

OREGON DEPARTMENT OF FISH AND WILDLIFE

Groundfish and Shrimp Investigations

Report of Cruise 76-4
Marine Resource Survey off Washington

- Vessel: M/V *Tordenskjold*, chartered trawler
- Dates: August 27 to September 20, 1976
- Objectives: The primary objective was to complete the last of two annual surveys for assessing fish stocks off the Washington coast. The survey was to take place from Cape Flattery to the Columbia River between 10-300 fathoms. A second objective was to compliment Oregon 1971-74 annual surveys by surveying off north central Oregon outside 110 fathoms.
- Methods: Trawl stations were located at five nautical mile intervals, from a random starting point along tracklines located six nautical miles apart. Tow locations were determined by loran (1L1 and 1L0) and depth sounder. Tows were one nautical mile in length. Gear used was a 400-mesh eastern type trawl constructed entirely of 3.5-inch mesh. Footrope-headrope lengths were 77 and 60-feet respectively. Sweeplines were a 10-fathom bridle and a 5-fathom dandy line. The trawl had a rubber disc, chain footrope, made up of 4.5-inch diameter rubber discs. Thirteen 8-inch plastic floats were equally spaced on the headrope starting at the wingtips. A 71-foot, 3/8-inch tickler chain was attached to the ends of the footrope. The "V" type steel otter boards (doors) were 5 x 7 feet and weighed about 1,350 pounds. The vessel was powered by a 365 h.p. diesel.
- Results: A total of 86 tows were made off Washington and an additional 15 tows were completed off Oregon. Data were not obtained at seven stations because of gear damage, untrawlable bottom and vessel's gear which limited trawling to a maximum depth of 260 fathoms. Catch rate by species and tow locations are shown in Table 1 and 2. Infrequently caught species are listed in the miscellaneous category. Table 3 lists common and scientific names of fishes caught. There were 8,639 flatfish and 278 Pacific ocean perch sampled for age, size and sex composition (Table 4).
- Personnel: Robert Demory, Project Leader, ODFW 8/27-9/3, 9/18-9/20.
Bill Barss, Party Chief, ODFW 8/27-9/6, Biologist 9/7-9/10.
Jerry Butler, Biologist, ODFW 8/27-9/3.
Bruce Johnson, Exp. Bio. Technician, ODFW, 8/27-9/3.
Brian Culver, Biologist, Washington Dept. of Fisheries, 8/27-9/3.
Brad Patty, Technician, Washington Dept. of Fisheries, 9/4-9/10.
Gene Stewart, Biologist, ODFW, 9/4-9/16, Party Chief 9/7-9/20.
Tim Rymer, Exp. Bio. Aide, ODFW, 9/4-9/10.
Tim Downey, Student Trainee, ODFW, 9/4-9/10.
Gary Hettman, Exp. Bio. Technician, ODFW, 9/11-9/20.
Neil TenEyck, Biologist, ODFW, 9/11-9/20.
Dennis Wise, Exp. Bio. Aide, ODFW, 9/11-9/17.
Greg Bargmann, Biologist, Washington Dept. of Fisheries, 9/11-9/20.
Carl Serwald, Vessel Captain.
George Takanen, Engineer-crewman.
Dennis Karn, Cook-crewman.

Bill Barss
Marine Region
September, 1976

Table 1. Washington Station Location and Catch (Pounds) of Principal Species by Tow, Groundfish Survey, Cruise 76-4, August 27 through September 15, 1976

Tow Number	1	2	3	4	5	6	7
Date	8/27	8/27	8/27	8/31	8/31	8/31	8/31
Loran, 1L1 Start	2781	2755	2811	2800	2839	2875	2860
End	2791	2765	2821	2802	2849	2885	2870
1L0 Start	4293	4281	4280	4245	4260	4274	4291
End	4294	4281	4279	4244	4259	4274	4290
Depth: Down-haul	18-17.5	110-102	55-55	77-77	71-69	48	20.5-20
Catch:							
Spiny dogfish	185	5	48	70	99	12	126
Skate	124		T		77	10	220
Ratfish			1		7		
Pacific cod		19	3		6	3	
Pacific hake		4	149		9	3	
Flatfish							
Pacific sanddab	7					24	20
Arrowtooth flounder		27	36	5	240	3	
Slender sole		8	T	2	9	T	
Petrale sole	3	5	19	22	17	32	
English sole	33		14			12	35
Dover sole		224	4	13	31	5	
Rex sole		19	4		9	59	T
Butter sole	59					8	136
Other flatfish	6	10	13				25
Rockfish							
Shortspine thornyhead		41	1				
Pacific ocean perch		4					
Greenstriped rockfish				9	4		
Yellowtail rockfish			21	4			
Canary rockfish			31	6	74	5	
Darkblotched rockfish		3	1				
Splitnose rockfish							
Other rockfish		9			40		
Sablefish		6	4		6		
Lingcod	13		6		25	2	
Miscellaneous		11	1				
Totals	430	395	356	131	653	178	562

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	8	9	10	11	12	13	14
Date	8/31	8/31	8/31	9/1	9/1	9/1	9/1
Loran, 1L1 Start	2909	2933	2988	3072	3029	2989	2955
End	2919	2944	2998	3061	3039	2999	2965
1L0 Start	4287	4273	4287	4292	4278	4263	4244
End	4287	4272	4286	4293	4277	4262	4243
Depth: Down-haul	21-23	48-48	22.5-25	18.5-18	41	57-58	73-74.5
Catch:							
Spiny dogfish	90		35	11	37	91	189
Skate	285	39	60	23		27	153
Ratfish						9	11
Pacific cod		1	9	12	9	8	
Pacific hake		29			182	111	
Flatfish							
Pacific sanddab	46	114	47	9	156	45	
Arrowtooth flounder		1			T	20	336
Slender sole					3	36	12
Petrale sole		18			8	11	
English sole	115	77	40	42	135	11	
Dover sole	2	40		T	126	60	6
Rex sole	43	252	31	19	299	111	3
Butter sole	128	33	116	195	1		
Other flatfish	127		40	38	T	59	1
Rockfish							
Shortspine thornyhead							
Pacific ocean perch							
Greenstriped rockfish							T
Yellowtail rockfish							
Canary rockfish					1	6	10
Darkblotched rockfish						3	T
Splitnose rockfish							
Other rockfish							
Sablefish					1	13	57
Lingcod	19	31	11			20	
Miscellaneous			7				
Totals	855	635	396	349	958	641	778

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	15	16	17*	18	19	20	21
Date	9/1	9/1	9/1	9/2	9/2	9/2	9/2
Loran, 1L1	2900	2864	2828	3152	3142	3108	3209
Start	2900	2864	2828	3152	3142	3108	3209
End	2910	2872	2838	3162	3153	3119	3220
1L0	4256	4238	4222	4304	4297	4281	4295
Start	4256	4238	4222	4304	4297	4281	4295
End	4255	4237	4220	4303	4296	4281	4294
Depth: Down-haul	65	84.5-87	110-145	13-13.5	17-18	35-35	22-23
Catch:							
Spiny dogfish	27	178		92	152	24	96
Skate	153	159		8	17	6	23
Ratfish	3	23					
Pacific cod						20	3
Pacific hake	74					7	14
Flatfish							
Pacific sanddab					21	56	63
Arrowtooth flounder	180	126					
Slender sole	56	12				1	
Petrale sole	13	2				9	T
English sole				T	11		31
Dover sole	38	21			2	20	14
Rex sole	50	5			32	64	75
Butter sole					121		57
Other flatfish	13	6		3	65		22
Rockfish							
Shortspine thornyhead							
Pacific ocean perch							
Greenstriped rockfish		31					
Yellowtail rockfish		2					
Canary rockfish	3	11					
Darkblotched rockfish		1					
Splitnose rockfish							
Other rockfish		25					
Sablefish	29	99					
Lingcod		9					9
Miscellaneous				T			
Totals	639	710	-	103	421	207	407

* Snag

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	22	23	24	25	26*	27*	28	
Date	9/2	9/3	9/3	9/3	9/3	9/3	9/3	
Loran, 1L1	Start End	3248 3260	3283 3294	3356 3367	3401 3406	3460 3461	3502 3503	3495 3497
1L0	Start End	- -	4287 4286	4293 4291	4262 4259	4255 4250	4283 4278	4212 4202
Depth: Down-haul	12-12	19-19.5	19.5-20.5	33-33.5	26-26	17.5-15	23	
Catch:								
Spiny dogfish		76	36	24	4			
Skate	9	12	71	21	15		27	
Ratfish					6	T		
Pacific cod								
Pacific hake		170	10					
Flatfish								
Pacific sanddab		76	53	12	T			
Arrowtooth flounder						1		
Slender sole				T	4		3	
Petrale sole				450	34	18	2	
English sole	T	96	450	34	18	2	8	
Dover sole		32	65	24				
Rex sole		50	100	12	T			
Butter sole	12	125	56	T	1		7	
Other flatfish	17	12	5	T		6	7	
Rockfish								
Shortspine thornyhead								
Pacific ocean perch								
Greenstriped rockfish								
Yellowtail rockfish								
Canary rockfish								
Darkblotched rockfish								
Splitnose rockfish								
Other rockfish						15		
Sablefish								
Lingcod							46	
Miscellaneous				10	T			
Totals	38	649	846	141	44	24	98	

* Snag

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	29*	30	31	32	33*	34*	35
Date	9/3	9/3	9/3	9/3	9/5	9/6	9/6
Loran, 1L1							
Start	3480	3506	3496	3493	3473	3442	3373
End	3480	3504		3493	3473	3442	3365
1L0							
Start	4137	4141	4070	4004	4046	4110	4248
End	4135	4129	4058	3991	4053	4112	4253
Depth: Down-haul	29-30	19-19.5	22-24	25-25	35.5-35.5	41.5	43-42
Catch:							
Spiny dogfish		36		6	13		316
Skate		67		23			T
Ratfish				3	5		12
Pacific cod			19	1			
Pacific hake					2		388
Flatfish							
Pacific sanddab		1	8	32	17		13
Arrowtooth flounder							
Slender sole					T		1
Petrale sole			6				21
English sole		189	12	186	3		416
Dover sole							54
Rex sole		10	69	15	8		64
Butter sole		31		4			
Other flatfish		54	6	7			
Rockfish							
Shortspine thornyhead							
Pacific ocean perch							
Greenstriped rockfish							
Yellowtail rockfish							6
Canary rockfish		2	4				
Darkblotched rockfish							
Splitnose rockfish							
Other rockfish			74				
Sablefish							
Lingcod			17		13		8
Miscellaneous			3				
Totals	-	390	218	277	61	-	1,299

* Snag

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	36	37	38	39	40	41	42	
Date	9/6	9/6	9/7	9/7	9/7	9/7	9/7	
Loran, 1L1	Start End	3321 3311	3261 3250	3207 3195	3144 3133	3095 3101	3073 3063	3038 3025
1L0	Start End	4267 4270	4277 4278	4280 4280	4260 4260	4240 4235	4219 4219	4244 4243
Depth: Down-haul	38-36	36-35	34.5	52-53.5	71-75	95-94	69-70	
Catch:								
Spiny dogfish	24	156	8	8	108	68	231	
Skate		13	32	14	95	65	88	
Ratfish				12		7	5	
Pacific cod		1	8					
Pacific hake	293		29	29	298	7	2	
Flatfish								
Pacific sanddab	86	88	166	85				
Arrowtooth flounder				7	88	174	160	
Slender sole				21	31	1	61	
Petrale sole	2	1	5	6				
English sole	1,237	59	960	5			2	
Dover sole	300	60	39	138	28	255	17	
Rex sole	124	258	420	75	9	14	31	
Butter sole		T						
Other flatfish			1	1	10		2	
Rockfish								
Shortspine thornyhead								
Pacific ocean perch						T		
Greenstriped rockfish								
Yellowtail rockfish					6		6	
Canary rockfish		23		4				
Darkblotched rockfish					2	7	T	
Splitnose rockfish						T		
Other rockfish								
Sablefish				10	37	66	187	
Lingcod				33	20		46	
Miscellaneous		34	1	2				
Totals	2,066	693	1,669	450	732	664	838	

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	43	44	45	46	47	48	49
Date	9/7	9/7	9/8	9/8	9/8	9/8	9/8
Loran, 1L1 Start	2938	3067	3212	3168	3123	3258	3313
End	2925	3079	3224	3180	3131	3270	3327
1L0 Start	4226	4261	4258	4231	4210	4240	4225
End	4224	4262	4260	4230	4210	4243	4224
Depth: Down-haul	129-126	55-53	50-48	77-76	102-103	63-60	68-66
Catch:							
Spiny dogfish	40	4	95	49	36	165	65
Skate	27	48	43	198	26	56	170
Ratfish	8			25	3		
Pacific cod			37		208		
Pacific hake	31	198	43	2		6	35
Flatfish							
Pacific sanddab		T	256				
Arrowtooth flounder	64	12	4	168	131	51	170
Slender sole	9	58	11	4	3	53	82
Petrale sole	10	2	23		20	10	
English sole		4	8				2
Dover sole	179	38	78	25	22	70	44
Rex sole	6	49	78	7	15	40	48
Butter sole							
Other flatfish		18		T		8	16
Rockfish							
Shortspine thornyhead	26						
Pacific ocean perch	291				7		
Greenstriped rockfish		T		1	47		
Yellowtail rockfish				66	3		
Canary rockfish				4			
Darkblotched rockfish	5	2		1			3
Splitnose rockfish	62						
Other rockfish	4				33		
Sablefish	34	49	17	33	67		9
Lingcod	52			30	15	51	22
Miscellaneous			5			10	
Totals	848	482	698	613	636	520	666

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	50	51	52	53*	54	55	56
Date	9/8	9/8	9/8	9/9	9/9	9/9	9/9
Loran, 1L1 Start	3333	3362	3399	3463	3431	3380	3333
End	3330	3368	3409	3463	3423	3377	3335
1L0 Start	4171	4179	4216	4195	4160	4138	4112
End	4162	4188	4213	4190	4162	4146	4105
Depth: Down-haul	81-81	64-62	45-44	30-32	41.5-43.5	60.5-61.5	80-79
Catch:							
Spiny dogfish	29	60	31		157	149	23
Skate	57	76	T	55	24	T	35
Ratfish	9	9	3		9		27
Pacific cod							
Pacific hake	5	14	1,019	2	1,389	5	5
Flatfish							
Pacific sanddab			8	1	90	1	
Arrowtooth flounder	405	86	1		1	36	378
Slender sole	81	25	5	T	2	21	29
Petrale sole	10	8	2	1	20	3	
English sole			21	3	33		
Dover sole	23	29	63		52	77	33
Rex sole	22	9	75	3	190	32	33
Butter sole				3			
Other flatfish	2	2				21	3
Rockfish							
Shortspine thornyhead							
Pacific ocean perch							
Greenstriped rockfish		T					2
Yellowtail rockfish			12				
Canary rockfish	6		11				
Darkblotched rockfish	1	3					T
Splitnose rockfish							
Other rockfish							
Sablefish	5					120	6
Lingcod	36	44	13	45	49		13
Miscellaneous			7		14	4	
Totals	691	365	1,271	113	2,030	469	587

* Snag

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	57	58	59	60	61	62	63
Date	9/9	9/9	9/9	9/9	9/10	9/10	9/10
Loran, 1L1 Start	3334	3370	3407	3411	3353	3350	3389
End	3334	3373	3409	3411	3355	3351	3388
1L0 Start	4061	4071	4100	4038	3913	4032	3958
End	4052	4061	4088	4025	3923	4021	3947
Depth: Down-haul	82-84	71-73	54-55	60-62	117-108	87-90	81-82
Catch:							
Spiny dogfish	33	31	19		4	23	33
Skate	7	21	33	118	33	99	90
Ratfish	3	28	9	11	92	33	13
Pacific cod					14	16	
Pacific hake		27	2,277	201	154	17	7
Flatfish							
Pacific sanddab							
Arrowtooth flounder	106	27	21	15	189	30	471
Slender sole	7	19	27	18	6	8	35
Petrals sole	1		4	4			1
English sole							
Dover sole	40	12	84	29	195	52	33
Rex sole	7	24	37	35	26	31	
Butter sole							
Other flatfish		1	5	9		7	
Rockfish							
Snortspine thornyhead					20	15	
Pacific ocean perch					554	3	
Greenstriped rockfish	22				13		
Yellowtail rockfish							
Canary rockfish				19			5
Darkblotched rockfish				T	2	6	5
Splitnose rockfish					2	T	
Other rockfish	7				103	12	7
Sablefish	18	3	2	3	148	3	30
Lingcod				4	83		12
Miscellaneous			33				
Totals	251	193	2,551	466	1,638	355	742

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	64	65	66	67	68	69	70
Date	9/10	9/11	9/11	9/12	9/12	9/12	9/12
Loran, 1L1 Start	3421	3447	3474	3494	3478	3457	3438
End	3420	3450	3475	3494	3476	3457	3437
1L0 Start	3966	3980	3964	3932	3924	3926	3924
End	3955	3971	3977	3920	3912	3913	3912
Depth: Down-haul	64-66	52-50	39-37	23-23.5	35-37	48-49	59-61
Catch:							
Spiny dogfish	19	9	10	1		4	22
Skate	65	34	38	79	23	139	32
Ratfish	23	7	18			16	23
Pacific cod	6	1	1			11	25
Pacific hake	817	908	255		12	893	39
Flatfish							
Pacific sanddab		26	132	58	160	56	45
Arrowtooth flounder	48	10				14	35
Slender sole	28	10	1			10	19
Petrале sole		3	3		2	6	
English sole	3	8	50	336	68	2	5
Dover sole	44	59	54	5	100	90	102
Rex sole	30	34	83	71	150	50	48
Butter sole							
Other flatfish	4	14	2	26		16	51
Rockfish							
Shortspine thornyhead							
Pacific ocean perch							
Greenstriped rockfish	13						2
Yellowtail rockfish	20	11	3				
Canary rockfish							
Darkblotched rockfish							5
Splitnose rockfish							
Other rockfish							
Sablefish	4	5				12	7
Lingcod	17			44			
Miscellaneous	2	50	7	2	27	5	2
Totals	1,143	1,189	657	622	542	1,324	462

Table 1. (Continued)

Tow Number		71*	72	73	74	75	76	77	78
Date		9/12	9/12	9/12	9/13	9/13	9/13	9/13	9/13
Loran, 1L1	Start	3380	3389	3443	3463	3483	3497	3487	3485
	End	3380	3393	3443	3465	3483	3496	3486	3484
	1L0								
	Start	3880	3844	3842	3824	3854	3849	3780	3700
	End	3877	3834	3830	3837	3842	3837	3767	3687
Depth: Down-haul		97-98	109-104	64-65	42-44	32-32	9.5-11.5	24-25	20-20
Catch:									
	Spiny dogfish		12	15			9		
	Skate		82	72	15	61	62	39	90
	Ratfish	1	13	33	1			5	
	Pacific cod		19		2				
	Pacific hake		97	92	238	2			
	Flatfish								
	Pacific sanddab				41	172		45	75
	Arrowtooth flounder		60	90	33				
	Slender sole		2	30	6			T	
	Petrals sole	T	12	5	19				2
	English sole		4	2	13	164	5	126	128
	Dover sole		100	86	135	26		2	
	Rex sole		27	52	60	165		33	68
	Butter sole						38	T	5
	Other flatfish	T		37	5		38	2	44
	Rockfish								
	Shortspine thornyhead		11						
	Pacific ocean perch	3	203	3					
	Greenstriped rock.	5	19	T	1				
	Yellowtail rockfish				13				
	Canary rockfish								
	Darkblotched rockfish		25	6					
	Splitnose rockfish		329	3					
	Other rockfish	49	21						
	Sablefish		41	4	3		T		
	Lingcod		25						
	Miscellaneous			1	29		49	3	2
Totals		58	1,102	531	614	590	201	255	414

* Snag

T = Trace = <1 pound

Table 1. (Continued)

Tow Number	79	80	81	82	83	84	85	86
Date	9/13	9/15	9/15	9/15	9/15	9/15	9/15	9/15
Loran, 1L1 Start	3485	3472	3469	3471	3452	3453	3437	3452
End	3485	3472	3470	3472	3451	3452	3436	3455
1L0 Start	3631	3620	3683	3763	3770	3697	3617	3613
End	3618	3632	3697	3777	3757	3685	3605	3622
Depth: Down-haul	13	32-34	37-36	40-40	67-68	58-59	73-73	60-59
Catch:								
Spiny dogfish	29	13	5		4	3		
Skate	32	239	213	112	56	32	54	132
Ratfish						3	29	7
Pacific cod		6				17		21
Pacific hake		535	1,054	83	272	66	45	
Flatfish								
Pacific sanddab	88	64	144	88	1	6		
Arrowtooth flounder		23	3	15	90	55	12	26
Slender sole			T	T	10	12	11	13
Petrals sole			8	10	3	5		5
English sole	83	64	83	210	3			
Dover sole		30	25	156	70	195	162	176
Rex sole	42	377	232	135	93	17	36	31
Butter sole	29							
Other flatfish	105	10		T	13	17	2	4
Rockfish								
Shortspine thornyhead					29			
Pacific ocean perch								
Greenstriped rockfish						T	18	4
Yellowtail rockfish		5	17	11	17			
Canary rockfish					17	53		11
Darkblotched rockfish					4	T	3	
Splitnose rockfish								
Other rockfish					3			14
Sablefish					31	206	83	6
Lingcod		12	52	12				
Miscellaneous	1	14	2	1		3		T
Totals	409	1,392	1,838	833	716	690	455	450

T = Trace = <1 pound

Table 2. Oregon Station Locations and Catch (Pounds) of Principal Species by Tow, Groundfish Survey, Cruise 76-4, September 16 through September 20, 1976

Tow Number	1	2	3	4	5	6	7	8
Date	9/16	9/16	9/16	9/16	9/18	9/18	9/18	9/18
Loran, 1L1 Start	3405	3391	3391	3406	3402	3386	3389	3401
End	3404	3390	-	3405	3400	3387	3389	3403
1L0 Start	3107	3081	3044	3042	2552	2545	2605	2614
End	3094	3068	3031	3029	2541	2534	2593	2604
Depth: Down-haul	130-140	210-218	225-231	200-215	138-136	242-235	240-243	185-178
Catch:								
Spiny dogfish	2							
Skate	182	19	21	11	16	9	5	28
Ratfish	9	3			T			
Pacific cod								
Pacific hake	13	74	27	132	15	13	9	53
Flatfish								
Pacific sanddab								
Arrowtooth flounder	47	3		11	27	6		3
Slender sole	T				10	T	T	T
Petrale sole		11						
English sole								
Dover sole	114	195	176	237	36	4	78	200
Rex sole	14	21	7	7	9	3	25	13
Butter sole								
Other flatfish								
Rockfish								
Shortspine thornyhead	45	34	56	96	33	64	135	59
Pacific ocean perch	924	59	64	47	56			70
Greenstriped rockfish					2			
Yellowtail rockfish								
Canary rockfish								
Darkblotched rock.	268	3	6	11	35			64
Splitnose rockfish	29	T		5	13			15
Other rockfish	13	12	38	65	28	9	24	5
Sablefish	100	25	55	31	35	31	25	141
Lingcod	26							
Miscellaneous		5		4	2	2	6	1
Totals	1,786	464	450	657	317	141	307	652

T = Trace = <1 pound

Table 2. (Continued)

Tow Number	9	10	11	12	13	14	15
Date	9/19	9/19	9/19	9/19	9/19	9/19	9/20
Loran, 1L1 Start	3417	3403	3399	3400	3412	3413	3422
End	3417	3403	3400	3400	3412	3412	3423
1L0 Start	2859	2855	2912	2981	2980	2918	2789
End	2847	2843	2900	2969	2968	2907	2802
Depth: Down-haul	186-191	215-218	224-218	246-252	212-208	205-206	123-118
Catch:							
Spiny dogfish							
Skate	31	8		14	2	6	35
Ratfish							2
Pacific cod							
Pacific hake	135	37	52	47	6	49	27
Flatfish							
Pacific sanddab							
Arrowtooth flounder						9	64
Slender sole		T	T			T	1
Petrale sole							6
English sole							
Dover sole	70	15	15	76	12	86	57
Rex sole	11	2	T	26	2	6	5
Butter sole							
Other flatfish							
Rockfish							
Shortspine thornyhead	108	63	11	139	3	55	138
Pacific ocean perch		39	70				76
Greenstriped rockfish							
Yellowtail rockfish							
Canary rockfish							
Darkblotched rockfish							23
Splitnose rockfish	15					3	T
Other rockfish	34	7	13	19		31	T
Sablefish	13	11	46	78		22	62
Lingcod							
Miscellaneous	3	2		5	1	3	T
Totals	420	184	207	404	26	270	496

T = Trace = <1 pound

Table 3. List of Common and Scientific Names of Fishes Caught on Cruise 76-4.

Common Name	Scientific Name
Brown cat shark ^{1/}	<i>Apristurus brunneus</i>
Spiny dogfish	<i>Squalus acanthias</i>
Big skate	<i>Raja binoculata</i>
Black skate	<i>R. kincaidi</i>
Longnose skate	<i>R. rhina</i>
Ratfish	<i>Hydrolagus collieri</i>
American shad ^{1/}	<i>Alosa sapadissima</i>
Eulachon ^{1/}	<i>Thaleichthys pacificus</i>
Pacific hake	<i>Merluccius productus</i>
Pacific cod	<i>Gadus macrocephalus</i>
Pacific tomcod ^{1/}	<i>Microgadus proximus</i>
Eelpouts ^{1/}	Zoarcidae
Jack mackerel ^{1/}	<i>Trachurus symmetricus</i>
Rougheye rockfish	<i>Sebastes aleutianus</i>
Pacific ocean perch	<i>S. alutus</i>
Aurora rockfish	<i>S. aurora</i>
Silvergrey rockfish	<i>S. brevispinis</i>
Darkblotched rockfish	<i>S. crameri</i>
Splitnose rockfish	<i>S. diploproa</i>
Greenstriped rockfish	<i>S. elongatus</i>
Widow rockfish	<i>S. entomelas</i>
Yellowtail rockfish	<i>S. flavidus</i>
Rosethorn rockfish	<i>S. helvomaculatus</i>
Quillback rockfish	<i>S. maliger</i>
Black rockfish	<i>S. melanops</i>
Bocaccio	<i>S. paucispinis</i>
Canary	<i>S. pinniger</i>
Yellowmouth rockfish	<i>S. reedi</i>
Redbanded rockfish	<i>S. babcocki</i>
Stripetail rockfish	<i>S. saxicola</i>
Sharpchin rockfish	<i>S. zacentrus</i>
Shortspine thornyhead	<i>Sebastolobus alascanus</i>
Sablefish	<i>Anoplopoma fimbria</i>
Lingcod	<i>Ophiodon elongatus</i>
Brown Irish lord ^{1/}	<i>Hemilepidotus spinosus</i>
Threadfin sculpin ^{1/}	<i>Icelinus filamentosus</i>
Pacific staghorn sculpin ^{1/}	<i>Leptocottus armatus</i>
Poachers ^{1/}	Agonidae
Blacktail snailfish ^{1/}	<i>Careproctus melanurus</i>
Pacific sanddab	<i>Citharichthys sordidus</i>
Arrowtooth flounder	<i>Atheresthes stomias</i>
Petrable sole	<i>Eopsetta jordani</i>
Rex sole	<i>Glyptocephalus zachirus</i>
Flathead sole	<i>Hippoglossoides elassodon</i>
Butter sole	<i>Isopsetta isolepis</i>

Table 3. Continued

Common Name	Scientific Name
Rock sole	<i>Lepidopsetta bilineata</i>
Slender sole	<i>Lyopsetta exilis</i>
Dover sole	<i>Microstomus pacificus</i>
English sole	<i>Parophrys retulus</i>
Starry flounder	<i>Platichthys stellatus</i>
Curlfin sole	<i>Pleuronichthys decurrens</i>
Sand sole	<i>Psettichthys melanostictus</i>
Halibut	<i>Hippoglossus stenolepis</i>

^{1/} Species listed in the miscellaneous category of Table 1 and 2.

Table 4. Preliminary Numbers of Fish Sampled for Age Composition, Cruise 76-4.

Species	Number		
	Wash. Coast	Tillamook area	Total
Dover sole	1,591	426	2,017
English sole	1,438	0	1,438
Petrale sole	156	0	156
Rex sole	2,585	49	2,634
Pacific sanddab	1,568	0	1,568
Arrowtooth flounder	826	0	826
Pacific ocean perch	0	278	278
Total	8,164	753	8,917