45.0	1.1	6.8	0.5	3.9		0.3	6.9	109.0
Dover sole	85.3	124.7	77.3	3.1	0.1		0.4		0.2	10.9	130.7
Rex sole		0.1		1.3		0.2	0.0	0.1	0.0	1.8	1.1
Other flatfish	4.1		1.6				1.7		0.0		
Sablefish											
Pacific cod											
Lingcod				2.6			0.1				
Pacific whiting	114.6	159.3	80.2	4.5	9.8	0.8	1.8	4.6	0.7	46.9	63.9
Other roundfish	9.1	1.7	1.0	3.7	39.5	5.7	172.5	7.1	562.5	0.7	2.1
Shortspine thornyhead	0.6	0.1		0.1							0.2
Longspine thornyhead											
Roughieye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Spitnose rockfish	220.6	24.8	70.3	49.8	1.1					37.9	13.5
Yellowtail rockfish											
Chilipepper									102.3		
Bocaccio											
Canary rockfish						0.1					
Redstripe rockfish											
Stripetail rockfish				203.8	2.3	0.0					
Other rockfish	1.4			1.0	0.3	0.0	0.3	0.7	57.3	0.3	1.4
Jellyfish											
Shrimps	0.0	0.0	0.1	0.2							0.0
Crabs	0.4	0.9					0.1				
Octopuses	1.8	0.5		0.3	0.4		0.6			0.3	
Squids	0.2	3.9	3.4	0.0		0.2		0.0	0.1	10.0	32.3
Sea stars	0.2	0.2	0.0		0.1		2.4	0.1	0.0	0.0	
Sea urchins	37.8	12.7	0.8	0.4						1.1	1.7
Total catch weight	707.3	396.8	285.1	296.5	140.6	20.3	224.4	75.2	1,106.0	119.5	365.1

Table A-2.--Continued.

Haul	12	13	14	15	16	17	18	19	20	21	22
Start date & time	6/9/1988 17:02	6/10/1988 6:23	6/10/1988 8:45	6/10/1988 10:28	6/10/1988 12:23	6/10/1988 14:39	6/11/1988 6:33	6/11/1988 8:07	6/11/1988 9:55	6/11/1988 11:40	6/11/1988 13:33
Station	3F	7A	7C	7D	7E	7B	11A	11B	11C	11D	11E
Start latitude	3444.75	3502.77	3503.46	3504.08	3504.16	3503.11	3522.80	3523.50	3523.29	3524.21	3524.25
Start longitude	12100.53	12046.21	12056.95	12059.68	12102.83	12050.57	12058.01	12101.06	12107.84	12110.69	12112.82
End latitude	3443.31	3504.29	3504.94	3505.59	3505.74	3504.62	3524.18	3524.72	3524.85	3525.66	3525.70
End longitude	12059.87	12046.61	12057.33	12100.00	12102.97	12050.95	12058.98	12102.18	12108.61	12111.40	12113.49
Bottom depth (m)	431	73	281	370	451	118	82	112	292	337	373
Duration (hr)	0.52	0.53	0.51	0.53	0.53	0.53	0.57	0.54	0.55	0.52	0.53
Distance fished (km)	2.918	2.885	2.815	2.847	2.947	2.902	2.992	2.848	3.158	2.912	2.859
Net width (m)	15.153	13.774	15.805	15.16	16.506	14.825	14.989	14.558	14.771	16.208	15.79
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish		6.5				10.0	20.2	5.9	3.6		3.9
Skates				11.4	2.9	0.4	0.0	0.0	0.0	1.0	0.9
Spotted ratfish	1.2	0.7		1.6	0.4		0.5	0.4	0.8		0.1
Other elasmobranchs	1.5	5.6	1.0	2.2	7.0	6.8	0.6	10.1	0.6		21.2
Pacific sanddab		3.3				13.6	9.3	16.5			
Arrowtooth flounder											
Pacific halibut		1.8		1.0			5.0	5.0			
Petrale sole		6.8					10.8	2.5			
English sole			8.9	34.7	78.1	0.2		0.4	2.8	1.4	1.2
Dover sole	56.3			53.0	23.9			0.8	0.3	0.5	2.3
Rex sole	45.1			1.2			6.8	0.3	1.6		
Other flatfish	0.1	12.5	31.1	4.7	17.3						
Sablefish	7.8									1.6	17.0
Pacific cod											
Lingcod						1.0	2.5	1.1			
Pacific whiting	169.1	3.9	31.8	130.6	91.8	3.6	3.0	0.1	135.7	107.9	240.7
Other roundfish	9.5	73.6	6.5	15.9	22.0	2.0	166.1	10.0	0.4	0.6	1.2
Shortspine thornyhead	4.0			1.3	8.7						
Longspine thornyhead					12.3						
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darblotched rockfish											
Splithnose rockfish	1.9		22.0	80.1					211.9	319.0	0.3
Yellowtail rockfish											628.6
Chilipepper			1.1	1.2		0.3	1.4	0.9	3.3		
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish						0.1	2.0	2.1	1.4		
Other rockfish	23.1	0.1		0.1	47.7	0.5	0.3	0.7	0.1		1.5
Jellyfish											
Shrimps		0.1	0.1		0.0		0.1		0.1		
Crabs	0.0	0.1	0.1	0.4			2.8				
Octopuses	1.0	0.2	0.2	0.6	0.9	1.1					
Squids	111.7	41.8	16.7	16.7	1.6	0.1	0.0	0.1	34.2	47.9	17.8
Sea stars	2.1	0.1	0.1	4.9	5.7	2.3	0.3	0.7	0.1	0.0	0.5
Sea urchins	11.3	1.0	1.0	24.1	9.4				0.2	0.6	
Total catch weight	448.0	115.5	146.0	386.8	332.7	42.3	232.3	57.5	397.1	480.9	937.6

Table A-2.-Continued.

Haul	23	24	25	26	27	28	29	30	31	32	33
Start date & time	6/12/1998 6:54	6/12/1998 8:46	6/12/1998 10:33	6/12/1998 14:15	6/12/1998 16:47	6/12/1998 19:32	6/13/1998 6:21	6/13/1998 7:57	6/13/1998 9:57	6/14/1998 9:37	6/14/1998 12:43
Station	15A	15B	15C	17A	17C	17B	19A	19B	19C	20A	20C
Start latitude	3543.05	3547.06	3546.87	3603.98	3606.99	3607.99	3625.11	3623.29	3623.90	3638.05	3631.62
Start longitude	12122.94	12128.51	12130.57	12137.56	12142.22	12141.23	12156.50	12159.55	12200.37	12200.68	12201.70
End latitude	3544.68	3545.69	3545.36	3605.40	3607.00	3607.67	3623.70	3624.91	3625.37	3636.49	3633.17
End longitude	12123.45	12127.55	12129.94	12138.49	12140.98	12140.98	12156.12	12156.92	12159.80	12200.78	12201.64
Bottom depth (m)	73	190	375	104	431	210	74	201	477	112	465
Duration (hr)	0.59	0.53	0.55	0.58	0.38	0.19	0.53	0.52	0.51	0.56	0.59
Distance fished (km)	3.131	3.009	2.985	3.004	1.912	0.537	2.734	3.158	2.866	3.094	2.985
Net width (m)	14.8	14.667	14.791	14.252	16.18	14.065	14.103	16.478	15.229	14.424	14.925
Net measured?	Y	N	N	N	N	N	N	Y	Y	N	N
Performance	0	4.1	0	0	4	-1.2	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	8.1		2.0		70.9	3.1	20.0		49.4	2.7	
Skates				6.1	12.4	9.4			1.6	0.2	19.3
Spotted ratfish	2.3	0.2	2.6		22.6	4.0	0.9	0.8	2.6	0.2	41.3
Other elasmobranchs		0.0	2.2		28.1				8.4	0.1	11.1
Pacific sanddab	35.7			11.6			5.1	5.2		16.6	
Arrowtooth flounder											
Pacific halibut		3.7		8.6							0.9
Petrale sole	1.7			4.6			2.2	3.5		0.3	
English sole	2.9			0.2	71.5	7.7		3.0	530.9	0.0	509.9
Dover sole	0.1	4.2	27.2	0.2	6.1	0.4		3.9	55.1		55.9
Rex sole	0.1	1.2	6.3	0.2	6.1	1.1	0.5	4.2		4.1	
Other flatfish	5.7	0.1		0.2							
Sablefish			13.3		28.2				16.0		70.4
Pacific cod											
Lingcod		4.7					0.1			1.1	
Pacific whiting		1.0	228.2	13.4	23.9	0.4	50.9	3.9	32.3	9.4	19.0
Other roundfish	22.3	1.9	1.8	7.4	2.7			0.5	8.0	957.8	19.4
Shortspine thornyhead			0.2		5.4				1.3		12.0
Longspine thornyhead					0.6						21.6
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Spitnose rockfish											
Yellowtail rockfish											
Chillipepper		20.2	233.0			16.8		7.6			0.3
Bocaccio	2.8	19.1		5.5		0.1	0.0	6.6		4.4	
Canary rockfish		3.3				26.0				0.1	
Redstripe rockfish		1.7				3.5	1.1				
Stripetail rockfish		180.2		0.3		7.6		5.2		0.1	
Other rockfish	0.7	16.1	0.5	1.9	48.3	3.3	0.1	1,019.7	20.7	88.1	39.4
Jellyfish											
Shrimps		0.2	0.1			1.8					
Crabs		0.0			0.0		0.1	0.7			0.0
Octopuses			0.5								
Squids	0.1	5.9	4.1	0.0	5.2		0.1	4.6	0.2	0.4	0.0
Sea stars		0.2	0.0	0.4	2.8	4.7	2.0	1.3	0.0	0.3	0.6
Sea urchins			3.5		12.8				0.1		2.3
Total catch weight	82.5	264.5	526.4	61.0	353.8	90.3	104.9	1,072.6	727.1	1,087.2	838.7

Table A-2.-Continued.

Haul	34	35	36	37	38	39	40	41	42	43	44
Start date & time	6/14/1988 15:51	6/15/1988 6:33	6/15/1988 8:26	6/15/1988 9:19	6/15/1988 10:53	6/15/1988 13:59	6/15/1988 17:09	6/15/1988 19:27	6/16/1988 6:28	6/16/1988 9:30	6/16/1988 12:34
Station	20B	22A	22B	22B	22C	22D	22F	22E	26G	26F	26E
Start latitude	3629.16	3655.09	3654.03	3654.26	3653.27	3655.86	3654.56	3654.97	3712.44	3715.27	3713.54
Start longitude	12200.46	12206.69	12209.62	12209.97	12212.56	12219.69	12221.98	12222.07	12256.17	12253.83	12249.23
End latitude	3630.66	3654.33	3654.03	3655.21	3654.19	3655.44	3654.50	3654.60	3713.62	3713.91	3714.82
End longitude	12200.04	12204.94	12209.54	12211.64	12214.14	12217.85	12219.97	12219.99	12257.37	12252.99	12250.53
Bottom depth (m)	213	59	84	86	112	205	439	390	458	327	244
Duration (hr)	0.54	0.55	0.19	0.56	0.55	0.52	0.53	0.57	0.56	0.52	0.56
Distance fished (km)	3.022	2.971	0.768	3.055	2.997	2.915	3.077	3.31	2.847	2.847	3.078
Net width (m)	14.524	13.826	15.184	14.545	14.391	14.394	14.678	14.944	14.458	14.446	14.371
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	-1.2	5.6	0	0	0	0	-5.1	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish		3.7		2.9			49.3	79.2		2.2	1.4
Skates	12.4	1.7		19.9			35.9	23.0		2.2	0.7
Spotted ratfish	3.2	0.4		22.0		1.1	7.7	23.0		0.8	
Other elasmobranchs	8.5	0.9		1.6		7.7		0.3		0.0	2.9
Pacific sanddab	7.7	5.9	0.6	2.1	6.1	9.2			0.1		
Arrowtooth flounder											
Pacific halibut											
Petrale sole	4.2	0.3	0.4	3.5	3.5	4.5	8.9	21.4		9.4	5.4
English sole	31.0	6.5	1.4	6.4	6.4	20.5	8.2	27.0		223.4	21.9
Dover sole	1.8	0.1		0.1		0.4	623.5	89.2	0.2		55.1
Rex sole	4.8	0.1	0.1	0.6	0.6	2.5	198.1	98.1	1.3		39.7
Other flatfish	7.2	6.7	0.4	0.1	5.2	0.1		0.1		2.5	7.3
Sablefish	0.4			0.4		0.4	73.2	5.7		13.7	4.3
Pacific cod											
Lingcod											
Pacific whiting	216.1	1.6		32.5		2.4	115.9	253.8		181.7	401.9
Other roundfish	0.8	250.4	5.8	13.1	3.9	641.6	13.9	9.5	0.2	13.7	2.3
Shortspine thornyhead	1.0					21.4	14.0	2.5		3.1	
Longspine thornyhead											
Rougheye rockfish								1.1			
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											0.3
Splitnose rockfish	337.2						0.6	125.4		302.9	283.4
Yellowtail rockfish			22.2								92.5
Chilipepper	60.8		1.5			16.3					
Bocaccio	0.6		15.1			1.1					
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish	316.3		0.9	0.0	116.8	52.1	65.3	8.7			3.2
Other rockfish	36.1					606.6					136.2
Jellyfish											
Shrimps	3.0					0.1			0.0		0.5
Crabs					0.0						0.0
Octopuses							3.0				
Squids	0.1	0.3	0.0	0.0			0.4	0.1		0.1	0.1
Sea stars	0.7	0.3	0.0	0.0	6.2	0.0	0.0	0.2		0.1	0.1
Sea urchins							0.0	8.4		0.1	
Total catch weight	1,053.9	279.8	54.2	15.5	311.4	1,388.0	1,218.0	777.6	1.8	890.1	1,061.0

Table A-2.-Continued.

Haul	45	46	47	48	49	50	51	52	53	54	55
Start date & time	6/16/1998 15:55	6/17/1998 6:27	6/17/1998 9:44	6/17/1998 11:33	6/17/1998 13:46	6/17/1998 18:12	6/17/1998 20:13	6/18/1998 6:22	6/18/1998 7:42	6/18/1998 9:11	6/18/1998 10:36
Station	28D	26A	26B	26C	26G	30F	30E	30A	30B	30C	30D
Start latitude	3714.00	3714.35	3714.36	3714.10	3712.60	3734.25	3735.43	3733.60	3733.77	3733.75	3733.66
Start longitude	12246.15	12231.31	12236.38	12242.72	12256.25	12301.73	12301.82	12244.10	12247.47	12251.13	12254.10
End latitude	3714.93	3715.72	3715.91	3715.54	3713.89	3735.49	3734.06	3734.83	3735.07	3735.13	3735.13
End longitude	12246.91	12232.28	12237.29	12243.74	12257.54	12302.66	12301.01	12245.42	12248.63	12252.16	12255.16
Bottom depth (m)	162	78	93	109	456	418	258	61	72	87	97
Duration (hr)	0.39	0.55	0.57	0.56	0.58	0.56	0.54	0.55	0.55	0.54	0.55
Distance fished (km)	2.295	2.919	3.189	3.082	3.001	2.994	3.001	3.013	2.958	3.025	3.165
Net width (m)	15.019	14.373	14.771	14.961	15.441	14.883	14.817	14.139	14.762	14.11	14.971
Net measured?	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y
Performance	5.23	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish			2.9	8.8	1.1			1.6	3.3	1.0	4.0
Skates	3.4	0.0	1.2	21.6	21.6	2.6	10.4		5.9	24.5	
Spotted ratfish			0.3	0.5	0.5	5.7	1.4		0.9		0.3
Other elasmobranchs		0.5	2.5	18.7	18.7	8.7		0.5	7.8	5.2	3.3
Pacific sanddab	0.7	25.9	20.2	5.4				100.9	66.6	11.5	6.4
Arrowtooth flounder											
Pacific halibut											
Petrale sole	1.4	0.2	0.6	1.2			0.8	4.0	7.8	4.6	1.1
English sole	13.1	22.1	19.1	3.0				16.2	11.2	5.9	1.7
Dover sole	4.9	0.1	0.2	1.9	223.0	566.4	84.7	0.4	0.6	1.3	1.8
Rex sole	16.6	3.5	6.2	5.4	61.1	75.8	30.6	6.0	7.1	20.7	18.3
Other flatfish	7.9	4.9	2.0	1.2			4.9	4.3	1.9	2.8	0.7
Sablefish	0.9				21.8	58.5	9.5				
Pacific cod											
Lingcod								0.2			0.5
Pacific whiting	36.9	3.1	11.9	9.3	90.0	217.2	106.2	3.8	4.8	3.9	5.5
Other roundfish	10.0	805.2	269.2	98.8	7.5	20.0	1.5	102.6	490.7	192.2	51.1
Shortspine thornyhead					2.3	19.4	2.1				
Longspine thornyhead						4.1					
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish							0.3				
Yellowtail rockfish							51.7				
Chilipepper	12.5		0.0	0.1		69.9				0.0	0.5
Bocaccio	11.6										1.3
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish	113.3			0.2			18.9				0.1
Other rockfish	59.6		0.2	4.3	49.7	82.2	0.5	0.1		0.1	0.3
Jellyfish											
Shrimps	0.0		0.5	1.4	0.0		3.1	0.4	0.3	1.1	1.0
Crabs	0.1						0.2				
Octopuses							0.0				0.0
Squids		0.1	0.3		3.6	0.2	0.2	0.2	0.1	0.1	0.0
Sea stars	1.3	0.6	0.1	0.9	0.4	0.1	0.2	1.5	0.2	0.8	0.2
Sea urchins			0.6		0.0	0.5	0.1				
Total catch weight	294.6	868.2	339.1	141.8	501.5	1,132.0	328.9	242.9	608.4	251.3	123.4

Table A-2.-Continued.

Haul	56	57	58	59	60	61	62	63	64	65	66
Start date & time	6/18/1988 14:21	6/18/1988 16:22	6/18/1988 19:25	6/19/1988 6:33	6/19/1988 9:29	6/19/1988 11:55	6/19/1988 14:11	6/19/1988 15:41	6/19/1988 17:10	6/20/1988 6:25	6/20/1988 7:59
Station	34E	34G	34I	34H	34F	34D	34C	34B	34A	37A	37B
Start latitude	3753.23	3754.36	3754.84	3754.96	3754.33	3754.10	3754.36	3754.48	3754.53	3813.56	3813.90
Start longitude	12311.01	12321.43	12327.43	12327.05	12315.99	12305.03	12300.09	12256.63	12253.91	12303.01	12306.92
End latitude	3754.59	3755.88	3755.71	3755.84	3754.92	3755.19	3755.32	3755.56	3755.38	3814.98	3815.31
End longitude	12312.07	12321.88	12327.61	12327.29	12316.39	12306.57	12301.86	12258.22	12255.85	12303.81	12307.76
Bottom depth (m)	94	113	412	284	100	87	69	63	59	67	83
Duration (hr)	0.57	0.53	0.42	0.4	0.45	0.59	0.56	0.56	0.55	0.56	0.55
Distance fished (km)	2.963	2.905	1.85	1.69	2.163	3.078	3.147	3.061	3	2.956	2.92
Net width (m)	13.943	14.5	14.572	15.017	14.413	14.506	13.761	13.206	12.961	14.626	14.457
Net measured?	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	1.2	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish		5.9	2.4		0.4						0.4
Skates			10.7	25.7			1.4				1.0
Spotted ratfish			3.7	6.8		0.3				0.6	1.1
Other elasmobranchs			4.0			3.9	5.1	1.3	0.9	1.7	19.3
Pacific sanddab	205.4	9.6			10.6	1.6	11.9	45.7	40.9	5.0	16.1
Arrowtooth flounder											
Pacific halibut											
Petrale sole	0.7	0.9			0.2	5.7	0.7	1.3	0.1	0.1	3.1
English sole	3.8	1.0			1.8	5.9	3.1	4.2	1.5	3.8	6.5
Dover sole		1.8	303.1	83.4	1.4	0.0				0.0	
Rex sole	0.2	13.4	210.0	22.6	3.9	3.6	1.2	1.7	0.1		2.8
Other flatfish	2.6	1.5	0.2	3.2	0.5	1.7	4.2	11.1	10.4	1.7	0.3
Sablefish			18.1	8.9							
Pacific cod											
Lingcod	6.5	2.9			0.2	0.1					
Pacific whiting	24.1		41.0	178.9		22.6	37.4	4.0	4.2	16.0	42.0
Other roundfish	44.5	3,048.5	3.8		0.5	602.4	49.3	183.1	590.1	22.8	630.7
Shortspine thornyhead			90.4	4.6							
Longspine thornyhead			20.3								
Rougheye rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish			6.5	28.1							
Yellowtail rockfish				1,465.2							
Chilipepper	183.1										
Bocaccio						2.9					
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish		6.2	15.4	3.3	0.2	0.0		0.3			0.0
Jellyfish											
Shrimps				0.3						0.0	
Crabs					0.1			4.8	0.6	0.4	1.1
Octopuses											
Squids	0.0		2.2		0.1	0.1	0.1	0.1	0.0	0.0	0.0
Sea stars	0.3	0.2	0.5	0.1	0.1	0.1	0.2	0.5	0.6	0.5	1.0
Sea urchins			0.2								
Total catch weight	288.2	3,275.0	795.4	1,836.0	23.8	652.7	117.6	258.7	590.3	52.9	725.5

Table A-2.-Continued.

Haul	67	68	69	70	71	72	73	74	75	76	77
Start date & time	6/20/1998 9:44	6/20/1998 11:07	6/20/1998 12:39	6/20/1998 14:51	6/20/1998 16:33	6/21/1998 6:26	6/21/1998 8:27	6/21/1998 10:01	6/21/1998 11:52	6/21/1998 13:33	6/21/1998 15:09
Station	37C	37D	37E	37F	37G	39F	39E	39D	39B	39A	39C
Start latitude	3814.10	3814.12	3814.20	3815.36	3814.88	3832.83	3832.45	3833.84	3835.07	3835.32	3833.77
Start longitude	12311.87	12314.18	12319.11	12330.14	12331.24	12341.55	12340.53	12337.10	12330.82	12324.70	12332.69
End latitude	3815.66	3815.71	3815.75	3814.79	3814.34	3834.21	3833.81	3834.61	3833.78	3833.96	3834.99
End longitude	12312.41	12314.84	12319.67	12328.34	12329.32	12342.51	12341.57	12337.85	12329.69	12323.60	12334.05
Bottom depth (m)	95	101	125	332	398	449	336	155	117	82	136
Duration (hr)	0.55	0.55	0.54	0.53	0.56	0.57	0.58	0.32	0.54	0.55	0.55
Distance fished (km)	3.004	3.104	2.996	2.853	3.073	3.032	3.063	1.832	2.932	2.992	2.999
Net width (m)	14.558	14.554	14.602	15.35	14.817	14.867	14.67	15.11	14.402	14.031	15.414
Net measured?	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	3.6	8.8	8.1	30.3	0.8	6.1	6.2	15.8	12.3	2.2	9.2
Skates		1.7		4.7	1.6	3.5	0.9	2.4	24.1		0.0
Spotted ratfish	1.0			3.2		1.8	2.4			4.3	0.4
Other elasmobranchs	1.0	0.7			0.1	5.0			1.7	10.0	
Pacific sanddab	12.0	28.2	36.5					1.4	8.2	8.3	10.5
Arrowtooth flounder						0.6					
Pacific halibut											
Petrale sole	0.2	0.2	0.7	0.6				0.7		0.3	
English sole	17.6	19.3	18.2	0.2		3.4	23.3	11.1	5.2	8.7	2.0
Dover sole	0.0	0.2	1.1	110.3	108.2	206.0	117.9	2.0	0.6	0.2	0.1
Rex sole	7.1	7.0	5.1	79.1	65.1	124.6	129.9	5.9	8.3	0.5	1.4
Other flatfish	0.5	0.9	1.4	9.0	0.7	1.0	5.9	0.5	1.2	2.3	1.9
Sablefish				12.8	11.9	79.4	42.0				
Pacific cod											
Lingcod									0.3		
Pacific whiting	54.8	26.8	87.6	516.1	146.0	63.7	331.3	7.8	13.8	26.6	48.0
Other roundfish	98.5	256.2	293.3	1.5	5.1	19.2	2.7	1.6	188.2	327.9	182.6
Shortspine thornyhead				14.8	9.1	9.0	16.2				
Longspine thornyhead						0.8					
Roughnose rockfish											
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish					0.5		5.6		0.0		0.0
Spitnose rockfish				6.9	1.8		77.8				
Yellowtail rockfish											
Chilipepper								548.2			0.8
Bocaccio			1.5								
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	0.3	0.1	0.0	0.3	3.6	21.1	23.4	53.6	0.1	0.0	0.0
Jellyfish			2.3								
Shrimps						0.0	2.7		2.1		
Crabs					0.1						
Octopuses					3.0						
Squids	0.4	0.2	0.1	3.6	3.6	0.1		0.3	0.1	0.0	0.0
Sea stars	0.1	0.8	0.4		0.0				2.0	0.5	1.1
Sea urchins	2.5	1.2	0.1	0.5	0.1	0.1	0.5		0.0	1.0	0.7
Total catch weight	200.8	353.6	458.7	793.8	361.9	545.0	790.1	649.0	268.1	393.2	263.9

Table A-2.-Continued.

	78	79	80	81	82	83	84	85	86	87	88
Start date & time	6/21/1998 18:24	6/22/1998 6:22	6/22/1998 8:05	6/22/1998 9:49	6/22/1998 11:45	6/22/1998 15:29	6/22/1998 17:07	6/22/1998 18:50	6/22/1998 20:34	6/23/1998 6:36	6/23/1998 8:24
Station	41B	41A	41C	41D	41E	43D	43C	43B	43A	45D	45C
Start latitude	3854.70	3853.41	3852.72	3855.77	3853.67	3913.17	3913.96	3913.96	3914.59	3936.11	3936.53
Start longitude	12349.85	12345.87	12351.57	12356.96	12358.15	12359.98	12357.96	12351.40	12349.70	12400.26	12357.85
End latitude	3854.20	3854.92	3854.19	3854.19	3855.07	3914.68	3915.58	3915.57	3913.11	3934.59	3934.95
End longitude	12349.53	12346.77	12352.44	12356.83	12359.07	12359.91	12357.94	12351.78	12349.33	12400.21	12357.70
Bottom depth (m)	106	81	130	288	400	413	258	112	88	427	224
Duration (hr)	0.63	0.56	0.56	0.52	0.57	0.55	0.56	0.56	0.54	0.5	0.51
Distance fished (km)	2.127	3.083	3.02	3.003	2.818	2.818	3.01	3.056	2.792	2.863	2.943
Net width (m)	14.226	14.397	14.359	14.216	14.804	15.909	14.81	14.658	13.886	15.941	13.512
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	-4.3	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish		1.3	2.8	769.1	13.5		1.4	24.4	31.8	1.0	21.4
Skates		4.4		9.3	12.1		5.3	0.7	59.9	17.1	
Spotted ratfish		1.6		3.3	1.9	4.6	20.0	0.4		6.1	11.4
Other elasmobranchs						3.9	1.1			8.4	0.1
Pacific sanddab		8.4	21.4					11.5	4.2		
Arrowtooth flounder											
Pacific halibut											
Petrale sole		2.3	2.7					3.1	1.3		
English sole		9.2	15.3	10.1	17.2	47.3	1.1	6.9	7.6		
Dover sole		0.1	1.6	64.0			84.3	0.8	0.0		28.1
Rex sole		0.6	3.2	27.4	11.0	41.3	53.4	3.8	0.8	22.6	6.7
Other flatfish		5.0	0.2	0.7			3.5	1.6	0.4	0.1	0.5
Sablefish				12.6	73.7	23.2	8.5	1.9		17.2	31.4
Pacific cod											
Lingcod		1.3	3.6	1.8				3.8	2.2		
Pacific whiting		24.2	7.6	863.8	271.3	37.9	200.3	40.4	36.3	70.9	343.0
Other roundfish		25.4	21.0	0.3	9.5	10.1	7.0	32.3	26.8	11.0	2.0
Shortspine thornyhead				4.3	2.0	2.2	0.8			13.6	3.8
Longspine thornyhead											
Rougheye rockfish					1.7	2.0					
Pacific ocean perch							0.6				
Silvergray rockfish											
Darkblotched rockfish											
Spilthrose rockfish				0.3	1.0	1.7	0.5	0.0			0.3
Yellowtail rockfish				382.7	63.1		126.7				142.4
Chillipepper											
Bocaccio			5.8					0.0			113.5
Canary rockfish			0.6						0.5		
Redstripe rockfish											
Stripetail rockfish				0.1	4.2	6.1	50.2	0.3	0.7	25.0	52.4
Other rockfish			0.4	0.8			0.6				1.2
Jellyfish								0.0			
Shrimps				0.1		0.0				0.0	0.1
Crabs			0.4	0.0		0.7	0.1	1.1	0.5	0.9	0.5
Octopuses						0.3				0.0	
Squids							0.2				3.6
Sea stars			0.2	0.9		0.1	3.9	1.8	0.2	5.0	6.7
Sea urchins			0.0	0.1		0.1	5.7	0.0		0.0	0.7
Total catch weight		83.8	88.8	2,152.0	482.1	190.6	575.2	142.3	173.4	277.9	770.3

Table A-2.-Continued.

haul	89	90	91	92	93	94	95	96	97	98	99
Start date & time	6/23/1988 9:55	6/23/1988 15:37	6/23/1988 19:25	6/24/1988 6:22	6/24/1988 8:27	6/24/1988 13:24	6/24/1988 19:14	6/25/1988 6:33	6/25/1988 8:48	6/25/1988 10:53	6/27/1988 6:49
Station	45B	45A	47A	47B	47C	49D	49A	51E	51D	51A	51C
Start latitude	3936.05	3933.03	3951.49	3951.13	3951.07	4012.17	4018.84	4033.10	4033.32	4032.55	4033.41
Start longitude	12356.51	12352.78	12403.68	12407.52	12409.05	12431.33	12424.54	12442.27	12441.45	12432.12	12437.22
End latitude	3934.44	3934.61	3952.08	3952.61	3952.55	4012.91	4019.46	4033.65	4034.73	4033.46	4034.88
End longitude	12356.38	12352.91	12405.11	12408.51	12409.84	12432.98	12425.52	12442.22	12440.56	12430.31	12436.85
Bottom depth (m)	160	113	131	277	417	462	79	428	323	87	158
Duration (hr)	0.54	0.58	0.44	0.56	0.54	0.54	0.35	0.49	0.54	0.55	0.54
Distance fished (km)	2.989	2.978	2.324	3.089	2.975	3.186	1.894	2.352	2.93	3.121	2.78
Net width (m)	13.788	14.804	14.549	15.157	15.604	14.252	14.29	14.001	13.581	13.48	14.975
Net measured?	Y	Y	N	Y	Y	N	N	N	N	N	N
Performance	0	0	0	0	0	0	2.4	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	253.9	20.5	41.8	764.7	3.0	13.8	7.7	0.6	128.9	3.7	1.1
Skates	30.9	3.2	28.3	0.6	2.3	4.5	7.7	7.7	7.7	3.7	7.2
Spotted ratfish			0.7	28.3	5.7	31.2	1.8	0.9	25.5	1.1	3.6
Other elasmobranchs				4.8	50.1	15.5	8.1	7.8	4.2		
Pacific sanddab		5.7	2.9				2.2			16.9	
Arrowtooth flounder				0.2	0.9	0.9					
Pacific halibut	10.8		21.0				14.6		0.2	31.9	2.8
Petrale sole	10.0	11.7	11.3				15.5		7.5	16.7	5.7
English sole	23.9	0.4	8.5				8.2		195.7	6.3	196.4
Dover sole	2.3	0.1	9.3				0.5		86.2	12.0	42.5
Rex sole		2.6	6.5				3.9		27.8		
Other flatfish		1.1	0.2				2.4		0.2	0.8	9.3
Sablefish	7.4			26.4	37.0	95.8		31.2	79.6		
Pacific cod											
Lingcod			12.2				0.8				
Pacific whiting	1,237.6	297.0	853.0	84.9	71.3	18.4	10.1	23.2	35.5	49.6	120.5
Other roundfish		18.4	12.7	6.8	25.3	6.4	22.2	4.2	9.0	7.3	5.7
Shortspine thornyhead					4.0	1.7		8.0	16.5		
Longspine thornyhead								2.5	3.8		
Rougheye rockfish					2.1			2.3	1.0		
Pacific ocean perch											
Silvergray rockfish											
Darkblotched rockfish											
Spittnose rockfish	2.1	0.0		2.2	220.8	158.6	0.5	133.7	195.7	6.3	196.4
Yellowtail rockfish				11.1	60.2	103.1	3.9	0.1	86.2	12.0	42.5
Chillipepper					9.3		2.4	0.1	0.2	0.8	
Bocaccio	75.7	0.2	2.7	0.1							
Canary rockfish	15.9		23.5								
Redstripe rockfish											
Stripetail rockfish	167.3		0.1	2.7							
Other rockfish			15.1	0.1	12.2	10.6	35.6	8.7	2.2		
Jellyfish											
Shrimps				0.0	0.3	0.1	0.3	0.0	0.0	5.5	0.3
Crabs		0.4		0.0	0.2	0.0	0.3	0.0	0.0	0.9	
Octopuses			0.0								
Squids		0.0	0.0		0.6	0.1	0.2	0.6	0.0	0.6	0.5
Sea stars	2.0	0.3	9.5	1.1	0.6	0.3	1.4	0.0	2.5	3.3	1.2
Sea urchins				0.6	0.2	9.4			2.4		0.3
Total catch weight	1,840.0	367.0	1,130.3	1,185.4	511.6	471.0	649.9	252.3	618.0	157.3	407.5

Table A-2.—Continued.

Haul	100	101	102	103	104	105	106	107	108	108	108	109	110	
Start date & time	6/27/1998 10:32	6/27/1998 16:03	6/28/1998 6:39	6/28/1998 9:03	6/28/1998 11:42	6/28/1998 14:20	6/28/1998 16:17	6/28/1998 19:29	6/29/1998 6:33	6/29/1998 7:30	6/29/1998 9:54			
Station	51B 4032.72 12435.31	53A 4053.15 12416.20	55E 4114.20 12425.21	55D 4114.19 12424.39	55C 4114.41 12422.32	55B 4114.05 12417.04	55A 4114.04 12412.63	57A 4134.80 12419.35	57E 4137.90 12430.72	57E 4137.90 12430.72	57E 4137.85 12430.68	57D 4134.99 12429.14		
Start latitude	4034.07 12434.34	4054.76 12415.54	4115.37 12425.88	4115.07 12425.07	4115.72 12423.25	4115.67 12417.45	4115.66 12412.32	4133.24 12418.90	4137.76 12430.74	4137.76 12430.74	4136.42 12430.69	4133.45 12429.51		
End latitude	126 0.55	65 0.58	378 0.46	273 0.51	164 0.54	95 0.56	66 0.56	73 0.51	375 0.08	375 0.08	375 0.51	214 0.51		
End longitude	2.87 14.789	3.202 14.287	2.567 15.135	2.659 14.786	2.765 15.428	3.073 14.686	3.094 14.074	2.966 14.718	0.269 13.389	0.269 13.389	2.729 15.627	2.901 14.281		
Bottom depth (m)	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y		
Duration (hr)	0	0	0	0	0	0	0	0	0	0	0	0		
Distance fished (km)	172	172	172	172	172	172	172	172	172	172	172	172		
Net width (m)	238.9	19.5	0.9	163.6	0.9	3.7	17.7	9.2	12.3	12.3	9.2	5.7		
Net measured?	36.0	19.2	1.4	34.5	6.4	7.1	0.8	4.1	0.2	0.2	4.1	0.9		
Performance	0.4	0.4	9.0	3.8	1.4	1.3	1.1					1.4		
Gear	10.0	10.3	10.3	10.0	6.7	0.4	0.0	0.2	94.0	94.0	17.2	4.6		
Spiny dogfish														
Skates														
Spotted ratfish														
Other elasmobranchs														
Pacific sanddab														
Arrowtooth flounder														
Pacific halibut														
Petrale sole														
English sole														
Dover sole														
Rex sole														
Other flatfish														
Sablefish														
Pacific cod														
Lingcod														
Pacific whiting														
Other roundfish														
Shortspine thornyhead														
Longspine thornyhead														
Rougheye rockfish														
Pacific ocean perch														
Silvergray rockfish														
Darkblotched rockfish														
Splitnose rockfish														
Yellowtail rockfish														
Chillipepper														
Bocaccio														
Canary rockfish														
Redstripe rockfish														
Stripetail rockfish														
Other rockfish														
Jellyfish														
Shrimps														
Crabs														
Octopuses														
Squids														
Sea stars														
Sea urchins														
Total catch weight	310.1	2,256.6	361.6	472.2	546.2	764.3	2,616.0	533.5	291.1	291.1	533.5	278.1		

Table A-2.-Continued.

Haul	111	112	113	114	115	116	117	118	119	120	121
Start date & time	6/29/1998 11:46	6/29/1998 14:02	6/30/1998 6:20	6/30/1998 8:25	6/30/1998 10:19	6/30/1998 12:33	6/30/1998 14:45	6/30/1998 18:30	7/1/1998 6:31	7/1/1998 8:39	7/1/1998 10:42
Station	57C	57B	59A	59B	59C	59D	59E	61D	61C	61B	61A
Start latitude	4136.40	4133.04	4154.21	4155.96	4155.94	4157.24	4156.33	4212.93	4212.74	4214.18	4214.18
Start longitude	12426.09	12422.26	12422.89	12425.15	12428.98	12434.31	12435.84	12439.26	12435.76	12431.34	12428.44
End latitude	4133.85	4134.63	4155.73	4154.44	4154.48	4155.86	4154.93	4214.46	4214.30	4215.73	4215.64
End longitude	12426.37	12422.17	12422.17	12425.56	12428.54	12433.41	12434.98	12439.69	12436.01	12431.71	12429.03
Bottom depth (m)	129	94	63	77	108	193	399	410	220	130	100
Duration (hr)	0.53	0.55	0.57	0.54	0.53	0.51	0.52	0.52	0.51	0.52	0.54
Distance fished (km)	2.917	2.958	2.985	2.887	2.782	2.905	2.877	2.896	2.914	2.965	2.831
Net width (m)	14.01	14.794	13.185	14.243	14.565	14.593	15.117	15.696	14.909	14.46	14.353
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	11.8	96.3	1.9	20.1	3.2	3.2	13.3	0.6	6.8	0.8	3.5
Skates	0.9	2.8	17.2	3.9	1.8	1.4	13.3	0.6	3.6	22.6	42.0
Spotted ratfish			0.3		0.4	1.5			26.4	3.8	1.8
Other elasmobranchs							11.0	6.8	1.8		
Pacific sanddab	2.9	6.0	112.1	10.3	2.0	3.5	4.0	15.4	0.9	1.9	4.8
Arrowtooth flounder	2.5	0.6		0.2	1.2					0.4	0.3
Pacific halibut				19.0	29.1					71.5	
Petrale sole	1.4	0.2	10.4	7.0	3.3	2.1	2.1	0.4	1.0	1.9	9.3
English sole	0.5	5.8	6.7	12.7	1.7	4.7	0.4		0.4	12.1	26.5
Dover sole	2.1	0.4	0.2	0.1	20.2	64.2	119.7	229.0	62.5	11.6	
Rex sole	34.3	8.3	8.4	6.9	42.4	53.3	64.1	41.5	69.3	17.6	5.3
Other flatfish	0.6	0.2	0.3	0.1	4.9	1.0	0.1		9.8	2.7	0.8
Sablefish						2.4	148.5	128.4	22.9		
Pacific cod											
Lingcod	5.7					0.9			46.9		0.5
Pacific whiting	510.5	470.0	1,501.3	1,516.5	154.9	183.3	78.1	5.4	49.3	158.0	1,082.7
Other roundfish	0.9	47.1	6.6	6.3	6.0	2.5	37.1	41.5	4.0	13.8	7.7
Shortspine thornyhead	0.0	0.2				0.1	15.9	38.9	3.6		
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch							0.6				
Silvergray rockfish											
Darkblotched rockfish											
Splitnose rockfish	0.2					0.5	2.9		56.1	1.1	
Yellowtail rockfish	0.6					5.7			18.5	0.1	
Chilipepper	0.2							1.1			
Bocaccio						123.5					
Canary rockfish	2.6		0.8		1.4				0.4	0.9	0.8
Redstripe rockfish											
Stripetail rockfish	0.5				0.0	50.5			3.0	1.0	
Other rockfish	3.7				0.3	23.9	21.1	7.7	6.2	1.6	
Jellyfish											
Shrimps	0.7				1.5	0.1	0.0	0.0	0.2	0.1	0.0
Crabs			1.4	1.0	0.4	0.5	0.1	0.7	0.4	529.1	9.5
Octopuses				0.1			0.6	0.2			0.1
Squids	0.0	0.0	0.0	0.0						0.0	0.1
Sea stars	0.4	1.4	0.2	1.8	2.8	0.5	5.9	9.6	2.9	1.0	2.8
Sea urchins					1.6	1.6	156.7	109.0	1.3		
Total catch weight	583.6	641.8	1,668.5	1,607.3	276.3	529.6	686.3	637.9	398.4	853.9	1,203.7

Table A-2.-Continued.

Haul	122	123	124	125	126	127	128	129	130	131	132
Start date & time	7/11/1998 14:50	7/11/1998 17:07	7/21/1998 6:31	7/21/1998 8:27	7/21/1998 10:18	7/21/1998 14:48	7/21/1998 17:58	7/31/1998 6:33	7/31/1998 8:51	7/31/1998 12:16	7/31/1998 16:16
Station	63E	63D	63A	63B	63C	65A	65B	65C	65D	65E	67G
Start latitude	4233.19	4236.28	4234.12	4233.47	4234.12	4234.05	4253.69	4253.14	4253.69	4253.01	4315.94
Start longitude	12446.97	12443.11	12430.30	12437.07	12441.21	12439.09	12443.32	12447.71	12449.40	12454.46	12452.16
End latitude	4234.61	4234.86	4235.61	4234.92	4235.54	4254.93	4255.31	4254.42	4254.15	4254.53	4314.45
End longitude	12445.95	12443.74	12429.66	12436.74	12440.97	12439.86	12443.35	12446.80	12451.50	12454.97	12452.73
Bottom depth (m)	381	264	63	108	143	96	137	213	244	421	385
Duration (hr)	0.54	0.53	0.56	0.54	0.53	0.55	0.56	0.53	0.52	0.56	0.56
Distance fished (km)	3.008	2.791	2.956	2.751	2.819	2.97	3.017	2.901	3.081	2.898	2.872
Net width (m)	15.471	14.471	13.392	15.196	14.544	14.71	14.263	14.886	14.516	15.252	14.904
Net measured?	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	43.3	0.3	1.1	1.7	1.7	1.9	22.2	9.4	61.6	61.0	5.1
Skates	10.2	14.7	0.4	12.0	0.4	18.8	11.7	3.7	21.5	10.0	12.1
Spotted ratfish	0.9			0.5	0.0		0.6	2.1	5.1	7.4	
Other elasmobranchs	1.9	1.4								4.2	0.9
Pacific sanddab			6.2	17.2	0.9	9.9	3.0				
Arrowtooth flounder	4.9	4.6			0.8	1.9	3.3	4.3	13.4	2.6	1.9
Pacific halibut											
Petrale sole			1.8	0.3	5.5	4.1	0.6				
English sole			7.3	15.1	11.6	38.1	46.6				
Dover sole	44.1	69.6	0.3	8.2	8.9	1.0	192.9	200.1	252.1	63.8	138.0
Rex sole	4.4	42.7	18.9	11.2	27.3	1.8	70.8		91.0	7.6	20.7
Other flatfish		1.2	2.9	0.5	3.2	0.3	4.1	1.9	0.8		
Sablefish	161.1	98.0			3.8	0.9	1.3	96.1	367.1	199.6	43.8
Pacific cod											
Lingcod		3.8		0.1	8.7						
Pacific whiting	157.7	397.7	23.8	18.9	927.2	3,749.7	1,249.7	426.5	538.4	20.0	354.1
Other roundfish	5.5	4.0	1.8	8.4	1.3	69.5	5.2	18.8	18.1	21.9	5.1
Shortspine thornyhead	16.2	3.9						4.7	6.0	9.3	14.3
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch	1.0	3.7			8.5			2.7	14.4		4.4
Silvergray rockfish											
Darkblotched rockfish		1.5			54.2		0.3	15.1	16.8		1.4
Spitnose rockfish	9.2	25.7					0.1	33.5	20.5		3.2
Yellowtail rockfish					9.6	130.5	14.6	1.1			
Chilipepper											
Bocaccio											
Canary rockfish				1.6	1.7	6.1	6.0	0.9	0.1		
Redstripe rockfish											
Stripetail rockfish					8.4						
Other rockfish	1.3	3.1		0.1	15.5	1.2	0.5	4.7	0.3	5.7	4.1
Jellyfish					0.5						
Shrimps	0.0	0.1		0.4			0.4	0.1	0.1	0.0	
Crabs	0.5	3.9	4.0	2.6	8.6	0.9	0.8	0.1	0.8	0.6	0.0
Octopuses		0.0									
Squids		2.3	0.8	0.0			0.0	0.8	8.1	7.4	21.4
Sea stars	1.5	0.6	1.2	1.1	0.8	2.1	1.0	0.0	1.1	2.7	6.0
Sea urchins	8.5							0.0	4.8	4.8	7.2
Total catch weight	473.1	683.0	73.8	198.8	1,105.2	4,038.0	1,635.9	954.9	1,472.7	434.2	645.2

Table A-2.-Continued.

Haul	133	134	135	136	137	138	139	140	141	142	143
Start date & time	7/3/1998 18:59	7/4/1998 6:39	7/4/1998 8:51	7/4/1998 11:51	7/4/1998 15:13	7/4/1998 18:38	7/5/1998 6:23	7/5/1998 8:21	7/5/1998 10:56	7/5/1998 13:36	7/5/1998 15:59
Station	67E	67F	67D	67C	67A	69A	69B	69C	69D	69E	
Start latitude	4316.00	4314.54	4316.08	4317.26	4317.49	4332.95	4331.72	4335.56	4335.46	4333.98	4334.50
Start longitude	12450.19	12450.46	12442.50	12436.65	12429.37	12417.30	12420.48	12428.91	12431.97	12438.61	12439.64
End latitude	4314.73	4314.51	4314.53	4315.61	4316.51	4334.48	4333.26	4334.06	4335.96	4335.51	4335.98
End longitude	12449.10	12451.99	12442.85	12436.76	12428.76	12416.71	12420.00	12429.32	12432.30	12438.52	12439.62
Bottom depth (m)	369	344	200	119	77	76	97	137	168	333	378
Duration (hr)	0.53	0.39	0.54	0.54	0.35	0.53	0.53	0.53	0.55	0.53	0.52
Distance fished (km)	2.918	2.135	2.967	3.134	1.939	2.977	2.944	2.859	2.864	2.906	2.771
Net width (m)	15.424	15.224	15.604	14.166	14.007	13.421	14.655	14.634	15.774	15.852	16.661
Net measured?	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y
Performance	0	0	0	0	0	5.5	5.5	5.5	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	1.5		34.5	2.3	5.4	2.8	4.6	2.8	7.9	4.6	30.3
Skates			11.0	12.8	40.0	4.5	3.1	12.3	16.4	8.9	4.2
Spotted ratfish			1.4	1.0		0.6	1.1		0.2	4.6	
Other elasmobranchs											
Pacific sanddab				2.4	30.5	52.4	18.3	9.7	7.5	65.7	26.0
Arrowtooth flounder	0.8		10.9				1.1	8.2	7.1		
Pacific halibut			45.0					9.2	54.7		
Petrale sole			5.9	1.9	0.3	5.8	6.5	0.3	3.6		
English sole			0.8	51.4	11.8	50.5	49.5	6.3	3.2		
Dover sole	60.4	86.1	106.8	1.7	0.1	0.2	8.0	5.6	13.7	87.4	168.6
Rex sole	60.0	67.7	50.8	2.8	3.2	9.7	19.4	7.3	16.7	105.3	86.7
Other flatfish	0.1	0.1	4.2	1.0	0.7	0.1	0.4	0.8	1.0	1.6	1.4
Sablefish	25.8	15.6	117.1	1.1				0.9	0.8	84.3	60.7
Pacific cod											
Lingcod				1.6				4.8			
Pacific whiting	183.2	162.1	370.3	597.2	122.5	493.9	55.7	1,632.4	575.2	156.0	53.5
Other roundfish	3.9	2.1	4.1	18.5	2.6	4.3	4.1	38.1	2.5	18.9	12.8
Shortspine thornyhead	14.0	8.5	21.4							50.1	76.6
Longspine thornyhead											
Rougheye rockfish											
Pacific ocean perch	2.9									5.3	0.6
Silvergray rockfish											1.2
Darkblotched rockfish								2.6	0.8	2.8	0.7
Spitnose rockfish	9.8	3.5							0.0	47.5	9.4
Yellowtail rockfish		3.2	0.5	1.8		4.1		4.3	23.6		
Chilipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	0.3	0.3	5.4	26.7	0.0	0.0		4.1	0.1	3.5	1.8
Jellyfish										0.5	
Shrimps			0.5			0.0			4.3		
Crabs		0.1				1.4	1.7			1.7	2.9
Octopuses											
Squids	0.7		0.1	0.1	0.6	0.1	1.9	2.8	1.2	1.2	5.0
Sea stars	1.4	0.1	0.0	0.0	0.4	0.5	5.8		0.0	3.9	5.8
Sea urchins	0.2	0.3	1.1	0.0			0.3		0.1	3.1	15.5
Total catch weight	364.6	351.2	792.4	724.8	224.9	631.9	185.2	1,753.2	743.8	660.9	565.9

Table A-2.-Continued.

Haul	144	145	146	147	148	149	150	151	152	153	154
Start date & time	7/6/1988 6:40	7/6/1988 9:04	7/6/1988 11:04	7/6/1988 13:00	7/6/1988 14:49	7/6/1988 17:07	7/7/1988 6:28	7/7/1988 8:28	7/7/1988 12:18	7/7/1988 14:05	7/7/1988 15:40
Station	71H	71G	71F	71E	71D	71C	71B	71A	73A	73B	73C
Start latitude	4355.04	4353.60	4355.15	4353.10	4356.13	4355.78	4354.10	4353.97	4413.71	4414.15	4414.21
Start longitude	12455.94	12449.28	12440.95	12434.58	12431.72	12428.95	12418.20	12415.31	12416.65	12421.21	12425.08
End latitude	4354.10	4354.31	4354.58	4354.67	4354.53	4354.26	4355.61	4355.59	4415.26	4415.58	4415.69
End longitude	12454.05	12451.25	12443.04	12435.12	12432.08	12428.33	12418.30	12415.33	12417.03	12421.89	12425.68
Bottom depth (m)	387	223	196	189	139	126	103	82	74	85	92
Duration (hr)	0.52	0.54	0.52	0.55	0.54	0.54	0.53	0.56	0.55	0.54	0.54
Distance fished (km)	3.114	2.98	3.012	3.013	3.117	2.888	2.854	3.034	2.934	2.829	2.933
Net width (m)	15.726	14.309	14.244	15.312	14	14.594	14.308	13.556	13.067	13.314	13.593
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	5.5	5.5	5.5	0	5.5	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	2.2	0.7	3.3	0.9	2.3	0.9	1.0	14.1	3.8	6.8	5.5
Skates	16.9	0.7	0.2	1.0	6.5	6.1	3.1	16.0	1.6		
Spotted ratfish	2.0	2.3	0.2	0.2		1.3	1.1	0.4			
Other elasmobranchs	13.8			0.1							
Pacific sanddab				4.1	32.2	34.5	152.6	44.9	78.5	240.2	62.9
Arrowtooth flounder	0.8		8.7	8.5	0.6	2.7					
Pacific halibut					7.3			13.3			
Petrale sole			0.9	2.0	9.2	9.5	6.1	1.8	0.1	9.5	5.4
English sole		1.3		0.8	6.2	27.1	13.0	33.6	7.5	28.9	92.9
Dover sole	209.8	90.3	88.8	33.5	7.1	13.6	20.7	0.6	1.2	11.9	
Rex sole	67.5	7.6	90.9	11.5	20.7	19.5	18.9	6.8	23.3	27.5	28.4
Other flatfish	1.5	2.1	10.6	0.9	4.7	3.2	1.7	0.6	24.3	1.0	0.1
Sablefish	251.3	13.4	10.6	5.5			1.0				
Pacific cod											
Lingcod		2.1				1.2				0.4	0.3
Pacific whiting	39.8	55.2	61.6	108.7	1,204.7	116.2	84.4	197.1	68.6	150.8	45.5
Other roundfish	4.3	20.9	2.9	2.1	2.1	11.3	0.8	2.9	36.1	0.7	1.3
Shortspine thornyhead	14.5	13.7	6.3	1.4							
Longspine thornyhead											
Rougheye rockfish	2.1			0.2							
Pacific ocean perch			1.1								
Silvergray rockfish		0.1				0.4					
Darkblotched rockfish		0.6	0.2	2.4	0.1						
Splitnose rockfish		2.8		0.0							
Yellowtail rockfish					195.6	14.8	2.8				
Chilipepper											
Bocaccio											
Canary rockfish				1.2	4.0						
Redstripe rockfish							0.1				
Stripetail rockfish		32.5	4.9	0.6							
Other rockfish		2.0	1.3	2.5	53.5	12.3	0.6	0.1	1.2		0.3
Jellyfish											
Shrimps		0.0	0.2	0.5				0.1			
Crabs	0.0	0.3	2.7	2.2	0.4	0.7	1.2	3.3	5.9	5.3	3.7
Octopuses				0.1							
Squids		0.3	0.3	0.2	0.2	0.0	0.3	0.6	0.7	0.2	0.0
Sea stars	3.4	0.4	0.1		0.0		0.1	0.6			
Sea urchins	0.4	0.2	0.2	0.2			0.1				
Total catch weight	635.4	250.0	287.2	191.1	1,557.8	275.3	309.8	321.2	267.7	473.4	259.9

Table A-2.--Continued.

Haul	155	156	157	158	159	160	161	162	163	164	165
Start date & time	7/7/1998 17:27	7/7/1998 19:32	7/8/1998 10:48	7/8/1998 13:32	7/8/1998 16:28	7/8/1998 6:34	7/8/1998 8:57	7/8/1998 11:21	7/8/1998 11:56	7/10/1998 16:10	7/10/1998 18:07
Station	73D	73E	73H	73I	73J	75J	75H	75E	75E	75A	75B
Start latitude	4414.29	4413.40	4417.13	4416.35	4411.99	4434.10	4433.99	4432.50	4432.56	4433.44	4435.17
Start longitude	12430.37	12434.04	12451.41	12454.51	12459.61	12450.74	12446.89	12435.97	12435.96	12417.40	12420.85
End latitude	4415.86	4414.88	4416.19	4415.08	4413.27	4435.48	4435.16	4432.68	4434.17	4434.99	4433.54
End longitude	12430.56	12433.79	12453.18	12455.58	12458.57	12450.97	12448.46	12435.87	12435.75	12417.68	12420.85
Bottom depth (m)	100	101	166	212	389	443	341	165	164	80	79
Duration (hr)	0.56	0.54	0.52	0.52	0.58	0.55	0.51	0.08	0.56	0.54	0.54
Distance fished (km)	2.944	2.769	2.981	2.729	3.134	2.846	2.987	0.371	3.028	2.928	3.064
Net width (m)	13.49	13.637	13.441	14.58	14.461	14.615	14.132	14.327	14.398	13.176	13.392
Net measured?	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y
Performance	5.5	0	0	0	0	5.1	0	-5.23	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	4.0	4.9		3.8	1.7		2.2		3.8	5.5	3.1
Skates	3.6		6.2	3.5	8.9	6.7			0.2	24.1	147.0
Spotted ratfish				0.2	6.1	0.8				0.8	1.7
Other elasmobranchs						13.1					
Pacific sanddab	30.8	210.8		2.4	9.7	1.1	5.7		8.1	200.2	15.1
Arrowtooth flounder	0.5										
Pacific halibut	1.7	2.3	46.4							51.2	2.9
Petrale sole	62.9	38.0	35.4	4.3	0.9				1.3	3.0	10.0
English sole	6.3	3.8	21.3	25.8	311.6	80.9	19.5		0.4	119.4	8.7
Dover sole	24.1	28.4	23.3	39.5	31.6	5.7	8.7		46.7	2.0	5.6
Rex sole	0.2	0.5	10.0	3.7	0.1		0.2		21.0	70.9	2.2
Other flatfish							0.2		2.5	4.3	14.1
Sablefish			1,088.0	1,295.9	88.1	39.9	48.8		49.7		
Pacific cod	0.2	0.4	13.3	0.2	43.8	137.3	78.1		15.1	106.6	6.8
Pacific whiting	75.2	227.9	6.8	0.2	6.2	1.4	1.8		4,459.1		
Other roundfish	0.6						33.8		4.0	0.2	2.7
Shortspine thornyhead					32.7	50.2					
Longspine thornyhead					5.0	25.2					
Rougheye rockfish					6.4						
Pacific ocean perch					1.0		1.1				
Silvergray rockfish				17.7							
Darkblotched rockfish				4.5							
Spitnose rockfish				2.1							
Yellowtail rockfish			2.9						23.1		
Chillipepper				3.8							
Bocaccio											
Canary rockfish			1.5						0.6		
Redstripe rockfish				0.1							
Stripetail rockfish				84.7							
Other rockfish	4.2	4.5	5.5	13.1	21.3	11.4	1.2		42.7		
Jellyfish		0.2									
Shrimps					0.0	0.2	0.0				
Crabs	28.1	52.6	0.3	4.6	0.3	4.6	0.0			0.6	
Octopuses			0.9	0.7	0.9	0.7					
Squids			0.7		0.7						
Sea stars	0.1	0.6	0.2	2.2	2.2	2.1	0.5			0.1	0.0
Sea urchins			0.2	0.1	4.6		0.4			0.8	0.8
Total catch weight	243.5	576.3	1,261.4	1,505.6	588.8	385.2	208.1		4,678.4	589.6	221.4

Table A-2.-Continued.

Haul	166	167	168	169	170	171	172	173	174	175	176
Start date & time	7/11/1988 6:30	7/11/1988 8:34	7/11/1988 10:36	7/11/1988 16:39	7/12/1988 6:26	7/12/1988 8:53	7/12/1988 11:21	7/12/1988 13:23	7/12/1988 15:17	7/12/1988 17:15	7/13/1988 6:25
Station	75D	75F	75G	78K	78J	78I	78H	78G	78F	78E	78D
Start latitude	4432.45	4433.56	4435.86	4454.60	4453.30	4453.90	4453.12	4454.85	4455.47	4455.53	4453.59
Start longitude	12432.31	12439.66	12446.44	12450.25	12446.42	12442.93	12440.03	12438.37	12432.84	12425.78	12424.77
End latitude	4433.92	4435.16	4434.72	4453.89	4452.32	4455.38	4454.46	4453.50	4454.44	4454.29	4454.76
End longitude	12431.47	12439.90	12445.02	12452.03	12447.81	12443.39	12439.27	12437.14	12434.53	12427.11	12423.45
Bottom depth (m)	119	286	322	389	258	458	340	406	403	212	167
Duration (hr)	0.56	0.53	0.53	0.62	0.55	0.52	0.51	0.58	0.52	0.54	0.51
Distance fished (km)	3.014	3.038	2.838	2.98	2.867	2.884	2.935	3.009	2.949	2.954	2.778
Net width (m)	14.001	15.828	15.429	14.278	14.355	14.96	14.576	14.981	14.214	14.311	14.776
Net measured?	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	3.11	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	2.4	3.6	4.5	0.7	3.0	0.7	4.1	2.0	3.5	29.5	5.5
Skates		0.9	1.9	20.0	12.9	0.9	0.9	5.7	11.4	5.8	4.0
Spotted ratfish			3.7					0.7			
Other elasmobranchs			0.1		0.1	28.5	2.2		0.8		
Pacific sanddab	12.3										4.6
Arrowtooth flounder		18.4	6.1		0.8	0.7	1.4		6.6	97.2	25.7
Pacific halibut	4.1				58.1					116.2	23.4
Petrale sole	1.0				1.0						1.1
English sole	38.6						3.9				6.0
Dover sole	5.8	49.1	25.9	41.1	8.1	13.2	40.8	24.8	36.3	27.2	30.0
Rex sole	19.3	30.1	13.0	17.2	18.3	8.5	23.7	21.8	2.9	58.8	14.8
Other flatfish	1.5	4.9	0.6	0.1	0.1	0.1	0.1		0.1	7.5	6.1
Sablefish		50.8	37.8	32.9	1.6	18.0	9.2	10.6	78.3	237.2	287.4
Pacific cod											
Lingcod	2.4									2.9	3.5
Pacific whiting	67.6	118.4	82.1	335.9	1,878.3	178.2	478.9	79.2	29.1	1,058.8	1,475.6
Other roundfish	27.5	12.0	7.3	0.2	0.3	1.5	1.2	2.8	6.2	3.7	0.8
Shortspine thornyhead		44.3	20.2	14.8	13.0	7.5	16.8	19.7	70.9	12.3	
Longspine thornyhead						0.4					
Rougheye rockfish		2.9	0.1	8.4		1.5		6.7	1.2	0.3	
Pacific ocean perch		2.9	1.2	13.0	333.8	1.3	9.3	5.4	7.0	3.1	
Silvergray rockfish											
Darkblotched rockfish		1.1	0.8	2.5		0.5					
Spitnose rockfish		14.4	1.0		2.8		4.1			106.4	4.8
Yellowtail rockfish	1.3						22.6			26.2	
Chillipepper											
Bocaccio											
Canary rockfish										1.0	
Redstripe rockfish											
Stripetail rockfish		0.1								21.6	0.1
Other rockfish	1.4	3.8	0.2	1.9	7.4	0.8	0.6	7.4	6.9	17.0	176.9
Jellyfish											
Shrimps		1.7	0.7						0.0	0.1	
Crabs		0.5	0.3		0.0	0.4	0.1	0.0	0.1		
Octopuses					0.5						
Squids	0.0			22.3		4.0		0.0			0.1
Sea stars	1.0	0.5	0.5	0.9		1.0	0.4	0.0	0.4	0.3	0.1
Sea urchins		5.7	1.9						0.9	5.2	0.7
Total catch weight	186.2	367.3	211.0	515.3	2,344.3	271.5	623.3	190.8	264.5	1,839.6	2,051.0

Table A-2.-Continued.

Haul	177	178	179	180	181	182	183	184	185	186	187
Start date & time	7/13/1988 8:38	7/13/1988 10:19	7/13/1988 11:42	7/13/1988 14:51	7/13/1988 17:57	7/14/1988 6:25	7/14/1988 8:02	7/14/1988 13:13	7/14/1988 16:26	7/14/1988 18:52	7/15/1988 6:36
Station	78C	78B	78A	82C	82A	82B	82D	82E	82F	82G	86H
Start latitude	4453.56	4453.34	4453.60	4515.57	4514.09	4515.51	4516.97	4512.32	4512.64	4513.52	4534.25
Start longitude	12417.37	12414.58	12411.26	12413.68	12406.22	12410.35	12419.33	12423.65	12429.02	12433.38	12438.92
End latitude	4454.25	4454.82	4455.14	4514.04	4515.76	4513.89	4515.41	4513.90	4514.23	4515.06	4534.48
End longitude	12418.83	12414.01	12410.51	12413.70	12406.03	12410.44	12419.05	12425.09	12428.66	12433.13	12441.93
Bottom depth (m)	143	121	99	162	91	129	203	391	408	445	431
Duration (hr)	0.55	0.53	0.56	0.53	0.54	0.59	0.53	0.51	0.52	0.54	0.56
Distance fished (km)	3.127	2.873	3.041	2.852	3.104	3.063	2.952	3.026	3.022	2.895	2.761
Net width (m)	14.012	13.941	13.499	14.338	13.342	14.131	14.271	15.397	15.335	15.293	15.579
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	45.6	33.2	21.6	8.6	43.7	54.4	3.3	2.5	1.3	0.6	
Skates	0.1	14.7	9.8	6.4	22.2	2.2		1.2			1.1
Spotted ratfish		0.9		0.6	1.5						
Other elasmobranchs											
Pacific sanddab	24.0	15.8	34.0	2.0	177.3	35.9					0.2
Arrowtooth flounder	12.1	1.6		49.4		1.2	13.8	2.4		5.1	1.8
Pacific halibut							35.7				
Petrale sole	6.7	2.8	3.3	11.3	6.9	6.0					
English sole	6.5	34.2	38.4	60.1	88.4	60.1					
Dover sole	19.1	0.4	2.7	16.1	2.5	3.3	32.7	11.5	14.1	2.3	45.7
Rex sole	5.6	4.9	14.2	15.4	49.9	16.8	9.7	1.0			2.9
Other flatfish	0.6	1.4	1.4	0.4	0.6	0.2	0.4	0.1	0.1		
Sablefish	10.8			396.0		14.8	27.1	16.9	10.9	19.7	47.2
Pacific cod											
Lingcod			0.6		2.2						
Pacific whiting	477.1	137.2	7.4	5,469.6	1.1	1,197.0	372.3	10.7	10.7	25.9	7.2
Other roundfish	17.3	9.3	0.5	357.3	1.2	11.2	2.2	1.7	0.8	1.8	0.6
Shortspine thornyhead				7.3			7.9	42.1	44.1	41.1	49.4
Longspine thornyhead								0.0	1.9	17.8	13.2
Rougheye rockfish				0.2							4.9
Pacific ocean perch											0.6
Silvergray rockfish							2.1	4.9	6.9		
Darkblotched rockfish											
Splitnose rockfish				2.2			21.0	0.4			
Yellowtail rockfish				1.0			6.5	0.4			
Chilipepper											
Bocaccio											
Canary rockfish											
Redstripe rockfish	3.2										
Stripetail rockfish											
Other rockfish	0.2	0.1		3.9		0.3	6.8	4.8	1.2	9.2	1.7
Jellyfish											
Shrimps											
Crabs	1.4			1.4			0.1	0.1	0.1	0.1	0.7
Octopuses							0.4			0.0	0.1
Squids											
Sea stars	0.2	0.1	0.1			0.1	0.1	0.5	0.4	0.1	1.0
Sea urchins	0.1						0.4	0.1	1.0	0.1	7.3
Total catch weight	632.4	255.3	134.3	6,349.8	397.6	1,405.7	555.3	102.2	112.4	126.5	190.0

Table A-2.-Continued.

Haul	188	189	190	191	192	193	194	195	196	197	198
Start date & time	7/15/1988 9:02	7/15/1988 10:57	7/15/1988 12:47	7/15/1988 14:48	7/15/1988 16:42	7/15/1988 18:35	7/16/1988 6:24	7/16/1988 8:41	7/16/1988 10:49	7/16/1988 12:31	7/16/1988 14:21
Station	86G	86F	86E	86D	86C	86B	86A	86A	90A	90B	90D
Start latitude	4533.12	4533.11	4533.38	4535.74	4535.09	4533.68	4533.90	4544.93	4554.93	4555.07	4554.90
Start longitude	12431.51	12427.05	12425.12	12423.30	12420.31	12411.54	12408.41	12403.53	12404.09	12407.19	12416.51
End latitude	4534.43	4534.63	4534.82	4534.47	4533.58	4535.30	4535.47	4543.28	4553.31	4553.50	4553.36
End longitude	12432.64	12427.96	12425.89	12422.77	12419.71	12411.75	12408.53	12404.08	12404.04	12407.34	12416.16
Bottom depth (m)	378	213	192	172	159	119	99	72	70	81	121
Duration (hr)	0.51	0.54	0.55	0.55	0.55	0.54	0.54	0.55	0.54	0.54	0.53
Distance fished (km)	2.857	3.07	2.852	2.764	2.915	3.02	2.951	3.159	3.002	2.948	2.908
Net width (m)	14.921	14.982	14.964	14.622	14.275	14.627	13.295	13.163	13.05	13.52	13.968
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	4	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	3.5	0.9	1.2	3.1	1.2	13.4	24.9	89.9	98.5	33.0	4.5
Skates	0.9				1.0	7.5		6.2	6.7		6.7
Spotted ratfish	2.0			1.1		0.1	0.8	2.6	3.7	2.6	1.3
Other elasmobranchs											
Pacific sanddab						23.8	21.8	108.8	134.5	37.6	5.8
Arrowtooth flounder	4.0	9.6	9.8	10.7	8.0						13.5
Pacific halibut		30.4									
Petrale sole			0.2	1.9	1.9	2.6	4.2	2.0	5.3	7.7	5.4
English sole	62.1	48.5	53.0	58.3	37.6	23.5	53.4	11.1	8.6	14.0	0.2
Dover sole	12.6	29.5	20.6	28.2	22.4	10.7	1.6	0.7	0.2	1.0	31.8
Rex sole						22.2	8.2	15.5	29.2	23.4	17.9
Other flatfish	0.5	2.6	2.8	3.3	1.5	1.6	0.3	2.0	1.5	0.6	1.0
Sablefish	44.0	25.2	18.4	18.5	5.2	0.8					31.3
Pacific cod											
Lingcod			4.3	3.9		3.5			0.9		9.1
Pacific whiting	9.9	413.0	160.6	140.9	271.1	1,826.3	242.4	123.2	61.3	3.9	436.8
Other roundfish	1.4	0.4	2.0	1.0	0.5	3.0	7.6	23.8	1.2		2.2
Shortspine thornyhead	34.1	9.9	14.5	3.3	0.4						
Longspine thornyhead											
Rougheye rockfish	1.2		0.2	0.3							
Pacific ocean perch	0.8	0.9									
Silvergray rockfish											
Darkblotched rockfish	0.5	45.4	3.0	0.2	0.2						0.3
Splitnose rockfish	0.3	11.1	21.3								
Yellowtail rockfish			12.5	7.1	6.9	22.6					
Chilipepper											
Bocaccio											
Canary rockfish				1.5	2.2	1.5					0.7
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	0.0	7.6	9.7	34.2	4.9	1.6	0.5		0.2	0.1	0.3
Jellyfish			0.1								
Shrimps		0.3	0.3		0.6	4.0	46.2	5.9	0.7		0.2
Crabs	0.1								0.1		
Octopuses											
Squids		0.3	0.0							0.1	
Sea stars	2.2	1.3	0.1	0.4	0.5	2.8	1.7	0.7	0.4	0.1	0.1
Sea urchins	9.9	3.9	7.2	4.7	2.4						0.3
Total catch weight	192.1	641.3	341.9	325.3	369.9	1,972.5	415.0	386.4	312.2	186.0	569.5

Table A-2.-Continued.

Haul	199	200	201	202	203	204	205	206	207	208	209
Start date & time	7/18/1998 11:52	7/18/1998 14:59	7/18/1998 17:07	7/18/1998 19:24	7/19/1998 6:54	7/19/1998 13:38	7/19/1998 16:24	7/19/1998 18:04	7/20/1998 6:41	7/20/1998 10:23	7/20/1998 12:45
Station	90E	90F	90G	90H	90I	94D	94C	94B	94A	98A	98B
Start latitude	4553.72	4553.60	4552.87	4553.01	4554.25	4614.44	4612.84	4612.77	4613.97	4633.37	4633.13
Start longitude	12421.21	12424.91	12429.48	12442.31	12445.93	12424.64	12422.93	12420.95	12415.77	12416.43	12424.09
End latitude	4555.12	4555.06	4554.33	4554.60	4555.77	4615.77	4614.43	4614.28	4615.52	4635.05	4634.61
End longitude	12421.99	12425.39	12429.96	12442.69	12444.85	12424.01	12422.17	12420.27	12416.43	12416.42	12424.32
Bottom depth (m)	140	144	151	243	411	242	125	120	76	61	91
Duration (hr)	0.51	0.53	0.53	0.51	0.52	0.51	0.54	0.54	0.57	0.6	0.53
Distance fished (km)	2.85	2.808	2.766	2.997	3.146	2.791	3.117	2.977	3.073	3.128	2.773
Net width (m)	14.124	14.231	15.106	14.268	14.772	14.699	14.183	14.31	13.342	13.048	13.515
Net measured?	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	-2.4	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	0.9	5.0	1.8		2.5		16.5	19.7	37.0	29.9	47.1
Skates	2.2	7.2	1.2	5.4		6.0	2.2	13.0	3.2		12.8
Spotted ratfish	0.6		1.3	4.1		0.8	4.4	4.4	7.0		
Other elasmobranchs					0.8	0.2					
Pacific sanddab	0.1		2.0				0.3	0.7	18.7	185.9	22.8
Arrowtooth flounder		14.7	8.6	2.7	1.7	10.7	9.8	3.6	0.5		3.4
Pacific halibut		9.8								15.5	6.3
Petrale sole	3.8						1.0	0.5	17.5	0.6	6.0
English sole	0.2	0.1	0.3	18.3			27.4	5.7	31.5	73.0	5.8
Dover sole	15.4	14.4	27.2	11.3	12.5	164.9	204.9	336.8	326.5	2.1	31.9
Rex sole	22.5	23.9	32.4	19.4	3.3	118.7	81.8	78.1	287.9	40.5	35.1
Other flatfish	3.0	2.0	2.6	0.1	0.0	1.0	5.3	2.5	3.2		0.2
Sablefish	15.5	16.8	10.7	18.4	60.7	28.4			0.8		
Pacific cod							8.5		3.9		
Lingcod	3.2		2.1		0.9		0.9				3.0
Pacific whiting	277.7	117.0	88.9	175.0	31.7	23.3	133.3	140.5	223.2	220.9	727.5
Other roundfish	1.8	0.7	3.7	0.3	0.7	4.7	2.9	7.3	25.7	13.0	8.2
Shortspine thornyhead		1.0		7.1	24.4	175.3	1.4				
Longspine thornyhead											
Rougheye rockfish	0.1	0.6	2.2		5.4	1.9					
Pacific ocean perch				1.9	0.6	1.0					
Silvergray rockfish											
Darkblotched rockfish	0.2	3.2	3.7		0.6	2.6	5.5	0.2			
Splittnose rockfish				4.7		1.0	0.2				
Yellowtail rockfish	2.0		39.6					1.2			
Chillipepper											
Bocaccio											
Canary rockfish	1.8		2.2				6.2	5.1			
Redstripe rockfish			1.1								
Stripetail rockfish											
Other rockfish		0.6	28.1			10.6	25.0	4.3	2.8		
Jellyfish				1.4		0.3					
Shrimps	2.4	0.4	1.2	0.1	0.0	1.7	1.8	1.7	1.1	3.4	0.8
Crabs	0.7										
Octopuses											
Squids				0.9	0.7	6.0	1.8	0.9	0.4	0.9	0.4
Sea stars	20.5	0.2	1.4	0.7	0.7	89.9					0.7
Sea urchins		4.5	22.8	5.6	0.0						
Total catch weight	375.3	222.0	286.0	277.5	148.5	650.3	542.1	627.6	991.0	586.6	913.1

Table A-2.-Continued.

Haul	210	211	212	213	214	215	216	217	218	219	220
Start date & time	7/20/1998 14:48	7/20/1998 17:28	7/21/1998 6:55	7/30/1998 8:30	7/30/1998 10:46	7/30/1998 13:42	7/30/1998 14:22	7/30/1998 16:12	7/30/1998 19:01	7/31/1998 9:22	7/31/1998 11:19
Station	98c	98d	98e	100a	100b	100c	100c	100d	100e	101f	101e
Start latitude	4632.85	4634.82	4634.63	4653.34	4653.82	4653.40	4653.40	4653.67	4653.57	4702.39	4704.91
Start longitude	12427.46	12434.85	12433.78	12428.14	12433.50	12437.12	12437.12	12443.17	12446.08	12452.25	12451.96
End latitude	4634.40	4634.29	4634.24	4654.86	4655.07	4653.60	4654.84	4655.16	4655.08	4703.11	4706.11
End longitude	12427.69	12432.73	12435.95	12429.01	12434.77	12437.25	12437.80	12443.63	12446.77	12454.11	12453.41
Bottom depth (m)	125	195	224	82	98	112	111	134	148	159	149
Duration (hr)	0.55	0.54	0.53	0.54	0.54	0.08	0.51	0.51	0.52	0.52	0.52
Distance fished (km)	2.921	3.145	3.002	3.038	2.906	0.417	2.823	2.823	2.929	2.735	2.891
Net width (m)	14.078	14.132	14.532	13.989	14.944	16.73	14.749	14.94	14.567	15.463	15.105
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	-5.23	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	19.8	8.5	3.0	31.0	132.0		16.3	46.6	24.4	17.6	37.9
Skates		24.6	15.4				3.9	94.7	17.2	7.2	3.2
Spotted ratfish		0.2	0.2	0.7	1.9		0.5		1.3	0.3	0.1
Other elasmobranchs											
Pacific sanddab	2.2			28.3	18.9		16.3	12.0	1.5		
Arrowtooth flounder	2.9	50.8	57.1	1.4	9.5		12.4	19.7	21.7	28.1	28.7
Pacific halibut	9.5	59.6						7.6			
Petrale sole	1.5	0.8		6.7	8.7		4.0	2.7	2.4	2.2	2.7
English sole	2.1	0.8	0.9	149.9	61.7		32.7	3.1	1.6	0.2	0.6
Dover sole	14.9	30.9	98.3	65.9	33.0		30.8	8.4	27.3	50.4	80.3
Rex sole	16.9	70.7	86.5	44.5	12.6		10.3	7.0	17.9	25.0	45.8
Other flatfish	1.1	6.8	12.0	1.3	0.7		1.9	1.4	1.3	0.5	2.8
Sablefish	6.6	18.0						2.3	2.3	1.0	3.0
Pacific cod								1.5	1.2	1.2	1.2
Lingcod		435.1			1.0				1.3	5.2	
Pacific whiting	2,252.8	11.7	10.8	115.1	480.8		170.2	1,138.7	241.2	308.3	723.6
Other roundfish	7.1	2.0	0.5	3.0	8.6		5.5	19.7	6.6	19.3	114.9
Shortspine thornyhead	1.1	13.8	30.3							0.5	0.2
Longspine thornyhead											
Rougheye rockfish	2.1		0.9							0.2	0.1
Pacific ocean perch			2.7								
Silvergray rockfish											
Darkblotched rockfish	3.9	0.6	1.2				0.0	0.5		28.1	20.1
Splitnose rockfish		15.5	10.7								
Yellowtail rockfish	135.6	11.3	3.2					10.1	8.7	29.6	9.5
Chilipepper											
Bocaccio		3.7			0.5				1.4		
Canary rockfish											
Redstripe rockfish		0.6	2.3		0.1		0.1	0.0		0.8	
Stripetail rockfish		1.2	5.8		1.7		1.8	0.1		0.2	
Other rockfish		0.6									
Jellyfish			1.8					1.0	2.2	108.2	31.9
Shrimps											
Crabs											
Octopuses											
Squids											
Sea stars		0.6	2.5	0.0	0.1		2.1	0.0	0.1	1.0	0.8
Sea urchins		0.8	1.9	0.5	1.3		0.4	0.2	0.0		
Total catch weight	2,480.0	771.8	352.3	448.4	772.9		309.5	1,378.0	381.8	641.4	1,109.2

Table A-2.-Continued.

Haul	221	222	223	224	225	226	227	228	229	230	231
Start date & time	7/31/1988 14:19	7/31/1988 16:27	7/31/1988 19:05	8/1/1988 7:41	8/1/1988 11:42	8/1/1988 13:47	8/1/1988 16:41	8/1/1988 18:56	8/2/1988 6:37	8/2/1988 9:12	8/2/1988 11:17
Station	101d	101c	101a	102g	102e	102d	102c	102b	102a	103b	103c
Start latitude	4704.43	4704.11	4706.86	4713.42	4715.72	4713.87	4712.96	4713.74	4714.63	4724.84	4723.78
Start longitude	12448.23	12443.64	12435.60	12500.02	12450.85	12447.63	12444.76	12438.60	12433.02	12441.98	12444.15
End latitude	4705.89	4705.53	4705.39	4714.79	4714.56	4715.26	4714.41	4715.13	4713.01	4723.27	4725.25
End longitude	12448.82	12444.45	12435.34	12500.22	12452.19	12446.72	12444.25	12438.96	12432.64	12441.59	12444.72
Bottom depth (m)	137	118	83	441	193	142	125	94	72	106	121
Duration (hr)	0.52	0.51	0.52	0.51	0.5	0.51	0.51	0.51	0.55	0.52	0.51
Distance fished (km)	2.81	2.824	2.775	2.641	2.9	2.828	2.768	2.633	3.092	2.958	2.827
Net width (m)	15.522	15.09	14.071	16.001	14.812	15.583	15.647	15.624	14.64	14.175	14.799
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	5.1	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	98.7	29.0	7.0		23.1	157.4	53.3	17.6	38.1	38.3	84.5
Skates	13.7	1.1	3.8	2.5	1.1	31.1		7.2			
Spotted ratfish	2.7	0.1	0.3			4.3					
Other elasmobranchs		1.8		8.4	7.9			2.2			
Pacific sanddab	15.9	10.8	31.7	3.5	50.7	61.1	30.7	40.3	36.0	14.7	1.2
Arrowtooth flounder	21.4	24.5			97.0	4.3	39.9	13.0		21.8	64.4
Pacific halibut	9.5						38.8				
Petrale sole	3.5	3.5	2.3		1.3		2.5	5.5	0.8	1.2	4.0
English sole		15.7	67.5		0.8		3.8	31.7	83.8	5.7	1.3
Dover sole	8.0	21.5	11.4	82.1	18.7	44.8	58.0	14.2	3.4	50.9	37.0
Rex sole	25.7	13.7	42.1	19.2	50.1	32.1	16.8	32.3	64.5	19.0	8.5
Other flatfish	2.1	4.1	0.1		1.9	23.2	6.5	0.1	2.9	3.0	2.3
Sablefish	4.2			14.3	40.5	83.9	93.6			129.6	337.5
Pacific cod			2.4		2.3			1.2			
Lingcod	46.4		0.5			15.8			1.1	8.2	
Pacific whiting	1,187.0	618.3	74.0	19.4	13.0	618.1	490.1	83.1	31.8	2,458.7	4,311.7
Other roundfish	14.0	106.1	10.2	6.2	7.0	1,680.6	367.1	5.7	45.3	94.6	527.2
Shortspine thornyhead				23.6	1.2						
Longspine thornyhead											
Rougheye rockfish	0.4	0.6			1.7		0.4				
Pacific ocean perch				6.9	3.0						
Silvergray rockfish											
Dartblotched rockfish	2.3	1.2		0.2	40.7	8.7					4.0
Spitnose rockfish					9.7	0.3					
Yellowtail rockfish	4.6	3.8	3.0		237.9	27.4	26.3	2.2		120.8	24.8
Chillipepper											
Bocaccio									0.9	3.1	2.3
Canary rockfish	2.6	3.0					3.5				
Redstripe rockfish											
Stripetail rockfish											
Other rockfish	4.6		1.7	7.1	1.0			0.7	0.0		
Jellyfish											
Shrimps				0.0	0.0						
Crabs		1.4	1.3	0.0	0.0		1.2	9.0	4.5	5.4	1.2
Octopuses				1.4							
Squids									0.0		
Sea stars	0.8	0.8	0.3	0.6	0.9		0.3	0.3			
Sea urchins	0.2			0.1			0.0				
Total catch weight	1,468.8	861.3	260.1	198.3	612.7	2,793.0	1,233.0	266.3	314.9	2,975.0	5,412.0

Table A-2.--Continued.

Haul	232	233	234	235	236	237	238	239	240	241	242
Start date & time	8/3/1998 8:18	8/3/1998 13:47	8/3/1998 17:56	8/3/1998 19:25	8/4/1998 7:51	8/4/1998 9:46	8/4/1998 12:33	8/4/1998 14:36	8/4/1998 16:46	8/4/1998 19:20	8/5/1998 6:50
Station	114q	114n	114m	114k	114j	114i	114h	114g	114f	114e	114d
Start latitude	4845.24	4844.60	4846.32	4846.00	4844.28	4844.34	4845.18	4845.01	4844.53	4845.13	4844.60
Start longitude	12630.98	12616.62	12616.53	12615.18	12609.17	12605.30	12559.61	12548.83	12546.21	12542.20	12537.30
End latitude	4844.63	4845.74	4844.88	4844.62	4845.77	4845.81	4843.64	4844.31	4844.38	4845.23	4844.31
End longitude	12629.35	12617.40	12615.90	12613.92	12608.75	12606.31	12558.74	12551.20	12548.39	12544.38	12535.03
Bottom depth (m)	421	191	175	167	137	116	85	92	115	113	160
Duration (hr)	0.44	0.45	0.51	0.51	0.51	0.52	0.52	0.56	0.52	0.51	0.52
Distance fished (km)	2.31	2.33	2.85	3.002	2.864	3.014	3.059	3.271	2.702	2.733	2.839
Net width (m)	15.147	14.246	14.839	14.72	14.429	14.057	13.172	13.463	13.719	13.875	13.337
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish		13.1	10.0	15.8	54.0	212.3	297.6	895.2	199.4	212.2	89.6
Skates	11.6	11.9	9.1		0.0	4.9		7.6	19.6	3.9	21.3
Spotted ratfish	2.2		2.1	1.0	1.1		0.0	0.9	0.1	1.6	9.6
Other elasmobranchs											
Pacific sanddab											
Arrowtooth flounder											
Pacific halibut											
Petrale sole		20.6	249.2	347.5	54.8	11.0	78.7	78.2	0.6	2.5	0.9
English sole				0.4		3.6	2.4	0.6	7.3	1.5	
Dover sole											
Rex sole		22.1	33.4	53.5	5.5	73.1	3.6	42.6	9.0	1.6	
Other flatfish		2.4	39.8	58.2	31.3	4.7	4.5	3.5	22.2	4.4	26.7
Sablefish	1.7	50.6	55.1	35.1	7.5	2.3	21.1	18.9	18.7	23.3	29.2
Pacific cod		3.4	2.6	2.7	2.7		0.1	8.0	1.6	0.8	
Lingcod			6.5		2.7	1.6	9.2	27.2	13.9	13.9	
Pacific whiting	37.7	1.2	3.0	2.9	221.1	529.5	0.7	0.7	3.4	63.1	324.0
Other roundfish	0.7	1.2	13.7	8.0	5.7	91.6	25.4	6.7	3.7	1.9	0.6
Shortspine thornyhead	5.8	2.6	0.6	1.5							
Longspine thornyhead											
Rougheye rockfish	94.6	0.2									
Pacific ocean perch	5.8	329.7	117.2	100.3							
Silvergray rockfish		7.1	2.9	3.0							
Darkblotched rockfish		48.0	52.9	65.0	3.9				0.2		
Spitnose rockfish											
Yellowtail rockfish		650.5	235.5	403.9	3.2	23.4					
Chilipepper											
Bocaccio											
Canary rockfish		5.7	9.2	5.5							
Redstripe rockfish		65.1	275.9	49.1					2.9	2.6	
Stripetail rockfish										1.0	
Other rockfish		465.4	45.7	23.1	8.7				4.2	18.8	
Jellyfish		0.2					0.2				0.2
Shrimps	0.0	0.5	0.3		0.0					0.3	2.5
Crabs	0.0										
Octopuses											
Squids	1.1										
Sea stars	0.3	0.2	0.2	2.5	0.7	0.1	0.0		0.3	0.3	8.6
Sea urchins		0.3	0.2	5.0	1.1				0.0	0.1	0.1
Total catch weight	208.4	1,983.0	1,378.7	1,231.7	459.3	962.5	461.2	1,182.2	241.9	421.0	543.7

Table A-2.--Continued.

Haul	243	244	245	246	247	248	249	250	251	252	253
Start date & time	8/5/1988 8:42	8/5/1988 10:25	8/5/1988 13:07	8/5/1988 18:37	8/6/1988 6:32	8/6/1988 8:25	8/6/1988 10:52	8/6/1988 13:48	8/6/1988 16:40	8/7/1988 6:40	8/7/1988 8:26
Station	114c	114b	114a	116a	116b	116c	116d	116e	116f	116g	116h
Start latitude	4844.77	4845.84	4846.11	4903.83	4903.78	4903.32	4904.33	4903.70	4904.46	4903.38	4903.35
Start longitude	12534.62	12532.43	12518.01	12605.79	12608.15	12614.07	12624.59	12628.85	12632.97	12637.14	12643.74
End latitude	4844.37	4844.56	4844.72	4905.40	4905.20	4905.09	4905.42	4904.71	4904.91	4904.24	4904.36
End longitude	12532.32	12531.07	12518.93	12606.82	12609.53	12612.98	12626.26	12630.51	12635.04	12639.04	12645.57
Bottom depth (m)	152	138	96	55	61	69	124	142	133	143	175
Duration (hr)	0.52	0.53	0.53	0.55	0.53	0.52	0.52	0.53	0.52	0.51	0.54
Distance fished (km)	2.928	2.9	2.87	3.173	3.123	2.672	2.868	2.787	2.701	2.898	2.923
Net width (m)	13.561	14.083	15.023	13.608	13.961	13.56	15.074	14.896	14.866	14.125	15.092
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Gear	172	172	172	172	172	172	172	172	172	172	172
Spiny dogfish	68.3	114.3	762.9	56.5	44.4	69.3	34.5	21.9	33.1	15.8	8.7
Skates	4.9	8.5	0.7	0.4	4.3		4.4	0.6	15.1	0.3	2.1
Spotted ratfish	5.0	5.3					0.4	0.1			0.4
Other elasmobranchs											
Pacific sanddab			23.0	14.4	13.0	17.1	0.3	0.1	0.1	0.1	0.1
Arrowtooth flounder	3.1	13.9	36.7	16.9	7.8	16.5	91.9	101.4	103.6	310.2	115.0
Pacific halibut			10.9	5.5	7.1	0.5	1.5	0.4	1.8	6.6	26.5
Petrale sole			2.9	83.5	11.9	5.9				1.7	4.4
English sole			17.3	0.1	0.2	1.0	31.7	60.2	29.2	8.3	4.4
Dover sole	39.1	48.0	7.9	2.7	5.0	14.1	26.6	27.7	39.5	30.6	16.5
Rex sole	46.0	21.7	7.9	26.4	27.5	25.5	10.4	26.9	3.7	17.8	10.9
Other flatfish	6.5	14.5	9.3							1.9	0.8
Sablefish		1.2					12.4	20.6	18.2	6.5	26.0
Pacific cod		0.9	4.7	4.3	3.0	4.3	15.6	10.2	3.7	2.8	3.6
Lingcod		126.5	30.5				594.6	1,019.6	151.9		0.7
Pacific whiting	246.6	11.5	42.5	6.1	6.9	1.9	42.5	2.1	5.0	1.3	1.8
Other roundfish	2.5										
Shortspine thornyhead											
Longspine thornyhead		0.6									
Rougheye rockfish	2.7										
Pacific ocean perch											
Silvergray rockfish							2.1	0.4			0.2
Darkblotched rockfish											
Spitnose rockfish	0.2					15.4	23.9	41.3	81.5		83.1
Yellowtail rockfish											
Chilipepper											
Bocaccio							4.7			4.4	
Canary rockfish						25.7	0.8		2.9	21.8	35.3
Redstripe rockfish											88.1
Stripetail rockfish											1.7
Other rockfish				3.2		22.2		5.4	0.7	0.5	82.6
Jellyfish	0.3	0.2	0.3	0.1							
Shrimps	6.5	3.6									0.3
Crabs											
Octopuses											
Squids											
Sea stars	1.8	1.6	0.0	0.0	0.0	0.2				6.1	0.6
Sea urchins	0.4	0.9	0.4	0.3					30.6		0.6
Total catch weight	434.2	374.7	1,033.4	148.7	133.5	240.2	900.9	1,339.6	521.6	434.7	647.8

Table A-2.--Continued.

Haul	254	255	256	257
Start date & time	8/7/1998 10:30	8/7/1998 12:43	8/7/1998 14:31	8/7/1998 19:06
Station	116i	116j	116j	114p
Start latitude	4903.72	4903.49	4903.56	4845.56
Start longitude	12651.82	12654.66	12654.72	12621.92
End latitude	4904.98	4903.49	4904.91	4845.40
End longitude	12653.28	12654.66	12655.98	12624.05
Bottom depth (m)	283	439	438	372
Duration (hr)	0.52	0.55	0.51	0.53
Distance fished (km)	2.962	1.648	2.958	2.849
Net width (m)	15.062	15.158	15.63	15.591
Net measured?	Y	N	Y	Y
Performance	0	-5.42	0	0
Gear	172	172	172	172
Spiny dogfish			0.7	1.7
Skates	3.2		17.7	0.6
Spotted ratfish				0.9
Other elasmobranchs				
Pacific sanddab				
Arrowtooth flounder	95.7		50.0	62.7
Pacific halibut	5.3			
Petrale sole				
English sole				
Dover sole	56.1		104.4	63.8
Rex sole	13.6		21.2	31.7
Other flatfish	0.8			0.2
Sablefish	2.8		14.1	23.3
Pacific cod				
Lingcod				
Pacific whiting	25.5		8.3	20.2
Other roundfish	1.1		1.6	2.4
Shortspine thornyhead	29.8		42.1	35.6
Longspine thornyhead				
Rougheye rockfish			72.3	26.7
Pacific ocean perch	223.9		11.5	26.5
Silvergray rockfish				
Darkblotched rockfish	6.4			
Splitnose rockfish	72.2			
Yellowtail rockfish	1.7			
Chilipepper				2.1
Bocaccio				
Canary rockfish				
Redstripe rockfish				
Stripetail rockfish				
Other rockfish	7.4		1.1	0.3
Jellyfish	0.8			
Shrimps	0.7		0.0	0.1
Crabs				
Octopuses				0.1
Squids	2.7			
Sea stars			0.1	0.3
Sea urchins	0.9		0.0	
Total catch weight	551.0		346.9	289.4



APPENDIX B

RELATIVE ABUNDANCE OF SPECIES BY AREA AND DEPTH STRATUM

Appendix Tables B-1 through B-36 list all fish and invertebrate species encountered in each depth stratum of each International North Pacific Fisheries Commission (INPFC) area of the 1998 West Coast triennial bottom trawl survey. Species in each table are listed in order of decreasing relative abundance, measured by average catch per unit of effort (CPUE, in units of kg/ha). Average CPUE values have been weighted by the size of the sampling strata. For each INPFC area, tables are presented for the shallow (55-183 m), middle (184-366 m), and deep (367-500 m) depth strata, as well as for the entire INPFC area. Tables B-29 through B-32 list the relative abundance of species in the U.S. portion of the survey area and Tables B-33 through B-36 present the relative abundance listings for the entire survey area.

Tables B-1 through B-4, the INPFC Conception Area	B-2
Tables B-5 through B-8, the INPFC Monterey Area	B-15
Tables B-9 through B-12, the INPFC Eureka Area	B-32
Tables B-13 through B-16, the INPFC Columbia Area	B-46
Tables B-17 through B-20, the U.S. Portion of the INPFC Vancouver Area	B-65
Tables B-21 through B-24, the Canadian Portion of the INPFC Vancouver Area	B-74
Tables B-25 through B-28, the INPFC Vancouver Area	B-85
Tables B-29 through B-32, the U.S. Portion of the Survey Area	B-98
Tables B-33 through B-36, the Entire Survey Area	B-127

Table B-1.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Conception shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes jordani</i>	51.7510	0.5196	0.5196
2	<i>Trachurus symmetricus</i>	15.3960	0.1546	0.6742
3	<i>Citharichthys sordidus</i>	8.6090	0.0864	0.7607
4	<i>Sebastes goodei</i>	5.3750	0.0540	0.8146
5	<i>Genyonemus lineatus</i>	4.1100	0.0413	0.8559
6	<i>Clupea pallasii</i>	1.9520	0.0196	0.8755
7	<i>Squalus acanthias</i>	1.3220	0.0133	0.8888
8	<i>Sebastes saxicola</i>	1.0800	0.0108	0.8996
9	<i>Merluccius productus</i>	1.0200	0.0102	0.9099
10	<i>Argentina sialis</i>	0.9690	0.0097	0.9196
11	<i>Parophrys vetulus</i>	0.8330	0.0084	0.9280
12	<i>Squatina californica</i>	0.8320	0.0084	0.9363
13	<i>Sebastes semicinctus</i>	0.8270	0.0083	0.9446
14	<i>Eopsetta jordani</i>	0.6360	0.0064	0.9510
15	<i>Peprilus simillimus</i>	0.4490	0.0045	0.9555
16	<i>Paralichthys californicus</i>	0.3990	0.0040	0.9595
17	<i>Porichthys notatus</i>	0.3660	0.0037	0.9632
18	<i>Oncorhynchus tshawytscha</i>	0.3500	0.0035	0.9667
19	<i>Pandalus jordani</i>	0.2650	0.0027	0.9694
20	<i>Torpedo californica</i>	0.2640	0.0026	0.9720
21	<i>Zalembeus rosaceus</i>	0.2200	0.0022	0.9742
22	<i>Hydrolagus collicii</i>	0.2120	0.0021	0.9764
23	<i>Engraulis mordax</i>	0.1930	0.0019	0.9783
24	<i>Sebastes diploproa</i>	0.1850	0.0019	0.9802
25	<i>Lycodes pacificus</i>	0.1740	0.0017	0.9819
26	<i>Glyptocephalus zachirus</i>	0.1590	0.0016	0.9835
27	<i>Mustelus henlei</i>	0.1560	0.0016	0.9851
28	<i>Ophiodon elongatus</i>	0.1540	0.0015	0.9866
29	<i>Galeorhinus galeus</i>	0.1520	0.0015	0.9881
30	<i>Raja binoculata</i>	0.1150	0.0012	0.9893
31	<i>Anoplopoma fimbria</i>	0.1090	0.0011	0.9904
32	<i>Brisaster latifrons</i>	0.0830	0.0008	0.9912
33	<i>Mustelus californicus</i>	0.0700	0.0007	0.9919
34	<i>Luidia foliata</i>	0.0640	0.0006	0.9926
35	<i>Metridium</i> sp.	0.0470	0.0005	0.9931
36	<i>Lyopsetta exilis</i>	0.0440	0.0004	0.9935
37	<i>Myoxoderma platyacanthum</i>	0.0420	0.0004	0.9939
38	<i>Cancer productus</i>	0.0410	0.0004	0.9943
39	<i>Microstomus pacificus</i>	0.0400	0.0004	0.9947
40	<i>Sebastes paucispinis</i>	0.0400	0.0004	0.9951
41	<i>Paralithodes californiensis</i>	0.0400	0.0004	0.9955

Table B-1.--Continued.

42	<i>Pycnopodia helianthoides</i>	0.0380	0.0004	0.9959
43	<i>Pleuronichthys decurrens</i>	0.0340	0.0003	0.9963
44	<i>Scomber japonicus</i>	0.0310	0.0003	0.9966
45	<i>Rathbunaster californicus</i>	0.0250	0.0003	0.9968
46	Actiniaria (order)	0.0220	0.0002	0.9970
47	<i>Cancer magister</i>	0.0220	0.0002	0.9973
48	brachiopod unident.	0.0210	0.0002	0.9975
49	heart urchin unident.	0.0190	0.0002	0.9977
50	<i>Bathyraja interrupta</i>	0.0180	0.0002	0.9978
51	<i>Zaniolepis latipinnis</i>	0.0180	0.0002	0.9980
52	<i>Pleuronichthys coenosus</i>	0.0150	0.0001	0.9982
53	<i>Sebastes elongatus</i>	0.0130	0.0001	0.9983
54	<i>Opisthoteuthis californiana</i>	0.0120	0.0001	0.9984
55	octopus unident.	0.0110	0.0001	0.9985
56	<i>Loligo opalescens</i>	0.0110	0.0001	0.9986
57	<i>Apristurus brunneus</i>	0.0110	0.0001	0.9988
58	Thaliacea unident.	0.0100	0.0001	0.9989
59	<i>Sebastes levis</i>	0.0090	0.0001	0.9990
60	<i>Raja rhina</i>	0.0080	0.0001	0.9990
61	Holothuroidea unident.	0.0080	0.0001	0.9991
62	nudibranch unident.	0.0070	0.0001	0.9992
63	<i>Xystreureys liolepis</i>	0.0060	0.0001	0.9992
64	<i>Cephaloscyllium ventriosum</i>	0.0060	0.0001	0.9993
65	Penaeidae	0.0050	0.0001	0.9994
66	<i>Alosa sapidissima</i>	0.0050	0.0001	0.9994
67	<i>Raja inornata</i>	0.0050	0.0001	0.9995
68	<i>Raja stellulata</i>	0.0050	Trace	0.9995
69	<i>Mediaster</i> sp.	0.0040	Trace	0.9995
70	<i>Thrissacanthias penicillatus</i>	0.0040	Trace	0.9996
71	<i>Prionotus stephanophrys</i>	0.0030	Trace	0.9996
72	<i>Sebastes caurinus</i>	0.0030	Trace	0.9996
73	starfish unident.	0.0030	Trace	0.9997
74	<i>Zaniolepis frenata</i>	0.0030	Trace	0.9997
75	<i>Pandalus platyceros</i>	0.0020	Trace	0.9997
76	skate egg case unident.	0.0020	Trace	0.9998
77	<i>Molpadia</i> sp.	0.0020	Trace	0.9998
78	Pennatulacea (order)	0.0020	Trace	0.9998
79	<i>Molpadia intermedia</i>	0.0020	Trace	0.9998
80	Paguridae	0.0020	Trace	0.9998
81	<i>Sardinops sagax</i>	0.0020	Trace	0.9998
82	<i>Stylasterias forreri</i>	0.0020	Trace	0.9999
83	<i>Hippoglossina stomata</i>	0.0020	Trace	0.9999
84	<i>Pleuronichthys verticalis</i>	0.0010	Trace	0.9999

Table B-1.--Continued.

85	Trichiuridae	0.0010	Trace	0.9999
86	Berryteuthis magister	0.0010	Trace	0.9999
87	crinoid unident.	0.0010	Trace	0.9999
88	Chilara taylori	0.0010	Trace	0.9999
89	Lycodes cortezianus	0.0010	Trace	0.9999
90	Icelinus filamentosus	0.0010	Trace	1.0000
91	Parmaturus xaniurus	0.0010	Trace	1.0000
92	Taningia danae	0.0010	Trace	1.0000
93	Mediaster aequalis	0.0010	Trace	1.0000
94	squid unident.	0.0010	Trace	1.0000
95	Stomphia sp.	Trace	Trace	1.0000
96	Asteronyx loveni	Trace	Trace	1.0000
97	shrimp unident.	Trace	Trace	1.0000
98	Pagurus brandti	Trace	Trace	1.0000
99	Vampyroteuthis infernalis	Trace	Trace	1.0000
100	Crangon sp.	Trace	Trace	1.0000
101	Cololabis saira	Trace	Trace	1.0000
102	Virgularidae	Trace	Trace	1.0000
103	Myctophidae	Trace	Trace	1.0000

Table B-2.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Conception middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes diploproa</i>	20.5780	0.2773	0.2773
2	<i>Sebastes saxicola</i>	17.4690	0.2354	0.5128
3	<i>Merluccius productus</i>	16.7490	0.2257	0.7385
4	<i>Glyptocephalus zachirus</i>	5.9840	0.0806	0.8191
5	<i>Moroteuthis robusta</i>	2.6050	0.0351	0.8543
6	<i>Microstomus pacificus</i>	2.5640	0.0346	0.8888
7	<i>Sebastes goodei</i>	1.2360	0.0167	0.9055
8	<i>Lyopsetta exilis</i>	0.8720	0.0118	0.9172
9	squid unident.	0.8530	0.0115	0.9287
10	<i>Brisaster latifrons</i>	0.5810	0.0078	0.9365
11	<i>Allocentrotus fragilis</i>	0.4770	0.0064	0.9430
12	<i>Sebastes jordani</i>	0.3440	0.0046	0.9476
13	<i>Brisaster</i> sp.	0.2730	0.0037	0.9513
14	<i>Squalus acanthias</i>	0.2460	0.0033	0.9546
15	heart urchin unident.	0.2400	0.0032	0.9578
16	<i>Raja rhina</i>	0.2360	0.0032	0.9610
17	<i>Raja binoculata</i>	0.2360	0.0032	0.9642
18	<i>Anoplopoma fimbria</i>	0.2230	0.0030	0.9672
19	<i>Lycodes cortezianus</i>	0.2210	0.0030	0.9701
20	<i>Hydrolagus colliei</i>	0.2130	0.0029	0.9730
21	<i>Eopsetta jordani</i>	0.1820	0.0025	0.9755
22	<i>Bathyraja interrupta</i>	0.1790	0.0024	0.9779
23	<i>Sebastes paucispinis</i>	0.1510	0.0020	0.9799
24	<i>Ophiodon elongatus</i>	0.1330	0.0018	0.9817
25	<i>Lycodes pacificus</i>	0.1310	0.0018	0.9835
26	<i>Parmaturus xaniurus</i>	0.1270	0.0017	0.9852
27	<i>Oncorhynchus tshawytscha</i>	0.1080	0.0015	0.9866
28	<i>Paralichthys californicus</i>	0.0920	0.0012	0.9879
29	<i>Parophrys vetulus</i>	0.0920	0.0012	0.9891
30	<i>Paralithodes californiensis</i>	0.0810	0.0011	0.9902
31	<i>Metridium</i> sp.	0.0680	0.0009	0.9911
32	<i>Cancer productus</i>	0.0610	0.0008	0.9919
33	<i>Trachurus symmetricus</i>	0.0570	0.0008	0.9927
34	<i>Pandalus platyceros</i>	0.0510	0.0007	0.9934
35	<i>Torpedo californica</i>	0.0510	0.0007	0.9941
36	octopus unident.	0.0490	0.0007	0.9947
37	rough purple sea anemone	0.0380	0.0005	0.9953
38	<i>Sebastes pinniger</i>	0.0310	0.0004	0.9957
39	<i>Apristurus brunneus</i>	0.0250	0.0003	0.9960
40	<i>Rathbunaster californicus</i>	0.0230	0.0003	0.9963
41	Actiniaria (order)	0.0230	0.0003	0.9966

Table B-2.--Continued.

42	<i>Mustelus henlei</i>	0.0190	0.0003	0.9969
43	<i>Lycodes diapterus</i>	0.0180	0.0002	0.9971
44	<i>Zaniolepis frenata</i>	0.0180	0.0002	0.9974
45	<i>Sebastes elongatus</i>	0.0160	0.0002	0.9976
46	<i>Icelinus filamentosus</i>	0.0130	0.0002	0.9978
47	<i>Holothuroidea unident.</i>	0.0110	0.0001	0.9979
48	<i>Sebastolobus alascanus</i>	0.0110	0.0001	0.9981
49	<i>Sebastes rufus</i>	0.0110	0.0001	0.9982
50	<i>Molpadia sp.</i>	0.0100	0.0001	0.9983
51	Naticidae	0.0100	0.0001	0.9985
52	<i>Sebastes rosenblatti</i>	0.0090	0.0001	0.9986
53	<i>Luidia foliata</i>	0.0090	0.0001	0.9987
54	<i>Sebastes chlorostictus</i>	0.0090	0.0001	0.9988
55	<i>Histioteuthis dofleini</i>	0.0060	0.0001	0.9989
56	<i>Porichthys notatus</i>	0.0060	0.0001	0.9990
57	<i>Thaliacea unident.</i>	0.0060	0.0001	0.9991
58	<i>Pandalus jordani</i>	0.0050	0.0001	0.9991
59	<i>Sebastes zacentrus</i>	0.0050	0.0001	0.9992
60	<i>Onychoteuthis borealijaponicus</i>	0.0050	0.0001	0.9993
61	Trichiuridae	0.0050	0.0001	0.9994
62	<i>Pandalopsis dispar</i>	0.0050	0.0001	0.9994
63	<i>Sebastes helvomaculatus</i>	0.0050	0.0001	0.9995
64	<i>Chilara taylori</i>	0.0040	0.0001	0.9995
65	<i>Vampyroteuthis infernalis</i>	0.0040	0.0001	0.9996
66	<i>Argentina sialis</i>	0.0030	Trace	0.9996
67	<i>Apristurus kampae</i>	0.0030	Trace	0.9997
68	<i>Hippasteria spinosa</i>	0.0020	Trace	0.9997
69	<i>Parastichopus leucothele</i>	0.0020	Trace	0.9997
70	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9998
71	<i>Ophiopholis longispina</i>	0.0020	Trace	0.9998
72	<i>Taningia danae</i>	0.0010	Trace	0.9998
73	Porifera (phylum)	0.0010	Trace	0.9998
74	<i>Aristostomias scintillans</i>	0.0010	Trace	0.9998
75	<i>Myoxoderma platyacanthum</i>	0.0010	Trace	0.9998
76	<i>Apristurus brunneus</i>	0.0010	Trace	0.9999
77	Polychaeta (class)	0.0010	Trace	0.9999
78	Platyroctidae	0.0010	Trace	0.9999
79	<i>Caryophyllia sp.</i>	0.0010	Trace	0.9999
80	nudibranch unident.	0.0010	Trace	0.9999
81	<i>Crangon sp.</i>	0.0010	Trace	0.9999
82	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
83	Myctophidae	0.0010	Trace	0.9999
85	<i>Bathylagus sp.</i>	0.0010	Trace	1.0000

Table B-2.--Continued.

84	<i>Chauliodus macouni</i>	0.0010	Trace	1.0000
86	<i>Sebastes semicinctus</i>	Trace	Trace	1.0000
87	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
88	Virgularidae	Trace	Trace	1.0000
89	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000
90	Ophiuroid unident.	Trace	Trace	1.0000
92	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
91	<i>Lampanyctus</i> sp.	Trace	Trace	1.0000
93	<i>Mediaster aequalis</i>	Trace	Trace	1.0000
94	Pennatulacea (order)	Trace	Trace	1.0000
95	<i>Loligo opalescens</i>	Trace	Trace	1.0000
97	<i>Pagurus confragosus</i>	Trace	Trace	1.0000
96	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
99	Sternoptychidae unident.	Trace	Trace	1.0000
98	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000

Table B-3.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Conception deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	32.7060	0.2877	0.2877
2	<i>Sebastes diploproa</i>	23.0300	0.2026	0.4903
3	<i>Microstomus pacificus</i>	22.5490	0.1984	0.6887
4	<i>Glyptocephalus zachirus</i>	7.9230	0.0697	0.7584
5	<i>Sebastes aurora</i>	4.7610	0.0419	0.8003
6	<i>Anoplopoma fimbria</i>	2.6690	0.0235	0.8238
7	<i>Moroteuthis robusta</i>	2.3320	0.0205	0.8443
8	<i>Sebastolobus altivelis</i>	2.2910	0.0202	0.8645
9	squid unident.	2.0290	0.0178	0.8823
10	<i>Sebastes melanostomus</i>	2.0190	0.0178	0.9001
11	<i>Allocentrotus fragilis</i>	1.8990	0.0167	0.9168
12	<i>Raja rhina</i>	1.4790	0.0130	0.9298
13	<i>Lycodes corteziensis</i>	1.0980	0.0097	0.9394
14	heart urchin unident.	0.8980	0.0079	0.9473
15	<i>Lycodes diapterus</i>	0.8780	0.0077	0.9551
16	<i>Sebastolobus alascanus</i>	0.7340	0.0065	0.9615
17	<i>Brisaster</i> sp.	0.6440	0.0057	0.9672
18	<i>Parmaturus xaniurus</i>	0.4950	0.0044	0.9715
19	<i>Hydrolagus colliei</i>	0.4320	0.0038	0.9753
20	<i>Torpedo californica</i>	0.2900	0.0025	0.9779
21	Porifera (phylum)	0.2410	0.0021	0.9800
22	<i>Squalus acanthias</i>	0.2180	0.0019	0.9819
23	<i>Paractinostola faeculenta</i>	0.2120	0.0019	0.9838
24	<i>Myoxoderma platyacanthum</i>	0.1830	0.0016	0.9854
25	rough purple sea anemone	0.1830	0.0016	0.9870
26	Actiniaria (order)	0.1780	0.0016	0.9886
27	<i>Brisaster latifrons</i>	0.1730	0.0015	0.9901
28	<i>Bathyraja interrupta</i>	0.1370	0.0012	0.9913
29	<i>Clupea pallasii</i>	0.1300	0.0011	0.9924
30	<i>Apristurus brunneus</i>	0.1100	0.0010	0.9934
31	<i>Aphrocallistes vastus</i>	0.1030	0.0009	0.9943
32	<i>Chionoecetes tanneri</i>	0.0730	0.0006	0.9950
33	octopus unident.	0.0510	0.0004	0.9954
34	<i>Eopsetta jordani</i>	0.0480	0.0004	0.9958
35	<i>Vampyroteuthis infernalis</i>	0.0480	0.0004	0.9963
36	<i>Molpadia</i> sp.	0.0310	0.0003	0.9965
37	<i>Lyopsetta exilis</i>	0.0310	0.0003	0.9968
38	<i>Opisthoteuthis californiana</i>	0.0290	0.0003	0.9971
39	<i>Histioteuthis dofleini</i>	0.0280	0.0002	0.9973
40	<i>Liponemis brevicornis</i>	0.0280	0.0002	0.9975
41	<i>Molpadia intermedia</i>	0.0250	0.0002	0.9978

Table B-3.--Continued.

42	<i>Taningia danae</i>	0.0240	0.0002	0.9980
43	Holothuroidea unident.	0.0180	0.0002	0.9981
44	<i>Sebastes paucispinis</i>	0.0150	0.0001	0.9983
45	<i>Careproctus melanurus</i>	0.0150	0.0001	0.9984
46	<i>Somniosus pacificus</i>	0.0140	0.0001	0.9985
47	Ascidian unident.	0.0140	0.0001	0.9986
48	<i>Sebastes rufus</i>	0.0140	0.0001	0.9988
49	<i>Neptunea amianta</i>	0.0140	0.0001	0.9989
50	<i>Psolus</i> sp.	0.0120	0.0001	0.9990
51	Thaliacea unident.	0.0120	0.0001	0.9991
52	<i>Paralithodes californiensis</i>	0.0100	0.0001	0.9992
53	<i>Apristurus kampae</i>	0.0090	0.0001	0.9993
54	<i>Sebastes babcocki</i>	0.0080	0.0001	0.9993
55	<i>Hippasteria californica</i>	0.0070	0.0001	0.9994
56	<i>Sebastes crameri</i>	0.0060	0.0001	0.9995
57	<i>Rathbunaster californicus</i>	0.0060	0.0001	0.9995
58	<i>Parophrys vetulus</i>	0.0060	0.0001	0.9996
59	<i>Luidia foliata</i>	0.0060	0.0001	0.9996
60	<i>Rossia pacifica</i>	0.0050	Trace	0.9997
61	Myctophidae	0.0050	Trace	0.9997
62	Pennatulacea (order)	0.0040	Trace	0.9997
63	<i>Tritonia</i> sp.	0.0040	Trace	0.9998
64	<i>Metridium</i> sp.	0.0030	Trace	0.9998
65	<i>Pasiphaea pacifica</i>	0.0030	Trace	0.9998
66	<i>Parastichopus leucothele</i>	0.0020	Trace	0.9998
67	<i>Mediaster aequalis</i>	0.0020	Trace	0.9999
68	<i>Malacocephalus laevis</i>	0.0020	Trace	0.9999
69	<i>Berryteuthis magister</i>	0.0020	Trace	0.9999
70	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9999
71	<i>Pentamera lissoplaca</i>	0.0010	Trace	0.9999
72	Ophiuroid unident.	0.0010	Trace	0.9999
73	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
74	<i>Zaniolepis frenata</i>	0.0010	Trace	1.0000
75	Aphroditidae	0.0010	Trace	1.0000
76	<i>Lophaster furcilliger</i>	0.0010	Trace	1.0000
77	hydroid unident.	0.0010	Trace	1.0000
78	shrimp unident.	Trace	Trace	1.0000
79	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
80	Sternoptychidae unident.	Trace	Trace	1.0000
81	Paguridae	Trace	Trace	1.0000
82	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
83	starfish unident.	Trace	Trace	1.0000
84	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
85	<i>Pagurus confragosus</i>	Trace	Trace	1.0000

Table B-3.--Continued.

86	Virgularidae	Trace	Trace	1.0000
87	Natica sp.	Trace	Trace	1.0000
88	Apristurus brunneus	Trace	Trace	1.0000
89	Chorilia longipes	Trace	Trace	1.0000
90	Chauliodus macouni	Trace	Trace	1.0000
91	Leuroglossus stilbius	Trace	Trace	1.0000
92	Actinauge verrillii	Trace	Trace	1.0000
93	Asteronyx loveni	Trace	Trace	1.0000
94	Lycodapus fierasfer	Trace	Trace	1.0000
95	Tarletonbeania crenularis	Trace	Trace	1.0000
96	Gnathophausia gigas	Trace	Trace	1.0000

Table B-4.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire INPFC Conception area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes jordani</i>	18.0900	0.1837	0.1837
2	<i>Merluccius productus</i>	17.5220	0.1779	0.3616
3	<i>Sebastes diploproa</i>	14.4440	0.1467	0.5083
4	<i>Microstomus pacificus</i>	9.5060	0.0965	0.6049
5	<i>Trachurus symmetricus</i>	5.3700	0.0545	0.6594
6	<i>Sebastes saxicola</i>	4.9330	0.0501	0.7095
7	<i>Glyptocephalus zachirus</i>	4.7170	0.0479	0.7574
8	<i>Citharichthys sordidus</i>	2.9950	0.0304	0.7878
9	<i>Sebastes goodei</i>	2.1920	0.0223	0.8100
10	<i>Sebastes aurora</i>	1.8630	0.0189	0.8290
11	<i>Moroteuthis robusta</i>	1.5920	0.0162	0.8451
12	<i>Genyonemus lineatus</i>	1.4290	0.0145	0.8596
13	<i>Anoplopoma fimbria</i>	1.1400	0.0116	0.8712
14	squid unident.	1.0170	0.0103	0.8815
15	<i>Sebastolobus altivelis</i>	0.8960	0.0091	0.8906
16	<i>Allocentrotus fragilis</i>	0.8670	0.0088	0.8994
17	<i>Sebastes melanostomus</i>	0.7900	0.0080	0.9075
18	<i>Clupea pallasii</i>	0.7300	0.0074	0.9149
19	<i>Raja rhina</i>	0.6430	0.0065	0.9214
20	<i>Squalus acanthias</i>	0.6090	0.0062	0.9276
21	<i>Lycodes cortezianus</i>	0.4880	0.0050	0.9326
22	heart urchin unident.	0.4210	0.0043	0.9368
23	<i>Lycodes diapterus</i>	0.3480	0.0035	0.9404
24	<i>Argentina sialis</i>	0.3380	0.0034	0.9438
25	<i>Brisaster</i> sp.	0.3230	0.0033	0.9471
26	<i>Parophrys vetulus</i>	0.3160	0.0032	0.9503
27	<i>Hydrolagus colliei</i>	0.2980	0.0030	0.9533
28	<i>Sebastolobus alascanus</i>	0.2900	0.0029	0.9563
29	<i>Squatina californica</i>	0.2890	0.0029	0.9592
30	<i>Sebastes semicinctus</i>	0.2880	0.0029	0.9621
31	<i>Eopsetta jordani</i>	0.2870	0.0029	0.9650
32	<i>Lyopsetta exilis</i>	0.2550	0.0026	0.9676
33	<i>Brisaster latifrons</i>	0.2480	0.0025	0.9701
34	<i>Parmaturus xaniurus</i>	0.2270	0.0023	0.9725
35	<i>Torpedo californica</i>	0.2180	0.0022	0.9747
36	<i>Paralichthys californicus</i>	0.1630	0.0017	0.9763
37	<i>Peprilus simillimus</i>	0.1560	0.0016	0.9779
38	<i>Oncorhynchus tshawytscha</i>	0.1500	0.0015	0.9794
39	<i>Porichthys notatus</i>	0.1290	0.0013	0.9807
40	<i>Bathyraja interrupta</i>	0.1060	0.0011	0.9818
41	<i>Raja binoculata</i>	0.1020	0.0010	0.9828

Table B-4.--Continued.

42	<i>Lycodes pacificus</i>	0.0950	0.0010	0.9838
43	Porifera (phylum)	0.0940	0.0010	0.9848
44	<i>Pandalus jordani</i>	0.0940	0.0010	0.9857
45	<i>Ophiodon elongatus</i>	0.0880	0.0009	0.9866
46	<i>Myoxoderma platyacanthum</i>	0.0870	0.0009	0.9875
47	Actiniaria (order)	0.0830	0.0008	0.9883
48	<i>Paractinostola faeculenta</i>	0.0830	0.0008	0.9892
49	rough purple sea anemone	0.0820	0.0008	0.9900
50	<i>Zalambius rosaceus</i>	0.0760	0.0008	0.9908
51	<i>Engraulis mordax</i>	0.0670	0.0007	0.9915
52	<i>Mustelus henlei</i>	0.0590	0.0006	0.9921
53	<i>Sebastes paucispinis</i>	0.0590	0.0006	0.9927
54	<i>Apristurus brunneus</i>	0.0530	0.0005	0.9932
55	<i>Galeorhinus galeus</i>	0.0530	0.0005	0.9938
56	<i>Aphrocallistes vastus</i>	0.0400	0.0004	0.9942
57	<i>Paralithodes californiensis</i>	0.0390	0.0004	0.9946
58	octopus unident.	0.0370	0.0004	0.9949
59	<i>Metridium</i> sp.	0.0350	0.0004	0.9953
60	<i>Cancer productus</i>	0.0300	0.0003	0.9956
61	<i>Chionoecetes tanneri</i>	0.0290	0.0003	0.9959
62	<i>Luidia foliata</i>	0.0270	0.0003	0.9962
63	<i>Mustelus californicus</i>	0.0240	0.0002	0.9964
64	<i>Vampyroteuthis infernalis</i>	0.0200	0.0002	0.9966
65	<i>Rathbunaster californicus</i>	0.0170	0.0002	0.9968
66	<i>Opisthoteuthis californiana</i>	0.0160	0.0002	0.9969
67	<i>Molpadia</i> sp.	0.0150	0.0002	0.9971
68	<i>Pandalus platyceros</i>	0.0140	0.0001	0.9972
69	<i>Pycnopodia helianthoides</i>	0.0130	0.0001	0.9974
70	<i>Histioteuthis dofleini</i>	0.0130	0.0001	0.9975
71	Holothuroidea unident.	0.0120	0.0001	0.9976
72	<i>Pleuronichthys decurrens</i>	0.0120	0.0001	0.9978
73	<i>Liponemis brevicornis</i>	0.0110	0.0001	0.9979
74	<i>Scomber japonicus</i>	0.0110	0.0001	0.9980
75	<i>Molpadia intermedia</i>	0.0100	0.0001	0.9981
76	<i>Taningia danae</i>	0.0100	0.0001	0.9982
77	Thaliacea unident.	0.0100	0.0001	0.9983
78	<i>Sebastes elongatus</i>	0.0090	0.0001	0.9984
79	<i>Sebastes rufus</i>	0.0080	0.0001	0.9985
80	<i>Sebastes pinniger</i>	0.0080	0.0001	0.9985
81	<i>Cancer magister</i>	0.0080	0.0001	0.9986
82	brachiopod unident.	0.0070	0.0001	0.9987
83	<i>Zaniolepis latipinnis</i>	0.0060	0.0001	0.9987
84	<i>Zaniolepis frenata</i>	0.0060	0.0001	0.9988
85	<i>Careproctus melanurus</i>	0.0060	0.0001	0.9989

Table B-4.--Continued.

86	<i>Somniosus pacificus</i>	0.0060	0.0001	0.9989
87	Ascidian unident.	0.0060	0.0001	0.9990
88	<i>Neptunea amianta</i>	0.0050	0.0001	0.9990
89	<i>Pleuronichthys coenosus</i>	0.0050	0.0001	0.9991
90	<i>Psolus</i> sp.	0.0050	Trace	0.9991
91	<i>Apristurus kampae</i>	0.0040	Trace	0.9992
92	<i>Loligo opalescens</i>	0.0040	Trace	0.9992
93	<i>Icelinus filamentosus</i>	0.0040	Trace	0.9993
94	<i>Sebastes babcocki</i>	0.0030	Trace	0.9993
95	<i>Sebastes levis</i>	0.0030	Trace	0.9993
96	<i>Hippasteria californica</i>	0.0030	Trace	0.9993
97	Pennatulacea (order)	0.0030	Trace	0.9994
98	nudibranch unident.	0.0030	Trace	0.9994
99	Naticidae	0.0030	Trace	0.9994
100	<i>Sebastes crameri</i>	0.0020	Trace	0.9995
101	<i>Sebastes rosenblatti</i>	0.0020	Trace	0.9995
102	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9995
103	<i>Sebastes chlorostictus</i>	0.0020	Trace	0.9995
104	<i>Xystreurus liolepis</i>	0.0020	Trace	0.9995
105	<i>Cephaloscyllium ventriosum</i>	0.0020	Trace	0.9996
106	Myctophidae	0.0020	Trace	0.9996
107	Penaeidae	0.0020	Trace	0.9996
108	<i>Rossia pacifica</i>	0.0020	Trace	0.9996
109	<i>Alosa sapidissima</i>	0.0020	Trace	0.9996
110	Trichiuridae	0.0020	Trace	0.9997
111	<i>Raja inornata</i>	0.0020	Trace	0.9997
112	<i>Raja stellulata</i>	0.0020	Trace	0.9997
113	<i>Tritonia</i> sp.	0.0020	Trace	0.9997
114	<i>Mediaster</i> sp.	0.0020	Trace	0.9997
115	<i>Chilara taylori</i>	0.0010	Trace	0.9997
116	<i>Parastichopus leucothele</i>	0.0010	Trace	0.9998
117	<i>Sebastes zacentrus</i>	0.0010	Trace	0.9998
118	<i>Onychoteuthis borealijaponicus</i>	0.0010	Trace	0.9998
119	<i>Pasiphaea pacifica</i>	0.0010	Trace	0.9998
120	<i>Pandalopsis dispar</i>	0.0010	Trace	0.9998
121	<i>Sebastes helvomaculatus</i>	0.0010	Trace	0.9998
122	<i>Mediaster aequalis</i>	0.0010	Trace	0.9998
123	starfish unident.	0.0010	Trace	0.9998
124	<i>Prionotus stephanophrys</i>	0.0010	Trace	0.9999
125	<i>Sebastes caurinus</i>	0.0010	Trace	0.9999
126	<i>Berryteuthis magister</i>	0.0010	Trace	0.9999
127	skate egg case unident.	0.0010	Trace	0.9999
128	Paguridae	0.0010	Trace	0.9999
129	<i>Malacocephalus laevis</i>	0.0010	Trace	0.9999

Table B-4.--Continued.

130	<i>Hippasteria spinosa</i>	0.0010	Trace	0.9999
131	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
132	<i>Sardinops sagax</i>	0.0010	Trace	0.9999
133	<i>Stylasterias forreri</i>	0.0010	Trace	0.9999
134	Ophiuroid unident.	0.0010	Trace	0.9999
135	<i>Pentamera lissoplaca</i>	0.0010	Trace	0.9999
136	<i>Hippoglossina stomata</i>	0.0010	Trace	0.9999
137	<i>Pleuronichthys verticalis</i>	Trace	Trace	0.9999
138	<i>Ophiopholis longispina</i>	Trace	Trace	1.0000
139	crinoid unident.	Trace	Trace	1.0000
140	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
141	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000
142	shrimp unident.	Trace	Trace	1.0000
143	Polychaeta (class)	Trace	Trace	1.0000
144	<i>Crangon</i> sp.	Trace	Trace	1.0000
145	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
146	Platyroctidae	Trace	Trace	1.0000
147	Aphroditidae	Trace	Trace	1.0000
148	<i>Caryophyllia</i> sp.	Trace	Trace	1.0000
149	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
150	hydroid unident.	Trace	Trace	1.0000
151	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
152	Virgularidae	Trace	Trace	1.0000
153	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
154	Sternoptychidae unident.	Trace	Trace	1.0000
155	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
156	<i>Stomphia</i> sp.	Trace	Trace	1.0000
157	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
158	<i>Pagurus confragosus</i>	Trace	Trace	1.0000
159	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
160	<i>Pagurus brandti</i>	Trace	Trace	1.0000
161	<i>Natica</i> sp.	Trace	Trace	1.0000
163	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
162	<i>Lampanyctus</i> sp.	Trace	Trace	1.0000
164	<i>Chorilia longipes</i>	Trace	Trace	1.0000
165	<i>Leuroglossus stilbius</i>	Trace	Trace	1.0000
166	<i>Cololabis saira</i>	Trace	Trace	1.0000
167	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
168	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
169	<i>Lycodapus fierasfer</i>	Trace	Trace	1.0000
170	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000
171	<i>Tarletonbeania crenularis</i>	Trace	Trace	1.0000
172	<i>Gnathophausia gigas</i>	Trace	Trace	1.0000

Table B-5.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Monterey shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	21.4580	0.1921	0.1921
2	<i>Clupea pallasii</i>	14.3240	0.1282	0.3203
3	<i>Sebastes goodei</i>	12.2320	0.1095	0.4298
4	<i>Citharichthys sordidus</i>	7.9530	0.0712	0.5010
5	<i>Genyonemus lineatus</i>	7.4780	0.0669	0.5679
6	<i>Trachurus symmetricus</i>	7.3970	0.0662	0.6341
7	<i>Sardinops sagax</i>	5.8180	0.0521	0.6862
8	<i>Squalus acanthias</i>	4.8760	0.0437	0.7299
9	<i>Sebastes flavidus</i>	4.4540	0.0399	0.7697
10	<i>Scomber japonicus</i>	3.9360	0.0352	0.8050
11	<i>Engraulis mordax</i>	2.6350	0.0236	0.8286
12	<i>Sebastes saxicola</i>	2.5630	0.0229	0.8515
13	<i>Parophrys vetulus</i>	2.0400	0.0183	0.8698
14	<i>Oncorhynchus tshawytscha</i>	1.7770	0.0159	0.8857
15	<i>Glyptocephalus zachirus</i>	1.1080	0.0099	0.8956
16	<i>Sebastes entomelas</i>	1.0010	0.0090	0.9046
17	<i>Sebastes pinniger</i>	0.7700	0.0069	0.9115
18	<i>Eopsetta jordani</i>	0.6840	0.0061	0.9176
19	<i>Raja binoculata</i>	0.6620	0.0059	0.9235
20	<i>Sebastes elongatus</i>	0.6170	0.0055	0.9290
21	<i>Ophiodon elongatus</i>	0.6100	0.0055	0.9345
22	<i>Microstomus pacificus</i>	0.5840	0.0052	0.9397
23	<i>Porichthys notatus</i>	0.5230	0.0047	0.9444
24	<i>Sebastes semicinctus</i>	0.4760	0.0043	0.9487
25	<i>Raja rhina</i>	0.4710	0.0042	0.9529
26	<i>Metridium sp.</i>	0.4230	0.0038	0.9567
27	<i>Sebastes jordani</i>	0.4200	0.0038	0.9604
28	<i>Peprilus simillimus</i>	0.3070	0.0027	0.9632
29	<i>Hippoglossus stenolepis</i>	0.2860	0.0026	0.9657
30	<i>Laqueus californianus</i>	0.2820	0.0025	0.9683
31	<i>Luidia foliata</i>	0.2420	0.0022	0.9704
32	<i>Argentina sialis</i>	0.2170	0.0019	0.9724
33	<i>Alosa sapidissima</i>	0.2100	0.0019	0.9743
34	<i>Hydrolagus coliei</i>	0.2090	0.0019	0.9761
35	<i>Mustelus henlei</i>	0.1710	0.0015	0.9777
36	<i>Torpedo californica</i>	0.1670	0.0015	0.9792
37	<i>Pleuronichthys decurrens</i>	0.1530	0.0014	0.9805
38	<i>Zalembeius rosaceus</i>	0.1400	0.0013	0.9818
39	<i>Rathbunaster californicus</i>	0.1360	0.0012	0.9830
40	<i>Sebastes chlorostictus</i>	0.1330	0.0012	0.9842
41	<i>Sebastes mystinus</i>	0.1320	0.0012	0.9854

Table B-5.--Continued.

42	<i>Octopus dofleini</i>	0.1270	0.0011	0.9865
43	<i>Lyopsetta exilis</i>	0.1180	0.0011	0.9876
44	Actinaria (order)	0.1150	0.0010	0.9886
45	<i>Lepidopsetta bilineata</i>	0.1130	0.0010	0.9896
46	<i>Sebastes paucispinis</i>	0.1030	0.0009	0.9905
47	<i>Hexanchus griseus</i>	0.0880	0.0008	0.9913
48	<i>Cancer magister</i>	0.0830	0.0007	0.9921
49	<i>Paralichthys californicus</i>	0.0780	0.0007	0.9928
50	<i>Platichthys stellatus</i>	0.0770	0.0007	0.9935
51	<i>Anoplopoma fimbria</i>	0.0630	0.0006	0.9940
52	<i>Pycnopodia helianthoides</i>	0.0590	0.0005	0.9945
53	<i>Brisaster latifrons</i>	0.0530	0.0005	0.9950
54	<i>Loligo opalescens</i>	0.0480	0.0004	0.9955
55	Thaliacea unident.	0.0470	0.0004	0.9959
56	<i>Mustelus</i> sp.	0.0470	0.0004	0.9963
57	<i>Parastichopus californicus</i>	0.0300	0.0003	0.9966
58	<i>Pleuronichthys verticalis</i>	0.0290	0.0003	0.9968
59	<i>Sebastes ovalis</i>	0.0260	0.0002	0.9970
60	<i>Chilara taylori</i>	0.0240	0.0002	0.9973
61	<i>Raja inornata</i>	0.0210	0.0002	0.9974
62	<i>Lopholithodes foraminatus</i>	0.0190	0.0002	0.9976
63	<i>Brisaster</i> sp.	0.0180	0.0002	0.9978
64	<i>Cancer productus</i>	0.0150	0.0001	0.9979
65	<i>Pandalus jordani</i>	0.0140	0.0001	0.9980
66	<i>Zaniolepis latipinnis</i>	0.0130	0.0001	0.9981
67	<i>Sebastes levis</i>	0.0110	0.0001	0.9983
68	<i>Metridium senile</i>	0.0110	0.0001	0.9984
69	<i>Sebastes crameri</i>	0.0100	0.0001	0.9984
70	<i>Sebastes zacentrus</i>	0.0100	0.0001	0.9985
71	<i>Pandalus platyceros</i>	0.0100	0.0001	0.9986
72	<i>Gorgonocephalus eucnemis</i>	0.0100	0.0001	0.9987
73	<i>Sebastes miniatus</i>	0.0090	0.0001	0.9988
74	<i>Apristurus brunneus</i>	0.0090	0.0001	0.9989
75	Scyphozoa (class)	0.0080	0.0001	0.9989
76	<i>Bathyraja interrupta</i>	0.0080	0.0001	0.9990
77	<i>Psettichthys melanostictus</i>	0.0060	0.0001	0.9991
78	<i>Lycodes pacificus</i>	0.0060	0.0001	0.9991
79	Pennatulacea (order)	0.0060	0.0001	0.9992
80	<i>Microgadus proximus</i>	0.0060	0.0001	0.9992
81	skate egg case unident.	0.0060	Trace	0.9993
82	starfish unident.	0.0050	Trace	0.9993
83	<i>Mediaster aequalis</i>	0.0050	Trace	0.9994
84	nudibranch unident.	0.0050	Trace	0.9994
85	<i>Icelinus filamentosus</i>	0.0040	Trace	0.9994

Table B-5.--Continued.

86	<i>Sebastes helvomaculatus</i>	0.0030	Trace	0.9995
87	<i>Sebastes caurinus</i>	0.0030	Trace	0.9995
88	<i>Atheresthes stomias</i>	0.0030	Trace	0.9995
89	<i>Hippasteria californica</i>	0.0030	Trace	0.9995
90	<i>Mursia gaudichaudii</i>	0.0030	Trace	0.9996
91	<i>Crasseodoma giganteum</i>	0.0030	Trace	0.9996
92	<i>Sebastes alutus</i>	0.0020	Trace	0.9996
93	<i>Synodus lucioceps</i>	0.0020	Trace	0.9996
94	Porifera (phylum)	0.0020	Trace	0.9996
95	<i>Sebastes diploproa</i>	0.0020	Trace	0.9997
96	<i>Hexagrammos decagrammus</i>	0.0020	Trace	0.9997
97	<i>Tritonia</i> sp.	0.0020	Trace	0.9997
98	<i>Parastichopus leucothele</i>	0.0020	Trace	0.9997
99	<i>Hippasteria spinosa</i>	0.0020	Trace	0.9997
100	<i>Sebastes rosenblatti</i>	0.0020	Trace	0.9998
101	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9998
102	Aphroditidae	0.0020	Trace	0.9998
103	<i>Stomphia</i> sp.	0.0020	Trace	0.9998
104	<i>Ophiura sarsi</i>	0.0020	Trace	0.9998
105	<i>Stylasterias forreri</i>	0.0010	Trace	0.9998
106	<i>Mustelus californicus</i>	0.0010	Trace	0.9998
107	squid unident.	0.0010	Trace	0.9999
108	<i>Sebastes wilsoni</i>	0.0010	Trace	0.9999
109	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9999
110	Basketstarfish unident.	0.0010	Trace	0.9999
111	<i>Ptilosarcus gurneyi</i>	0.0010	Trace	0.9999
112	<i>Lycodes corteziianus</i>	0.0010	Trace	0.9999
113	octopus unident.	0.0010	Trace	0.9999
114	<i>Myoxoderma platyacanthum</i>	0.0010	Trace	0.9999
115	<i>Sebastolobus alascanus</i>	0.0010	Trace	0.9999
116	heart urchin unident.	0.0010	Trace	0.9999
117	Virgularidae	0.0010	Trace	0.9999
118	<i>Careproctus melanurus</i>	0.0010	Trace	0.9999
119	<i>Asterina miniata</i>	0.0010	Trace	0.9999
120	<i>Oregonia gracilis</i>	0.0010	Trace	0.9999
121	<i>Acantholithodes hispidus</i>	Trace	Trace	0.9999
122	Ascidian unident.	Trace	Trace	1.0000
123	<i>Ceramaster</i> sp.	Trace	Trace	1.0000
124	<i>Pugettia</i> sp.	Trace	Trace	1.0000
125	<i>Mediaster</i> sp.	Trace	Trace	1.0000
126	Ophiuroid unident.	Trace	Trace	1.0000
127	<i>Sebastes auriculatus</i>	Trace	Trace	1.0000
128	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
129	<i>Paralithodes californiensis</i>	Trace	Trace	1.0000

Table B-5.--Continued.

130	<i>Rossia pacifica</i>	Trace	Trace	1.0000
131	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
132	<i>Holothuroidea</i> unident.	Trace	Trace	1.0000
133	<i>Majidae</i> unident.	Trace	Trace	1.0000
134	<i>Enophrys taurina</i>	Trace	Trace	1.0000
135	<i>Taningia danae</i>	Trace	Trace	1.0000
136	<i>Polychaeta</i> (class)	Trace	Trace	1.0000
137	<i>Pagurus capillatus</i>	Trace	Trace	1.0000
138	<i>Aphrocallistes vastus</i>	Trace	Trace	1.0000
139	<i>Myctophidae</i>	Trace	Trace	1.0000
140	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
141	<i>Crossaster papposus</i>	Trace	Trace	1.0000
142	<i>Chitonotus pugetensis</i>	Trace	Trace	1.0000
143	<i>Icelinus tenuis</i>	Trace	Trace	1.0000
144	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
145	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
146	<i>Bathyagonus nigripinnis</i>	Trace	Trace	1.0000
147	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
148	<i>Citharichthys stigmaeus</i>	Trace	Trace	1.0000
149	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
151	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
150	<i>Pteraster</i> sp.	Trace	Trace	1.0000
152	<i>Allosmerus elongatus</i>	Trace	Trace	1.0000
154	<i>Trichiuridae</i>	Trace	Trace	1.0000
153	brachiopod unident.	Trace	Trace	1.0000
155	<i>Isopoda</i> (order)	Trace	Trace	1.0000
156	crab unident.	Trace	Trace	1.0000
157	<i>Pagurus brandti</i>	Trace	Trace	1.0000
158	<i>Penaeidae</i>	Trace	Trace	1.0000
159	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
160	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000

Table B-6.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Monterey middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	102.6170	0.3710	0.3710
2	<i>Sebastes diploproa</i>	46.7110	0.1689	0.5399
3	<i>Sebastes goodei</i>	28.4920	0.1030	0.6429
4	<i>Microstomus pacificus</i>	18.5480	0.0671	0.7099
5	<i>Squalus acanthias</i>	16.8110	0.0608	0.7707
6	<i>Sebastes jordani</i>	16.5940	0.0600	0.8307
7	<i>Sebastes saxicola</i>	15.4000	0.0557	0.8864
8	<i>Glyptocephalus zachirus</i>	9.2340	0.0334	0.9197
9	<i>Sebastes entomelas</i>	4.6250	0.0167	0.9365
10	<i>Anoplopoma fimbria</i>	3.9940	0.0144	0.9509
11	<i>Parophrys vetulus</i>	2.0230	0.0073	0.9582
12	<i>Hydrolagus collicii</i>	1.5540	0.0056	0.9638
13	<i>Raja rhina</i>	1.0480	0.0038	0.9676
14	<i>Sebastes zacentrus</i>	0.7850	0.0028	0.9705
15	<i>Lycodes cortezianus</i>	0.7410	0.0027	0.9731
16	<i>Sebastolobus alascanus</i>	0.7210	0.0026	0.9758
17	<i>Sebastes crameri</i>	0.7000	0.0025	0.9783
18	<i>Lyopsetta exilis</i>	0.6370	0.0023	0.9806
19	<i>Ophiodon elongatus</i>	0.5560	0.0020	0.9826
20	<i>Apristurus brunneus</i>	0.5500	0.0020	0.9846
21	<i>Trachurus symmetricus</i>	0.3660	0.0013	0.9859
22	<i>Eopsetta jordani</i>	0.2770	0.0010	0.9869
23	<i>Bathyraja interrupta</i>	0.2730	0.0010	0.9879
24	<i>Citharichthys sordidus</i>	0.2450	0.0009	0.9888
25	<i>Sebastes elongatus</i>	0.2320	0.0008	0.9896
26	<i>Sebastes melanostomus</i>	0.2260	0.0008	0.9904
27	<i>Porichthys notatus</i>	0.2180	0.0008	0.9912
28	<i>Rathbunaster californicus</i>	0.2160	0.0008	0.9920
29	<i>Torpedo californica</i>	0.1920	0.0007	0.9927
30	<i>Argentina sialis</i>	0.1840	0.0007	0.9934
31	<i>Alloctrotus fragilis</i>	0.1840	0.0007	0.9940
32	<i>Luidia foliata</i>	0.1740	0.0006	0.9947
33	<i>Sebastes paucispinis</i>	0.1430	0.0005	0.9952
34	<i>Moroteuthis robusta</i>	0.1120	0.0004	0.9956
35	<i>Lopholithodes foraminatus</i>	0.1010	0.0004	0.9959
36	<i>Pleuronichthys decurrens</i>	0.1010	0.0004	0.9963
37	<i>Pandalopsis dispar</i>	0.0990	0.0004	0.9967
38	<i>Raja binoculata</i>	0.0900	0.0003	0.9970
39	<i>Sebastes rosenblatti</i>	0.0860	0.0003	0.9973
40	<i>Myoxoderma platyacanthum</i>	0.0670	0.0002	0.9975
41	squid unident.	0.0660	0.0002	0.9978

Table B-6.--Continued.

42	<i>Sebastes helvomaculatus</i>	0.0610	0.0002	0.9980
43	<i>Oncorhynchus tshawytscha</i>	0.0570	0.0002	0.9982
44	<i>Sebastes borealis</i>	0.0460	0.0002	0.9984
45	<i>Cancer magister</i>	0.0320	0.0001	0.9985
46	<i>Pandalus platyceros</i>	0.0320	0.0001	0.9986
47	<i>Metridium</i> sp.	0.0290	0.0001	0.9987
48	<i>Icelinus filamentosus</i>	0.0260	0.0001	0.9988
49	<i>Lycodes diapterus</i>	0.0240	0.0001	0.9989
50	<i>Sebastes aurora</i>	0.0220	0.0001	0.9990
51	<i>Sebastes babcocki</i>	0.0220	0.0001	0.9991
52	<i>Scomber japonicus</i>	0.0200	0.0001	0.9991
53	<i>Sebastes alutus</i>	0.0190	0.0001	0.9992
54	<i>Atheresthes stomias</i>	0.0180	0.0001	0.9993
55	<i>Sebastes chlorostictus</i>	0.0170	0.0001	0.9993
56	<i>Careproctus melanurus</i>	0.0160	0.0001	0.9994
57	<i>Sebastes pinniger</i>	0.0150	0.0001	0.9994
58	<i>Chilara taylori</i>	0.0120	Trace	0.9995
59	<i>Ophiura sarsi</i>	0.0110	Trace	0.9995
60	<i>Thaliacea</i> unident.	0.0110	Trace	0.9996
61	<i>Holothuroidea</i> unident.	0.0110	Trace	0.9996
62	<i>Taningia danae</i>	0.0080	Trace	0.9996
63	<i>Brisaster</i> sp.	0.0080	Trace	0.9997
64	<i>Cancer productus</i>	0.0070	Trace	0.9997
65	<i>Sebastes levis</i>	0.0060	Trace	0.9997
66	<i>Pagurus confragosus</i>	0.0060	Trace	0.9997
67	<i>Leucandra heathi</i>	0.0060	Trace	0.9997
68	<i>Hippasteria californica</i>	0.0050	Trace	0.9998
69	<i>Parastichopus leucothele</i>	0.0050	Trace	0.9998
70	<i>Hippasteria spinosa</i>	0.0050	Trace	0.9998
71	<i>Liponemis brevicornis</i>	0.0040	Trace	0.9998
72	<i>Pagurus capillatus</i>	0.0040	Trace	0.9998
73	<i>Sebastes</i> sp.	0.0030	Trace	0.9998
74	<i>Gorgonocephalus eucnemis</i>	0.0030	Trace	0.9999
75	<i>Lycodes pacificus</i>	0.0030	Trace	0.9999
76	<i>Histioteuthis dofleini</i>	0.0020	Trace	0.9999
77	Aphroditidae	0.0020	Trace	0.9999
78	Cottidae	0.0020	Trace	0.9999
79	<i>Opisthoteuthis californiana</i>	0.0020	Trace	0.9999
80	<i>Polinices</i> sp.	0.0020	Trace	0.9999
81	<i>Pycnopodia helianthoides</i>	0.0020	Trace	0.9999
82	<i>Stomphia</i> sp.	0.0020	Trace	0.9999
83	<i>Zalambius rosaceus</i>	0.0020	Trace	0.9999
84	<i>Berryteuthis magister</i>	0.0010	Trace	0.9999
85	<i>Sebastes semicinctus</i>	0.0010	Trace	0.9999

Table B-6.--Continued.

86	<i>Sebastes rufus</i>	0.0010	Trace	0.9999
87	<i>Parastichopus californicus</i>	0.0010	Trace	0.9999
88	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
89	Myctophidae	0.0010	Trace	1.0000
90	<i>Stylasterias forreri</i>	0.0010	Trace	1.0000
91	Paguridae	0.0010	Trace	1.0000
92	<i>Paractinostola faeculenta</i>	0.0010	Trace	1.0000
93	<i>Pandalus jordani</i>	0.0010	Trace	1.0000
94	<i>Tactostoma macropus</i>	0.0010	Trace	1.0000
95	<i>Mediaster aequalis</i>	0.0010	Trace	1.0000
96	<i>Allocentrotus</i> sp.	0.0010	Trace	1.0000
97	<i>Apristurus kampae</i>	0.0010	Trace	1.0000
98	<i>Bathylagus</i> sp.	0.0010	Trace	1.0000
99	<i>Brisaster latifrons</i>	0.0010	Trace	1.0000
100	<i>Raja inornata</i>	0.0010	Trace	1.0000
101	Pennatulacea (order)	Trace	Trace	1.0000
102	<i>Buccinum viridum</i>	Trace	Trace	1.0000
103	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
104	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000
105	<i>Natica</i> sp.	Trace	Trace	1.0000
106	starfish unident.	Trace	Trace	1.0000
107	crab unident.	Trace	Trace	1.0000
108	<i>Sebastolobus altivelis</i>	Trace	Trace	1.0000
109	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
110	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
111	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
112	<i>Chorilia longipes</i>	Trace	Trace	1.0000
113	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
114	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
115	<i>Mediaster</i> sp.	Trace	Trace	1.0000
116	Actiniaria (order)	Trace	Trace	1.0000
117	<i>Diaphus</i> sp.	Trace	Trace	1.0000
118	<i>Psolus squamatus</i>	Trace	Trace	1.0000

Table B-7.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Monterey deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Microstomus pacificus</i>	45.6090	0.3520	0.3520
2	<i>Merluccius productus</i>	22.9990	0.1775	0.5295
3	<i>Glyptocephalus zachirus</i>	17.7850	0.1373	0.6668
4	<i>Anoplopoma fimbria</i>	9.7940	0.0756	0.7424
5	<i>Sebastes diploproa</i>	7.4890	0.0578	0.8002
6	<i>Sebastes aurora</i>	4.2060	0.0325	0.8326
7	<i>Squalus acanthias</i>	3.5000	0.0270	0.8596
8	<i>Sebastolobus alascanus</i>	2.8270	0.0218	0.8815
9	<i>Lycodes corteziensis</i>	2.6590	0.0205	0.9020
10	<i>Hydrolagus collicii</i>	2.5840	0.0199	0.9219
11	<i>Raja rhina</i>	1.5050	0.0116	0.9335
12	<i>Apristurus brunneus</i>	1.4010	0.0108	0.9444
13	<i>Sebastes melanostomus</i>	1.3210	0.0102	0.9545
14	<i>Rathbunaster californicus</i>	0.7300	0.0056	0.9602
15	<i>Sebastolobus altivelis</i>	0.5750	0.0044	0.9646
16	<i>Parmaturus xaniurus</i>	0.4210	0.0032	0.9679
17	rough purple sea anemone	0.4130	0.0032	0.9711
18	<i>Parophrys vetulus</i>	0.3660	0.0028	0.9739
19	<i>Bathyraja interrupta</i>	0.3390	0.0026	0.9765
20	<i>Alloctrotus fragilis</i>	0.2950	0.0023	0.9788
21	<i>Eopsetta jordani</i>	0.2770	0.0021	0.9809
22	<i>Lycodes diapterus</i>	0.2760	0.0021	0.9830
23	<i>Liponemis brevicornis</i>	0.2510	0.0019	0.9850
24	<i>Lyopsetta exilis</i>	0.2120	0.0016	0.9866
25	<i>Myoxoderma platyacanthum</i>	0.2020	0.0016	0.9882
26	<i>Trachurus symmetricus</i>	0.1400	0.0011	0.9893
27	<i>Paractinostola faeculenta</i>	0.1390	0.0011	0.9903
28	<i>Moroteuthis robusta</i>	0.1240	0.0010	0.9913
29	<i>Sebastes aleutianus</i>	0.1000	0.0008	0.9921
30	<i>Brisaster</i> sp.	0.0960	0.0007	0.9928
31	<i>Neptunea lyrata</i>	0.0820	0.0006	0.9934
32	squid unident.	0.0730	0.0006	0.9940
33	octopus unident.	0.0640	0.0005	0.9945
34	<i>Albatrossia pectoralis</i>	0.0560	0.0004	0.9949
35	<i>Berryteuthis magister</i>	0.0480	0.0004	0.9953
36	<i>Atheresthes stomias</i>	0.0470	0.0004	0.9957
37	<i>Neptunea amianta</i>	0.0460	0.0004	0.9960
38	<i>Careproctus melanurus</i>	0.0390	0.0003	0.9963
39	<i>Luidia foliata</i>	0.0380	0.0003	0.9966
40	<i>Antimora microlepis</i>	0.0320	0.0002	0.9968
41	<i>Opisthoteuthis californiana</i>	0.0310	0.0002	0.9971

Table B-7.--Continued.

42	<i>Sebastes alutus</i>	0.0290	0.0002	0.9973
43	<i>Taningia danae</i>	0.0250	0.0002	0.9975
44	Myctophidae	0.0230	0.0002	0.9977
45	<i>Pagurus confragosus</i>	0.0220	0.0002	0.9979
46	Thaliacea unident.	0.0220	0.0002	0.9980
47	<i>Sebastes crameri</i>	0.0210	0.0002	0.9982
48	Porifera (phylum)	0.0200	0.0002	0.9983
49	<i>Histioteuthis dofleini</i>	0.0180	0.0001	0.9985
50	<i>Sebastes babcocki</i>	0.0130	0.0001	0.9986
51	<i>Molpadia intermedia</i>	0.0120	0.0001	0.9987
52	<i>Sebastes pinniger</i>	0.0120	0.0001	0.9988
53	<i>Chionoecetes tanneri</i>	0.0110	0.0001	0.9988
54	<i>Pasiphaea pacifica</i>	0.0100	0.0001	0.9989
55	<i>Hippasteria spinosa</i>	0.0090	0.0001	0.9990
56	<i>Bothrocarum brunneum</i>	0.0080	0.0001	0.9990
57	<i>Hippasteria californica</i>	0.0080	0.0001	0.9991
58	<i>Buccinum viridum</i>	0.0070	0.0001	0.9992
59	Actiniaria (order)	0.0070	0.0001	0.9992
60	<i>Metridium</i> sp.	0.0070	0.0001	0.9993
61	Paguridae	0.0060	Trace	0.9993
62	Hexactinellida	0.0060	Trace	0.9994
63	<i>Brisaster latifrons</i>	0.0050	Trace	0.9994
64	<i>Mediaster aequalis</i>	0.0050	Trace	0.9995
65	<i>Alepocephalus tenebrosus</i>	0.0040	Trace	0.9995
66	<i>Sebastes rufus</i>	0.0040	Trace	0.9995
67	<i>Raja inornata</i>	0.0040	Trace	0.9995
68	<i>Ophiura sarsi</i>	0.0040	Trace	0.9996
69	<i>Actinauge verrillii</i>	0.0040	Trace	0.9996
70	<i>Anthomastus</i> sp.	0.0030	Trace	0.9996
71	<i>Scomber japonicus</i>	0.0030	Trace	0.9997
72	<i>Lampanyctus</i> sp.	0.0030	Trace	0.9997
73	<i>Embassichthys bathybius</i>	0.0020	Trace	0.9997
74	<i>Stylasterias forreri</i>	0.0020	Trace	0.9997
75	Holothuroidea unident.	0.0020	Trace	0.9997
76	Pennatulacea (order)	0.0020	Trace	0.9997
77	<i>Clinocardium</i> sp.	0.0020	Trace	0.9998
78	<i>Careproctus</i> sp.	0.0020	Trace	0.9998
79	<i>Gorgonocephalus eucnemis</i>	0.0020	Trace	0.9998
80	<i>Symbolophorus californiensis</i>	0.0020	Trace	0.9998
81	<i>Sebastes chlorostictus</i>	0.0020	Trace	0.9998
82	Sipuncula (phylum)	0.0010	Trace	0.9998
83	<i>Tactostoma macropus</i>	0.0010	Trace	0.9998
84	<i>Bathylagus</i> sp.	0.0010	Trace	0.9999
85	<i>Psolus squamatus</i>	0.0010	Trace	0.9999

Table B-7.--Continued.

86	Mediaster sp.	0.0010	Trace	0.9999
87	Scyphozoa (class)	0.0010	Trace	0.9999
88	Clupea pallasii	0.0010	Trace	0.9999
89	Aforia sp.	0.0010	Trace	0.9999
90	Nezumia stelgidolepis	0.0010	Trace	0.9999
91	Pentamera lissoplaca	0.0010	Trace	0.9999
92	snail (gastropod) eggs	0.0010	Trace	0.9999
93	Lampanyctus ritteri	0.0010	Trace	0.9999
94	Aphroditidae	0.0010	Trace	0.9999
95	skate egg case unident.	0.0010	Trace	0.9999
96	Chorilia longipes	0.0010	Trace	0.9999
97	Echiura (phylum)	0.0010	Trace	0.9999
98	Aphrocallistes vastus	0.0010	Trace	0.9999
99	Calliostoma sp.	Trace	Trace	1.0000
100	Styela rustica	Trace	Trace	1.0000
101	Ptilosarcus gurneyi	Trace	Trace	1.0000
102	Aplacophora	Trace	Trace	1.0000
103	Ophiuroid unident.	Trace	Trace	1.0000
104	Chauliodus macouni	Trace	Trace	1.0000
105	Polinices sp.	Trace	Trace	1.0000
106	Loligo opalescens	Trace	Trace	1.0000
107	Buccinum sp.	Trace	Trace	1.0000
108	Ophiopholis aculeata	Trace	Trace	1.0000
109	Pasiphaea tarda	Trace	Trace	1.0000
110	Laqueus californianus	Trace	Trace	1.0000
111	Liparidinae	Trace	Trace	1.0000
112	Pannychia moseleyi	Trace	Trace	1.0000
113	Pagurus capillatus	Trace	Trace	1.0000
114	Idiacanthus antrostomus	Trace	Trace	1.0000
115	Colus sp.	Trace	Trace	1.0000
116	Lycodapus sp.	Trace	Trace	1.0000
117	Coryphaenoides acrolepis	Trace	Trace	1.0000
118	Paraliparis sp.	Trace	Trace	1.0000
119	Ascidian unident.	Trace	Trace	1.0000
120	Virgularidae	Trace	Trace	1.0000
121	Lycodapus mandibularis	Trace	Trace	1.0000
122	Beringius frielei	Trace	Trace	1.0000
123	Apristurus brunneus	Trace	Trace	1.0000
125	Colus herendeenii	Trace	Trace	1.0000
124	Asteronyx loveni	Trace	Trace	1.0000
126	Tritonia sp.	Trace	Trace	1.0000
127	Oregonia gracilis	Trace	Trace	1.0000
128	Rhinoliparis attenuatus	Trace	Trace	1.0000
129	Bathyraja sp.	Trace	Trace	1.0000

Table B-7.--Continued.

130	Pagurus brandti	Trace	Trace	1.0000
131	Gastropod unident.	Trace	Trace	1.0000
132	Diaphus sp.	Trace	Trace	1.0000
133	Leuroglossus stilbius	Trace	Trace	1.0000
134	Lestidiops ringens	Trace	Trace	1.0000

Table B-8.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire INPFC Monterey area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	36.7000	0.2520	0.2520
2	<i>Microstomus pacificus</i>	12.8940	0.0885	0.3406
3	<i>Sebastes goodei</i>	12.7770	0.0877	0.4283
4	<i>Sebastes diploproa</i>	10.0940	0.0693	0.4976
5	<i>Clupea pallasii</i>	8.8240	0.0606	0.5582
6	<i>Squalus acanthias</i>	6.7970	0.0467	0.6049
7	<i>Glyptocephalus zachirus</i>	5.9390	0.0408	0.6457
8	<i>Citharichthys sordidus</i>	4.9440	0.0340	0.6796
9	<i>Trachurus symmetricus</i>	4.6520	0.0319	0.7116
10	<i>Genyonemus lineatus</i>	4.6060	0.0316	0.7432
11	<i>Sebastes saxicola</i>	4.4120	0.0303	0.7735
12	<i>Sardinops sagax</i>	3.5840	0.0246	0.7981
13	<i>Sebastes jordani</i>	3.3120	0.0227	0.8208
14	<i>Sebastes flavidus</i>	2.7440	0.0188	0.8397
15	<i>Anoplopoma fimbria</i>	2.7320	0.0188	0.8585
16	<i>Scomber japonicus</i>	2.4290	0.0167	0.8751
17	<i>Parophrys vetulus</i>	1.7020	0.0117	0.8868
18	<i>Engraulis mordax</i>	1.6230	0.0111	0.8980
19	<i>Sebastes entomelas</i>	1.4680	0.0101	0.9080
20	<i>Oncorhynchus tshawytscha</i>	1.1050	0.0076	0.9156
21	<i>Hydrolagus colliei</i>	0.9310	0.0064	0.9220
22	<i>Sebastes aurora</i>	0.8450	0.0058	0.9278
23	<i>Raja rhina</i>	0.7840	0.0054	0.9332
24	<i>Sebastolobus alascanus</i>	0.6990	0.0048	0.9380
25	<i>Lycodes corteziianus</i>	0.6690	0.0046	0.9426
26	<i>Eopsetta jordani</i>	0.5280	0.0036	0.9462
27	<i>Sebastes pinniger</i>	0.4790	0.0033	0.9495
28	<i>Ophiodon elongatus</i>	0.4780	0.0033	0.9528
29	<i>Raja binoculata</i>	0.4250	0.0029	0.9557
30	<i>Sebastes elongatus</i>	0.4230	0.0029	0.9586
31	<i>Apristurus brunneus</i>	0.3870	0.0027	0.9613
32	<i>Porichthys notatus</i>	0.3620	0.0025	0.9638
33	<i>Sebastes melanostomus</i>	0.3060	0.0021	0.9659
34	<i>Sebastes semicinctus</i>	0.2930	0.0020	0.9679
35	<i>Rathbunaster californicus</i>	0.2700	0.0019	0.9697
36	<i>Metridium sp.</i>	0.2670	0.0018	0.9716
37	<i>Lyopsetta exilis</i>	0.2330	0.0016	0.9732
38	<i>Peprilus simillimus</i>	0.1890	0.0013	0.9745
39	<i>Luidia foliata</i>	0.1890	0.0013	0.9758
40	<i>Hippoglossus stenolepis</i>	0.1760	0.0012	0.9770
41	<i>Laqueus californianus</i>	0.1740	0.0012	0.9782

Table B-8.--Continued.

42	<i>Argentina sialis</i>	0.1680	0.0012	0.9793
43	<i>Sebastes zacentrus</i>	0.1500	0.0010	0.9804
44	<i>Sebastes crameri</i>	0.1390	0.0010	0.9813
45	<i>Torpedo californica</i>	0.1380	0.0010	0.9823
46	<i>Alosa sapidissima</i>	0.1300	0.0009	0.9832
47	<i>Bathyraja interrupta</i>	0.1230	0.0008	0.9840
48	<i>Sebastolobus altivelis</i>	0.1150	0.0008	0.9848
49	<i>Pleuronichthys decurrens</i>	0.1130	0.0008	0.9856
50	<i>Mustelus henlei</i>	0.1050	0.0007	0.9863
51	<i>Alloctrotus fragilis</i>	0.0930	0.0006	0.9869
52	<i>Sebastes paucispinis</i>	0.0900	0.0006	0.9875
53	<i>Zalembeus rosaceus</i>	0.0870	0.0006	0.9881
54	<i>Sebastes chlorostictus</i>	0.0850	0.0006	0.9887
55	<i>Parmaturus xaniurus</i>	0.0840	0.0006	0.9893
56	rough purple sea anemone	0.0830	0.0006	0.9899
57	<i>Sebastes mystinus</i>	0.0820	0.0006	0.9904
58	<i>Octopus dofleini</i>	0.0780	0.0005	0.9910
59	Actiniaria (order)	0.0720	0.0005	0.9915
60	<i>Lepidopsetta bilineata</i>	0.0700	0.0005	0.9919
61	<i>Lycodes diapterus</i>	0.0600	0.0004	0.9923
62	<i>Cancer magister</i>	0.0570	0.0004	0.9927
63	<i>Hexanchus griseus</i>	0.0540	0.0004	0.9931
64	<i>Myoxoderma platyacanthum</i>	0.0530	0.0004	0.9935
65	<i>Liponemis brevicornis</i>	0.0510	0.0004	0.9938
66	<i>Paralichthys californicus</i>	0.0480	0.0003	0.9942
67	<i>Platichthys stellatus</i>	0.0480	0.0003	0.9945
68	<i>Moroteuthis robusta</i>	0.0450	0.0003	0.9948
69	<i>Pycnopodia helianthoides</i>	0.0370	0.0003	0.9950
70	Thaliacea unident.	0.0350	0.0002	0.9953
71	<i>Brisaster latifrons</i>	0.0340	0.0002	0.9955
72	<i>Brisaster</i> sp.	0.0320	0.0002	0.9957
73	<i>Lopholithodes foraminatus</i>	0.0300	0.0002	0.9959
74	<i>Loligo opalescens</i>	0.0300	0.0002	0.9962
75	<i>Mustelus</i> sp.	0.0290	0.0002	0.9963
76	<i>Paractinostola faeculenta</i>	0.0280	0.0002	0.9965
77	squid unident.	0.0270	0.0002	0.9967
78	<i>Sebastes aleutianus</i>	0.0200	0.0001	0.9969
79	<i>Parastichopus californicus</i>	0.0190	0.0001	0.9970
80	<i>Pandalopsis dispar</i>	0.0180	0.0001	0.9971
81	<i>Pleuronichthys verticalis</i>	0.0180	0.0001	0.9972
82	<i>Sebastes rosenblatti</i>	0.0170	0.0001	0.9974
83	<i>Chilara taylora</i>	0.0170	0.0001	0.9975
84	<i>Neptunea lyrata</i>	0.0160	0.0001	0.9976
85	<i>Sebastes ovalis</i>	0.0160	0.0001	0.9977

Table B-8.--Continued.

86	<i>Atheresthes stomias</i>	0.0140	0.0001	0.9978
87	<i>Raja inornata</i>	0.0140	0.0001	0.9979
88	octopus unident.	0.0130	0.0001	0.9980
89	<i>Sebastes helvomaculatus</i>	0.0130	0.0001	0.9981
90	<i>Pandalus platyceros</i>	0.0120	0.0001	0.9982
91	<i>Albatrossia pectoralis</i>	0.0110	0.0001	0.9982
92	<i>Careproctus melanurus</i>	0.0110	0.0001	0.9983
93	<i>Sebastes alutus</i>	0.0110	0.0001	0.9984
94	<i>Cancer productus</i>	0.0100	0.0001	0.9985
95	<i>Berryteuthis magister</i>	0.0100	0.0001	0.9985
96	<i>Neptunea amianta</i>	0.0090	0.0001	0.9986
97	<i>Pandalus jordani</i>	0.0090	0.0001	0.9986
98	<i>Sebastes borealis</i>	0.0080	0.0001	0.9987
99	<i>Sebastes levis</i>	0.0080	0.0001	0.9988
100	<i>Zaniolepis latipinnis</i>	0.0080	0.0001	0.9988
101	<i>Icelinus filamentosus</i>	0.0070	0.0001	0.9989
102	<i>Metridium senile</i>	0.0070	Trace	0.9989
103	<i>Gorgonocephalus eucnemis</i>	0.0070	Trace	0.9990
104	<i>Opisthoteuthis californiana</i>	0.0070	Trace	0.9990
105	<i>Sebastes babcocki</i>	0.0070	Trace	0.9990
106	<i>Taningia danae</i>	0.0070	Trace	0.9991
107	<i>Antimora microlepis</i>	0.0060	Trace	0.9991
108	<i>Sebastes miniatus</i>	0.0060	Trace	0.9992
109	<i>Pagurus confragosus</i>	0.0050	Trace	0.9992
110	Scyphozoa (class)	0.0050	Trace	0.9992
111	Porifera (phylum)	0.0050	Trace	0.9993
112	Myctophidae	0.0050	Trace	0.9993
113	<i>Hippasteria californica</i>	0.0040	Trace	0.9994
114	<i>Lycodes pacificus</i>	0.0040	Trace	0.9994
115	<i>Mediaster aequalis</i>	0.0040	Trace	0.9994
116	<i>Histioteuthis dofleini</i>	0.0040	Trace	0.9994
117	Pennatulacea (order)	0.0040	Trace	0.9995
118	<i>Hippasteria spinosa</i>	0.0040	Trace	0.9995
119	<i>Ophiura sarsi</i>	0.0040	Trace	0.9995
120	<i>Psettichthys melanostictus</i>	0.0040	Trace	0.9995
121	skate egg case unident.	0.0040	Trace	0.9996
122	<i>Microgadus proximus</i>	0.0030	Trace	0.9996
123	starfish unident.	0.0030	Trace	0.9996
124	nudibranch unident.	0.0030	Trace	0.9996
125	Holothuroidea unident.	0.0030	Trace	0.9996
126	<i>Molpadia intermedia</i>	0.0020	Trace	0.9997
127	<i>Parastichopus leucothele</i>	0.0020	Trace	0.9997
128	<i>Pasiphaea pacifica</i>	0.0020	Trace	0.9997
129	<i>Chionoecetes tanneri</i>	0.0020	Trace	0.9997

Table B-8.--Continued.

130	<i>Sebastes caurinus</i>	0.0020	Trace	0.9997
131	<i>Mursia gaudichaudii</i>	0.0020	Trace	0.9997
132	<i>Crasseodoma giganteum</i>	0.0020	Trace	0.9997
133	<i>Bothrocarra brunneum</i>	0.0020	Trace	0.9998
134	Aphroditidae	0.0020	Trace	0.9998
135	<i>Buccinum viridum</i>	0.0020	Trace	0.9998
136	<i>Synodus lucioceps</i>	0.0020	Trace	0.9998
137	Paguridae	0.0010	Trace	0.9998
138	<i>Stylasterias forreri</i>	0.0010	Trace	0.9998
139	<i>Hexagrammos decagrammus</i>	0.0010	Trace	0.9998
140	<i>Tritonia</i> sp.	0.0010	Trace	0.9998
141	<i>Stomphia</i> sp.	0.0010	Trace	0.9998
142	Hexactinellida	0.0010	Trace	0.9998
143	<i>Sebastes rufus</i>	0.0010	Trace	0.9999
144	<i>Thrissacanthias penicillatus</i>	0.0010	Trace	0.9999
145	<i>Leucandra heathi</i>	0.0010	Trace	0.9999
146	<i>Alepocephalus tenebrosus</i>	0.0010	Trace	0.9999
147	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
148	<i>Actinauge verrillii</i>	0.0010	Trace	0.9999
149	<i>Mustelus californicus</i>	0.0010	Trace	0.9999
150	<i>Ptilosarcus gurneyi</i>	0.0010	Trace	0.9999
151	<i>Sebastes wilsoni</i>	0.0010	Trace	0.9999
152	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9999
153	<i>Anthomastus</i> sp.	0.0010	Trace	0.9999
154	Basketstarfish unident.	0.0010	Trace	0.9999
155	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
156	<i>Sebastes</i> sp.	0.0010	Trace	0.9999
157	<i>Mediaster</i> sp.	0.0010	Trace	0.9999
158	<i>Lampanyctus</i> sp.	0.0010	Trace	0.9999
159	<i>Embassichthys bathybius</i>	Trace	Trace	0.9999
160	<i>Tactostoma macropus</i>	Trace	Trace	0.9999
161	<i>Polinices</i> sp.	Trace	Trace	0.9999
162	Virgularidae	Trace	Trace	0.9999
163	<i>Bathylagus</i> sp.	Trace	Trace	0.9999
164	<i>Clinocardium</i> sp.	Trace	Trace	0.9999
165	heart urchin unident.	Trace	Trace	0.9999
166	<i>Careproctus</i> sp.	Trace	Trace	0.9999
167	Cottidae	Trace	Trace	1.0000
168	<i>Asterina miniata</i>	Trace	Trace	1.0000
169	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
170	Ascidian unident.	Trace	Trace	1.0000
171	Ophiuroid unident.	Trace	Trace	1.0000
172	<i>Acantholithodes hispidus</i>	Trace	Trace	1.0000
173	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000

Table B-8.--Continued.

174	<i>Psolus squamatus</i>	Trace	Trace	1.0000
175	<i>Ceramaster</i> sp.	Trace	Trace	1.0000
176	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
177	<i>Pugettia</i> sp.	Trace	Trace	1.0000
178	<i>Sebastes auriculatus</i>	Trace	Trace	1.0000
179	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
180	<i>Paralithodes californiensis</i>	Trace	Trace	1.0000
181	<i>Aforia</i> sp.	Trace	Trace	1.0000
182	<i>Nezumia stelgidolepis</i>	Trace	Trace	1.0000
183	<i>Aphrocallistes vastus</i>	Trace	Trace	1.0000
184	<i>Rossia pacifica</i>	Trace	Trace	1.0000
185	<i>Pentamera lissoplaca</i>	Trace	Trace	1.0000
186	<i>Chorilia longipes</i>	Trace	Trace	1.0000
187	<i>Alloctrotus</i> sp.	Trace	Trace	1.0000
188	Majidae unident.	Trace	Trace	1.0000
189	snail (gastropod) eggs	Trace	Trace	1.0000
190	<i>Apristurus kampae</i>	Trace	Trace	1.0000
191	<i>Lampanyctus ritteri</i>	Trace	Trace	1.0000
192	<i>Enophrys taurina</i>	Trace	Trace	1.0000
193	Echiura (phylum)	Trace	Trace	1.0000
194	Polychaeta (class)	Trace	Trace	1.0000
195	<i>Calliostoma</i> sp.	Trace	Trace	1.0000
196	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
197	<i>Styela rustica</i>	Trace	Trace	1.0000
198	<i>Aplacophora</i>	Trace	Trace	1.0000
199	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
200	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
201	crab unident.	Trace	Trace	1.0000
202	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
203	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
204	<i>Natica</i> sp.	Trace	Trace	1.0000
205	<i>Crossaster papposus</i>	Trace	Trace	1.0000
206	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
207	<i>Buccinum</i> sp.	Trace	Trace	1.0000
208	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
209	Liparidinae	Trace	Trace	1.0000
210	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
211	<i>Chitonotus pugetensis</i>	Trace	Trace	1.0000
212	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
213	<i>Colus</i> sp.	Trace	Trace	1.0000
214	<i>Icelinus tenuis</i>	Trace	Trace	1.0000
215	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
216	<i>Coryphaenoides acrolepis</i>	Trace	Trace	1.0000
217	<i>Paraliparis</i> sp.	Trace	Trace	1.0000

Table B-8.--Continued.

218	<i>BathYGONUS nigripinnis</i>	Trace	Trace	1.0000
219	<i>LYCODAPUS mandibularis</i>	Trace	Trace	1.0000
220	<i>XENERETMUS latifrons</i>	Trace	Trace	1.0000
221	<i>CITHARICHTHYS stigmaeus</i>	Trace	Trace	1.0000
222	<i>BERINGIUS frielei</i>	Trace	Trace	1.0000
224	<i>LOPHASTER furcilliger</i>	Trace	Trace	1.0000
223	<i>PTERASTER</i> sp.	Trace	Trace	1.0000
226	<i>COLUS herendeenii</i>	Trace	Trace	1.0000
225	<i>ASTERONYX loveni</i>	Trace	Trace	1.0000
227	<i>DIAPHUS</i> sp.	Trace	Trace	1.0000
228	<i>ALLOSMERUS elongatus</i>	Trace	Trace	1.0000
230	Trichiuridae	Trace	Trace	1.0000
229	brachiopod unident.	Trace	Trace	1.0000
231	<i>PAGURUS brandti</i>	Trace	Trace	1.0000
232	Isopoda (order)	Trace	Trace	1.0000
233	<i>RHINOLIPARIS attenuatus</i>	Trace	Trace	1.0000
234	Gastropod unident.	Trace	Trace	1.0000
235	<i>LEUROGLOSSUS stilbius</i>	Trace	Trace	1.0000
236	Penaeidae	Trace	Trace	1.0000
237	<i>LESTIDIOPS ringens</i>	Trace	Trace	1.0000

Table B-9.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Eureka shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	228.0340	0.8534	0.8534
2	<i>Parophrys vetulus</i>	4.9820	0.0186	0.8720
3	<i>Citharichthys sordidus</i>	4.7530	0.0178	0.8898
4	<i>Microstomus pacificus</i>	4.6740	0.0175	0.9073
5	<i>Glyptocephalus zachirus</i>	3.8560	0.0144	0.9217
6	<i>Squalus acanthias</i>	3.8350	0.0144	0.9361
7	<i>Cancer magister</i>	3.7270	0.0139	0.9500
8	<i>Clupea pallasii</i>	1.8450	0.0069	0.9569
9	<i>Eopsetta jordani</i>	1.2720	0.0048	0.9617
10	<i>Sebastes saxicola</i>	1.1370	0.0043	0.9660
11	<i>Hippoglossus stenolepis</i>	1.0730	0.0040	0.9700
12	<i>Raja binoculata</i>	1.0670	0.0040	0.9740
13	<i>Sebastes flavidus</i>	0.9410	0.0035	0.9775
14	<i>Raja rhina</i>	0.8120	0.0030	0.9805
15	<i>Metridium</i> sp.	0.4720	0.0018	0.9823
16	<i>Lyopsetta exilis</i>	0.4700	0.0018	0.9840
17	<i>Lycodes pacificus</i>	0.3710	0.0014	0.9854
18	<i>Sebastes crameri</i>	0.3680	0.0014	0.9868
19	<i>Brisaster latifrons</i>	0.3580	0.0013	0.9882
20	<i>Sebastes pinniger</i>	0.3450	0.0013	0.9894
21	<i>Ophiodon elongatus</i>	0.2970	0.0011	0.9906
22	<i>Scomber japonicus</i>	0.2830	0.0011	0.9916
23	<i>Luidia foliata</i>	0.2380	0.0009	0.9925
24	<i>Sebastes elongatus</i>	0.2010	0.0008	0.9933
25	Scyphozoa (class)	0.2000	0.0007	0.9940
26	<i>Lopholithodes foraminatus</i>	0.1810	0.0007	0.9947
27	<i>Hydrolagus colliei</i>	0.1790	0.0007	0.9953
28	<i>Atheresthes stomias</i>	0.1610	0.0006	0.9960
29	<i>Pycnopodia helianthoides</i>	0.1600	0.0006	0.9966
30	<i>Sebastes diploproa</i>	0.1030	0.0004	0.9969
31	<i>Alosa sapidissima</i>	0.0850	0.0003	0.9973
32	<i>Pleuronichthys decurrens</i>	0.0570	0.0002	0.9975
33	<i>Pandalus jordani</i>	0.0550	0.0002	0.9977
34	<i>Sebastes alutus</i>	0.0550	0.0002	0.9979
35	<i>Lycodes corteziianus</i>	0.0440	0.0002	0.9980
36	<i>Oncorhynchus tshawytscha</i>	0.0430	0.0002	0.9982
37	<i>Anoplopoma fimbria</i>	0.0410	0.0002	0.9984
38	<i>Lycodes diapterus</i>	0.0360	0.0001	0.9985
39	<i>Sebastes zacentrus</i>	0.0340	0.0001	0.9986
40	Thaliacea unident.	0.0330	0.0001	0.9987
41	<i>Sebastes entomelas</i>	0.0290	0.0001	0.9989

Table B-9.--Continued.

42	<i>Pisaster brevispinus</i>	0.0260	0.0001	0.9990
43	skate egg case unident.	0.0220	0.0001	0.9990
44	<i>Microgadus proximus</i>	0.0220	0.0001	0.9991
45	<i>Bathyraja interrupta</i>	0.0210	0.0001	0.9992
46	<i>Oncorhynchus kisutch</i>	0.0210	0.0001	0.9993
47	Basketstarfish unident.	0.0200	0.0001	0.9994
48	<i>Hippasteria californica</i>	0.0200	0.0001	0.9994
49	<i>Chilara taylori</i>	0.0190	0.0001	0.9995
50	<i>Porichthys notatus</i>	0.0180	0.0001	0.9996
51	<i>Berryteuthis magister</i>	0.0160	0.0001	0.9996
52	nudibranch unident.	0.0080	Trace	0.9997
53	<i>Gorgonocephalus eucnemis</i>	0.0080	Trace	0.9997
54	<i>Torpedo californica</i>	0.0080	Trace	0.9997
55	<i>Loligo opalescens</i>	0.0070	Trace	0.9997
56	<i>Sebastes goodei</i>	0.0070	Trace	0.9998
57	<i>Hippasteria spinosa</i>	0.0070	Trace	0.9998
58	<i>Rathbunaster californicus</i>	0.0060	Trace	0.9998
59	Aphroditidae	0.0060	Trace	0.9998
60	<i>Sebastes aleutianus</i>	0.0050	Trace	0.9999
61	octopus unident.	0.0040	Trace	0.9999
62	<i>Dermasterias imbricata</i>	0.0030	Trace	0.9999
63	<i>Molpadia</i> sp.	0.0020	Trace	0.9999
64	<i>Stylasterias forreri</i>	0.0020	Trace	0.9999
65	Pennatulacea (order)	0.0020	Trace	0.9999
66	<i>Sebastolobus alascanus</i>	0.0020	Trace	0.9999
67	<i>Pandalus platyceros</i>	0.0020	Trace	0.9999
68	<i>Leptocottus armatus</i>	0.0020	Trace	0.9999
69	<i>Sebastes aurora</i>	0.0020	Trace	0.9999
70	<i>Ophiura sarsi</i>	0.0020	Trace	0.9999
71	<i>Sardinops sagax</i>	0.0020	Trace	0.9999
72	<i>Molpadia intermedia</i>	0.0020	Trace	0.9999
73	<i>Isopsetta isolepis</i>	0.0010	Trace	1.0000
74	<i>Sebastes proriger</i>	0.0010	Trace	1.0000
75	<i>Pagurus capillatus</i>	0.0010	Trace	1.0000
76	<i>Alloctrotus fragilis</i>	0.0010	Trace	1.0000
77	squid unident.	0.0010	Trace	1.0000
78	Holothuroidea unident.	0.0010	Trace	1.0000
79	<i>Tritonia</i> sp.	0.0010	Trace	1.0000
80	<i>Stylatula</i> sp.	0.0010	Trace	1.0000
81	<i>Genyonemus lineatus</i>	0.0010	Trace	1.0000
82	<i>Zaniolepis latipinnis</i>	0.0010	Trace	1.0000
83	<i>Sebastes helvomaculatus</i>	0.0010	Trace	1.0000
84	starfish unident.	0.0010	Trace	1.0000
85	<i>Careproctus melanurus</i>	0.0010	Trace	1.0000

Table B-9.--Continued.

86	<i>Spirinchus starksi</i>	Trace	Trace	1.0000
87	<i>Pseudostichopus mollis</i>	Trace	Trace	1.0000
88	<i>Parastichopus leucothele</i>	Trace	Trace	1.0000
89	<i>Thaleichthys pacificus</i>	Trace	Trace	1.0000
90	<i>Engraulis mordax</i>	Trace	Trace	1.0000
91	<i>Eptatretus stouti</i>	Trace	Trace	1.0000
92	Paguridae	Trace	Trace	1.0000
93	<i>Rossia pacifica</i>	Trace	Trace	1.0000
94	<i>Polinices</i> sp.	Trace	Trace	1.0000
95	Ophiuroid unident.	Trace	Trace	1.0000
96	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
97	<i>Crangon</i> sp.	Trace	Trace	1.0000
98	Polychaeta (class)	Trace	Trace	1.0000
99	Porifera (phylum)	Trace	Trace	1.0000
100	Actiniaria (order)	Trace	Trace	1.0000
101	<i>Myoxoderma platyacanthum</i>	Trace	Trace	1.0000
102	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
103	<i>Pseudarchaster parelii</i>	Trace	Trace	1.0000
104	<i>Bathyagonus infraspinus</i>	Trace	Trace	1.0000
105	<i>Pandalus danae</i>	Trace	Trace	1.0000
106	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
107	Myctophidae	Trace	Trace	1.0000
108	Sipuncula (phylum)	Trace	Trace	1.0000
109	<i>Argis</i> sp.	Trace	Trace	1.0000
110	<i>Callianassa californiensis</i>	Trace	Trace	1.0000
111	<i>Crangon communis</i>	Trace	Trace	1.0000

Table B-10.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Eureka middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	58.6310	0.3832	0.3832
2	<i>Microstomus pacificus</i>	25.1980	0.1647	0.5480
3	<i>Anoplopoma fimbria</i>	14.2040	0.0928	0.6408
4	<i>Glyptocephalus zachirus</i>	12.5240	0.0819	0.7227
5	<i>Squalus acanthias</i>	10.0220	0.0655	0.7882
6	<i>Sebastes diploproa</i>	5.4070	0.0353	0.8235
7	<i>Sebastes saxicola</i>	4.2640	0.0279	0.8514
8	<i>Raja rhina</i>	2.2290	0.0146	0.8660
9	<i>Sebastes goodei</i>	2.1860	0.0143	0.8802
10	<i>Sebastes crameri</i>	1.9930	0.0130	0.8933
11	<i>Parophrys vetulus</i>	1.8920	0.0124	0.9056
12	<i>Lycodes cortezianus</i>	1.3250	0.0087	0.9143
13	<i>Hydrolagus colliei</i>	1.2050	0.0079	0.9222
14	<i>Atheresthes stomias</i>	1.0320	0.0067	0.9289
15	<i>Sebastolobus alascanus</i>	0.9750	0.0064	0.9353
16	<i>Ophiodon elongatus</i>	0.9090	0.0059	0.9412
17	<i>Sebastes entomelas</i>	0.7910	0.0052	0.9464
18	<i>Hippoglossus stenolepis</i>	0.7660	0.0050	0.9514
19	<i>Brisaster latifrons</i>	0.7300	0.0048	0.9562
20	<i>Bathyraja interrupta</i>	0.6770	0.0044	0.9606
21	<i>Lyopsetta exilis</i>	0.6290	0.0041	0.9647
22	<i>Luidia foliata</i>	0.5850	0.0038	0.9685
23	<i>Parastichopus leucothele</i>	0.5550	0.0036	0.9722
24	<i>Sebastes alutus</i>	0.5070	0.0033	0.9755
25	<i>Sebastes elongatus</i>	0.4140	0.0027	0.9782
26	<i>Lycodes diapterus</i>	0.4060	0.0027	0.9808
27	<i>Alloctrotus fragilis</i>	0.3520	0.0023	0.9831
28	<i>Rathbunaster californicus</i>	0.3320	0.0022	0.9853
29	<i>Apristurus brunneus</i>	0.3150	0.0021	0.9874
30	<i>Holothuroidea unident.</i>	0.2670	0.0017	0.9891
31	<i>Sebastes zacentrus</i>	0.1980	0.0013	0.9904
32	<i>Eopsetta jordani</i>	0.1910	0.0013	0.9917
33	<i>Cancer magister</i>	0.1850	0.0012	0.9929
34	<i>Metridium sp.</i>	0.1020	0.0007	0.9935
35	<i>Sebastes aleutianus</i>	0.0880	0.0006	0.9941
36	Ommastrephidae	0.0810	0.0005	0.9946
37	<i>Oncorhynchus tshawytscha</i>	0.0710	0.0005	0.9951
38	<i>Sebastes babcocki</i>	0.0670	0.0004	0.9955
39	Paguridae	0.0540	0.0004	0.9959
40	<i>Scomber japonicus</i>	0.0480	0.0003	0.9962
41	<i>Sebastes pinniger</i>	0.0450	0.0003	0.9965

Table B-10.--Continued.

42	<i>Sebastes proriger</i>	0.0410	0.0003	0.9968
43	<i>Sebastes ruberrimus</i>	0.0400	0.0003	0.9970
44	<i>Moroteuthis robusta</i>	0.0370	0.0002	0.9973
45	<i>Lycodes pacificus</i>	0.0360	0.0002	0.9975
46	<i>Pandalus platyceros</i>	0.0340	0.0002	0.9977
47	<i>Careproctus melanurus</i>	0.0320	0.0002	0.9979
48	<i>Pandalus jordani</i>	0.0300	0.0002	0.9981
49	<i>Ophiura sarsi</i>	0.0280	0.0002	0.9983
50	<i>Sebastes aurora</i>	0.0200	0.0001	0.9985
51	<i>Sebastes melanostomus</i>	0.0180	0.0001	0.9986
52	squid unident.	0.0160	0.0001	0.9987
53	<i>Hippasteria spinosa</i>	0.0160	0.0001	0.9988
54	Thaliacea unident.	0.0160	0.0001	0.9989
55	<i>Chilara taylori</i>	0.0160	0.0001	0.9990
56	Aphroditidae	0.0120	0.0001	0.9991
57	<i>Pandalopsis dispar</i>	0.0100	0.0001	0.9991
58	nudibranch unident.	0.0100	0.0001	0.9992
59	<i>Pseudostichopus mollis</i>	0.0100	0.0001	0.9993
60	<i>Berryteuthis magister</i>	0.0090	0.0001	0.9993
61	Scyphozoa (class)	0.0080	Trace	0.9994
62	Actiniaria (order)	0.0070	Trace	0.9994
63	Myctophidae	0.0060	Trace	0.9995
64	<i>Lampetra tridentata</i>	0.0060	Trace	0.9995
65	octopus unident.	0.0060	Trace	0.9995
66	<i>Mediaster aequalis</i>	0.0050	Trace	0.9996
67	<i>Pycnopodia helianthoides</i>	0.0050	Trace	0.9996
68	<i>Sebastes helvomaculatus</i>	0.0050	Trace	0.9996
69	<i>Stylasterias forreri</i>	0.0040	Trace	0.9997
70	<i>Hippasteria californica</i>	0.0040	Trace	0.9997
71	<i>Pagurus brandti</i>	0.0040	Trace	0.9997
72	<i>Sebastes levis</i>	0.0040	Trace	0.9998
73	<i>Buccinum viridum</i>	0.0040	Trace	0.9998
74	<i>Sebastes jordani</i>	0.0030	Trace	0.9998
75	<i>Taningia danae</i>	0.0030	Trace	0.9998
76	Basketstarfish unident.	0.0030	Trace	0.9998
77	rough purple sea anemone	0.0030	Trace	0.9999
78	<i>Sebastolobus altivelis</i>	0.0030	Trace	0.9999
79	<i>Pagurus confragosus</i>	0.0020	Trace	0.9999
80	<i>Eptatretus deani</i>	0.0020	Trace	0.9999
81	<i>Oncorhynchus kisutch</i>	0.0020	Trace	0.9999
82	<i>Paractinostola faeculenta</i>	0.0020	Trace	0.9999
83	<i>Pagurus capillatus</i>	0.0020	Trace	0.9999
84	Liparidinae	0.0010	Trace	0.9999
85	skate egg case unident.	0.0010	Trace	1.0000

Table B-10.--Continued.

86	<i>Stylatula</i> sp.	0.0010	Trace	1.0000
87	<i>Aphrocallistes vastus</i>	0.0010	Trace	1.0000
88	<i>Crossaster</i> sp.	0.0010	Trace	1.0000
89	<i>Bathyagonus infraspinus</i>	0.0010	Trace	1.0000
90	<i>Icelinus filamentosus</i>	0.0010	Trace	1.0000
91	<i>Liponemis brevicornis</i>	0.0010	Trace	1.0000
92	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000
93	Pennatulacea (order)	Trace	Trace	1.0000
94	Sipuncula (phylum)	Trace	Trace	1.0000
95	<i>Mediaster</i> sp.	Trace	Trace	1.0000
96	<i>Pseudarchaster parelii</i>	Trace	Trace	1.0000
97	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
98	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
99	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
100	<i>Buccinum</i> sp.	Trace	Trace	1.0000
101	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
102	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
103	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
104	<i>Aforia</i> sp.	Trace	Trace	1.0000
105	snail (gastropod) eggs	Trace	Trace	1.0000
106	<i>Loligo opalescens</i>	Trace	Trace	1.0000
107	crinoid unident.	Trace	Trace	1.0000
108	Polychaeta (class)	Trace	Trace	1.0000
109	<i>Leuroglossus schmidti</i>	Trace	Trace	1.0000
110	Euphausiacea (order)	Trace	Trace	1.0000

Table B-11.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Eureka deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Microstomus pacificus</i>	33.0830	0.2668	0.2668
2	<i>Anoplopoma fimbria</i>	28.3550	0.2287	0.4955
3	<i>Merluccius productus</i>	17.1270	0.1381	0.6336
4	<i>Glyptocephalus zachirus</i>	13.4630	0.1086	0.7422
5	<i>Brisaster latifrons</i>	5.9650	0.0481	0.7903
6	<i>Lycodes diapterus</i>	4.3510	0.0351	0.8254
7	<i>Apristurus brunneus</i>	4.3070	0.0347	0.8601
8	<i>Sebastolobus alascanus</i>	4.0260	0.0325	0.8926
9	<i>Sebastes aurora</i>	2.7400	0.0221	0.9147
10	<i>Squalus acanthias</i>	2.7040	0.0218	0.9365
11	<i>Lycodes corteziianus</i>	1.4320	0.0116	0.9481
12	<i>Atheresthes stomias</i>	1.3680	0.0110	0.9591
13	<i>Raja rhina</i>	0.7120	0.0057	0.9648
14	<i>Alloctrotus fragilis</i>	0.4630	0.0037	0.9686
15	<i>Luidia foliata</i>	0.4530	0.0037	0.9722
16	<i>Sebastolobus altivelis</i>	0.2490	0.0020	0.9742
17	<i>Neptunea</i> sp.	0.2300	0.0019	0.9761
18	<i>Metridium</i> sp.	0.1990	0.0016	0.9777
19	<i>Hydrolagus colliei</i>	0.1970	0.0016	0.9793
20	<i>Bathyraja interrupta</i>	0.1700	0.0014	0.9806
21	rough purple sea anemone	0.1550	0.0013	0.9819
22	<i>Sebastes diploproa</i>	0.1410	0.0011	0.9830
23	Onychoteuthidae	0.1330	0.0011	0.9841
24	<i>Sebastes borealis</i>	0.1220	0.0010	0.9851
25	<i>Sebastes aleutianus</i>	0.1150	0.0009	0.9860
26	<i>Albatrossia pectoralis</i>	0.1070	0.0009	0.9869
27	Thaliacea unident.	0.0920	0.0007	0.9876
28	<i>Lyopsetta exilis</i>	0.0920	0.0007	0.9884
29	<i>Myoxoderma sacculatum</i>	0.0880	0.0007	0.9891
30	octopus unident.	0.0840	0.0007	0.9898
31	<i>Chionoecetes tanneri</i>	0.0830	0.0007	0.9904
32	<i>Sebastes crameri</i>	0.0800	0.0006	0.9911
33	<i>Careproctus melanurus</i>	0.0760	0.0006	0.9917
34	<i>Bothrocara brunneum</i>	0.0760	0.0006	0.9923
35	<i>Neptunea lyrata</i>	0.0680	0.0005	0.9928
36	<i>Ommastrephes bartrami</i>	0.0610	0.0005	0.9933
37	<i>Vampyroteuthis infernalis</i>	0.0580	0.0005	0.9938
38	<i>Sebastes alutus</i>	0.0540	0.0004	0.9942
39	<i>Trachurus symmetricus</i>	0.0540	0.0004	0.9947
40	<i>Liponemis brevicornis</i>	0.0500	0.0004	0.9951
41	<i>Sebastes babcocki</i>	0.0490	0.0004	0.9955

Table B-11.--Continued.

42	<i>Opisthoteuthis californiana</i>	0.0470	0.0004	0.9959
43	<i>Neptunea amianta</i>	0.0470	0.0004	0.9962
44	<i>Parastichopus leucothele</i>	0.0430	0.0003	0.9966
45	<i>Pisaster brevispinus</i>	0.0270	0.0002	0.9968
46	<i>Pagurus confragosus</i>	0.0260	0.0002	0.9970
47	Myctophidae	0.0220	0.0002	0.9972
48	<i>Taningia danae</i>	0.0220	0.0002	0.9974
49	<i>Rathbunaster californicus</i>	0.0210	0.0002	0.9975
50	<i>Lycodes pacificus</i>	0.0200	0.0002	0.9977
51	<i>Ophiura sarsi</i>	0.0180	0.0001	0.9978
52	<i>Sebastes goodei</i>	0.0170	0.0001	0.9980
53	<i>Buccinum viridum</i>	0.0150	0.0001	0.9981
54	<i>Berryteuthis magister</i>	0.0140	0.0001	0.9982
55	<i>Pasiphaea pacifica</i>	0.0140	0.0001	0.9983
56	<i>Myoxoderma platyacanthum</i>	0.0130	0.0001	0.9984
57	<i>Tactostoma macropus</i>	0.0120	0.0001	0.9985
58	<i>Eptatretus deani</i>	0.0110	0.0001	0.9986
59	<i>Eptatretus stouti</i>	0.0110	0.0001	0.9987
60	<i>Paractinostola faeculenta</i>	0.0100	0.0001	0.9988
61	Aphroditidae	0.0100	0.0001	0.9989
62	<i>Pycnopodia helianthoides</i>	0.0100	0.0001	0.9990
63	<i>Mediaster aequalis</i>	0.0080	0.0001	0.9990
64	<i>Alepocephalus tenebrosus</i>	0.0070	0.0001	0.9991
65	<i>Antimora microlepis</i>	0.0070	0.0001	0.9991
66	<i>Neptunea pribiloffensis</i>	0.0070	0.0001	0.9992
67	<i>Coryphaenoides acrolepis</i>	0.0070	0.0001	0.9992
68	squid unident.	0.0070	0.0001	0.9993
69	Paguridae	0.0070	0.0001	0.9994
70	<i>Pannychia moseleyi</i>	0.0060	Trace	0.9994
71	<i>Chauliodus macouni</i>	0.0050	Trace	0.9994
72	<i>Aristostomias scintillans</i>	0.0050	Trace	0.9995
73	Basketstarfish unident.	0.0050	Trace	0.9995
74	skate egg case unident.	0.0050	Trace	0.9996
75	Porifera (phylum)	0.0040	Trace	0.9996
76	<i>Sebastes melanostomus</i>	0.0040	Trace	0.9996
77	<i>Lampanyctus</i> sp.	0.0040	Trace	0.9997
78	<i>Nezumia stelgidolepis</i>	0.0030	Trace	0.9997
79	<i>Hippasteria californica</i>	0.0030	Trace	0.9997
80	<i>Pseudarchaster parelii</i>	0.0030	Trace	0.9997
81	<i>Bathyagonus nigripinnis</i>	0.0020	Trace	0.9997
82	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9998
83	<i>Pagurus capillatus</i>	0.0020	Trace	0.9998
84	nudibranch unident.	0.0020	Trace	0.9998
85	Petromyzontidae	0.0020	Trace	0.9998

Table B-11.--Continued.

86	Actiniaria (order)	0.0020	Trace	0.9998
87	Embassichthys bathybius	0.0020	Trace	0.9998
88	Liparis sp.	0.0010	Trace	0.9999
89	Aphrocallistes vastus	0.0010	Trace	0.9999
90	Scyphozoa (class)	0.0010	Trace	0.9999
91	Careproctus sp.	0.0010	Trace	0.9999
92	Molpadia intermedia	0.0010	Trace	0.9999
93	Chilara taylori	0.0010	Trace	0.9999
94	Pagurus brandti	0.0010	Trace	0.9999
95	Lampanyctus ritteri	0.0010	Trace	0.9999
96	Sternoptychidae unident.	0.0010	Trace	0.9999
97	Stylasterias forreri	0.0010	Trace	0.9999
98	Sipuncula (phylum)	0.0010	Trace	0.9999
99	Holothuroidea unident.	0.0010	Trace	0.9999
100	Lampanyctus regalis	0.0010	Trace	1.0000
101	Crossaster sp.	0.0010	Trace	1.0000
102	Idiacanthus antrostomus	0.0010	Trace	1.0000
103	Sagamichthys abei	0.0010	Trace	1.0000
104	Neptunea sp.	0.0010	Trace	1.0000
105	Psolus squamatus	0.0010	Trace	1.0000
106	Actinauge verrillii	0.0010	Trace	1.0000
107	Molpadia sp.	Trace	Trace	1.0000
108	Rossia pacifica	Trace	Trace	1.0000
109	Hippasteria spinosa	Trace	Trace	1.0000
110	Stylatula sp.	Trace	Trace	1.0000
111	Lycodapus sp.	Trace	Trace	1.0000
112	Apristurus brunneus	Trace	Trace	1.0000
113	Gastropod unident.	Trace	Trace	1.0000
114	Calliostoma sp.	Trace	Trace	1.0000
115	Chorilia longipes	Trace	Trace	1.0000
117	Aforia sp.	Trace	Trace	1.0000
116	Ophiopholis aculeata	Trace	Trace	1.0000
118	Swiftia sp.	Trace	Trace	1.0000
119	fish unident.	Trace	Trace	1.0000
120	Leuroglossus stilbius	Trace	Trace	1.0000

Table B-12.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire INPFC Eureka area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	144.7520	0.6865	0.6865
2	<i>Microstomus pacificus</i>	15.3520	0.0728	0.7593
3	<i>Anoplopoma fimbria</i>	9.2030	0.0436	0.8030
4	<i>Glyptocephalus zachirus</i>	7.8740	0.0373	0.8403
5	<i>Squalus acanthias</i>	5.0580	0.0240	0.8643
6	<i>Parophrys vetulus</i>	3.2290	0.0153	0.8796
7	<i>Citharichthys sordidus</i>	2.6560	0.0126	0.8922
8	<i>Cancer magister</i>	2.1270	0.0101	0.9023
9	<i>Sebastes saxicola</i>	1.6390	0.0078	0.9101
10	<i>Brisaster latifrons</i>	1.6000	0.0076	0.9177
11	<i>Sebastes diploproa</i>	1.3590	0.0064	0.9241
12	<i>Raja rhina</i>	1.1250	0.0053	0.9294
13	<i>Sebastolobus alascanus</i>	1.0590	0.0050	0.9345
14	<i>Clupea pallasii</i>	1.0310	0.0049	0.9394
15	<i>Lycodes diapterus</i>	1.0120	0.0048	0.9442
16	<i>Apristurus brunneus</i>	0.9610	0.0046	0.9487
17	<i>Hippoglossus stenolepis</i>	0.7800	0.0037	0.9524
18	<i>Eopsetta jordani</i>	0.7560	0.0036	0.9560
19	<i>Sebastes crameri</i>	0.6910	0.0033	0.9593
20	<i>Lycodes corteziianus</i>	0.6310	0.0030	0.9623
21	<i>Atheresthes stomias</i>	0.6150	0.0029	0.9652
22	<i>Raja binoculata</i>	0.5960	0.0028	0.9680
23	<i>Sebastes aurora</i>	0.5700	0.0027	0.9707
24	<i>Sebastes flavidus</i>	0.5260	0.0025	0.9732
25	<i>Sebastes goodei</i>	0.5220	0.0025	0.9757
26	<i>Lyopsetta exilis</i>	0.4300	0.0020	0.9777
27	<i>Hydrolagus colliei</i>	0.4240	0.0020	0.9797
28	<i>Ophiodon elongatus</i>	0.3800	0.0018	0.9815
29	<i>Luidia foliata</i>	0.3640	0.0017	0.9833
30	<i>Metridium sp.</i>	0.3290	0.0016	0.9848
31	<i>Lycodes pacificus</i>	0.2200	0.0010	0.9859
32	<i>Sebastes elongatus</i>	0.2100	0.0010	0.9869
33	<i>Bathyraja interrupta</i>	0.2060	0.0010	0.9878
34	<i>Sebastes pinniger</i>	0.2030	0.0010	0.9888
35	<i>Sebastes entomelas</i>	0.2030	0.0010	0.9898
36	<i>Alloctrotus fragilis</i>	0.1790	0.0008	0.9906
37	<i>Scomber japonicus</i>	0.1690	0.0008	0.9914
38	<i>Sebastes alutus</i>	0.1610	0.0008	0.9922
39	<i>Parastichopus leucothele</i>	0.1400	0.0007	0.9928
40	Scyphozoa (class)	0.1140	0.0005	0.9934
41	<i>Lopholithodes foraminatus</i>	0.1010	0.0005	0.9938

Table B-12.--Continued.

42	<i>Pycnopodia helianthoides</i>	0.0930	0.0004	0.9943
43	<i>Rathbunaster californicus</i>	0.0860	0.0004	0.9947
44	<i>Sebastes zacentrus</i>	0.0650	0.0003	0.9950
45	Holothuroidea unident.	0.0640	0.0003	0.9953
46	<i>Sebastolobus altivelis</i>	0.0520	0.0002	0.9956
47	<i>Alosa sapidissima</i>	0.0480	0.0002	0.9958
48	<i>Neptunea</i> sp.	0.0470	0.0002	0.9960
49	<i>Sebastes aleutianus</i>	0.0470	0.0002	0.9962
50	Thaliacea unident.	0.0410	0.0002	0.9964
51	<i>Oncorhynchus tshawytscha</i>	0.0410	0.0002	0.9966
52	<i>Pandalus jordani</i>	0.0380	0.0002	0.9968
53	rough purple sea anemone	0.0330	0.0002	0.9969
54	<i>Pleuronichthys decurrens</i>	0.0320	0.0002	0.9971
55	Onychoteuthidae	0.0270	0.0001	0.9972
56	<i>Sebastes babcocki</i>	0.0260	0.0001	0.9974
57	<i>Sebastes borealis</i>	0.0250	0.0001	0.9975
58	<i>Careproctus melanurus</i>	0.0240	0.0001	0.9976
59	<i>Albatrossia pectoralis</i>	0.0220	0.0001	0.9977
60	octopus unident.	0.0210	0.0001	0.9978
61	<i>Pisaster brevispinus</i>	0.0200	0.0001	0.9979
62	Ommastrephidae	0.0190	0.0001	0.9980
63	<i>Myoxoderma sacculatum</i>	0.0180	0.0001	0.9981
64	<i>Chionoecetes tanneri</i>	0.0170	0.0001	0.9981
65	<i>Bothrocara brunneum</i>	0.0160	0.0001	0.9982
66	Paguridae	0.0140	0.0001	0.9983
67	<i>Chilara taylori</i>	0.0140	0.0001	0.9983
68	<i>Neptunea lyrata</i>	0.0140	0.0001	0.9984
69	<i>Berryteuthis magister</i>	0.0140	0.0001	0.9985
70	skate egg case unident.	0.0140	0.0001	0.9985
71	Basketstarfish unident.	0.0130	0.0001	0.9986
72	<i>Hippasteria californica</i>	0.0130	0.0001	0.9987
73	<i>Ommastrephes bartrami</i>	0.0130	0.0001	0.9987
74	<i>Oncorhynchus kisutch</i>	0.0120	0.0001	0.9988
75	<i>Microgadus proximus</i>	0.0120	0.0001	0.9988
76	<i>Vampyroteuthis infernalis</i>	0.0120	0.0001	0.9989
77	<i>Ophiura sarsi</i>	0.0110	0.0001	0.9990
78	<i>Trachurus symmetricus</i>	0.0110	0.0001	0.9990
79	<i>Liponemis brevicornis</i>	0.0100	0.0001	0.9991
80	<i>Sebastes proriger</i>	0.0100	Trace	0.9991
81	<i>Porichthys notatus</i>	0.0100	Trace	0.9991
82	<i>Opisthoteuthis californiana</i>	0.0100	Trace	0.9992
83	<i>Neptunea amianta</i>	0.0100	Trace	0.9992
84	<i>Sebastes ruberrimus</i>	0.0090	Trace	0.9993
85	<i>Pandalus platyceros</i>	0.0090	Trace	0.9993

Table B-12.--Continued.

86	<i>Moroteuthis robusta</i>	0.0090	Trace	0.9994
87	Aphroditidae	0.0080	Trace	0.9994
88	nudibranch unident.	0.0080	Trace	0.9994
89	<i>Hippasteria spinosa</i>	0.0080	Trace	0.9995
90	Myctophidae	0.0060	Trace	0.9995
91	<i>Pagurus confragosus</i>	0.0060	Trace	0.9995
92	squid unident.	0.0060	Trace	0.9996
93	<i>Taningia danae</i>	0.0050	Trace	0.9996
94	<i>Sebastes melanostomus</i>	0.0050	Trace	0.9996
95	<i>Gorgonocephalus eucnemis</i>	0.0050	Trace	0.9996
96	<i>Torpedo californica</i>	0.0040	Trace	0.9997
97	<i>Loligo opalescens</i>	0.0040	Trace	0.9997
98	<i>Buccinum viridum</i>	0.0040	Trace	0.9997
99	<i>Pasiphaea pacifica</i>	0.0030	Trace	0.9997
100	<i>Mediaster aequalis</i>	0.0030	Trace	0.9997
101	<i>Eptatretus deani</i>	0.0030	Trace	0.9997
102	<i>Myoxoderma platyacanthum</i>	0.0030	Trace	0.9997
103	<i>Pseudostichopus mollis</i>	0.0030	Trace	0.9998
104	<i>Paractinostola faeculenta</i>	0.0030	Trace	0.9998
105	<i>Tactostoma macropus</i>	0.0030	Trace	0.9998
106	<i>Eptatretus stouti</i>	0.0020	Trace	0.9998
107	<i>Pandalopsis dispar</i>	0.0020	Trace	0.9998
108	<i>Stylasterias forreri</i>	0.0020	Trace	0.9998
109	Actiniaria (order)	0.0020	Trace	0.9998
110	<i>Dermasterias imbricata</i>	0.0020	Trace	0.9998
111	<i>Alepocephalus tenebrosus</i>	0.0020	Trace	0.9998
112	<i>Antimora microlepis</i>	0.0010	Trace	0.9999
113	<i>Neptunea pribiloffensis</i>	0.0010	Trace	0.9999
114	<i>Sebastes helvomaculatus</i>	0.0010	Trace	0.9999
115	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
116	<i>Coryphaenoides acrolepis</i>	0.0010	Trace	0.9999
117	<i>Lampetra tridentata</i>	0.0010	Trace	0.9999
118	<i>Molpadia</i> sp.	0.0010	Trace	0.9999
119	Pennatulacea (order)	0.0010	Trace	0.9999
120	<i>Pannychia moseleyi</i>	0.0010	Trace	0.9999
121	<i>Pagurus brandti</i>	0.0010	Trace	0.9999
122	<i>Molpadia intermedia</i>	0.0010	Trace	0.9999
123	<i>Chauliodus macouni</i>	0.0010	Trace	0.9999
124	<i>Leptocottus armatus</i>	0.0010	Trace	0.9999
125	<i>Aristostomias scintillans</i>	0.0010	Trace	0.9999
126	<i>Sardinops sagax</i>	0.0010	Trace	0.9999
127	Porifera (phylum)	0.0010	Trace	0.9999
128	<i>Sebastes levis</i>	0.0010	Trace	0.9999
129	<i>Sebastes jordani</i>	0.0010	Trace	0.9999

Table B-12.--Continued.

130	<i>Lampanyctus</i> sp.	0.0010	Trace	0.9999
131	<i>Isopsetta isolepis</i>	0.0010	Trace	1.0000
132	<i>Pseudarchaster parelii</i>	0.0010	Trace	1.0000
133	<i>Stylatula</i> sp.	0.0010	Trace	1.0000
134	<i>Nezumia stelgidolepis</i>	0.0010	Trace	1.0000
135	<i>Bathyagonus nigripinnis</i>	0.0010	Trace	1.0000
136	<i>Thrissacanthias penicillatus</i>	0.0010	Trace	1.0000
137	<i>Aphrocallistes vastus</i>	Trace	Trace	1.0000
138	<i>Tritonia</i> sp.	Trace	Trace	1.0000
139	Petromyzontidae	Trace	Trace	1.0000
140	<i>Genyonemus lineatus</i>	Trace	Trace	1.0000
141	<i>Embassichthys bathybius</i>	Trace	Trace	1.0000
142	<i>Zaniolepis latipinnis</i>	Trace	Trace	1.0000
143	<i>Crossaster</i> sp.	Trace	Trace	1.0000
144	starfish unident.	Trace	Trace	1.0000
145	Liparidinae	Trace	Trace	1.0000
146	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000
147	<i>Liparis</i> sp.	Trace	Trace	1.0000
148	<i>Spirinchus starksi</i>	Trace	Trace	1.0000
149	<i>Careproctus</i> sp.	Trace	Trace	1.0000
150	<i>Rossia pacifica</i>	Trace	Trace	1.0000
151	<i>Thaleichthys pacificus</i>	Trace	Trace	1.0000
152	<i>Engraulis mordax</i>	Trace	Trace	1.0000
153	<i>Bathyagonus infraspinatus</i>	Trace	Trace	1.0000
154	<i>Lampanyctus ritteri</i>	Trace	Trace	1.0000
155	Sternoptychidae unident.	Trace	Trace	1.0000
156	<i>Lampanyctus regalis</i>	Trace	Trace	1.0000
157	<i>Polinices</i> sp.	Trace	Trace	1.0000
158	Ophiuroid unident.	Trace	Trace	1.0000
159	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
160	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
161	<i>Icelinus filamentosus</i>	Trace	Trace	1.0000
162	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
163	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
164	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
165	<i>Neptunea</i> sp.	Trace	Trace	1.0000
166	<i>Psolus squamatus</i>	Trace	Trace	1.0000
167	<i>Crangon</i> sp.	Trace	Trace	1.0000
168	Polychaeta (class)	Trace	Trace	1.0000
169	<i>Mediaster</i> sp.	Trace	Trace	1.0000
170	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
171	<i>Aforia</i> sp.	Trace	Trace	1.0000
172	<i>Pandalus danae</i>	Trace	Trace	1.0000
173	<i>Oregonia gracilis</i>	Trace	Trace	1.0000

Table B-12.--Continued.

174	Lycodapus sp.	Trace	Trace	1.0000
175	Buccinum sp.	Trace	Trace	1.0000
176	Gastropod unident.	Trace	Trace	1.0000
177	Calliostoma sp.	Trace	Trace	1.0000
178	Lyconectes aleutensis	Trace	Trace	1.0000
179	Chorilia longipes	Trace	Trace	1.0000
180	Paraliparis sp.	Trace	Trace	1.0000
181	Ophiopholis aculeata	Trace	Trace	1.0000
182	snail (gastropod) eggs	Trace	Trace	1.0000
183	Swiftia sp.	Trace	Trace	1.0000
184	fish unident.	Trace	Trace	1.0000
185	crinoid unident.	Trace	Trace	1.0000
186	Leuroglossus stilbius	Trace	Trace	1.0000
187	Argis sp.	Trace	Trace	1.0000
188	Callianassa californiensis	Trace	Trace	1.0000
189	Leuroglossus schmidti	Trace	Trace	1.0000
190	Crangon communis	Trace	Trace	1.0000
191	Euphausiacea (order)	Trace	Trace	1.0000

Table B-13.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Columbia shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	131.2620	0.6745	0.6745
2	<i>Citharichthys sordidus</i>	9.1480	0.0470	0.7215
3	<i>Anoplopoma fimbria</i>	7.2200	0.0371	0.7586
4	<i>Parophrys vetulus</i>	5.8740	0.0302	0.7888
5	<i>Glyptocephalus zachirus</i>	5.6170	0.0289	0.8176
6	<i>Microstomus pacificus</i>	5.5290	0.0284	0.8460
7	<i>Squalus acanthias</i>	4.9960	0.0257	0.8717
8	<i>Clupea pallasii</i>	4.9090	0.0252	0.8969
9	<i>Sebastes flavidus</i>	2.5890	0.0133	0.9102
10	<i>Alosa sapidissima</i>	2.4100	0.0124	0.9226
11	<i>Hippoglossus stenolepis</i>	1.9850	0.0102	0.9328
12	<i>Atheresthes stomias</i>	1.7260	0.0089	0.9417
13	<i>Sebastes elongatus</i>	1.5160	0.0078	0.9495
14	<i>Scomber japonicus</i>	1.5080	0.0077	0.9572
15	<i>Raja binoculata</i>	0.9880	0.0051	0.9623
16	<i>Eopsetta jordani</i>	0.9860	0.0051	0.9674
17	<i>Raja rhina</i>	0.7600	0.0039	0.9713
18	<i>Ophiodon elongatus</i>	0.7100	0.0036	0.9749
19	<i>Cancer magister</i>	0.5770	0.0030	0.9779
20	<i>Trachurus symmetricus</i>	0.5260	0.0027	0.9806
21	<i>Sebastes crameri</i>	0.5140	0.0026	0.9832
22	<i>Lyopsetta exilis</i>	0.3180	0.0016	0.9848
23	<i>Oncorhynchus tshawytscha</i>	0.2260	0.0012	0.9860
24	<i>Hydrolagus colliei</i>	0.2180	0.0011	0.9871
25	<i>Galeorhinus galeus</i>	0.1600	0.0008	0.9879
26	<i>Brisaster latifrons</i>	0.1560	0.0008	0.9888
27	<i>Sebastes proriger</i>	0.1540	0.0008	0.9895
28	<i>Sebastes pinniger</i>	0.1310	0.0007	0.9902
29	heart urchin unident.	0.1280	0.0007	0.9909
30	<i>Lepidopsetta bilineata</i>	0.1130	0.0006	0.9915
31	<i>Luidia foliata</i>	0.0920	0.0005	0.9919
32	<i>Gadus macrocephalus</i>	0.0910	0.0005	0.9924
33	<i>Metridium</i> sp.	0.0890	0.0005	0.9928
34	Actiniaria (order)	0.0780	0.0004	0.9932
35	<i>Acipenser medirostris</i>	0.0780	0.0004	0.9936
36	<i>Sebastes entomelas</i>	0.0770	0.0004	0.9940
37	<i>Sebastolobus alascanus</i>	0.0690	0.0004	0.9944
38	<i>Microgadus proximus</i>	0.0640	0.0003	0.9947
39	<i>Psettichthys melanostictus</i>	0.0610	0.0003	0.9950
40	<i>Hippoglossoides elassodon</i>	0.0490	0.0003	0.9953
41	<i>Hexanchus griseus</i>	0.0480	0.0002	0.9955

Table B-13.--Continued.

42	<i>Torpedo californica</i>	0.0450	0.0002	0.9958
43	<i>Sebastes helvomaculatus</i>	0.0440	0.0002	0.9960
44	<i>Pleuronichthys decurrens</i>	0.0400	0.0002	0.9962
45	<i>Platichthys stellatus</i>	0.0350	0.0002	0.9964
46	<i>Allocentrotus fragilis</i>	0.0330	0.0002	0.9966
47	<i>Parastichopus californicus</i>	0.0320	0.0002	0.9967
48	<i>Lycodes pacificus</i>	0.0270	0.0001	0.9969
49	<i>Bathyraja interrupta</i>	0.0250	0.0001	0.9970
50	<i>Sebastes saxicola</i>	0.0230	0.0001	0.9971
51	<i>Pandalus jordani</i>	0.0230	0.0001	0.9972
52	<i>Sebastes aleutianus</i>	0.0220	0.0001	0.9973
53	<i>Sebastes ruberrimus</i>	0.0220	0.0001	0.9975
54	Holothuroidea unident.	0.0220	0.0001	0.9976
55	<i>Luidia</i> sp.	0.0200	0.0001	0.9977
56	Scyphozoa (class)	0.0200	0.0001	0.9978
57	<i>Pycnopodia helianthoides</i>	0.0200	0.0001	0.9979
58	<i>Gorgonocephalus eucnemis</i>	0.0180	0.0001	0.9980
59	<i>Sardinops sagax</i>	0.0180	0.0001	0.9981
60	<i>Virgularia</i> sp.	0.0180	0.0001	0.9982
61	<i>Engraulis mordax</i>	0.0180	0.0001	0.9982
62	Basketstarfish unident.	0.0150	0.0001	0.9983
63	<i>Thaleichthys pacificus</i>	0.0150	0.0001	0.9984
64	<i>Loligo opalescens</i>	0.0150	0.0001	0.9985
65	<i>Icelinus filamentosus</i>	0.0140	0.0001	0.9985
66	<i>Hippasteria</i> sp.	0.0140	0.0001	0.9986
67	<i>Spirinchus starksi</i>	0.0140	0.0001	0.9987
68	<i>Lycodes brevipes</i>	0.0130	0.0001	0.9988
69	<i>Parastichopus leucothele</i>	0.0120	0.0001	0.9988
70	<i>Bathyraja parmifera</i>	0.0120	0.0001	0.9989
71	<i>Sebastes melanops</i>	0.0120	0.0001	0.9989
72	<i>Porichthys notatus</i>	0.0120	0.0001	0.9990
73	<i>Stylasterias forreri</i>	0.0120	0.0001	0.9991
74	skate egg case unident.	0.0110	0.0001	0.9991
75	Thaliacea unident.	0.0110	0.0001	0.9992
76	<i>Sebastes wilsoni</i>	0.0110	0.0001	0.9992
77	<i>Stylatula</i> sp.	0.0100	Trace	0.9993
78	<i>Sebastes chlorostictus</i>	0.0100	Trace	0.9993
79	<i>Isopsetta isolepis</i>	0.0080	Trace	0.9994
80	<i>Lycodes cortezianus</i>	0.0080	Trace	0.9994
81	<i>Anarrhichthys ocellatus</i>	0.0070	Trace	0.9994
82	<i>Lopholithodes foraminatus</i>	0.0070	Trace	0.9995
83	<i>Cryptacanthodes giganteus</i>	0.0070	Trace	0.9995
84	<i>Hexagrammos decagrammus</i>	0.0070	Trace	0.9995
85	<i>Sebastes zacentrus</i>	0.0070	Trace	0.9996

Table B-13.--Continued.

86	<i>Alepisaurus ferox</i>	0.0060	Trace	0.9996
87	<i>Aphrocallistes vastus</i>	0.0050	Trace	0.9996
88	squid eggs unident.	0.0050	Trace	0.9997
89	<i>Allosmerus elongatus</i>	0.0040	Trace	0.9997
90	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9997
91	<i>Sebastes babcocki</i>	0.0040	Trace	0.9997
92	<i>Hypomesus pretiosus</i>	0.0030	Trace	0.9997
93	<i>Thrissacanthias penicillatus</i>	0.0030	Trace	0.9998
94	starfish unident.	0.0030	Trace	0.9998
95	<i>Oncorhynchus kisutch</i>	0.0030	Trace	0.9998
96	<i>Pseudostichopus mollis</i>	0.0030	Trace	0.9998
97	<i>Hippasteria californica</i>	0.0020	Trace	0.9998
98	<i>Strongylocentrotus droebachiensis</i>	0.0020	Trace	0.9998
99	<i>Sebastes maliger</i>	0.0020	Trace	0.9998
100	squid unident.	0.0020	Trace	0.9998
101	<i>Pandalus platyceros</i>	0.0020	Trace	0.9999
102	<i>Dermasterias imbricata</i>	0.0020	Trace	0.9999
103	Porifera (phylum)	0.0020	Trace	0.9999
104	Stromateidae	0.0010	Trace	0.9999
105	<i>Patinopecten caurinus</i>	0.0010	Trace	0.9999
106	<i>Sebastes diploproa</i>	0.0010	Trace	0.9999
107	Aphroditidae	0.0010	Trace	0.9999
108	<i>Solaster</i> sp.	0.0010	Trace	0.9999
109	<i>Pisaster</i> sp.	0.0010	Trace	0.9999
110	<i>Tritonia diomedea</i>	0.0010	Trace	0.9999
111	Paguridae	0.0010	Trace	0.9999
112	Ophidiidae	0.0010	Trace	0.9999
113	<i>Chilara taylori</i>	0.0010	Trace	0.9999
114	<i>Lethasterias nanimensis</i>	0.0010	Trace	0.9999
115	<i>Fusitriton oregonensis</i>	0.0010	Trace	0.9999
116	<i>Polinices</i> sp.	0.0010	Trace	0.9999
117	Pennatulacea (order)	0.0010	Trace	0.9999
118	<i>Tritonia</i> sp.	0.0010	Trace	0.9999
119	<i>Hippasteria spinosa</i>	0.0010	Trace	1.0000
120	<i>Rossia pacifica</i>	0.0010	Trace	1.0000
121	<i>Mediaster</i> sp.	0.0010	Trace	1.0000
122	<i>Eptatretus deani</i>	0.0010	Trace	1.0000
123	octopus unident.	Trace	Trace	1.0000
124	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
125	<i>Pagurus capillatus</i>	Trace	Trace	1.0000
126	<i>Crossaster</i> sp.	Trace	Trace	1.0000
127	<i>Pseudarchaster</i> sp.	Trace	Trace	1.0000
128	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
129	<i>Mursia gaudichaudii</i>	Trace	Trace	1.0000

Table B-13.--Continued.

130	nudibranch unident.	Trace	Trace	1.0000
131	<i>Solaster endeca</i>	Trace	Trace	1.0000
132	Onychoteuthidae	Trace	Trace	1.0000
133	<i>Liponemis brevicornis</i>	Trace	Trace	1.0000
134	Gastropod unident.	Trace	Trace	1.0000
135	<i>Molpadia</i> sp.	Trace	Trace	1.0000
136	<i>Peprilus simillimus</i>	Trace	Trace	1.0000
137	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
138	<i>Acantholithodes hispidus</i>	Trace	Trace	1.0000
139	<i>Pseudarchaster parelii</i>	Trace	Trace	1.0000
140	<i>Cucumaria</i> sp.	Trace	Trace	1.0000
141	<i>Sebastes aurora</i>	Trace	Trace	1.0000
142	<i>Strongylocentrotus franciscanus</i>	Trace	Trace	1.0000
143	Ctenophora (phylum)	Trace	Trace	1.0000
144	<i>Icelinus borealis</i>	Trace	Trace	1.0000
145	<i>Sebastes semicinctus</i>	Trace	Trace	1.0000
146	Stichaeidae	Trace	Trace	1.0000
147	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
148	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
149	<i>Crossaster papposus</i>	Trace	Trace	1.0000
150	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
151	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
152	<i>Mediaster aequalis</i>	Trace	Trace	1.0000
153	<i>Zaniolepis latipinnis</i>	Trace	Trace	1.0000
154	snail (gastropod) eggs	Trace	Trace	1.0000
155	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
156	brachiopod unident.	Trace	Trace	1.0000
157	Ascidian unident.	Trace	Trace	1.0000
158	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
159	<i>Sebastes goodei</i>	Trace	Trace	1.0000
160	<i>Rathbunaster californicus</i>	Trace	Trace	1.0000
161	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
162	<i>Ophiura sarsi</i>	Trace	Trace	1.0000
163	Polychaeta (class)	Trace	Trace	1.0000
164	<i>Pandalus danae</i>	Trace	Trace	1.0000
165	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
166	<i>Callianassa</i> sp.	Trace	Trace	1.0000
167	<i>Poroclinus rothrocki</i>	Trace	Trace	1.0000
168	<i>Sebastes</i> sp.	Trace	Trace	1.0000
169	<i>Neptunea</i> sp.	Trace	Trace	1.0000
170	shrimp unident.	Trace	Trace	1.0000
171	<i>Plectobranthus evides</i>	Trace	Trace	1.0000
172	Isopoda (order)	Trace	Trace	1.0000

Table B-14.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Columbia middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	84.0910	0.4670	0.4670
2	<i>Anoplopoma fimbria</i>	17.3700	0.0965	0.5634
3	<i>Microstomus pacificus</i>	11.5410	0.0641	0.6275
4	<i>Sebastes diploproa</i>	10.0590	0.0559	0.6834
5	<i>Glyptocephalus zachirus</i>	9.7020	0.0539	0.7373
6	<i>Sebastes zacentrus</i>	7.0520	0.0392	0.7764
7	<i>Sebastes alutus</i>	6.3390	0.0352	0.8116
8	<i>Sebastolobus alascanus</i>	4.5360	0.0252	0.8368
9	<i>Atheresthes stomias</i>	3.7080	0.0206	0.8574
10	<i>Hippoglossus stenolepis</i>	3.5700	0.0198	0.8772
11	<i>Ophiodon elongatus</i>	3.2980	0.0183	0.8956
12	<i>Sebastes flavidus</i>	2.3530	0.0131	0.9086
13	<i>Sebastes crameri</i>	2.3160	0.0129	0.9215
14	<i>Sebastes saxicola</i>	2.1610	0.0120	0.9335
15	<i>Alloctrotus fragilis</i>	1.4710	0.0082	0.9417
16	<i>Squalus acanthias</i>	1.2050	0.0067	0.9483
17	<i>Raja rhina</i>	0.8930	0.0050	0.9533
18	<i>Sebastes elongatus</i>	0.8530	0.0047	0.9580
19	<i>Parophrys vetulus</i>	0.7410	0.0041	0.9622
20	<i>Lyopsetta exilis</i>	0.7250	0.0040	0.9662
21	heart urchin unident.	0.5630	0.0031	0.9693
22	<i>Lycodes cortezianus</i>	0.5480	0.0030	0.9724
23	<i>Moroteuthis robusta</i>	0.5250	0.0029	0.9753
24	<i>Sebastes entomelas</i>	0.3980	0.0022	0.9775
25	<i>Aphrocallistes vastus</i>	0.3440	0.0019	0.9794
26	<i>Brisaster latifrons</i>	0.2850	0.0016	0.9810
27	<i>Sebastes helvomaculatus</i>	0.2650	0.0015	0.9824
28	<i>Bathyraja interrupta</i>	0.2600	0.0014	0.9839
29	<i>Alosa sapidissima</i>	0.2440	0.0014	0.9852
30	<i>Sebastes pinniger</i>	0.2150	0.0012	0.9864
31	<i>Lycodes diapterus</i>	0.2040	0.0011	0.9876
32	<i>Hydrolagus colliei</i>	0.2010	0.0011	0.9887
33	<i>Sebastes babcocki</i>	0.1420	0.0008	0.9895
34	<i>Eopsetta jordani</i>	0.1280	0.0007	0.9902
35	<i>Cancer magister</i>	0.1130	0.0006	0.9908
36	<i>Luidia foliata</i>	0.1120	0.0006	0.9914
37	<i>Icelinus filamentosus</i>	0.1090	0.0006	0.9920
38	Holothuroidea unident.	0.0980	0.0005	0.9926
39	<i>Sebastes reedi</i>	0.0910	0.0005	0.9931
40	<i>Pandalus jordani</i>	0.0710	0.0004	0.9935
41	<i>Ommastrephes bartrami</i>	0.0700	0.0004	0.9939

Table B-14.--Continued.

42	<i>Sebastes aleutianus</i>	0.0690	0.0004	0.9943
43	<i>Pandalus platyceros</i>	0.0600	0.0003	0.9946
44	<i>Luidia</i> sp.	0.0510	0.0003	0.9949
45	<i>Trachurus symmetricus</i>	0.0480	0.0003	0.9951
46	<i>Torpedo californica</i>	0.0460	0.0003	0.9954
47	<i>Sebastes borealis</i>	0.0440	0.0002	0.9956
48	<i>Sebastes brevispinis</i>	0.0410	0.0002	0.9959
49	Scyphozoa (class)	0.0380	0.0002	0.9961
50	<i>Lopholithodes foraminatus</i>	0.0360	0.0002	0.9963
51	<i>Parastichopus leucothele</i>	0.0340	0.0002	0.9965
52	<i>Scomber japonicus</i>	0.0330	0.0002	0.9967
53	Thaliacea unident.	0.0320	0.0002	0.9968
54	<i>Sebastes goodei</i>	0.0310	0.0002	0.9970
55	Porifera (phylum)	0.0290	0.0002	0.9972
56	sea urchin unident.	0.0280	0.0002	0.9973
57	<i>Liponemis brevicornis</i>	0.0250	0.0001	0.9975
58	<i>Clupea pallasii</i>	0.0240	0.0001	0.9976
59	Actiniaria (order)	0.0230	0.0001	0.9977
60	<i>Citharichthys sordidus</i>	0.0220	0.0001	0.9978
61	octopus unident.	0.0200	0.0001	0.9980
62	<i>Halichondria panicea</i>	0.0200	0.0001	0.9981
63	<i>Apristurus brunneus</i>	0.0200	0.0001	0.9982
64	<i>Pseudostichopus mollis</i>	0.0180	0.0001	0.9983
65	<i>Neptunea</i> sp.	0.0160	0.0001	0.9984
66	<i>Berryteuthis magister</i>	0.0150	0.0001	0.9985
67	<i>Sebastes levis</i>	0.0140	0.0001	0.9985
68	<i>Gadus macrocephalus</i>	0.0130	0.0001	0.9986
69	<i>Paractinostola faeculenta</i>	0.0130	0.0001	0.9987
70	Onychoteuthidae	0.0130	0.0001	0.9987
71	<i>Stylasterias forreri</i>	0.0120	0.0001	0.9988
72	rough purple sea anemone	0.0120	0.0001	0.9989
73	<i>Sebastes aurora</i>	0.0110	0.0001	0.9989
74	<i>Diplopteraster multipes</i>	0.0110	0.0001	0.9990
75	<i>Ctenodiscus crispatus</i>	0.0100	0.0001	0.9991
76	<i>Thrissacanthias penicillatus</i>	0.0100	0.0001	0.9991
77	<i>Neptunea lyrata</i>	0.0100	0.0001	0.9992
78	Myctophidae	0.0070	Trace	0.9992
79	Paguridae	0.0070	Trace	0.9992
80	starfish unident.	0.0060	Trace	0.9993
81	<i>Careproctus melanurus</i>	0.0060	Trace	0.9993
82	<i>Lycodes pacificus</i>	0.0060	Trace	0.9993
83	<i>Gonatus</i> sp.	0.0060	Trace	0.9994
84	<i>Rathbunaster californicus</i>	0.0060	Trace	0.9994
85	<i>Ophiura sarsi</i>	0.0060	Trace	0.9994

Table B-14.--Continued.

86	<i>Chilara taylori</i>	0.0060	Trace	0.9995
87	<i>Cucumaria</i> sp.	0.0050	Trace	0.9995
88	<i>Hippoglossoides elassodon</i>	0.0050	Trace	0.9995
89	<i>Pycnopodia helianthoides</i>	0.0050	Trace	0.9996
90	skate egg case unident.	0.0040	Trace	0.9996
91	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9996
92	<i>Solaster</i> sp.	0.0040	Trace	0.9996
93	<i>Theragra chalcogramma</i>	0.0040	Trace	0.9997
94	<i>Pandalopsis dispar</i>	0.0030	Trace	0.9997
95	Pennatulacea (order)	0.0030	Trace	0.9997
96	<i>Lampetra tridentata</i>	0.0030	Trace	0.9997
97	<i>Sebastes proriger</i>	0.0030	Trace	0.9997
98	<i>Eptatretus deani</i>	0.0030	Trace	0.9997
99	squid unident.	0.0030	Trace	0.9998
100	Aphroditidae	0.0030	Trace	0.9998
101	<i>Sebastes rufus</i>	0.0030	Trace	0.9998
102	<i>Fusitriton oregonensis</i>	0.0030	Trace	0.9998
103	<i>Solaster dawsoni</i>	0.0020	Trace	0.9998
104	<i>Pseudarchaster parelii</i>	0.0020	Trace	0.9998
105	<i>Sardinops sagax</i>	0.0020	Trace	0.9998
106	<i>Buccinum viridum</i>	0.0020	Trace	0.9998
107	<i>Mycale loveni</i>	0.0020	Trace	0.9999
108	<i>Sebastes jordani</i>	0.0020	Trace	0.9999
109	<i>Lycodes brevipes</i>	0.0020	Trace	0.9999
110	<i>Luidiaster dawsoni</i>	0.0010	Trace	0.9999
111	<i>Sebastes melanostomus</i>	0.0010	Trace	0.9999
112	<i>Neptunea pribiloffensis</i>	0.0010	Trace	0.9999
113	Basketstarfish unident.	0.0010	Trace	0.9999
114	<i>Bathyagonus pentacanthus</i>	0.0010	Trace	0.9999
115	<i>Molpadia</i> sp.	0.0010	Trace	0.9999
116	<i>Metridium</i> sp.	0.0010	Trace	0.9999
117	<i>Oregonia bifurca</i>	0.0010	Trace	0.9999
118	<i>Pasiphaea pacifica</i>	0.0010	Trace	0.9999
119	<i>Lampanyctus</i> sp.	0.0010	Trace	0.9999
120	<i>Mediaster aequalis</i>	0.0010	Trace	0.9999
121	<i>Xeneretmus latifrons</i>	0.0010	Trace	0.9999
122	<i>Taningia danae</i>	0.0010	Trace	0.9999
123	<i>Rossia pacifica</i>	0.0010	Trace	0.9999
124	Ophiuroid unident.	0.0010	Trace	1.0000
125	<i>Xeneretmus triacanthus</i>	0.0010	Trace	1.0000
126	Hexactinellida	0.0010	Trace	1.0000
127	<i>Buccinum</i> sp.	0.0010	Trace	1.0000
128	<i>Neptunea amianta</i>	0.0010	Trace	1.0000
129	<i>Mediaster</i> sp.	0.0010	Trace	1.0000

Table B-14.--Continued.

130	<i>Crossaster</i> sp.	0.0010	Trace	1.0000
131	<i>Beringius frielei</i>	Trace	Trace	1.0000
132	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
133	<i>Loligo opalescens</i>	Trace	Trace	1.0000
134	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
135	<i>Pagurus confragosus</i>	Trace	Trace	1.0000
136	<i>Diaphus theta</i>	Trace	Trace	1.0000
137	Euphausiacea (order)	Trace	Trace	1.0000
138	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
139	<i>Thaleichthys pacificus</i>	Trace	Trace	1.0000
140	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
141	<i>BathYGONUS</i> sp.	Trace	Trace	1.0000
142	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
143	<i>Psolus</i> sp.	Trace	Trace	1.0000
144	<i>Tritonia</i> sp.	Trace	Trace	1.0000
145	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
146	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
147	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
148	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
149	<i>Chionoecetes tanneri</i>	Trace	Trace	1.0000
150	<i>Pagurus capillatus</i>	Trace	Trace	1.0000
151	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
152	Sipuncula (phylum)	Trace	Trace	1.0000
153	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
154	<i>Henricia</i> sp.	Trace	Trace	1.0000
155	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
156	<i>Stylatula</i> sp.	Trace	Trace	1.0000
157	snail (gastropod) eggs	Trace	Trace	1.0000
158	<i>Chorilia longipes</i>	Trace	Trace	1.0000
159	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
160	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
161	hydroid unident.	Trace	Trace	1.0000

Table B-15.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Columbia deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	19.5970	0.2663	0.2663
2	<i>Microstomus pacificus</i>	15.0750	0.2049	0.4712
3	<i>Anoplopoma fimbria</i>	15.0240	0.2042	0.6753
4	<i>Sebastolobus alascanus</i>	7.7460	0.1053	0.7806
5	<i>Glyptocephalus zachirus</i>	4.1200	0.0560	0.8366
6	<i>Atheresthes stomias</i>	1.1700	0.0159	0.8525
7	<i>Apristurus brunneus</i>	0.8740	0.0119	0.8644
8	<i>Sebastes aurora</i>	0.8020	0.0109	0.8753
9	<i>Sebastolobus altivelis</i>	0.7870	0.0107	0.8860
10	<i>Sebastes alutus</i>	0.7710	0.0105	0.8965
11	<i>Raja rhina</i>	0.7330	0.0100	0.9064
12	<i>Lycodes cortezianus</i>	0.6590	0.0090	0.9154
13	<i>Squalus acanthias</i>	0.6450	0.0088	0.9241
14	<i>Sebastes aleutianus</i>	0.5140	0.0070	0.9311
15	<i>Brisaster latifrons</i>	0.4320	0.0059	0.9370
16	<i>Lycodes diapterus</i>	0.4200	0.0057	0.9427
17	Ommastrephidae	0.4090	0.0056	0.9483
18	<i>Aphrocallistes vastus</i>	0.4040	0.0055	0.9537
19	Holothuroidea unident.	0.3700	0.0050	0.9588
20	<i>Alloctrotus fragilis</i>	0.3180	0.0043	0.9631
21	<i>Bathyraja interrupta</i>	0.2520	0.0034	0.9665
22	<i>Chionoectes tanneri</i>	0.2360	0.0032	0.9697
23	<i>Sebastes diploproa</i>	0.1860	0.0025	0.9722
24	<i>Luidia foliata</i>	0.1620	0.0022	0.9744
25	Scyliorhinidae	0.1390	0.0019	0.9763
26	<i>Sebastes borealis</i>	0.1310	0.0018	0.9781
27	<i>Neptunea</i> sp.	0.1170	0.0016	0.9797
28	<i>Liponemis brevicornis</i>	0.1130	0.0015	0.9812
29	<i>Hydrolagus colliei</i>	0.1020	0.0014	0.9826
30	<i>Lyopsetta exilis</i>	0.0670	0.0009	0.9835
31	<i>Sebastes crameri</i>	0.0650	0.0009	0.9844
32	<i>Thrissacanthias penicillatus</i>	0.0590	0.0008	0.9852
33	<i>Prionace glauca</i>	0.0580	0.0008	0.9860
34	<i>Pseudostichopus mollis</i>	0.0490	0.0007	0.9867
35	Thaliacea unident.	0.0460	0.0006	0.9873
36	<i>Rathbunaster californicus</i>	0.0450	0.0006	0.9879
37	<i>Raja binoculata</i>	0.0440	0.0006	0.9885
38	<i>Ommastrephes bartrami</i>	0.0420	0.0006	0.9891
39	<i>Sebastes babcocki</i>	0.0410	0.0006	0.9896
40	octopus unident.	0.0390	0.0005	0.9901
41	<i>Sebastes melanostomus</i>	0.0380	0.0005	0.9907

Table B-15.--Continued.

42	<i>Neptunea amianta</i>	0.0370	0.0005	0.9912
43	<i>Ophiura sarsi</i>	0.0370	0.0005	0.9917
44	<i>Berryteuthis magister</i>	0.0360	0.0005	0.9922
45	<i>Parastichopus leucothele</i>	0.0320	0.0004	0.9926
46	rough purple sea anemone	0.0310	0.0004	0.9930
47	Myctophidae	0.0310	0.0004	0.9934
48	<i>Metridium</i> sp.	0.0300	0.0004	0.9938
49	<i>Myoxoderma sacculatum</i>	0.0290	0.0004	0.9942
50	Actiniaria (order)	0.0290	0.0004	0.9946
51	<i>Bothrocara brunneum</i>	0.0250	0.0003	0.9950
52	Porifera (phylum)	0.0250	0.0003	0.9953
53	<i>Pasiphaea pacifica</i>	0.0230	0.0003	0.9956
54	Pennatulacea (order)	0.0230	0.0003	0.9959
55	<i>Antimora microlepis</i>	0.0230	0.0003	0.9963
56	<i>Halichondria panicea</i>	0.0180	0.0002	0.9965
57	<i>Neptunea lyrata</i>	0.0170	0.0002	0.9967
58	<i>Diplopteraster multipes</i>	0.0150	0.0002	0.9969
59	Paguridae	0.0130	0.0002	0.9971
60	Scyphozoa (class)	0.0120	0.0002	0.9973
61	<i>Pagurus confragosus</i>	0.0120	0.0002	0.9974
62	<i>Careproctus melanurus</i>	0.0110	0.0002	0.9976
63	<i>Cancer magister</i>	0.0110	0.0001	0.9977
64	<i>Lampanyctus</i> sp.	0.0110	0.0001	0.9979
65	<i>Alosa sapidissima</i>	0.0100	0.0001	0.9980
66	<i>Lampetra tridentata</i>	0.0090	0.0001	0.9982
67	<i>Parophrys vetulus</i>	0.0070	0.0001	0.9983
68	sea urchin unident.	0.0070	0.0001	0.9983
69	<i>Eopsetta jordani</i>	0.0060	0.0001	0.9984
70	<i>Cucumaria</i> sp.	0.0060	0.0001	0.9985
71	<i>Paractinostola faeculenta</i>	0.0060	0.0001	0.9986
72	<i>Eptatretus deani</i>	0.0060	0.0001	0.9987
73	<i>Opisthoteuthis californiana</i>	0.0050	0.0001	0.9987
74	Euphausiacea (order)	0.0050	0.0001	0.9988
75	squid unident.	0.0050	0.0001	0.9989
76	<i>Gorgonocephalus eucnemis</i>	0.0040	0.0001	0.9989
77	<i>Neptunea pribiloffensis</i>	0.0040	0.0001	0.9990
78	<i>Sebastes helvomaculatus</i>	0.0040	0.0001	0.9991
79	<i>Tactostoma macropus</i>	0.0040	0.0001	0.9991
80	<i>Scomber japonicus</i>	0.0030	Trace	0.9992
81	<i>Fusitriton oregonensis</i>	0.0030	Trace	0.9992
82	Aphroditidae	0.0030	Trace	0.9992
83	<i>Hippasteria spinosa</i>	0.0030	Trace	0.9993
84	<i>Ctenodiscus crispatus</i>	0.0030	Trace	0.9993
85	Rajidae unident.	0.0030	Trace	0.9994

Table B-15.--Continued.

86	Hexactinellida	0.0030	Trace	0.9994
87	Virgularia sp.	0.0030	Trace	0.9994
88	Chauliodus macouni	0.0030	Trace	0.9995
89	Stylasterias forreri	0.0020	Trace	0.9995
90	Icelinus filamentosus	0.0020	Trace	0.9995
91	Actinauge verrillii	0.0020	Trace	0.9996
92	Pseudarchaster parelii	0.0020	Trace	0.9996
93	Myoxoderma platyacanthum	0.0020	Trace	0.9996
94	Buccinum viridum	0.0020	Trace	0.9997
95	Coryphaenoides acrolepis	0.0020	Trace	0.9997
96	Apristurus brunneus	0.0020	Trace	0.9997
97	Mediaster aequalis	0.0010	Trace	0.9997
98	Pisaster sp.	0.0010	Trace	0.9997
99	Luidiaster dawsoni	0.0010	Trace	0.9998
100	Mycale loveni	0.0010	Trace	0.9998
101	Tritonia diomedea	0.0010	Trace	0.9998
102	Taningia danae	0.0010	Trace	0.9998
103	Anthomastus sp.	0.0010	Trace	0.9998
104	Solaster endeca	0.0010	Trace	0.9998
105	Sagamichthys abei	0.0010	Trace	0.9998
106	Pteraster sp.	0.0010	Trace	0.9999
107	Basketstarfish unident.	0.0010	Trace	0.9999
108	skate egg case unident.	0.0010	Trace	0.9999
109	Hippasteria sp.	0.0010	Trace	0.9999
110	starfish unident.	0.0010	Trace	0.9999
111	Pagurus capillatus	0.0010	Trace	0.9999
112	Solaster sp.	0.0010	Trace	0.9999
113	Clupea pallasi	0.0010	Trace	0.9999
114	Leptychaster pacificus	0.0010	Trace	0.9999
115	Embassichthys bathybius	Trace	Trace	0.9999
116	Pannychia moseleyi	Trace	Trace	0.9999
117	Bathylagus sp.	Trace	Trace	0.9999
118	Ophiuroid unident.	Trace	Trace	1.0000
119	Bathyagonus nigripinnis	Trace	Trace	1.0000
120	Ophiopholis aculeata	Trace	Trace	1.0000
121	Aristostomias scintillans	Trace	Trace	1.0000
122	Leptychaster arcticus	Trace	Trace	1.0000
123	Liparis sp.	Trace	Trace	1.0000
124	Ascidian unident.	Trace	Trace	1.0000
125	Chorilia longipes	Trace	Trace	1.0000
126	Oregonia bifurca	Trace	Trace	1.0000
127	Loligo opalescens	Trace	Trace	1.0000
128	Bathyagonus pentacanthus	Trace	Trace	1.0000
129	Chiroteuthis calyx	Trace	Trace	1.0000

Table B-15.--Continued.

130	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
131	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
132	<i>Stenobrachius leucopsarus</i>	Trace	Trace	1.0000
133	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
134	brachiopod unident.	Trace	Trace	1.0000
135	<i>Pandalus tridens</i>	Trace	Trace	1.0000
136	snail (gastropod) eggs	Trace	Trace	1.0000
137	<i>Pandalus jordani</i>	Trace	Trace	1.0000
138	<i>Careproctus</i> sp.	Trace	Trace	1.0000
139	Liparidinae	Trace	Trace	1.0000
140	<i>Crossaster</i> sp.	Trace	Trace	1.0000
141	<i>Laqueus californianus</i>	Trace	Trace	1.0000
142	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
143	<i>Howella sherborni</i>	Trace	Trace	1.0000
144	<i>Henricia</i> sp.	Trace	Trace	1.0000
145	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
146	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
147	Pleuronectiformes larvae	Trace	Trace	1.0000

Table B-16.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire INPFC Columbia area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	103.8550	0.6012	0.6012
2	<i>Anoplopoma fimbria</i>	10.6020	0.0614	0.6626
3	<i>Microstomus pacificus</i>	8.2950	0.0480	0.7106
4	<i>Glyptocephalus zachirus</i>	6.2590	0.0362	0.7469
5	<i>Citharichthys sordidus</i>	5.7780	0.0334	0.7803
6	<i>Parophrys vetulus</i>	3.8660	0.0224	0.8027
7	<i>Squalus acanthias</i>	3.5100	0.0203	0.8230
8	<i>Clupea pallasii</i>	3.1030	0.0180	0.8410
9	<i>Sebastes alascanus</i>	2.2150	0.0128	0.8538
10	<i>Sebastes diploproa</i>	2.1810	0.0126	0.8664
11	<i>Sebastes flavidus</i>	2.1370	0.0124	0.8788
12	<i>Atheresthes stomias</i>	2.0640	0.0119	0.8907
13	<i>Hippoglossus stenolepis</i>	2.0160	0.0117	0.9024
14	<i>Alosa sapidissima</i>	1.5740	0.0091	0.9115
15	<i>Sebastes zacentrus</i>	1.5130	0.0088	0.9203
16	<i>Sebastes alutus</i>	1.4750	0.0085	0.9288
17	<i>Ophiodon elongatus</i>	1.1530	0.0067	0.9355
18	<i>Sebastes elongatus</i>	1.1390	0.0066	0.9421
19	<i>Scomber japonicus</i>	0.9590	0.0056	0.9477
20	<i>Sebastes crameri</i>	0.8300	0.0048	0.9525
21	<i>Raja rhina</i>	0.7840	0.0045	0.9570
22	<i>Eopsetta jordani</i>	0.6510	0.0038	0.9608
23	<i>Raja binoculata</i>	0.6300	0.0036	0.9644
24	<i>Sebastes saxicola</i>	0.4770	0.0028	0.9672
25	<i>Cancer magister</i>	0.3900	0.0023	0.9694
26	<i>Alloctrotus fragilis</i>	0.3850	0.0022	0.9717
27	<i>Lyopsetta exilis</i>	0.3660	0.0021	0.9738
28	<i>Trachurus symmetricus</i>	0.3420	0.0020	0.9758
29	<i>Brisaster latifrons</i>	0.2270	0.0013	0.9771
30	<i>Lycodes cortezianus</i>	0.2240	0.0013	0.9784
31	heart urchin unident.	0.2010	0.0012	0.9795
32	<i>Hydrolagus collicii</i>	0.1960	0.0011	0.9807
33	<i>Oncorhynchus tshawytscha</i>	0.1420	0.0008	0.9815
34	<i>Apristurus brunneus</i>	0.1400	0.0008	0.9823
35	<i>Aphrocallistes vastus</i>	0.1400	0.0008	0.9831
36	<i>Sebastes entomelas</i>	0.1340	0.0008	0.9839
37	<i>Sebastes pinniger</i>	0.1280	0.0007	0.9846
38	<i>Sebastes aurora</i>	0.1270	0.0007	0.9854
39	<i>Sebastes altivelis</i>	0.1220	0.0007	0.9861

Table B-16.--Continued.

40	<i>Moroteuthis robusta</i>	0.1120	0.0007	0.9867
41	<i>Bathyraja interrupta</i>	0.1100	0.0006	0.9874
42	<i>Lycodes diapterus</i>	0.1090	0.0006	0.9880
43	<i>Sebastes aleutianus</i>	0.1080	0.0006	0.9886
44	<i>Luidia foliata</i>	0.1070	0.0006	0.9892
45	<i>Galeorhinus galeus</i>	0.1010	0.0006	0.9898
46	<i>Sebastes proriger</i>	0.0980	0.0006	0.9904
47	<i>Holothuroidea unident.</i>	0.0920	0.0005	0.9909
48	<i>Sebastes helvomaculatus</i>	0.0850	0.0005	0.9914
49	<i>Lepidopsetta bilineata</i>	0.0710	0.0004	0.9918
50	Ommastrephidae	0.0630	0.0004	0.9922
51	<i>Metridium sp.</i>	0.0610	0.0004	0.9925
52	<i>Gadus macrocephalus</i>	0.0600	0.0004	0.9929
53	Actiniaria (order)	0.0580	0.0003	0.9932
54	<i>Acipenser medirostris</i>	0.0490	0.0003	0.9935
55	<i>Microgadus proximus</i>	0.0410	0.0002	0.9938
56	<i>Sebastes babcocki</i>	0.0390	0.0002	0.9940
57	<i>Psettichthys melanostictus</i>	0.0380	0.0002	0.9942
58	<i>Torpedo californica</i>	0.0380	0.0002	0.9944
59	<i>Chionoecetes tanneri</i>	0.0370	0.0002	0.9946
60	<i>Icelinus filamentosus</i>	0.0330	0.0002	0.9948
61	<i>Hippoglossoides elassodon</i>	0.0320	0.0002	0.9950
62	<i>Hexanchus griseus</i>	0.0300	0.0002	0.9952
63	<i>Pandalus jordani</i>	0.0300	0.0002	0.9954
64	<i>Sebastes borealis</i>	0.0300	0.0002	0.9955
65	<i>Pleuronichthys decurrens</i>	0.0250	0.0001	0.9957
66	<i>Luidia sp.</i>	0.0240	0.0001	0.9958
67	<i>Liponemis brevicornis</i>	0.0230	0.0001	0.9959
68	Scyphozoa (class)	0.0230	0.0001	0.9961
69	<i>Platichthys stellatus</i>	0.0220	0.0001	0.9962
70	Scyliorhinidae	0.0220	0.0001	0.9963
71	Ommastrephes bartrami	0.0220	0.0001	0.9965
72	<i>Neptunea sp.</i>	0.0210	0.0001	0.9966
73	Thaliacea unident.	0.0210	0.0001	0.9967
74	<i>Parastichopus californicus</i>	0.0200	0.0001	0.9968
75	<i>Parastichopus leucothele</i>	0.0200	0.0001	0.9969
76	<i>Sebastes reedi</i>	0.0200	0.0001	0.9970
77	<i>Lycodes pacificus</i>	0.0180	0.0001	0.9972
78	<i>Pandalus platyceros</i>	0.0140	0.0001	0.9972
79	<i>Sebastes ruberrimus</i>	0.0140	0.0001	0.9973
80	<i>Pycnopodia helianthoides</i>	0.0140	0.0001	0.9974

Table B-16.--Continued.

81	<i>Pseudostichopus mollis</i>	0.0130	0.0001	0.9975
82	<i>Thrissacanthias penicillatus</i>	0.0130	0.0001	0.9975
83	<i>Gorgonocephalus eucnemis</i>	0.0120	0.0001	0.9976
84	<i>Lopholithodes foraminatus</i>	0.0120	0.0001	0.9977
85	<i>Sardinops sagax</i>	0.0120	0.0001	0.9978
86	<i>Virgularia</i> sp.	0.0120	0.0001	0.9978
87	<i>Engraulis mordax</i>	0.0110	0.0001	0.9979
88	Porifera (phylum)	0.0110	0.0001	0.9980
89	octopus unident.	0.0110	0.0001	0.9980
90	<i>Stylasterias forreri</i>	0.0100	0.0001	0.9981
91	Basketstarfish unident.	0.0100	0.0001	0.9981
92	<i>Loligo opalescens</i>	0.0090	0.0001	0.9982
93	<i>Thaleichthys pacificus</i>	0.0090	0.0001	0.9982
94	Prionace glauca	0.0090	0.0001	0.9983
95	<i>Hippasteria</i> sp.	0.0090	0.0001	0.9983
96	<i>Sebastes brevispinis</i>	0.0090	0.0001	0.9984
97	<i>Berryteuthis magister</i>	0.0090	0.0001	0.9984
98	<i>Spirinchus starksi</i>	0.0090	Trace	0.9985
99	<i>Lycodes brevipes</i>	0.0080	Trace	0.9985
100	<i>Rathbunaster californicus</i>	0.0080	Trace	0.9986
101	skate egg case unident.	0.0080	Trace	0.9986
102	<i>Bathyraja parmitifera</i>	0.0080	Trace	0.9987
103	<i>Sebastes melanops</i>	0.0080	Trace	0.9987
104	rough purple sea anemone	0.0070	Trace	0.9988
105	<i>Porichthys notatus</i>	0.0070	Trace	0.9988
106	<i>Halichondria panicea</i>	0.0070	Trace	0.9989
107	sea urchin unident.	0.0070	Trace	0.9989
108	<i>Ophiura sarsi</i>	0.0070	Trace	0.9989
109	<i>Sebastes goodei</i>	0.0070	Trace	0.9990
110	<i>Sebastes wilsoni</i>	0.0070	Trace	0.9990
111	Myctophidae	0.0060	Trace	0.9990
112	<i>Sebastes melanostomus</i>	0.0060	Trace	0.9991
113	<i>Stylatula</i> sp.	0.0060	Trace	0.9991
114	<i>Sebastes chlorostictus</i>	0.0060	Trace	0.9992
115	<i>Neptunea amianta</i>	0.0060	Trace	0.9992
116	<i>Isopsetta isolepis</i>	0.0050	Trace	0.9992
117	Pennatulacea (order)	0.0050	Trace	0.9992
118	<i>Neptunea lyrata</i>	0.0050	Trace	0.9993
119	<i>Diplopteraster multipes</i>	0.0050	Trace	0.9993
120	<i>Anarrhichthys ocellatus</i>	0.0050	Trace	0.9993
121	<i>Myoxoderma sacculatum</i>	0.0040	Trace	0.9993

Table B-16.--Continued.

122	<i>Cryptacanthodes giganteus</i>	0.0040	Trace	0.9994
123	<i>Hexagrammos decagrammus</i>	0.0040	Trace	0.9994
124	Paguridae	0.0040	Trace	0.9994
125	<i>Bothrocarra brunneum</i>	0.0040	Trace	0.9994
126	<i>Pasiphaea pacifica</i>	0.0040	Trace	0.9995
127	<i>Paractinostola faeculenta</i>	0.0040	Trace	0.9995
128	<i>Antimora microlepis</i>	0.0040	Trace	0.9995
129	<i>Alepisaurus ferox</i>	0.0040	Trace	0.9995
130	starfish unident.	0.0030	Trace	0.9996
131	<i>Pisaster brevispinus</i>	0.0030	Trace	0.9996
132	squid eggs unident.	0.0030	Trace	0.9996
133	<i>Careproctus melanurus</i>	0.0030	Trace	0.9996
134	<i>Sebastes levis</i>	0.0030	Trace	0.9996
135	Onychoteuthidae	0.0030	Trace	0.9996
136	<i>Ctenodiscus crispatus</i>	0.0030	Trace	0.9997
137	squid unident.	0.0030	Trace	0.9997
138	<i>Allosmerus elongatus</i>	0.0020	Trace	0.9997
139	<i>Lampetra tridentata</i>	0.0020	Trace	0.9997
140	<i>Cucumaria</i> sp.	0.0020	Trace	0.9997
141	<i>Hypomesus pretiosus</i>	0.0020	Trace	0.9997
142	<i>Pagurus confragosus</i>	0.0020	Trace	0.9997
143	<i>Eptatretus deani</i>	0.0020	Trace	0.9997
144	<i>Oncorhynchus kisutch</i>	0.0020	Trace	0.9998
145	<i>Lampanyctus</i> sp.	0.0020	Trace	0.9998
146	Aphroditidae	0.0020	Trace	0.9998
147	<i>Chilara taylori</i>	0.0020	Trace	0.9998
148	<i>Fusitriton oregonensis</i>	0.0020	Trace	0.9998
149	<i>Solaster</i> sp.	0.0020	Trace	0.9998
150	<i>Hippasteria californica</i>	0.0020	Trace	0.9998
151	<i>Strongylocentrotus droebachiensis</i>	0.0020	Trace	0.9998
152	<i>Sebastes maliger</i>	0.0010	Trace	0.9998
153	<i>Gonatus</i> sp.	0.0010	Trace	0.9998
154	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9998
155	<i>Hippasteria spinosa</i>	0.0010	Trace	0.9999
156	<i>Neptunea pribiloffensis</i>	0.0010	Trace	0.9999
157	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9999
158	Euphausiacea (order)	0.0010	Trace	0.9999
159	<i>Opisthoteuthis californiana</i>	0.0010	Trace	0.9999
160	Strómateidae	0.0010	Trace	0.9999
161	<i>Patinopecten caurinus</i>	0.0010	Trace	0.9999
162	<i>Tritonia diomedea</i>	0.0010	Trace	0.9999

Table B-16.--Continued.

163	<i>Theragra chalcogramma</i>	0.0010	Trace	0.9999
164	<i>Pisaster</i> sp.	0.0010	Trace	0.9999
165	<i>Pandalopsis dispar</i>	0.0010	Trace	0.9999
166	<i>Buccinum viridum</i>	0.0010	Trace	0.9999
167	<i>Tactostoma macropus</i>	0.0010	Trace	0.9999
168	<i>Sebastes rufus</i>	0.0010	Trace	0.9999
169	Hexactinellida	0.0010	Trace	0.9999
170	<i>Mycale loveni</i>	0.0010	Trace	0.9999
171	Ophidiidae	0.0010	Trace	0.9999
172	<i>Tritonia</i> sp.	0.0010	Trace	0.9999
173	<i>Lethasterias nanimensis</i>	0.0010	Trace	0.9999
174	<i>Luidiaster dawsoni</i>	0.0010	Trace	0.9999
175	<i>Polinices</i> sp.	0.0010	Trace	0.9999
176	<i>Rossia pacifica</i>	0.0010	Trace	0.9999
177	<i>Mediaster</i> sp.	Trace	Trace	0.9999
178	<i>Solaster dawsoni</i>	Trace	Trace	0.9999
179	<i>Chauliodus macouni</i>	Trace	Trace	0.9999
180	Rajidae unident.	Trace	Trace	0.9999
181	<i>Mediaster aequalis</i>	Trace	Trace	1.0000
182	<i>Pagurus capillatus</i>	Trace	Trace	1.0000
183	<i>Crossaster</i> sp.	Trace	Trace	1.0000
184	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
185	<i>Molpadia</i> sp.	Trace	Trace	1.0000
186	<i>Solaster endeca</i>	Trace	Trace	1.0000
187	<i>Sebastes jordani</i>	Trace	Trace	1.0000
188	<i>Myoxoderma platyacanthum</i>	Trace	Trace	1.0000
189	<i>Taningia danae</i>	Trace	Trace	1.0000
190	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
191	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
192	<i>Coryphaenoides acrolepis</i>	Trace	Trace	1.0000
193	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
194	<i>Pseudarchaster</i> sp.	Trace	Trace	1.0000
195	<i>Bathygonus pentacanthus</i>	Trace	Trace	1.0000
196	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
197	<i>Mursia gaudichaudii</i>	Trace	Trace	1.0000
198	nudibranch unident.	Trace	Trace	1.0000
199	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
200	Gastropod unident.	Trace	Trace	1.0000
201	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
202	Ophiuroid unident.	Trace	Trace	1.0000
203	<i>Peprilus simillimus</i>	Trace	Trace	1.0000

Table B-16.--Continued.

204	<i>Anthomastus</i> sp.	Trace	Trace	1.0000
205	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
206	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
207	<i>Pteraster</i> sp.	Trace	Trace	1.0000
208	<i>Buccinum</i> sp.	Trace	Trace	1.0000
209	<i>Acantholithodes hispidus</i>	Trace	Trace	1.0000
210	<i>Beringius frielei</i>	Trace	Trace	1.0000
211	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
212	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
213	<i>Strongylocentrotus franciscanus</i>	Trace	Trace	1.0000
214	snail (gastropod) eggs	Trace	Trace	1.0000
215	<i>Ctenophora</i> (phylum)	Trace	Trace	1.0000
216	<i>Icelinus borealis</i>	Trace	Trace	1.0000
217	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
218	<i>Sebastes semicinctus</i>	Trace	Trace	1.0000
219	Ascidian unident.	Trace	Trace	1.0000
220	<i>Diaphus theta</i>	Trace	Trace	1.0000
221	<i>Embassichthys bathybius</i>	Trace	Trace	1.0000
222	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
223	brachiopod unident.	Trace	Trace	1.0000
224	Stichaeidae	Trace	Trace	1.0000
225	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
226	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
227	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
228	<i>Crossaster papposus</i>	Trace	Trace	1.0000
229	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
230	<i>Bathyagonus</i> sp.	Trace	Trace	1.0000
231	<i>Bathyagonus nigripinnis</i>	Trace	Trace	1.0000
232	<i>Psolus</i> sp.	Trace	Trace	1.0000
233	<i>Zaniolepis latipinnis</i>	Trace	Trace	1.0000
234	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
235	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
236	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
237	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000
238	<i>Liparis</i> sp.	Trace	Trace	1.0000
239	<i>Chorilia longipes</i>	Trace	Trace	1.0000
240	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
241	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000
242	<i>Chiroteuthis calyx</i>	Trace	Trace	1.0000
243	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
244	<i>Henricia</i> sp.	Trace	Trace	1.0000

Table B-16.--Continued.

245	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
246	<i>Pandalus tridens</i>	Trace	Trace	1.0000
247	Polychaeta (class)	Trace	Trace	1.0000
248	<i>Pandalus danae</i>	Trace	Trace	1.0000
249	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
250	<i>Careproctus</i> sp.	Trace	Trace	1.0000
251	<i>Callianassa</i> sp.	Trace	Trace	1.0000
252	Liparidinae	Trace	Trace	1.0000
253	<i>Poroclinus rothrocki</i>	Trace	Trace	1.0000
254	<i>Sebastes</i> sp.	Trace	Trace	1.0000
255	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
256	<i>Laqueus californianus</i>	Trace	Trace	1.0000
257	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
258	<i>Howella sherborni</i>	Trace	Trace	1.0000
259	shrimp unident.	Trace	Trace	1.0000
260	<i>Plectobranchnus evides</i>	Trace	Trace	1.0000
261	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
262	Isopoda (order)	Trace	Trace	1.0000
263	Pleuronectiformes larvae	Trace	Trace	1.0000
264	hydroid unident.	Trace	Trace	1.0000

Table B-17.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the INPFC Vancouver shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	166.6580	0.4981	0.4981
2	<i>Squalus acanthias</i>	43.9850	0.1315	0.6295
3	<i>Sebastes flavidus</i>	42.2750	0.1263	0.7559
4	<i>Atheresthes stomias</i>	21.6360	0.0647	0.8205
5	<i>Citharichthys sordidus</i>	8.4320	0.0252	0.8457
6	<i>Hippoglossus stenolepis</i>	7.1250	0.0213	0.8670
7	<i>Parophrys vetulus</i>	5.0910	0.0152	0.8823
8	<i>Anoplopoma fimbria</i>	5.0140	0.0150	0.8972
9	<i>Microstomus pacificus</i>	4.4540	0.0133	0.9106
10	<i>Hydrolagus colliei</i>	4.3590	0.0130	0.9236
11	<i>Sebastes proriger</i>	3.8370	0.0115	0.9350
12	<i>Sebastes entomelas</i>	2.4530	0.0073	0.9424
13	<i>Raja rhina</i>	2.4090	0.0072	0.9496
14	<i>Sebastes elongatus</i>	2.3710	0.0071	0.9567
15	<i>Glyptocephalus zachirus</i>	2.2580	0.0067	0.9634
16	<i>Ophiodon elongatus</i>	1.8350	0.0055	0.9689
17	<i>Eopsetta jordani</i>	1.5590	0.0047	0.9736
18	<i>Oncorhynchus tshawytscha</i>	0.9850	0.0029	0.9765
19	<i>Alosa sapidissima</i>	0.9580	0.0029	0.9794
20	<i>Raja binoculata</i>	0.9480	0.0028	0.9822
21	<i>Gadus macrocephalus</i>	0.7950	0.0024	0.9846
22	<i>Lepidopsetta bilineata</i>	0.7750	0.0023	0.9869
23	<i>Sebastes pinniger</i>	0.6740	0.0020	0.9889
24	<i>Clupea pallasii</i>	0.5870	0.0018	0.9907
25	<i>Microgadus proximus</i>	0.3330	0.0010	0.9917
26	<i>Sebastes paucispinis</i>	0.2850	0.0009	0.9925
27	<i>Hippoglossoides elassodon</i>	0.2630	0.0008	0.9933
28	<i>Sebastes crameri</i>	0.2450	0.0007	0.9940
29	<i>Lyopsetta exilis</i>	0.2360	0.0007	0.9947
30	<i>Trachurus symmetricus</i>	0.1930	0.0006	0.9953
31	<i>Sebastes aleutianus</i>	0.1760	0.0005	0.9958
32	<i>Sebastes ruberrimus</i>	0.1270	0.0004	0.9962
33	<i>Sebastes brevispinis</i>	0.1220	0.0004	0.9966
34	<i>Sebastes helvomaculatus</i>	0.1050	0.0003	0.9969
35	<i>Bathyraja interrupta</i>	0.0990	0.0003	0.9972
36	<i>Scomber japonicus</i>	0.0930	0.0003	0.9975
37	<i>Sebastes babcocki</i>	0.0900	0.0003	0.9977
38	<i>Sebastolobus alascanus</i>	0.0800	0.0002	0.9980
39	Scyphozoa (class)	0.0560	0.0002	0.9981
40	<i>Sardinops sagax</i>	0.0490	0.0001	0.9983
41	<i>Sebastes zacentrus</i>	0.0470	0.0001	0.9984

Table B-17.--Continued.

42	<i>Sebastes alutus</i>	0.0450	0.0001	0.9986
43	Thaliacea unident.	0.0400	0.0001	0.9987
44	skate egg case unident.	0.0390	0.0001	0.9988
45	<i>Lopholithodes</i> sp.	0.0380	0.0001	0.9989
46	Actiniaria (order)	0.0310	0.0001	0.9990
47	<i>Cancer magister</i>	0.0290	0.0001	0.9991
48	<i>Luidia foliata</i>	0.0260	0.0001	0.9992
49	<i>Allocentrotus fragilis</i>	0.0250	0.0001	0.9992
50	<i>Pycnopodia helianthoides</i>	0.0240	0.0001	0.9993
51	<i>Hexagrammos decagrammus</i>	0.0210	0.0001	0.9994
52	<i>Icelinus filamentosus</i>	0.0200	0.0001	0.9994
53	<i>Theragra chalcogramma</i>	0.0190	0.0001	0.9995
54	<i>Solaster dawsoni</i>	0.0180	0.0001	0.9996
55	<i>Psetichthys melanostictus</i>	0.0180	0.0001	0.9996
56	<i>Crossaster papposus</i>	0.0160	Trace	0.9997
57	Gorgonacea (order)	0.0160	Trace	0.9997
58	<i>Pseudostichopus mollis</i>	0.0140	Trace	0.9997
59	sea urchin unident.	0.0130	Trace	0.9998
60	<i>Strongylocentrotus droebachiensis</i>	0.0080	Trace	0.9998
61	heart urchin unident.	0.0070	Trace	0.9998
62	<i>Pandalus borealis</i>	0.0070	Trace	0.9998
63	<i>Lycodes pacificus</i>	0.0050	Trace	0.9999
64	<i>Sebastes wilsoni</i>	0.0050	Trace	0.9999
65	Basketstarfish unident.	0.0050	Trace	0.9999
66	<i>Lethasterias nanimensis</i>	0.0040	Trace	0.9999
67	starfish unident.	0.0030	Trace	0.9999
68	<i>Solaster paxillatus</i>	0.0030	Trace	0.9999
69	<i>Pandalus platyceros</i>	0.0030	Trace	0.9999
70	Holothuroidea unident.	0.0030	Trace	0.9999
71	Aphroditidae	0.0020	Trace	0.9999
72	Hexactinellida	0.0020	Trace	0.9999
73	<i>Pleuronichthys decurrens</i>	0.0020	Trace	1.0000
74	<i>Fusitriton oregonensis</i>	0.0020	Trace	1.0000
75	<i>Sebastes chlorostictus</i>	0.0020	Trace	1.0000
76	<i>Ceramaster patagonicus</i>	0.0010	Trace	1.0000
77	<i>Porichthys notatus</i>	0.0010	Trace	1.0000
78	<i>Sebastes diploproa</i>	0.0010	Trace	1.0000
79	<i>Octopus dofleini</i>	0.0010	Trace	1.0000
80	<i>Sebastes saxicola</i>	0.0010	Trace	1.0000
81	<i>Ceramaster japonicus</i>	0.0010	Trace	1.0000
82	<i>Orthasterias koehleri</i>	0.0010	Trace	1.0000
83	<i>Ommastrephes bartrami</i>	0.0010	Trace	1.0000
84	<i>Thaleichthys pacificus</i>	0.0010	Trace	1.0000
85	<i>Pandalus jordani</i>	0.0010	Trace	1.0000

Table B-17.--Continued.

86	<i>Taningia danae</i>	0.0010	Trace	1.0000
87	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
88	<i>Loligo opalescens</i>	Trace	Trace	1.0000
89	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
90	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
91	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
92	<i>Solaster sp.</i>	Trace	Trace	1.0000
93	squid unident.	Trace	Trace	1.0000
94	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
95	<i>Pteraster sp.</i>	Trace	Trace	1.0000
96	<i>Hyas lyratus</i>	Trace	Trace	1.0000
97	Myctophidae	Trace	Trace	1.0000
98	Cottidae	Trace	Trace	1.0000

Table B-18.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the INPFC Vancouver middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	20.6050	0.1485	0.1485
2	<i>Sebastes alutus</i>	20.0950	0.1448	0.2933
3	<i>Microstomus pacificus</i>	17.8620	0.1287	0.4221
4	<i>Atheresthes stomias</i>	12.1450	0.0875	0.5096
5	<i>Anoplopoma fimbria</i>	12.1410	0.0875	0.5971
6	<i>Sebastes entomelas</i>	8.9170	0.0643	0.6614
7	<i>Hydrolagus collicii</i>	8.8090	0.0635	0.7249
8	<i>Sebastes flavidus</i>	8.3740	0.0604	0.7852
9	<i>Squalus acanthias</i>	6.6270	0.0478	0.8330
10	<i>Glyptocephalus zachirus</i>	6.0970	0.0439	0.8770
11	<i>Raja rhina</i>	2.4580	0.0177	0.8947
12	<i>Sebastolobus alascanus</i>	1.9850	0.0143	0.9090
13	<i>Sebastes crameri</i>	1.5100	0.0109	0.9199
14	<i>Hippoglossus stenolepis</i>	1.4070	0.0101	0.9300
15	<i>Gadus macrocephalus</i>	1.4020	0.0101	0.9401
16	<i>Bathyraja interrupta</i>	1.3540	0.0098	0.9499
17	<i>Parophrys vetulus</i>	0.8770	0.0063	0.9562
18	<i>Lyopsetta exilis</i>	0.7140	0.0051	0.9613
19	<i>Sebastes elongatus</i>	0.5810	0.0042	0.9655
20	<i>Sebastes babcocki</i>	0.5660	0.0041	0.9696
21	<i>Alosa sapidissima</i>	0.5160	0.0037	0.9733
22	<i>Sebastes diploproa</i>	0.4420	0.0032	0.9765
23	<i>Hippoglossoides elassodon</i>	0.3420	0.0025	0.9790
24	<i>Sebastes pinniger</i>	0.3120	0.0022	0.9812
25	<i>Sebastes aleutianus</i>	0.2470	0.0018	0.9830
26	<i>Alloctrotus fragilis</i>	0.2390	0.0017	0.9847
27	<i>Cryptacanthodes giganteus</i>	0.2240	0.0016	0.9863
28	<i>Sebastes paucispinis</i>	0.1430	0.0010	0.9874
29	<i>Eopsetta jordani</i>	0.1320	0.0010	0.9883
30	heart urchin unident.	0.1300	0.0009	0.9893
31	<i>Ophiodon elongatus</i>	0.1230	0.0009	0.9901
32	<i>Pandalus borealis</i>	0.0970	0.0007	0.9908
33	Scyphozoa (class)	0.0910	0.0007	0.9915
34	<i>Sebastes proriger</i>	0.0900	0.0006	0.9921
35	<i>Pandalus jordani</i>	0.0890	0.0006	0.9928
36	<i>Torpedo californica</i>	0.0840	0.0006	0.9934
37	<i>Theragra chalcogramma</i>	0.0810	0.0006	0.9940
38	<i>Pasiphaea pacifica</i>	0.0750	0.0005	0.9945
39	<i>Luidia foliata</i>	0.0710	0.0005	0.9950
40	<i>Lethasterias nanimensis</i>	0.0600	0.0004	0.9955
41	<i>Lopholithodes</i> sp.	0.0520	0.0004	0.9958

Table B-18.--Continued.

42	<i>Scomber japonicus</i>	0.0500	0.0004	0.9962
43	<i>Pseudostichopus mollis</i>	0.0470	0.0003	0.9965
44	<i>Brisaster latifrons</i>	0.0460	0.0003	0.9969
45	<i>Berryteuthis magister</i>	0.0410	0.0003	0.9972
46	<i>Oncorhynchus kisutch</i>	0.0370	0.0003	0.9974
47	<i>Sebastes brevispinis</i>	0.0340	0.0002	0.9977
48	<i>Sebastes saxicola</i>	0.0300	0.0002	0.9979
49	<i>Thaleichthys pacificus</i>	0.0270	0.0002	0.9981
50	<i>Clupea pallasii</i>	0.0220	0.0002	0.9982
51	<i>Pandalus hypsinotus</i>	0.0210	0.0002	0.9984
52	<i>Sebastes helvomaculatus</i>	0.0190	0.0001	0.9985
53	<i>Apristurus brunneus</i>	0.0180	0.0001	0.9987
54	<i>Pandalus platyceros</i>	0.0170	0.0001	0.9988
55	<i>Lycodes diapterus</i>	0.0160	0.0001	0.9989
56	<i>Lycodes pacificus</i>	0.0160	0.0001	0.9990
57	<i>Crossaster papposus</i>	0.0140	0.0001	0.9991
58	<i>Icelinus filamentosus</i>	0.0140	0.0001	0.9992
59	sea urchin unident.	0.0120	0.0001	0.9993
60	<i>Ceramaster patagonicus</i>	0.0110	0.0001	0.9994
61	Aphroditidae	0.0110	0.0001	0.9995
62	<i>Lycodes corteziianus</i>	0.0110	0.0001	0.9995
63	<i>Fusitriton oregonensis</i>	0.0070	Trace	0.9996
64	<i>Styela rustica</i>	0.0060	Trace	0.9996
65	<i>Strongylocentrotus droebachiensis</i>	0.0060	Trace	0.9997
66	<i>Hippasteria spinosa</i>	0.0060	Trace	0.9997
67	Thaliacea unident.	0.0050	Trace	0.9998
68	<i>Solaster paxillatus</i>	0.0050	Trace	0.9998
69	<i>Sebastes zacentrus</i>	0.0050	Trace	0.9998
70	Basketstarfish unident.	0.0040	Trace	0.9999
71	Porifera (phylum)	0.0040	Trace	0.9999
72	<i>Ceramaster japonicus</i>	0.0030	Trace	0.9999
73	Myctophidae	0.0030	Trace	0.9999
74	<i>Sardinops sagax</i>	0.0030	Trace	1.0000
75	<i>Citharichthys sordidus</i>	0.0020	Trace	1.0000
76	<i>Hyas lyratus</i>	0.0010	Trace	1.0000
77	<i>Orthasterias koehleri</i>	0.0010	Trace	1.0000
78	<i>Liponemis brevicornis</i>	0.0010	Trace	1.0000
79	<i>Chauliodus macouni</i>	0.0010	Trace	1.0000
80	Paguridae	Trace	Trace	1.0000
81	Actiniaria (order)	Trace	Trace	1.0000
82	<i>Ctenodiscus crispatus</i>	Trace	Trace	1.0000
83	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
84	<i>Loligo opalescens</i>	Trace	Trace	1.0000

Table B-19.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the INPFC Vancouver deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	4.6040	0.2386	0.2386
2	<i>Microstomus pacificus</i>	4.5490	0.2357	0.4743
3	<i>Sebastes altivelis</i>	3.0000	0.1555	0.6298
4	<i>Sebastes alascanus</i>	2.6520	0.1374	0.7672
5	<i>Anoplopoma fimbria</i>	1.2410	0.0643	0.8315
6	<i>Antimora microlepis</i>	0.5920	0.0307	0.8621
7	<i>Glyptocephalus zachirus</i>	0.4230	0.0219	0.8841
8	<i>Hydrolagus colliei</i>	0.2770	0.0143	0.8984
9	<i>Lycodes diapterus</i>	0.1870	0.0097	0.9081
10	<i>Taningia danae</i>	0.1850	0.0096	0.9177
11	<i>Apristurus brunneus</i>	0.1840	0.0095	0.9272
12	<i>Embassichthys bathybius</i>	0.1780	0.0092	0.9364
13	<i>Chionoectes tanneri</i>	0.1760	0.0091	0.9456
14	<i>Paractinostola faeculenta</i>	0.1640	0.0085	0.9541
15	<i>Bathyraja aleutica</i>	0.1480	0.0077	0.9617
16	<i>Alloctrotus fragilis</i>	0.1460	0.0076	0.9693
17	<i>Parastichopus</i> sp.	0.1400	0.0072	0.9765
18	<i>Pasiphaea pacifica</i>	0.0870	0.0045	0.9811
19	Myctophidae	0.0720	0.0037	0.9848
20	Scyphozoa (class)	0.0710	0.0037	0.9884
21	<i>Octopus dofleini</i>	0.0650	0.0033	0.9918
22	<i>Lampanyctus</i> sp.	0.0390	0.0020	0.9938
23	<i>Chauliodus macouni</i>	0.0380	0.0020	0.9958
24	Actiniaria (order)	0.0280	0.0014	0.9972
25	<i>Fusitriton oregonensis</i>	0.0250	0.0013	0.9985
26	<i>Tactostoma macropus</i>	0.0150	0.0008	0.9993
27	<i>Bathylagus</i> sp.	0.0120	0.0006	0.9999
28	<i>Notolepsis risso</i>	0.0020	0.0001	1.0000

Table B-20.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire U.S. portion of the INPFC Vancouver area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	125.5270	0.4529	0.4529
2	<i>Squalus acanthias</i>	33.4050	0.1205	0.5734
3	<i>Sebastes flavidus</i>	32.6200	0.1177	0.6911
4	<i>Atheresthes stomias</i>	18.7050	0.0675	0.7586
5	<i>Microstomus pacificus</i>	7.8860	0.0285	0.7871
6	<i>Anoplopoma fimbria</i>	6.7490	0.0244	0.8114
7	<i>Citharichthys sordidus</i>	6.0790	0.0219	0.8333
8	<i>Hippoglossus stenolepis</i>	5.4960	0.0198	0.8532
9	<i>Hydrolagus collicii</i>	5.4020	0.0195	0.8727
10	<i>Sebastes alutus</i>	5.1730	0.0187	0.8913
11	<i>Sebastes entomelas</i>	4.0490	0.0146	0.9059
12	<i>Parophrys vetulus</i>	3.8950	0.0141	0.9200
13	<i>Glyptocephalus zachirus</i>	3.1980	0.0115	0.9315
14	<i>Sebastes proriger</i>	2.7890	0.0101	0.9416
15	<i>Raja rhina</i>	2.3650	0.0085	0.9501
16	<i>Sebastes elongatus</i>	1.8580	0.0067	0.9568
17	<i>Ophiodon elongatus</i>	1.3540	0.0049	0.9617
18	<i>Eopsetta jordani</i>	1.1580	0.0042	0.9659
19	<i>Gadus macrocephalus</i>	0.9320	0.0034	0.9693
20	<i>Alosa sapidissima</i>	0.8230	0.0030	0.9722
21	<i>Oncorhynchus tshawytscha</i>	0.7100	0.0026	0.9748
22	<i>Raja binoculata</i>	0.6830	0.0025	0.9772
23	<i>Sebastolobus alascanus</i>	0.6270	0.0023	0.9795
24	<i>Sebastes pinniger</i>	0.5650	0.0020	0.9816
25	<i>Sebastes crameri</i>	0.5630	0.0020	0.9836
26	<i>Lepidopsetta bilineata</i>	0.5590	0.0020	0.9856
27	<i>Clupea pallasii</i>	0.4290	0.0015	0.9871
28	<i>Bathyraja interrupta</i>	0.4180	0.0015	0.9887
29	<i>Lyopsetta exilis</i>	0.3530	0.0013	0.9899
30	<i>Hippoglossoides elassodon</i>	0.2770	0.0010	0.9909
31	<i>Sebastes paucispinis</i>	0.2420	0.0009	0.9918
32	<i>Microgadus proximus</i>	0.2400	0.0009	0.9927
33	<i>Sebastes babcocki</i>	0.2100	0.0008	0.9934
34	<i>Sebastes aleutianus</i>	0.1900	0.0007	0.9941
35	<i>Trachurus symmetricus</i>	0.1390	0.0005	0.9946
36	<i>Sebastes diploproa</i>	0.1140	0.0004	0.9950
37	<i>Sebastes brevispinis</i>	0.0970	0.0003	0.9954
38	<i>Sebastes ruberrimus</i>	0.0910	0.0003	0.9957
39	<i>Alloctrotus fragilis</i>	0.0830	0.0003	0.9960
40	<i>Sebastes helvomaculatus</i>	0.0800	0.0003	0.9963
41	<i>Scomber japonicus</i>	0.0800	0.0003	0.9966

Table B-20.--Continued.

42	<i>Sebastolobus altivelis</i>	0.0700	0.0003	0.9968
43	Scyphozoa (class)	0.0660	0.0002	0.9971
44	<i>Cryptacanthodes giganteus</i>	0.0570	0.0002	0.9973
45	<i>Lopholithodes</i> sp.	0.0410	0.0001	0.9974
46	heart urchin unident.	0.0380	0.0001	0.9976
47	<i>Luidia foliata</i>	0.0370	0.0001	0.9977
48	<i>Sardinops sagax</i>	0.0360	0.0001	0.9978
49	<i>Sebastes zacentrus</i>	0.0350	0.0001	0.9979
50	<i>Theragra chalcogramma</i>	0.0340	0.0001	0.9981
51	Thaliacea unident.	0.0300	0.0001	0.9982
52	<i>Pandalus borealis</i>	0.0300	0.0001	0.9983
53	skate egg case unident.	0.0280	0.0001	0.9984
54	<i>Pandalus jordani</i>	0.0230	0.0001	0.9985
55	Actiniaria (order)	0.0230	0.0001	0.9986
56	<i>Pseudostichopus mollis</i>	0.0220	0.0001	0.9986
57	<i>Torpedo californica</i>	0.0210	0.0001	0.9987
58	<i>Pasiphaea pacifica</i>	0.0210	0.0001	0.9988
59	<i>Cancer magister</i>	0.0210	0.0001	0.9989
60	<i>Icelinus filamentosus</i>	0.0180	0.0001	0.9989
61	<i>Lethasterias nanimensis</i>	0.0180	0.0001	0.9990
62	<i>Pycnopodia helianthoides</i>	0.0170	0.0001	0.9991
63	<i>Crossaster papposus</i>	0.0150	0.0001	0.9991
64	<i>Hexagrammos decagrammus</i>	0.0150	0.0001	0.9992
65	<i>Antimora microlepis</i>	0.0140	0.0001	0.9992
66	<i>Solaster dawsoni</i>	0.0130	Trace	0.9993
67	sea urchin unident.	0.0130	Trace	0.9993
68	<i>Psettichthys melanostictus</i>	0.0130	Trace	0.9994
69	<i>Brisaster latifrons</i>	0.0120	Trace	0.9994
70	Gorgonacea (order)	0.0110	Trace	0.9994
71	<i>Berryteuthis magister</i>	0.0100	Trace	0.9995
72	<i>Oncorhynchus kisutch</i>	0.0100	Trace	0.9995
73	<i>Apristurus brunneus</i>	0.0090	Trace	0.9995
74	<i>Sebastes saxicola</i>	0.0090	Trace	0.9996
75	<i>Lycodes diapterus</i>	0.0080	Trace	0.9996
76	<i>Lycodes pacificus</i>	0.0080	Trace	0.9996
77	<i>Thaleichthys pacificus</i>	0.0070	Trace	0.9997
78	<i>Strongylocentrotus droebachiensis</i>	0.0070	Trace	0.9997
79	<i>Pandalus platyceros</i>	0.0060	Trace	0.9997
80	<i>Pandalus hypsinotus</i>	0.0050	Trace	0.9997
81	<i>Taningia danae</i>	0.0050	Trace	0.9997
82	Basketstarfish unident.	0.0050	Trace	0.9998
83	Aphroditidae	0.0040	Trace	0.9998
84	<i>Embassichthys bathybius</i>	0.0040	Trace	0.9998
85	<i>Chionoecetes tanneri</i>	0.0040	Trace	0.9998

Table B-20.--Continued.

86	<i>Ceramaster patagonicus</i>	0.0040	Trace	0.9998
87	<i>Paractinostola faeculenta</i>	0.0040	Trace	0.9998
88	<i>Fusitriton oregonensis</i>	0.0040	Trace	0.9999
89	<i>Sebastes wilsoni</i>	0.0040	Trace	0.9999
90	<i>Bathyraja aleutica</i>	0.0030	Trace	0.9999
91	<i>Solaster paxillatus</i>	0.0030	Trace	0.9999
92	<i>Parastichopus</i> sp.	0.0030	Trace	0.9999
93	<i>Lycodes cortezianus</i>	0.0030	Trace	0.9999
94	<i>Octopus dofleini</i>	0.0020	Trace	0.9999
95	Myctophidae	0.0020	Trace	0.9999
96	starfish unident.	0.0020	Trace	0.9999
97	Holothuroidea unident.	0.0020	Trace	0.9999
98	<i>Styela rustica</i>	0.0020	Trace	0.9999
99	<i>Ceramaster japonicus</i>	0.0020	Trace	1.0000
100	<i>Hippasteria spinosa</i>	0.0010	Trace	1.0000
101	Hexactinellida	0.0010	Trace	1.0000
102	<i>Pleuronichthys decurrens</i>	0.0010	Trace	1.0000
103	<i>Sebastes chlorostictus</i>	0.0010	Trace	1.0000
104	<i>Chauliodus macouni</i>	0.0010	Trace	1.0000
105	<i>Porichthys notatus</i>	0.0010	Trace	1.0000
106	<i>Orthasterias koehleri</i>	0.0010	Trace	1.0000
107	Porifera (phylum)	0.0010	Trace	1.0000
108	<i>Lampanyctus</i> sp.	0.0010	Trace	1.0000
109	<i>Ommastrephes bartrami</i>	0.0010	Trace	1.0000
110	<i>Hyas lyratus</i>	Trace	Trace	1.0000
111	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
112	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
113	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
114	<i>Loligo opalescens</i>	Trace	Trace	1.0000
115	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
116	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
117	<i>Liponemis brevicornis</i>	Trace	Trace	1.0000
118	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
119	<i>Solaster</i> sp.	Trace	Trace	1.0000
120	squid unident.	Trace	Trace	1.0000
121	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
122	<i>Pteraster</i> sp.	Trace	Trace	1.0000
123	Paguridae	Trace	Trace	1.0000
124	<i>Ctenodiscus crispatus</i>	Trace	Trace	1.0000
125	<i>Notolepsis risso</i>	Trace	Trace	1.0000
126	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
127	Cottidae	Trace	Trace	1.0000

Table B-21.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the Canadian portion of the INPFC Vancouver shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	48.2560	0.2427	0.2427
2	<i>Squalus acanthias</i>	46.2930	0.2329	0.4756
3	<i>Atheresthes stomias</i>	17.7260	0.0892	0.5648
4	<i>Anoplopoma fimbria</i>	13.2280	0.0665	0.6313
5	<i>Clupea pallasii</i>	12.3990	0.0624	0.6937
6	<i>Sebastes flavidus</i>	9.8080	0.0493	0.7430
7	<i>Microstomus pacificus</i>	9.1030	0.0458	0.7888
8	<i>Glyptocephalus zachirus</i>	5.8750	0.0296	0.8184
9	<i>Hippoglossus stenolepis</i>	4.7670	0.0240	0.8423
10	<i>Ophiodon elongatus</i>	3.9350	0.0198	0.8621
11	<i>Parophrys vetulus</i>	3.9160	0.0197	0.8818
12	<i>Citharichthys sordidus</i>	3.8630	0.0194	0.9013
13	<i>Sebastes proriger</i>	2.2390	0.0113	0.9125
14	<i>Sebastes pinniger</i>	1.7120	0.0086	0.9211
15	<i>Hippoglossoides elassodon</i>	1.4310	0.0072	0.9283
16	<i>Raja rhina</i>	1.3710	0.0069	0.9352
17	<i>Alosa sapidissima</i>	1.2880	0.0065	0.9417
18	<i>Sebastes elongatus</i>	1.2440	0.0063	0.9480
19	<i>Sebastes alutus</i>	1.1110	0.0056	0.9536
20	<i>Hydrolagus colliei</i>	0.8250	0.0041	0.9577
21	<i>Sebastes brevispinis</i>	0.7810	0.0039	0.9616
22	<i>Sebastes crameri</i>	0.7100	0.0036	0.9652
23	<i>Gadus macrocephalus</i>	0.6990	0.0035	0.9687
24	<i>Lepidopsetta bilineata</i>	0.6900	0.0035	0.9722
25	<i>Eopsetta jordani</i>	0.6340	0.0032	0.9754
26	<i>Lyopsetta exilis</i>	0.5850	0.0029	0.9783
27	<i>Oncorhynchus tshawytscha</i>	0.3520	0.0018	0.9801
28	<i>Luidia</i> sp.	0.2620	0.0013	0.9814
29	<i>Lycodes pacificus</i>	0.2520	0.0013	0.9827
30	<i>Microgadus proximus</i>	0.1990	0.0010	0.9837
31	<i>Sebastes maliger</i>	0.1940	0.0010	0.9847
32	<i>Sebastes ruberrimus</i>	0.1920	0.0010	0.9856
33	Actiniaria (order)	0.1770	0.0009	0.9865
34	<i>Sebastes entomelas</i>	0.1690	0.0009	0.9874
35	<i>Thaleichthys pacificus</i>	0.1560	0.0008	0.9882
36	<i>Sebastes paucispinis</i>	0.1420	0.0007	0.9889
37	<i>Theragra chalcogramma</i>	0.1400	0.0007	0.9896
38	<i>Sebastes zacentrus</i>	0.1370	0.0007	0.9903
39	<i>Galeorhinus galeus</i>	0.1320	0.0007	0.9909
40	<i>Sebastes helvomaculatus</i>	0.1250	0.0006	0.9916
41	<i>Brisaster latifrons</i>	0.1190	0.0006	0.9922

Table B-21.--Continued.

42	<i>Luidia foliata</i>	0.1170	0.0006	0.9927
43	<i>Raja binoculata</i>	0.1120	0.0006	0.9933
44	heart urchin unident.	0.1100	0.0006	0.9939
45	<i>Trachurus symmetricus</i>	0.1070	0.0005	0.9944
46	<i>Pandalus jordani</i>	0.1020	0.0005	0.9949
47	<i>Alloctrotus fragilis</i>	0.0940	0.0005	0.9954
48	<i>Sardinops sagax</i>	0.0890	0.0005	0.9958
49	<i>Pleuronichthys decurrens</i>	0.0640	0.0003	0.9962
50	<i>Sebastes aleutianus</i>	0.0640	0.0003	0.9965
51	<i>Lycodes brevipes</i>	0.0570	0.0003	0.9968
52	<i>Anarrhichthys ocellatus</i>	0.0530	0.0003	0.9970
53	<i>Sebastolobus alascanus</i>	0.0530	0.0003	0.9973
54	<i>Icelinus filamentosus</i>	0.0500	0.0003	0.9975
55	<i>Sebastes babcocki</i>	0.0470	0.0002	0.9978
56	Scyphozoa (class)	0.0450	0.0002	0.9980
57	<i>Pandalus borealis</i>	0.0440	0.0002	0.9982
58	Holothuroidea unident.	0.0250	0.0001	0.9984
59	<i>Lethasterias nanimensis</i>	0.0250	0.0001	0.9985
60	<i>Porichthys notatus</i>	0.0230	0.0001	0.9986
61	<i>Sebastes wilsoni</i>	0.0220	0.0001	0.9987
62	<i>Bathyraja interrupta</i>	0.0220	0.0001	0.9988
63	<i>Scomber japonicus</i>	0.0220	0.0001	0.9989
64	<i>Pandalopsis dispar</i>	0.0210	0.0001	0.9990
65	<i>Pycnopodia helianthoides</i>	0.0200	0.0001	0.9991
66	<i>Allosmerus elongatus</i>	0.0190	0.0001	0.9992
67	starfish unident.	0.0150	0.0001	0.9993
68	Aphroditidae	0.0150	0.0001	0.9994
69	<i>Orthasterias koehleri</i>	0.0100	0.0001	0.9994
70	<i>Polinices pallidus</i>	0.0100	Trace	0.9995
71	<i>Hexagrammos decagrammus</i>	0.0090	Trace	0.9995
72	<i>Sebastes saxicola</i>	0.0080	Trace	0.9996
73	<i>Oncorhynchus kisutch</i>	0.0070	Trace	0.9996
74	<i>Pseudostichopus mollis</i>	0.0060	Trace	0.9996
75	<i>Pandalus platyceros</i>	0.0060	Trace	0.9997
76	<i>Solaster</i> sp.	0.0060	Trace	0.9997
77	<i>Hippasteria</i> sp.	0.0050	Trace	0.9997
78	<i>Hippasteria spinosa</i>	0.0050	Trace	0.9997
79	<i>Strongylocentrotus droebachiensis</i>	0.0050	Trace	0.9998
80	<i>Ommastrephes bartrami</i>	0.0050	Trace	0.9998
81	<i>Parastichopus californicus</i>	0.0040	Trace	0.9998
82	<i>Patinopecten caurinus</i>	0.0040	Trace	0.9998
83	Hexactinellida	0.0040	Trace	0.9999
84	<i>Sebastes diploproa</i>	0.0030	Trace	0.9999
85	<i>Cancer magister</i>	0.0030	Trace	0.9999

Table B-21.--Continued.

86	Gastropod unident.	0.0020	Trace	0.9999
87	Porifera (phylum)	0.0020	Trace	0.9999
88	Basketstarfish unident.	0.0020	Trace	0.9999
89	Liponemis brevicornis	0.0020	Trace	0.9999
90	Polinices sp.	0.0020	Trace	0.9999
91	Pseudarchaster parelii	0.0020	Trace	0.9999
92	Fusitriton oregonensis	0.0020	Trace	0.9999
93	Sebastes jordani	0.0010	Trace	1.0000
94	Thaliacea unident.	0.0010	Trace	1.0000
95	Mediaster sp.	0.0010	Trace	1.0000
96	skate egg case unident.	0.0010	Trace	1.0000
97	Sebastes melanops	0.0010	Trace	1.0000
98	Aphrocallistes vastus	0.0010	Trace	1.0000
99	Pandalus hypsinotus	0.0010	Trace	1.0000
100	Styela rustica	Trace	Trace	1.0000
101	Tritonia diomedea	Trace	Trace	1.0000
102	Osmeridae	Trace	Trace	1.0000
103	Psettichthys melanostictus	Trace	Trace	1.0000
104	Hemilepidotus spinosus	Trace	Trace	1.0000
105	Solaster paxillatus	Trace	Trace	1.0000
106	Loligo opalescens	Trace	Trace	1.0000
107	Ceramaster patagonicus	Trace	Trace	1.0000
108	Podothecus acipenserinus	Trace	Trace	1.0000
109	Molpadia intermedia	Trace	Trace	1.0000
110	Rossia pacifica	Trace	Trace	1.0000
111	Ronquilus jordani	Trace	Trace	1.0000
112	Stylatula sp.	Trace	Trace	1.0000
113	Cucumaria sp.	Trace	Trace	1.0000
114	Cymatogaster aggregata	Trace	Trace	1.0000
115	Pasiphaea pacifica	Trace	Trace	1.0000
116	Hypomesus pretiosus	Trace	Trace	1.0000
117	Bathymaster signatus	Trace	Trace	1.0000
118	Platyhelminthes (phylum)	Trace	Trace	1.0000
119	Paguridae	Trace	Trace	1.0000
120	Engraulis mordax	Trace	Trace	1.0000
121	Liparis sp.	Trace	Trace	1.0000
122	Polychaeta (class)	Trace	Trace	1.0000
123	shrimp unident.	Trace	Trace	1.0000
124	Isopoda (order)	Trace	Trace	1.0000
125	Ophiuroid unident.	Trace	Trace	1.0000

Table B-22.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the Canadian portion of the INPFC Vancouver middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes flavidus</i>	92.5060	0.2961	0.2961
2	<i>Sebastes alutus</i>	46.4100	0.1485	0.4446
3	<i>Atheresthes stomias</i>	37.5920	0.1203	0.5649
4	<i>Sebastes proriger</i>	21.8170	0.0698	0.6348
5	<i>Sebastes zacentrus</i>	15.8260	0.0507	0.6854
6	<i>Anoplopoma fimbria</i>	15.2890	0.0489	0.7343
7	<i>Sebastes entomelas</i>	12.7210	0.0407	0.7751
8	<i>Microstomus pacificus</i>	10.8060	0.0346	0.8096
9	<i>Sebastes elongatus</i>	10.3060	0.0330	0.8426
10	<i>Sebastes brevispinis</i>	7.9850	0.0256	0.8682
11	<i>Glyptocephalus zachirus</i>	7.4790	0.0239	0.8921
12	<i>Sebastes pinniger</i>	6.1590	0.0197	0.9118
13	<i>Merluccius productus</i>	4.1350	0.0132	0.9251
14	<i>Hippoglossus stenolepis</i>	3.1140	0.0100	0.9350
15	<i>Sebastes crameri</i>	2.5200	0.0081	0.9431
16	<i>Sebastes diploproa</i>	2.3120	0.0074	0.9505
17	<i>Allocentrotus fragilis</i>	1.8250	0.0058	0.9563
18	<i>Sebastolobus alascanus</i>	1.7980	0.0058	0.9621
19	<i>Raja rhina</i>	1.7130	0.0055	0.9676
20	<i>Squalus acanthias</i>	1.3330	0.0043	0.9718
21	<i>Gadus macrocephalus</i>	1.3040	0.0042	0.9760
22	<i>Parophrys vetulus</i>	1.2230	0.0039	0.9799
23	<i>Ophiodon elongatus</i>	1.1670	0.0037	0.9837
24	<i>Lyopsetta exilis</i>	0.9800	0.0031	0.9868
25	<i>Sebastes babcocki</i>	0.7290	0.0023	0.9891
26	<i>Sebastes paucispinis</i>	0.6550	0.0021	0.9912
27	<i>Hydrolagus colliei</i>	0.6510	0.0021	0.9933
28	<i>Sebastes helvomaculatus</i>	0.4540	0.0015	0.9948
29	<i>Theragra chalcogramma</i>	0.2250	0.0007	0.9955
30	<i>Sebastes reedi</i>	0.2120	0.0007	0.9962
31	<i>Holothuroidea unident.</i>	0.1520	0.0005	0.9966
32	<i>Pseudostichopus mollis</i>	0.1310	0.0004	0.9971
33	<i>Eopsetta jordani</i>	0.1170	0.0004	0.9974
34	<i>Icelinus filamentosus</i>	0.1170	0.0004	0.9978
35	<i>Bathyraja interrupta</i>	0.0930	0.0003	0.9981
36	<i>Berryteuthis magister</i>	0.0850	0.0003	0.9984
37	<i>Luidia foliata</i>	0.0840	0.0003	0.9987
38	<i>Pandalus platyceros</i>	0.0740	0.0002	0.9989
39	<i>Sebastes ruberrimus</i>	0.0670	0.0002	0.9991
40	<i>Hippasteria spinosa</i>	0.0640	0.0002	0.9993
41	<i>Careproctus melanurus</i>	0.0340	0.0001	0.9994

Table B-22.--Continued.

42	Scyphozoa (class)	0.0340	0.0001	0.9995
43	Lycodes cortezianus	0.0310	0.0001	0.9996
44	Pandalopsis dispar	0.0230	0.0001	0.9997
45	Lopholithodes sp.	0.0200	0.0001	0.9998
46	Clupea pallasii	0.0160	0.0001	0.9998
47	Sebastes aleutianus	0.0100	Trace	0.9998
48	Actiniaria (order)	0.0100	Trace	0.9999
49	Sebastes saxicola	0.0080	Trace	0.9999
50	Fusitriton oregonensis	0.0070	Trace	0.9999
51	starfish unident.	0.0070	Trace	0.9999
52	Lethasterias nanimensis	0.0050	Trace	1.0000
53	Ceramaster japonicus	0.0030	Trace	1.0000
54	Aphroditidae	0.0020	Trace	1.0000
56	Ronquilus jordani	0.0020	Trace	1.0000
55	Lycodes pacificus	0.0020	Trace	1.0000
57	Mediaster sp.	0.0010	Trace	1.0000
58	Sebastes wilsoni	0.0010	Trace	1.0000
59	Thaleichthys pacificus	0.0010	Trace	1.0000
60	fish unident.	Trace	Trace	1.0000

Table B-23.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the Canadian portion of the INPFC Vancouver deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes aleutianus</i>	26.9690	0.2876	0.2876
2	<i>Sebastes alutus</i>	16.0720	0.1714	0.4590
3	<i>Microstomus pacificus</i>	13.8180	0.1473	0.6063
4	<i>Atheresthes stomias</i>	11.6790	0.1245	0.7309
5	<i>Sebastes alascanus</i>	5.7710	0.0615	0.7924
6	<i>Glyptocephalus zachirus</i>	5.0040	0.0534	0.8458
7	<i>Merluccius productus</i>	4.9060	0.0523	0.8981
8	<i>Raja rhina</i>	4.0090	0.0428	0.9408
9	<i>Anoplopoma fimbria</i>	2.4000	0.0256	0.9664
10	<i>Hippoglossus stenolepis</i>	0.6170	0.0066	0.9730
11	<i>Lycodes corteziianus</i>	0.2970	0.0032	0.9762
12	<i>Eopsetta jordani</i>	0.2690	0.0029	0.9790
13	<i>Hydrolagus collicii</i>	0.2440	0.0026	0.9816
14	<i>Sebastes crameri</i>	0.2420	0.0026	0.9842
15	<i>Squalus acanthias</i>	0.1620	0.0017	0.9859
16	<i>Sebastes babcocki</i>	0.1580	0.0017	0.9876
17	Holothuroidea unident.	0.1290	0.0014	0.9890
18	<i>Pseudostichopus mollis</i>	0.1240	0.0013	0.9903
19	<i>Bathyraja interrupta</i>	0.1230	0.0013	0.9916
20	<i>Sebastes diploproa</i>	0.1190	0.0013	0.9929
21	Actiniaria (order)	0.0850	0.0009	0.9938
22	<i>Paractinostola faeculenta</i>	0.0770	0.0008	0.9946
23	<i>Berryteuthis magister</i>	0.0750	0.0008	0.9954
24	<i>Sebastes entomelas</i>	0.0640	0.0007	0.9961
25	<i>Opisthoteuthis californiana</i>	0.0580	0.0006	0.9967
26	Scyphozoa (class)	0.0460	0.0005	0.9972
27	<i>Parophrys vetulus</i>	0.0350	0.0004	0.9976
28	<i>Lyopsetta exilis</i>	0.0320	0.0003	0.9979
29	<i>Pandalus hypsinotus</i>	0.0260	0.0003	0.9982
30	<i>Lycodes diapterus</i>	0.0210	0.0002	0.9984
31	<i>Sebastes helvomaculatus</i>	0.0190	0.0002	0.9986
32	<i>Fusitriton oregonensis</i>	0.0170	0.0002	0.9988
33	<i>Diplopteraster multipes</i>	0.0160	0.0002	0.9990
34	Basketstarfish unident.	0.0110	0.0001	0.9991
35	<i>Neptunea lyrata</i>	0.0090	0.0001	0.9992
36	<i>Pandalopsis dispar</i>	0.0080	0.0001	0.9993
37	Thaliacea unident.	0.0080	0.0001	0.9994
38	<i>Luidia</i> sp.	0.0080	0.0001	0.9994
39	octopus unident.	0.0070	0.0001	0.9995
40	Hexactinellida	0.0070	0.0001	0.9996
41	<i>Stylatula</i> sp.	0.0060	0.0001	0.9997

Table B-23.--Continued.

42	starfish unident.	0.0060	0.0001	0.9997
43	<i>Liponemis brevicornis</i>	0.0050	0.0001	0.9998
44	<i>Sagamichthys abei</i>	0.0040	Trace	0.9998
45	<i>Allocentrotus fragilis</i>	0.0040	Trace	0.9999
46	Eel <i>leptocephalus</i>	0.0040	Trace	0.9999
47	Paguridae	0.0030	Trace	0.9999
48	Myctophidae	0.0030	Trace	1.0000
49	<i>Hippasteria</i> sp.	0.0020	Trace	1.0000
50	<i>Ctenodiscus crispatus</i>	0.0010	Trace	1.0000
51	squid unident.	Trace	Trace	1.0000
52	fish unident.	Trace	Trace	1.0000

Table B-24.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire Canadian portion of the INPFC Vancouver area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	40.0820	0.1954	0.1954
2	<i>Squalus acanthias</i>	37.8310	0.1844	0.3798
3	<i>Atheresthes stomias</i>	19.6730	0.0959	0.4757
4	<i>Sebastes flavidus</i>	18.9550	0.0924	0.5680
5	<i>Anoplopoma fimbria</i>	12.7380	0.0621	0.6301
6	<i>Clupea pallasii</i>	10.0900	0.0492	0.6793
7	<i>Microstomus pacificus</i>	9.6250	0.0469	0.7262
8	<i>Sebastes alutus</i>	7.4990	0.0366	0.7628
9	<i>Glyptocephalus zachirus</i>	6.0060	0.0293	0.7921
10	<i>Sebastes proriger</i>	4.4100	0.0215	0.8136
11	<i>Hippoglossus stenolepis</i>	4.2900	0.0209	0.8345
12	<i>Ophiodon elongatus</i>	3.3400	0.0163	0.8507
13	<i>Parophrys vetulus</i>	3.3330	0.0162	0.8670
14	<i>Citharichthys sordidus</i>	3.1430	0.0153	0.8823
15	<i>Sebastes elongatus</i>	2.2350	0.0109	0.8932
16	<i>Sebastes pinniger</i>	2.1240	0.0104	0.9035
17	<i>Sebastes zacentrus</i>	1.9890	0.0097	0.9132
18	<i>Sebastes aleutianus</i>	1.8820	0.0092	0.9224
19	<i>Sebastes entomelas</i>	1.6510	0.0080	0.9305
20	<i>Raja rhina</i>	1.5910	0.0078	0.9382
21	<i>Sebastes brevispinis</i>	1.5830	0.0077	0.9459
22	<i>Hippoglossoides elassodon</i>	1.1640	0.0057	0.9516
23	<i>Alosa sapidissima</i>	1.0480	0.0051	0.9567
24	<i>Sebastes crameri</i>	0.8930	0.0044	0.9611
25	<i>Hydrolagus colliei</i>	0.7650	0.0037	0.9648
26	<i>Gadus macrocephalus</i>	0.7240	0.0035	0.9683
27	<i>Sebastolobus alascanus</i>	0.6480	0.0032	0.9715
28	<i>Lyopsetta exilis</i>	0.5940	0.0029	0.9744
29	<i>Lepidopsetta bilineata</i>	0.5620	0.0027	0.9771
30	<i>Eopsetta jordani</i>	0.5480	0.0027	0.9798
31	<i>Alloctrotus fragilis</i>	0.2930	0.0014	0.9812
32	<i>Oncorhynchus tshawytscha</i>	0.2860	0.0014	0.9826
33	<i>Sebastes diploproa</i>	0.2850	0.0014	0.9840
34	<i>Luidia</i> sp.	0.2130	0.0010	0.9850
35	<i>Lycodes pacificus</i>	0.2050	0.0010	0.9860
36	<i>Sebastes paucispinis</i>	0.1930	0.0009	0.9870
37	<i>Sebastes ruberrimus</i>	0.1640	0.0008	0.9878
38	<i>Microgadus proximus</i>	0.1620	0.0008	0.9886
39	<i>Sebastes maliger</i>	0.1580	0.0008	0.9893
40	<i>Sebastes helvomaculatus</i>	0.1570	0.0008	0.9901
41	Actiniaria (order)	0.1510	0.0007	0.9908

Table B-24.--Continued.

42	<i>Theragra chalcogramma</i>	0.1400	0.0007	0.9915
43	<i>Sebastes babcocki</i>	0.1360	0.0007	0.9922
44	<i>Thaleichthys pacificus</i>	0.1270	0.0006	0.9928
45	<i>Galeorhinus galeus</i>	0.1080	0.0005	0.9933
46	<i>Luidia foliata</i>	0.1050	0.0005	0.9938
47	<i>Brisaster latifrons</i>	0.0970	0.0005	0.9943
48	<i>Raja binoculata</i>	0.0910	0.0004	0.9948
49	heart urchin unident.	0.0900	0.0004	0.9952
50	<i>Trachurus symmetricus</i>	0.0870	0.0004	0.9956
51	<i>Pandalus jordani</i>	0.0830	0.0004	0.9960
52	<i>Sardinops sagax</i>	0.0730	0.0004	0.9964
53	<i>Icelinus filamentosus</i>	0.0550	0.0003	0.9966
54	<i>Pleuronichthys decurrens</i>	0.0520	0.0003	0.9969
55	Holothuroidea unident.	0.0470	0.0002	0.9971
56	<i>Lycodes brevipes</i>	0.0460	0.0002	0.9974
57	Scyphozoa (class)	0.0430	0.0002	0.9976
58	<i>Anarrhichthys ocellatus</i>	0.0430	0.0002	0.9978
59	<i>Bathyraja interrupta</i>	0.0370	0.0002	0.9980
60	<i>Pandalus borealis</i>	0.0360	0.0002	0.9981
61	<i>Pseudostichopus mollis</i>	0.0290	0.0001	0.9983
62	<i>Sebastes reedi</i>	0.0250	0.0001	0.9984
63	<i>Lycodes cortezianus</i>	0.0240	0.0001	0.9985
64	<i>Lethasterias nanimensis</i>	0.0210	0.0001	0.9986
65	<i>Pandalopsis dispar</i>	0.0210	0.0001	0.9987
66	<i>Porichthys notatus</i>	0.0190	0.0001	0.9988
67	<i>Sebastes wilsoni</i>	0.0180	0.0001	0.9989
68	<i>Scomber japonicus</i>	0.0180	0.0001	0.9990
69	<i>Pycnopodia helianthoides</i>	0.0160	0.0001	0.9991
70	<i>Allosmerus elongatus</i>	0.0160	0.0001	0.9991
71	<i>Berryteuthis magister</i>	0.0150	0.0001	0.9992
72	starfish unident.	0.0140	0.0001	0.9993
73	<i>Pandalus platyceros</i>	0.0130	0.0001	0.9993
74	Aphroditidae	0.0130	0.0001	0.9994
75	<i>Hippasteria spinosa</i>	0.0120	0.0001	0.9995
76	<i>Orthasterias koehleri</i>	0.0090	Trace	0.9995
77	<i>Polinices pallidus</i>	0.0080	Trace	0.9995
78	<i>Hexagrammos decagrammus</i>	0.0080	Trace	0.9996
79	<i>Sebastes saxicola</i>	0.0070	Trace	0.9996
80	<i>Oncorhynchus kisutch</i>	0.0060	Trace	0.9996
81	<i>Paractinostola faeculenta</i>	0.0050	Trace	0.9997
82	<i>Solaster</i> sp.	0.0050	Trace	0.9997
83	<i>Hippasteria</i> sp.	0.0050	Trace	0.9997
84	<i>Careproctus melanurus</i>	0.0040	Trace	0.9997
85	<i>Opisthoteuthis californiana</i>	0.0040	Trace	0.9997

Table B-24.--Continued.

86	<i>Strongylocentrotus droebachiensis</i>	0.0040	Trace	0.9998
87	<i>Ommastrephes bartrami</i>	0.0040	Trace	0.9998
88	<i>Parastichopus californicus</i>	0.0040	Trace	0.9998
89	Hexactinellida	0.0030	Trace	0.9998
90	<i>Fusitriton oregonensis</i>	0.0030	Trace	0.9998
91	<i>Patinopecten caurinus</i>	0.0030	Trace	0.9998
92	<i>Lopholithodes</i> sp.	0.0020	Trace	0.9999
93	Basketstarfish unident.	0.0020	Trace	0.9999
94	<i>Pandalus hypsinotus</i>	0.0020	Trace	0.9999
95	<i>Cancer magister</i>	0.0020	Trace	0.9999
96	<i>Liponemis brevicornis</i>	0.0020	Trace	0.9999
97	Gastropod unident.	0.0020	Trace	0.9999
98	Porifera (phylum)	0.0020	Trace	0.9999
99	Thaliacea unident.	0.0010	Trace	0.9999
100	<i>Lycodes diapterus</i>	0.0010	Trace	0.9999
101	<i>Polinices</i> sp.	0.0010	Trace	0.9999
102	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9999
103	<i>Sebastes jordani</i>	0.0010	Trace	1.0000
104	<i>Diplopteraster multipes</i>	0.0010	Trace	1.0000
105	<i>Mediaster</i> sp.	0.0010	Trace	1.0000
106	skate egg case unident.	0.0010	Trace	1.0000
107	<i>Sebastes melanops</i>	0.0010	Trace	1.0000
108	<i>Aphrocallistes vastus</i>	0.0010	Trace	1.0000
109	<i>Neptunea lyrata</i>	0.0010	Trace	1.0000
110	<i>Stylatula</i> sp.	0.0010	Trace	1.0000
111	octopus unident.	Trace	Trace	1.0000
112	<i>Styela rustica</i>	Trace	Trace	1.0000
113	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
114	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
115	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
116	Osmeridae	Trace	Trace	1.0000
117	<i>Psettichthys melanostictus</i>	Trace	Trace	1.0000
118	Paguridae	Trace	Trace	1.0000
119	<i>Hemilepidotus spinosus</i>	Trace	Trace	1.0000
120	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
121	<i>Solaster paxillatus</i>	Trace	Trace	1.0000
122	<i>Loligo opalescens</i>	Trace	Trace	1.0000
123	Eel <i>leptocephalus</i>	Trace	Trace	1.0000
124	<i>Ceramaster patagonicus</i>	Trace	Trace	1.0000
125	Myctophidae	Trace	Trace	1.0000
126	<i>Podothecus acipenserinus</i>	Trace	Trace	1.0000
127	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
128	<i>Rossia pacifica</i>	Trace	Trace	1.0000
129	<i>Cucumaria</i> sp.	Trace	Trace	1.0000

Table B-24.--Continued.

130	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
131	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000
132	<i>Hypomesus pretiosus</i>	Trace	Trace	1.0000
133	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
134	Platyhelminthes (phylum)	Trace	Trace	1.0000
135	<i>Ctenodiscus crispatus</i>	Trace	Trace	1.0000
136	<i>Engraulis mordax</i>	Trace	Trace	1.0000
137	<i>Liparis</i> sp.	Trace	Trace	1.0000
138	Polychaeta (class)	Trace	Trace	1.0000
139	squid unident.	Trace	Trace	1.0000
140	shrimp unident.	Trace	Trace	1.0000
141	fish unident.	Trace	Trace	1.0000
142	Isopoda (order)	Trace	Trace	1.0000
143	Ophiuroid unident.	Trace	Trace	1.0000

Table B-25.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Vancouver shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	94.7180	0.3757	0.3757
2	<i>Squalus acanthias</i>	45.3870	0.1800	0.5558
3	<i>Sebastes flavidus</i>	22.5480	0.0894	0.6452
4	<i>Atheresthes stomias</i>	19.2600	0.0764	0.7216
5	<i>Anoplopoma fimbria</i>	10.0050	0.0397	0.7613
6	<i>Clupea pallasii</i>	7.7640	0.0308	0.7921
7	<i>Microstomus pacificus</i>	7.2790	0.0289	0.8210
8	<i>Hippoglossus stenolepis</i>	5.6920	0.0226	0.8436
9	<i>Citharichthys sordidus</i>	5.6560	0.0224	0.8660
10	<i>Glyptocephalus zachirus</i>	4.4560	0.0177	0.8837
11	<i>Parophrys vetulus</i>	4.3770	0.0174	0.9010
12	<i>Ophiodon elongatus</i>	3.1110	0.0123	0.9134
13	<i>Sebastes proriger</i>	2.8660	0.0114	0.9248
14	<i>Hydrolagus collicii</i>	2.2120	0.0088	0.9335
15	<i>Raja rhina</i>	1.7780	0.0071	0.9406
16	<i>Sebastes elongatus</i>	1.6860	0.0067	0.9473
17	<i>Sebastes pinniger</i>	1.3050	0.0052	0.9524
18	<i>Alosa sapidissima</i>	1.1590	0.0046	0.9570
19	<i>Sebastes entomelas</i>	1.0650	0.0042	0.9613
20	<i>Eopsetta jordani</i>	0.9970	0.0040	0.9652
21	<i>Hippoglossoides elassodon</i>	0.9720	0.0039	0.9691
22	<i>Gadus macrocephalus</i>	0.7370	0.0029	0.9720
23	<i>Lepidopsetta bilineata</i>	0.7240	0.0029	0.9749
24	<i>Sebastes alutus</i>	0.6930	0.0027	0.9776
25	<i>Oncorhynchus tshawytscha</i>	0.6000	0.0024	0.9800
26	<i>Sebastes crameri</i>	0.5270	0.0021	0.9821
27	<i>Sebastes brevispinis</i>	0.5220	0.0021	0.9842
28	<i>Lyopsetta exilis</i>	0.4480	0.0018	0.9859
29	<i>Raja binoculata</i>	0.4400	0.0017	0.9877
30	<i>Microgadus proximus</i>	0.2510	0.0010	0.9887
31	<i>Sebastes paucispinis</i>	0.1980	0.0008	0.9895
32	<i>Sebastes ruberrimus</i>	0.1660	0.0007	0.9901
33	<i>Luidia</i> sp.	0.1590	0.0006	0.9908
34	<i>Lycodes pacificus</i>	0.1550	0.0006	0.9914
35	<i>Trachurus symmetricus</i>	0.1410	0.0006	0.9919
36	Actinaria (order)	0.1200	0.0005	0.9924
37	<i>Sebastes maliger</i>	0.1180	0.0005	0.9929
38	<i>Sebastes helvomaculatus</i>	0.1170	0.0005	0.9934
39	<i>Sebastes aleutianus</i>	0.1080	0.0004	0.9938
40	<i>Sebastes zacentrus</i>	0.1020	0.0004	0.9942
41	<i>Thaleichthys pacificus</i>	0.0950	0.0004	0.9946

Table B-25.--Continued.

42	<i>Theragra chalcogramma</i>	0.0920	0.0004	0.9949
43	<i>Luidia foliata</i>	0.0820	0.0003	0.9952
44	<i>Galeorhinus galeus</i>	0.0800	0.0003	0.9956
45	<i>Sardinops sagax</i>	0.0740	0.0003	0.9959
46	<i>Brisaster latifrons</i>	0.0730	0.0003	0.9961
47	heart urchin unident.	0.0700	0.0003	0.9964
48	<i>Alloctrotus fragilis</i>	0.0670	0.0003	0.9967
49	<i>Sebastes babcocki</i>	0.0640	0.0003	0.9969
50	<i>Sebastolobus alascanus</i>	0.0640	0.0003	0.9972
51	<i>Pandalus jordani</i>	0.0620	0.0002	0.9974
52	<i>Bathyraja interrupta</i>	0.0520	0.0002	0.9976
53	<i>Scomber japonicus</i>	0.0500	0.0002	0.9978
54	Scyphozoa (class)	0.0490	0.0002	0.9980
55	<i>Pleuronichthys decurrens</i>	0.0400	0.0002	0.9982
56	<i>Icelinus filamentosus</i>	0.0380	0.0002	0.9984
57	<i>Lycodes brevipes</i>	0.0340	0.0001	0.9985
58	<i>Anarrhichthys ocellatus</i>	0.0320	0.0001	0.9986
59	<i>Pandalus borealis</i>	0.0300	0.0001	0.9987
60	<i>Pycnopodia helianthoides</i>	0.0210	0.0001	0.9988
61	<i>Lethasterias nanimensis</i>	0.0170	0.0001	0.9989
62	Thaliacea unident.	0.0160	0.0001	0.9989
63	Holothuroidea unident.	0.0160	0.0001	0.9990
64	skate egg case unident.	0.0160	0.0001	0.9991
65	<i>Sebastes wilsoni</i>	0.0150	0.0001	0.9991
66	<i>Lopholithodes</i> sp.	0.0150	0.0001	0.9992
67	<i>Porichthys notatus</i>	0.0150	0.0001	0.9993
68	<i>Hexagrammos decagrammus</i>	0.0140	0.0001	0.9993
69	<i>Cancer magister</i>	0.0130	0.0001	0.9994
70	<i>Pandalopsis dispar</i>	0.0130	0.0001	0.9994
71	<i>Allosmerus elongatus</i>	0.0120	Trace	0.9995
72	starfish unident.	0.0110	Trace	0.9995
73	Aphroditidae	0.0100	Trace	0.9995
74	<i>Pseudostichopus mollis</i>	0.0090	Trace	0.9996
75	<i>Solaster dawsoni</i>	0.0070	Trace	0.9996
76	<i>Psettichthys melanostictus</i>	0.0070	Trace	0.9996
77	<i>Orthasterias koehleri</i>	0.0070	Trace	0.9997
78	<i>Crossaster papposus</i>	0.0060	Trace	0.9997
79	Gorgonacea (order)	0.0060	Trace	0.9997
80	<i>Strongylocentrotus droebachiensis</i>	0.0060	Trace	0.9997
81	<i>Polinices pallidus</i>	0.0060	Trace	0.9998
82	<i>Sebastes saxicola</i>	0.0050	Trace	0.9998
83	sea urchin unident.	0.0050	Trace	0.9998
84	<i>Pandalus platyceros</i>	0.0050	Trace	0.9998
85	<i>Oncorhynchus kisutch</i>	0.0040	Trace	0.9998

Table B-25.--Continued.

86	<i>Solaster</i> sp.	0.0040	Trace	0.9998
87	<i>Hippasteria</i> sp.	0.0030	Trace	0.9999
88	<i>Hippasteria spinosa</i>	0.0030	Trace	0.9999
89	Basketstarfish unident.	0.0030	Trace	0.9999
90	<i>Ommastrephes bartrami</i>	0.0030	Trace	0.9999
91	Hexactinellida	0.0030	Trace	0.9999
92	<i>Parastichopus californicus</i>	0.0030	Trace	0.9999
93	<i>Sebastes diploproa</i>	0.0020	Trace	0.9999
94	<i>Patinopecten caurinus</i>	0.0020	Trace	0.9999
95	<i>Fusitriton oregonensis</i>	0.0020	Trace	0.9999
96	Gastropod unident.	0.0010	Trace	0.9999
97	Porifera (phylum)	0.0010	Trace	1.0000
98	<i>Solaster paxillatus</i>	0.0010	Trace	1.0000
99	<i>Liponemis brevicornis</i>	0.0010	Trace	1.0000
100	<i>Polinices</i> sp.	0.0010	Trace	1.0000
101	<i>Pseudarchaster parelii</i>	0.0010	Trace	1.0000
102	<i>Sebastes jordani</i>	0.0010	Trace	1.0000
103	<i>Ceramaster patagonicus</i>	0.0010	Trace	1.0000
104	<i>Sebastes chlorostictus</i>	0.0010	Trace	1.0000
105	<i>Mediaster</i> sp.	0.0010	Trace	1.0000
106	<i>Octopus dofleini</i>	0.0010	Trace	1.0000
107	<i>Sebastes melanops</i>	Trace	Trace	1.0000
108	<i>Aphrocallistes vastus</i>	Trace	Trace	1.0000
109	<i>Pandalus hypsinotus</i>	Trace	Trace	1.0000
110	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
111	<i>Loligo opalescens</i>	Trace	Trace	1.0000
112	<i>Styela rustica</i>	Trace	Trace	1.0000
113	<i>Taningia danae</i>	Trace	Trace	1.0000
114	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
115	Osmeridae	Trace	Trace	1.0000
116	<i>Hemilepidotus spinosus</i>	Trace	Trace	1.0000
117	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
118	<i>Podothecus acipenserinus</i>	Trace	Trace	1.0000
119	<i>Rossia pacifica</i>	Trace	Trace	1.0000
120	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
121	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
122	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
123	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
124	<i>Stylatula</i> sp.	Trace	Trace	1.0000
125	<i>Cucumaria</i> sp.	Trace	Trace	1.0000
126	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
127	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
128	squid unident.	Trace	Trace	1.0000
129	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000

Table B-25.--Continued.

130	Pteraster sp.	Trace	Trace	1.0000
131	Hypomesus pretiosus	Trace	Trace	1.0000
132	Bathymaster signatus	Trace	Trace	1.0000
133	Platyhelminthes (phylum)	Trace	Trace	1.0000
134	Paguridae	Trace	Trace	1.0000
135	Engraulis mordax	Trace	Trace	1.0000
136	Liparis sp.	Trace	Trace	1.0000
137	Polychaeta (class)	Trace	Trace	1.0000
138	Hyas lyratus	Trace	Trace	1.0000
139	Myctophidae	Trace	Trace	1.0000
140	shrimp unident.	Trace	Trace	1.0000
141	Cottidae	Trace	Trace	1.0000
142	Isopoda (order)	Trace	Trace	1.0000
143	Ophiuroid unident.	Trace	Trace	1.0000

Table B-26.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Vancouver middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes flavidus</i>	41.0920	0.1992	0.1992
2	<i>Sebastes alutus</i>	30.3280	0.1470	0.3462
3	<i>Atheresthes stomias</i>	22.0410	0.1068	0.4531
4	<i>Microstomus pacificus</i>	15.1180	0.0733	0.5263
5	<i>Merluccius productus</i>	14.2000	0.0688	0.5952
6	<i>Anoplopoma fimbria</i>	13.3650	0.0648	0.6600
7	<i>Sebastes entomelas</i>	10.3960	0.0504	0.7104
8	<i>Sebastes proriger</i>	8.5390	0.0414	0.7517
9	<i>Glyptocephalus zachirus</i>	6.6350	0.0322	0.7839
10	<i>Sebastes zacentrus</i>	6.1570	0.0298	0.8138
11	<i>Hydrolagus colliei</i>	5.6360	0.0273	0.8411
12	<i>Squalus acanthias</i>	4.5680	0.0221	0.8632
13	<i>Sebastes elongatus</i>	4.3630	0.0212	0.8844
14	<i>Sebastes brevispinis</i>	3.1260	0.0152	0.8995
15	<i>Sebastes pinniger</i>	2.5860	0.0125	0.9121
16	<i>Raja rhina</i>	2.1680	0.0105	0.9226
17	<i>Hippoglossus stenolepis</i>	2.0700	0.0100	0.9326
18	<i>Sebastolobus alascanus</i>	1.9120	0.0093	0.9419
19	<i>Sebastes crameri</i>	1.9030	0.0092	0.9511
20	<i>Gadus macrocephalus</i>	1.3640	0.0066	0.9577
21	<i>Sebastes diploproa</i>	1.1690	0.0057	0.9634
22	<i>Parophrys vetulus</i>	1.0120	0.0049	0.9683
23	<i>Bathyraja interrupta</i>	0.8640	0.0042	0.9725
24	<i>Allocentrotus fragilis</i>	0.8560	0.0041	0.9766
25	<i>Lyopsetta exilis</i>	0.8170	0.0040	0.9806
26	<i>Sebastes babcocki</i>	0.6290	0.0031	0.9836
27	<i>Ophiodon elongatus</i>	0.5290	0.0026	0.9862
28	<i>Sebastes paucispinis</i>	0.3420	0.0017	0.9878
29	<i>Alosa sapidissima</i>	0.3160	0.0015	0.9894
30	<i>Hippoglossoides elassodon</i>	0.2090	0.0010	0.9904
31	<i>Sebastes helvomaculatus</i>	0.1880	0.0009	0.9913
32	<i>Sebastes aleutianus</i>	0.1550	0.0008	0.9920
33	<i>Theragra chalcogramma</i>	0.1370	0.0007	0.9927
34	<i>Cryptacanthodes giganteus</i>	0.1370	0.0007	0.9934
35	<i>Eopsetta jordani</i>	0.1260	0.0006	0.9940
36	<i>Sebastes reedi</i>	0.0820	0.0004	0.9944
37	<i>Pseudostichopus mollis</i>	0.0800	0.0004	0.9948
38	heart urchin unident.	0.0800	0.0004	0.9952
39	<i>Luidia foliata</i>	0.0760	0.0004	0.9955
40	Scyphozoa (class)	0.0690	0.0003	0.9959
41	<i>Pandalus borealis</i>	0.0600	0.0003	0.9962

Table B-26.--Continued.

42	Holothuroidea unident.	0.0590	0.0003	0.9964
43	Berryteuthis magister	0.0580	0.0003	0.9967
44	Pandalus jordani	0.0550	0.0003	0.9970
45	Icelinus filamentosus	0.0540	0.0003	0.9972
46	Torpedo californica	0.0510	0.0002	0.9975
47	Pasiphaea pacifica	0.0460	0.0002	0.9977
48	Lopholithodes sp.	0.0400	0.0002	0.9979
49	Pandalus platyceros	0.0390	0.0002	0.9981
50	Lethasterias nanimensis	0.0390	0.0002	0.9983
51	Scomber japonicus	0.0310	0.0001	0.9984
52	Hippasteria spinosa	0.0280	0.0001	0.9986
53	Brisaster latifrons	0.0280	0.0001	0.9987
54	Sebastes ruberrimus	0.0260	0.0001	0.9988
55	Oncorhynchus kisutch	0.0230	0.0001	0.9989
56	Sebastes saxicola	0.0210	0.0001	0.9990
57	Clupea pallasii	0.0200	0.0001	0.9991
58	Lycodes corteziianus	0.0190	0.0001	0.9992
59	Thaleichthys pacificus	0.0170	0.0001	0.9993
60	Careproctus melanurus	0.0130	0.0001	0.9994
61	Pandalus hypsinotus	0.0130	0.0001	0.9994
62	Apristurus brunneus	0.0110	0.0001	0.9995
63	Lycodes pacificus	0.0100	0.0001	0.9995
64	Lycodes diapterus	0.0100	Trace	0.9996
65	Pandalopsis dispar	0.0090	Trace	0.9996
66	Crossaster papposus	0.0090	Trace	0.9997
67	sea urchin unident.	0.0080	Trace	0.9997
68	Aphroditidae	0.0070	Trace	0.9998
69	Fusitriton oregonensis	0.0070	Trace	0.9998
70	Ceramaster patagonicus	0.0070	Trace	0.9998
71	Actiniaria (order)	0.0040	Trace	0.9998
72	Styela rustica	0.0040	Trace	0.9999
73	Strongylocentrotus droebachiensis	0.0040	Trace	0.9999
74	Ceramaster japonicus	0.0030	Trace	0.9999
75	Thaliacea unident.	0.0030	Trace	0.9999
76	Solaster paxillatus	0.0030	Trace	0.9999
77	starfish unident.	0.0030	Trace	0.9999
78	Basketstarfish unident.	0.0030	Trace	1.0000
79	Porifera (phylum)	0.0020	Trace	1.0000
80	Myctophidae	0.0020	Trace	1.0000
81	Sardinops sagax	0.0020	Trace	1.0000
82	Citharichthys sordidus	0.0010	Trace	1.0000
83	Hyas lyratus	0.0010	Trace	1.0000
84	Orthasterias koehlerii	0.0010	Trace	1.0000
85	Ronquilus jordani	0.0010	Trace	1.0000

Table B-26.--Continued.

86	Mediaster sp.	0.0010	Trace	1.0000
87	Sebastes wilsoni	Trace	Trace	1.0000
88	Liponemis brevicornis	Trace	Trace	1.0000
89	Chauliodus macouni	Trace	Trace	1.0000
90	Paguridae	Trace	Trace	1.0000
91	Ctenodiscus crispatus	Trace	Trace	1.0000
92	Bathyagonus pentacanthus	Trace	Trace	1.0000
93	Loligo opalescens	Trace	Trace	1.0000
94	fish unident.	Trace	Trace	1.0000

Table B-27.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the INPFC Vancouver deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Sebastes aleutianus</i>	21.5750	0.2735	0.2735
2	<i>Sebastes alutus</i>	12.8580	0.1630	0.4365
3	<i>Microstomus pacificus</i>	11.9640	0.1517	0.5882
4	<i>Atheresthes stomias</i>	9.3430	0.1184	0.7066
5	<i>Sebastolobus alascanus</i>	5.1480	0.0653	0.7719
6	<i>Merluccius productus</i>	4.8450	0.0614	0.8333
7	<i>Glyptocephalus zachirus</i>	4.0880	0.0518	0.8851
8	<i>Raja rhina</i>	3.2070	0.0407	0.9258
9	<i>Anoplopoma fimbria</i>	2.1680	0.0275	0.9533
10	<i>Sebastolobus altivelis</i>	0.6000	0.0076	0.9609
11	<i>Hippoglossus stenolepis</i>	0.4930	0.0063	0.9671
12	<i>Hydrolagus collicii</i>	0.2500	0.0032	0.9703
13	<i>Lycodes corteziianus</i>	0.2380	0.0030	0.9733
14	<i>Eopsetta jordani</i>	0.2150	0.0027	0.9761
15	<i>Sebastes crameri</i>	0.1930	0.0025	0.9785
16	<i>Squalus acanthias</i>	0.1290	0.0016	0.9801
17	<i>Sebastes babcocki</i>	0.1260	0.0016	0.9817
18	<i>Antimora microlepis</i>	0.1180	0.0015	0.9832
19	<i>Holothuroidea unident.</i>	0.1030	0.0013	0.9846
20	<i>Pseudostichopus mollis</i>	0.0990	0.0013	0.9858
21	<i>Bathyraja interrupta</i>	0.0980	0.0012	0.9871
22	<i>Sebastes diploproa</i>	0.0950	0.0012	0.9883
23	<i>Paractinostola faeculenta</i>	0.0950	0.0012	0.9895
24	Actiniaria (order)	0.0730	0.0009	0.9904
25	<i>Berryteuthis magister</i>	0.0600	0.0008	0.9912
26	<i>Lycodes diapterus</i>	0.0540	0.0007	0.9918
27	<i>Sebastes entomelas</i>	0.0510	0.0006	0.9925
28	Scyphozoa (class)	0.0510	0.0006	0.9931
29	<i>Opisthoteuthis californiana</i>	0.0460	0.0006	0.9937
30	<i>Taningia danae</i>	0.0370	0.0005	0.9942
31	<i>Apristurus brunneus</i>	0.0370	0.0005	0.9947
32	<i>Embassichthys bathybius</i>	0.0360	0.0005	0.9951
33	<i>Chionoecetes tanneri</i>	0.0350	0.0004	0.9956
34	<i>Allocentrotus fragilis</i>	0.0320	0.0004	0.9960
35	<i>Bathyraja aleutica</i>	0.0300	0.0004	0.9963
36	<i>Parophrys vetulus</i>	0.0280	0.0004	0.9967
37	<i>Parastichopus</i> sp.	0.0280	0.0004	0.9970
38	<i>Lyopsetta exilis</i>	0.0260	0.0003	0.9974
39	<i>Pandalus hypsinotus</i>	0.0210	0.0003	0.9976
40	<i>Fusitriton oregonensis</i>	0.0190	0.0002	0.9979
41	<i>Pasiphaea pacifica</i>	0.0170	0.0002	0.9981

Table B-27.--Continued.

42	Myctophidae	0.0170	0.0002	0.9983
43	Sebastes helvomaculatus	0.0150	0.0002	0.9985
44	Diplopteraster multipes	0.0130	0.0002	0.9987
45	Octopus dofleini	0.0130	0.0002	0.9988
46	Basketstarfish unident.	0.0080	0.0001	0.9989
47	Lampanyctus sp.	0.0080	0.0001	0.9990
48	Chauliodus macouni	0.0080	0.0001	0.9991
49	Neptunea lyrata	0.0070	0.0001	0.9992
50	Pandalopsis dispar	0.0070	0.0001	0.9993
51	Thaliacea unident.	0.0060	0.0001	0.9994
52	Luidia sp.	0.0060	0.0001	0.9995
53	octopus unident.	0.0060	0.0001	0.9995
54	Hexactinellida	0.0050	0.0001	0.9996
55	Stylatula sp.	0.0050	0.0001	0.9997
56	starfish unident.	0.0050	0.0001	0.9997
57	Liponemis brevicornis	0.0040	0.0001	0.9998
58	Sagamichthys abei	0.0040	Trace	0.9998
59	Tactostoma macropus	0.0030	Trace	0.9999
60	Eel leptocephalus	0.0030	Trace	0.9999
61	Paguridae	0.0030	Trace	0.9999
62	Bathylagus sp.	0.0020	Trace	1.0000
63	Hippasteria sp.	0.0010	Trace	1.0000
64	Ctenodiscus crispatus	0.0010	Trace	1.0000
65	Notolepsis risso	Trace	Trace	1.0000
66	squid unident.	Trace	Trace	1.0000
67	fish unident.	Trace	Trace	1.0000

Table B-28.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire INPFC Vancouver area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	76.1030	0.3231	0.3231
2	<i>Squalus acanthias</i>	35.9650	0.1527	0.4758
3	<i>Sebastes flavidus</i>	24.7150	0.1049	0.5808
4	<i>Atheresthes stomias</i>	19.2650	0.0818	0.6626
5	<i>Anoplopoma fimbria</i>	10.2130	0.0434	0.7060
6	<i>Microstomus pacificus</i>	8.8920	0.0378	0.7437
7	<i>Sebastes alutus</i>	6.5190	0.0277	0.7714
8	<i>Clupea pallasii</i>	6.0170	0.0255	0.7969
9	<i>Glyptocephalus zachirus</i>	4.8220	0.0205	0.8174
10	<i>Hippoglossus stenolepis</i>	4.7980	0.0204	0.8378
11	<i>Citharichthys sordidus</i>	4.3810	0.0186	0.8564
12	<i>Sebastes proriger</i>	3.7270	0.0158	0.8722
13	<i>Parophrys vetulus</i>	3.5700	0.0152	0.8874
14	<i>Hydrolagus collicii</i>	2.7200	0.0115	0.8989
15	<i>Sebastes entomelas</i>	2.6620	0.0113	0.9102
16	<i>Ophiodon elongatus</i>	2.5030	0.0106	0.9208
17	<i>Sebastes elongatus</i>	2.0760	0.0088	0.9297
18	<i>Raja rhina</i>	1.9170	0.0081	0.9378
19	<i>Sebastes pinniger</i>	1.4670	0.0062	0.9440
20	<i>Sebastes aleutianus</i>	1.1680	0.0050	0.9490
21	<i>Sebastes zacentrus</i>	1.1650	0.0049	0.9539
22	<i>Sebastes brevispinis</i>	0.9560	0.0041	0.9580
23	<i>Alosa sapidissima</i>	0.9530	0.0040	0.9620
24	<i>Gadus macrocephalus</i>	0.8120	0.0034	0.9655
25	<i>Eopsetta jordani</i>	0.8050	0.0034	0.9689
26	<i>Hippoglossoides elassodon</i>	0.7900	0.0034	0.9723
27	<i>Sebastes crameri</i>	0.7540	0.0032	0.9755
28	<i>Sebastes alascanus</i>	0.6390	0.0027	0.9782
29	<i>Lepidopsetta bilineata</i>	0.5600	0.0024	0.9806
30	<i>Lyopsetta exilis</i>	0.4920	0.0021	0.9826
31	<i>Oncorhynchus tshawytscha</i>	0.4650	0.0020	0.9846
32	<i>Raja binoculata</i>	0.3410	0.0014	0.9861
33	<i>Sebastes paucispinis</i>	0.2140	0.0009	0.9870
34	<i>Sebastes diploproa</i>	0.2130	0.0009	0.9879
35	<i>Alloctrotus fragilis</i>	0.2040	0.0009	0.9887
36	<i>Bathyraja interrupta</i>	0.1970	0.0008	0.9896
37	<i>Microgadus proximus</i>	0.1950	0.0008	0.9904
38	<i>Sebastes babcocki</i>	0.1670	0.0007	0.9911
39	<i>Sebastes ruberrimus</i>	0.1330	0.0006	0.9917
40	<i>Sebastes helvomaculatus</i>	0.1250	0.0005	0.9922
41	<i>Luidia</i> sp.	0.1230	0.0005	0.9927

Table B-28.--Continued.

42	<i>Lycodes pacificus</i>	0.1220	0.0005	0.9933
43	<i>Trachurus symmetricus</i>	0.1090	0.0005	0.9937
44	Actiniaria (order)	0.0970	0.0004	0.9941
45	<i>Theragra chalcogramma</i>	0.0960	0.0004	0.9945
46	<i>Sebastes maliger</i>	0.0910	0.0004	0.9949
47	<i>Thaleichthys pacificus</i>	0.0770	0.0003	0.9953
48	<i>Luidia foliata</i>	0.0770	0.0003	0.9956
49	heart urchin unident.	0.0680	0.0003	0.9959
50	<i>Galeorhinus galeus</i>	0.0620	0.0003	0.9961
51	<i>Brisaster latifrons</i>	0.0610	0.0003	0.9964
52	<i>Pandalus jordani</i>	0.0580	0.0002	0.9966
53	<i>Sardinops sagax</i>	0.0570	0.0002	0.9969
54	Scyphozoa (class)	0.0530	0.0002	0.9971
55	<i>Scomber japonicus</i>	0.0440	0.0002	0.9973
56	<i>Icelinus filamentosus</i>	0.0390	0.0002	0.9975
57	<i>Pandalus borealis</i>	0.0330	0.0001	0.9976
58	<i>Pleuronichthys decurrens</i>	0.0310	0.0001	0.9977
59	<i>Sebastes altivelis</i>	0.0290	0.0001	0.9979
60	Holothuroidea unident.	0.0280	0.0001	0.9980
61	<i>Lycodes brevipes</i>	0.0270	0.0001	0.9981
62	<i>Pseudostichopus mollis</i>	0.0260	0.0001	0.9982
63	<i>Anarrhichthys ocellatus</i>	0.0250	0.0001	0.9983
64	<i>Cryptacanthodes giganteus</i>	0.0240	0.0001	0.9984
65	<i>Lethasterias nanimensis</i>	0.0200	0.0001	0.9985
66	<i>Lopholithodes</i> sp.	0.0190	0.0001	0.9986
67	<i>Pycnopodia helianthoides</i>	0.0170	0.0001	0.9986
68	<i>Lycodes corteziianus</i>	0.0150	0.0001	0.9987
69	<i>Sebastes reedi</i>	0.0150	0.0001	0.9988
70	Thaliacea unident.	0.0130	0.0001	0.9988
71	<i>Berryteuthis magister</i>	0.0130	0.0001	0.9989
72	skate egg case unident.	0.0120	0.0001	0.9989
73	<i>Pandalopsis dispar</i>	0.0120	0.0001	0.9990
74	<i>Sebastes wilsoni</i>	0.0120	0.0001	0.9990
75	<i>Porichthys notatus</i>	0.0110	Trace	0.9991
76	<i>Hexagrammos decagrammus</i>	0.0110	Trace	0.9991
77	<i>Pandalus platyceros</i>	0.0100	Trace	0.9992
78	<i>Cancer magister</i>	0.0100	Trace	0.9992
79	Aphroditidae	0.0090	Trace	0.9992
80	<i>Torpedo californica</i>	0.0090	Trace	0.9993
81	<i>Allosmerus elongatus</i>	0.0090	Trace	0.9993
82	<i>Pasiphaea pacifica</i>	0.0090	Trace	0.9994
83	starfish unident.	0.0090	Trace	0.9994
84	<i>Sebastes saxicola</i>	0.0080	Trace	0.9994
85	<i>Hippasteria spinosa</i>	0.0080	Trace	0.9995

Table B-28.--Continued.

86	<i>Oncorhynchus kisutch</i>	0.0070	Trace	0.9995
87	<i>Crossaster papposus</i>	0.0060	Trace	0.9995
88	<i>Antimora microlepis</i>	0.0060	Trace	0.9995
89	<i>Solaster dawsoni</i>	0.0060	Trace	0.9996
90	<i>Psettichthys melanostictus</i>	0.0060	Trace	0.9996
91	sea urchin unident.	0.0050	Trace	0.9996
92	<i>Orthasterias koehleri</i>	0.0050	Trace	0.9996
93	<i>Strongylocentrotus droebachiensis</i>	0.0050	Trace	0.9997
94	Gorgonacea (order)	0.0050	Trace	0.9997
95	<i>Paractinostola faeculenta</i>	0.0050	Trace	0.9997
96	<i>Polinices pallidus</i>	0.0040	Trace	0.9997
97	<i>Lycodes diapterus</i>	0.0040	Trace	0.9997
98	<i>Apristurus brunneus</i>	0.0040	Trace	0.9998
99	<i>Pandalus hypsinotus</i>	0.0040	Trace	0.9998
100	<i>Fusitriton oregonensis</i>	0.0030	Trace	0.9998
101	Basketstarfish unident.	0.0030	Trace	0.9998
102	<i>Solaster</i> sp.	0.0030	Trace	0.9998
103	<i>Hippasteria</i> sp.	0.0030	Trace	0.9998
104	Hexactinellida	0.0030	Trace	0.9998
105	<i>Ommastrephes bartrami</i>	0.0020	Trace	0.9998
106	<i>Careproctus melanurus</i>	0.0020	Trace	0.9999
107	<i>Opisthoteuthis californiana</i>	0.0020	Trace	0.9999
108	<i>Parastichopus californicus</i>	0.0020	Trace	0.9999
109	<i>Taningia danae</i>	0.0020	Trace	0.9999
110	<i>Ceramaster patagonicus</i>	0.0020	Trace	0.9999
111	<i>Embassichthys bathybius</i>	0.0020	Trace	0.9999
112	<i>Chionoecetes tanneri</i>	0.0020	Trace	0.9999
113	<i>Patinopecten caurinus</i>	0.0020	Trace	0.9999
114	<i>Solaster paxillatus</i>	0.0020	Trace	0.9999
115	Porifera (phylum)	0.0010	Trace	0.9999
116	<i>Bathyraja aleutica</i>	0.0010	Trace	0.9999
117	<i>Parastichopus</i> sp.	0.0010	Trace	0.9999
118	<i>Liponemis brevicornis</i>	0.0010	Trace	0.9999
119	Myctophidae	0.0010	Trace	0.9999
120	Gastropod unident.	0.0010	Trace	1.0000
121	<i>Octopus dofleini</i>	0.0010	Trace	1.0000
122	<i>Styela rustica</i>	0.0010	Trace	1.0000
123	<i>Ceramaster japonicus</i>	0.0010	Trace	1.0000
124	<i>Polinices</i> sp.	0.0010	Trace	1.0000
125	<i>Pseudarchaster parelii</i>	0.0010	Trace	1.0000
126	<i>Sebastes jordani</i>	0.0010	Trace	1.0000
127	<i>Diplopteraster multipes</i>	0.0010	Trace	1.0000
128	<i>Mediaster</i> sp.	0.0010	Trace	1.0000
129	<i>Sebastes chlorostictus</i>	Trace	Trace	1.0000

Table B-28.--Continued.

130	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
131	<i>Lampanyctus</i> sp.	Trace	Trace	1.0000
132	<i>Sebastes melanops</i>	Trace	Trace	1.0000
133	<i>Aphrocallistes vastus</i>	Trace	Trace	1.0000
134	<i>Neptunea lyrata</i>	Trace	Trace	1.0000
135	<i>Stylatula</i> sp.	Trace	Trace	1.0000
136	octopus unident.	Trace	Trace	1.0000
137	<i>Loligo opalescens</i>	Trace	Trace	1.0000
138	Paguridae	Trace	Trace	1.0000
139	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
140	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
141	Osmeridae	Trace	Trace	1.0000
142	<i>Hemilepidotus spinosus</i>	Trace	Trace	1.0000
143	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
144	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
145	<i>Hyas lyratus</i>	Trace	Trace	1.0000
146	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
147	Eel <i>leptocephalus</i>	Trace	Trace	1.0000
148	<i>Podothecus acipenserinus</i>	Trace	Trace	1.0000
149	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
150	<i>Rossia pacifica</i>	Trace	Trace	1.0000
151	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
152	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
153	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
154	<i>Ctenodiscus crispatus</i>	Trace	Trace	1.0000
155	squid unident.	Trace	Trace	1.0000
156	<i>Cucumaria</i> sp.	Trace	Trace	1.0000
157	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
158	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
159	<i>Pteraster</i> sp.	Trace	Trace	1.0000
160	<i>Hypomesus pretiosus</i>	Trace	Trace	1.0000
161	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
162	Platyhelminthes (phylum)	Trace	Trace	1.0000
163	<i>Engraulis mordax</i>	Trace	Trace	1.0000
164	<i>Liparis</i> sp.	Trace	Trace	1.0000
165	Polychaeta (class)	Trace	Trace	1.0000
166	<i>Notolepsis risso</i>	Trace	Trace	1.0000
167	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
168	shrimp unident.	Trace	Trace	1.0000
169	Cottidae	Trace	Trace	1.0000
170	fish unident.	Trace	Trace	1.0000
171	Isopoda (order)	Trace	Trace	1.0000
172	Ophiuroid unident.	Trace	Trace	1.0000

Table B-29.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the survey area, shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	110.6760	0.5772	0.5772
2	<i>Squalus acanthias</i>	8.9120	0.0465	0.6237
3	<i>Citharichthys sordidus</i>	8.1130	0.0423	0.6660
4	<i>Sebastes flavidus</i>	7.1240	0.0372	0.7032
5	<i>Clupea pallasii</i>	6.4350	0.0336	0.7367
6	<i>Parophrys vetulus</i>	4.3240	0.0226	0.7593
7	<i>Sebastes goodei</i>	3.6720	0.0191	0.7784
8	<i>Anoplopoma fimbria</i>	3.6270	0.0189	0.7973
9	<i>Microstomus pacificus</i>	3.6200	0.0189	0.8162
10	<i>Glyptocephalus zachirus</i>	3.4540	0.0180	0.8342
11	<i>Trachurus symmetricus</i>	3.1570	0.0165	0.8507
12	<i>Atheresthes stomias</i>	3.1450	0.0164	0.8671
13	<i>Sebastes jordani</i>	3.0730	0.0160	0.8831
14	<i>Genyonemus lineatus</i>	2.2910	0.0120	0.8951
15	<i>Hippoglossus stenolepis</i>	1.8500	0.0096	0.9047
16	<i>Scomber japonicus</i>	1.7680	0.0092	0.9140
17	<i>Sardinops sagax</i>	1.6140	0.0084	0.9224
18	<i>Alosa sapidissima</i>	1.1910	0.0062	0.9286
19	<i>Sebastes elongatus</i>	1.0990	0.0057	0.9343
20	<i>Eopsetta jordani</i>	0.9850	0.0051	0.9395
21	<i>Sebastes saxicola</i>	0.9310	0.0049	0.9443
22	<i>Raja binoculata</i>	0.8550	0.0045	0.9488
23	<i>Raja rhina</i>	0.8270	0.0043	0.9531
24	<i>Cancer magister</i>	0.7770	0.0041	0.9571
25	<i>Engraulis mordax</i>	0.7430	0.0039	0.9610
26	<i>Ophiodon elongatus</i>	0.7190	0.0038	0.9648
27	<i>Oncorhynchus tshawytscha</i>	0.7190	0.0037	0.9685
28	<i>Hydrolagus colliei</i>	0.6680	0.0035	0.9720
29	<i>Sebastes entomelas</i>	0.5830	0.0030	0.9750
30	<i>Sebastes proriger</i>	0.4900	0.0026	0.9776
31	<i>Sebastes pinniger</i>	0.3880	0.0020	0.9796
32	<i>Sebastes crameri</i>	0.2960	0.0015	0.9812
33	<i>Lyopsetta exilis</i>	0.2590	0.0014	0.9825
34	<i>Metridium sp.</i>	0.2210	0.0012	0.9837
35	<i>Sebastes semicinctus</i>	0.1780	0.0009	0.9846
36	<i>Porichthys notatus</i>	0.1720	0.0009	0.9855
37	<i>Lepidopsetta bilineata</i>	0.1650	0.0009	0.9864
38	<i>Luidia foliata</i>	0.1440	0.0008	0.9871
39	<i>Brisaster latifrons</i>	0.1340	0.0007	0.9878

Table B-29.--Continued.

40	<i>Gadus macrocephalus</i>	0.1260	0.0007	0.9885
41	<i>Argentina sialis</i>	0.1150	0.0006	0.9891
42	<i>Peprilus simillimus</i>	0.1100	0.0006	0.9896
43	<i>Torpedo californica</i>	0.0810	0.0004	0.9901
44	<i>Laqueus californianus</i>	0.0780	0.0004	0.9905
45	<i>Galeorhinus galeus</i>	0.0760	0.0004	0.9909
46	<i>Lycodes pacificus</i>	0.0740	0.0004	0.9912
47	Actiniaria (order)	0.0690	0.0004	0.9916
48	<i>Pleuronichthys decurrens</i>	0.0690	0.0004	0.9920
49	<i>Microgadus proximus</i>	0.0680	0.0004	0.9923
50	<i>Sebastes paucispinis</i>	0.0620	0.0003	0.9926
51	<i>Mustelus henlei</i>	0.0560	0.0003	0.9929
52	heart urchin unident.	0.0560	0.0003	0.9932
53	<i>Pycnopodia helianthoides</i>	0.0510	0.0003	0.9935
54	<i>Zalembeus rosaceus</i>	0.0510	0.0003	0.9938
55	<i>Hippoglossoides elassodon</i>	0.0500	0.0003	0.9940
56	<i>Squatina californica</i>	0.0480	0.0002	0.9943
57	<i>Hexanchus griseus</i>	0.0450	0.0002	0.9945
58	Scyphozoa (class)	0.0440	0.0002	0.9947
59	<i>Paralichthys californicus</i>	0.0440	0.0002	0.9950
60	<i>Sebastes chlorostictus</i>	0.0410	0.0002	0.9952
61	<i>Rathbunaster californicus</i>	0.0400	0.0002	0.9954
62	<i>Sebastolobus alascanus</i>	0.0390	0.0002	0.9956
63	<i>Sebastes mystinus</i>	0.0360	0.0002	0.9958
64	<i>Pandalus jordani</i>	0.0360	0.0002	0.9960
65	<i>Platichthys stellatus</i>	0.0360	0.0002	0.9962
66	<i>Octopus dofleini</i>	0.0350	0.0002	0.9963
67	<i>Lopholithodes foraminatus</i>	0.0330	0.0002	0.9965
68	<i>Acipenser medirostris</i>	0.0330	0.0002	0.9967
69	<i>Sebastes helvomaculatus</i>	0.0310	0.0002	0.9968
70	<i>Sebastes aleutianus</i>	0.0300	0.0002	0.9970
71	<i>Psettichthys melanostictus</i>	0.0290	0.0002	0.9971
72	<i>Bathyraja interrupta</i>	0.0270	0.0001	0.9973
73	Thaliacea unident.	0.0270	0.0001	0.9974
74	<i>Sebastes diploproa</i>	0.0260	0.0001	0.9976
75	<i>Sebastes ruberrimus</i>	0.0230	0.0001	0.9977
76	<i>Parastichopus californicus</i>	0.0220	0.0001	0.9978
77	<i>Loligo opalescens</i>	0.0210	0.0001	0.9979
78	<i>Alloctrotus fragilis</i>	0.0170	0.0001	0.9980
79	<i>Sebastes zacentrus</i>	0.0150	0.0001	0.9981
80	skate egg case unident.	0.0140	0.0001	0.9981

Table B-29.--Continued.

81	<i>Sebastes brevispinis</i>	0.0130	0.0001	0.9982
82	<i>Sebastes alutus</i>	0.0130	0.0001	0.9983
83	<i>Mustelus</i> sp.	0.0130	0.0001	0.9984
84	<i>Sebastes babcocki</i>	0.0120	0.0001	0.9984
85	<i>Gorgonocephalus eucnemis</i>	0.0120	0.0001	0.9985
86	<i>Holothuroidea</i> unident.	0.0100	0.0001	0.9985
87	Basketstarfish unident.	0.0100	0.0001	0.9986
88	<i>Icelinus filamentosus</i>	0.0100	0.0001	0.9986
89	<i>Lycodes cortezi</i>	0.0090	0.0001	0.9987
90	<i>Chilara taylori</i>	0.0090	Trace	0.9987
91	<i>Luidia</i> sp.	0.0090	Trace	0.9988
92	<i>Pleuronichthys verticalis</i>	0.0080	Trace	0.9988
93	<i>Virgularia</i> sp.	0.0080	Trace	0.9989
94	<i>Sebastes ovalis</i>	0.0070	Trace	0.9989
95	<i>Cancer productus</i>	0.0060	Trace	0.9989
96	<i>Thaleichthys pacificus</i>	0.0060	Trace	0.9990
97	<i>Raja inornata</i>	0.0060	Trace	0.9990
98	<i>Hippasteria</i> sp.	0.0060	Trace	0.9990
99	<i>Parastichopus leucothele</i>	0.0060	Trace	0.9990
100	<i>Spirinchus starksi</i>	0.0060	Trace	0.9991
101	<i>Hexagrammos decagrammus</i>	0.0060	Trace	0.9991
102	<i>Stylasterias forreri</i>	0.0060	Trace	0.9991
103	<i>Lycodes brevipes</i>	0.0050	Trace	0.9992
104	<i>Sebastes wilsoni</i>	0.0050	Trace	0.9992
105	<i>Pisaster brevispinus</i>	0.0050	Trace	0.9992
106	<i>Bathyraja parmitifera</i>	0.0050	Trace	0.9992
107	<i>Sebastes melanops</i>	0.0050	Trace	0.9993
108	<i>Brisaster</i> sp.	0.0050	Trace	0.9993
109	<i>Lycodes diapterus</i>	0.0050	Trace	0.9993
110	<i>Zaniolepis latipinnis</i>	0.0050	Trace	0.9993
111	<i>Hippasteria californica</i>	0.0040	Trace	0.9994
112	<i>Mustelus californicus</i>	0.0040	Trace	0.9994
113	<i>Lopholithodes</i> sp.	0.0040	Trace	0.9994
114	<i>Stylatula</i> sp.	0.0040	Trace	0.9994
115	<i>Pandalus platyceros</i>	0.0040	Trace	0.9995
116	<i>Oncorhynchus kisutch</i>	0.0040	Trace	0.9995
117	<i>Sebastes levis</i>	0.0040	Trace	0.9995
118	<i>Isopsetta isolepis</i>	0.0040	Trace	0.9995
119	starfish unident.	0.0030	Trace	0.9995
120	<i>Metridium senile</i>	0.0030	Trace	0.9996
121	<i>Apristurus brunneus</i>	0.0030	Trace	0.9996

Table B-29.--Continued.

122	<i>Anarrhichthys ocellatus</i>	0.0030	Trace	0.9996
123	<i>Cryptacanthodes giganteus</i>	0.0030	Trace	0.9996
124	nudibranch unident.	0.0030	Trace	0.9996
125	<i>Pseudostichopus mollis</i>	0.0030	Trace	0.9996
126	<i>Myoxoderma platyacanthum</i>	0.0030	Trace	0.9996
127	<i>Sebastes miniatus</i>	0.0020	Trace	0.9997
128	<i>Paralithodes californiensis</i>	0.0020	Trace	0.9997
129	<i>Alepisaurus ferox</i>	0.0020	Trace	0.9997
130	Pennatulacea (order)	0.0020	Trace	0.9997
131	<i>Aphrocallistes vastus</i>	0.0020	Trace	0.9997
132	<i>Berryteuthis magister</i>	0.0020	Trace	0.9997
133	<i>Theragra chalcogramma</i>	0.0020	Trace	0.9997
134	squid eggs unident.	0.0020	Trace	0.9997
135	<i>Solaster dawsoni</i>	0.0020	Trace	0.9997
136	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9998
137	Aphroditidae	0.0020	Trace	0.9998
138	<i>Strongylocentrotus droebachiensis</i>	0.0020	Trace	0.9998
139	<i>Crossaster papposus</i>	0.0020	Trace	0.9998
140	<i>Hippasteria spinosa</i>	0.0020	Trace	0.9998
141	Gorgonacea (order)	0.0020	Trace	0.9998
142	<i>Allosmerus elongatus</i>	0.0020	Trace	0.9998
143	octopus unident.	0.0020	Trace	0.9998
144	sea urchin unident.	0.0010	Trace	0.9998
145	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9998
146	<i>Hypomesus pretiosus</i>	0.0010	Trace	0.9998
147	<i>Mediaster aequalis</i>	0.0010	Trace	0.9999
148	squid unident.	0.0010	Trace	0.9999
149	Porifera (phylum)	0.0010	Trace	0.9999
150	brachiopod unident.	0.0010	Trace	0.9999
151	<i>Sebastes caurinus</i>	0.0010	Trace	0.9999
152	<i>Tritonia</i> sp.	0.0010	Trace	0.9999
153	<i>Mursia gaudichaudii</i>	0.0010	Trace	0.9999
154	<i>Sebastes maliger</i>	0.0010	Trace	0.9999
155	<i>Pleuronichthys coenosus</i>	0.0010	Trace	0.9999
156	<i>Lethasterias nanimensis</i>	0.0010	Trace	0.9999
157	<i>Pandalus borealis</i>	0.0010	Trace	0.9999
158	<i>Crasseodoma giganteum</i>	0.0010	Trace	0.9999
159	<i>Opisthoteuthis californiana</i>	0.0010	Trace	0.9999
160	<i>Ophiura sarsi</i>	0.0010	Trace	0.9999
161	<i>Synodus lucioceps</i>	0.0010	Trace	0.9999
162	<i>Mediaster</i> sp.	0.0010	Trace	0.9999

Table B-29.--Continued.

163	Stromateidae	0.0010	Trace	0.9999
164	Fusitriton oregonensis	0.0010	Trace	0.9999
165	Molpadia sp.	0.0010	Trace	0.9999
166	Patinopecten caurinus	0.0010	Trace	0.9999
167	Paguridae	0.0010	Trace	0.9999
168	Sebastes rosenblatti	0.0010	Trace	0.9999
169	Stomphia sp.	Trace	Trace	0.9999
170	Solaster sp.	Trace	Trace	0.9999
171	Pisaster sp.	Trace	Trace	0.9999
172	Tritonia diomedea	Trace	Trace	0.9999
173	Polinices sp.	Trace	Trace	1.0000
174	Molpadia intermedia	Trace	Trace	1.0000
175	Ophidiidae	Trace	Trace	1.0000
176	Pagurus capillatus	Trace	Trace	1.0000
177	Rossia pacifica	Trace	Trace	1.0000
178	Xystreureys liolepis	Trace	Trace	1.0000
179	Cephaloscyllium ventriosum	Trace	Trace	1.0000
180	Solaster paxillatus	Trace	Trace	1.0000
181	Penaeidae	Trace	Trace	1.0000
182	Sebastes aurora	Trace	Trace	1.0000
183	Orthasterias koehleri	Trace	Trace	1.0000
184	Ptilosarcus gurneyi	Trace	Trace	1.0000
185	Raja stellulata	Trace	Trace	1.0000
186	Leptocottus armatus	Trace	Trace	1.0000
187	Careproctus melanurus	Trace	Trace	1.0000
188	Eptatretus deani	Trace	Trace	1.0000
189	Pteraster tessellatus	Trace	Trace	1.0000
190	Hexactinellida	Trace	Trace	1.0000
191	Acantholithodes hispidus	Trace	Trace	1.0000
192	Prionotus stephanophrys	Trace	Trace	1.0000
193	Crossaster sp.	Trace	Trace	1.0000
194	Virgularidae	Trace	Trace	1.0000
195	Pseudarchaster sp.	Trace	Trace	1.0000
196	Asterina miniata	Trace	Trace	1.0000
197	Taningia danae	Trace	Trace	1.0000
198	Ascidian unident.	Trace	Trace	1.0000
199	Radulinus asprellus	Trace	Trace	1.0000
200	Ceramaster patagonicus	Trace	Trace	1.0000
201	Zaniolepis frenata	Trace	Trace	1.0000
202	Solaster endeca	Trace	Trace	1.0000
203	Oregonia gracilis	Trace	Trace	1.0000

Table B-29.--Continued.

204	Ophiuroid unident.	Trace	Trace	1.0000
205	Onychoteuthidae	Trace	Trace	1.0000
206	Liponemis brevicornis	Trace	Trace	1.0000
207	Gastropod unident.	Trace	Trace	1.0000
208	Ceramaster sp.	Trace	Trace	1.0000
209	Pugettia sp.	Trace	Trace	1.0000
210	Sebastes auriculatus	Trace	Trace	1.0000
211	Ceramaster japonicus	Trace	Trace	1.0000
212	Leptychaster pacificus	Trace	Trace	1.0000
213	Ommastrephes bartrami	Trace	Trace	1.0000
214	Pseudarchaster parelii	Trace	Trace	1.0000
215	Hippoglossina stomata	Trace	Trace	1.0000
216	Lampetra tridentata	Trace	Trace	1.0000
217	Pannychia moseleyi	Trace	Trace	1.0000
218	Polychaeta (class)	Trace	Trace	1.0000
219	Cucumaria sp.	Trace	Trace	1.0000
220	Trichiuridae	Trace	Trace	1.0000
221	Cymatogaster aggregata	Trace	Trace	1.0000
222	Majidae unident.	Trace	Trace	1.0000
223	crinoid unident.	Trace	Trace	1.0000
224	Strongylocentrotus franciscanus	Trace	Trace	1.0000
225	Ctenophora (phylum)	Trace	Trace	1.0000
226	Enophrys taurina	Trace	Trace	1.0000
227	Icelinus borealis	Trace	Trace	1.0000
228	Xeneretmus latifrons	Trace	Trace	1.0000
229	Myctophidae	Trace	Trace	1.0000
230	Parmaturus xaniurus	Trace	Trace	1.0000
231	Eptatretus stouti	Trace	Trace	1.0000
232	Stichaeidae	Trace	Trace	1.0000
233	Poraniopsis inflata	Trace	Trace	1.0000
234	snail (gastropod) eggs	Trace	Trace	1.0000
235	Bathymaster signatus	Trace	Trace	1.0000
236	Crangon sp.	Trace	Trace	1.0000
237	Henricia leviuscula	Trace	Trace	1.0000
238	Pteraster sp.	Trace	Trace	1.0000
239	shrimp unident.	Trace	Trace	1.0000
240	Chitonotus pugetensis	Trace	Trace	1.0000
241	Pandalus danae	Trace	Trace	1.0000
242	Asteronyx loveni	Trace	Trace	1.0000
243	Icelinus tenuis	Trace	Trace	1.0000
244	Bathyraja sp.	Trace	Trace	1.0000

Table B-29.--Continued.

245	<i>BathYGONUS pentacanthus</i>	Trace	Trace	1.0000
246	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
247	<i>Pagurus brandti</i>	Trace	Trace	1.0000
248	<i>Vampyroteuthis infernalis</i>	Trace	Trace	1.0000
249	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
250	<i>BathYGONUS nigripinnis</i>	Trace	Trace	1.0000
251	<i>BathYGONUS infraspinus</i>	Trace	Trace	1.0000
252	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
253	<i>Hyas lyratus</i>	Trace	Trace	1.0000
254	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
255	<i>Callianassa</i> sp.	Trace	Trace	1.0000
256	<i>Citharichthys stigmaeus</i>	Trace	Trace	1.0000
257	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
258	<i>Poroclinus rothroeki</i>	Trace	Trace	1.0000
259	<i>Sebastes</i> sp.	Trace	Trace	1.0000
260	Isopoda (order)	Trace	Trace	1.0000
261	<i>Neptunea</i> sp.	Trace	Trace	1.0000
262	<i>Cololabis saira</i>	Trace	Trace	1.0000
263	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000
264	crab unident.	Trace	Trace	1.0000
265	Cottidae	Trace	Trace	1.0000
266	<i>Plectobranchnus evides</i>	Trace	Trace	1.0000
267	<i>Argis</i> sp.	Trace	Trace	1.0000
268	<i>Callianassa californiensis</i>	Trace	Trace	1.0000
269	<i>Crangon communis</i>	Trace	Trace	1.0000
270	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000

Table B-30.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the survey area, middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	69.5060	0.3847	0.3847
2	<i>Sebastes diploproa</i>	17.7940	0.0985	0.4832
3	<i>Microstomus pacificus</i>	14.8890	0.0824	0.5656
4	<i>Anoplopoma fimbria</i>	11.2760	0.0624	0.6280
5	<i>Glyptocephalus zachirus</i>	9.2130	0.0510	0.6790
6	<i>Sebastes saxicola</i>	7.0470	0.0390	0.7180
7	<i>Sebastes goodei</i>	6.9250	0.0383	0.7563
8	<i>Squalus acanthias</i>	6.5790	0.0364	0.7927
9	<i>Sebastes alutus</i>	4.7370	0.0262	0.8189
10	<i>Sebastes jordani</i>	3.7830	0.0209	0.8399
11	<i>Sebastes zacentrus</i>	2.9750	0.0165	0.8563
12	<i>Atheresthes stomias</i>	2.9300	0.0162	0.8726
13	<i>Sebastes alascanus</i>	2.3100	0.0128	0.8853
14	<i>Sebastes entomelas</i>	2.2850	0.0126	0.8980
15	<i>Sebastes flavidus</i>	1.8260	0.0101	0.9081
16	<i>Hippoglossus stenolepis</i>	1.6720	0.0093	0.9174
17	<i>Hydrolagus colliei</i>	1.5930	0.0088	0.9262
18	<i>Ophiodon elongatus</i>	1.5900	0.0088	0.9350
19	<i>Sebastes crameri</i>	1.5420	0.0085	0.9435
20	<i>Raja rhina</i>	1.2290	0.0068	0.9503
21	<i>Parophrys vetulus</i>	1.1490	0.0064	0.9567
22	<i>Alloctrotus fragilis</i>	0.7560	0.0042	0.9608
23	<i>Lyopsetta exilis</i>	0.7060	0.0039	0.9648
24	<i>Lycodes cortezius</i>	0.6170	0.0034	0.9682
25	<i>Moroteuthis robusta</i>	0.5430	0.0030	0.9712
26	<i>Sebastes elongatus</i>	0.5160	0.0029	0.9740
27	<i>Bathyraja interrupta</i>	0.4370	0.0024	0.9765
28	<i>Brisaster latifrons</i>	0.3000	0.0017	0.9781
29	heart urchin unident.	0.2630	0.0015	0.9796
30	<i>Apristurus brunneus</i>	0.1860	0.0010	0.9806
31	<i>Luidia foliata</i>	0.1840	0.0010	0.9816
32	<i>Eopsetta jordani</i>	0.1780	0.0010	0.9826
33	<i>Gadus macrocephalus</i>	0.1560	0.0009	0.9835
34	<i>Lycodes diapterus</i>	0.1530	0.0008	0.9843
35	<i>Alosa sapidissima</i>	0.1510	0.0008	0.9852
36	<i>Aphrocallistes vastus</i>	0.1350	0.0007	0.9859
37	<i>Sebastes babcocki</i>	0.1320	0.0007	0.9866
38	<i>Sebastes pinniger</i>	0.1320	0.0007	0.9874
39	<i>Sebastes helvomaculatus</i>	0.1210	0.0007	0.9880
40	squid unident.	0.1190	0.0007	0.9887
41	<i>Trachurus symmetricus</i>	0.1080	0.0006	0.9893

Table B-30.--Continued.

42	<i>Rathbunaster californicus</i>	0.1060	0.0006	0.9899
43	<i>Parastichopus leucothele</i>	0.1020	0.0006	0.9904
44	<i>Holothuroidea unident.</i>	0.0840	0.0005	0.9909
45	<i>Cancer magister</i>	0.0810	0.0004	0.9913
46	<i>Torpedo californica</i>	0.0760	0.0004	0.9918
47	<i>Sebastes aleutianus</i>	0.0670	0.0004	0.9921
48	<i>Sebastes paucispinis</i>	0.0650	0.0004	0.9925
49	<i>Citharichthys sordidus</i>	0.0640	0.0004	0.9929
50	<i>Sebastes melanostomus</i>	0.0540	0.0003	0.9932
51	<i>Icelinus filamentosus</i>	0.0520	0.0003	0.9934
52	<i>Porichthys notatus</i>	0.0500	0.0003	0.9937
53	<i>Raja binoculata</i>	0.0480	0.0003	0.9940
54	<i>Pandalus platyceros</i>	0.0440	0.0002	0.9942
55	<i>Pandalus jordani</i>	0.0430	0.0002	0.9945
56	<i>Argentina sialis</i>	0.0420	0.0002	0.9947
57	<i>Hippoglossoides elassodon</i>	0.0390	0.0002	0.9949
58	<i>Oncorhynchus tshawytscha</i>	0.0370	0.0002	0.9951
59	<i>Lopholithodes foraminatus</i>	0.0370	0.0002	0.9953
60	<i>Sebastes reedi</i>	0.0360	0.0002	0.9955
61	<i>Brisaster sp.</i>	0.0340	0.0002	0.9957
62	<i>Metridium sp.</i>	0.0310	0.0002	0.9959
63	<i>Scomber japonicus</i>	0.0300	0.0002	0.9961
64	<i>Sebastes borealis</i>	0.0280	0.0002	0.9962
65	<i>Ommastrephes bartrami</i>	0.0280	0.0002	0.9964
66	Scyphozoa (class)	0.0260	0.0001	0.9965
67	<i>Pandalopsis dispar</i>	0.0260	0.0001	0.9966
68	<i>Lycodes pacificus</i>	0.0260	0.0001	0.9968
69	<i>Cryptacanthodes giganteus</i>	0.0240	0.0001	0.9969
70	<i>Pleuronichthys decurrens</i>	0.0230	0.0001	0.9970
71	<i>Sebastes rosenblatti</i>	0.0200	0.0001	0.9972
72	<i>Luidia sp.</i>	0.0200	0.0001	0.9973
73	<i>Sebastes brevispinis</i>	0.0200	0.0001	0.9974
74	<i>Thaliacea unident.</i>	0.0190	0.0001	0.9975
75	<i>Sebastes proriger</i>	0.0170	0.0001	0.9976
76	<i>Myoxoderma platyacanthum</i>	0.0150	0.0001	0.9977
77	<i>Parmaturus xaniurus</i>	0.0150	0.0001	0.9977
78	octopus unident.	0.0150	0.0001	0.9978
79	<i>Pseudostichopus mollis</i>	0.0140	0.0001	0.9979
80	Actiniaria (order)	0.0130	0.0001	0.9980
81	Ommastrephidae	0.0130	0.0001	0.9980
82	<i>Sebastes aurora</i>	0.0120	0.0001	0.9981
83	sea urchin unident.	0.0120	0.0001	0.9982
84	<i>Berryteuthis magister</i>	0.0120	0.0001	0.9982
85	Porifera (phylum)	0.0120	0.0001	0.9983

Table B-30.--Continued.

86	<i>Clupea pallasii</i>	0.0120	0.0001	0.9984
87	Paguridae	0.0110	0.0001	0.9984
88	<i>Careproctus melanurus</i>	0.0110	0.0001	0.9985
89	<i>Liponemis brevicornis</i>	0.0110	0.0001	0.9986
90	<i>Paralichthys californicus</i>	0.0110	0.0001	0.9986
91	<i>Pandalus borealis</i>	0.0110	0.0001	0.9987
92	<i>Theragra chalcogramma</i>	0.0100	0.0001	0.9987
93	<i>Paralithodes californiensis</i>	0.0100	0.0001	0.9988
94	rough purple sea anemone	0.0090	0.0001	0.9988
95	<i>Ophiura sarsi</i>	0.0090	0.0001	0.9989
96	<i>Cancer productus</i>	0.0090	Trace	0.9989
97	<i>Pasiphaea pacifica</i>	0.0090	Trace	0.9990
98	<i>Chilara taylori</i>	0.0080	Trace	0.9990
99	<i>Halichondria panicea</i>	0.0080	Trace	0.9991
100	<i>Sebastes levis</i>	0.0080	Trace	0.9991
101	<i>Lethasterias nanimensis</i>	0.0060	Trace	0.9992
102	<i>Sebastes ruberrimus</i>	0.0060	Trace	0.9992
103	<i>Neptunea</i> sp.	0.0060	Trace	0.9992
104	<i>Stylasterias forreri</i>	0.0060	Trace	0.9993
105	<i>Paractinostola faeculenta</i>	0.0060	Trace	0.9993
106	<i>Lopholithodes</i> sp.	0.0060	Trace	0.9993
107	Onychoteuthidae	0.0050	Trace	0.9993
108	<i>Sebastes chlorostictus</i>	0.0050	Trace	0.9994
109	Aphroditidae	0.0050	Trace	0.9994
110	<i>Hippasteria spinosa</i>	0.0050	Trace	0.9994
111	Myctophidae	0.0040	Trace	0.9994
112	<i>Oncorhynchus kisutch</i>	0.0040	Trace	0.9995
113	<i>Thrissacanthias penicillatus</i>	0.0040	Trace	0.9995
114	<i>Diplopteraster multipes</i>	0.0040	Trace	0.9995
115	<i>Ctenodiscus crispatus</i>	0.0040	Trace	0.9995
116	<i>Neptunea lyrata</i>	0.0040	Trace	0.9996
117	<i>Thaleichthys pacificus</i>	0.0030	Trace	0.9996
118	<i>Pycnopodia helianthoides</i>	0.0030	Trace	0.9996
119	<i>Taningia danae</i>	0.0030	Trace	0.9996
120	<i>Sebastes rufus</i>	0.0030	Trace	0.9996
121	starfish unident.	0.0030	Trace	0.9996
122	<i>Lampetra tridentata</i>	0.0020	Trace	0.9997
123	<i>Pandalus hypsinotus</i>	0.0020	Trace	0.9997
124	<i>Gonatus</i> sp.	0.0020	Trace	0.9997
125	<i>Mustelus henlei</i>	0.0020	Trace	0.9997
126	<i>Zaniolepis frenata</i>	0.0020	Trace	0.9997
127	<i>Cucumaria</i> sp.	0.0020	Trace	0.9997
128	<i>Hippasteria californica</i>	0.0020	Trace	0.9997
129	skate egg case unident.	0.0020	Trace	0.9997

Table B-30.--Continued.

130	<i>Pagurus confragosus</i>	0.0020	Trace	0.9997
131	<i>Fusitriton oregonensis</i>	0.0020	Trace	0.9998
132	<i>Pisaster brevispinus</i>	0.0020	Trace	0.9998
133	nudibranch unident.	0.0020	Trace	0.9998
134	<i>Eptatretus deani</i>	0.0020	Trace	0.9998
135	<i>Solaster</i> sp.	0.0020	Trace	0.9998
136	<i>Crossaster papposus</i>	0.0020	Trace	0.9998
137	Pennatulacea (order)	0.0020	Trace	0.9998
138	<i>Molpadia</i> sp.	0.0020	Trace	0.9998
139	<i>Buccinum viridum</i>	0.0010	Trace	0.9998
140	<i>Mediaster aequalis</i>	0.0010	Trace	0.9998
141	Basketstarfish unident.	0.0010	Trace	0.9998
142	<i>Histioteuthis dofleini</i>	0.0010	Trace	0.9998
143	<i>Leucandra heathi</i>	0.0010	Trace	0.9999
144	<i>Ceramaster patagonicus</i>	0.0010	Trace	0.9999
145	Naticidae	0.0010	Trace	0.9999
146	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
147	<i>Sardinops sagax</i>	0.0010	Trace	0.9999
148	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9999
149	<i>Solaster dawsoni</i>	0.0010	Trace	0.9999
150	<i>Sebastes</i> sp.	0.0010	Trace	0.9999
151	<i>Styela rustica</i>	0.0010	Trace	0.9999
152	<i>Strongylocentrotus droebachiensis</i>	0.0010	Trace	0.9999
153	<i>Mycale loveni</i>	0.0010	Trace	0.9999
154	<i>Gorgonocephalus eucnemis</i>	0.0010	Trace	0.9999
155	<i>Onychoteuthis borealijaponicus</i>	0.0010	Trace	0.9999
156	<i>Lycodes brevipes</i>	0.0010	Trace	0.9999
157	Trichiuridae	0.0010	Trace	0.9999
158	<i>Pagurus brandti</i>	0.0010	Trace	0.9999
159	<i>Luidiaster dawsoni</i>	0.0010	Trace	0.9999
160	<i>Solaster paxillatus</i>	0.0010	Trace	0.9999
161	<i>Apristurus kampa</i>	0.0010	Trace	0.9999
162	<i>Sebastolobus altivelis</i>	Trace	Trace	0.9999
163	<i>Vampyroteuthis infernalis</i>	Trace	Trace	0.9999
164	Cottidae	Trace	Trace	0.9999
165	<i>Opisthoteuthis californiana</i>	Trace	Trace	0.9999
166	<i>Polinices</i> sp.	Trace	Trace	0.9999
167	<i>Ceramaster japonicus</i>	Trace	Trace	0.9999
168	<i>Neptunea pribiloffensis</i>	Trace	Trace	0.9999
169	<i>Symbolophorus californiensis</i>	Trace	Trace	0.9999
170	<i>Bathyagonus pentacanthus</i>	Trace	Trace	0.9999
171	<i>Sebastes semicinctus</i>	Trace	Trace	1.0000
172	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
173	<i>Stomphia</i> sp.	Trace	Trace	1.0000

Table B-30.--Continued.

174	<i>Zalambius rosaceus</i>	Trace	Trace	1.0000
175	<i>Lampanyctus</i> sp.	Trace	Trace	1.0000
176	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
177	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
178	<i>Parastichopus californicus</i>	Trace	Trace	1.0000
179	<i>Crossaster</i> sp.	Trace	Trace	1.0000
180	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
181	<i>Mediaster</i> sp.	Trace	Trace	1.0000
182	Ophiuroid unident.	Trace	Trace	1.0000
183	<i>Rossia pacifica</i>	Trace	Trace	1.0000
184	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
185	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
186	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
187	Hexactinellida	Trace	Trace	1.0000
188	<i>Buccinum</i> sp.	Trace	Trace	1.0000
189	<i>Neptunea amianta</i>	Trace	Trace	1.0000
190	Liparidinae	Trace	Trace	1.0000
191	<i>Loligo opalescens</i>	Trace	Trace	1.0000
192	<i>Alloccentrotus</i> sp.	Trace	Trace	1.0000
193	<i>Ophiopholis longispina</i>	Trace	Trace	1.0000
194	<i>Beringius frielei</i>	Trace	Trace	1.0000
195	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
196	<i>Stylatula</i> sp.	Trace	Trace	1.0000
197	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
198	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000
199	<i>Diaphus theta</i>	Trace	Trace	1.0000
200	Euphausiacea (order)	Trace	Trace	1.0000
201	<i>Hyas lyratus</i>	Trace	Trace	1.0000
202	Polychaeta (class)	Trace	Trace	1.0000
203	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
204	<i>Raja inornata</i>	Trace	Trace	1.0000
205	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
206	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
207	Platyroctidae	Trace	Trace	1.0000
208	<i>Caryophyllia</i> sp.	Trace	Trace	1.0000
209	<i>Sipuncula</i> (phylum)	Trace	Trace	1.0000
210	<i>Bathyagonus</i> sp.	Trace	Trace	1.0000
211	<i>Psolus</i> sp.	Trace	Trace	1.0000
212	<i>Crangon</i> sp.	Trace	Trace	1.0000
213	<i>Bathyagonus infraspinus</i>	Trace	Trace	1.0000
214	<i>Tritonia</i> sp.	Trace	Trace	1.0000
215	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
216	<i>Natica</i> sp.	Trace	Trace	1.0000
217	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000

Table B-30.--Continued.

218	crab unident.	Trace	Trace	1.0000
219	<i>Chorilia longipes</i>	Trace	Trace	1.0000
220	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
221	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
222	<i>Chionoecetes tanneri</i>	Trace	Trace	1.0000
223	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
224	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
225	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
226	Virgularidae	Trace	Trace	1.0000
227	snail (gastropod) eggs	Trace	Trace	1.0000
228	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
229	<i>Henricia</i> sp.	Trace	Trace	1.0000
230	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
231	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
232	<i>Buccinum</i> sp.	Trace	Trace	1.0000
233	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
234	<i>Aforia</i> sp.	Trace	Trace	1.0000
235	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
236	<i>Diaphus</i> sp.	Trace	Trace	1.0000
237	crinoid unident.	Trace	Trace	1.0000
238	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
239	<i>Leuroglossus schmidti</i>	Trace	Trace	1.0000
241	Sternoptychidae unident.	Trace	Trace	1.0000
240	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000
242	<i>Psolus squamatus</i>	Trace	Trace	1.0000
243	hydroid unident.	Trace	Trace	1.0000

Table B-31.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the U.S. portion of the survey area, deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Microstomus pacificus</i>	28.1720	0.2672	0.2672
2	<i>Merluccius productus</i>	22.7170	0.2154	0.4826
3	<i>Anoplopoma fimbria</i>	12.9520	0.1228	0.6054
4	<i>Glyptocephalus zachirus</i>	10.2940	0.0976	0.7030
5	<i>Sebastes diploproa</i>	7.0010	0.0664	0.7694
6	<i>Sebastolobus alascanus</i>	4.2250	0.0401	0.8095
7	<i>Sebastes aurora</i>	2.9020	0.0275	0.8370
8	<i>Squalus acanthias</i>	1.7010	0.0161	0.8531
9	<i>Lycodes cortezianus</i>	1.4410	0.0137	0.8668
10	<i>Apristurus brunneus</i>	1.4120	0.0134	0.8802
11	<i>Brisaster latifrons</i>	1.1410	0.0108	0.8910
12	<i>Lycodes diapterus</i>	1.1030	0.0105	0.9015
13	<i>Raja rhina</i>	1.0970	0.0104	0.9119
14	<i>Sebastolobus altivelis</i>	0.9760	0.0093	0.9211
15	<i>Hydrolagus collicii</i>	0.9010	0.0085	0.9297
16	<i>Sebastes melanostomus</i>	0.8100	0.0077	0.9373
17	<i>Allocentrotus fragilis</i>	0.6600	0.0063	0.9436
18	<i>Atheresthes stomias</i>	0.6240	0.0059	0.9495
19	<i>Moroteuthis robusta</i>	0.5180	0.0049	0.9544
20	squid unident.	0.4440	0.0042	0.9586
21	<i>Sebastes alutus</i>	0.2740	0.0026	0.9612
22	<i>Bathyraja interrupta</i>	0.2370	0.0023	0.9635
23	<i>Rathbunaster californicus</i>	0.2290	0.0022	0.9657
24	<i>Parmaturus xaniurus</i>	0.2230	0.0021	0.9678
25	<i>Sebastes aleutianus</i>	0.2180	0.0021	0.9699
26	rough purple sea anemone	0.1920	0.0018	0.9717
27	heart urchin unident.	0.1860	0.0018	0.9734
28	<i>Brisaster</i> sp.	0.1610	0.0015	0.9750
29	<i>Aphrocallistes vastus</i>	0.1560	0.0015	0.9764
30	<i>Luidia foliata</i>	0.1390	0.0013	0.9778
31	Ommastrephidae	0.1360	0.0013	0.9791
32	Holothuroidea unident.	0.1280	0.0012	0.9803
33	<i>Liponemis brevicornis</i>	0.1240	0.0012	0.9814
34	<i>Chionoecetes tanneri</i>	0.1120	0.0011	0.9825
35	<i>Parophrys vetulus</i>	0.1090	0.0010	0.9835
36	<i>Lyopsetta exilis</i>	0.1040	0.0010	0.9845
37	<i>Myoxoderma platyacanthum</i>	0.0990	0.0009	0.9855
38	<i>Eopsetta jordani</i>	0.0920	0.0009	0.9863
39	<i>Paractinostola faeculenta</i>	0.0890	0.0008	0.9872
40	<i>Neptunea</i> sp.	0.0760	0.0007	0.9879
41	Porifera (phylum)	0.0640	0.0006	0.9885

Table B-31.--Continued.

42	<i>Sebastes borealis</i>	0.0630	0.0006	0.9891
43	<i>Torpedo californica</i>	0.0600	0.0006	0.9897
44	octopus unident.	0.0560	0.0005	0.9902
45	<i>Trachurus symmetricus</i>	0.0490	0.0005	0.9907
46	Actiniaria (order)	0.0490	0.0005	0.9911
47	Scyliorhinidae	0.0460	0.0004	0.9916
48	<i>Metridium</i> sp.	0.0440	0.0004	0.9920
49	<i>Sebastes crameri</i>	0.0420	0.0004	0.9924
50	<i>Neptunea lyrata</i>	0.0400	0.0004	0.9928
51	Thaliacea unident.	0.0390	0.0004	0.9931
52	<i>Neptunea amianta</i>	0.0360	0.0003	0.9935
53	<i>Albatrossia pectoralis</i>	0.0330	0.0003	0.9938
54	<i>Careproctus melanurus</i>	0.0300	0.0003	0.9941
55	<i>Berryteuthis magister</i>	0.0290	0.0003	0.9943
56	<i>Clupea pallasii</i>	0.0270	0.0003	0.9946
57	<i>Sebastes babcocki</i>	0.0270	0.0003	0.9949
58	<i>Antimora microlepis</i>	0.0250	0.0002	0.9951
59	<i>Opisthoteuthis californiana</i>	0.0240	0.0002	0.9953
60	<i>Ommastrephes bartrami</i>	0.0240	0.0002	0.9956
61	<i>Myoxoderma sacculatum</i>	0.0240	0.0002	0.9958
62	<i>Bothrocara brunneum</i>	0.0230	0.0002	0.9960
63	Myctophidae	0.0220	0.0002	0.9962
64	Onychoteuthidae	0.0210	0.0002	0.9964
65	<i>Thrissacanthias penicillatus</i>	0.0200	0.0002	0.9966
66	<i>Prionace glauca</i>	0.0190	0.0002	0.9968
67	<i>Vampyroteuthis infernalis</i>	0.0190	0.0002	0.9970
68	<i>Parastichopus leucothele</i>	0.0180	0.0002	0.9972
69	<i>Taningia danae</i>	0.0180	0.0002	0.9973
70	<i>Pseudostichopus mollis</i>	0.0160	0.0002	0.9975
71	<i>Ophiura sarsi</i>	0.0160	0.0002	0.9976
72	<i>Pagurus confragosus</i>	0.0150	0.0001	0.9978
73	<i>Pasiphaea pacifica</i>	0.0150	0.0001	0.9979
74	<i>Raja binoculata</i>	0.0150	0.0001	0.9980
75	<i>Histioteuthis dofleini</i>	0.0110	0.0001	0.9981
76	Pennatulacea (order)	0.0090	0.0001	0.9982
77	<i>Molpadia intermedia</i>	0.0090	0.0001	0.9983
78	Paguridae	0.0070	0.0001	0.9984
79	<i>Molpadia</i> sp.	0.0060	0.0001	0.9985
80	<i>Halichondria panicea</i>	0.0060	0.0001	0.9985
81	Scyphozoa (class)	0.0060	0.0001	0.9986
82	<i>Lampanyctus</i> sp.	0.0050	0.0001	0.9986
83	<i>Buccinum viridum</i>	0.0050	Trace	0.9987
84	<i>Diplopteraster multipes</i>	0.0050	Trace	0.9987
85	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9987

Table B-31.--Continued.

86	<i>Hippasteria californica</i>	0.0040	Trace	0.9988
87	<i>Sebastes rufus</i>	0.0040	Trace	0.9988
88	<i>Eptatretus deani</i>	0.0040	Trace	0.9989
89	<i>Tactostoma macropus</i>	0.0040	Trace	0.9989
90	<i>Mediaster aequalis</i>	0.0040	Trace	0.9989
91	<i>Hippasteria spinosa</i>	0.0040	Trace	0.9990
92	<i>Cancer magister</i>	0.0040	Trace	0.9990
93	<i>Sebastes pinniger</i>	0.0030	Trace	0.9990
94	<i>Alosa sapidissima</i>	0.0030	Trace	0.9991
95	<i>Lycodes pacificus</i>	0.0030	Trace	0.9991
96	<i>Embassichthys bathybius</i>	0.0030	Trace	0.9991
97	<i>Sebastes paucispinis</i>	0.0030	Trace	0.9992
98	Aphroditidae	0.0030	Trace	0.9992
99	<i>Lampetra tridentata</i>	0.0030	Trace	0.9992
100	Ascidian unident.	0.0030	Trace	0.9992
101	<i>Somniosus pacificus</i>	0.0030	Trace	0.9993
102	<i>Sebastes goodei</i>	0.0030	Trace	0.9993
103	Hexactinellida	0.0030	Trace	0.9993
104	<i>Neptunea pribiloffensis</i>	0.0030	Trace	0.9993
105	<i>Psolus</i> sp.	0.0020	Trace	0.9994
106	<i>Alepocephalus tenebrosus</i>	0.0020	Trace	0.9994
107	sea urchin unident.	0.0020	Trace	0.9994
108	<i>Chauliodus macouni</i>	0.0020	Trace	0.9994
109	<i>Paralithodes californiensis</i>	0.0020	Trace	0.9995
110	<i>Cucumaria</i> sp.	0.0020	Trace	0.9995
111	<i>Gorgonocephalus eucnemis</i>	0.0020	Trace	0.9995
112	<i>Scomber japonicus</i>	0.0020	Trace	0.9995
113	<i>Apristurus kampae</i>	0.0020	Trace	0.9995
114	<i>Actinauge verrillii</i>	0.0020	Trace	0.9996
115	<i>Coryphaenoides acrolepis</i>	0.0020	Trace	0.9996
116	<i>Eptatretus stouti</i>	0.0020	Trace	0.9996
117	Euphausiacea (order)	0.0020	Trace	0.9996
118	<i>Bathyraja aleutica</i>	0.0020	Trace	0.9996
119	<i>Parastichopus</i> sp.	0.0020	Trace	0.9996
120	<i>Stylasterias forreri</i>	0.0020	Trace	0.9996
121	<i>Pycnopodia helianthoides</i>	0.0020	Trace	0.9997
122	<i>Fusitriton oregonensis</i>	0.0010	Trace	0.9997
123	<i>Sebastes helvomaculatus</i>	0.0010	Trace	0.9997
124	<i>Anthomastus</i> sp.	0.0010	Trace	0.9997
125	skate egg case unident.	0.0010	Trace	0.9997
126	<i>Pannychia moseleyi</i>	0.0010	Trace	0.9997
127	<i>Raja inornata</i>	0.0010	Trace	0.9997
128	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9997
129	<i>Ctenodiscus crispatus</i>	0.0010	Trace	0.9998

Table B-31.--Continued.

130	<i>Rossia pacifica</i>	0.0010	Trace	0.9998
131	Basketstarfish unident.	0.0010	Trace	0.9998
132	Rajidae unident.	0.0010	Trace	0.9998
133	<i>Virgularia</i> sp.	0.0010	Trace	0.9998
134	<i>Aristostomias scintillans</i>	0.0010	Trace	0.9998
135	<i>Tritonia</i> sp.	0.0010	Trace	0.9998
136	<i>Careproctus</i> sp.	0.0010	Trace	0.9998
137	<i>Nezumia stelgidolepis</i>	0.0010	Trace	0.9998
138	<i>Icelinus filamentosus</i>	0.0010	Trace	0.9998
139	<i>Octopus dofleini</i>	0.0010	Trace	0.9998
140	<i>Bathylagus</i> sp.	0.0010	Trace	0.9998
141	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9999
142	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
143	<i>Apristurus brunneus</i>	0.0010	Trace	0.9999
144	<i>Clinocardium</i> sp.	0.0010	Trace	0.9999
145	<i>Sipuncula</i> (phylum)	0.0010	Trace	0.9999
146	<i>Pentamera lissoplaca</i>	0.0010	Trace	0.9999
147	<i>Bathyagonus nigripinnis</i>	0.0010	Trace	0.9999
148	<i>Sebastes chlorostictus</i>	Trace	Trace	0.9999
149	Ophiuroid unident.	Trace	Trace	0.9999
150	<i>Psolus squamatus</i>	Trace	Trace	0.9999
151	<i>Pisaster</i> sp.	Trace	Trace	0.9999
152	<i>Luidiaster dawsoni</i>	Trace	Trace	0.9999
153	<i>Mycale loveni</i>	Trace	Trace	0.9999
154	<i>Sagamichthys abei</i>	Trace	Trace	0.9999
155	<i>Tritonia diomedea</i>	Trace	Trace	0.9999
156	<i>Malacocephalus laevis</i>	Trace	Trace	0.9999
157	<i>Mediaster</i> sp.	Trace	Trace	0.9999
158	<i>Lampanyctus ritteri</i>	Trace	Trace	0.9999
159	nudibranch unident.	Trace	Trace	0.9999
160	<i>Aforia</i> sp.	Trace	Trace	0.9999
161	starfish unident.	Trace	Trace	0.9999
162	<i>Liparis</i> sp.	Trace	Trace	0.9999
163	<i>Solaster endeca</i>	Trace	Trace	0.9999
164	Petromyzontidae	Trace	Trace	0.9999
165	<i>Chorilia longipes</i>	Trace	Trace	1.0000
166	<i>Pteraster</i> sp.	Trace	Trace	1.0000
167	<i>Hippasteria</i> sp.	Trace	Trace	1.0000
168	snail (gastropod) eggs	Trace	Trace	1.0000
169	Sternoptychidae unident.	Trace	Trace	1.0000
170	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
171	<i>Solaster</i> sp.	Trace	Trace	1.0000
172	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
173	<i>Chilara taylori</i>	Trace	Trace	1.0000

Table B-31.--Continued.

174	<i>Pagurus brandti</i>	Trace	Trace	1.0000
175	<i>Calliostoma</i> sp.	Trace	Trace	1.0000
176	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
177	<i>Echiura</i> (phylum)	Trace	Trace	1.0000
178	<i>Loligo opalescens</i>	Trace	Trace	1.0000
179	<i>Crossaster</i> sp.	Trace	Trace	1.0000
180	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
181	<i>Zaniolepis frenata</i>	Trace	Trace	1.0000
182	<i>Lampanyctus regalis</i>	Trace	Trace	1.0000
183	<i>Styela rustica</i>	Trace	Trace	1.0000
184	<i>Ptilosarcus gurneyi</i>	Trace	Trace	1.0000
185	<i>Aplacophora</i>	Trace	Trace	1.0000
186	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
187	hydroid unident.	Trace	Trace	1.0000
188	Liparidinae	Trace	Trace	1.0000
189	<i>Laqueus californianus</i>	Trace	Trace	1.0000
190	<i>Polinices</i> sp.	Trace	Trace	1.0000
191	shrimp unident.	Trace	Trace	1.0000
192	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
193	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
194	<i>Neptunea</i> sp.	Trace	Trace	1.0000
195	<i>Buccinum</i> sp.	Trace	Trace	1.0000
196	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
197	Virgularidae	Trace	Trace	1.0000
198	<i>Colus</i> sp.	Trace	Trace	1.0000
199	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
200	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
201	<i>Chiroteuthis calyx</i>	Trace	Trace	1.0000
202	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
203	<i>Stylatula</i> sp.	Trace	Trace	1.0000
204	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
205	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
206	<i>Natica</i> sp.	Trace	Trace	1.0000
207	<i>Leuroglossus stilbius</i>	Trace	Trace	1.0000
208	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
209	brachiopod unident.	Trace	Trace	1.0000
210	<i>Pandalus tridens</i>	Trace	Trace	1.0000
211	Gastropod unident.	Trace	Trace	1.0000
212	<i>Lycodapus mandibularis</i>	Trace	Trace	1.0000
213	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
214	<i>Pandalus jordani</i>	Trace	Trace	1.0000
215	<i>Beringius frielei</i>	Trace	Trace	1.0000
216	<i>Colus herendeenii</i>	Trace	Trace	1.0000
217	<i>Notolepsis risso</i>	Trace	Trace	1.0000

Table B-31.--Continued.

218	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
219	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
220	<i>Howella sherborni</i>	Trace	Trace	1.0000
221	<i>Rhinoliparis attenuatus</i>	Trace	Trace	1.0000
222	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
223	<i>Swiftia</i> sp.	Trace	Trace	1.0000
224	fish unident.	Trace	Trace	1.0000
225	<i>Diaphus</i> sp.	Trace	Trace	1.0000
226	<i>Henricia</i> sp.	Trace	Trace	1.0000
227	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
228	<i>Lycodapus fierasfer</i>	Trace	Trace	1.0000
229	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
230	Pleuronectiformes larvae	Trace	Trace	1.0000
231	<i>Tarletonbeania crenularis</i>	Trace	Trace	1.0000
232	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
233	<i>Gnathophausia gigas</i>	Trace	Trace	1.0000

Table B-32.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire U.S. portion of the survey area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	85.4050	0.4927	0.4927
2	<i>Microstomus pacificus</i>	10.6250	0.0613	0.5540
3	<i>Squalus acanthias</i>	7.0670	0.0408	0.5948
4	<i>Anoplopoma fimbria</i>	7.0200	0.0405	0.6353
5	<i>Glyptocephalus zachirus</i>	5.9760	0.0345	0.6698
6	<i>Sebastes diploproa</i>	5.1840	0.0299	0.6997
7	<i>Citharichthys sordidus</i>	4.8580	0.0280	0.7277
8	<i>Sebastes flavidus</i>	4.6500	0.0268	0.7546
9	<i>Clupea pallasii</i>	3.8490	0.0222	0.7768
10	<i>Sebastes goodei</i>	3.6990	0.0213	0.7981
11	<i>Parophrys vetulus</i>	2.8510	0.0165	0.8146
12	<i>Sebastes jordani</i>	2.6570	0.0153	0.8299
13	<i>Atheresthes stomias</i>	2.6310	0.0152	0.8451
14	<i>Sebastes saxicola</i>	2.0880	0.0120	0.8571
15	<i>Trachurus symmetricus</i>	1.9170	0.0111	0.8682
16	<i>Hippoglossus stenolepis</i>	1.4680	0.0085	0.8766
17	<i>Genyonemus lineatus</i>	1.3680	0.0079	0.8845
18	<i>Sebastolobus alascanus</i>	1.3090	0.0076	0.8921
19	<i>Sebastes alutus</i>	1.0890	0.0063	0.8984
20	<i>Scomber japonicus</i>	1.0630	0.0061	0.9045
21	<i>Raja rhina</i>	0.9650	0.0056	0.9101
22	<i>Sardinops sagax</i>	0.9640	0.0056	0.9156
23	<i>Hydrolagus collicii</i>	0.9120	0.0053	0.9209
24	<i>Sebastes entomelas</i>	0.8450	0.0049	0.9258
25	<i>Ophiodon elongatus</i>	0.7750	0.0045	0.9302
26	<i>Sebastes elongatus</i>	0.7680	0.0044	0.9347
27	<i>Alosa sapidissima</i>	0.7450	0.0043	0.9390
28	<i>Sebastes zacentrus</i>	0.6560	0.0038	0.9428
29	<i>Eopsetta jordani</i>	0.6440	0.0037	0.9465
30	<i>Sebastes aurora</i>	0.5410	0.0031	0.9496
31	<i>Raja binoculata</i>	0.5230	0.0030	0.9526
32	<i>Sebastes crameri</i>	0.5200	0.0030	0.9556
33	<i>Cancer magister</i>	0.4820	0.0028	0.9584
34	<i>Engraulis mordax</i>	0.4440	0.0026	0.9610
35	<i>Oncorhynchus tshawytscha</i>	0.4370	0.0025	0.9635
36	<i>Lycodes corteziianus</i>	0.4070	0.0023	0.9658
37	<i>Brisaster latifrons</i>	0.3570	0.0021	0.9679
38	<i>Lyopsetta exilis</i>	0.3280	0.0019	0.9698
39	<i>Apristurus brunneus</i>	0.3040	0.0018	0.9715
40	<i>Alloctrotus fragilis</i>	0.2970	0.0017	0.9732
41	<i>Sebastes proriger</i>	0.2960	0.0017	0.9750

Table B-32.--Continued.

42	<i>Sebastes pinniger</i>	0.2610	0.0015	0.9765
43	<i>Lycodes diapterus</i>	0.2410	0.0014	0.9779
44	<i>Moroteuthis robusta</i>	0.2140	0.0012	0.9791
45	<i>Sebastolobus altivelis</i>	0.1810	0.0010	0.9801
46	<i>Sebastes melanostomus</i>	0.1620	0.0009	0.9811
47	<i>Bathyraja interrupta</i>	0.1550	0.0009	0.9820
48	<i>Luidia foliata</i>	0.1520	0.0009	0.9828
49	<i>Metridium</i> sp.	0.1470	0.0008	0.9837
50	heart urchin unident.	0.1250	0.0007	0.9844
51	<i>Porichthys notatus</i>	0.1140	0.0007	0.9851
52	<i>Gadus macrocephalus</i>	0.1100	0.0006	0.9857
53	squid unident.	0.1090	0.0006	0.9863
54	<i>Sebastes semicinctus</i>	0.1060	0.0006	0.9869
55	<i>Lepidopsetta bilineata</i>	0.0980	0.0006	0.9875
56	<i>Rathbunaster californicus</i>	0.0890	0.0005	0.9880
57	<i>Argentina sialis</i>	0.0780	0.0004	0.9885
58	<i>Torpedo californica</i>	0.0760	0.0004	0.9889
59	<i>Sebastes aleutianus</i>	0.0730	0.0004	0.9893
60	<i>Peprilus simillimus</i>	0.0660	0.0004	0.9897
61	<i>Aphrocallistes vastus</i>	0.0600	0.0003	0.9901
62	Actiniaria (order)	0.0530	0.0003	0.9904
63	<i>Sebastes paucispinis</i>	0.0520	0.0003	0.9907
64	<i>Lycodes pacificus</i>	0.0500	0.0003	0.9909
65	Holothuroidea unident.	0.0480	0.0003	0.9912
66	<i>Laqueus californianus</i>	0.0460	0.0003	0.9915
67	<i>Pleuronichthys decurrens</i>	0.0460	0.0003	0.9918
68	<i>Galeorhinus galeus</i>	0.0450	0.0003	0.9920
69	<i>Sebastes helvomaculatus</i>	0.0450	0.0003	0.9923
70	<i>Parmaturus xaniurus</i>	0.0450	0.0003	0.9925
71	<i>Microgadus proximus</i>	0.0410	0.0002	0.9928
72	<i>Sebastes babcocki</i>	0.0410	0.0002	0.9930
73	<i>Brisaster</i> sp.	0.0400	0.0002	0.9932
74	<i>Hippoglossoides elassodon</i>	0.0380	0.0002	0.9935
75	rough purple sea anemone	0.0380	0.0002	0.9937
76	<i>Mustelus henlei</i>	0.0340	0.0002	0.9939
77	Scyphozoa (class)	0.0330	0.0002	0.9941
78	<i>Pycnopodia helianthoides</i>	0.0310	0.0002	0.9942
79	<i>Pandalus jordani</i>	0.0310	0.0002	0.9944
80	<i>Zalambius rosaceus</i>	0.0310	0.0002	0.9946
81	<i>Parastichopus leucothele</i>	0.0290	0.0002	0.9948
82	<i>Paralichthys californicus</i>	0.0290	0.0002	0.9949
83	<i>Squatina californica</i>	0.0280	0.0002	0.9951
84	Ommastrephidae	0.0280	0.0002	0.9953
85	<i>Lopholithodes foraminatus</i>	0.0280	0.0002	0.9954

Table B-32.--Continued.

86	<i>Thaliacea</i> unident.	0.0270	0.0002	0.9956
87	<i>Hexanchus griseus</i>	0.0270	0.0002	0.9957
88	<i>Sebastes chlorostictus</i>	0.0250	0.0001	0.9959
89	<i>Liponemis brevicornis</i>	0.0250	0.0001	0.9960
90	<i>Myoxoderma platyacanthum</i>	0.0230	0.0001	0.9962
91	<i>Sebastes mystinus</i>	0.0220	0.0001	0.9963
92	<i>Platichthys stellatus</i>	0.0210	0.0001	0.9964
93	<i>Octopus dofleini</i>	0.0210	0.0001	0.9965
94	<i>Chionoecetes tanneri</i>	0.0210	0.0001	0.9966
95	<i>Acipenser medirostris</i>	0.0200	0.0001	0.9968
96	<i>Paractinostola faeculenta</i>	0.0180	0.0001	0.9969
97	<i>Sebastes borealis</i>	0.0180	0.0001	0.9970
98	<i>Psettichthys melanostictus</i>	0.0170	0.0001	0.9971
99	<i>Icelinus filamentosus</i>	0.0170	0.0001	0.9972
100	<i>Neptunea</i> sp.	0.0150	0.0001	0.9973
101	Porifera (phylum)	0.0150	0.0001	0.9973
102	<i>Sebastes ruberrimus</i>	0.0150	0.0001	0.9974
103	octopus unident.	0.0140	0.0001	0.9975
104	<i>Parastichopus californicus</i>	0.0130	0.0001	0.9976
105	<i>Loligo opalescens</i>	0.0130	0.0001	0.9977
106	<i>Sebastes brevispinis</i>	0.0120	0.0001	0.9977
107	<i>Pandalus platyceros</i>	0.0120	0.0001	0.9978
108	<i>Ommastrephes bartrami</i>	0.0100	0.0001	0.9979
109	<i>Luidia</i> sp.	0.0100	0.0001	0.9979
110	<i>Berryteuthis magister</i>	0.0090	0.0001	0.9980
111	skate egg case unident.	0.0090	0.0001	0.9980
112	Scyliorhinidae	0.0090	0.0001	0.9981
113	<i>Neptunea lyrata</i>	0.0080	Trace	0.9981
114	<i>Careproctus melanurus</i>	0.0080	Trace	0.9982
115	<i>Sebastes reedi</i>	0.0080	Trace	0.9982
116	<i>Pseudostichopus mollis</i>	0.0080	Trace	0.9983
117	<i>Mustelus</i> sp.	0.0080	Trace	0.9983
118	<i>Chilara taylori</i>	0.0070	Trace	0.9983
119	<i>Gorgonocephalus eucnemis</i>	0.0070	Trace	0.9984
120	<i>Cryptacanthodes giganteus</i>	0.0070	Trace	0.9984
121	<i>Neptunea amianta</i>	0.0070	Trace	0.9985
122	Basketstarfish unident.	0.0060	Trace	0.9985
123	<i>Albatrossia pectoralis</i>	0.0060	Trace	0.9985
124	<i>Thrissacanthias penicillatus</i>	0.0060	Trace	0.9986
125	<i>Cancer productus</i>	0.0060	Trace	0.9986
126	<i>Pandalopsis dispar</i>	0.0060	Trace	0.9986
127	<i>Ophiura sarsi</i>	0.0050	Trace	0.9987
128	Onychoteuthidae	0.0050	Trace	0.9987
129	Myctophidae	0.0050	Trace	0.9987

Table B-32.--Continued.

130	<i>Opisthoteuthis californiana</i>	0.0050	Trace	0.9988
131	<i>Stylasterias forreri</i>	0.0050	Trace	0.9988
132	<i>Pleuronichthys verticalis</i>	0.0050	Trace	0.9988
133	<i>Sebastes rosenblatti</i>	0.0050	Trace	0.9988
134	<i>Virgularia</i> sp.	0.0050	Trace	0.9989
135	<i>Antimora microlepis</i>	0.0050	Trace	0.9989
136	<i>Pasiphaea pacifica</i>	0.0050	Trace	0.9989
137	<i>Myoxoderma sacculatum</i>	0.0040	Trace	0.9989
138	<i>Thaleichthys pacificus</i>	0.0040	Trace	0.9990
139	<i>Sebastes ovalis</i>	0.0040	Trace	0.9990
140	<i>Bothrocara brunneum</i>	0.0040	Trace	0.9990
141	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9990
142	Paguridae	0.0040	Trace	0.9991
143	<i>Taningia danae</i>	0.0040	Trace	0.9991
144	sea urchin unident.	0.0040	Trace	0.9991
145	<i>Paralithodes californiensis</i>	0.0040	Trace	0.9991
146	<i>Hippasteria californica</i>	0.0040	Trace	0.9992
147	<i>Sebastes levis</i>	0.0040	Trace	0.9992
148	<i>Raja inornata</i>	0.0040	Trace	0.9992
149	<i>Lopholithodes</i> sp.	0.0040	Trace	0.9992
150	<i>Vampyroteuthis infernalis</i>	0.0040	Trace	0.9992
151	<i>Prionace glauca</i>	0.0040	Trace	0.9993
152	<i>Hippasteria</i> sp.	0.0040	Trace	0.9993
153	<i>Theragra chalcogramma</i>	0.0030	Trace	0.9993
154	<i>Spirinchus starksi</i>	0.0030	Trace	0.9993
155	<i>Hexagrammos decagrammus</i>	0.0030	Trace	0.9993
156	Pennatulacea (order)	0.0030	Trace	0.9994
157	<i>Oncorhynchus kisutch</i>	0.0030	Trace	0.9994
158	<i>Lycodes brevipes</i>	0.0030	Trace	0.9994
159	<i>Sebastes wilsoni</i>	0.0030	Trace	0.9994
160	<i>Pagurus confragosus</i>	0.0030	Trace	0.9994
161	<i>Bathyraja parmifera</i>	0.0030	Trace	0.9995
162	<i>Sebastes melanops</i>	0.0030	Trace	0.9995
163	<i>Halichondria panicea</i>	0.0030	Trace	0.9995
164	Aphroditidae	0.0030	Trace	0.9995
165	<i>Hippasteria spinosa</i>	0.0030	Trace	0.9995
166	<i>Zaniolepis latipinnis</i>	0.0030	Trace	0.9995
167	<i>Pandalus borealis</i>	0.0030	Trace	0.9996
168	<i>Mustelus californicus</i>	0.0030	Trace	0.9996
169	starfish unident.	0.0030	Trace	0.9996
170	<i>Stylatula</i> sp.	0.0030	Trace	0.9996

Table B-32.--Continued.

171	<i>Histioteuthis dofleini</i>	0.0020	Trace	0.9996
172	nudibranch unident.	0.0020	Trace	0.9996
173	<i>Isopsetta isolepis</i>	0.0020	Trace	0.9996
174	<i>Lethasterias nanimensis</i>	0.0020	Trace	0.9996
175	<i>Molpadia intermedia</i>	0.0020	Trace	0.9997
176	<i>Molpadia</i> sp.	0.0020	Trace	0.9997
177	<i>Metridium senile</i>	0.0020	Trace	0.9997
178	<i>Diplopteraster multipes</i>	0.0020	Trace	0.9997
179	<i>Mediaster aequalis</i>	0.0020	Trace	0.9997
180	<i>Anarrhichthys ocellatus</i>	0.0020	Trace	0.9997
181	<i>Sebastes miniatus</i>	0.0010	Trace	0.9997
182	<i>Crossaster papposus</i>	0.0010	Trace	0.9997
183	<i>Solaster dawsoni</i>	0.0010	Trace	0.9997
184	<i>Alepisaurus ferox</i>	0.0010	Trace	0.9997
185	<i>Sebastes rufus</i>	0.0010	Trace	0.9998
186	<i>Strongylocentrotus droebachiensis</i>	0.0010	Trace	0.9998
187	<i>Buccinum viridum</i>	0.0010	Trace	0.9998
188	squid eggs unident.	0.0010	Trace	0.9998
189	<i>Eptatretus deani</i>	0.0010	Trace	0.9998
190	<i>Lampetra tridentata</i>	0.0010	Trace	0.9998
191	<i>Ctenodiscus crispatus</i>	0.0010	Trace	0.9998
192	<i>Lampanyctus</i> sp.	0.0010	Trace	0.9998
193	Gorgonacea (order)	0.0010	Trace	0.9998
194	<i>Allosmerus elongatus</i>	0.0010	Trace	0.9998
195	<i>Fusitriton oregonensis</i>	0.0010	Trace	0.9998
196	<i>Cucumaria</i> sp.	0.0010	Trace	0.9998
197	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9998
198	<i>Hypomesus pretiosus</i>	0.0010	Trace	0.9998
199	<i>Tritonia</i> sp.	0.0010	Trace	0.9998
200	brachiopod unident.	0.0010	Trace	0.9998
201	<i>Tactostoma macropus</i>	0.0010	Trace	0.9998
202	Hexactinellida	0.0010	Trace	0.9999
203	Ascidian unident.	0.0010	Trace	0.9999
204	<i>Solaster</i> sp.	0.0010	Trace	0.9999
205	<i>Sebastes caurinus</i>	0.0010	Trace	0.9999
206	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
207	<i>Zaniolepis frenata</i>	0.0010	Trace	0.9999
208	<i>Embassichthys bathybius</i>	0.0010	Trace	0.9999
209	<i>Neptunea pribiloffensis</i>	0.0010	Trace	0.9999
210	<i>Somniosus pacificus</i>	0.0010	Trace	0.9999
211	<i>Mursia gaudichaudii</i>	0.0010	Trace	0.9999

Table B-32.--Continued.

212	<i>Sebastes maliger</i>	0.0010	Trace	0.9999
213	<i>Pleuronichthys coenosus</i>	0.0010	Trace	0.9999
214	<i>Mediaster</i> sp.	Trace	Trace	0.9999
215	<i>Pandalus hypsinotus</i>	Trace	Trace	0.9999
216	<i>Gonatus</i> sp.	Trace	Trace	0.9999
217	<i>Psolus</i> sp.	Trace	Trace	0.9999
218	<i>Chauliodus macouni</i>	Trace	Trace	0.9999
219	<i>Apristurus kampae</i>	Trace	Trace	0.9999
220	<i>Rossia pacifica</i>	Trace	Trace	0.9999
221	<i>Alepocephalus tenebrosus</i>	Trace	Trace	0.9999
222	<i>Pseudarchaster parelii</i>	Trace	Trace	0.9999
223	<i>Crasseodoma giganteum</i>	Trace	Trace	0.9999
224	<i>Synodus lucioceps</i>	Trace	Trace	0.9999
225	<i>Actinauge verrillii</i>	Trace	Trace	0.9999
226	<i>Eptatretus stouti</i>	Trace	Trace	0.9999
227	<i>Ceramaster patagonicus</i>	Trace	Trace	0.9999
228	<i>Stomphia</i> sp.	Trace	Trace	0.9999
229	<i>Polinices</i> sp.	Trace	Trace	0.9999
230	Euphausiacea (order)	Trace	Trace	0.9999
231	Stromateidae	Trace	Trace	0.9999
232	<i>Coryphaenoides acrolepis</i>	Trace	Trace	0.9999
233	<i>Patinopecten caurinus</i>	Trace	Trace	0.9999
234	<i>Tritonia diomedea</i>	Trace	Trace	0.9999
235	<i>Pisaster</i> sp.	Trace	Trace	0.9999
236	<i>Bathyraja aleutica</i>	Trace	Trace	0.9999
237	<i>Solaster paxillatus</i>	Trace	Trace	0.9999
238	<i>Parastichopus</i> sp.	Trace	Trace	0.9999
239	<i>Pannychia moseleyi</i>	Trace	Trace	0.9999
240	<i>Leucandra heathi</i>	Trace	Trace	0.9999
241	Naticidae	Trace	Trace	0.9999
242	Ophiuroid unident.	Trace	Trace	1.0000
243	<i>Anthomastus</i> sp.	Trace	Trace	1.0000
244	<i>Symbolophorus californiensis</i>	Trace	Trace	1.0000
245	<i>Mycale loveni</i>	Trace	Trace	1.0000
246	Ophidiidae	Trace	Trace	1.0000
247	<i>Xystreurys liolepis</i>	Trace	Trace	1.0000
248	<i>Luidiaster dawsoni</i>	Trace	Trace	1.0000
249	<i>Crossaster</i> sp.	Trace	Trace	1.0000
250	<i>Cephaloscyllium ventriosum</i>	Trace	Trace	1.0000
251	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
252	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000

Table B-32.--Continued.

253	Penaeidae	Trace	Trace	1.0000
254	Bathylagus sp.	Trace	Trace	1.0000
255	Orthasterias koehleri	Trace	Trace	1.0000
256	Ptilosarcus gurneyi	Trace	Trace	1.0000
257	Rajidae unident.	Trace	Trace	1.0000
258	Trichiuridae	Trace	Trace	1.0000
259	Styela rustica	Trace	Trace	1.0000
260	Pagurus brandti	Trace	Trace	1.0000
261	Sebastes sp.	Trace	Trace	1.0000
262	Ceramaster japonicus	Trace	Trace	1.0000
263	Raja stellulata	Trace	Trace	1.0000
264	Leptocottus armatus	Trace	Trace	1.0000
265	Careproctus sp.	Trace	Trace	1.0000
266	Solaster endeca	Trace	Trace	1.0000
267	Nezumia stelgidolepis	Trace	Trace	1.0000
268	Onychoteuthis borealijaponicus	Trace	Trace	1.0000
269	Pteraster tessellatus	Trace	Trace	1.0000
270	Virgularidae	Trace	Trace	1.0000
271	Sipuncula (phylum)	Trace	Trace	1.0000
272	Acantholithodes hispidus	Trace	Trace	1.0000
273	Prionotus stephanophrys	Trace	Trace	1.0000
274	Leptychaster pacificus	Trace	Trace	1.0000
275	Clinocardium sp.	Trace	Trace	1.0000
276	BathYGONUS pentacanthus	Trace	Trace	1.0000
277	Pseudarchaster sp.	Trace	Trace	1.0000
278	Cottidae	Trace	Trace	1.0000
279	BathYGONUS nigripinnis	Trace	Trace	1.0000
280	Asterina miniata	Trace	Trace	1.0000
281	Pentamera lissoplaca	Trace	Trace	1.0000
282	Oregonia gracilis	Trace	Trace	1.0000
283	Xeneretmus latifrons	Trace	Trace	1.0000
284	Radulinus asprellus	Trace	Trace	1.0000
285	Gastropod unident.	Trace	Trace	1.0000
286	Psolus squamatus	Trace	Trace	1.0000
287	Sagamichthys abei	Trace	Trace	1.0000
288	Oregonia bifurca	Trace	Trace	1.0000
289	Polychaeta (class)	Trace	Trace	1.0000
290	snail (gastropod) eggs	Trace	Trace	1.0000
291	Malacocephalus laevis	Trace	Trace	1.0000
292	Ceramaster sp.	Trace	Trace	1.0000
293	Pugettia sp.	Trace	Trace	1.0000

Table B-32.--Continued.

294	<i>Pteraster</i> sp.	Trace	Trace	1.0000
295	<i>Chorilia longipes</i>	Trace	Trace	1.0000
296	<i>Sebastes auriculatus</i>	Trace	Trace	1.0000
297	<i>Lampanyctus ritteri</i>	Trace	Trace	1.0000
298	<i>Buccinum</i> sp.	Trace	Trace	1.0000
299	Liparidinae	Trace	Trace	1.0000
300	<i>Aforia</i> sp.	Trace	Trace	1.0000
301	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
302	<i>Liparis</i> sp.	Trace	Trace	1.0000
303	Petromyzontidae	Trace	Trace	1.0000
304	<i>Hippoglossina stomata</i>	Trace	Trace	1.0000
305	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
306	Sternoptychidae unident.	Trace	Trace	1.0000
307	<i>Beringius frielei</i>	Trace	Trace	1.0000
308	<i>Crangon</i> sp.	Trace	Trace	1.0000
309	<i>Allocentrotus</i> sp.	Trace	Trace	1.0000
310	<i>Ophiopholis longispina</i>	Trace	Trace	1.0000
311	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
312	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
313	Majidae unident.	Trace	Trace	1.0000
314	crinoid unident.	Trace	Trace	1.0000
315	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
316	<i>Strongylocentrotus franciscanus</i>	Trace	Trace	1.0000
317	<i>Hyas lyratus</i>	Trace	Trace	1.0000
318	Ctenophora (phylum)	Trace	Trace	1.0000
319	<i>Enophrys taurina</i>	Trace	Trace	1.0000
320	<i>Icelinus borealis</i>	Trace	Trace	1.0000
321	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
322	shrimp unident.	Trace	Trace	1.0000
323	<i>Calliostoma</i> sp.	Trace	Trace	1.0000
324	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
325	<i>Diaphus theta</i>	Trace	Trace	1.0000
326	Echiura (phylum)	Trace	Trace	1.0000
327	<i>Bathyagonus infraspinus</i>	Trace	Trace	1.0000
328	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
329	<i>Natica</i> sp.	Trace	Trace	1.0000
330	Stichaeidae	Trace	Trace	1.0000
331	Platyroctidae	Trace	Trace	1.0000
332	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
333	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
334	<i>Lampanyctus regalis</i>	Trace	Trace	1.0000

Table B-32.--Continued.

335	<i>Caryophyllia</i> sp.	Trace	Trace	1.0000
336	<i>Aplacophora</i>	Trace	Trace	1.0000
337	<i>Stenobrachius leucopsarus</i>	Trace	Trace	1.0000
338	<i>Bathyagonus</i> sp.	Trace	Trace	1.0000
339	hydroid unident.	Trace	Trace	1.0000
340	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
341	crab unident.	Trace	Trace	1.0000
342	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
343	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
344	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
345	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
346	<i>Neptunea</i> sp.	Trace	Trace	1.0000
347	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
348	<i>Chitonotus pugetensis</i>	Trace	Trace	1.0000
349	<i>Pandalus danae</i>	Trace	Trace	1.0000
350	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
351	<i>Colus</i> sp.	Trace	Trace	1.0000
352	<i>Icelinus tenuis</i>	Trace	Trace	1.0000
353	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
354	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
355	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
356	<i>Chiroteuthis calyx</i>	Trace	Trace	1.0000
357	<i>Henricia</i> sp.	Trace	Trace	1.0000
358	<i>Leuroglossus stilbius</i>	Trace	Trace	1.0000
359	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
360	<i>Pandalus tridens</i>	Trace	Trace	1.0000
361	<i>Lycodapus mandibularis</i>	Trace	Trace	1.0000
362	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
363	<i>Buccinum</i> sp.	Trace	Trace	1.0000
364	<i>Callianassa</i> sp.	Trace	Trace	1.0000
365	<i>Citharichthys stigmaeus</i>	Trace	Trace	1.0000
366	<i>Colus herendeenii</i>	Trace	Trace	1.0000
367	<i>Diaphus</i> sp.	Trace	Trace	1.0000
368	<i>Notolepsis risso</i>	Trace	Trace	1.0000
369	<i>Poroclinus rothrocki</i>	Trace	Trace	1.0000
370	Isopoda (order)	Trace	Trace	1.0000
371	<i>Cololabis saira</i>	Trace	Trace	1.0000
372	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
373	<i>Howella sherborni</i>	Trace	Trace	1.0000
374	<i>Rhinoliparis attenuatus</i>	Trace	Trace	1.0000
375	<i>Swiftia</i> sp.	Trace	Trace	1.0000

Table B-32.--Continued.

376	fish unident.	Trace	Trace	1.0000
377	<i>Plectobranchnus evides</i>	Trace	Trace	1.0000
378	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
379	<i>Argis</i> sp.	Trace	Trace	1.0000
380	<i>Callianassa californiensis</i>	Trace	Trace	1.0000
381	<i>Leuroglossus schmidti</i>	Trace	Trace	1.0000
382	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
383	<i>Lycodapus fierasfer</i>	Trace	Trace	1.0000
384	<i>Crangon communis</i>	Trace	Trace	1.0000
385	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000
386	<i>Pleuronectiformes</i> larvae	Trace	Trace	1.0000
387	<i>Tarletonbeania crenularis</i>	Trace	Trace	1.0000
388	<i>Gnathophausia gigas</i>	Trace	Trace	1.0000

Table B-33.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire survey area, shallow stratum (55-183 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	101.5410	0.5268	0.5268
2	<i>Squalus acanthias</i>	14.3830	0.0746	0.6014
3	<i>Sebastes flavidus</i>	7.5170	0.0390	0.6404
4	<i>Citharichthys sordidus</i>	7.4910	0.0389	0.6792
5	<i>Clupea pallasii</i>	7.3080	0.0379	0.7171
6	<i>Atheresthes stomias</i>	5.2790	0.0274	0.7445
7	<i>Anoplopoma fimbria</i>	5.0320	0.0261	0.7706
8	<i>Microstomus pacificus</i>	4.4230	0.0229	0.7936
9	<i>Parophrys vetulus</i>	4.2640	0.0221	0.8157
10	<i>Glyptocephalus zachirus</i>	3.8090	0.0198	0.8355
11	<i>Sebastes goodei</i>	3.1340	0.0163	0.8517
12	<i>Trachurus symmetricus</i>	2.7110	0.0141	0.8658
13	<i>Sebastes jordani</i>	2.6230	0.0136	0.8794
14	<i>Hippoglossus stenolepis</i>	2.2770	0.0118	0.8912
15	<i>Genyonemus lineatus</i>	1.9560	0.0101	0.9014
16	<i>Scomber japonicus</i>	1.5130	0.0078	0.9092
17	<i>Sardinops sagax</i>	1.3910	0.0072	0.9164
18	<i>Alosa sapidissima</i>	1.2050	0.0063	0.9227
19	<i>Ophiodon elongatus</i>	1.1900	0.0062	0.9288
20	<i>Sebastes elongatus</i>	1.1200	0.0058	0.9347
21	<i>Eopsetta jordani</i>	0.9340	0.0048	0.9395
22	<i>Raja rhina</i>	0.9070	0.0047	0.9442
23	<i>Sebastes saxicola</i>	0.7960	0.0041	0.9483
24	<i>Raja binoculata</i>	0.7460	0.0039	0.9522
25	<i>Sebastes proriger</i>	0.7460	0.0039	0.9561
26	<i>Hydrolagus collicii</i>	0.6910	0.0036	0.9597
27	<i>Oncorhynchus tshawytscha</i>	0.6650	0.0035	0.9631
28	<i>Cancer magister</i>	0.6630	0.0034	0.9665
29	<i>Engraulis mordax</i>	0.6340	0.0033	0.9698
30	<i>Sebastes pinniger</i>	0.5820	0.0030	0.9729
31	<i>Sebastes entomelas</i>	0.5230	0.0027	0.9756
32	<i>Sebastes crameri</i>	0.3570	0.0019	0.9774
33	<i>Lyopsetta exilis</i>	0.3070	0.0016	0.9790
34	<i>Hippoglossoides elassodon</i>	0.2520	0.0013	0.9803
35	<i>Lepidopsetta bilineata</i>	0.2420	0.0013	0.9816
36	<i>Gadus macrocephalus</i>	0.2100	0.0011	0.9827
37	<i>Metridium</i> sp.	0.1880	0.0010	0.9836
38	<i>Sebastes alutus</i>	0.1740	0.0009	0.9845
39	<i>Sebastes semicinctus</i>	0.1520	0.0008	0.9853
40	<i>Porichthys notatus</i>	0.1500	0.0008	0.9861

Table B-33.--Continued.

41	<i>Luidia foliolata</i>	0.1400	0.0007	0.9868
42	<i>Brisaster latifrons</i>	0.1320	0.0007	0.9875
43	<i>Sebastes brevispinis</i>	0.1260	0.0007	0.9882
44	<i>Lycodes pacificus</i>	0.1000	0.0005	0.9887
45	<i>Argentina sialis</i>	0.0980	0.0005	0.9892
46	<i>Peprilus simillimus</i>	0.0940	0.0005	0.9897
47	<i>Microgadus proximus</i>	0.0880	0.0005	0.9901
48	Actiniaria (order)	0.0850	0.0004	0.9906
49	<i>Galeorhinus galeus</i>	0.0840	0.0004	0.9910
50	<i>Sebastes paucispinis</i>	0.0740	0.0004	0.9914
51	<i>Torpedo californica</i>	0.0690	0.0004	0.9918
52	<i>Pleuronichthys decurrens</i>	0.0680	0.0004	0.9921
53	<i>Laqueus californianus</i>	0.0660	0.0003	0.9925
54	heart urchin unident.	0.0640	0.0003	0.9928
55	<i>Sebastes ruberrimus</i>	0.0480	0.0002	0.9930
56	<i>Mustelus henlei</i>	0.0480	0.0002	0.9933
57	<i>Pycnopodia helianthoides</i>	0.0470	0.0002	0.9935
58	<i>Pandalus jordani</i>	0.0460	0.0002	0.9938
59	<i>Luidia</i> sp.	0.0460	0.0002	0.9940
60	<i>Sebastes helvomaculatus</i>	0.0450	0.0002	0.9942
61	Scyphozoa (class)	0.0440	0.0002	0.9945
62	<i>Zalembeus rosaceus</i>	0.0440	0.0002	0.9947
63	<i>Sebastolobus alascanus</i>	0.0410	0.0002	0.9949
64	<i>Squatina californica</i>	0.0410	0.0002	0.9951
65	<i>Hexanchus griseus</i>	0.0380	0.0002	0.9953
66	<i>Paralichthys californicus</i>	0.0380	0.0002	0.9955
67	<i>Sebastes chlorostictus</i>	0.0350	0.0002	0.9957
68	<i>Sebastes aleutianus</i>	0.0350	0.0002	0.9959
69	<i>Rathbunaster californicus</i>	0.0340	0.0002	0.9960
70	<i>Sebastes zacentrus</i>	0.0330	0.0002	0.9962
71	<i>Sebastes mystinus</i>	0.0310	0.0002	0.9964
72	<i>Platichthys stellatus</i>	0.0310	0.0002	0.9965
73	<i>Octopus dofleini</i>	0.0300	0.0002	0.9967
74	<i>Sebastes maliger</i>	0.0290	0.0002	0.9968
75	<i>Thaleichthys pacificus</i>	0.0280	0.0001	0.9970
76	<i>Allocentrotus fragilis</i>	0.0280	0.0001	0.9971
77	<i>Lopholithodes foraminatus</i>	0.0280	0.0001	0.9973
78	<i>Acipenser medirostris</i>	0.0280	0.0001	0.9974
79	<i>Bathyraja interrupta</i>	0.0270	0.0001	0.9976
80	<i>Psettichthys melanostictus</i>	0.0250	0.0001	0.9977
81	Thaliacea unident.	0.0230	0.0001	0.9978

Table B-33.--Continued.

82	<i>Sebastes diploproa</i>	0.0220	0.0001	0.9979
83	<i>Theragra chalcogramma</i>	0.0220	0.0001	0.9980
84	<i>Parastichopus californicus</i>	0.0190	0.0001	0.9981
85	<i>Loligo opalescens</i>	0.0180	0.0001	0.9982
86	<i>Sebastes babcocki</i>	0.0170	0.0001	0.9983
87	<i>Icelinus filamentosus</i>	0.0150	0.0001	0.9984
88	<i>Lycodes brevipes</i>	0.0130	0.0001	0.9985
89	Holothuroidea unident.	0.0120	0.0001	0.9985
90	skate egg case unident.	0.0120	0.0001	0.9986
91	<i>Mustelus</i> sp.	0.0110	0.0001	0.9986
92	<i>Anarrhichthys ocellatus</i>	0.0100	0.0001	0.9987
93	<i>Gorgonocephalus eucnemis</i>	0.0100	0.0001	0.9988
94	<i>Lycodes corteziianus</i>	0.0080	Trace	0.9988
95	<i>Chilara taylori</i>	0.0080	Trace	0.9988
96	<i>Sebastes wilsoni</i>	0.0080	Trace	0.9989
97	<i>Pandalus borealis</i>	0.0070	Trace	0.9989
98	<i>Pleuronichthys verticalis</i>	0.0070	Trace	0.9989
99	<i>Virgularia</i> sp.	0.0060	Trace	0.9990
100	<i>Hexagrammos decagrammus</i>	0.0060	Trace	0.9990
101	<i>Sebastes ovalis</i>	0.0060	Trace	0.9990
102	<i>Hippasteria</i> sp.	0.0060	Trace	0.9991
103	<i>Cancer productus</i>	0.0050	Trace	0.9991
104	<i>Raja inornata</i>	0.0050	Trace	0.9991
105	Asteroidea unident.	0.0050	Trace	0.9992
106	<i>Parastichopus leucothele</i>	0.0050	Trace	0.9992
107	<i>Spirinchus starksi</i>	0.0050	Trace	0.9992
108	<i>Stylasterias forreri</i>	0.0050	Trace	0.9992
109	<i>Oncorhynchus kisutch</i>	0.0050	Trace	0.9993
110	<i>Sebastes melanops</i>	0.0040	Trace	0.9993
111	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9993
112	<i>Bathyraja parmifera</i>	0.0040	Trace	0.9993
113	<i>Pandalus platyceros</i>	0.0040	Trace	0.9993
114	<i>Lethasterias nanimensis</i>	0.0040	Trace	0.9994
115	<i>Brisaster</i> sp.	0.0040	Trace	0.9994
116	<i>Lycodes diapterus</i>	0.0040	Trace	0.9994
117	<i>Allosmerus elongatus</i>	0.0040	Trace	0.9994
118	Aphroditidae	0.0040	Trace	0.9995
119	<i>Zaniolepis latipinnis</i>	0.0040	Trace	0.9995
120	<i>Hippasteria californica</i>	0.0040	Trace	0.9995
121	<i>Mustelus californicus</i>	0.0040	Trace	0.9995
122	<i>Lopholithodes</i> sp.	0.0040	Trace	0.9995

Table B-33.--Continued.

123	<i>Stylatula</i> sp.	0.0040	Trace	0.9996
124	<i>Pseudostichopus mollis</i>	0.0030	Trace	0.9996
125	<i>Sebastes levis</i>	0.0030	Trace	0.9996
126	<i>Pandalopsis dispar</i>	0.0030	Trace	0.9996
127	<i>Isopsetta isolepis</i>	0.0030	Trace	0.9996
128	<i>Metridium senile</i>	0.0030	Trace	0.9996
129	<i>Apristurus brunneus</i>	0.0030	Trace	0.9996
130	<i>Cryptacanthodes giganteus</i>	0.0030	Trace	0.9997
131	<i>Nudibranchia unident.</i>	0.0020	Trace	0.9997
132	<i>Hippasteria spinosa</i>	0.0020	Trace	0.9997
133	<i>Strongylocentrotus droebachiensis</i>	0.0020	Trace	0.9997
134	<i>Myoxoderma platyacanthum</i>	0.0020	Trace	0.9997
135	<i>Sebastes miniatus</i>	0.0020	Trace	0.9997
136	<i>Aphrocallistes vastus</i>	0.0020	Trace	0.9997
137	<i>Paralithodes californiensis</i>	0.0020	Trace	0.9997
138	<i>Alepisaurus ferox</i>	0.0020	Trace	0.9997
139	Pennatulacea (order)	0.0020	Trace	0.9998
140	<i>Berryteuthis magister</i>	0.0020	Trace	0.9998
141	squid eggs unident.	0.0020	Trace	0.9998
142	<i>Orthasterias koehleri</i>	0.0020	Trace	0.9998
143	<i>Solaster dawsoni</i>	0.0020	Trace	0.9998
144	<i>Thrissacanthias penicillatus</i>	0.0020	Trace	0.9998
145	<i>Crossaster papposus</i>	0.0020	Trace	0.9998
146	Gorgonacea (order)	0.0010	Trace	0.9998
147	Porifera (phylum)	0.0010	Trace	0.9998
148	<i>Polinices pallidus</i>	0.0010	Trace	0.9998
149	octopus unident.	0.0010	Trace	0.9998
150	Echinacea unident.	0.0010	Trace	0.9999
151	<i>Hypomesus pretiosus</i>	0.0010	Trace	0.9999
152	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9999
153	<i>Solaster</i> sp.	0.0010	Trace	0.9999
154	<i>Mediaster aequalis</i>	0.0010	Trace	0.9999
155	squid unident.	0.0010	Trace	0.9999
156	brachiopod unident.	0.0010	Trace	0.9999
157	<i>Patinopecten caurinus</i>	0.0010	Trace	0.9999
158	<i>Sebastes caurinus</i>	0.0010	Trace	0.9999
159	<i>Tritonia</i> sp.	0.0010	Trace	0.9999
160	<i>Mursia gaudichaudii</i>	0.0010	Trace	0.9999
161	<i>Ommastrephes bartrami</i>	0.0010	Trace	0.9999
162	<i>Pleuronichthys coenosus</i>	0.0010	Trace	0.9999
163	<i>Fusitriton oregonensis</i>	0.0010	Trace	0.9999

Table B-33.--Continued.

164	Hexactinellida	0.0010	Trace	0.9999
165	Mediaster sp.	0.0010	Trace	0.9999
166	Crasseodoma giganteum	0.0010	Trace	0.9999
167	Opisthoteuthis californiana	0.0010	Trace	0.9999
168	Ophiura sarsi	0.0010	Trace	0.9999
169	Synodus lucioiceps	0.0010	Trace	0.9999
170	Polinices sp.	0.0010	Trace	0.9999
171	Stromateidae	Trace	Trace	0.9999
172	Molpadia sp.	Trace	Trace	0.9999
173	Paguridae	Trace	Trace	0.9999
174	Gastropod unident.	Trace	Trace	0.9999
175	Sebastes rosenblatti	Trace	Trace	1.0000
176	Liponema brevicorne	Trace	Trace	1.0000
177	Tritonia diomedea	Trace	Trace	1.0000
178	Stomphia sp.	Trace	Trace	1.0000
179	Molpadia intermedia	Trace	Trace	1.0000
180	Rossia pacifica	Trace	Trace	1.0000
181	Pisaster sp.	Trace	Trace	1.0000
182	Solaster paxillatus	Trace	Trace	1.0000
183	Ophidiidae	Trace	Trace	1.0000
184	Pagurus capillatus	Trace	Trace	1.0000
185	Pseudarchaster parelii	Trace	Trace	1.0000
186	Xystreureys liolepis	Trace	Trace	1.0000
187	Cephaloscyllium ventriosum	Trace	Trace	1.0000
188	Penaeidae	Trace	Trace	1.0000
189	Sebastes aurora	Trace	Trace	1.0000
190	Ptilosarcus gurneyi	Trace	Trace	1.0000
191	Raja stellulata	Trace	Trace	1.0000
192	Leptocottus armatus	Trace	Trace	1.0000
193	Careproctus melanurus	Trace	Trace	1.0000
194	Eptatretus deani	Trace	Trace	1.0000
195	Pteraster tesselatus	Trace	Trace	1.0000
196	Acantholithodes hispidus	Trace	Trace	1.0000
197	Ceramaster patagonicus	Trace	Trace	1.0000
198	Prionotus stephanophrys	Trace	Trace	1.0000
199	Crossaster sp.	Trace	Trace	1.0000
200	Virgularidae	Trace	Trace	1.0000
201	Pseudarchaster sp.	Trace	Trace	1.0000
202	Asterina miniata	Trace	Trace	1.0000
203	Taningia danae	Trace	Trace	1.0000
204	Ascidian unident.	Trace	Trace	1.0000

Table B-33.--Continued.

205	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
206	<i>Zaniolepis frenata</i>	Trace	Trace	1.0000
207	Ophiuroid unident.	Trace	Trace	1.0000
208	<i>Solaster endeca</i>	Trace	Trace	1.0000
209	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
210	Onychoteuthidae	Trace	Trace	1.0000
211	<i>Ceramaster</i> sp.	Trace	Trace	1.0000
212	<i>Pugettia</i> sp.	Trace	Trace	1.0000
213	<i>Pandalus hypsinotus</i>	Trace	Trace	1.0000
214	<i>Sebastes auriculatus</i>	Trace	Trace	1.0000
215	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
216	<i>Cucumaria</i> sp.	Trace	Trace	1.0000
217	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
218	Polychaeta (class)	Trace	Trace	1.0000
219	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
220	<i>Hippoglossina stomata</i>	Trace	Trace	1.0000
221	<i>Styela rustica</i>	Trace	Trace	1.0000
222	<i>Lampetra tridentata</i>	Trace	Trace	1.0000
223	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
224	Trichiuridae	Trace	Trace	1.0000
225	Osmeridae	Trace	Trace	1.0000
226	Majidae unident.	Trace	Trace	1.0000
227	<i>Hemilepidotus spinosus</i>	Trace	Trace	1.0000
228	crinoid unident.	Trace	Trace	1.0000
229	<i>Strongylocentrotus franciscanus</i>	Trace	Trace	1.0000
230	Ctenophora (phylum)	Trace	Trace	1.0000
231	<i>Enophrys taurina</i>	Trace	Trace	1.0000
232	<i>Icelinus borealis</i>	Trace	Trace	1.0000
233	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
234	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
235	Myctophidae	Trace	Trace	1.0000
236	<i>Parmaturus xaniurus</i>	Trace	Trace	1.0000
237	<i>Eptatretus stouti</i>	Trace	Trace	1.0000
238	<i>Podothecus acipenserinus</i>	Trace	Trace	1.0000
239	Stichaeidae	Trace	Trace	1.0000
240	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
241	gastropod eggs	Trace	Trace	1.0000
242	<i>Crangon</i> sp.	Trace	Trace	1.0000
243	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
244	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
245	<i>Pteraster</i> sp.	Trace	Trace	1.0000

Table B-33.--Continued.

246	shrimp unident.	Trace	Trace	1.0000
247	<i>Chitonotus pugetensis</i>	Trace	Trace	1.0000
248	<i>Pandalus danae</i>	Trace	Trace	1.0000
249	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
250	<i>Pasiphaea pacifica</i>	Trace	Trace	1.0000
251	<i>Icelinus tenuis</i>	Trace	Trace	1.0000
252	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
253	<i>BathYGONUS pentacanthus</i>	Trace	Trace	1.0000
254	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
255	Platyhelminthes (phylum)	Trace	Trace	1.0000
256	<i>Pagurus brandti</i>	Trace	Trace	1.0000
257	<i>Vampyroteuthis infernalis</i>	Trace	Trace	1.0000
258	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
259	<i>BathYGONUS nigripinnis</i>	Trace	Trace	1.0000
260	<i>Liparis</i> sp.	Trace	Trace	1.0000
261	<i>BathYGONUS infraspinus</i>	Trace	Trace	1.0000
262	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
263	<i>Hyas lyratus</i>	Trace	Trace	1.0000
264	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
265	<i>Callianassa</i> sp.	Trace	Trace	1.0000
266	<i>Citharichthys stigmatosus</i>	Trace	Trace	1.0000
267	Isopoda (order)	Trace	Trace	1.0000
268	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
269	<i>Poroclinus rothrocki</i>	Trace	Trace	1.0000
270	<i>Sebastes</i> sp.	Trace	Trace	1.0000
271	<i>Neptunea</i> sp.	Trace	Trace	1.0000
272	<i>Cololabis saira</i>	Trace	Trace	1.0000
273	Sipuncula (phylum)	Trace	Trace	1.0000
274	crab unident.	Trace	Trace	1.0000
275	Cottidae	Trace	Trace	1.0000
276	<i>Plectobranthus euides</i>	Trace	Trace	1.0000
277	<i>Argis</i> sp.	Trace	Trace	1.0000
278	<i>Callianassa californiensis</i>	Trace	Trace	1.0000
279	<i>Crangon communis</i>	Trace	Trace	1.0000
280	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000

Table B-34.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire survey area, middle stratum (184-366 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	65.3070	0.3453	0.3453
2	<i>Sebastes diploproa</i>	16.8000	0.0888	0.4341
3	<i>Microstomus pacificus</i>	14.6270	0.0773	0.5115
4	<i>Anoplopoma fimbria</i>	11.5340	0.0610	0.5725
5	<i>Glyptocephalus zachirus</i>	9.1020	0.0481	0.6206
6	<i>Sebastes flavidus</i>	7.6490	0.0404	0.6610
7	<i>Sebastes alutus</i>	7.4130	0.0392	0.7002
8	<i>Sebastes saxicola</i>	6.5950	0.0349	0.7351
9	<i>Sebastes goodei</i>	6.4810	0.0343	0.7694
10	<i>Squalus acanthias</i>	6.2420	0.0330	0.8024
11	<i>Atheresthes stomias</i>	5.1560	0.0273	0.8296
12	<i>Sebastes zacentrus</i>	3.8000	0.0201	0.8497
13	<i>Sebastes jordani</i>	3.5400	0.0187	0.8684
14	<i>Sebastes entomelas</i>	2.9550	0.0156	0.8840
15	<i>Sebastolobus alascanus</i>	2.2770	0.0120	0.8961
16	<i>Hippoglossus stenolepis</i>	1.7650	0.0093	0.9054
17	<i>Sebastes crameri</i>	1.6050	0.0085	0.9139
18	<i>Ophiodon elongatus</i>	1.5630	0.0083	0.9222
19	<i>Hydrolagus collicii</i>	1.5330	0.0081	0.9303
20	<i>Sebastes proriger</i>	1.4170	0.0075	0.9378
21	<i>Raja rhina</i>	1.2600	0.0067	0.9444
22	<i>Parophrys vetulus</i>	1.1540	0.0061	0.9505
23	<i>Sebastes elongatus</i>	1.1450	0.0061	0.9566
24	<i>Allocentrotus fragilis</i>	0.8240	0.0044	0.9609
25	<i>Lyopsetta exilis</i>	0.7240	0.0038	0.9648
26	<i>Lycodes cortezianus</i>	0.5790	0.0031	0.9678
27	<i>Sebastes brevispinis</i>	0.5310	0.0028	0.9706
28	<i>Sebastes pinniger</i>	0.5190	0.0027	0.9734
29	<i>Moroteuthis robusta</i>	0.5090	0.0027	0.9761
30	<i>Bathyraja interrupta</i>	0.4150	0.0022	0.9783
31	<i>Brisaster latifrons</i>	0.2800	0.0015	0.9797
32	heart urchin unident.	0.2460	0.0013	0.9810
33	<i>Gadus macrocephalus</i>	0.2300	0.0012	0.9823
34	<i>Luidia foliolata</i>	0.1770	0.0009	0.9832
35	<i>Eopsetta jordani</i>	0.1740	0.0009	0.9841
36	<i>Apristurus brunneus</i>	0.1740	0.0009	0.9850
37	<i>Sebastes babcocki</i>	0.1710	0.0009	0.9859
38	<i>Lycodes diapterus</i>	0.1430	0.0008	0.9867
39	<i>Sebastes helvomaculatus</i>	0.1420	0.0008	0.9875
40	<i>Alosa sapidissima</i>	0.1420	0.0007	0.9882
41	<i>Aphrocallistes vastus</i>	0.1260	0.0007	0.9889

Table B-34.--Continued.

42	squid unident.	0.1110	0.0006	0.9895
43	<i>Sebastes paucispinis</i>	0.1030	0.0005	0.9900
44	<i>Trachurus symmetricus</i>	0.1010	0.0005	0.9905
45	<i>Rathbunaster californicus</i>	0.0990	0.0005	0.9911
46	<i>Parastichopus leucothele</i>	0.0950	0.0005	0.9916
47	Holothuroidea unident.	0.0890	0.0005	0.9920
48	<i>Cancer magister</i>	0.0750	0.0004	0.9924
49	<i>Torpedo californica</i>	0.0710	0.0004	0.9928
50	<i>Sebastes aleutianus</i>	0.0640	0.0003	0.9932
51	<i>Citharichthys sordidus</i>	0.0600	0.0003	0.9935
52	<i>Icelinus filamentosus</i>	0.0560	0.0003	0.9938
53	<i>Sebastes melanostomus</i>	0.0510	0.0003	0.9940
54	<i>Sebastes reedi</i>	0.0470	0.0002	0.9943
55	<i>Porichthys notatus</i>	0.0470	0.0002	0.9945
56	<i>Pandalus platyceros</i>	0.0460	0.0002	0.9948
57	<i>Raja binoculata</i>	0.0450	0.0002	0.9950
58	<i>Pandalus jordani</i>	0.0400	0.0002	0.9952
59	<i>Argentina sialis</i>	0.0390	0.0002	0.9954
60	<i>Hippoglossoides elassodon</i>	0.0360	0.0002	0.9956
61	<i>Oncorhynchus tshawytscha</i>	0.0340	0.0002	0.9958
62	<i>Lopholithodes foraminatus</i>	0.0340	0.0002	0.9960
63	<i>Brisaster</i> sp.	0.0320	0.0002	0.9962
64	<i>Metridium</i> sp.	0.0290	0.0002	0.9963
65	<i>Scomber japonicus</i>	0.0280	0.0002	0.9965
66	Scyphozoa (class)	0.0270	0.0001	0.9966
67	<i>Sebastes borealis</i>	0.0260	0.0001	0.9967
68	<i>Ommastrephes bartrami</i>	0.0260	0.0001	0.9969
69	<i>Pandalopsis dispar</i>	0.0260	0.0001	0.9970
70	<i>Lycodes pacificus</i>	0.0240	0.0001	0.9971
71	<i>Theragra chalcogramma</i>	0.0240	0.0001	0.9973
72	<i>Cryptacanthodes giganteus</i>	0.0230	0.0001	0.9974
73	<i>Pseudostichopus mollis</i>	0.0210	0.0001	0.9975
74	<i>Pleuronichthys decurrens</i>	0.0210	0.0001	0.9976
75	<i>Sebastes rosenblatti</i>	0.0190	0.0001	0.9977
76	<i>Luidia</i> sp.	0.0190	0.0001	0.9978
77	Thaliacea unident.	0.0170	0.0001	0.9979
78	<i>Berryteuthis magister</i>	0.0170	0.0001	0.9980
79	<i>Myoxoderma platyacanthum</i>	0.0140	0.0001	0.9981
80	<i>Parmaturus xaniurus</i>	0.0140	0.0001	0.9981
81	octopus unident.	0.0140	0.0001	0.9982
82	Actiniaria (order)	0.0130	0.0001	0.9983
83	<i>Careproctus melanurus</i>	0.0120	0.0001	0.9983
84	<i>Clupea pallasii</i>	0.0120	0.0001	0.9984
85	Ommastrephidae	0.0120	0.0001	0.9985

Table B-34.--Continued.

86	<i>Sebastes aurora</i>	0.0120	0.0001	0.9985
87	<i>Echinacea unident.</i>	0.0110	0.0001	0.9986
88	Porifera (phylum)	0.0110	0.0001	0.9986
89	Paguridae	0.0110	0.0001	0.9987
90	<i>Liponema brevicorne</i>	0.0100	0.0001	0.9988
91	<i>Sebastes ruberrimus</i>	0.0100	0.0001	0.9988
92	<i>Paralichthys californicus</i>	0.0100	0.0001	0.9989
93	<i>Pandalus borealis</i>	0.0100	0.0001	0.9989
94	<i>Paralithodes californiensis</i>	0.0090	Trace	0.9990
95	<i>Ophiura sarsi</i>	0.0090	Trace	0.9990
96	<i>Hippasteria spinosa</i>	0.0080	Trace	0.9991
97	<i>Cancer productus</i>	0.0080	Trace	0.9991
98	<i>Pasiphaea pacifica</i>	0.0080	Trace	0.9991
99	<i>Chilara taylori</i>	0.0070	Trace	0.9992
100	<i>Halichondria panicea</i>	0.0070	Trace	0.9992
101	<i>Sebastes levis</i>	0.0070	Trace	0.9993
102	<i>Lopholithodes sp.</i>	0.0070	Trace	0.9993
103	<i>Lethasterias nanimensis</i>	0.0060	Trace	0.9993
104	<i>Neptunea sp.</i>	0.0060	Trace	0.9994
105	<i>Stylasterias forreri</i>	0.0050	Trace	0.9994
106	<i>Paractinostola faeculenta</i>	0.0050	Trace	0.9994
107	Onychoteuthidae	0.0050	Trace	0.9994
108	Aphroditidae	0.0050	Trace	0.9995
109	<i>Sebastes chlorostictus</i>	0.0040	Trace	0.9995
110	Myctophidae	0.0040	Trace	0.9995
111	<i>Oncorhynchus kisutch</i>	0.0040	Trace	0.9995
112	<i>Thrissacanthias penicillatus</i>	0.0040	Trace	0.9995
113	<i>Diplopteraster multipes</i>	0.0040	Trace	0.9996
114	<i>Ctenodiscus crispatus</i>	0.0040	Trace	0.9996
115	<i>Neptunea lyrata</i>	0.0040	Trace	0.9996
116	<i>Thaleichthys pacificus</i>	0.0030	Trace	0.9996
117	Asteroidea unident.	0.0030	Trace	0.9996
118	<i>Pycnopodia helianthoides</i>	0.0030	Trace	0.9997
119	<i>Taningia danae</i>	0.0030	Trace	0.9997
120	<i>Sebastes rufus</i>	0.0020	Trace	0.9997
121	<i>Lampetra tridentata</i>	0.0020	Trace	0.9997
122	<i>Fusitriton oregonensis</i>	0.0020	Trace	0.9997
123	<i>Pandalus hypsinotus</i>	0.0020	Trace	0.9997
124	<i>Gonatus sp.</i>	0.0020	Trace	0.9997
125	<i>Mustelus henlei</i>	0.0020	Trace	0.9997
126	<i>Zaniolepis frenata</i>	0.0020	Trace	0.9997
127	<i>Cucumaria sp.</i>	0.0020	Trace	0.9998
128	<i>Hippasteria californica</i>	0.0020	Trace	0.9998
129	skate egg case unident.	0.0020	Trace	0.9998

Table B-34.--Continued.

130	<i>Pagurus confragosus</i>	0.0020	Trace	0.9998
131	<i>Pisaster brevispinus</i>	0.0020	Trace	0.9998
132	<i>Nudibranchia unident.</i>	0.0020	Trace	0.9998
133	<i>Eptatretus deani</i>	0.0010	Trace	0.9998
134	<i>Solaster sp.</i>	0.0010	Trace	0.9998
135	<i>Crossaster papposus</i>	0.0010	Trace	0.9998
136	Pennatulacea (order)	0.0010	Trace	0.9998
137	<i>Molpadia sp.</i>	0.0010	Trace	0.9998
138	<i>Buccinum viridum</i>	0.0010	Trace	0.9998
139	<i>Mediaster aequalis</i>	0.0010	Trace	0.9999
140	<i>Histioteuthis hoylei</i>	0.0010	Trace	0.9999
141	<i>Leucandra heathi</i>	0.0010	Trace	0.9999
142	<i>Ceramaster patagonicus</i>	0.0010	Trace	0.9999
143	Naticidae	0.0010	Trace	0.9999
144	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
145	<i>Sardinops sagax</i>	0.0010	Trace	0.9999
146	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9999
147	<i>Solaster dawsoni</i>	0.0010	Trace	0.9999
148	<i>Sebastes sp.</i>	0.0010	Trace	0.9999
149	<i>Styela rustica</i>	0.0010	Trace	0.9999
150	<i>Ceramaster japonicus</i>	0.0010	Trace	0.9999
151	<i>Strongylocentrotus droebachiensis</i>	0.0010	Trace	0.9999
152	<i>Mycale loveni</i>	0.0010	Trace	0.9999
153	<i>Gorgonocephalus eucnemis</i>	0.0010	Trace	0.9999
154	<i>Onychoteuthis borealijaponicus</i>	0.0010	Trace	0.9999
155	<i>Lycodes brevipes</i>	0.0010	Trace	0.9999
156	Trichiuridae	0.0010	Trace	0.9999
157	<i>Pagurus brandti</i>	0.0010	Trace	0.9999
158	<i>Luidiaster dawsoni</i>	0.0010	Trace	0.9999
159	<i>Solaster paxillatus</i>	Trace	Trace	0.9999
160	<i>Apristurus kampaе</i>	Trace	Trace	0.9999
161	<i>Sebastolobus altivelis</i>	Trace	Trace	0.9999
162	<i>Vampyroteuthis infernalis</i>	Trace	Trace	0.9999
163	Cottidae	Trace	Trace	0.9999
164	<i>Opisthoteuthis californiana</i>	Trace	Trace	0.9999
165	<i>Polinices sp.</i>	Trace	Trace	0.9999
166	<i>Neptunea pribiloffensis</i>	Trace	Trace	0.9999
167	<i>Symbolophorus californiensis</i>	Trace	Trace	1.0000
168	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
169	<i>Mediaster sp.</i>	Trace	Trace	1.0000
170	<i>Sebastes semicinctus</i>	Trace	Trace	1.0000
171	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
172	<i>Stomphia sp.</i>	Trace	Trace	1.0000
173	<i>Zalembeius rosaceus</i>	Trace	Trace	1.0000

Table B-34.--Continued.

174	<i>Lampanyctus</i> sp.	Trace	Trace	1.0000
175	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
176	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
177	<i>Parastichopus californicus</i>	Trace	Trace	1.0000
178	<i>Crossaster</i> sp.	Trace	Trace	1.0000
179	<i>Tactostoma macropus</i>	Trace	Trace	1.0000
180	Ophiuroid unident.	Trace	Trace	1.0000
181	<i>Rossia pacifica</i>	Trace	Trace	1.0000
182	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
183	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
184	<i>Chauliodus macouni</i>	Trace	Trace	1.0000
185	Hexactinellida	Trace	Trace	1.0000
186	<i>Buccinum</i> sp.	Trace	Trace	1.0000
187	<i>Neptunea amianta</i>	Trace	Trace	1.0000
188	Liparidinae	Trace	Trace	1.0000
189	<i>Loligo opalescens</i>	Trace	Trace	1.0000
190	<i>Allocentrotus</i> sp.	Trace	Trace	1.0000
191	<i>Ophiopholis longispina</i>	Trace	Trace	1.0000
192	<i>Beringius frielei</i>	Trace	Trace	1.0000
193	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
194	<i>Stylatula</i> sp.	Trace	Trace	1.0000
195	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
196	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000
197	<i>Diaphus theta</i>	Trace	Trace	1.0000
198	Euphausiacea (order)	Trace	Trace	1.0000
199	<i>Hyas lyratus</i>	Trace	Trace	1.0000
200	Polychaeta (class)	Trace	Trace	1.0000
201	<i>Molpadia intermedia</i>	Trace	Trace	1.0000
202	<i>Raja inornata</i>	Trace	Trace	1.0000
203	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
204	<i>Actinauge verrillii</i>	Trace	Trace	1.0000
205	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
206	Platyroctidae	Trace	Trace	1.0000
207	<i>Caryophyllia</i> sp.	Trace	Trace	1.0000
208	Sipuncula (phylum)	Trace	Trace	1.0000
209	<i>Bathyagonus</i> sp.	Trace	Trace	1.0000
210	<i>Psolus</i> sp.	Trace	Trace	1.0000
211	<i>Crangon</i> sp.	Trace	Trace	1.0000
212	<i>Bathyagonus infraspinus</i>	Trace	Trace	1.0000
213	<i>Tritonia</i> sp.	Trace	Trace	1.0000
214	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
215	<i>Natica</i> sp.	Trace	Trace	1.0000
216	<i>Sebastes wilsoni</i>	Trace	Trace	1.0000
217	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000

Table B-34.--Continued.

218	crab unident.	Trace	Trace	1.0000
219	<i>Chorilia longipes</i>	Trace	Trace	1.0000
220	<i>Stenobrachius leucopsarus</i>	Trace	Trace	1.0000
221	<i>Tritonia diomedea</i>	Trace	Trace	1.0000
222	<i>Chionoecetes tanneri</i>	Trace	Trace	1.0000
223	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
224	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
225	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
226	Virgularidae	Trace	Trace	1.0000
227	gastropod eggs	Trace	Trace	1.0000
228	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
229	<i>Henricia</i> sp.	Trace	Trace	1.0000
230	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
231	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
232	<i>Buccinum</i> sp.	Trace	Trace	1.0000
233	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
234	<i>Aforia</i> sp.	Trace	Trace	1.0000
235	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
236	<i>Diaphus</i> sp.	Trace	Trace	1.0000
237	crinoid unident.	Trace	Trace	1.0000
238	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
239	<i>Leuroglossus schmidti</i>	Trace	Trace	1.0000
241	Sternoptychidae unident.	Trace	Trace	1.0000
240	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000
242	fish unident.	Trace	Trace	1.0000
243	hydroid unident.	Trace	Trace	1.0000

Table B-35.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire survey area, deep stratum (367-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Microstomus pacificus</i>	27.5410	0.2629	0.2629
2	<i>Merluccius productus</i>	21.9340	0.2094	0.4723
3	<i>Anoplopoma fimbria</i>	12.4880	0.1192	0.5915
4	<i>Glyptocephalus zachirus</i>	10.0620	0.0961	0.6876
5	<i>Sebastes diploproa</i>	6.6990	0.0639	0.7515
6	<i>Sebastolobus alascanus</i>	4.2930	0.0410	0.7925
7	<i>Sebastes aurora</i>	2.7740	0.0265	0.8190
8	<i>Squalus acanthias</i>	1.6330	0.0156	0.8346
9	<i>Sebastes aleutianus</i>	1.3940	0.0133	0.8479
10	<i>Lycodes cortezianus</i>	1.3910	0.0133	0.8612
11	<i>Apristurus brunneus</i>	1.3500	0.0129	0.8740
12	<i>Raja rhina</i>	1.2250	0.0117	0.8857
13	<i>Atheresthes stomias</i>	1.1090	0.0106	0.8963
14	<i>Brisaster latifrons</i>	1.0910	0.0104	0.9067
15	<i>Lycodes diapterus</i>	1.0560	0.0101	0.9168
16	<i>Sebastes alutus</i>	0.9690	0.0092	0.9261
17	<i>Sebastolobus altivelis</i>	0.9330	0.0089	0.9350
18	<i>Hydrolagus colliei</i>	0.8720	0.0083	0.9433
19	<i>Sebastes melanostomus</i>	0.7750	0.0074	0.9507
20	<i>Alloctrotus fragilis</i>	0.6310	0.0060	0.9567
21	<i>Moroteuthis robusta</i>	0.4950	0.0047	0.9614
22	squid unident.	0.4240	0.0040	0.9655
23	<i>Bathyraja interrupta</i>	0.2320	0.0022	0.9677
24	<i>Rathbunaster californicus</i>	0.2190	0.0021	0.9698
25	<i>Parmaturus xaniurus</i>	0.2140	0.0020	0.9718
26	heart urchin unident.	0.1780	0.0017	0.9735
27	<i>Brisaster</i> sp.	0.1540	0.0015	0.9750
28	<i>Aphrocallistes vastus</i>	0.1500	0.0014	0.9764
29	<i>Luidia foliolata</i>	0.1330	0.0013	0.9777
30	Ommastrephidae	0.1300	0.0012	0.9789
31	Holothuroidea unident.	0.1280	0.0012	0.9802
32	<i>Liponema brevicorne</i>	0.1180	0.0011	0.9813
33	<i>Chionoecetes tanneri</i>	0.1070	0.0010	0.9823
34	<i>Parophrys vetulus</i>	0.1050	0.0010	0.9833
35	<i>Lyopsetta exilis</i>	0.1010	0.0010	0.9843
36	<i>Eopsetta jordani</i>	0.0990	0.0010	0.9852
37	<i>Myoxoderma platyacanthum</i>	0.0950	0.0009	0.9861
38	<i>Paractinostola faeculenta</i>	0.0890	0.0008	0.9870
39	<i>Neptunea</i> sp.	0.0730	0.0007	0.9877
40	Porifera (phylum)	0.0620	0.0006	0.9883
41	<i>Sebastes borealis</i>	0.0600	0.0006	0.9888

Table B-35.--Continued.

42	<i>Torpedo californica</i>	0.0570	0.0005	0.9894
43	octopus unident.	0.0530	0.0005	0.9899
44	Actiniaria (order)	0.0500	0.0005	0.9904
45	<i>Sebastes crameri</i>	0.0500	0.0005	0.9909
46	<i>Trachurus symmetricus</i>	0.0470	0.0004	0.9913
47	Scyliorhinidae	0.0440	0.0004	0.9917
48	<i>Metridium</i> sp.	0.0420	0.0004	0.9921
49	<i>Neptunea lyrata</i>	0.0390	0.0004	0.9925
50	Thaliacea unident.	0.0380	0.0004	0.9929
51	<i>Neptunea amianta</i>	0.0340	0.0003	0.9932
52	<i>Sebastes babcocki</i>	0.0330	0.0003	0.9935
53	<i>Albatrossia pectoralis</i>	0.0320	0.0003	0.9938
54	<i>Berryteuthis magister</i>	0.0310	0.0003	0.9941
55	<i>Careproctus melanurus</i>	0.0290	0.0003	0.9944
56	<i>Hippoglossus stenolepis</i>	0.0270	0.0003	0.9946
57	<i>Clupea pallasii</i>	0.0260	0.0003	0.9949
58	<i>Opisthoteuthis californiana</i>	0.0260	0.0002	0.9951
59	<i>Antimora microlepis</i>	0.0240	0.0002	0.9954
60	<i>Ommastrephes bartrami</i>	0.0230	0.0002	0.9956
61	<i>Myoxoderma sacculatum</i>	0.0230	0.0002	0.9958
62	<i>Bothrocara brunneum</i>	0.0220	0.0002	0.9960
63	Myctophidae	0.0220	0.0002	0.9962
64	<i>Pseudostichopus mollis</i>	0.0210	0.0002	0.9964
65	Onychoteuthidae	0.0210	0.0002	0.9966
66	<i>Thrissacanthias penicillatus</i>	0.0190	0.0002	0.9968
67	<i>Prionace glauca</i>	0.0190	0.0002	0.9970
68	<i>Vampyroteuthis infernalis</i>	0.0180	0.0002	0.9972
69	<i>Parastichopus leucothele</i>	0.0170	0.0002	0.9973
70	<i>Taningia danae</i>	0.0170	0.0002	0.9975
71	<i>Ophiura sarsi</i>	0.0160	0.0001	0.9976
72	<i>Pagurus confragosus</i>	0.0140	0.0001	0.9978
73	<i>Pasiphaea pacifica</i>	0.0140	0.0001	0.9979
74	<i>Raja binoculata</i>	0.0140	0.0001	0.9980
75	<i>Histioteuthis hoylei</i>	0.0100	0.0001	0.9981
76	Pennatulacea (order)	0.0090	0.0001	0.9982
77	<i>Molpadia intermedia</i>	0.0080	0.0001	0.9983
78	Scyphozoa (class)	0.0070	0.0001	0.9984
79	Paguridae	0.0070	0.0001	0.9984
80	<i>Molpadia</i> sp.	0.0060	0.0001	0.9985
81	<i>Halichondria panicea</i>	0.0060	0.0001	0.9985
82	<i>Diplopteraster multipes</i>	0.0050	0.0001	0.9986
83	<i>Lampanyctus</i> sp.	0.0050	Trace	0.9986
84	<i>Buccinum viridum</i>	0.0050	Trace	0.9987
85	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9987

Table B-35.--Continued.

86	<i>Hippasteria californica</i>	0.0040	Trace	0.9988
87	<i>Sebastes rufus</i>	0.0040	Trace	0.9988
88	<i>Eptatretus deani</i>	0.0040	Trace	0.9988
89	<i>Tactostoma macropus</i>	0.0040	Trace	0.9989
90	<i>Mediaster aequalis</i>	0.0040	Trace	0.9989
91	<i>Hippasteria spinosa</i>	0.0040	Trace	0.9989
92	<i>Cancer magister</i>	0.0030	Trace	0.9990
93	<i>Sebastes pinniger</i>	0.0030	Trace	0.9990
94	<i>Alosa sapidissima</i>	0.0030	Trace	0.9990
95	<i>Lycodes pacificus</i>	0.0030	Trace	0.9991
96	<i>Embassichthys bathybius</i>	0.0030	Trace	0.9991
97	<i>Sebastes paucispinis</i>	0.0030	Trace	0.9991
98	Hexactinellida	0.0030	Trace	0.9992
99	Aphroditidae	0.0030	Trace	0.9992
100	<i>Lampetra tridentata</i>	0.0030	Trace	0.9992
101	Ascidian unident.	0.0030	Trace	0.9992
102	<i>Somniosus pacificus</i>	0.0030	Trace	0.9993
103	<i>Sebastes entomelas</i>	0.0030	Trace	0.9993
104	<i>Sebastes goodei</i>	0.0030	Trace	0.9993
105	<i>Neptunea pribiloffensis</i>	0.0020	Trace	0.9993
106	<i>Psolus</i> sp.	0.0020	Trace	0.9994
107	<i>Alepocephalus tenebrosus</i>	0.0020	Trace	0.9994
108	Echinacea unident.	0.0020	Trace	0.9994
109	<i>Chauliodus macouni</i>	0.0020	Trace	0.9994
110	<i>Sebastes helvomaculatus</i>	0.0020	Trace	0.9995
111	<i>Fusitriton oregonensis</i>	0.0020	Trace	0.9995
112	<i>Paralithodes californiensis</i>	0.0020	Trace	0.9995
113	<i>Cucumaria</i> sp.	0.0020	Trace	0.9995
114	<i>Gorgonocephalus eucnemis</i>	0.0020	Trace	0.9995
115	<i>Scomber japonicus</i>	0.0020	Trace	0.9995
116	<i>Apristurus kampae</i>	0.0020	Trace	0.9996
117	<i>Actinauge verrillii</i>	0.0020	Trace	0.9996
118	<i>Coryphaenoides acrolepis</i>	0.0020	Trace	0.9996
119	<i>Eptatretus stouti</i>	0.0020	Trace	0.9996
120	Euphausiacea (order)	0.0020	Trace	0.9996
121	<i>Bathyraja aleutica</i>	0.0020	Trace	0.9996
122	<i>Parastichopus</i> sp.	0.0020	Trace	0.9997
123	<i>Stylasterias forreri</i>	0.0020	Trace	0.9997
124	<i>Pycnopodia helianthoides</i>	0.0020	Trace	0.9997
125	<i>Anthomastus</i> sp.	0.0010	Trace	0.9997
126	<i>Pandalus hypsinotus</i>	0.0010	Trace	0.9997
127	skate egg case unident.	0.0010	Trace	0.9997
128	<i>Pannychia moseleyi</i>	0.0010	Trace	0.9997
129	<i>Raja inornata</i>	0.0010	Trace	0.9997

Table B-35.--Continued.

130	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9998
131	<i>Ctenodiscus crispatus</i>	0.0010	Trace	0.9998
132	<i>Rossia pacifica</i>	0.0010	Trace	0.9998
133	Rajidae unident.	0.0010	Trace	0.9998
134	<i>Virgularia</i> sp.	0.0010	Trace	0.9998
135	<i>Aristostomias scintillans</i>	0.0010	Trace	0.9998
136	<i>Tritonia</i> sp.	0.0010	Trace	0.9998
137	<i>Careproctus</i> sp.	0.0010	Trace	0.9998
138	<i>Nezumia stelgidolepis</i>	0.0010	Trace	0.9998
139	<i>Icelinus filamentosus</i>	0.0010	Trace	0.9998
140	<i>Octopus dofleini</i>	0.0010	Trace	0.9998
141	<i>Bathylagus</i> sp.	0.0010	Trace	0.9998
142	<i>Symbolophorus californiensis</i>	0.0010	Trace	0.9998
143	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
144	<i>Sagamichthys abei</i>	0.0010	Trace	0.9999
145	<i>Apristurus brunneus</i>	0.0010	Trace	0.9999
146	<i>Clinocardium</i> sp.	0.0010	Trace	0.9999
147	Asteroidea unident.	0.0010	Trace	0.9999
148	<i>Sipuncula</i> (phylum)	0.0010	Trace	0.9999
149	<i>Pentamera lissoplaca</i>	0.0010	Trace	0.9999
150	<i>Bathyagonus nigripinnis</i>	Trace	Trace	0.9999
151	<i>Sebastes chlorostictus</i>	Trace	Trace	0.9999
152	Ophiuroid unident.	Trace	Trace	0.9999
153	<i>Pisaster</i> sp.	Trace	Trace	0.9999
154	<i>Luidiaster dawsoni</i>	Trace	Trace	0.9999
155	<i>Mycale loveni</i>	Trace	Trace	0.9999
156	<i>Tritonia diomedea</i>	Trace	Trace	0.9999
157	<i>Malacocephalus laevis</i>	Trace	Trace	0.9999
158	<i>Pandalopsis dispar</i>	Trace	Trace	0.9999
159	<i>Mediaster</i> sp.	Trace	Trace	0.9999
160	<i>Luidia</i> sp.	Trace	Trace	0.9999
161	<i>Lampanyctus ritteri</i>	Trace	Trace	0.9999
162	<i>Nudibranchia</i> unident.	Trace	Trace	0.9999
163	<i>Stylatula</i> sp.	Trace	Trace	0.9999
164	<i>Hippasteria</i> sp.	Trace	Trace	0.9999
165	<i>Aforia</i> sp.	Trace	Trace	0.9999
166	<i>Liparis</i> sp.	Trace	Trace	0.9999
167	<i>Solaster endeca</i>	Trace	Trace	0.9999
168	Petromyzontidae	Trace	Trace	1.0000
169	<i>Chorilia longipes</i>	Trace	Trace	1.0000
170	<i>Pteraster</i> sp.	Trace	Trace	1.0000
171	gastropod eggs	Trace	Trace	1.0000
172	Sternoptychidae unident.	Trace	Trace	1.0000
173	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000

Table B-35.--Continued.

174	<i>Solaster</i> sp.	Trace	Trace	1.0000
175	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
176	<i>Chilara taylori</i>	Trace	Trace	1.0000
177	<i>Pagurus brandti</i>	Trace	Trace	1.0000
178	<i>Calliostoma</i> sp.	Trace	Trace	1.0000
179	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
180	Eel <i>leptocephalus</i>	Trace	Trace	1.0000
181	<i>Echiura</i> (phylum)	Trace	Trace	1.0000
182	<i>Loligo opalescens</i>	Trace	Trace	1.0000
183	<i>Crossaster</i> sp.	Trace	Trace	1.0000
184	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
185	<i>Zaniolepis frenata</i>	Trace	Trace	1.0000
186	<i>Lampanyctus regalis</i>	Trace	Trace	1.0000
187	<i>Styela rustica</i>	Trace	Trace	1.0000
188	<i>Ptilosarcus gurneyi</i>	Trace	Trace	1.0000
189	<i>Aplacophora</i>	Trace	Trace	1.0000
190	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000
191	hydroid unident.	Trace	Trace	1.0000
192	Liparidinae	Trace	Trace	1.0000
193	<i>Laqueus californianus</i>	Trace	Trace	1.0000
194	<i>Polinices</i> sp.	Trace	Trace	1.0000
195	shrimp unident.	Trace	Trace	1.0000
196	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
197	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
198	<i>Neptunea</i> sp.	Trace	Trace	1.0000
199	<i>Buccinum</i> sp.	Trace	Trace	1.0000
200	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
201	Virgularidae	Trace	Trace	1.0000
202	<i>Colus</i> sp.	Trace	Trace	1.0000
203	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
204	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
205	<i>Chiroteuthis calyx</i>	Trace	Trace	1.0000
206	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
207	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
208	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
209	<i>Natica</i> sp.	Trace	Trace	1.0000
210	<i>Leuroglossus stilbius</i>	Trace	Trace	1.0000
211	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
212	brachiopod unident.	Trace	Trace	1.0000
213	<i>Pandalus tridens</i>	Trace	Trace	1.0000
214	Gastropod unident.	Trace	Trace	1.0000
215	<i>Lycodapus mandibularis</i>	Trace	Trace	1.0000
216	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
217	<i>Pandalus jordani</i>	Trace	Trace	1.0000

Table B-35.--Continued.

218	<i>Beringius frielei</i>	Trace	Trace	1.0000
219	<i>Colus herendeenii</i>	Trace	Trace	1.0000
220	<i>Notolepsis risso</i>	Trace	Trace	1.0000
221	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
222	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
223	<i>Howella sherborni</i>	Trace	Trace	1.0000
224	fish unident.	Trace	Trace	1.0000
225	<i>Rhinoliparis attenuatus</i>	Trace	Trace	1.0000
226	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
227	<i>Swiftia</i> sp.	Trace	Trace	1.0000
228	<i>Diaphus</i> sp.	Trace	Trace	1.0000
229	<i>Henricia</i> sp.	Trace	Trace	1.0000
230	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
231	<i>Lycodapus fierasfer</i>	Trace	Trace	1.0000
232	<i>Orthasterias koehleri</i>	Trace	Trace	1.0000
233	Pleuronectiformes larvae	Trace	Trace	1.0000
234	<i>Tarletonbeania crenularis</i>	Trace	Trace	1.0000
235	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
236	<i>Gnathopausia gigas</i>	Trace	Trace	1.0000

Table B-36.--Rank order of relative abundance (kg/ha) for fish and invertebrate species in the entire survey area (55-500 m).

Rank	Species name	Mean CPUE (kg/ha)	Proportion	Cumulative proportion
1	<i>Merluccius productus</i>	80.3410	0.4542	0.4542
2	<i>Microstomus pacificus</i>	10.5140	0.0594	0.5136
3	<i>Squalus acanthias</i>	10.5050	0.0594	0.5730
4	<i>Anoplopoma fimbria</i>	7.6590	0.0433	0.6163
5	<i>Sebastes flavidus</i>	6.2490	0.0353	0.6517
6	<i>Glyptocephalus zachirus</i>	5.9790	0.0338	0.6855
7	<i>Citharichthys sordidus</i>	4.6660	0.0264	0.7118
8	<i>Sebastes diploproa</i>	4.6370	0.0262	0.7380
9	<i>Clupea pallasii</i>	4.5470	0.0257	0.7638
10	<i>Atheresthes stomias</i>	4.5350	0.0256	0.7894
11	<i>Sebastes goodei</i>	3.2850	0.0186	0.8080
12	<i>Parophrys vetulus</i>	2.9050	0.0164	0.8244
13	<i>Sebastes jordani</i>	2.3600	0.0133	0.8377
14	<i>Sebastes saxicola</i>	1.8560	0.0105	0.8482
15	<i>Sebastes alutus</i>	1.8050	0.0102	0.8584
16	<i>Hippoglossus stenolepis</i>	1.7830	0.0101	0.8685
17	<i>Trachurus symmetricus</i>	1.7130	0.0097	0.8782
18	<i>Sebastolobus alascanus</i>	1.2350	0.0070	0.8852
19	<i>Genyonemus lineatus</i>	1.2150	0.0069	0.8920
20	<i>Ophiodon elongatus</i>	1.0620	0.0060	0.8980
21	<i>Raja rhina</i>	1.0350	0.0058	0.9039
22	<i>Scomber japonicus</i>	0.9460	0.0053	0.9092
23	<i>Sebastes entomelas</i>	0.9350	0.0053	0.9145
24	<i>Sebastes elongatus</i>	0.9320	0.0053	0.9198
25	<i>Hydrolagus collicii</i>	0.8960	0.0051	0.9249
26	<i>Sardinops sagax</i>	0.8640	0.0049	0.9298
27	<i>Sebastes zacentrus</i>	0.8050	0.0046	0.9343
28	<i>Alosa sapidissima</i>	0.7790	0.0044	0.9387
29	<i>Sebastes proriger</i>	0.7560	0.0043	0.9430
30	<i>Eopsetta jordani</i>	0.6330	0.0036	0.9466
31	<i>Sebastes crameri</i>	0.5620	0.0032	0.9497
32	<i>Sebastes aurora</i>	0.4810	0.0027	0.9525
33	<i>Raja binoculata</i>	0.4750	0.0027	0.9551
34	<i>Sebastes pinniger</i>	0.4690	0.0027	0.9578
35	<i>Cancer magister</i>	0.4280	0.0024	0.9602
36	<i>Oncorhynchus tshawytscha</i>	0.4200	0.0024	0.9626
37	<i>Engraulis mordax</i>	0.3940	0.0022	0.9648
38	<i>Lycodes corteziianus</i>	0.3640	0.0021	0.9669
39	<i>Lyopsetta exilis</i>	0.3570	0.0020	0.9689
40	<i>Brisaster latifrons</i>	0.3280	0.0019	0.9708
41	<i>Alloctrotus fragilis</i>	0.2960	0.0017	0.9724

Table B-36.--Continued.

42	<i>Sebastes aleutianus</i>	0.2750	0.0016	0.9740
43	<i>Apristurus brunneus</i>	0.2700	0.0015	0.9755
44	<i>Lycodes diapterus</i>	0.2140	0.0012	0.9767
45	<i>Moroteuthis robusta</i>	0.1900	0.0011	0.9778
46	<i>Sebastes brevispinis</i>	0.1880	0.0011	0.9789
47	<i>Gadus macrocephalus</i>	0.1780	0.0010	0.9799
48	<i>Hippoglossoides elassodon</i>	0.1640	0.0009	0.9808
49	<i>Sebastolobus altivelis</i>	0.1610	0.0009	0.9817
50	<i>Lepidopsetta bilineata</i>	0.1500	0.0008	0.9825
51	<i>Luidia foliata</i>	0.1470	0.0008	0.9834
52	<i>Sebastes melanostomus</i>	0.1440	0.0008	0.9842
53	<i>Bathyraja interrupta</i>	0.1420	0.0008	0.9850
54	<i>Metridium</i> sp.	0.1300	0.0007	0.9857
55	heart urchin unident.	0.1210	0.0007	0.9864
56	<i>Porichthys notatus</i>	0.1030	0.0006	0.9870
57	squid unident.	0.0970	0.0005	0.9875
58	<i>Sebastes semicinctus</i>	0.0940	0.0005	0.9881
59	<i>Rathbunaster californicus</i>	0.0790	0.0004	0.9885
60	<i>Argentina sialis</i>	0.0690	0.0004	0.9889
61	<i>Sebastes paucispinis</i>	0.0680	0.0004	0.9893
62	<i>Torpedo californica</i>	0.0680	0.0004	0.9897
63	<i>Lycodes pacificus</i>	0.0680	0.0004	0.9901
64	Actiniaria (order)	0.0640	0.0004	0.9904
65	<i>Peprilus simillimus</i>	0.0580	0.0003	0.9908
66	<i>Sebastes helvomaculatus</i>	0.0580	0.0003	0.9911
67	<i>Microgadus proximus</i>	0.0540	0.0003	0.9914
68	<i>Aphrocallistes vastus</i>	0.0530	0.0003	0.9917
69	<i>Galeorhinus galeus</i>	0.0520	0.0003	0.9920
70	<i>Sebastes babcocki</i>	0.0510	0.0003	0.9923
71	Holothuroidea unident.	0.0480	0.0003	0.9925
72	<i>Pleuronichthys decurrens</i>	0.0470	0.0003	0.9928
73	<i>Laqueus californianus</i>	0.0410	0.0002	0.9930
74	<i>Parmaturus xaniurus</i>	0.0400	0.0002	0.9933
75	<i>Pandalus jordani</i>	0.0370	0.0002	0.9935
76	<i>Brisaster</i> sp.	0.0360	0.0002	0.9937
77	Scyphozoa (class)	0.0340	0.0002	0.9939
78	rough purple sea anemone	0.0330	0.0002	0.9941
79	<i>Luidia</i> sp.	0.0320	0.0002	0.9942
80	<i>Sebastes ruberrimus</i>	0.0320	0.0002	0.9944
81	<i>Mustelus henlei</i>	0.0300	0.0002	0.9946
82	<i>Pycnopodia helianthoides</i>	0.0300	0.0002	0.9948
83	<i>Zalambius rosaceus</i>	0.0270	0.0002	0.9949
84	<i>Parastichopus leucothele</i>	0.0260	0.0001	0.9951
85	<i>Paralichthys californicus</i>	0.0260	0.0001	0.9952

Table B-36.--Continued.

86	<i>Squatina californica</i>	0.0250	0.0001	0.9954
87	Ommastrephidae	0.0250	0.0001	0.9955
88	<i>Lopholithodes foraminatus</i>	0.0240	0.0001	0.9956
89	Thaliacea unident.	0.0240	0.0001	0.9958
90	<i>Hexanchus griseus</i>	0.0240	0.0001	0.9959
91	<i>Liponemis brevicornis</i>	0.0230	0.0001	0.9960
92	<i>Sebastes chlorostictus</i>	0.0230	0.0001	0.9962
93	<i>Icelinus filamentosus</i>	0.0210	0.0001	0.9963
94	<i>Myoxoderma platyacanthum</i>	0.0210	0.0001	0.9964
95	<i>Sebastes mystinus</i>	0.0190	0.0001	0.9965
96	<i>Platichthys stellatus</i>	0.0190	0.0001	0.9966
97	<i>Theragra chalcogramma</i>	0.0190	0.0001	0.9967
98	<i>Octopus dofleini</i>	0.0190	0.0001	0.9968
99	<i>Chionoecetes tanneri</i>	0.0180	0.0001	0.9969
100	<i>Sebastes maliger</i>	0.0180	0.0001	0.9970
101	<i>Thaleichthys pacificus</i>	0.0180	0.0001	0.9971
102	<i>Acipenser medirostris</i>	0.0170	0.0001	0.9972
103	<i>Paractinostola faeculenta</i>	0.0160	0.0001	0.9973
104	<i>Sebastes borealis</i>	0.0160	0.0001	0.9974
105	<i>Psettichthys melanostictus</i>	0.0160	0.0001	0.9975
106	Porifera (phylum)	0.0140	0.0001	0.9976
107	<i>Neptunea</i> sp.	0.0140	0.0001	0.9977
108	octopus unident.	0.0130	0.0001	0.9977
109	<i>Pandalus platyceros</i>	0.0120	0.0001	0.9978
110	<i>Parastichopus californicus</i>	0.0120	0.0001	0.9979
111	<i>Loligo opalescens</i>	0.0110	0.0001	0.9979
112	<i>Pseudostichopus mollis</i>	0.0100	0.0001	0.9980
113	<i>Berryteuthis magister</i>	0.0100	0.0001	0.9980
114	<i>Sebastes reedi</i>	0.0100	0.0001	0.9981
115	Ommastrephes bartrami	0.0100	0.0001	0.9982
116	<i>Lycodes brevipes</i>	0.0080	Trace	0.9982
117	skate egg case unident.	0.0080	Trace	0.9982
118	<i>Careproctus melanurus</i>	0.0080	Trace	0.9983
119	Scyliorhinidae	0.0080	Trace	0.9983
120	<i>Neptunea lyrata</i>	0.0070	Trace	0.9984
121	<i>Pandalopsis dispar</i>	0.0070	Trace	0.9984
122	<i>Mustelus</i> sp.	0.0070	Trace	0.9985
123	<i>Chilara taylori</i>	0.0070	Trace	0.9985
124	<i>Gorgonocephalus eucnemis</i>	0.0070	Trace	0.9985
125	<i>Pandalus borealis</i>	0.0060	Trace	0.9986
126	<i>Anarrhichthys ocellatus</i>	0.0060	Trace	0.9986
127	<i>Cryptacanthodes giganteus</i>	0.0060	Trace	0.9986
128	<i>Neptunea amianta</i>	0.0060	Trace	0.9987
129	Basketstarfish unident.	0.0060	Trace	0.9987

Table B-36.--Continued.

130	<i>Albatrossia pectoralis</i>	0.0050	Trace	0.9987
131	<i>Thrissacanthias penicillatus</i>	0.0050	Trace	0.9988
132	<i>Cancer productus</i>	0.0050	Trace	0.9988
133	<i>Opisthoteuthis californiana</i>	0.0050	Trace	0.9988
134	<i>Ophiura sarsi</i>	0.0050	Trace	0.9988
135	<i>Sebastes wilsoni</i>	0.0050	Trace	0.9989
136	Onychoteuthidae	0.0050	Trace	0.9989
137	Myctophidae	0.0050	Trace	0.9989
138	<i>Stylasterias forreri</i>	0.0040	Trace	0.9989
139	<i>Pleuronichthys verticalis</i>	0.0040	Trace	0.9990
140	<i>Sebastes rosenblatti</i>	0.0040	Trace	0.9990
141	<i>Virgularia</i> sp.	0.0040	Trace	0.9990
142	<i>Antimora microlepis</i>	0.0040	Trace	0.9990
143	<i>Pasiphaea pacifica</i>	0.0040	Trace	0.9991
144	<i>Lethasterias nanimensis</i>	0.0040	Trace	0.9991
145	<i>Myoxoderma sacculatum</i>	0.0040	Trace	0.9991
146	Aphroditidae	0.0040	Trace	0.9991
147	<i>Hexagrammos decagrammus</i>	0.0040	Trace	0.9992
148	<i>Sebastes ovalis</i>	0.0040	Trace	0.9992
149	<i>Bothrocarum brunneum</i>	0.0040	Trace	0.9992
150	starfish unident.	0.0040	Trace	0.9992
151	<i>Pisaster brevispinus</i>	0.0040	Trace	0.9992
152	<i>Hippasteria spinosa</i>	0.0040	Trace	0.9993
153	Paguridae	0.0040	Trace	0.9993
154	<i>Hippasteria</i> sp.	0.0040	Trace	0.9993
155	<i>Oncorhynchus kisutch</i>	0.0040	Trace	0.9993
156	<i>Taningia danae</i>	0.0040	Trace	0.9993
157	<i>Lopholithodes</i> sp.	0.0040	Trace	0.9994
158	sea urchin unident.	0.0040	Trace	0.9994
159	<i>Paralithodes californiensis</i>	0.0030	Trace	0.9994
160	<i>Hippasteria californica</i>	0.0030	Trace	0.9994
161	<i>Sebastes levis</i>	0.0030	Trace	0.9994
162	<i>Raja inornata</i>	0.0030	Trace	0.9995
163	<i>Vampyroteuthis infernalis</i>	0.0030	Trace	0.9995
164	<i>Prionace glauca</i>	0.0030	Trace	0.9995
165	<i>Spirinchus starksi</i>	0.0030	Trace	0.9995
166	Pennatulacea (order)	0.0030	Trace	0.9995
167	<i>Pagurus confragosus</i>	0.0030	Trace	0.9995
168	<i>Sebastes melanops</i>	0.0030	Trace	0.9996
169	<i>Bathyraja parmifera</i>	0.0030	Trace	0.9996
170	<i>Allosmerus elongatus</i>	0.0030	Trace	0.9996

Table B-36.--Continued.

171	<i>Halichondria panicea</i>	0.0030	Trace	0.9996
172	<i>Zaniolepis latipinnis</i>	0.0020	Trace	0.9996
173	<i>Mustelus californicus</i>	0.0020	Trace	0.9996
174	<i>Stylatula</i> sp.	0.0020	Trace	0.9996
175	<i>Histioteuthis dofleini</i>	0.0020	Trace	0.9997
176	nudibranch unident.	0.0020	Trace	0.9997
177	<i>Isopsetta isolepis</i>	0.0020	Trace	0.9997
178	<i>Diplopteraster multipes</i>	0.0020	Trace	0.9997
179	<i>Molpadia intermedia</i>	0.0020	Trace	0.9997
180	<i>Molpadia</i> sp.	0.0020	Trace	0.9997
181	<i>Metridium senile</i>	0.0020	Trace	0.9997
182	<i>Mediaster aequalis</i>	0.0020	Trace	0.9997
183	<i>Strongylocentrotus droebachiensis</i>	0.0020	Trace	0.9997
184	<i>Sebastes miniatus</i>	0.0010	Trace	0.9997
185	<i>Crossaster papposus</i>	0.0010	Trace	0.9998
186	<i>Solaster dawsoni</i>	0.0010	Trace	0.9998
187	<i>Alepisaurus ferox</i>	0.0010	Trace	0.9998
188	<i>Fusitriton oregonensis</i>	0.0010	Trace	0.9998
189	<i>Sebastes rufus</i>	0.0010	Trace	0.9998
190	<i>Buccinum viridum</i>	0.0010	Trace	0.9998
191	<i>Orthasterias koehleri</i>	0.0010	Trace	0.9998
192	squid eggs unident.	0.0010	Trace	0.9998
193	<i>Solaster</i> sp.	0.0010	Trace	0.9998
194	<i>Eptatretus deani</i>	0.0010	Trace	0.9998
195	<i>Lampetra tridentata</i>	0.0010	Trace	0.9998
196	Hexactinellida	0.0010	Trace	0.9998
197	<i>Ctenodiscus crispatus</i>	0.0010	Trace	0.9998
198	<i>Lampanyctus</i> sp.	0.0010	Trace	0.9998
199	Gorgonacea (order)	0.0010	Trace	0.9998
200	<i>Polinices pallidus</i>	0.0010	Trace	0.9998
201	<i>Cucumaria</i> sp.	0.0010	Trace	0.9998
202	<i>Hypomesus pretiosus</i>	0.0010	Trace	0.9999
203	<i>Dermasterias imbricata</i>	0.0010	Trace	0.9999
204	<i>Tritonia</i> sp.	0.0010	Trace	0.9999
205	<i>Pandalus hypsinotus</i>	0.0010	Trace	0.9999
206	brachiopod unident.	0.0010	Trace	0.9999
207	<i>Tactostoma macropus</i>	0.0010	Trace	0.9999
208	<i>Patinopecten caurinus</i>	0.0010	Trace	0.9999
209	Ascidian unident.	0.0010	Trace	0.9999
210	<i>Sebastes caurinus</i>	0.0010	Trace	0.9999
211	<i>Pseudarchaster parelii</i>	0.0010	Trace	0.9999

Table B-36.--Continued.

212	<i>Mediaster</i> sp.	0.0010	Trace	0.9999
213	<i>Pagurus capillatus</i>	0.0010	Trace	0.9999
214	<i>Zaniolepis frenata</i>	0.0010	Trace	0.9999
215	<i>Embassichthys bathybius</i>	0.0010	Trace	0.9999
216	<i>Neptunea pribiloffensis</i>	0.0010	Trace	0.9999
217	<i>Somniosus pacificus</i>	Trace	Trace	0.9999
218	<i>Mursia gaudichaudii</i>	Trace	Trace	0.9999
219	<i>Polinices</i> sp.	Trace	Trace	0.9999
220	<i>Pleuronichthys coenosus</i>	Trace	Trace	0.9999
221	<i>Rossia pacifica</i>	Trace	Trace	0.9999
222	<i>Gonatus</i> sp.	Trace	Trace	0.9999
223	<i>Psolus</i> sp.	Trace	Trace	0.9999
224	<i>Chauliodus macouni</i>	Trace	Trace	0.9999
225	<i>Apristurus kampae</i>	Trace	Trace	0.9999
226	<i>Alepocephalus tenebrosus</i>	Trace	Trace	0.9999
227	<i>Crasseodoma giganteum</i>	Trace	Trace	0.9999
228	<i>Synodus lucioceps</i>	Trace	Trace	0.9999
229	<i>Ceramaster patagonicus</i>	Trace	Trace	0.9999
230	<i>Actinauge verrillii</i>	Trace	Trace	0.9999
231	<i>Tritonia diomedea</i>	Trace	Trace	0.9999
232	<i>Eptatretus stouti</i>	Trace	Trace	0.9999
233	<i>Stomphia</i> sp.	Trace	Trace	0.9999
234	Euphausiacea (order)	Trace	Trace	0.9999
235	<i>Solaster paxillatus</i>	Trace	Trace	0.9999
236	Stromateidae	Trace	Trace	0.9999
237	<i>Coryphaenoides acrolepis</i>	Trace	Trace	0.9999
238	Gastropod unident.	Trace	Trace	0.9999
239	<i>Pisaster</i> sp.	Trace	Trace	0.9999
240	<i>Bathyraja aleutica</i>	Trace	Trace	1.0000
241	<i>Parastichopus</i> sp.	Trace	Trace	1.0000
242	<i>Pannychia moseleyi</i>	Trace	Trace	1.0000
243	<i>Leucandra heathi</i>	Trace	Trace	1.0000
244	Naticidae	Trace	Trace	1.0000
245	Ophiuroid unident.	Trace	Trace	1.0000
246	<i>Anthomastus</i> sp.	Trace	Trace	1.0000
247	<i>Symbolophorus californiensis</i>	Trace	Trace	1.0000
248	<i>Styela rustica</i>	Trace	Trace	1.0000
249	<i>Mycale loveni</i>	Trace	Trace	1.0000
250	Ophidiidae	Trace	Trace	1.0000
251	<i>Xystreureys liolepis</i>	Trace	Trace	1.0000
252	<i>Luidiaster dawsoni</i>	Trace	Trace	1.0000

Table B-36.--Continued.

253	<i>Ceramaster japonicus</i>	Trace	Trace	1.0000
254	<i>Crossaster</i> sp.	Trace	Trace	1.0000
255	<i>Cephaloscyllium ventriosum</i>	Trace	Trace	1.0000
256	<i>Apristurus brunneus</i>	Trace	Trace	1.0000
257	<i>Aristostomias scintillans</i>	Trace	Trace	1.0000
258	Penaeidae	Trace	Trace	1.0000
259	<i>Bathylagus</i> sp.	Trace	Trace	1.0000
260	<i>Ptilosarcus gurneyi</i>	Trace	Trace	1.0000
261	Rajidae unident.	Trace	Trace	1.0000
262	Trichiuridae	Trace	Trace	1.0000
263	<i>Pagurus brandti</i>	Trace	Trace	1.0000
264	<i>Sebastes</i> sp.	Trace	Trace	1.0000
265	<i>Raja stellulata</i>	Trace	Trace	1.0000
266	<i>Leptocottus armatus</i>	Trace	Trace	1.0000
267	<i>Careproctus</i> sp.	Trace	Trace	1.0000
268	<i>Solaster endeca</i>	Trace	Trace	1.0000
269	<i>Nezumia stelgidolepis</i>	Trace	Trace	1.0000
270	<i>Onychoteuthis borealijaponicus</i>	Trace	Trace	1.0000
271	<i>Pteraster tessellatus</i>	Trace	Trace	1.0000
272	Virgularidae	Trace	Trace	1.0000
273	Sipuncula (phylum)	Trace	Trace	1.0000
274	<i>Acantholithodes hispidus</i>	Trace	Trace	1.0000
275	<i>Sagamichthys abei</i>	Trace	Trace	1.0000
276	<i>Prionotus stephanophrys</i>	Trace	Trace	1.0000
277	<i>Leptychaster pacificus</i>	Trace	Trace	1.0000
278	<i>Clinocardium</i> sp.	Trace	Trace	1.0000
279	<i>Bathyagonus pentacanthus</i>	Trace	Trace	1.0000
280	<i>Pseudarchaster</i> sp.	Trace	Trace	1.0000
281	Cottidae	Trace	Trace	1.0000
282	<i>Bathyagonus nigripinnis</i>	Trace	Trace	1.0000
283	<i>Asterina miniata</i>	Trace	Trace	1.0000
284	<i>Pentamera lissoplaca</i>	Trace	Trace	1.0000
285	<i>Oregonia gracilis</i>	Trace	Trace	1.0000
286	<i>Xeneretmus latifrons</i>	Trace	Trace	1.0000
287	<i>Radulinus asprellus</i>	Trace	Trace	1.0000
288	<i>Psolus squamatus</i>	Trace	Trace	1.0000
289	Polychaeta (class)	Trace	Trace	1.0000
290	<i>Oregonia bifurca</i>	Trace	Trace	1.0000
291	snail (gastropod) eggs	Trace	Trace	1.0000
292	<i>Malacocephalus laevis</i>	Trace	Trace	1.0000
293	<i>Ceramaster</i> sp.	Trace	Trace	1.0000

Table B-36.--Continued.

294	<i>Pugettia</i> sp.	Trace	Trace	1.0000
295	<i>Pteraster</i> sp.	Trace	Trace	1.0000
296	<i>Chorilia longipes</i>	Trace	Trace	1.0000
297	<i>Sebastes auriculatus</i>	Trace	Trace	1.0000
298	<i>Lampanyctus ritteri</i>	Trace	Trace	1.0000
299	<i>Buccinum</i> sp.	Trace	Trace	1.0000
300	Liparidinae	Trace	Trace	1.0000
301	<i>Liparis</i> sp.	Trace	Trace	1.0000
302	<i>Aforia</i> sp.	Trace	Trace	1.0000
303	<i>Xeneretmus triacanthus</i>	Trace	Trace	1.0000
304	Petromyzontidae	Trace	Trace	1.0000
305	<i>Cymatogaster aggregata</i>	Trace	Trace	1.0000
306	<i>Hippoglossina stomata</i>	Trace	Trace	1.0000
307	<i>Poraniopsis inflata</i>	Trace	Trace	1.0000
308	<i>Ronquilus jordani</i>	Trace	Trace	1.0000
309	Sternoptychidae unident.	Trace	Trace	1.0000
310	<i>Beringius frielei</i>	Trace	Trace	1.0000
311	Osmeridae	Trace	Trace	1.0000
312	<i>Crangon</i> sp.	Trace	Trace	1.0000
313	<i>Allocentrotus</i> sp.	Trace	Trace	1.0000
314	<i>Ophiopholis longispina</i>	Trace	Trace	1.0000
315	<i>Ophiopholis aculeata</i>	Trace	Trace	1.0000
316	Majidae unident.	Trace	Trace	1.0000
317	crinoid unident.	Trace	Trace	1.0000
318	<i>Hemilepidotus spinosus</i>	Trace	Trace	1.0000
319	<i>Xeneretmus leiops</i>	Trace	Trace	1.0000
320	<i>Strongylocentrotus franciscanus</i>	Trace	Trace	1.0000
321	<i>Hyas lyratus</i>	Trace	Trace	1.0000
322	shrimp unident.	Trace	Trace	1.0000
323	Ctenophora (phylum)	Trace	Trace	1.0000
324	<i>Enophrys taurina</i>	Trace	Trace	1.0000
325	<i>Icelinus borealis</i>	Trace	Trace	1.0000
326	<i>Icelinus oculatus</i>	Trace	Trace	1.0000
327	<i>Bathymaster signatus</i>	Trace	Trace	1.0000
328	<i>Calliostoma</i> sp.	Trace	Trace	1.0000
329	<i>Idiacanthus antrostomus</i>	Trace	Trace	1.0000
330	Eel leptocephalus	Trace	Trace	1.0000
331	<i>Diaphus theta</i>	Trace	Trace	1.0000
332	Echiura (phylum)	Trace	Trace	1.0000
333	<i>Bathyagonus infraspinus</i>	Trace	Trace	1.0000
334	<i>Lophaster furcilliger</i>	Trace	Trace	1.0000

Table B-36.--Continued.

335	<i>Natica</i> sp.	Trace	Trace	1.0000
336	<i>Podothecus acipenserinus</i>	Trace	Trace	1.0000
337	Stichaeidae	Trace	Trace	1.0000
338	Platyroctidae	Trace	Trace	1.0000
339	<i>Leptychaster arcticus</i>	Trace	Trace	1.0000
340	<i>Lycodapus</i> sp.	Trace	Trace	1.0000
341	<i>Lampanyctus regalis</i>	Trace	Trace	1.0000
342	<i>Caryophyllia</i> sp.	Trace	Trace	1.0000
343	Aplacophora	Trace	Trace	1.0000
344	<i>Stenobranchius leucopsarus</i>	Trace	Trace	1.0000
345	<i>Bathyagonus</i> sp.	Trace	Trace	1.0000
346	hydroid unident.	Trace	Trace	1.0000
347	<i>Pasiphaea tarda</i>	Trace	Trace	1.0000
348	crab unident.	Trace	Trace	1.0000
349	<i>Asteronyx loveni</i>	Trace	Trace	1.0000
350	<i>Henricia leviuscula</i>	Trace	Trace	1.0000
351	<i>Alyconaria</i> unident.	Trace	Trace	1.0000
352	<i>Neptunea</i> sp.	Trace	Trace	1.0000
353	<i>Bathyraja</i> sp.	Trace	Trace	1.0000
354	<i>Chitonotus pugetensis</i>	Trace	Trace	1.0000
355	<i>Pandalus danae</i>	Trace	Trace	1.0000
356	<i>Paraliparis</i> sp.	Trace	Trace	1.0000
357	<i>Colus</i> sp.	Trace	Trace	1.0000
358	<i>Icelinus tenuis</i>	Trace	Trace	1.0000
359	Platyhelminthes (phylum)	Trace	Trace	1.0000
360	<i>Lestidiops ringens</i>	Trace	Trace	1.0000
361	<i>Gephyreaster swifti</i>	Trace	Trace	1.0000
362	<i>Lyconectes aleutensis</i>	Trace	Trace	1.0000
363	<i>Chiroteuthis calyx</i>	Trace	Trace	1.0000
364	<i>Henricia</i> sp.	Trace	Trace	1.0000
365	<i>Leuroglossus stilbius</i>	Trace	Trace	1.0000
366	<i>Amphiophiura ponderosa</i>	Trace	Trace	1.0000
367	<i>Pandalus tridens</i>	Trace	Trace	1.0000
368	<i>Lycodapus mandibularis</i>	Trace	Trace	1.0000
369	<i>Cyclocardia</i> sp.	Trace	Trace	1.0000
370	<i>Buccinum</i> sp.	Trace	Trace	1.0000
371	<i>Callianassa</i> sp.	Trace	Trace	1.0000
372	<i>Citharichthys stigmaeus</i>	Trace	Trace	1.0000
373	Isopoda (order)	Trace	Trace	1.0000
374	<i>Colus herendeenii</i>	Trace	Trace	1.0000
375	<i>Diaphus</i> sp.	Trace	Trace	1.0000

Table B-36.--Continued.

376	<i>Notolepsis risso</i>	Trace	Trace	1.0000
377	<i>Poroclinus rothroeki</i>	Trace	Trace	1.0000
378	fish unident.	Trace	Trace	1.0000
379	<i>Cololabis saira</i>	Trace	Trace	1.0000
380	<i>Tarletonbeania</i> sp.	Trace	Trace	1.0000
381	<i>Howella sherborni</i>	Trace	Trace	1.0000
382	<i>Rhinoliparis attenuatus</i>	Trace	Trace	1.0000
383	<i>Swiftia</i> sp.	Trace	Trace	1.0000
384	<i>Plectobranchnus evides</i>	Trace	Trace	1.0000
385	<i>Halocynthia hispidus</i>	Trace	Trace	1.0000
386	<i>Argis</i> sp.	Trace	Trace	1.0000
387	<i>Callianassa californiensis</i>	Trace	Trace	1.0000
388	<i>Leuroglossus schmidti</i>	Trace	Trace	1.0000
389	<i>Eualus macrophthalmus</i>	Trace	Trace	1.0000
390	<i>Lycodapus fierasfer</i>	Trace	Trace	1.0000
391	<i>Crangon communis</i>	Trace	Trace	1.0000
392	<i>Saccopharynx</i> sp.	Trace	Trace	1.0000
393	<i>Pleuronectiformes</i> larvae	Trace	Trace	1.0000
394	<i>Tarletonbeania crenularis</i>	Trace	Trace	1.0000
395	<i>Gnathophausia gigas</i>	Trace	Trace	1.0000

APPENDIX C

ESTIMATES OF BIOMASS AND POPULATION NUMBERS

The tables in Appendix C present the estimates of biomass and population numbers, along with their associated variances and coefficients of variation (CV), derived from the results of the 1998 West Coast triennial bottom trawl survey. Abundance estimates are provided for each depth stratum of each International North Pacific Fisheries Commission (INPFC) area, as well as for the entire survey area and the U.S. portion of the survey area. Estimates are presented for the most commercially or ecologically important species in alphabetical order, though users are cautioned to regard estimates of pelagic and semi-pelagic species as conservative minimum estimates. The following species are included in this appendix:

American shad	Pacific herring
Arrowtooth flounder	Pacific ocean perch
Bocaccio	Pacific sanddab
Canary rockfish	Pacific sardine
Chilipepper	Petrale sole
Chub mackerel	Redstripe rockfish
Darkblotched rockfish	Rex sole
Dover sole	Sablefish
English sole	Sharpchin rockfish
Eulachon	Shortbelly rockfish
Greenstriped rockfish	Shortspine thornyhead
Jack mackerel	Silvergray rockfish
Lingcod	Spiny dogfish
Longspine thornyhead	Splitnose rockfish
Northern anchovy	Stripetail rockfish
Pacific hake (whiting)	Widow rockfish
Pacific halibut	Yellowtail rockfish

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for American Shad**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	1,066	1.953719674E+05	0.41	1,729,438	5.117271133E+11	0.41
	184-366 m	6	3.430947846E+01	0.95	6,690	4.008491661E+07	0.95
	367-500 m	0	-	-	0	-	-
	55-366 m	1,072	1.954062769E+05	0.41	1,736,129	5.117671982E+11	0.41
	55-500 m	1,072	1.954062769E+05	0.41	1,736,129	5.117671982E+11	0.41
US Vancouver	55-183 m	901	9.004354750E+04	0.33	1,670,038	3.168835815E+11	0.34
	184-366 m	77	2.981131842E+03	0.71	88,791	3.653092881E+09	0.68
	367-500 m	0	-	-	0	-	-
	55-366 m	977	9.302467934E+04	0.31	1,758,829	3.205366743E+11	0.32
	55-500 m	977	9.302467934E+04	0.31	1,758,829	3.205366743E+11	0.32
Total Vancouver	55-183 m	1,967	3.028762957E+05	0.28	3,399,477	8.743735072E+11	0.28
	184-366 m	83	3.631887240E+03	0.73	95,481	4.413392280E+09	0.70
	367-500 m	0	-	-	0	-	-
	55-366 m	2,050	3.065081830E+05	0.27	3,494,958	8.787868995E+11	0.27
	55-500 m	2,050	3.065081830E+05	0.27	3,494,958	8.787868995E+11	0.27
Columbia	55-183 m	3,135	9.951092699E+05	0.32	6,269,619	3.603795217E+12	0.30
	184-366 m	73	2.321880826E+03	0.66	99,349	4.574599200E+09	0.68
	367-500 m	4	1.295177195E+01	1.00	2,994	8.964379906E+06	1.00
	55-366 m	3,208	9.974311508E+05	0.31	6,368,968	3.608369816E+12	0.30
	55-500 m	3,211	9.974441025E+05	0.31	6,371,962	3.608378781E+12	0.30
Eureka	55-183 m	35	4.537325834E+02	0.61	55,874	1.384520619E+09	0.67
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	35	4.537325834E+02	0.61	55,874	1.384520619E+09	0.67
	55-500 m	35	4.537325834E+02	0.61	55,874	1.384520619E+09	0.67
Monterey	55-183 m	181	3.438053334E+03	0.32	886,371	1.788926828E+11	0.48
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	181	3.438053334E+03	0.32	886,371	1.788926828E+11	0.48
	55-500 m	181	3.438053334E+03	0.32	886,371	1.788926828E+11	0.48
Conception	55-183 m	8	2.114772912E+01	0.58	36,078	4.018294090E+08	0.56
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	8	2.114772912E+01	0.58	36,078	4.018294090E+08	0.56
	55-500 m	8	2.114772912E+01	0.58	36,078	4.018294090E+08	0.56
U.S. Total	55-183 m	4,259	1.665717660E+06	0.30	8,917,979	6.142972247E+12	0.28
	184-366 m	150	6.705186694E+03	0.55	188,140	1.099024662E+10	0.56
	367-500 m	4	1.295177195E+01	1.00	2,994	8.964379906E+06	1.00
	55-366 m	4,409	1.672422846E+06	0.29	9,106,120	6.153962493E+12	0.27
	55-500 m	4,412	1.672435798E+06	0.29	9,109,114	6.153971458E+12	0.27
Total	55-183 m	5,325	1.878550408E+06	0.26	10,647,418	6.700462172E+12	0.24
	184-366 m	156	7.355942092E+03	0.55	194,831	1.175054602E+10	0.56
	367-500 m	4	1.295177195E+01	1.00	2,994	8.964379906E+06	1.00
	55-366 m	5,481	1.885906350E+06	0.25	10,842,248	6.712212718E+12	0.24
	55-500 m	5,485	1.885919302E+06	0.25	10,845,242	6.712221683E+12	0.24

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Arrowtooth Flounder**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	14,561	9.832527259E+06	0.22	14,285,988	6.370801460E+12	0.18
	184-366 m	2,901	7.805743004E+05	0.30	1,927,487	2.961112865E+11	0.28
	367-500 m	516	9.451854669E+03	0.19	242,486	3.436365762E+09	0.24
	55-366 m	17,462	1.061310156E+07	0.19	16,213,475	6.666912747E+12	0.16
	55-500 m	17,979	1.062255341E+07	0.18	16,455,961	6.670349113E+12	0.16
US Vancouver	55-183 m	7,567	1.366809908E+07	0.49	6,473,324	3.317301563E+12	0.28
	184-366 m	2,119	1.608997717E+05	0.19	1,652,748	1.171041367E+11	0.21
	367-500 m	4	1.790860852E+01	1.00	1,209	1.461927226E+06	1.00
	55-366 m	9,686	1.382899885E+07	0.38	8,126,072	3.434405700E+12	0.23
	55-500 m	9,690	1.382901676E+07	0.38	8,127,281	3.434407162E+12	0.23
Total Vancouver	55-183 m	22,128	2.641000632E+07	0.23	20,759,313	1.074293507E+13	0.16
	184-366 m	5,020	1.408900713E+06	0.24	3,580,234	6.023835594E+11	0.22
	367-500 m	521	9.469763278E+03	0.19	243,695	3.437827689E+09	0.24
	55-366 m	27,148	2.781890703E+07	0.19	24,339,547	1.134531863E+13	0.14
	55-500 m	27,669	2.782837680E+07	0.19	24,583,242	1.134875646E+13	0.14
Columbia	55-183 m	2,645	1.113038044E+05	0.13	3,675,884	2.083708705E+11	0.12
	184-366 m	1,558	9.999042204E+04	0.20	1,771,280	1.631868742E+11	0.23
	367-500 m	301	3.936484852E+03	0.21	192,853	2.445666173E+09	0.26
	55-366 m	4,204	2.112942265E+05	0.11	5,447,165	3.715577447E+11	0.11
	55-500 m	4,504	2.152307113E+05	0.10	5,640,017	3.740034109E+11	0.11
Eureka	55-183 m	66	2.680924993E+02	0.25	118,668	1.022703027E+09	0.27
	184-366 m	111	5.678966306E+02	0.21	162,711	1.106718475E+09	0.20
	367-500 m	101	3.384755762E+02	0.18	119,862	5.539333211E+08	0.20
	55-366 m	177	8.359891299E+02	0.16	281,379	2.129421503E+09	0.16
	55-500 m	278	1.174464706E+03	0.12	401,241	2.683354824E+09	0.13
Monterey	55-183 m	3	6.675357915E+00	1.00	2,802	7.852586233E+06	1.00
	184-366 m	3	4.167345005E+00	0.61	7,454	1.760365998E+07	0.56
	367-500 m	5	4.688837198E+00	0.41	6,301	5.962852163E+06	0.39
	55-366 m	6	1.084270292E+01	0.56	10,256	2.545624622E+07	0.49
	55-500 m	11	1.553154012E+01	0.35	16,557	3.141909838E+07	0.34
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	10,281	1.381304253E+07	0.36	10,270,679	3.599871789E+12	0.18
	184-366 m	3,791	2.708304760E+05	0.14	3,594,193	2.925357393E+11	0.15
	367-500 m	411	4.373912793E+03	0.16	320,225	3.013257328E+09	0.17
	55-366 m	14,073	1.408387300E+07	0.27	13,864,872	3.892407528E+12	0.14
	55-500 m	14,484	1.408824692E+07	0.26	14,185,097	3.895420785E+12	0.14
Total	55-183 m	24,842	2.655494977E+07	0.21	24,556,667	1.102550529E+13	0.14
	184-366 m	6,693	1.518831417E+06	0.18	5,521,679	7.778151620E+11	0.16
	367-500 m	927	1.382576746E+04	0.13	562,711	6.449623090E+09	0.14
	55-366 m	31,535	2.807378118E+07	0.17	30,078,346	1.180332046E+13	0.11
	55-500 m	32,462	2.808760695E+07	0.16	30,641,058	1.180977008E+13	0.11

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Bocaccio**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	117	2.337710798E+03	0.41	28,076	1.440853984E+08	0.43
	184-366 m	35	9.888468015E+02	0.89	8,574	5.829058348E+07	0.89
	367-500 m	0	-	-	0	-	-
	55-366 m	152	3.326557599E+03	0.38	36,650	2.023759819E+08	0.39
	55-500 m	152	3.326557599E+03	0.38	36,650	2.023759819E+08	0.39
US Vancouver	55-183 m	99	2.212503619E+03	0.48	22,807	9.927004311E+07	0.44
	184-366 m	44	4.371760978E+02	0.47	10,740	2.103679894E+07	0.43
	367-500 m	0	-	-	0	-	-
	55-366 m	143	2.649679717E+03	0.36	33,547	1.203068420E+08	0.33
	55-500 m	143	2.649679717E+03	0.36	33,547	1.203068420E+08	0.33
Total Vancouver	55-183 m	216	5.086865462E+03	0.33	50,883	2.708789676E+08	0.32
	184-366 m	80	2.068900714E+03	0.57	19,314	1.162024186E+08	0.56
	367-500 m	0	-	-	0	-	-
	55-366 m	295	7.155766176E+03	0.29	70,197	3.870813862E+08	0.28
	55-500 m	295	7.155766176E+03	0.29	70,197	3.870813862E+08	0.28
Columbia	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Eureka	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Monterey	55-183 m	97	2.197820505E+03	0.48	97,279	3.491501302E+09	0.61
	184-366 m	33	2.956566342E+02	0.51	31,474	1.544739165E+08	0.39
	367-500 m	0	-	-	0	-	-
	55-366 m	130	2.493477139E+03	0.38	128,753	3.645975218E+09	0.47
	55-500 m	130	2.493477139E+03	0.38	128,753	3.645975218E+09	0.47
Conception	55-183 m	4	2.805736397E+00	0.41	13,532	3.125950755E+07	0.41
	184-366 m	6	6.989166481E+00	0.46	8,850	1.856781086E+07	0.49
	367-500 m	2	2.538413826E+00	1.00	1,366	1.867090305E+06	1.00
	55-366 m	10	9.794902878E+00	0.32	22,383	4.982731841E+07	0.32
	55-500 m	11	1.233331670E+01	0.31	23,749	5.169440872E+07	0.30
U.S. Total	55-183 m	200	4.416090744E+03	0.33	133,618	3.642854519E+09	0.45
	184-366 m	84	7.624149483E+02	0.33	51,064	2.429785710E+08	0.31
	367-500 m	2	2.538413826E+00	1.00	1,366	1.867090305E+06	1.00
	55-366 m	283	5.178505692E+03	0.25	184,682	3.885833090E+09	0.34
	55-500 m	285	5.181044106E+03	0.25	186,049	3.887700180E+09	0.34
Total	55-183 m	316	7.290452586E+03	0.27	161,694	3.814463444E+09	0.38
	184-366 m	119	2.394139564E+03	0.41	59,638	3.381441907E+08	0.31
	367-500 m	2	2.538413826E+00	1.00	1,366	1.867090305E+06	1.00
	55-366 m	435	9.684592150E+03	0.23	221,333	4.152607634E+09	0.29
	55-500 m	437	9.687130564E+03	0.23	222,699	4.154474725E+09	0.29

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Canary Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	1,367	1.929303134E+05	0.32	1,342,894	3.314835521E+11	0.43
	184-366 m	455	6.283526398E+04	0.55	242,257	1.763449944E+10	0.55
	367-500 m	0	-	-	0	-	-
	55-366 m	1,822	2.557655774E+05	0.28	1,585,151	3.491180515E+11	0.37
	55-500 m	1,822	2.557655774E+05	0.28	1,585,151	3.491180515E+11	0.37
US Vancouver	55-183 m	278	7.751146452E+03	0.32	184,867	2.594652520E+09	0.28
	184-366 m	180	6.190557452E+03	0.44	95,267	1.663234222E+09	0.43
	367-500 m	0	-	-	0	-	-
	55-366 m	458	1.394170390E+04	0.26	280,135	4.257886742E+09	0.23
	55-500 m	458	1.394170390E+04	0.26	280,135	4.257886742E+09	0.23
Total Vancouver	55-183 m	1,645	2.187960467E+05	0.28	1,527,762	3.635980565E+11	0.39
	184-366 m	636	1.051939424E+05	0.51	337,524	2.943210575E+10	0.51
	367-500 m	0	-	-	0	-	-
	55-366 m	2,281	3.239899890E+05	0.25	1,865,286	3.930301623E+11	0.34
	55-500 m	2,281	3.239899890E+05	0.25	1,865,286	3.930301623E+11	0.34
Columbia	55-183 m	186	1.335072289E+03	0.20	216,607	3.472536240E+09	0.27
	184-366 m	67	1.406372468E+03	0.56	42,135	4.485327581E+08	0.50
	367-500 m	0	-	-	0	-	-
	55-366 m	252	2.741444757E+03	0.21	258,741	3.921068998E+09	0.24
	55-500 m	252	2.741444757E+03	0.21	258,741	3.921068998E+09	0.24
Eureka	55-183 m	141	1.677889964E+03	0.29	111,568	9.065029456E+08	0.27
	184-366 m	5	1.094706391E+01	0.69	3,370	5.319422754E+06	0.68
	367-500 m	0	-	-	0	-	-
	55-366 m	146	1.688837028E+03	0.28	114,937	9.118223684E+08	0.26
	55-500 m	146	1.688837028E+03	0.28	114,937	9.118223684E+08	0.26
Monterey	55-183 m	666	2.303348798E+05	0.72	646,239	2.119453685E+11	0.71
	184-366 m	5	1.103028341E+01	0.73	3,184	5.612686103E+06	0.74
	367-500 m	1	2.189865149E+00	1.00	1,451	2.104830016E+06	1.00
	55-366 m	670	2.303459101E+05	0.72	649,424	2.119509812E+11	0.71
	55-500 m	672	2.303481000E+05	0.71	650,874	2.119530860E+11	0.71
Conception	55-183 m	1	4.622834099E-01	1.00	1,858	3.451009361E+06	1.00
	184-366 m	1	9.638260021E-01	1.00	594	3.531657284E+05	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	2	1.426109412E+00	0.72	2,452	3.804175089E+06	0.80
	55-500 m	2	1.426109412E+00	0.72	2,452	3.804175089E+06	0.80
U.S. Total	55-183 m	1,271	2.412307462E+05	0.39	1,161,139	2.191074655E+11	0.40
	184-366 m	257	8.386243330E+03	0.36	144,550	2.341287934E+09	0.33
	367-500 m	1	2.189865149E+00	1.00	1,451	2.104830016E+06	1.00
	55-366 m	1,528	2.496169896E+05	0.33	1,305,689	2.214487535E+11	0.36
	55-500 m	1,530	2.496191794E+05	0.33	1,307,140	2.214508583E+11	0.36
Total	55-183 m	2,638	4.522756464E+05	0.25	2,504,033	5.801108695E+11	0.30
	184-366 m	713	1.073896282E+05	0.46	386,807	3.011015946E+10	0.45
	367-500 m	1	2.189865149E+00	1.00	1,451	2.104830016E+06	1.00
	55-366 m	3,351	5.596652747E+05	0.22	2,890,840	6.102210290E+11	0.27
	55-500 m	3,352	5.596674645E+05	0.22	2,892,291	6.102231338E+11	0.27

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Chilipepper**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
US Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Total Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Columbia	55-183 m	0	7.220687918E-03	1.00	3,541	1.253591652E+07	1.00
	184-366 m	12	8.677692645E+01	0.79	16,992	2.044812481E+08	0.84
	367-500 m	0	-	-	0	-	-
	55-366 m	12	8.678414714E+01	0.78	20,533	2.170171646E+08	0.72
	55-500 m	12	8.678414714E+01	0.78	20,533	2.170171646E+08	0.72
Eureka	55-183 m	3	5.059892029E+00	0.83	7,681	3.169213477E+07	0.73
	184-366 m	235	3.828250543E+04	0.83	478,613	1.519622739E+11	0.81
	367-500 m	1	1.627091439E+00	1.00	2,315	5.359308563E+06	1.00
	55-366 m	238	3.828756533E+04	0.82	486,294	1.519939660E+11	0.80
	55-500 m	239	3.828919242E+04	0.82	488,609	1.519993253E+11	0.80
Monterey	55-183 m	10,991	2.707363426E+07	0.47	41,297,165	3.613867364E+14	0.46
	184-366 m	5,177	1.445743930E+07	0.73	9,622,175	5.599744173E+13	0.78
	367-500 m	0	-	-	0	-	-
	55-366 m	16,168	4.153107356E+07	0.40	50,919,340	4.173841782E+14	0.40
	55-500 m	16,168	4.153107356E+07	0.40	50,919,340	4.173841782E+14	0.40
Conception	55-183 m	576	1.083507450E+05	0.57	2,694,440	2.185403067E+12	0.55
	184-366 m	126	1.608982774E+03	0.32	268,661	1.198543789E+10	0.41
	367-500 m	0	-	-	0	-	-
	55-366 m	702	1.099597278E+05	0.47	2,963,101	2.197388505E+12	0.50
	55-500 m	702	1.099597278E+05	0.47	2,963,101	2.197388505E+12	0.50
U.S. Total	55-183 m	11,570	2.722616466E+07	0.45	44,002,827	3.640132927E+14	0.43
	184-366 m	5,550	1.450033734E+07	0.69	10,386,441	5.619271492E+13	0.72
	367-500 m	1	1.627091439E+00	1.00	2,315	5.359308563E+06	1.00
	55-366 m	17,120	4.172650199E+07	0.38	54,389,268	4.202060076E+14	0.38
	55-500 m	17,121	4.172650362E+07	0.38	54,391,583	4.202060130E+14	0.38
Total	55-183 m	11,570	2.722616466E+07	0.45	44,002,827	3.640132927E+14	0.43
	184-366 m	5,550	1.450033734E+07	0.69	10,386,441	5.619271492E+13	0.72
	367-500 m	1	1.627091439E+00	1.00	2,315	5.359308563E+06	1.00
	55-366 m	17,120	4.172650199E+07	0.38	54,389,268	4.202060076E+14	0.38
	55-500 m	17,121	4.172650362E+07	0.38	54,391,583	4.202060130E+14	0.38

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Chub Mackerel**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	21	1.266410268E+02	0.53	32,114	2.297240373E+08	0.47
	184-366 m	1	4.768283687E-01	1.00	1,594	2.540886055E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	22	1.271178551E+02	0.51	33,708	2.322649234E+08	0.45
	55-500 m	22	1.271178551E+02	0.51	33,708	2.322649234E+08	0.45
US Vancouver	55-183 m	271	2.728745781E+04	0.61	863,654	3.150432207E+11	0.65
	184-366 m	7	3.887100759E+01	0.91	15,781	2.071966914E+08	0.91
	367-500 m	0	-	-	0	-	-
	55-366 m	278	2.732632882E+04	0.59	879,435	3.152504174E+11	0.64
	55-500 m	278	2.732632882E+04	0.59	879,435	3.152504174E+11	0.64
Total Vancouver	55-183 m	293	2.746579142E+04	0.57	895,768	3.155262446E+11	0.63
	184-366 m	8	4.791511577E+01	0.92	17,375	2.553902341E+08	0.92
	367-500 m	0	-	-	0	-	-
	55-366 m	300	2.751370654E+04	0.55	913,143	3.157816348E+11	0.62
	55-500 m	300	2.751370654E+04	0.55	913,143	3.157816348E+11	0.62
Columbia	55-183 m	2,041	8.603891565E+05	0.45	6,666,376	9.529902434E+12	0.46
	184-366 m	12	5.534211992E+01	0.61	31,020	3.669973200E+08	0.62
	367-500 m	1	1.432468068E+00	1.00	2,660	7.073916386E+06	1.00
	55-366 m	2,053	8.604444986E+05	0.45	6,697,397	9.530269431E+12	0.46
	55-500 m	2,054	8.604459311E+05	0.45	6,700,056	9.530276505E+12	0.46
Eureka	55-183 m	116	1.216594031E+04	0.95	212,753	4.074557861E+10	0.95
	184-366 m	5	2.009108606E+01	0.87	12,405	1.189130415E+08	0.88
	367-500 m	0	-	-	0	-	-
	55-366 m	121	1.218603139E+04	0.91	225,158	4.086449165E+10	0.90
	55-500 m	121	1.218603139E+04	0.91	225,158	4.086449165E+10	0.90
Monterey	55-183 m	3,754	1.372781041E+07	0.99	18,923,841	3.350913108E+14	0.97
	184-366 m	3	6.932794136E+00	0.79	3,693	6.947536011E+06	0.71
	367-500 m	0	8.476562366E-02	1.00	2,447	5.985850128E+06	1.00
	55-366 m	3,758	1.372781735E+07	0.99	18,927,534	3.350913177E+14	0.97
	55-500 m	3,758	1.372781743E+07	0.99	18,929,981	3.350913237E+14	0.97
Conception	55-183 m	15	7.302083013E+01	0.58	145,402	1.120175734E+10	0.73
	184-366 m	0	-	-	0	-	-
	367-500 m	0	3.032851676E-02	1.00	1,463	2.141693154E+06	1.00
	55-366 m	15	7.302083013E+01	0.58	145,402	1.120175734E+10	0.73
	55-500 m	15	7.305115865E+01	0.58	146,865	1.120389903E+10	0.72
U.S. Total	55-183 m	6,197	1.480488349E+07	0.62	26,812,026	3.471129477E+14	0.69
	184-366 m	27	1.238041424E+02	0.41	62,900	7.141562807E+08	0.42
	367-500 m	2	1.648968631E+00	0.77	6,570	2.236242447E+07	0.72
	55-366 m	6,224	1.480500729E+07	0.62	26,874,926	3.471136619E+14	0.69
	55-500 m	6,226	1.480500894E+07	0.62	26,881,495	3.471136842E+14	0.69
Total	55-183 m	6,218	1.480506182E+07	0.62	26,844,140	3.471134307E+14	0.69
	184-366 m	28	1.328482505E+02	0.41	64,494	7.623498234E+08	0.43
	367-500 m	2	1.648968631E+00	0.77	6,570	2.236242447E+07	0.72
	55-366 m	6,246	1.480519467E+07	0.62	26,908,634	3.471141931E+14	0.69
	55-500 m	6,248	1.480519632E+07	0.62	26,915,203	3.471142154E+14	0.69

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Darkblotched Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	553	9.564412751E+04	0.56	1,328,393	3.589721707E+11	0.45
	184-366 m	205	2.188659645E+04	0.72	401,618	5.679141980E+10	0.59
	367-500 m	11	1.141282570E+02	1.00	12,940	1.674379184E+08	1.00
	55-366 m	758	1.175307240E+05	0.45	1,730,011	4.157635905E+11	0.37
	55-500 m	769	1.176448522E+05	0.45	1,742,951	4.159310284E+11	0.37
US Vancouver	55-183 m	138	1.744135221E+03	0.30	698,088	4.055263981E+10	0.29
	184-366 m	220	1.293903587E+04	0.52	697,029	1.610719214E+11	0.58
	367-500 m	0	-	-	0	-	-
	55-366 m	358	1.468317109E+04	0.34	1,395,117	2.016245612E+11	0.32
	55-500 m	358	1.468317109E+04	0.34	1,395,117	2.016245612E+11	0.32
Total Vancouver	55-183 m	690	1.059538217E+05	0.47	2,026,481	4.347973472E+11	0.33
	184-366 m	425	4.967964139E+04	0.52	1,098,648	2.831751297E+11	0.48
	367-500 m	11	1.141282570E+02	1.00	12,940	1.674379184E+08	1.00
	55-366 m	1,116	1.556334631E+05	0.35	3,125,129	7.179724769E+11	0.27
	55-500 m	1,126	1.557475913E+05	0.35	3,138,068	7.181399148E+11	0.27
Columbia	55-183 m	750	7.817764127E+04	0.37	4,230,955	1.693800861E+12	0.31
	184-366 m	960	8.214508038E+04	0.30	2,684,514	5.108591366E+11	0.27
	367-500 m	18	6.179313379E+01	0.43	27,227	1.080654042E+08	0.38
	55-366 m	1,710	1.603227217E+05	0.23	6,915,469	2.204659998E+12	0.21
	55-500 m	1,728	1.603845148E+05	0.23	6,942,696	2.204768063E+12	0.21
Eureka	55-183 m	151	2.020901260E+04	0.94	635,028	3.513450856E+11	0.93
	184-366 m	214	7.162011333E+03	0.39	604,872	6.378488707E+10	0.42
	367-500 m	6	1.384800455E+01	0.63	7,412	2.456306526E+07	0.67
	55-366 m	365	2.737102393E+04	0.45	1,239,900	4.151299726E+11	0.52
	55-500 m	371	2.738487194E+04	0.45	1,247,312	4.151545357E+11	0.52
Monterey	55-183 m	9	3.749892580E+01	0.69	55,845	8.964052887E+08	0.54
	184-366 m	118	5.445890690E+03	0.62	238,944	1.549552849E+10	0.52
	367-500 m	2	1.743367805E+00	0.56	3,201	2.946762005E+06	0.54
	55-366 m	127	5.483389616E+03	0.58	294,790	1.639193378E+10	0.43
	55-500 m	130	5.485132983E+03	0.57	297,991	1.639488055E+10	0.43
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	1	2.135476499E-01	0.69	2,857	3.840146447E+06	0.69
	55-366 m	0	-	-	0	-	-
	55-500 m	1	2.135476499E-01	0.69	2,857	3.840146447E+06	0.69
U.S. Total	55-183 m	1,047	1.046263693E+05	0.31	5,619,916	2.189266284E+12	0.26
	184-366 m	1,513	1.101137441E+05	0.22	4,225,360	7.801484664E+11	0.21
	367-500 m	27	7.759805380E+01	0.32	40,698	1.394153779E+08	0.29
	55-366 m	2,560	2.147401134E+05	0.18	9,845,276	2.969414750E+12	0.18
	55-500 m	2,587	2.148177115E+05	0.18	9,885,974	2.969554165E+12	0.17
Total	55-183 m	1,600	2.088360558E+05	0.29	6,948,309	2.583510991E+12	0.23
	184-366 m	1,718	1.468543497E+05	0.22	4,626,979	9.022516747E+11	0.21
	367-500 m	38	1.917263108E+02	0.37	53,637	3.068532963E+08	0.33
	55-366 m	3,318	3.556904054E+05	0.18	11,575,288	3.485762666E+12	0.16
	55-500 m	3,356	3.558821317E+05	0.18	11,628,925	3.486069519E+12	0.16

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Dover Sole**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	7,405	1.197268285E+06	0.15	19,944,492	8.827783446E+12	0.15
	184-366 m	1,789	4.710939484E+05	0.38	3,830,018	1.730276448E+12	0.34
	367-500 m	611	2.226155838E+04	0.24	1,241,542	6.092522314E+10	0.20
	55-366 m	9,194	1.668362234E+06	0.14	23,774,510	1.055805989E+13	0.14
	55-500 m	9,805	1.690623792E+06	0.13	25,016,052	1.061898512E+13	0.13
US Vancouver	55-183 m	1,801	4.064151569E+04	0.11	5,637,791	3.804013881E+11	0.11
	184-366 m	1,704	1.166604080E+05	0.20	4,198,555	8.132998229E+11	0.21
	367-500 m	123	5.779433946E+03	0.62	342,497	4.775353965E+10	0.64
	55-366 m	3,505	1.573019237E+05	0.11	9,836,346	1.193701211E+12	0.11
	55-500 m	3,627	1.630813576E+05	0.11	10,178,844	1.241454751E+12	0.11
Total Vancouver	55-183 m	9,206	1.348149559E+06	0.13	25,582,284	1.002477405E+13	0.12
	184-366 m	3,493	8.739414306E+05	0.27	8,028,573	3.676681923E+12	0.24
	367-500 m	733	2.804099233E+04	0.23	1,584,039	1.086787628E+11	0.21
	55-366 m	12,699	2.222090990E+06	0.12	33,610,856	1.370145598E+13	0.11
	55-500 m	13,433	2.250131982E+06	0.11	35,194,896	1.381013474E+13	0.11
Columbia	55-183 m	8,352	1.602846554E+06	0.15	32,381,788	3.454792931E+13	0.18
	184-366 m	4,562	2.653930142E+05	0.11	15,810,724	2.532866511E+12	0.10
	367-500 m	3,746	2.983834536E+05	0.15	9,580,130	2.838223753E+12	0.18
	55-366 m	12,914	1.868239568E+06	0.11	48,192,511	3.708079582E+13	0.13
	55-500 m	16,660	2.166623022E+06	0.09	57,772,642	3.991901957E+13	0.11
Eureka	55-183 m	1,912	4.436596738E+05	0.35	8,681,860	8.841989906E+12	0.34
	184-366 m	2,712	1.839435494E+05	0.16	9,785,401	2.766707213E+12	0.17
	367-500 m	2,437	3.707632819E+05	0.25	7,700,848	4.620575864E+12	0.28
	55-366 m	4,624	6.276032232E+05	0.17	18,467,261	1.160869712E+13	0.18
	55-500 m	7,061	9.983665052E+05	0.14	26,168,109	1.622927298E+13	0.15
Monterey	55-183 m	515	2.545582458E+04	0.31	3,179,124	9.765227398E+11	0.31
	184-366 m	3,265	5.546520386E+05	0.23	13,777,351	8.372161540E+12	0.21
	367-500 m	5,328	7.354291139E+05	0.16	19,799,419	1.107854904E+13	0.17
	55-366 m	3,780	5.801078632E+05	0.20	16,956,475	9.348684280E+12	0.18
	55-500 m	9,108	1.315536977E+06	0.13	36,755,894	2.042723332E+13	0.12
Conception	55-183 m	6	3.329353690E+00	0.31	81,043	5.696406202E+08	0.29
	184-366 m	326	2.346326213E+04	0.47	2,184,781	8.365088828E+11	0.42
	367-500 m	2,902	3.099882782E+05	0.19	10,389,264	3.864663865E+12	0.19
	55-366 m	332	2.346659149E+04	0.46	2,265,824	8.370785234E+11	0.40
	55-500 m	3,235	3.334548697E+05	0.18	12,655,087	4.701742388E+12	0.17
U.S. Total	55-183 m	12,586	2.159620731E+06	0.12	49,961,606	4.545792941E+13	0.13
	184-366 m	12,569	1.153880206E+06	0.09	45,756,811	1.539040005E+13	0.09
	367-500 m	14,536	2.022306793E+06	0.10	47,812,159	2.780571633E+13	0.11
	55-366 m	25,155	3.313500937E+06	0.07	95,718,417	6.084832947E+13	0.08
	55-500 m	39,691	5.335807730E+06	0.06	143,530,576	8.865404580E+13	0.07
Total	55-183 m	19,991	3.467128774E+06	0.09	69,906,098	5.510230208E+13	0.11
	184-366 m	14,358	1.911161229E+06	0.10	49,586,829	1.825378215E+13	0.09
	367-500 m	15,147	2.044568352E+06	0.09	49,053,701	2.786664156E+13	0.11
	55-366 m	34,349	5.378290003E+06	0.07	119,492,927	7.335608423E+13	0.07
	55-500 m	49,496	7.422858355E+06	0.06	168,546,628	1.012227258E+14	0.06

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for English Sole**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	3,550	4.964859056E+05	0.20	13,171,986	7.592388596E+12	0.21
	184-366 m	119	5.945635077E+03	0.65	234,338	2.103954667E+10	0.62
	367-500 m	2	2.379065105E+00	1.00	2,588	6.697516736E+06	1.00
	55-366 m	3,669	5.024315407E+05	0.19	13,406,325	7.613428143E+12	0.21
	55-500 m	3,671	5.024339198E+05	0.19	13,408,913	7.613434840E+12	0.21
US Vancouver	55-183 m	1,535	8.194189789E+04	0.19	7,851,465	2.746843268E+12	0.21
	184-366 m	69	7.516647293E+02	0.40	145,219	2.969453417E+09	0.38
	367-500 m	0	-	-	0	-	-
	55-366 m	1,603	8.269356262E+04	0.18	7,996,683	2.749812721E+12	0.21
	55-500 m	1,603	8.269356262E+04	0.18	7,996,683	2.749812721E+12	0.21
Total Vancouver	55-183 m	5,085	6.301476847E+05	0.16	21,023,451	1.124052900E+13	0.16
	184-366 m	188	1.013448384E+04	0.54	379,557	3.613346620E+10	0.50
	367-500 m	2	2.379065105E+00	1.00	2,588	6.697516736E+06	1.00
	55-366 m	5,272	6.402821686E+05	0.15	21,403,008	1.127666247E+13	0.16
	55-500 m	5,274	6.402845477E+05	0.15	21,405,596	1.127666916E+13	0.16
Columbia	55-183 m	9,415	8.929781874E+05	0.10	68,223,820	5.518620662E+13	0.11
	184-366 m	318	1.333487341E+04	0.36	1,077,479	1.663496157E+11	0.38
	367-500 m	1	2.090217776E+00	1.00	3,109	9.666864498E+06	1.00
	55-366 m	9,734	9.063130608E+05	0.10	69,301,299	5.535255624E+13	0.11
	55-500 m	9,735	9.063151510E+05	0.10	69,304,408	5.535256590E+13	0.11
Eureka	55-183 m	2,038	5.686845628E+05	0.37	11,738,858	1.221293662E+13	0.30
	184-366 m	204	1.531277470E+04	0.61	473,040	6.499125566E+10	0.54
	367-500 m	0	-	-	0	-	-
	55-366 m	2,242	5.839973375E+05	0.34	12,211,898	1.227792788E+13	0.29
	55-500 m	2,242	5.839973375E+05	0.34	12,211,898	1.227792788E+13	0.29
Monterey	55-183 m	1,815	2.513521116E+04	0.09	14,419,211	1.417553371E+12	0.08
	184-366 m	332	7.909496121E+03	0.27	1,510,717	1.966388445E+11	0.29
	367-500 m	45	7.977642264E+02	0.62	114,747	5.435913903E+09	0.64
	55-366 m	2,148	3.304470729E+04	0.08	15,929,928	1.614192216E+12	0.08
	55-500 m	2,193	3.384247151E+04	0.08	16,044,675	1.619628130E+12	0.08
Conception	55-183 m	140	1.542345591E+03	0.28	1,101,661	1.031643524E+11	0.29
	184-366 m	32	3.713514532E+02	0.60	173,516	1.632646121E+10	0.74
	367-500 m	1	4.156402508E-01	1.00	2,720	7.399815749E+06	1.00
	55-366 m	172	1.913697044E+03	0.25	1,275,177	1.194908136E+11	0.27
	55-500 m	173	1.914112684E+03	0.25	1,277,897	1.194982134E+11	0.27
U.S. Total	55-183 m	14,943	1.754581042E+06	0.09	103,335,014	7.944984959E+13	0.09
	184-366 m	955	3.956341457E+04	0.21	3,379,970	5.107218962E+11	0.21
	367-500 m	47	8.002700845E+02	0.60	120,577	5.452980583E+09	0.61
	55-366 m	15,898	1.794144457E+06	0.08	106,714,985	7.996057149E+13	0.08
	55-500 m	15,946	1.794944727E+06	0.08	106,835,561	7.996602447E+13	0.08
Total	55-183 m	18,493	2.302786829E+06	0.08	116,507,001	8.794353532E+13	0.08
	184-366 m	1,074	4.894623368E+04	0.21	3,614,309	5.438859090E+11	0.20
	367-500 m	49	8.026491496E+02	0.58	123,165	5.459678100E+09	0.60
	55-366 m	19,567	2.351733063E+06	0.08	120,121,309	8.848742123E+13	0.08
	55-500 m	19,616	2.352535712E+06	0.08	120,244,474	8.849288091E+13	0.08

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Eulachon

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	121	1.423672561E+03	0.31	7,709,236	9.110363073E+12	0.39
	184-366 m	2	2.327887554E+00	0.80	102,676	6.747145532E+09	0.80
	367-500 m	0	-	-	0	-	-
	55-366 m	123	1.426000449E+03	0.31	7,811,913	9.117110218E+12	0.39
	55-500 m	123	1.426000449E+03	0.31	7,811,913	9.117110218E+12	0.39
US Vancouver	55-183 m	7	3.748166265E+00	0.26	501,692	2.393086800E+10	0.31
	184-366 m	2	1.479499660E+00	0.59	93,862	3.393802804E+09	0.62
	367-500 m	0	-	-	0	-	-
	55-366 m	9	5.227665925E+00	0.24	595,554	2.732467081E+10	0.28
	55-500 m	9	5.227665925E+00	0.24	595,554	2.732467081E+10	0.28
Total Vancouver	55-183 m	128	1.552966283E+03	0.31	8,210,929	9.937684848E+12	0.38
	184-366 m	4	5.417973277E+00	0.59	196,538	1.461610307E+10	0.62
	367-500 m	0	-	-	0	-	-
	55-366 m	132	1.558384256E+03	0.30	8,407,466	9.952300951E+12	0.38
	55-500 m	132	1.558384256E+03	0.30	8,407,466	9.952300951E+12	0.38
Columbia	55-183 m	20	6.658772524E+01	0.41	1,144,837	1.780028411E+11	0.37
	184-366 m	0	1.390817586E-02	1.00	5,616	3.153781373E+07	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	20	6.660163342E+01	0.41	1,150,452	1.780343789E+11	0.37
	55-500 m	20	6.660163342E+01	0.41	1,150,452	1.780343789E+11	0.37
Eureka	55-183 m	0	1.387994992E-02	0.70	5,297	1.369247269E+07	0.70
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	1.387994992E-02	0.70	5,297	1.369247269E+07	0.70
	55-500 m	0	1.387994992E-02	0.70	5,297	1.369247269E+07	0.70
Monterey	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	28	7.676428216E+01	0.32	1,651,826	2.426392519E+11	0.30
	184-366 m	2	1.493407836E+00	0.56	99,477	3.425340617E+09	0.59
	367-500 m	0	-	-	0	-	-
	55-366 m	30	7.825768999E+01	0.30	1,751,303	2.460645925E+11	0.28
	55-500 m	30	7.825768999E+01	0.30	1,751,303	2.460645925E+11	0.28
Total	55-183 m	149	1.625982398E+03	0.27	9,361,062	1.015639323E+13	0.34
	184-366 m	4	5.431881453E+00	0.57	202,154	1.464764088E+10	0.60
	367-500 m	0	-	-	0	-	-
	55-366 m	153	1.631414280E+03	0.26	9,563,216	1.017104087E+13	0.33
	55-500 m	153	1.631414280E+03	0.26	9,563,216	1.017104087E+13	0.33

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Greenstriped Rockfish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	1,023	1.015065029E+05	0.31	2,912,360	8.589472511E+11	0.32
	184-366 m	460	4.732360016E+04	0.47	1,520,521	5.338791931E+11	0.48
	367-500 m	0	-	-	0	-	-
	55-366 m	1,483	1.488301030E+05	0.26	4,432,881	1.392826444E+12	0.27
	55-500 m	1,483	1.488301030E+05	0.26	4,432,881	1.392826444E+12	0.27
US Vancouver	55-183 m	911	5.357030019E+04	0.25	2,600,973	4.299759793E+11	0.25
	184-366 m	512	1.337835468E+05	0.71	1,614,637	1.245541299E+12	0.69
	367-500 m	0	-	-	0	-	-
	55-366 m	1,423	1.873538470E+05	0.30	4,215,610	1.675517279E+12	0.31
	55-500 m	1,423	1.873538470E+05	0.30	4,215,610	1.675517279E+12	0.31
Total Vancouver	55-183 m	1,934	1.711192164E+05	0.21	5,513,332	1.414989056E+12	0.22
	184-366 m	972	2.361971024E+05	0.50	3,135,158	2.343892127E+12	0.49
	367-500 m	0	-	-	0	-	-
	55-366 m	2,906	4.073163189E+05	0.22	8,648,491	3.758881183E+12	0.22
	55-500 m	2,906	4.073163189E+05	0.22	8,648,491	3.758881183E+12	0.22
Columbia	55-183 m	2,270	4.003457387E+05	0.28	10,253,328	6.835344133E+12	0.25
	184-366 m	377	6.824658741E+03	0.22	1,691,281	1.525753005E+11	0.23
	367-500 m	0	-	-	0	-	-
	55-366 m	2,647	4.071703974E+05	0.24	11,944,609	6.987919433E+12	0.22
	55-500 m	2,647	4.071703974E+05	0.24	11,944,609	6.987919433E+12	0.22
Eureka	55-183 m	82	1.498038641E+03	0.47	816,909	9.712399765E+10	0.38
	184-366 m	45	3.069950237E+02	0.39	342,069	2.668186268E+10	0.48
	367-500 m	0	-	-	0	-	-
	55-366 m	127	1.805033665E+03	0.34	1,158,978	1.238058603E+11	0.30
	55-500 m	127	1.805033665E+03	0.34	1,158,978	1.238058603E+11	0.30
Monterey	55-183 m	543	4.960966005E+04	0.41	3,426,609	1.363186706E+12	0.34
	184-366 m	42	1.092657489E+03	0.78	332,611	7.435477835E+10	0.82
	367-500 m	0	-	-	0	-	-
	55-366 m	586	5.070231754E+04	0.38	3,759,220	1.437541484E+12	0.32
	55-500 m	586	5.070231754E+04	0.38	3,759,220	1.437541484E+12	0.32
Conception	55-183 m	2	2.499957194E+00	0.80	38,443	1.108194637E+09	0.87
	184-366 m	1	1.400065974E+00	0.81	9,686	5.010335092E+07	0.73
	367-500 m	0	-	-	0	-	-
	55-366 m	3	3.900023168E+00	0.57	48,129	1.158297988E+09	0.71
	55-500 m	3	3.900023168E+00	0.57	48,129	1.158297988E+09	0.71
U.S. Total	55-183 m	3,808	5.442817497E+05	0.19	17,136,262	9.329574193E+12	0.18
	184-366 m	977	1.428299476E+05	0.39	3,990,284	1.512218579E+12	0.31
	367-500 m	0	-	-	0	-	-
	55-366 m	4,785	6.871116973E+05	0.17	21,126,546	1.084179277E+13	0.16
	55-500 m	4,785	6.871116973E+05	0.17	21,126,546	1.084179277E+13	0.16
Total	55-183 m	4,831	6.618306660E+05	0.17	20,048,622	1.031458727E+13	0.16
	184-366 m	1,437	2.452435032E+05	0.34	5,510,805	2.610569406E+12	0.29
	367-500 m	0	-	-	0	-	-
	55-366 m	6,268	9.070741692E+05	0.15	25,559,427	1.292515668E+13	0.14
	55-500 m	6,268	9.070741692E+05	0.15	25,559,427	1.292515668E+13	0.14

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Jack Mackerel**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	124	4.336189603E+03	0.53	145,885	7.460812468E+09	0.59
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	124	4.336189603E+03	0.53	145,885	7.460812468E+09	0.59
	55-500 m	124	4.336189603E+03	0.53	145,885	7.460812468E+09	0.59
US Vancouver	55-183 m	146	4.373524665E+03	0.45	225,618	1.858424959E+10	0.60
	184-366 m	2	3.793545478E+00	1.00	2,435	5.927414809E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	148	4.377318210E+03	0.45	228,052	1.859017701E+10	0.60
	55-500 m	148	4.377318210E+03	0.45	228,052	1.859017701E+10	0.60
Total Vancouver	55-183 m	270	9.188308235E+03	0.36	371,503	2.677157307E+10	0.44
	184-366 m	2	3.793545478E+00	1.00	2,435	5.927414809E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	272	9.192101780E+03	0.35	373,937	2.677750049E+10	0.44
	55-500 m	272	9.192101780E+03	0.35	373,937	2.677750049E+10	0.44
Columbia	55-183 m	703	7.530916873E+04	0.39	1,164,270	2.909553844E+11	0.46
	184-366 m	16	9.428560525E+01	0.61	21,200	1.561479647E+08	0.59
	367-500 m	0	-	-	0	-	-
	55-366 m	719	7.540345434E+04	0.38	1,185,469	2.911115323E+11	0.46
	55-500 m	719	7.540345434E+04	0.38	1,185,469	2.911115323E+11	0.46
Eureka	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	4	1.580272098E+01	1.00	3,196	1.021153691E+07	1.00
	55-366 m	0	-	-	0	-	-
	55-500 m	4	1.580272098E+01	1.00	3,196	1.021153691E+07	1.00
Monterey	55-183 m	7,029	1.898434634E+07	0.62	60,396,654	1.436042526E+15	0.63
	184-366 m	62	1.619267421E+03	0.64	47,338	9.390206776E+08	0.65
	367-500 m	16	2.006313873E+02	0.89	12,285	1.210153945E+08	0.90
	55-366 m	7,092	1.898596561E+07	0.61	60,443,992	1.436043465E+15	0.63
	55-500 m	7,107	1.898616624E+07	0.61	60,456,276	1.436043586E+15	0.63
Conception	55-183 m	2,024	1.738005256E+06	0.65	11,997,955	1.032803290E+14	0.85
	184-366 m	7	5.483235089E+01	1.00	4,474	2.001893042E+07	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	2,031	1.738060089E+06	0.65	12,002,429	1.032803490E+14	0.85
	55-500 m	2,031	1.738060089E+06	0.65	12,002,429	1.032803490E+14	0.85
U.S. Total	55-183 m	9,902	2.252401199E+07	0.48	73,784,497	2.217769503E+15	0.64
	184-366 m	88	1.797248597E+03	0.48	75,446	1.160286354E+09	0.45
	367-500 m	20	2.164341083E+02	0.74	15,480	1.312269314E+08	0.74
	55-366 m	9,990	2.252580923E+07	0.48	73,859,943	2.217770663E+15	0.64
	55-500 m	10,010	2.252602567E+07	0.47	73,875,423	2.217770794E+15	0.64
Total	55-183 m	10,026	2.252882677E+07	0.47	73,930,382	2.217777690E+15	0.64
	184-366 m	88	1.797248597E+03	0.48	75,446	1.160286354E+09	0.45
	367-500 m	20	2.164341083E+02	0.74	15,480	1.312269314E+08	0.74
	55-366 m	10,114	2.253062402E+07	0.47	74,005,828	2.217778850E+15	0.64
	55-500 m	10,133	2.253084045E+07	0.47	74,021,308	2.217778982E+15	0.64

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Lingcod**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	3,165	3.007293645E+06	0.55	1,127,889	2.990284525E+11	0.48
	184-366 m	82	1.873693825E+03	0.53	18,216	1.021342189E+08	0.55
	367-500 m	0	-	-	0	-	-
	55-366 m	3,247	3.009167339E+06	0.53	1,146,105	2.991305868E+11	0.48
	55-500 m	3,247	3.009167339E+06	0.53	1,146,105	2.991305868E+11	0.48
US Vancouver	55-183 m	727	2.969790564E+04	0.24	298,517	3.722235117E+09	0.20
	184-366 m	292	3.988635973E+04	0.69	53,627	1.041172368E+09	0.60
	367-500 m	0	-	-	0	-	-
	55-366 m	1,018	6.958426537E+04	0.26	352,144	4.763407485E+09	0.20
	55-500 m	1,018	6.958426537E+04	0.26	352,144	4.763407485E+09	0.20
Total Vancouver	55-183 m	3,892	3.305581182E+06	0.47	1,426,406	3.295808569E+11	0.40
	184-366 m	373	4.284127256E+04	0.55	71,843	1.204593291E+09	0.48
	367-500 m	0	-	-	0	-	-
	55-366 m	4,265	3.348422454E+06	0.43	1,498,248	3.307854502E+11	0.38
	55-500 m	4,265	3.348422454E+06	0.43	1,498,248	3.307854502E+11	0.38
Columbia	55-183 m	1,060	1.342008479E+05	0.35	564,259	1.204985238E+10	0.19
	184-366 m	942	4.345964350E+05	0.70	168,093	1.124310995E+10	0.63
	367-500 m	0	-	-	0	-	-
	55-366 m	2,002	5.687972829E+05	0.38	732,352	2.329296233E+10	0.21
	55-500 m	2,002	5.687972829E+05	0.38	732,352	2.329296233E+10	0.21
Eureka	55-183 m	122	1.526337568E+03	0.32	100,671	1.158006190E+09	0.34
	184-366 m	98	5.140828421E+03	0.73	26,118	1.145884944E+08	0.41
	367-500 m	0	-	-	0	-	-
	55-366 m	219	6.667165989E+03	0.37	126,789	1.272594684E+09	0.28
	55-500 m	219	6.667165989E+03	0.37	126,789	1.272594684E+09	0.28
Monterey	55-183 m	545	4.301470368E+04	0.38	493,457	4.022357614E+10	0.41
	184-366 m	106	6.699663514E+03	0.77	72,057	2.984132311E+09	0.76
	367-500 m	0	-	-	0	-	-
	55-366 m	651	4.971436719E+04	0.34	565,515	4.320770845E+10	0.37
	55-500 m	651	4.971436719E+04	0.34	565,515	4.320770845E+10	0.37
Conception	55-183 m	25	1.284139691E+02	0.45	40,569	2.349536501E+08	0.38
	184-366 m	9	4.060044654E+01	0.75	5,209	1.383387582E+07	0.71
	367-500 m	0	-	-	0	-	-
	55-366 m	34	1.690144156E+02	0.38	45,777	2.487875259E+08	0.34
	55-500 m	34	1.690144156E+02	0.38	45,777	2.487875259E+08	0.34
U.S. Total	55-183 m	2,479	2.162964083E+05	0.19	1,497,473	5.783347606E+10	0.16
	184-366 m	1,446	7.487009559E+05	0.60	325,103	2.216749436E+10	0.46
	367-500 m	0	-	-	0	-	-
	55-366 m	3,924	9.649973642E+05	0.25	1,822,577	8.000097042E+10	0.16
	55-500 m	3,924	9.649973642E+05	0.25	1,822,577	8.000097042E+10	0.16
Total	55-183 m	5,644	3.492179685E+06	0.33	2,625,362	3.836920979E+11	0.24
	184-366 m	1,528	7.516558688E+05	0.57	343,319	2.233091528E+10	0.44
	367-500 m	0	-	-	0	-	-
	55-366 m	7,171	4.243835553E+06	0.29	2,968,681	4.060230131E+11	0.21
	55-500 m	7,171	4.243835553E+06	0.29	2,968,681	4.060230131E+11	0.21

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Longspine Thornyhead**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
US Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	15	2.350154325E+02	1.00	263,440	6.940042843E+10	1.00
	55-366 m	0	-	-	0	-	-
	55-500 m	15	2.350154325E+02	1.00	263,440	6.940042843E+10	1.00
Total Vancouver	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	15	2.350154325E+02	1.00	263,440	6.940042843E+10	1.00
	55-366 m	0	-	-	0	-	-
	55-500 m	15	2.350154325E+02	1.00	263,440	6.940042843E+10	1.00
Columbia	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	257	7.652573177E+03	0.34	4,030,822	1.849237819E+12	0.34
	55-366 m	0	-	-	0	-	-
	55-500 m	257	7.652573177E+03	0.34	4,030,822	1.849237819E+12	0.34
Eureka	55-183 m	0	-	-	0	-	-
	184-366 m	0	3.703519290E-02	0.69	3,181	4.723564307E+06	0.68
	367-500 m	18	1.286637993E+02	0.62	187,722	1.297255987E+10	0.61
	55-366 m	0	3.703519290E-02	0.69	3,181	4.723564307E+06	0.68
	55-500 m	19	1.287008345E+02	0.61	190,903	1.297728344E+10	0.60
Monterey	55-183 m	0	-	-	0	-	-
	184-366 m	0	4.540051377E-03	1.00	2,406	5.790881858E+06	1.00
	367-500 m	66	1.751764703E+03	0.64	721,447	1.871283467E+11	0.60
	55-366 m	0	4.540051377E-03	1.00	2,406	5.790881858E+06	1.00
	55-500 m	66	1.751769243E+03	0.63	723,854	1.871341376E+11	0.60
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	255	6.020887745E+03	0.30	2,673,049	8.229545912E+11	0.34
	55-366 m	0	-	-	0	-	-
	55-500 m	255	6.020887745E+03	0.30	2,673,049	8.229545912E+11	0.34
U.S. Total	55-183 m	0	-	-	0	-	-
	184-366 m	0	4.157524428E-02	0.59	5,588	1.051444617E+07	0.58
	367-500 m	611	1.718627426E+04	0.21	7,876,480	3.282710258E+12	0.23
	55-366 m	0	4.157524428E-02	0.59	5,588	1.051444617E+07	0.58
	55-500 m	612	1.718631583E+04	0.21	7,882,068	3.282720773E+12	0.23
Total	55-183 m	0	-	-	0	-	-
	184-366 m	0	4.157524428E-02	0.59	5,588	1.051444617E+07	0.58
	367-500 m	611	1.718627426E+04	0.21	7,876,480	3.282710258E+12	0.23
	55-366 m	0	4.157524428E-02	0.59	5,588	1.051444617E+07	0.58
	55-500 m	612	1.718631583E+04	0.21	7,882,068	3.282720773E+12	0.23

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Northern Anchovy**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver							
	55-183 m	0	4.742131785E-03	1.00	3,826	1.463620921E+07	1.00
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	4.742131785E-03	1.00	3,826	1.463620921E+07	1.00
	55-500 m	0	4.742131785E-03	1.00	3,826	1.463620921E+07	1.00
US Vancouver							
	55-183 m	6	3.913553076E+01	0.99	94,305	8.423024365E+09	0.97
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	6	3.913553076E+01	0.99	94,305	8.423024365E+09	0.97
	55-500 m	6	3.913553076E+01	0.99	94,305	8.423024365E+09	0.97
Total Vancouver							
	55-183 m	6	3.914069108E+01	0.98	98,130	8.438951258E+09	0.94
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	6	3.914069108E+01	0.98	98,130	8.438951258E+09	0.94
	55-500 m	6	3.914069108E+01	0.98	98,130	8.438951258E+09	0.94
Columbia							
	55-183 m	21	4.188727124E+02	0.98	321,043	9.020829973E+10	0.94
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	21	4.188727124E+02	0.98	321,043	9.020829973E+10	0.94
	55-500 m	21	4.188727124E+02	0.98	321,043	9.020829973E+10	0.94
Eureka							
	55-183 m	0	2.190710975E-02	0.89	16,909	1.941654979E+08	0.82
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	2.190710975E-02	0.89	16,909	1.941654979E+08	0.82
	55-500 m	0	2.190710975E-02	0.89	16,909	1.941654979E+08	0.82
Monterey							
	55-183 m	2,121	7.134978444E+05	0.40	116,074,383	2.043040859E+15	0.39
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	2,121	7.134978444E+05	0.40	116,074,383	2.043040859E+15	0.39
	55-500 m	2,121	7.134978444E+05	0.40	116,074,383	2.043040859E+15	0.39
Conception							
	55-183 m	241	2.060835541E+04	0.60	16,051,004	9.639879952E+13	0.61
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	241	2.060835541E+04	0.60	16,051,004	9.639879952E+13	0.61
	55-500 m	241	2.060835541E+04	0.60	16,051,004	9.639879952E+13	0.61
U.S. Total							
	55-183 m	2,389	8.679017088E+05	0.39	132,557,643	2.769071848E+15	0.40
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	2,389	8.679017088E+05	0.39	132,557,643	2.769071848E+15	0.40
	55-500 m	2,389	8.679017088E+05	0.39	132,557,643	2.769071848E+15	0.40
Total							
	55-183 m	2,389	8.679017140E+05	0.39	132,561,468	2.769071864E+15	0.40
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	2,389	8.679017140E+05	0.39	132,561,468	2.769071864E+15	0.40
	55-500 m	2,389	8.679017140E+05	0.39	132,561,468	2.769071864E+15	0.40

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Hake**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	43,566	1.469225758E+08	0.28	89,747,477	5.617506188E+14	0.26
	184-366 m	1,015	8.216995077E+04	0.28	2,165,495	4.075325636E+11	0.29
	367-500 m	217	8.148209689E+03	0.42	390,883	2.551863340E+10	0.41
	55-366 m	44,580	1.470047457E+08	0.27	91,912,972	5.621581514E+14	0.26
	55-500 m	44,797	1.470128939E+08	0.27	92,303,855	5.621836700E+14	0.26
US Vancouver	55-183 m	49,444	2.804668495E+08	0.34	115,775,348	1.208132909E+15	0.30
	184-366 m	2,075	2.992886000E+05	0.26	4,768,321	1.516657169E+12	0.26
	367-500 m	47	4.878979513E-03	0.00	82,163	5.582251461E+06	0.03
	55-366 m	51,519	2.807661381E+08	0.33	120,543,669	1.209649566E+15	0.29
	55-500 m	51,566	2.807661381E+08	0.32	120,625,833	1.209649572E+15	0.29
Total Vancouver	55-183 m	93,010	4.792030769E+08	0.24	205,522,825	1.978486722E+15	0.22
	184-366 m	3,090	4.858896061E+05	0.23	6,933,816	2.434903440E+12	0.23
	367-500 m	264	8.148214568E+03	0.34	473,046	2.552421565E+10	0.34
	55-366 m	96,099	4.796889665E+08	0.23	212,456,641	1.980921625E+15	0.21
	55-500 m	96,363	4.796971147E+08	0.23	212,929,687	1.980947149E+15	0.21
Columbia	55-183 m	214,074	8.781039339E+08	0.14	572,744,915	6.497527922E+15	0.14
	184-366 m	34,669	1.090806626E+08	0.30	86,771,548	7.445729807E+14	0.31
	367-500 m	5,581	1.378739489E+06	0.21	10,230,595	4.730944378E+12	0.21
	55-366 m	248,743	9.871845965E+08	0.13	659,516,464	7.242100903E+15	0.13
	55-500 m	254,323	9.885633360E+08	0.12	669,747,059	7.246831847E+15	0.13
Eureka	55-183 m	93,280	3.178595710E+08	0.19	366,828,835	7.174335920E+15	0.23
	184-366 m	6,310	2.658393085E+06	0.26	14,823,899	3.079863284E+13	0.37
	367-500 m	1,262	1.300777037E+05	0.29	2,572,052	4.726482376E+11	0.27
	55-366 m	99,590	3.205179641E+08	0.18	381,852,734	7.205134552E+15	0.22
	55-500 m	100,852	3.206480418E+08	0.18	384,224,786	7.205607201E+15	0.22
Monterey	55-183 m	18,656	3.065246827E+07	0.30	67,190,597	2.249239198E+14	0.22
	184-366 m	18,300	2.208080821E+07	0.26	91,605,513	1.501221231E+15	0.42
	367-500 m	3,030	1.911394738E+05	0.14	5,659,616	5.567670337E+11	0.13
	55-366 m	36,957	5.273327648E+07	0.20	158,796,110	1.726145151E+15	0.26
	55-500 m	39,986	5.292441595E+07	0.18	164,455,726	1.726701918E+15	0.25
Conception	55-183 m	164	6.123721163E+03	0.48	4,467,421	6.917669377E+12	0.59
	184-366 m	2,183	2.591208720E+05	0.23	29,297,288	1.059691772E+14	0.35
	367-500 m	3,212	4.463288196E+05	0.21	8,417,968	2.119599054E+12	0.17
	55-366 m	2,347	2.652445931E+05	0.22	33,764,709	1.128868466E+14	0.31
	55-500 m	5,559	7.115734127E+05	0.15	42,182,677	1.150064457E+14	0.25
U.S. Total	55-183 m	375,619	1.641803671E+09	0.11	1,127,007,110	1.605671648E+16	0.11
	184-366 m	63,536	1.346060210E+08	0.18	227,266,574	2.423785554E+15	0.22
	367-500 m	13,131	2.182746296E+06	0.11	26,962,393	7.997400354E+12	0.10
	55-366 m	439,156	1.776409692E+09	0.10	1,354,273,685	1.848050203E+16	0.10
	55-500 m	452,287	1.778592438E+09	0.09	1,381,236,078	1.848849943E+16	0.10
Total	55-183 m	419,185	1.840539898E+09	0.10	1,216,754,587	1.682707029E+16	0.11
	184-366 m	64,551	1.347926220E+08	0.18	229,432,069	2.424703800E+15	0.21
	367-500 m	13,348	2.190894506E+06	0.11	27,353,277	8.022918987E+12	0.10
	55-366 m	483,736	1.975332520E+09	0.09	1,446,186,656	1.925177409E+16	0.10
	55-500 m	497,084	1.977523415E+09	0.09	1,473,539,933	1.925979701E+16	0.09

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Halibut**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	4,383	6.418248633E+06	0.58	584,404	1.143693947E+11	0.58
	184-366 m	196	1.139297198E+04	0.54	20,083	1.312454695E+08	0.57
	367-500 m	27	7.431909894E+02	1.00	2,588	6.697516736E+06	1.00
	55-366 m	4,580	6.429641605E+06	0.55	604,487	1.145006402E+11	0.56
	55-500 m	4,607	6.430384796E+06	0.55	607,075	1.145073377E+11	0.56
US Vancouver	55-183 m	2,190	2.683686838E+05	0.24	331,490	8.781029084E+09	0.28
	184-366 m	276	7.421561573E+03	0.31	25,882	6.652633362E+07	0.32
	367-500 m	0	-	-	0	-	-
	55-366 m	2,466	2.757902454E+05	0.21	357,372	8.847555418E+09	0.26
	55-500 m	2,466	2.757902454E+05	0.21	357,372	8.847555418E+09	0.26
Total Vancouver	55-183 m	6,573	7.290695510E+06	0.41	915,894	1.345133701E+11	0.40
	184-366 m	472	2.625313161E+04	0.34	45,965	2.766512904E+08	0.36
	367-500 m	27	7.431909894E+02	1.00	2,588	6.697516736E+06	1.00
	55-366 m	7,046	7.316948641E+06	0.38	961,859	1.347900214E+11	0.38
	55-500 m	7,073	7.317691832E+06	0.38	964,447	1.347967189E+11	0.38
Columbia	55-183 m	3,065	1.631188513E+06	0.42	331,170	2.021986501E+10	0.43
	184-366 m	1,415	1.969429925E+05	0.31	114,491	1.158052632E+09	0.30
	367-500 m	0	-	-	0	-	-
	55-366 m	4,480	1.828131506E+06	0.30	445,661	2.137791764E+10	0.33
	55-500 m	4,480	1.828131506E+06	0.30	445,661	2.137791764E+10	0.33
Eureka	55-183 m	439	4.774805471E+04	0.50	23,309	9.938876334E+07	0.43
	184-366 m	82	1.461364052E+03	0.46	7,011	9.840761694E+06	0.45
	367-500 m	0	-	-	0	-	-
	55-366 m	521	4.920941876E+04	0.43	30,319	1.092295250E+08	0.34
	55-500 m	521	4.920941876E+04	0.43	30,319	1.092295250E+08	0.34
Monterey	55-183 m	248	1.262403960E+04	0.45	25,749	1.547205340E+08	0.48
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	248	1.262403960E+04	0.45	25,749	1.547205340E+08	0.48
	55-500 m	248	1.262403960E+04	0.45	25,749	1.547205340E+08	0.48
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	5,942	1.969279994E+06	0.24	711,718	2.941922119E+10	0.24
	184-366 m	1,774	2.206139682E+05	0.26	147,384	1.488073671E+09	0.26
	367-500 m	0	-	-	0	-	-
	55-366 m	7,716	2.189893962E+06	0.19	859,102	3.090729486E+10	0.20
	55-500 m	7,716	2.189893962E+06	0.19	859,102	3.090729486E+10	0.20
Total	55-183 m	10,325	8.991606820E+06	0.29	1,296,122	1.551515622E+11	0.30
	184-366 m	1,970	2.394455382E+05	0.25	167,467	1.698198628E+09	0.25
	367-500 m	27	7.431909894E+02	1.00	2,588	6.697516736E+06	1.00
	55-366 m	12,295	9.231052358E+06	0.25	1,463,589	1.568497608E+11	0.27
	55-500 m	12,323	9.231795549E+06	0.25	1,466,177	1.568564583E+11	0.27

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Herring

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	9,612	4.105971873E+07	0.67	100,786,410	4.137109673E+15	0.64
	184-366 m	2	1.234920164E+00	0.52	15,146	5.637148596E+07	0.50
	367-500 m	0	-	-	0	-	-
	55-366 m	9,614	4.105971997E+07	0.67	100,801,556	4.137109730E+15	0.64
	55-500 m	9,614	4.105971997E+07	0.67	100,801,556	4.137109730E+15	0.64
US Vancouver	55-183 m	1,775	8.444085122E+05	0.52	16,463,193	5.858483576E+13	0.46
	184-366 m	3	1.850396676E+00	0.47	18,270	6.702114478E+07	0.45
	367-500 m	0	-	-	0	-	-
	55-366 m	1,778	8.444103626E+05	0.52	16,481,463	5.858490278E+13	0.46
	55-500 m	1,778	8.444103626E+05	0.52	16,481,463	5.858490278E+13	0.46
Total Vancouver	55-183 m	11,387	4.552686515E+07	0.59	117,249,603	4.560715845E+15	0.58
	184-366 m	5	4.142498878E+00	0.40	33,416	1.672828043E+08	0.39
	367-500 m	0	-	-	0	-	-
	55-366 m	11,392	4.552686930E+07	0.59	117,283,019	4.560716012E+15	0.58
	55-500 m	11,392	4.552686930E+07	0.59	117,283,019	4.560716012E+15	0.58
Columbia	55-183 m	6,398	9.905259091E+06	0.49	58,710,439	6.976509712E+14	0.45
	184-366 m	9	2.304865539E+01	0.52	77,286	1.511088651E+09	0.50
	367-500 m	0	1.324727314E-02	1.00	1,439	2.069886429E+06	1.00
	55-366 m	6,408	9.905282139E+06	0.49	58,787,725	6.976524823E+14	0.45
	55-500 m	6,408	9.905282152E+06	0.49	58,789,164	6.976524844E+14	0.45
Eureka	55-183 m	755	3.834407057E+04	0.26	7,287,878	3.627758465E+12	0.26
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	755	3.834407057E+04	0.26	7,287,878	3.627758465E+12	0.26
	55-500 m	755	3.834407057E+04	0.26	7,287,878	3.627758465E+12	0.26
Monterey	55-183 m	12,165	7.292169800E+06	0.22	149,024,225	1.294601367E+15	0.24
	184-366 m	0	-	-	0	-	-
	367-500 m	9	7.872725486E+01	0.98	66,490	4.268016979E+09	0.98
	55-366 m	12,165	7.292169800E+06	0.22	149,024,225	1.294601367E+15	0.24
	55-500 m	12,174	7.292248527E+06	0.22	149,090,715	1.294605635E+15	0.24
Conception	55-183 m	817	2.822307071E+05	0.65	12,445,115	6.856188250E+13	0.67
	184-366 m	0	-	-	0	-	-
	367-500 m	5	2.816120247E+01	1.00	39,071	1.526574543E+09	1.00
	55-366 m	817	2.822307071E+05	0.65	12,445,115	6.856188250E+13	0.67
	55-500 m	822	2.822588683E+05	0.65	12,484,186	6.856340908E+13	0.66
U.S. Total	55-183 m	21,910	2.497993416E+07	0.23	243,930,849	2.851618442E+15	0.22
	184-366 m	12	2.572945995E+01	0.42	95,556	1.634516563E+09	0.42
	367-500 m	14	2.010614956E+02	0.98	107,001	1.090091575E+10	0.98
	55-366 m	21,922	2.497995989E+07	0.23	244,026,405	2.851620077E+15	0.22
	55-500 m	21,936	2.498016095E+07	0.23	244,133,406	2.851630978E+15	0.22
Total	55-183 m	31,522	6.966239080E+07	0.26	344,717,259	7.353749452E+15	0.25
	184-366 m	14	2.802156216E+01	0.37	110,702	1.734778223E+09	0.38
	367-500 m	14	2.010614956E+02	0.98	107,001	1.090091575E+10	0.98
	55-366 m	31,536	6.966241883E+07	0.26	344,827,961	7.353751186E+15	0.25
	55-500 m	31,551	6.966261989E+07	0.26	344,934,962	7.353762087E+15	0.25

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Ocean Perch**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	861	3.263141428E+05	0.66	2,710,349	3.107568338E+12	0.65
	184-366 m	2,287	1.181120909E+06	0.48	3,358,438	2.072140058E+12	0.43
	367-500 m	711	3.171283587E+05	0.79	932,218	5.677637357E+11	0.81
	55-366 m	3,148	1.507435051E+06	0.39	6,068,787	5.179708397E+12	0.38
	55-500 m	3,859	1.824563410E+06	0.35	7,001,005	5.747472132E+12	0.34
US Vancouver	55-183 m	53	7.937616636E+02	0.54	202,101	1.098317304E+10	0.52
	184-366 m	4,434	4.040533318E+06	0.45	4,934,168	3.867117147E+12	0.40
	367-500 m	8	6.960235522E+01	1.00	10,882	1.184161053E+08	1.00
	55-366 m	4,486	4.041327080E+06	0.45	5,136,269	3.878100320E+12	0.38
	55-500 m	4,495	4.041396682E+06	0.45	5,147,150	3.878218736E+12	0.38
Total Vancouver	55-183 m	914	3.559075411E+05	0.65	2,912,450	3.393329927E+12	0.63
	184-366 m	6,721	6.748279972E+06	0.39	8,292,606	7.922309182E+12	0.34
	367-500 m	719	3.171979611E+05	0.78	943,100	5.678821518E+11	0.80
	55-366 m	7,635	7.104187513E+06	0.35	11,205,056	1.131563911E+13	0.30
	55-500 m	8,354	7.421385474E+06	0.33	12,148,156	1.188352126E+13	0.28
Columbia	55-183 m	0	-	-	0	-	-
	184-366 m	2,824	1.757808752E+06	0.47	5,134,441	4.672828301E+12	0.42
	367-500 m	260	6.107429968E+03	0.30	366,323	1.217403693E+10	0.30
	55-366 m	2,824	1.757808752E+06	0.47	5,134,441	4.672828301E+12	0.42
	55-500 m	3,084	1.763916181E+06	0.43	5,500,764	4.685002338E+12	0.39
Eureka	55-183 m	22	4.980768270E+02	1.00	139,157	1.936467553E+10	1.00
	184-366 m	55	4.817245149E+02	0.40	101,927	1.766580198E+09	0.41
	367-500 m	4	3.185346111E+00	0.45	6,607	9.043546612E+06	0.46
	55-366 m	77	9.798013418E+02	0.41	241,084	2.113125573E+10	0.60
	55-500 m	81	9.829866880E+02	0.39	247,691	2.114029927E+10	0.59
Monterey	55-183 m	2	4.623434682E+00	1.00	3,209	1.029947579E+07	1.00
	184-366 m	3	6.528367896E+00	0.74	5,688	1.735759891E+07	0.73
	367-500 m	3	3.678720355E+00	0.58	4,985	7.851081597E+06	0.56
	55-366 m	6	1.115180258E+01	0.59	8,897	2.765707470E+07	0.59
	55-500 m	9	1.483052293E+01	0.43	13,882	3.550815630E+07	0.43
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	77	1.296461925E+03	0.47	344,467	3.035814805E+10	0.51
	184-366 m	7,315	5.809652843E+06	0.33	10,176,223	8.566173558E+12	0.29
	367-500 m	276	6.480652117E+03	0.29	388,797	1.281422508E+10	0.29
	55-366 m	7,392	5.810949305E+06	0.33	10,520,690	8.596531706E+12	0.28
	55-500 m	7,668	5.817429957E+06	0.31	10,909,487	8.609345931E+12	0.27
Total	55-183 m	938	3.564102414E+05	0.64	3,054,816	3.412704902E+12	0.60
	184-366 m	9,602	8.517399497E+06	0.30	13,534,661	1.262136559E+13	0.26
	367-500 m	987	3.236090108E+05	0.58	1,321,015	5.805779608E+11	0.58
	55-366 m	10,541	8.873809738E+06	0.28	16,589,477	1.603407049E+13	0.24
	55-500 m	11,527	9.197418749E+06	0.26	17,910,492	1.661464846E+13	0.23

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Sanddab**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	3,080	7.051593148E+05	0.27	25,803,982	4.735152648E+13	0.27
	184-366 m	0	3.527900061E-02	1.00	3,612	1.304696768E+07	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	3,080	7.051593500E+05	0.27	25,807,594	4.735153952E+13	0.27
	55-500 m	3,080	7.051593500E+05	0.27	25,807,594	4.735153952E+13	0.27
US Vancouver	55-183 m	2,134	2.351061184E+05	0.23	17,747,544	1.375581303E+13	0.21
	184-366 m	0	2.889879768E-03	1.00	1,034	1.068742518E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	2,134	2.351061213E+05	0.23	17,748,578	1.375581410E+13	0.21
	55-500 m	2,134	2.351061213E+05	0.23	17,748,578	1.375581410E+13	0.21
Total Vancouver	55-183 m	5,214	1.021907693E+06	0.19	43,551,526	6.640474995E+13	0.19
	184-366 m	0	5.836314394E-02	1.00	4,646	2.158400293E+07	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	5,214	1.021907752E+06	0.19	43,556,172	6.640477154E+13	0.19
	55-500 m	5,214	1.021907752E+06	0.19	43,556,172	6.640477154E+13	0.19
Columbia	55-183 m	15,718	6.182801687E+06	0.16	148,166,686	4.246897304E+14	0.14
	184-366 m	8	6.846652379E+01	1.00	79,680	6.348884785E+09	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	15,727	6.182870153E+06	0.16	148,246,366	4.246960793E+14	0.14
	55-500 m	15,727	6.182870153E+06	0.16	148,246,366	4.246960793E+14	0.14
Eureka	55-183 m	1,944	2.423734788E+05	0.25	23,515,057	3.248948463E+13	0.24
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	1,944	2.423734788E+05	0.25	23,515,057	3.248948463E+13	0.24
	55-500 m	1,944	2.423734788E+05	0.25	23,515,057	3.248948463E+13	0.24
Monterey	55-183 m	7,419	5.882222075E+06	0.33	57,785,995	2.727238931E+14	0.29
	184-366 m	33	3.045692964E+02	0.52	315,466	2.362981389E+10	0.49
	367-500 m	0	-	-	0	-	-
	55-366 m	7,452	5.882526645E+06	0.33	58,101,461	2.727475229E+14	0.28
	55-500 m	7,452	5.882526645E+06	0.33	58,101,461	2.727475229E+14	0.28
Conception	55-183 m	1,288	6.165127237E+05	0.61	14,019,043	4.709305665E+13	0.49
	184-366 m	7	2.002772130E+01	0.62	69,528	1.612011612E+09	0.58
	367-500 m	0	-	-	0	-	-
	55-366 m	1,295	6.165327515E+05	0.61	14,088,571	4.709466866E+13	0.49
	55-500 m	1,295	6.165327515E+05	0.61	14,088,571	4.709466866E+13	0.49
U.S. Total	55-183 m	28,504	1.383910750E+07	0.13	261,234,325	8.314925768E+14	0.11
	184-366 m	49	4.652739677E+02	0.44	465,708	3.740369269E+10	0.42
	367-500 m	0	-	-	0	-	-
	55-366 m	28,553	1.383957278E+07	0.13	261,700,032	8.315299805E+14	0.11
	55-500 m	28,553	1.383957278E+07	0.13	261,700,032	8.315299805E+14	0.11
Total	55-183 m	31,584	1.462590908E+07	0.12	287,038,306	8.841415137E+14	0.10
	184-366 m	49	4.653294410E+02	0.44	469,320	3.742420795E+10	0.41
	367-500 m	0	-	-	0	-	-
	55-366 m	31,633	1.462637441E+07	0.12	287,507,626	8.841789379E+14	0.10
	55-500 m	31,633	1.462637441E+07	0.12	287,507,626	8.841789379E+14	0.10

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Pacific Sardine**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	69	2.574929797E+03	0.73	794,729	2.838433765E+11	0.67
	184-366 m	0	1.353035251E-03	1.00	312	9.717288502E+04	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	69	2.574931150E+03	0.73	795,041	2.838434737E+11	0.67
	55-500 m	69	2.574931150E+03	0.73	795,041	2.838434737E+11	0.67
US Vancouver	55-183 m	12	2.725752300E+01	0.42	122,941	2.506979492E+09	0.41
	184-366 m	0	1.319820189E-01	0.75	3,774	8.790747498E+06	0.79
	367-500 m	0	-	-	0	-	-
	55-366 m	13	2.738950502E+01	0.41	126,716	2.515770239E+09	0.40
	55-500 m	13	2.738950502E+01	0.41	126,716	2.515770239E+09	0.40
Total Vancouver	55-183 m	82	2.829484112E+03	0.65	917,670	3.113948391E+11	0.61
	184-366 m	1	1.576453350E-01	0.77	4,086	1.063384691E+07	0.80
	367-500 m	0	-	-	0	-	-
	55-366 m	82	2.829641758E+03	0.65	921,756	3.114054729E+11	0.61
	55-500 m	82	2.829641758E+03	0.65	921,756	3.114054729E+11	0.61
Columbia	55-183 m	37	2.709033385E+02	0.44	456,048	3.140877809E+10	0.39
	184-366 m	0	2.487685641E-01	1.00	3,218	1.035457082E+07	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	38	2.711521071E+02	0.43	459,266	3.141913266E+10	0.39
	55-500 m	38	2.711521071E+02	0.43	459,266	3.141913266E+10	0.39
Eureka	55-183 m	1	2.227678293E-01	0.70	7,554	3.044321967E+07	0.73
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	1	2.227678293E-01	0.70	7,554	3.044321967E+07	0.73
	55-500 m	1	2.227678293E-01	0.70	7,554	3.044321967E+07	0.73
Monterey	55-183 m	5,389	4.711936407E+06	0.40	146,325,753	3.300636012E+15	0.39
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	5,389	4.711936407E+06	0.40	146,325,753	3.300636012E+15	0.39
	55-500 m	5,389	4.711936407E+06	0.40	146,325,753	3.300636012E+15	0.39
Conception	55-183 m	99	6.243041368E+03	0.80	4,613,069	1.255720915E+13	0.77
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	99	6.243041368E+03	0.80	4,613,069	1.255720915E+13	0.77
	55-500 m	99	6.243041368E+03	0.80	4,613,069	1.255720915E+13	0.77
U.S. Total	55-183 m	5,538	4.759824037E+06	0.39	151,525,366	3.396130887E+15	0.38
	184-366 m	1	5.313253137E-01	0.74	6,992	2.541273688E+07	0.72
	367-500 m	0	-	-	0	-	-
	55-366 m	5,539	4.759824568E+06	0.39	151,532,358	3.396130912E+15	0.38
	55-500 m	5,539	4.759824568E+06	0.39	151,532,358	3.396130912E+15	0.38
Total	55-183 m	5,608	4.762626263E+06	0.39	152,320,095	3.396439775E+15	0.38
	184-366 m	1	5.569886299E-01	0.73	7,304	2.725583628E+07	0.71
	367-500 m	0	-	-	0	-	-
	55-366 m	5,609	4.762626820E+06	0.39	152,327,398	3.396439802E+15	0.38
	55-500 m	5,609	4.762626820E+06	0.39	152,327,398	3.396439802E+15	0.38

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Petrale Sole**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	602	1.915706196E+04	0.23	1,224,014	5.754572385E+10	0.20
	184-366 m	11	4.118683514E+01	0.58	17,748	7.799108331E+07	0.50
	367-500 m	12	1.417194541E+02	1.00	5,176	2.679006694E+07	1.00
	55-366 m	613	1.919824879E+04	0.23	1,241,762	5.762371494E+10	0.19
	55-500 m	624	1.933996825E+04	0.22	1,246,938	5.765050500E+10	0.19
US Vancouver	55-183 m	540	2.023709786E+04	0.26	1,050,948	5.339885985E+10	0.22
	184-366 m	7	9.470533585E+00	0.41	19,326	8.204288296E+07	0.47
	367-500 m	0	-	-	0	-	-
	55-366 m	548	2.024656839E+04	0.26	1,070,274	5.348090274E+10	0.22
	55-500 m	548	2.024656839E+04	0.26	1,070,274	5.348090274E+10	0.22
Total Vancouver	55-183 m	1,142	4.409180806E+04	0.18	2,274,962	1.239428927E+11	0.15
	184-366 m	18	7.443987897E+01	0.47	37,075	2.111224203E+08	0.39
	367-500 m	12	1.417194541E+02	1.00	5,176	2.679006694E+07	1.00
	55-366 m	1,160	4.416624794E+04	0.18	2,312,036	1.241540151E+11	0.15
	55-500 m	1,172	4.430796739E+04	0.18	2,317,212	1.241808052E+11	0.15
Columbia	55-183 m	1,493	3.720193002E+04	0.13	4,013,932	2.123403738E+11	0.11
	184-366 m	56	3.614832948E+02	0.34	142,523	2.469693548E+09	0.35
	367-500 m	2	5.164594135E+00	1.00	3,148	9.907448022E+06	1.00
	55-366 m	1,549	3.756341332E+04	0.13	4,156,455	2.148100673E+11	0.11
	55-500 m	1,551	3.756857791E+04	0.12	4,159,603	2.148199748E+11	0.11
Eureka	55-183 m	520	1.250619774E+04	0.21	1,660,793	1.286025571E+11	0.22
	184-366 m	21	9.317183637E+01	0.47	34,927	1.480007344E+08	0.35
	367-500 m	0	-	-	0	-	-
	55-366 m	541	1.259936957E+04	0.21	1,695,720	1.287505578E+11	0.21
	55-500 m	541	1.259936957E+04	0.21	1,695,720	1.287505578E+11	0.21
Monterey	55-183 m	621	1.028728162E+04	0.16	1,566,697	5.985868521E+10	0.16
	184-366 m	51	2.975461993E+02	0.34	101,346	1.662284131E+09	0.40
	367-500 m	37	4.942646090E+02	0.61	46,310	8.313764109E+08	0.62
	55-366 m	672	1.058482782E+04	0.15	1,668,043	6.152096934E+10	0.15
	55-500 m	708	1.107909243E+04	0.15	1,714,353	6.235234575E+10	0.15
Conception	55-183 m	79	3.729259534E+02	0.24	166,728	1.736051943E+09	0.25
	184-366 m	17	6.381049915E+01	0.47	23,732	1.126707783E+08	0.45
	367-500 m	4	3.701039024E+00	0.50	6,080	1.032503546E+07	0.53
	55-366 m	96	4.367364525E+02	0.22	190,460	1.848722721E+09	0.23
	55-500 m	100	4.404374916E+02	0.21	196,540	1.859047757E+09	0.22
U.S. Total	55-183 m	3,254	8.173394239E+04	0.09	8,459,098	4.607300570E+11	0.08
	184-366 m	152	8.799900702E+02	0.20	321,854	4.855628938E+09	0.22
	367-500 m	43	5.066733445E+02	0.53	55,538	8.612195558E+08	0.53
	55-366 m	3,406	8.261393246E+04	0.08	8,780,952	4.655856859E+11	0.08
	55-500 m	3,448	8.312060580E+04	0.08	8,836,489	4.664469055E+11	0.08
Total	55-183 m	3,856	1.055886526E+05	0.08	9,683,112	5.312740898E+11	0.08
	184-366 m	163	9.449594156E+02	0.19	339,602	4.984708475E+09	0.21
	367-500 m	55	6.483927987E+02	0.47	60,713	8.880096228E+08	0.49
	55-366 m	4,018	1.065336120E+05	0.08	10,022,714	5.362587983E+11	0.07
	55-500 m	4,073	1.071820048E+05	0.08	10,083,427	5.371468079E+11	0.07

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Redstripe Rockfish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	1,828	1.222986203E+06	0.60	4,751,601	7.791997415E+12	0.59
	184-366 m	1,515	1.114466500E+06	0.70	2,928,435	4.198881369E+12	0.70
	367-500 m	0	-	-	0	-	-
	55-366 m	3,344	2.337452703E+06	0.46	7,680,036	1.199087878E+13	0.45
	55-500 m	3,344	2.337452703E+06	0.46	7,680,036	1.199087878E+13	0.45
US Vancouver	55-183 m	1,339	9.775191280E+05	0.74	3,020,437	4.915645665E+12	0.73
	184-366 m	543	1.014699088E+05	0.59	1,082,297	3.940524665E+11	0.58
	367-500 m	0	-	-	0	-	-
	55-366 m	1,882	1.078989037E+06	0.55	4,102,734	5.309698131E+12	0.56
	55-500 m	1,882	1.078989037E+06	0.55	4,102,734	5.309698131E+12	0.56
Total Vancouver	55-183 m	3,167	2.454319040E+06	0.49	7,772,039	1.412831321E+13	0.48
	184-366 m	2,059	1.856070861E+06	0.66	4,010,731	7.007250110E+12	0.66
	367-500 m	0	-	-	0	-	-
	55-366 m	5,226	4.310389902E+06	0.40	11,782,770	2.113556332E+13	0.39
	55-500 m	5,226	4.310389902E+06	0.40	11,782,770	2.113556332E+13	0.39
Columbia	55-183 m	255	2.961499489E+04	0.67	895,030	3.256316115E+11	0.64
	184-366 m	1	7.004402660E-01	0.65	7,058	1.615094635E+07	0.57
	367-500 m	0	-	-	0	-	-
	55-366 m	256	2.961569533E+04	0.67	902,088	3.256477625E+11	0.63
	55-500 m	256	2.961569533E+04	0.67	902,088	3.256477625E+11	0.63
Eureka	55-183 m	0	2.109354691E-01	1.00	2,524	6.368055460E+06	1.00
	184-366 m	4	3.900822556E+00	0.44	29,882	1.724851671E+08	0.44
	367-500 m	0	-	-	0	-	-
	55-366 m	5	4.111758025E+00	0.41	32,406	1.788532226E+08	0.41
	55-500 m	5	4.111758025E+00	0.41	32,406	1.788532226E+08	0.41
Monterey	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	1,595	1.007134334E+06	0.63	3,917,991	5.241283644E+12	0.58
	184-366 m	549	1.014745101E+05	0.58	1,119,237	3.942411026E+11	0.56
	367-500 m	0	-	-	0	-	-
	55-366 m	2,144	1.108608844E+06	0.49	5,037,227	5.635524747E+12	0.47
	55-500 m	2,144	1.108608844E+06	0.49	5,037,227	5.635524747E+12	0.47
Total	55-183 m	3,423	2.483934246E+06	0.46	8,669,592	1.445395119E+13	0.44
	184-366 m	2,065	1.856075463E+06	0.66	4,047,671	7.007438746E+12	0.65
	367-500 m	0	-	-	0	-	-
	55-366 m	5,487	4.340009709E+06	0.38	12,717,263	2.146138993E+13	0.36
	55-500 m	5,487	4.340009709E+06	0.38	12,717,263	2.146138993E+13	0.36

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Rex Sole**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	4,669	3.868908320E+05	0.13	27,547,244	1.100633413E+13	0.12
	184-366 m	626	3.119986846E+04	0.28	2,931,777	7.407257847E+11	0.29
	367-500 m	221	4.912889340E+03	0.32	905,786	9.387189066E+10	0.34
	55-366 m	5,295	4.180907005E+05	0.12	30,479,020	1.174705992E+13	0.11
	55-500 m	5,516	4.230035898E+05	0.12	31,384,807	1.184093181E+13	0.11
US Vancouver	55-183 m	1,123	1.419476463E+04	0.11	8,212,937	6.442424120E+11	0.10
	184-366 m	850	2.036852627E+04	0.17	4,149,573	3.833066486E+11	0.15
	367-500 m	25	4.432584939E+02	0.83	101,553	7.165323313E+09	0.83
	55-366 m	1,973	3.456329090E+04	0.09	12,362,511	1.027549061E+12	0.08
	55-500 m	1,999	3.500654939E+04	0.09	12,464,064	1.034714384E+12	0.08
Total Vancouver	55-183 m	5,792	4.367184270E+05	0.11	35,760,181	1.268080342E+13	0.10
	184-366 m	1,476	7.308783930E+04	0.18	7,081,350	1.611023165E+12	0.18
	367-500 m	247	5.356147834E+03	0.30	1,007,340	1.010372140E+11	0.32
	55-366 m	7,268	5.098062663E+05	0.10	42,841,531	1.429182659E+13	0.09
	55-500 m	7,515	5.151624141E+05	0.10	43,848,871	1.439286380E+13	0.09
Columbia	55-183 m	8,508	8.950493100E+05	0.11	86,540,872	9.429296773E+13	0.11
	184-366 m	3,806	2.023503522E+05	0.12	31,859,283	1.345582241E+13	0.12
	367-500 m	960	2.590655867E+04	0.17	6,769,621	1.469815120E+12	0.18
	55-366 m	12,314	1.097399662E+06	0.09	118,400,155	1.077487901E+14	0.09
	55-500 m	13,274	1.123306221E+06	0.08	125,169,776	1.092186053E+14	0.08
Eureka	55-183 m	1,578	5.937497813E+04	0.15	23,608,035	1.327232061E+13	0.15
	184-366 m	1,348	3.353834333E+04	0.14	14,202,457	3.128435042E+12	0.12
	367-500 m	992	4.471912772E+04	0.21	9,407,138	4.980412518E+12	0.24
	55-366 m	2,925	9.291332146E+04	0.10	37,810,492	1.640075565E+13	0.11
	55-500 m	3,917	1.376324492E+05	0.09	47,217,630	2.138116817E+13	0.10
Monterey	55-183 m	1,006	1.395235976E+04	0.12	12,166,486	2.306750936E+12	0.12
	184-366 m	1,629	9.353326465E+04	0.19	14,385,622	6.034498254E+12	0.17
	367-500 m	2,119	1.533158754E+05	0.18	14,525,352	4.402651112E+12	0.14
	55-366 m	2,636	1.074856244E+05	0.12	26,552,108	8.341249191E+12	0.11
	55-500 m	4,754	2.608014999E+05	0.11	41,077,459	1.274390030E+13	0.09
Conception	55-183 m	24	1.583732697E+02	0.52	335,885	3.051819291E+10	0.52
	184-366 m	784	2.155511093E+05	0.59	6,798,243	1.580198868E+13	0.58
	367-500 m	888	3.571702195E+04	0.21	5,966,706	1.994404420E+12	0.24
	55-366 m	808	2.157094826E+05	0.57	7,134,128	1.583250687E+13	0.56
	55-500 m	1,696	2.514265045E+05	0.30	13,100,834	1.782691129E+13	0.32
U.S. Total	55-183 m	12,239	1.004455807E+06	0.08	130,864,215	1.120151054E+14	0.08
	184-366 m	8,417	5.709675326E+05	0.09	71,395,178	3.900904947E+13	0.09
	367-500 m	4,983	2.648772686E+05	0.10	36,770,371	1.301531838E+13	0.10
	55-366 m	20,656	1.575423339E+06	0.06	202,259,393	1.510241549E+14	0.06
	55-500 m	25,639	1.840300608E+06	0.05	239,029,764	1.640394733E+14	0.05
Total	55-183 m	16,908	1.426979469E+06	0.07	158,411,459	1.240516664E+14	0.07
	184-366 m	9,044	6.236868456E+05	0.09	74,326,955	4.023676599E+13	0.09
	367-500 m	5,204	2.697901579E+05	0.10	37,676,157	1.310919027E+13	0.10
	55-366 m	25,951	2.050666315E+06	0.06	232,738,414	1.642884324E+14	0.06
	55-500 m	31,155	2.320456473E+06	0.05	270,414,570	1.773976227E+14	0.05

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Sablefish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	10,351	1.079596215E+07	0.32	4,417,896	1.339946583E+12	0.26
	184-366 m	1,238	3.121811042E+05	0.45	538,103	3.816006475E+10	0.36
	367-500 m	106	2.391978264E+03	0.46	54,937	4.012473469E+08	0.36
	55-366 m	11,589	1.110814326E+07	0.29	4,955,999	1.378106648E+12	0.24
	55-500 m	11,695	1.111053524E+07	0.29	5,010,936	1.378507895E+12	0.23
US Vancouver	55-183 m	2,299	3.126816697E+05	0.24	1,363,705	1.091312421E+11	0.24
	184-366 m	1,571	1.185953679E+05	0.22	893,388	6.202787632E+10	0.28
	367-500 m	24	1.199178358E+02	0.46	11,481	9.170643547E+06	0.26
	55-366 m	3,870	4.312770376E+05	0.17	2,257,093	1.711591185E+11	0.18
	55-500 m	3,894	4.313969554E+05	0.17	2,268,574	1.711682891E+11	0.18
Total Vancouver	55-183 m	12,651	1.209354598E+07	0.27	5,781,600	1.577525391E+12	0.22
	184-366 m	2,809	6.292157598E+05	0.28	1,431,492	1.346342207E+11	0.26
	367-500 m	130	2.511896099E+03	0.39	66,418	4.104179904E+08	0.31
	55-366 m	15,459	1.272276174E+07	0.23	7,213,092	1.712159611E+12	0.18
	55-500 m	15,589	1.272527363E+07	0.23	7,279,510	1.712570029E+12	0.18
Columbia	55-183 m	11,121	2.197964842E+07	0.42	8,234,322	1.133225657E+13	0.41
	184-366 m	6,898	9.278404551E+06	0.44	3,970,178	2.296740313E+12	0.38
	367-500 m	3,886	2.543357565E+05	0.13	1,959,537	4.928277454E+10	0.11
	55-366 m	18,018	3.125805297E+07	0.31	12,204,500	1.362899688E+13	0.30
	55-500 m	21,904	3.151238872E+07	0.26	14,164,037	1.367827965E+13	0.26
Eureka	55-183 m	17	1.135105496E+02	0.64	15,377	7.658971580E+07	0.57
	184-366 m	1,529	3.122389831E+05	0.37	1,177,542	1.837556350E+11	0.36
	367-500 m	2,089	3.955820630E+04	0.10	1,527,950	2.599294365E+10	0.11
	55-366 m	1,545	3.123524937E+05	0.36	1,192,919	1.838322247E+11	0.36
	55-500 m	3,634	3.519107000E+05	0.16	2,720,868	2.098251683E+11	0.17
Monterey	55-183 m	55	5.819917466E+02	0.44	71,808	9.273426981E+08	0.42
	184-366 m	714	1.781602882E+04	0.19	628,914	1.075345055E+10	0.16
	367-500 m	1,140	2.057027183E+04	0.13	960,999	1.681462029E+10	0.13
	55-366 m	769	1.839802056E+04	0.18	700,722	1.168079325E+10	0.15
	55-500 m	1,909	3.896829240E+04	0.10	1,661,721	2.849541353E+10	0.10
Conception	55-183 m	17	1.784751942E+02	0.80	52,169	1.781992659E+09	0.81
	184-366 m	27	2.704619629E+02	0.61	65,040	1.922782016E+09	0.67
	367-500 m	321	4.102664468E+03	0.20	340,411	4.565178475E+09	0.20
	55-366 m	44	4.489371571E+02	0.49	117,210	3.704774675E+09	0.52
	55-500 m	365	4.551601625E+03	0.18	457,621	8.269953150E+09	0.20
U.S. Total	55-183 m	13,508	2.276504345E+07	0.35	9,737,382	1.169158495E+13	0.35
	184-366 m	10,738	9.737381939E+06	0.29	6,735,062	2.558436244E+12	0.24
	367-500 m	7,460	3.216843055E+05	0.08	4,800,378	9.940200189E+10	0.07
	55-366 m	24,246	3.250242538E+07	0.24	16,472,444	1.425002119E+13	0.23
	55-500 m	31,706	3.282410969E+07	0.18	21,272,822	1.434942319E+13	0.18
Total	55-183 m	23,860	3.454590775E+07	0.25	14,155,277	1.315997909E+13	0.26
	184-366 m	11,976	1.024800233E+07	0.27	7,273,165	2.631042588E+12	0.22
	367-500 m	7,566	3.240762838E+05	0.08	4,855,316	9.980324924E+10	0.07
	55-366 m	35,836	4.479391009E+07	0.19	21,428,443	1.579102168E+13	0.19
	55-500 m	43,402	4.511798637E+07	0.15	26,283,758	1.589082493E+13	0.15

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Sharpchin Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	107	4.552165284E+03	0.63	313,082	2.772642150E+10	0.53
	184-366 m	1,046	1.033650541E+06	0.97	1,714,845	2.690852494E+12	0.96
	367-500 m	0	-	-	0	-	-
	55-366 m	1,153	1.038202706E+06	0.88	2,027,926	2.718578915E+12	0.81
	55-500 m	1,153	1.038202706E+06	0.88	2,027,926	2.718578915E+12	0.81
US Vancouver	55-183 m	20	1.150596320E+02	0.53	54,917	6.811918667E+08	0.48
	184-366 m	434	1.037179248E+05	0.74	861,207	3.617212437E+11	0.70
	367-500 m	0	-	-	0	-	-
	55-366 m	454	1.038329845E+05	0.71	916,124	3.624024355E+11	0.66
	55-500 m	454	1.038329845E+05	0.71	916,124	3.624024355E+11	0.66
Total Vancouver	55-183 m	127	5.084552543E+03	0.56	367,998	3.094654481E+10	0.48
	184-366 m	1,480	1.733155647E+06	0.89	2,576,052	4.623339566E+12	0.83
	367-500 m	0	-	-	0	-	-
	55-366 m	1,608	1.738240199E+06	0.82	2,944,050	4.654286111E+12	0.73
	55-500 m	1,608	1.738240199E+06	0.82	2,944,050	4.654286111E+12	0.73
Columbia	55-183 m	10	2.361507041E+01	0.48	62,280	9.205646116E+08	0.49
	184-366 m	2,966	4.916911046E+06	0.75	10,049,403	5.117873125E+13	0.71
	367-500 m	0	-	-	0	-	-
	55-366 m	2,976	4.916934661E+06	0.75	10,111,684	5.117965181E+13	0.71
	55-500 m	2,976	4.916934661E+06	0.75	10,111,684	5.117965181E+13	0.71
Eureka	55-183 m	14	1.153477168E+02	0.78	93,603	5.454360798E+09	0.79
	184-366 m	21	6.105795012E+01	0.37	159,134	3.888099357E+09	0.39
	367-500 m	0	-	-	0	-	-
	55-366 m	35	1.764056669E+02	0.38	252,737	9.342460155E+09	0.38
	55-500 m	35	1.764056669E+02	0.38	252,737	9.342460155E+09	0.38
Monterey	55-183 m	8	6.871620592E+01	0.99	80,814	5.667348834E+09	0.93
	184-366 m	142	1.722991705E+04	0.92	1,384,264	1.672109198E+12	0.93
	367-500 m	0	-	-	0	-	-
	55-366 m	151	1.729863325E+04	0.87	1,465,078	1.677776547E+12	0.88
	55-500 m	151	1.729863325E+04	0.87	1,465,078	1.677776547E+12	0.88
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	9.622087385E-02	0.69	4,624	9.347499159E+06	0.66
	367-500 m	0	-	-	0	-	-
	55-366 m	0	9.622087385E-02	0.69	4,624	9.347499159E+06	0.66
	55-500 m	0	9.622087385E-02	0.69	4,624	9.347499159E+06	0.66
U.S. Total	55-183 m	53	3.227386251E+02	0.34	291,614	1.272346611E+10	0.39
	184-366 m	3,564	5.037927572E+06	0.63	12,458,631	5.321668340E+13	0.59
	367-500 m	0	-	-	0	-	-
	55-366 m	3,617	5.038250311E+06	0.62	12,750,245	5.322940686E+13	0.57
	55-500 m	3,617	5.038250311E+06	0.62	12,750,245	5.322940686E+13	0.57
Total	55-183 m	160	5.292231536E+03	0.46	604,696	4.298881905E+10	0.34
	184-366 m	4,610	6.667365294E+06	0.56	14,173,476	5.747830172E+13	0.53
	367-500 m	0	-	-	0	-	-
	55-366 m	4,770	6.672657526E+06	0.54	14,778,172	5.752129054E+13	0.51
	55-500 m	4,770	6.672657526E+06	0.54	14,778,172	5.752129054E+13	0.51

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Shortbelly Rockfish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	1	1.139413917E+00	1.00	3,656	1.336336457E+07	1.00
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	1	1.139413917E+00	1.00	3,656	1.336336457E+07	1.00
	55-500 m	1	1.139413917E+00	1.00	3,656	1.336336457E+07	1.00
US Vancouver	55-183 m	0	2.215154295E-03	1.00	161	2.597994810E+04	1.00
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	2.215154295E-03	1.00	161	2.597994810E+04	1.00
	55-500 m	0	2.215154295E-03	1.00	161	2.597994810E+04	1.00
Total Vancouver	55-183 m	1	1.242107479E+00	1.00	3,817	1.456778335E+07	1.00
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	1	1.242107479E+00	1.00	3,817	1.456778335E+07	1.00
	55-500 m	1	1.242107479E+00	1.00	3,817	1.456778335E+07	1.00
Columbia	55-183 m	0	-	-	0	-	-
	184-366 m	1	3.850743596E-01	1.00	2,368	5.609730779E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	1	3.850743596E-01	1.00	2,368	5.609730779E+06	1.00
	55-500 m	1	3.850743596E-01	1.00	2,368	5.609730779E+06	1.00
Eureka	55-183 m	0	-	-	0	-	-
	184-366 m	0	1.210190889E-01	1.00	1,672	2.797223762E+06	1.00
	367-500 m	0	-	-	0	-	-
	55-366 m	0	1.210190889E-01	1.00	1,672	2.797223762E+06	1.00
	55-500 m	0	1.210190889E-01	1.00	1,672	2.797223762E+06	1.00
Monterey	55-183 m	363	4.891501533E+04	0.61	7,539,227	2.042641900E+13	0.60
	184-366 m	2,236	1.837459731E+06	0.61	44,494,309	8.711205579E+14	0.66
	367-500 m	0	-	-	0	-	-
	55-366 m	2,599	1.886374746E+06	0.53	52,033,537	8.915469769E+14	0.57
	55-500 m	2,599	1.886374746E+06	0.53	52,033,537	8.915469769E+14	0.57
Conception	55-183 m	7,959	6.102861648E+07	0.98	178,519,090	3.058708646E+16	0.98
	184-366 m	551	2.540338280E+05	0.92	12,322,874	1.381854858E+14	0.95
	367-500 m	0	-	-	0	-	-
	55-366 m	8,510	6.128265031E+07	0.92	190,841,964	3.072527194E+16	0.92
	55-500 m	8,510	6.128265031E+07	0.92	190,841,964	3.072527194E+16	0.92
U.S. Total	55-183 m	8,322	6.107898331E+07	0.94	186,058,478	3.061114834E+16	0.94
	184-366 m	2,788	3.007269399E+06	0.62	56,821,236	1.507499144E+15	0.68
	367-500 m	0	-	-	0	-	-
	55-366 m	11,110	6.408625271E+07	0.72	242,879,715	3.211864748E+16	0.74
	55-500 m	11,110	6.408625271E+07	0.72	242,879,715	3.211864748E+16	0.74
Total	55-183 m	8,323	6.107898455E+07	0.94	186,062,134	3.061114835E+16	0.94
	184-366 m	2,788	3.007269399E+06	0.62	56,821,236	1.507499144E+15	0.68
	367-500 m	0	-	-	0	-	-
	55-366 m	11,111	6.408625395E+07	0.72	242,883,370	3.211864749E+16	0.74
	55-500 m	11,111	6.408625395E+07	0.72	242,883,370	3.211864749E+16	0.74

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Shortspine Thornyhead

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	43	1.028584269E+03	0.75	193,104	1.887954843E+10	0.71
	184-366 m	182	5.868283757E+03	0.42	817,167	1.411837742E+11	0.46
	367-500 m	255	5.737812876E+03	0.30	1,231,713	9.506807037E+10	0.25
	55-366 m	225	6.896868027E+03	0.37	1,010,271	1.600633227E+11	0.40
	55-500 m	480	1.263468090E+04	0.23	2,241,984	2.551313930E+11	0.23
US Vancouver	55-183 m	30	6.451767583E+02	0.86	196,198	3.173850073E+10	0.91
	184-366 m	264	6.730204823E+03	0.31	1,094,831	9.182690958E+10	0.28
	367-500 m	42	2.245583994E+02	0.36	512,115	8.879371687E+10	0.58
	55-366 m	294	7.375381581E+03	0.29	1,291,029	1.235654103E+11	0.27
	55-500 m	336	7.599939980E+03	0.26	1,803,144	2.123591272E+11	0.26
Total Vancouver	55-183 m	72	1.860631073E+03	0.60	389,303	5.702612166E+10	0.61
	184-366 m	447	1.726496770E+04	0.29	1,911,997	3.286906815E+11	0.30
	367-500 m	297	5.962371275E+03	0.26	1,743,828	1.838617872E+11	0.25
	55-366 m	519	1.912559877E+04	0.27	2,301,300	3.857168032E+11	0.27
	55-500 m	816	2.508797004E+04	0.19	4,045,128	5.695785904E+11	0.19
Columbia	55-183 m	101	2.127816506E+03	0.46	449,482	5.358164817E+10	0.51
	184-366 m	1,823	2.119253498E+05	0.25	14,336,411	1.476477344E+13	0.27
	367-500 m	2,366	7.463970796E+04	0.12	18,820,473	5.409121580E+12	0.12
	55-366 m	1,925	2.140531663E+05	0.24	14,785,893	1.481835509E+13	0.26
	55-500 m	4,290	2.886928743E+05	0.13	33,606,366	2.022747667E+13	0.13
Eureka	55-183 m	1	3.757908905E-01	0.78	7,618	1.831277103E+07	0.56
	184-366 m	105	7.157553452E+02	0.25	1,320,272	1.748192368E+11	0.32
	367-500 m	297	2.293054981E+03	0.16	3,125,258	3.766738187E+11	0.20
	55-366 m	106	7.161311361E+02	0.25	1,327,889	1.748375496E+11	0.31
	55-500 m	402	3.009186117E+03	0.14	4,453,147	5.515113683E+11	0.17
Monterey	55-183 m	1	2.152586413E-01	0.73	6,199	1.923937875E+07	0.71
	184-366 m	128	1.346786039E+03	0.29	950,539	7.696174845E+10	0.29
	367-500 m	341	2.690010629E+04	0.48	1,644,283	1.580049192E+11	0.24
	55-366 m	128	1.347001298E+03	0.29	956,738	7.698098783E+10	0.29
	55-500 m	469	2.824710758E+04	0.36	2,601,022	2.349859071E+11	0.19
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	2	1.280741083E+00	0.56	14,164	7.665808343E+07	0.62
	367-500 m	88	5.080226007E+02	0.26	491,765	2.847858554E+10	0.34
	55-366 m	2	1.280741083E+00	0.56	14,164	7.665808343E+07	0.62
	55-500 m	90	5.093033418E+02	0.25	505,930	2.855524363E+10	0.33
U.S. Total	55-183 m	132	2.778386648E+03	0.40	659,497	8.545118668E+10	0.44
	184-366 m	2,323	2.219757414E+05	0.20	17,716,217	1.518358387E+13	0.22
	367-500 m	3,132	1.056385783E+05	0.10	24,593,895	6.443219224E+12	0.10
	55-366 m	2,455	2.247541281E+05	0.19	18,375,714	1.526903506E+13	0.21
	55-500 m	5,587	3.303927064E+05	0.10	42,969,609	2.171225428E+13	0.11
Total	55-183 m	175	3.993840962E+03	0.36	852,601	1.107388076E+11	0.39
	184-366 m	2,505	2.325105043E+05	0.19	18,533,384	1.542044764E+13	0.21
	367-500 m	3,388	1.113763912E+05	0.10	25,825,608	6.538287294E+12	0.10
	55-366 m	2,680	2.365043453E+05	0.18	19,385,985	1.553118645E+13	0.20
	55-500 m	6,068	3.478807364E+05	0.10	45,211,592	2.206947374E+13	0.10

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Silvergray Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	608	2.492679725E+05	0.82	363,275	9.409670045E+10	0.84
	184-366 m	538	9.807937558E+04	0.58	265,084	2.651711381E+10	0.61
	367-500 m	0	-	-	0	-	-
	55-366 m	1,146	3.473473481E+05	0.51	628,359	1.206138143E+11	0.55
	55-500 m	1,146	3.473473481E+05	0.51	628,359	1.206138143E+11	0.55
US Vancouver	55-183 m	67	1.389096611E+03	0.56	32,294	3.215004473E+08	0.56
	184-366 m	214	1.126422145E+04	0.50	109,173	3.146477749E+09	0.51
	367-500 m	0	-	-	0	-	-
	55-366 m	280	1.265331806E+04	0.40	141,467	3.467978196E+09	0.42
	55-500 m	280	1.265331806E+04	0.40	141,467	3.467978196E+09	0.42
Total Vancouver	55-183 m	674	2.727739786E+05	0.77	395,569	1.027367931E+11	0.81
	184-366 m	752	1.661826942E+05	0.54	374,257	4.505262629E+10	0.57
	367-500 m	0	-	-	0	-	-
	55-366 m	1,426	4.389566728E+05	0.46	769,826	1.477894194E+11	0.50
	55-500 m	1,426	4.389566728E+05	0.46	769,826	1.477894194E+11	0.50
Columbia	55-183 m	0	-	-	0	-	-
	184-366 m	16	1.439696364E+02	0.74	7,369	2.937049049E+07	0.74
	367-500 m	0	-	-	0	-	-
	55-366 m	16	1.439696364E+02	0.74	7,369	2.937049049E+07	0.74
	55-500 m	16	1.439696364E+02	0.74	7,369	2.937049049E+07	0.74
Eureka	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Monterey	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	67	1.389096611E+03	0.56	32,294	3.215004473E+08	0.56
	184-366 m	230	1.140819109E+04	0.46	116,542	3.175848239E+09	0.48
	367-500 m	0	-	-	0	-	-
	55-366 m	297	1.279728770E+04	0.38	148,836	3.497348687E+09	0.40
	55-500 m	297	1.279728770E+04	0.38	148,836	3.497348687E+09	0.40
Total	55-183 m	674	2.727739786E+05	0.77	395,569	1.027367931E+11	0.81
	184-366 m	768	1.663266639E+05	0.53	381,626	4.508199678E+10	0.56
	367-500 m	0	-	-	0	-	-
	55-366 m	1,443	4.391006424E+05	0.46	777,195	1.478187898E+11	0.49
	55-500 m	1,443	4.391006424E+05	0.46	777,195	1.478187898E+11	0.49

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Spiny Dogfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	40,219	5.689650278E+07	0.19	30,802,207	3.759491564E+13	0.20
	184-366 m	583	5.014689822E+04	0.38	731,720	9.629370760E+10	0.42
	367-500 m	7	1.246586040E+01	0.49	12,445	3.924773383E+07	0.50
	55-366 m	40,803	5.694664968E+07	0.18	31,533,928	3.769120935E+13	0.19
	55-500 m	40,810	5.694666215E+07	0.18	31,546,372	3.769124860E+13	0.19
US Vancouver	55-183 m	13,250	2.541431164E+07	0.38	12,180,116	1.197099597E+13	0.28
	184-366 m	494	2.587845782E+04	0.33	733,682	7.329987267E+10	0.37
	367-500 m	0	-	-	0	-	-
	55-366 m	13,744	2.544019010E+07	0.37	12,913,798	1.204429585E+13	0.27
	55-500 m	13,744	2.544019010E+07	0.37	12,913,798	1.204429585E+13	0.27
Total Vancouver	55-183 m	53,469	9.110922672E+07	0.18	42,982,323	5.463573293E+13	0.17
	184-366 m	1,077	1.094067270E+05	0.31	1,465,402	2.387409482E+11	0.33
	367-500 m	7	1.246586040E+01	0.49	12,445	3.924773383E+07	0.50
	55-366 m	54,547	9.121863345E+07	0.18	44,447,726	5.487447387E+13	0.17
	55-500 m	54,554	9.121864592E+07	0.18	44,460,171	5.487451312E+13	0.17
Columbia	55-183 m	8,594	8.511911367E+05	0.11	14,108,956	2.934145220E+12	0.12
	184-366 m	467	1.425420447E+04	0.26	1,002,160	1.349474495E+11	0.37
	367-500 m	163	2.583227601E+03	0.31	253,744	7.856328707E+09	0.35
	55-366 m	9,060	8.654453412E+05	0.10	15,111,116	3.069092670E+12	0.12
	55-500 m	9,224	8.680285688E+05	0.10	15,364,860	3.076948999E+12	0.11
Eureka	55-183 m	1,569	3.648993302E+05	0.39	8,820,273	2.412542538E+13	0.56
	184-366 m	1,079	1.269339455E+05	0.33	2,485,444	6.422621632E+11	0.32
	367-500 m	199	7.205681508E+03	0.43	459,303	5.275690265E+10	0.50
	55-366 m	2,647	4.918332757E+05	0.26	11,305,717	2.476768754E+13	0.44
	55-500 m	2,846	4.990389572E+05	0.25	11,765,020	2.482044444E+13	0.42
Monterey	55-183 m	4,227	3.623727118E+06	0.45	9,354,628	1.965552535E+13	0.47
	184-366 m	3,076	3.318796588E+06	0.59	7,131,433	1.778028842E+13	0.59
	367-500 m	399	1.406892472E+04	0.30	536,926	2.117310839E+10	0.27
	55-366 m	7,303	6.942523706E+06	0.36	16,486,061	3.743581378E+13	0.37
	55-500 m	7,703	6.956592631E+06	0.34	17,022,987	3.745698689E+13	0.36
Conception	55-183 m	208	3.069113512E+03	0.27	850,109	8.237842954E+10	0.34
	184-366 m	22	1.010790446E+02	0.46	24,205	1.231275797E+08	0.46
	367-500 m	92	2.529257252E+03	0.55	128,747	5.375128639E+09	0.57
	55-366 m	230	3.170192557E+03	0.25	874,315	8.250155712E+10	0.33
	55-500 m	322	5.699449809E+03	0.23	1,003,062	8.787668576E+10	0.30
U.S. Total	55-183 m	27,847	3.054601252E+07	0.20	45,314,082	5.992547604E+13	0.17
	184-366 m	5,138	3.486633301E+06	0.36	11,376,925	1.863354377E+13	0.38
	367-500 m	854	3.473680504E+04	0.22	1,378,720	1.051032996E+11	0.24
	55-366 m	32,985	3.403264582E+07	0.18	56,691,007	7.855901981E+13	0.16
	55-500 m	33,839	3.406738262E+07	0.17	58,069,726	7.866412311E+13	0.15
Total	55-183 m	68,067	9.624092760E+07	0.14	76,116,289	1.025902130E+14	0.13
	184-366 m	5,721	3.570161570E+06	0.33	12,108,645	1.879898485E+13	0.36
	367-500 m	861	3.474927090E+04	0.22	1,391,165	1.051425473E+11	0.23
	55-366 m	73,787	9.981108917E+07	0.14	88,224,934	1.213891978E+14	0.12
	55-500 m	74,649	9.984583844E+07	0.13	89,616,099	1.214943404E+14	0.12

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Splitnose Rockfish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	2	2.964003550E+00	0.73	19,981	2.027545234E+08	0.71
	184-366 m	173	2.867075970E+04	0.98	408,265	1.322240793E+11	0.89
	367-500 m	5	2.773045846E+01	1.00	12,443	1.548337854E+08	1.00
	55-366 m	175	2.867372370E+04	0.97	428,247	1.324268338E+11	0.85
	55-500 m	180	2.870145416E+04	0.94	440,690	1.325816676E+11	0.83
US Vancouver	55-183 m	0	5.169084546E-02	0.56	7,386	2.098656954E+07	0.62
	184-366 m	103	3.191361761E+03	0.55	942,152	1.776893757E+11	0.45
	367-500 m	0	4.324965505E-02	1.00	1,209	1.461927226E+06	1.00
	55-366 m	103	3.191413451E+03	0.55	949,538	1.777103623E+11	0.44
	55-500 m	103	3.191456701E+03	0.55	950,747	1.777118242E+11	0.44
Total Vancouver	55-183 m	3	3.277072947E+00	0.66	27,367	2.416208568E+08	0.57
	184-366 m	276	4.845051520E+04	0.80	1,350,418	4.202520292E+11	0.48
	367-500 m	5	2.777370811E+01	0.96	13,652	1.562957126E+08	0.92
	55-366 m	278	4.845379227E+04	0.79	1,377,785	4.204936501E+11	0.47
	55-500 m	284	4.848156598E+04	0.78	1,391,437	4.206499458E+11	0.47
Columbia	55-183 m	2	8.836293811E-01	0.46	40,196	3.424459583E+08	0.46
	184-366 m	4,134	7.507080948E+06	0.66	29,593,327	2.846716092E+14	0.57
	367-500 m	40	3.943080209E+02	0.50	125,076	3.737083957E+09	0.49
	55-366 m	4,136	7.507081832E+06	0.66	29,633,523	2.846719516E+14	0.57
	55-500 m	4,176	7.507476140E+06	0.66	29,758,599	2.846756887E+14	0.57
Eureka	55-183 m	42	8.397411582E+02	0.69	1,314,414	7.676989873E+11	0.67
	184-366 m	582	1.883427639E+04	0.24	6,344,150	1.827955328E+12	0.21
	367-500 m	10	1.081949735E+02	1.00	28,265	7.989350002E+08	1.00
	55-366 m	624	1.967401755E+04	0.22	7,658,564	2.595654316E+12	0.21
	55-500 m	634	1.978221252E+04	0.22	7,686,829	2.596453251E+12	0.21
Monterey	55-183 m	3	3.283556300E+00	0.57	49,266	5.561912951E+08	0.48
	184-366 m	7,807	1.624154263E+07	0.52	40,785,953	1.847609281E+14	0.33
	367-500 m	1,230	1.807738770E+05	0.35	4,480,909	2.366558876E+12	0.34
	55-366 m	7,810	1.624154591E+07	0.52	40,835,218	1.847614843E+14	0.33
	55-500 m	9,040	1.642231979E+07	0.45	45,316,128	1.871280431E+14	0.30
Conception	55-183 m	27	6.079834784E+02	0.90	1,619,170	2.584813417E+12	0.99
	184-366 m	2,594	5.569214990E+05	0.29	27,307,578	2.910342039E+13	0.20
	367-500 m	2,160	1.049419132E+06	0.47	10,315,733	2.203367205E+13	0.46
	55-366 m	2,621	5.575294825E+05	0.28	28,926,748	3.168823381E+13	0.19
	55-500 m	4,781	1.606948614E+06	0.27	39,242,481	5.372190586E+13	0.19
U.S. Total	55-183 m	75	1.453255985E+03	0.51	3,030,432	3.353716349E+12	0.60
	184-366 m	15,220	2.444842832E+07	0.32	104,973,165	5.234915467E+14	0.22
	367-500 m	3,440	1.278019268E+06	0.33	14,951,193	2.522065603E+13	0.34
	55-366 m	15,295	2.444988157E+07	0.32	108,003,596	5.268452631E+14	0.21
	55-500 m	18,735	2.572790084E+07	0.27	122,954,789	5.520659191E+14	0.19
Total	55-183 m	77	1.456481367E+03	0.49	3,050,413	3.353936983E+12	0.60
	184-366 m	15,392	2.449368747E+07	0.32	105,381,430	5.237341094E+14	0.22
	367-500 m	3,446	1.278046998E+06	0.33	14,963,636	2.522081087E+13	0.34
	55-366 m	15,470	2.449514395E+07	0.32	108,431,843	5.270880464E+14	0.21
	55-500 m	18,916	2.577319095E+07	0.27	123,395,479	5.523088572E+14	0.19

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Stripetail Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	6	3.735946336E+01	0.99	55,025	3.006793540E+09	1.00
	184-366 m	1	4.473853939E-01	0.77	3,927	8.706251543E+06	0.75
	367-500 m	0	-	-	0	-	-
	55-366 m	7	3.780684875E+01	0.88	58,952	3.015499791E+09	0.93
	55-500 m	7	3.780684875E+01	0.88	58,952	3.015499791E+09	0.93
US Vancouver	55-183 m	1	2.950727584E-01	0.61	7,131	1.702193260E+07	0.58
	184-366 m	20	3.120159834E+02	0.87	118,220	1.078612982E+10	0.88
	367-500 m	0	-	-	0	-	-
	55-366 m	21	3.123110561E+02	0.83	125,351	1.080315176E+10	0.83
	55-500 m	21	3.123110561E+02	0.83	125,351	1.080315176E+10	0.83
Total Vancouver	55-183 m	7	4.097706467E+01	0.91	62,156	3.289936659E+09	0.92
	184-366 m	21	3.138304366E+02	0.84	122,147	1.082731843E+10	0.85
	367-500 m	0	-	-	0	-	-
	55-366 m	28	3.548075012E+02	0.67	184,302	1.411725509E+10	0.64
	55-500 m	28	3.548075012E+02	0.67	184,302	1.411725509E+10	0.64
Columbia	55-183 m	39	1.333510547E+03	0.94	462,989	1.299264392E+11	0.78
	184-366 m	835	9.225075766E+04	0.36	5,874,839	4.211762589E+12	0.35
	367-500 m	0	-	-	0	-	-
	55-366 m	874	9.358426820E+04	0.35	6,337,828	4.341689029E+12	0.33
	55-500 m	874	9.358426820E+04	0.35	6,337,828	4.341689029E+12	0.33
Eureka	55-183 m	465	6.440532465E+04	0.55	4,817,448	6.786073786E+12	0.54
	184-366 m	459	2.189911932E+04	0.32	3,243,884	1.088464482E+12	0.32
	367-500 m	0	-	-	0	-	-
	55-366 m	924	8.630444398E+04	0.32	8,061,332	7.874538269E+12	0.35
	55-500 m	924	8.630444398E+04	0.32	8,061,332	7.874538269E+12	0.35
Monterey	55-183 m	2,302	8.238558373E+05	0.39	30,621,810	1.447183507E+14	0.39
	184-366 m	3,010	9.081454405E+05	0.32	30,544,091	8.291033314E+13	0.30
	367-500 m	0	-	-	0	-	-
	55-366 m	5,311	1.732001278E+06	0.25	61,165,901	2.276286838E+14	0.25
	55-500 m	5,311	1.732001278E+06	0.25	61,165,901	2.276286838E+14	0.25
Conception	55-183 m	159	1.195547041E+04	0.69	3,327,719	4.290957786E+12	0.62
	184-366 m	1,629	3.607835748E+05	0.37	18,023,327	4.720803082E+13	0.38
	367-500 m	0	-	-	0	-	-
	55-366 m	1,788	3.727390453E+05	0.34	21,351,046	5.149898860E+13	0.34
	55-500 m	1,788	3.727390453E+05	0.34	21,351,046	5.149898860E+13	0.34
U.S. Total	55-183 m	2,966	9.015864157E+05	0.32	39,237,096	1.559607888E+14	0.32
	184-366 m	5,953	1.483048707E+06	0.20	57,804,367	1.513051725E+14	0.21
	367-500 m	0	-	-	0	-	-
	55-366 m	8,919	2.384635122E+06	0.17	97,041,463	3.072659613E+14	0.18
	55-500 m	8,919	2.384635122E+06	0.17	97,041,463	3.072659613E+14	0.18
Total	55-183 m	2,972	9.016270976E+05	0.32	39,292,121	1.559640617E+14	0.32
	184-366 m	5,954	1.483050521E+06	0.20	57,808,293	1.513052137E+14	0.21
	367-500 m	0	-	-	0	-	-
	55-366 m	8,926	2.384677619E+06	0.17	97,100,415	3.072692754E+14	0.18
	55-500 m	8,926	2.384677619E+06	0.17	97,100,415	3.072692754E+14	0.18

1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Widow Rockfish

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver							
	55-183 m	191	6.627261889E+03	0.43	172,001	4.710281462E+09	0.40
	184-366 m	973	3.092159915E+05	0.57	743,644	1.745990481E+11	0.56
	367-500 m	3	7.928145251E+00	1.00	2,588	6.697516736E+06	1.00
	55-366 m	1,164	3.158432534E+05	0.48	915,645	1.793093296E+11	0.46
	55-500 m	1,167	3.158511815E+05	0.48	918,233	1.793160271E+11	0.46
US Vancouver							
	55-183 m	812	3.159788249E+05	0.69	679,716	2.044152782E+11	0.67
	184-366 m	1,429	8.786081474E+05	0.66	1,248,249	7.794298836E+11	0.71
	367-500 m	0	-	-	0	-	-
	55-366 m	2,241	1.194586972E+06	0.49	1,927,965	9.838451618E+11	0.51
	55-500 m	2,241	1.194586972E+06	0.49	1,927,965	9.838451618E+11	0.51
Total Vancouver							
	55-183 m	1,003	3.704859588E+05	0.61	851,717	2.401373605E+11	0.58
	184-366 m	2,402	1.548921861E+06	0.52	1,991,893	1.219050696E+12	0.55
	367-500 m	3	7.928145251E+00	1.00	2,588	6.697516736E+06	1.00
	55-366 m	3,405	1.919407820E+06	0.41	2,843,610	1.459188056E+12	0.42
	55-500 m	3,408	1.919415748E+06	0.41	2,846,198	1.459194754E+12	0.42
Columbia							
	55-183 m	128	3.423009296E+03	0.46	103,475	2.925012636E+09	0.52
	184-366 m	165	3.501755927E+03	0.36	135,467	2.256612203E+09	0.35
	367-500 m	0	-	-	0	-	-
	55-366 m	294	6.924765223E+03	0.28	238,943	5.181624839E+09	0.30
	55-500 m	294	6.924765223E+03	0.28	238,943	5.181624839E+09	0.30
Eureka							
	55-183 m	12	3.912528480E+01	0.52	15,235	5.903531886E+07	0.50
	184-366 m	85	1.064018429E+03	0.38	77,509	8.446856845E+08	0.37
	367-500 m	0	-	-	0	-	-
	55-366 m	97	1.103143714E+03	0.34	92,744	9.037210033E+08	0.32
	55-500 m	97	1.103143714E+03	0.34	92,744	9.037210033E+08	0.32
Monterey							
	55-183 m	867	3.207087992E+05	0.65	1,034,133	4.473997630E+11	0.65
	184-366 m	845	4.140211174E+05	0.76	755,419	3.295927821E+11	0.76
	367-500 m	0	-	-	0	-	-
	55-366 m	1,712	7.347299166E+05	0.50	1,789,552	7.769925451E+11	0.49
	55-500 m	1,712	7.347299166E+05	0.50	1,789,552	7.769925451E+11	0.49
Conception							
	55-183 m	0	1.036836590E-03	1.00	619	3.834454845E+05	1.00
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	1.036836590E-03	1.00	619	3.834454845E+05	1.00
	55-500 m	0	1.036836590E-03	1.00	619	3.834454845E+05	1.00
U.S. Total							
	55-183 m	1,819	6.401668448E+05	0.44	1,833,179	6.548200613E+11	0.44
	184-366 m	2,524	1.297217310E+06	0.45	2,216,645	1.112149760E+12	0.48
	367-500 m	0	-	-	0	-	-
	55-366 m	4,344	1.937384155E+06	0.32	4,049,824	1.766969821E+12	0.33
	55-500 m	4,344	1.937384155E+06	0.32	4,049,824	1.766969821E+12	0.33
Total							
	55-183 m	2,011	6.946739787E+05	0.41	2,005,180	6.905421435E+11	0.41
	184-366 m	3,497	1.967531024E+06	0.40	2,960,289	1.551770572E+12	0.42
	367-500 m	3	7.928145251E+00	1.00	2,588	6.697516736E+06	1.00
	55-366 m	5,508	2.662205003E+06	0.30	4,965,469	2.242312716E+12	0.30
	55-500 m	5,511	2.662212931E+06	0.30	4,968,057	2.242319413E+12	0.30

**1998 NMFS Triennial Bottom Trawl Survey
Biomass and Population Estimates for Yellowtail Rockfish**

INPFC Area	Depth Stratum	Biomass (t)	var(Biomass)	CV (Biomass)	Population (fish)	var(Population)	CV (Population)
Canadian Vancouver	55-183 m	8,597	8.596687371E+06	0.34	7,938,380	6.884785511E+12	0.33
	184-366 m	6,718	1.780135402E+07	0.63	5,718,808	1.235189522E+13	0.61
	367-500 m	0	-	-	0	-	-
	55-366 m	15,315	2.639804139E+07	0.34	13,657,188	1.923668073E+13	0.32
	55-500 m	15,315	2.639804139E+07	0.34	13,657,188	1.923668073E+13	0.32
US Vancouver	55-183 m	13,768	2.967789079E+07	0.40	12,643,591	2.262964789E+13	0.38
	184-366 m	2,443	1.499070382E+06	0.50	2,030,037	1.035653290E+12	0.50
	367-500 m	0	-	-	0	-	-
	55-366 m	16,212	3.117696117E+07	0.34	14,673,628	2.366530118E+13	0.33
	55-500 m	16,212	3.117696117E+07	0.34	14,673,628	2.366530118E+13	0.33
Total Vancouver	55-183 m	22,365	4.346635114E+07	0.29	20,581,971	3.349972851E+13	0.28
	184-366 m	9,161	2.949282540E+07	0.59	7,748,845	2.045928828E+13	0.58
	367-500 m	0	-	-	0	-	-
	55-366 m	31,526	7.295917654E+07	0.27	28,330,816	5.395901678E+13	0.26
	55-500 m	31,526	7.295917654E+07	0.27	28,330,816	5.395901678E+13	0.26
Columbia	55-183 m	4,716	1.294181847E+06	0.24	4,440,269	1.184607779E+12	0.25
	184-366 m	1,301	3.475488904E+05	0.45	1,020,302	2.129584959E+11	0.45
	367-500 m	0	-	-	0	-	-
	55-366 m	6,017	1.641730737E+06	0.21	5,460,571	1.397566275E+12	0.22
	55-500 m	6,017	1.641730737E+06	0.21	5,460,571	1.397566275E+12	0.22
Eureka	55-183 m	385	1.042092625E+05	0.84	480,042	1.758795444E+11	0.87
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	385	1.042092625E+05	0.84	480,042	1.758795444E+11	0.87
	55-500 m	385	1.042092625E+05	0.84	480,042	1.758795444E+11	0.87
Monterey	55-183 m	3,858	6.698406857E+06	0.67	4,276,215	8.281385897E+12	0.67
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	3,858	6.698406857E+06	0.67	4,276,215	8.281385897E+12	0.67
	55-500 m	3,858	6.698406857E+06	0.67	4,276,215	8.281385897E+12	0.67
Conception	55-183 m	0	-	-	0	-	-
	184-366 m	0	-	-	0	-	-
	367-500 m	0	-	-	0	-	-
	55-366 m	0	-	-	0	-	-
	55-500 m	0	-	-	0	-	-
U.S. Total	55-183 m	22,728	3.804562029E+07	0.27	21,840,116	3.258556210E+13	0.26
	184-366 m	3,744	2.036425491E+06	0.38	3,050,339	1.365850946E+12	0.38
	367-500 m	0	-	-	0	-	-
	55-366 m	26,472	4.008204578E+07	0.24	24,890,456	3.395141304E+13	0.23
	55-500 m	26,472	4.008204578E+07	0.24	24,890,456	3.395141304E+13	0.23
Total	55-183 m	31,325	5.183408065E+07	0.23	29,778,497	4.345564271E+13	0.22
	184-366 m	10,462	3.003018050E+07	0.52	8,769,147	2.078948593E+13	0.52
	367-500 m	0	-	-	0	-	-
	55-366 m	41,787	8.186426115E+07	0.22	38,547,644	6.424512864E+13	0.21
	55-500 m	41,787	8.186426115E+07	0.22	38,547,644	6.424512864E+13	0.21

RECENT TECHNICAL MEMORANDUMS

Copies of this and other NOAA Technical Memorandums are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22167 (web site: www.ntis.gov). Paper and microfiche copies vary in price.

AFSC-

- 113 ROBSON, B. W. (editor). 2000. Fur seal investigations, 1998, 101 p. NTIS No. PB2000-104258.
- 112 YANG, M-S., and M. W. NELSON. 2000. Food habits of the commercially important groundfishes in the Gulf of Alaska in 1990, 1993, and 1996, 174 p. NTIS No. PB2000-103403.
- 111 BUSBY, M. S., A. C. MATARESE, and K. L. MEIR. 2000. Annual, seasonal, and diel composition of larval and juvenile fishes collected by dip-net in Clam Bay, Puget Sound, Washington, from 1985 to 1995, 36 p. NTIS No. PB2000-103424.
- 110 HILL, P. S., and D. P. DEMASTER. 1999. Alaska marine mammal stock assessments, 1999, 166 p. NTIS PB2000-102844.
- 109 FOWLER, C. W., and M. A. PEREZ. 1999. Constructing species frequency distributions - a step toward systemic management, 59 p. NTIS No. PB2000-102552.
- 108 HILL, P. S., J. L. LAAKE, and E. MITCHELL. 1999. Results of a pilot program to document interactions between sperm whales and longline vessels in Alaska waters, 42 p. NTIS No. PB2000-101118.
- 107 MOORE, S. E., M. E. DAHLHEIM, K. M. STAFFORD, C. G. FOX, H. W. BRAHAM, M. A. MCDONALD, and J. THOMASON. 1999. Acoustic and visual detection of large whales in the eastern north Pacific Ocean, 27 p. NTIS No. PB2000-101119.
- 106 SINCLAIR, E.H., and B. W. ROBSON. (editors). 1999. Fur seal investigations, 1997, 111 p. NTIS No. PB2000-100223.
- 105 MURPHY, J. M., A. L. J. BRASE, and J. A. ORSI. 1999. Survey of juvenile Pacific salmon in the northern region of southeastern Alaska, May-October 1997, 40 p. NTIS No. PB99-175630.
- 104 SMITH, K. R., and R. A. MCCONNAUGHEY. 1999. Surficial sediments of the eastern Bering Sea continental shelf: EBSSSED database documentation, 41 p. NTIS No. PB2000-100938.
- 103 RUGH, D. J., M. M. MUTO, S. E. MOORE, and D. P. DEMASTER. 1999. Status review of the eastern north Pacific stock of gray whales, 93 p. NTIS No. PB99-172678.
- 102 BUCKLEY, T. W., G. E. TYLER, D. M. SMITH, and P. A. LIVINGSTON. 1999. Food habits of some commercially important groundfish off the coasts of California, Oregon, Washington, and British Columbia, 173 p. NTIS No. PB99-166563.
- 101 MCELDERRY, H., W. A. KARP, J. TWOMEY, M. MERKLEIN, V. CORNISH, and M. SAUNDERS. 1999. Proceedings of the first biennial Canada/U.S. observer program workshop, 113 p. NTIS No. PB99-146482.
- 100 SEASE, J. L., and T. R. LOUGHLIN. 1999. Aerial and land-based surveys of Steller sea lions (Eumetopias jubatus) in Alaska, June and July 1997 and 1998, 61 p. NTIS No. PB99-140618.
- 99 SEASE, J. L., J. M. STRICK, R. L. MERRICK, and J. P. LEWIS. 1999. Aerial and land-based surveys of Steller sea lions (Eumetopias jubatus) in Alaska, June and July 1996, 43 p. NTIS No. PB99-134462.
- 98 LAUTH, R. R. 1999. The 1997 Pacific West Coast upper continental slope trawl survey of groundfish resources off Washington, Oregon, and California: Estimates of distribution, abundance, and length composition, 284 p. NTIS No. PB99-133043.