

## **APPENDIX A**

### **Strata Specifications and Locations**

Appendix table A-1 presents the survey strata definitions for the 2007 Gulf of Alaska biennial bottom trawl survey including depth range, stratum name, and the area in square nautical miles and square kilometers. Appendix Table A-2 presents the summary strata code definitions. Appendix Figures A-1 through A-5 are charts showing the locations and extent of the strata as defined.

Appendix Table A-1. -- Survey strata used for the 2007 Gulf of Alaska biennial survey including depth, stratum code, name and area in square nautical miles (nmi<sup>2</sup>) and square kilometers (km<sup>2</sup>).

Depth Range (m)	Stratum Code	Stratum Name	Area (nmi <sup>2</sup> )	Area (km <sup>2</sup> )	
<b>1 - 100</b>	10	Fox Islands	2.430	8.333	
	11	Davidson Bank	3.989	13.681	
	12	Lower Alaska Peninsula	2.005	6.876	
	13	Shumagin Bank	3.615	12.399	
	20	Upper Alaska Peninsula	2.315	7.941	
	21	Semidi Bank	2.129	7.302	
	22	Chirikof Bank	3.147	10.792	
	30	Albatross Shallows	1.681	5.766	
	31	Albatross Banks	4.491	15.403	
	32	Lower Cook Inlet	2.883	9.887	
	33	Kenai Peninsula	1.534	5.260	
	35	Northern Kodiak Shallows	641	2.200	
	40	Yakutat Shallows	2.900	9.947	
	41	Middleton Shallows	1.958	6.714	
	50	Southeastern Shallows	1.909	6.546	
		<b>991</b>	<b>subtotal</b>	<b>37,628</b>	<b>129,047</b>
	<b>101 - 200</b>	110	Sanak Gully	1.238	4.245
111		Shumagin Outer Shelf	2.377	8.154	
112		West Shumagin Gully	664	2.278	
120		East Shumagin Gully	3.238	11.104	
121		Shelikof Edge	2.255	7.735	
122		Chirikof Outer Shelf	1.461	5.011	
130		Albatross Gullies	2.307	7.912	
131		Portlock Flats	2.139	7.336	
132		Barren Islands	3.202	10.981	
133		Kenai Flats	3.521	12.077	
134		Kodiak Outer Shelf	1.465	5.026	
140		Middleton Shelf	2.142	7.346	
141		Yakataga Shelf	1.539	5.277	
142		Yakutat Flats	2.634	9.032	
143		Fairweather Shelf	2.253	7.728	
150		Baranof-Chichagof Shelf	1.224	4.196	
151		Prince of Wales Shelf	2.008	6.888	
	<b>992</b>	<b>subtotal</b>	<b>35,668</b>	<b>122,324</b>	

Appendix Table A-1. - Continued

Depth Range (m)	Stratum Code	Stratum Name	Area (nmi <sup>2</sup> )	Area (km <sup>2</sup> )
<b>201 - 300</b>	210	Shumagin Slope	813	2,788
	220	Lower Shelikof Gully	2,921	10,018
	221	Chirikof Slope	446	1,528
	230	Kenai Gullies	1,942	6,659
	231	Kodiak Slope	473	1,623
	232	Upper Shelikof Gully	935	3,208
	240	Yakutat Gullies	887	3,043
	241	Yakutat Slope	620	2,127
	250	Baranof-Chichagof Slope	328	1,125
	251	Prince of Wales Slope/Gullies	1,145	3,927
	<b>993</b>	<b>subtotal</b>	<b>10,511</b>	<b>36,047</b>
<b>301 - 500</b>	310	Shumagin Slope	738	2,531
	320	Chirikof Slope	468	1,604
	330	Kodiak Slope	849	2,912
	340	Yakutat Gullies	323	1,107
	341	Yakutat Slope	443	1,521
	350	Southeastern Deep Gullies	684	2,344
	351	Southeastern Slope	225	773
	<b>994</b>	<b>subtotal</b>	<b>3,730</b>	<b>12,792</b>
<b>501 - 700</b>	410	Shumagin Slope	585	2,006
	420	Chirikof Slope	570	1,953
	430	Kodiak Slope	509	1,745
	440	Yakutat Slope	428	1,469
	450	Southeastern Slope	301	1,033
	<b>995</b>	<b>subtotal</b>	<b>2,393</b>	<b>8,206</b>
<b>701 - 1000</b>	510	Shumagin Slope	565	1,937
	520	Chirikof Slope	894	3,066
	530	Kodiak Slope	1,019	3,494
	540	Yakutat Slope	550	1,887
	550	Southeastern Slope	352	1,206
	<b>996</b>	<b>subtotal</b>	<b>3,380</b>	<b>11,590</b>
<b>1 - 1000</b>	<b>999</b>	<b>GRAND TOTAL</b>	<b>93,309</b>	<b>320,006</b>

Appendix Table A-2. -- Summary codes used for the 2007 Gulf of Alaska biennial bottom trawl survey including depth range, International North Pacific Fisheries Commission statistical areas and square area, and strata included in the summary area.

<b>Summary Code Number</b>	<b>Depth Range (m)</b>	<b>INPFC area</b>	<b>Area (nmi<sup>2</sup>)</b>	<b>Area (km<sup>2</sup>)</b>	<b>Strata included</b>
911	1 - 100	<b>Shumagin</b>	12,039	41,289	10 -13
912	101 - 200		4,280	14,677	110 - 112
913	201 - 300		813	2,788	210
914	301 - 500		738	2,531	310
915	501 - 700		585	2,006	410
916	701 – 1,000		565	1,937	510
919	1 -1,000		19,020	65,228	
921	1 - 100	<b>Chirikof</b>	7,591	26,035	20-22
922	101 - 200		6,954	23,850	120-122
923	201 - 300		3,350	11,490	230, 231
924	301 - 500		468	1,604	320
925	501 - 700		570	1,953	420
926	701 – 1,000		894	3,066	520
929	1 -1,000		19,827	67,998	
931	1 - 100	<b>Kodiak</b>	11,230	38,516	30 - 33, 35
932	101 - 200		12,634	43,332	130 - 134
933	201 - 300		3,350	11,490	230 - 232
934	301 - 500		849	2,912	330
935	501 - 700		509	1,745	430
936	701 – 1,000		1,019	3,494	530
939	1 -1,000		29,591	101,489	

<b>Summary Code Number</b>	<b>Depth Range (m)</b>	<b>INPFC area</b>	<b>Area (nmi<sup>2</sup>)</b>	<b>Area (km<sup>2</sup>)</b>	<b>Strata included</b>
941	1- 100	<b>Yakutat</b>	4,858	16,661	240, 241
942	101 - 200		8,568	29,383	140 – 143
943	201 - 300		1,507	5,170	240, 241
944	301 - 500		766	2,628	340, 341
945	501 - 700		428	1,469	440
946	701 – 1,000		550	1,887	540
949	1 -1,000		16,677	57,198	
951	1 - 100	<b>Southeastern</b>	1,909	6,546	50
952	101 - 200		3,232	11,084	150, 151
953	201 - 300		1,473	5,052	250, 251
954	301 - 500		909	3,117	350, 351
955	501 - 700		301	1,033	450
956	701 – 1,000		352	1,206	550
959	1 -1,000		8,176	28,039	
999	1 – 1,000	<b>All Areas</b>	93,309	320,006	



**APPENDIX B**

## Fish and Invertebrate Taxa Encountered

Appendix Tables B-1 and B-2 list fish and invertebrate taxa encountered and identified during the 2007 Gulf of Alaska biennial bottom trawl survey. Most common and scientific names are from Robins et al. (1991). Order of listings and common names used are for convenience and do not imply adherence to a particular phylogenetic system.

Appendix Table B-1. -- Fish species encountered during the 2007 Gulf of Alaska bottom trawl survey.

<b>Family</b>	<b>Species Name</b>	<b>Common Name</b>
Petromyzontidae	<i>Lampetra tridentata</i>	Pacific lamprey
Lamnidae	<i>Lamna ditropis</i>	salmon shark
Squalidae	<i>Squalus acanthias</i>	spiny dogfish
	<i>Somniosus pacificus</i>	Pacific sleeper shark
Rajidae	<i>Bathyraja abyssicola</i>	deepsea skate
	<i>Raja binoculata</i>	big skate
	<i>Bathyraja interrupta</i>	Bering skate
	<i>Raja rhina</i>	longnose skate
	<i>Bathyraja trachura</i>	rougtail skate
	<i>Bathyraja parmifera</i>	Alaska skate
	<i>Bathyraja aleutica</i>	Aleutian skate
	<i>Bathyraja lindbergi</i>	commander skate
	<i>Bathyraja maculata</i>	whiteblotched skate
	<i>Bathyraja minispinosa</i>	whitebrow skate
Chimaeridae	<i>Hydrolagus colliei</i>	spotted ratfish
Bothidae	<i>Citharichthys sordidus</i>	Pacific sanddab
Pleuronectidae	<i>Atheresthes stomias</i>	arrowtooth flounder
	<i>Reinhardtius hippoglossoides</i>	Greenland turbot
	<i>Hippoglossus stenolepis</i>	Pacific halibut
	<i>Hippoglossoides elassodon</i>	flathead sole
	<i>Lyopsetta exilis</i>	slender sole
	<i>Eopsetta jordani</i>	petrale sole
	<i>Parophrys vetulus</i>	English sole
	<i>Microstomus pacificus</i>	Dover sole
	<i>Embassichthys bathybius</i>	deepsea sole
	<i>Glyptocephalus zachirus</i>	rex sole
	<i>Limanda aspera</i>	yellowfin sole
	<i>Platichthys stellatus</i>	starry flounder
	<i>Psettichthys melanostictus</i>	sand sole
	<i>Lepidopsetta polyxystra</i>	northern rock sole
	<i>Lepidopsetta bilineata</i>	southern rock sole
	<i>Isopsetta isolepis</i>	butter sole

Agonidae	<i>Pleuronectes quadrituberculatus</i>	Alaska plaice
	<i>Sarritor frenatus</i>	sawback poacher
	<i>Xeneretmus latifrons</i>	blacktip poacher
	<i>Bathyagonus alascanus</i>	gray starsnout
	<i>Bathyagonus infraspinatus</i>	spinycheek starsnout
	<i>Bathyagonus pentacanthus</i>	bigeye poacher
	<i>Bathyagonus nigripinnis</i>	blackfin poacher
	<i>Podothecus acipenserinus</i>	sturgeon poacher
	<i>Anoplagonus inermis</i>	smooth aligatorfish
	<i>Hypsagonus quadricornis</i>	fourhorn poacher
Alepocephalidae	<i>Alepocephalus tenebrosus</i>	California slickhead
Ammodytidae	<i>Ammodytes hexapterus</i>	Pacific sand lance
Anarrhichadidae	<i>Anarrhichthys ocellatus</i>	wolf-eel
	<i>Anarrhichas orientalis</i>	Bering wolffish
Anoplopomatidae	<i>Anoplopoma fimbria</i>	sablefish
Bathylagidae	<i>Bathylagus pacificus</i>	Pacific blacksmelt
	<i>Bathylagus milleri</i>	robust blacksmelt
	<i>Leuroglossus schmidti</i>	northern smoothtongue
	<i>Bathylagus ochotensis</i>	popeye blacksmelt
	<i>Ronquilus jordani</i>	northern ronquil
Bathymasteridae	<i>Bathymaster caeruleofasciatus</i>	Alaskan ronquil
	<i>Bathymaster signatus</i>	searcher
	<i>Chauliodus macouni</i>	Pacific viperfish
Chauliodontidae	<i>Chauliodus macouni</i>	Pacific viperfish
Clupeidae	<i>Clupea pallasii</i>	Pacific herring
Macrouridae	<i>Coryphaenoides acrolepis</i>	Pacific grenadier
	<i>Albatrossia pectoralis</i>	giant grenadier
	<i>Coryphaenoides cinereus</i>	popeye grenadier
Cottidae	<i>Thyriscus anoplus</i>	sponge sculpin
	<i>Icelinus borealis</i>	northern sculpin
	<i>Icelinus tenuis</i>	spotfin sculpin
	<i>Gymnocanthus tricuspis</i>	Arctic staghorn sculpin
	<i>Gymnocanthus galeatus</i>	armorhead sculpin
	<i>Radulinus asprellus</i>	slim sculpin
	<i>Bolinia euryptera</i>	broadfin sculpin
	<i>Malacocottus zonurus</i>	darkfin sculpin

	<i>Hemilepidotus spinosus</i>	brown Irish lord
	<i>Hemilepidotus zapus</i>	longfin Irish lord
	<i>Hemilepidotus hemilepidotus</i>	red Irish lord
	<i>Hemilepidotus jordani</i>	yellow Irish lord
	<i>Triglops forficata</i>	scissortail sculpin
	<i>Triglops szepticus</i>	spectacled sculpin
	<i>Triglops pingeli</i>	ribbed sculpin
	<i>Triglops macellus</i>	roughspine sculpin
	<i>Myoxocephalus verrucosus</i>	warty sculpin
	<i>Myoxocephalus polyacanthocephalus</i>	great sculpin
	<i>Myoxocephalus jaok</i>	plain sculpin
	<i>Myoxocephalus quadricornis</i>	fourhorn sculpin
	<i>Dasycottus setiger</i>	spinyhead sculpin
	<i>Psychrolutes paradoxus</i>	tadpole sculpin
	<i>Psychrolutes phrictus</i>	blob sculpin
	<i>Rhamphocottus richardsoni</i>	grunt sculpin
	<i>Hemitripterus bolini</i>	bigmouth sculpin
	<i>Triglops xenostethus</i>	scalybreasted sculpin
	<i>Icelus spiniger</i>	thorny sculpin
	<i>Icelus spatula</i>	spatulate sculpin
Trichodontidae	<i>Trichodon trichodon</i>	Pacific sandfish
Gadidae	<i>Microgadus proximus</i>	Pacific tomcod
	<i>Gadus macrocephalus</i>	Pacific cod
Moridae	<i>Antimora microlepis</i>	Pacific flatnose
	<i>Theragra chalcogramma</i>	walleye pollock
Hexagrammidae	<i>Ophiodon elongatus</i>	lingcod
	<i>Pleurogrammus monopterygius</i>	Atka mackerel
	<i>Hexagrammos stelleri</i>	whitespotted greenling
	<i>Hexagrammos decagrammus</i>	kelp greenling
Icosteidae	<i>Icosteus aenigmaticus</i>	ragfish
Cyclopteridae	<i>Aptocyclus ventricosus</i>	smooth lumpsucker
	<i>Eumicrotremus orbis</i>	Pacific spiny lumpsucker
	<i>Eumicrotremus barbatus</i>	papillose lumpsucker
	<i>Cyclopteroides phrynoides</i>	toad lumpsucker
	<i>Liparis dennyi</i>	marbled snailfish

	<i>Liparis gibbus</i>	variegated snailfish
	<i>Crystallichthys cyclospilus</i>	blotched snailfish
	<i>Liparis ochotensis</i>	Okhotsk snailfish
	<i>Elassodiscus caudatus</i>	humpback snailfish
	<i>Careproctus melanurus</i>	blacktail snailfish
	<i>Careproctus cypselurus</i>	blackfin snailfish
	<i>Paraliparis ulochir</i>	Blackfaced red snailfish
	<i>Careproctus gilberti</i>	smalldisk snailfish
	<i>Careproctus colletti</i>	Alaska snailfish
	<i>Paraliparis dactylosus</i>	red snailfish
	<i>Paraliparis cephalus</i>	swellhead snailfish
	<i>Careproctus comus</i>	comic snailfish
	<i>Nectoliparis pelagicus</i>	tadpole snailfish
	<i>Allocareproctus unangas</i>	goldeneye snailfish
Melamphaeidae	<i>Poromitra crassiceps</i>	crested bigscale
	<i>Melamphaes lugubris</i>	highsnout bigscale
Melanostomiidae	<i>Tactostoma macropus</i>	longfin dragonfish
Merluccidae	<i>Merluccius productus</i>	Pacific hake
Myctophidae	<i>Stenobrachius leucopsarus</i>	northern lampfish
	<i>Stenobrachius nannochir</i>	garnet lampfish
	<i>Diaphus theta</i>	California headlightfish
	<i>Nannobranchium regale</i>	pinpoint lampfish
	<i>Lampanyctus jordani</i>	brokenline lampfish
	<i>Tarletonbeania crenularis</i>	blue lanternfish
Osmeridae	<i>Thaleichthys pacificus</i>	eulachon
	<i>Mallotus villosus</i>	capelin
	<i>Spirinchus thaleichthys</i>	longfin smelt
Salmonidae	<i>Oncorhynchus tshawytscha</i>	Chinook salmon
	<i>Oncorhynchus kisutch</i>	coho salmon
	<i>Oncorhynchus gorbuscha</i>	pink salmon
	<i>Oncorhynchus keta</i>	chum salmon
	<i>Oncorhynchus nerka</i>	sockeye salmon
Scomberesocidae	<i>Cololabis saira</i>	Pacific saury
Scopelarchidae	<i>Benthalbella dentata</i>	northern pearleye
Alepisauridae	<i>Alepisaurus ferox</i>	longnose lancetfish

Searsiidae	<i>Sagamichthys abei</i>	shining tubeshoulder
Cryptacanthodidae	<i>Lyconectes aleutensis</i>	dwarf wrymouth
	<i>Cryptacanthodes giganteus</i>	giant wrymouth
Stichaeidae	<i>Lumpenus maculatus</i>	daubed shanny
	<i>Lumpenus fabricii</i>	slender eelblenny
	<i>Lumpenus sagitta</i>	snake prickleback
	<i>Lumpenella longirostris</i>	longsnout prickleback
	<i>Chirolophis decoratus</i>	decorated warbonnet
	<i>Poroclinus rothrocki</i>	whitebarred prickleback
Pholididae	<i>Pholis laeata</i>	crescent gunnel
Zaproridae	<i>Zaprora silenus</i>	prowfish
Zoarcidae	<i>Bothrocara brunneum</i>	twoline eelpout
	<i>Bothrocara pusillum</i>	Alaska eelpout
	<i>Embryx crotalinus</i>	snakehead eelpout
	<i>Lycodes cortezianus</i>	bigfin eelpout
	<i>Lycodes palearis</i>	wattled eelpout
	<i>Lycodes diapterus</i>	black eelpout
	<i>Lycodes brevipes</i>	shortfin eelpout
	<i>Lycodes pacificus</i>	blackbelly eelpout
Scorpaenidae	<i>Sebastolobus alascanus</i>	shortspine thornyhead
	<i>Sebastolobus altivelis</i>	longspine thornyhead
	<i>Sebastes aleutianus</i>	rougheye rockfish
	<i>Sebastes melanostictus</i>	blackspotted rockfish
	<i>Sebastes alutus</i>	Pacific ocean perch
	<i>Sebastes brevispinis</i>	silvergray rockfish
	<i>Sebastes ciliatus</i>	dark rockfish
	<i>Sebastes variabilis</i>	dusky rockfish
	<i>Sebastes crameri</i>	darkblotched rockfish
	<i>Sebastes diploproa</i>	splitnose rockfish
	<i>Sebastes elongatus</i>	greenstriped rockfish
	<i>Sebastes emphaeus</i>	Puget Sound rockfish
	<i>Sebastes entomelas</i>	widow rockfish
	<i>Sebastes flavidus</i>	yellowtail rockfish
	<i>Sebastes helvomaculatus</i>	rosethorn rockfish
<i>Sebastes maliger</i>	quillback rockfish	

<i>Sebastes melanops</i>	black rockfish
<i>Sebastes paucispinis</i>	bocaccio
<i>Sebastes pinniger</i>	canary rockfish
<i>Sebastes polyspinis</i>	northern rockfish
<i>Sebastes proriger</i>	redstripe rockfish
<i>Sebastes ruberrimus</i>	yelloweye rockfish
<i>Sebastes babcocki</i>	redbanded rockfish
<i>Sebastes variegatus</i>	harlequin rockfish
<i>Sebastes wilsoni</i>	pygmy rockfish
<i>Sebastes zacentrus</i>	sharpchin rockfish
<i>Sebastes borealis</i>	shortraker rockfish
<i>Sebastes reedi</i>	yellowmouth rockfish

Appendix Table B2. -- Invertebrate species encountered during the 2007 Gulf of Alaska bottom trawl survey.

Phylum	Species/Taxon Name	Common Name
Cnidaria	<i>Periphylla periphylla</i>	
	<i>Chrysaora melanaster</i>	
	<i>Phacellophora camtschatica</i>	egg yolk jelly
	<i>Atolla</i> sp.	
	<i>Aurelia labiata</i>	
	<i>Cyanea capillata</i>	lion's mane
	<i>Alcyonium</i> sp.	
	<i>Gersemia</i> sp.	sea raspberry
	<i>Primnoa pacifica</i>	
	<i>Primnoa willeyi</i>	red tree coral
	<i>Lillipathes lilliei</i>	
	<i>Paragorgia arborea</i>	Kamchatka coral
	<i>Paragorgia pacifica</i>	
	<i>Paragorgia nodosa</i>	
	<i>Calcigorgia spiculifera</i>	
	<i>Virgularia</i> sp.	smoothstem seawhip
	<i>Halipterus willemoesi</i>	
	<i>Ptilosarcus gurneyi</i>	orange sea pen
	<i>Anthoptilum murrayi</i>	Murray sea pen
	<i>Actinauge verrillii</i>	reticulate anemone
	<i>Paractinostola faeculenta</i>	rough purple sea anemone
	<i>Actinoscyphia</i> sp.	
	<i>Metridium farcimen</i>	gigantic anemone
	<i>Stomphia didemon</i>	cowardly anemone
	<i>Stomphia coccinea</i>	swimming anemone
	<i>Urticina crassicornis</i>	mottled anemone
	<i>Bathypheilia australis</i>	hot dog sea anemone
	<i>Oractis diomedea</i>	grape anemone
	<i>Cribrinopsis fernaldi</i>	chevron-tentacled anemone
	<i>Liponema brevicornis</i>	tentacle-shedding anemone
<i>Actinistola</i> sp.		
<i>Javania borealis</i>		

	<i>Stylaster campylecus</i>	
	<i>Stylaster moseleyana</i>	
	<i>Cyclohelix lamellata</i>	
	<i>Stylaster alaskanus</i>	
	<i>Thouarella superba</i>	
	<i>Errinopora zarhyncha</i>	
	<i>Isidella</i> sp.	articulated bamboo coral
	<i>Plumarella</i> sp.	
	<i>Thouarella</i> sp.	
	<i>Keratoisis</i> sp.	bamboo coral
	<i>Fanellia compressa</i>	
	<i>Fanellia fraseri</i>	
	<i>Muriceides nigra</i>	
	<i>Amphilaphis</i> sp.	
	<i>Muriceides</i> sp.	
	<i>Arthrogorgia otsukai</i>	
Ctenophora	<i>Ctenophora</i>	comb jelly
Annelida	<i>Polychaeta</i>	polychaete worm
	<i>Eunice valens</i>	
	<i>Chaetopterus</i> sp.	
	<i>Aphrodita negligens</i>	sea mouse
	<i>Euphrosine multibranchiata</i>	
	<i>Nereidae</i>	
	<i>Eunoe nodosa</i>	giant scale worm
	<i>Eunoe depressa</i>	depressed scale worm
	<i>Gattyana ciliata</i>	
	<i>Serpula columbiana</i>	
	<i>Notostombdella</i>	
	<i>cyclostomum</i>	striped sea leech
Arthropoda	<i>Isopoda</i>	isopod
	<i>Rocinella angusta</i>	
	<i>Anuropus bathypelagica</i>	
	<i>Euphausiacea</i>	euphausiid unident.
	<i>Neognathophausia</i> sp.	
	<i>Balanus evermanni</i>	giant barnacle
	<i>Balanus nubilus</i>	

<i>Pandalus danae</i>	dock shrimp
<i>Pandalus jordani</i>	ocean shrimp
<i>Pandalus borealis</i>	northern shrimp
<i>Pandalus tridens</i>	yellowleg pandalid
<i>Pandalus platyceros</i>	spot shrimp
<i>Pandalus goniurus</i>	humpy shrimp
<i>Pandalus hypsinotus</i>	coonstripe shrimp
<i>Pandalus stenolepis</i>	roughpatch shrimp
<i>Pandalopsis longirostris</i>	
<i>Pandalopsis dispar</i>	sidestripe shrimp
<i>Penaeidae</i>	penaeid shrimps
<i>Eualus barbatus</i>	barbed eualid
<i>Eualus macrophthalmus</i>	bigeye eualid
<i>Eualus biunguis</i>	deepsea eualid
<i>Lebbeus groenlandicus</i>	spiny lebbeid
<i>Crangon communis</i>	twospine crangon
<i>Crangon dalli</i>	ridged crangon
<i>Crangon septemspinosa</i>	sevenspine bay shrimp
<i>Argis alaskensis</i>	common argid
<i>Argis dentate</i>	Arctic argid
<i>Sclerocrangon boreas</i>	sculptured shrimp
<i>Argis levior</i>	Nelson's argid
<i>Argis ovifer</i>	split-eye argid
<i>Pasiphaea pacifica</i>	Pacific glass shrimp
<i>Pasiphaea tarda</i>	crimson pasiphaeid
<i>Notostomus japonicus</i>	spinyridge shrimp
<i>Cancer branneri</i>	
<i>Cancer magister</i>	Dungeness crab
<i>Cancer oregonensis</i>	Oregon rock crab
<i>Oregonia bifurca</i>	
<i>Oregonia gracilis</i>	graceful decorator crab
<i>Chorilia longipes</i>	longhorned decorator crab
<i>Chionoecetes tanneri</i>	grooved Tanner crab
<i>Chionoecetes bairdi</i>	Tanner crab
<i>Chionoecetes angulatus</i>	triangle Tanner crab

<i>Hyas coarctatus</i>	circumboreal toad crab
<i>Hyas lyratus</i>	Pacific lyre crab
<i>Telmessus cheiragonus</i>	helmet crab
<i>Pagurus brandti</i>	sponge hermit
<i>Pagurus aleuticus</i>	Aleutian hermit
<i>Labidochirus splendescens</i>	splendid hermit
<i>Pagurus confragosus</i>	knobbyhand hermit
<i>Pagurus cornutus</i>	
<i>Pagurus dalli</i>	whiteknee hermit
<i>Pagurus kennerlyi</i>	bluespine hermit
<i>Pagurus trigonocheirus</i>	fuzzy hermit crab
<i>Pagurus beringanus</i>	Bering hermit
<i>Pagurus ochotensis</i>	Alaskan hermit
<i>Pagurus rathbuni</i>	longfinger hermit
<i>Pagurus tanneri</i>	longhand hermit
<i>Elassochirus tenuimanus</i>	widehand hermit crab
<i>Pagurus capillatus</i>	hairy hermit crab
<i>Elassochirus cavimanus</i>	purple hermit
<i>Elassochirus gilli</i>	Pacific red hermit
<i>Lopholithodes foraminatus</i>	box crab
<i>Acantholithodes hispidus</i>	fuzzy crab
<i>Lithodes couesi</i>	scarlet king crab
<i>Lithodes aequispinus</i>	golden king crab
<i>Hapalogaster grebnitzkii</i>	
<i>Rhinolithodes</i>	
<i>wosnessenskii</i>	rhinoceros crab
<i>Paralithodes camtschaticus</i>	red king crab
<i>Placetrion wosnessenskii</i>	scaled crab
<i>Erimacrus isenbeckii</i>	horsehair crab
<i>Pugettia gracilis</i>	graceful kelp crab
<i>Munida quadrispina</i>	pinchbug
<i>Neomenia yamamotoi</i>	
<i>Lepidozona abyssicola</i>	
<i>Placiphorella pacifica</i>	
<i>Mopalia swanii</i>	
<i>Mopalia egretta</i>	

Mollusca

<i>Tochuina tetraquetra</i>	giant orange tochui
<i>Dendronotus dalli</i>	Dall's dendronotid
<i>Tritonia festiva</i>	festive tritonia
<i>Tritonia diomedea</i>	rosy tritonia
<i>Triopha catalinae</i>	sea-clown triopha
<i>Chlamylla</i> sp.	
<i>Anisodoris nobilis</i>	Pacific sea lemon
<i>Anisodoris lentiginosa</i>	mottled pale sea-lemon
<i>Archidoris odhneri</i>	white night doris
<i>Cranopsis major</i>	great puncturella
<i>Scelitoboma bella</i>	
<i>Cryptonatica affinis</i>	Arctic moonsnail
<i>Cryptonatica aleutica</i>	Aleutian moonsnail
<i>Nucella lamellosa</i>	frilled dogwinkle
<i>Euspira pallidus</i>	pale moonsnail
<i>Crepidula</i> sp.	slipper shell
<i>Japelion aleutica</i>	
<i>Pyrulofusus dexius</i>	
<i>Pyrulofusus deformis</i>	warped whelk
<i>Pyrulofusus harpa</i>	left-hand whelk
<i>Volutopsius regularis</i>	regular whelk
<i>Beringius kennicottii</i>	
<i>Beringius undatus</i>	
<i>Beringius rotundus</i>	rotund whelk
<i>Neptunea amianta</i>	white neptune
<i>Neptunea pribiloffensis</i>	Pribilof whelk
<i>Neptunea lyrata</i>	lyre whelk
<i>Neptunea ventricosa</i>	fat whelk
<i>Plicifusus oceanodromae</i>	seahorse whelk
<i>Plicifusus virens</i>	
<i>Plicifusus griseus</i>	gray whelk
<i>Boreotrophon stuarti</i>	winged trophon
<i>Fusitriton oregonensis</i>	Oregon triton
<i>Bathybembix bairdii</i>	
<i>Cidarina cidaris</i>	

<i>Buccinum oedematum</i>	swollen whelk
<i>Buccinum plectrum</i>	sinuous whelk
<i>Buccinum scalariforme</i>	ladder whelk
<i>Buccinum moarchianum</i>	
<i>Arctomelon stearnsii</i>	Alaska volute
<i>Modiolus modiolus</i>	northern horsemussel
<i>Mytilus edulis</i>	blue mussel
<i>Chlamys rubida</i>	reddish scallop
<i>Patinopecten caurinus</i>	weathervane scallop
<i>Delectopecten vancouverensis</i>	Vancouver scallop
<i>Cyclopecten davidsoni</i>	salmon glass-scallop
<i>Panopea abrupta</i>	Pacific geoduck
<i>Hiatella arctica</i>	Arctic hiatella
<i>Nucula</i> sp.	
<i>Yoldia seminuda</i>	crisscrossed yoldia
<i>Yoldia thraciaeformis</i>	broad yoldia
<i>Yoldia hyperborea</i>	northern yoldia
<i>Nuculana pernula</i>	northern nutclam
<i>Nuculana conceptionis</i>	
<i>Limopsis akutanica</i>	Akutan limops
<i>Empleconia vaginata</i>	vaginated limops
<i>Musculus discors</i>	discordant mussel
<i>Astarte borealis</i>	boreal astarte
<i>Astarte elliptica</i>	elliptical astarte
<i>Clinocardium nuttallii</i>	Nuttall cockle
<i>Clinocardium ciliatum</i>	hairy cockle
<i>Clinocardium californiense</i>	California cockle
<i>Clinocardium blandum</i>	strait cockle
<i>Saxidomus gigantea</i>	butter clam
<i>Humilaria kennerleyi</i>	Kennerley's venus
<i>Tellina modesta</i>	
<i>Macoma</i> sp.	
<i>Serripes groenlandicus</i>	Greenland cockle
<i>Serripes laperousii</i>	broad cockle
<i>Serripes notabilis</i>	oblique smoothcockle

	<i>Pododesmus macrochisma</i>	Alaska falsejingle
	<i>Pododesmus cepio</i>	abalone jingle
	<i>Benthoctopus leioderma</i>	smoothskin octopus
	<i>Japatella diaphana</i>	
	<i>Opisthoteuthis californiana</i>	flapjack devilfish
	<i>Octopus dofleini</i>	giant octopus
	<i>Rossia pacifica</i>	eastern Pacific bobtail
	<i>Loligo opalescens</i>	California market squid
	<i>Gonatus</i> sp.	
	<i>Berryteuthis magister</i>	magistrate armhook squid
	<i>Berryteuthis anonychus</i>	
	<i>Gonatopsis borealis</i>	boreopacific armhook squid
	<i>Moroteuthis robusta</i>	robust clubhook squid
	<i>Onychoteuthis borealijaponicus</i>	boreal clubhook squid
	<i>Galiteuthis phyllura</i>	
	<i>Chiroteuthis calyx</i>	
	<i>Cranchiidae</i>	
	<i>Taonius pavo</i>	
	<i>Octopoteuthis deletron</i>	
	<i>Histioteuthis hoylei</i>	
Echinodermata	<i>Evasterias troschelii</i>	mottled sea star
	<i>Evasterias echinosoma</i>	giant sea star
	<i>Orthasterias koehleri</i>	redbanded sea star
	<i>Leptasterias hylodes</i>	Aleutian sea star
	<i>Leptasterias stolocantha</i>	
	<i>Leptasterias coei</i>	
	<i>Pycnopodia helianthoides</i>	sunflower sea star
	<i>Stylasterias forreri</i>	long-rayed star
	<i>Ampheraster marianus</i>	
	<i>Tarsaster alaskanus</i>	
	<i>Lethasterias nanimensis</i>	blackspined sea star
	<i>Pedicellaster magister</i>	majestic sea star
	<i>Stephanasterias albula</i>	
	<i>Poraniopsis inflata</i>	thorny sea star
	<i>Henricia sanguinolenta</i>	sanguine sea star

<i>Henricia aspera</i>	ridged blood star
<i>Henricia leviuscula</i>	blood sea star
<i>Henricia longispina</i>	
<i>Henricia spiculifera</i>	spiny Henricia
<i>Odontohenricia fisheri</i>	
<i>Leptasterias katharinae</i>	
<i>Gephyreaster swifti</i>	Swift's sea star
<i>Pseudarchaster alascensis</i>	
<i>Hippasteria californica</i>	
<i>Hippasteria heathi</i>	
<i>Hippasteria spinosa</i>	spiny red sea star
<i>Pseudarchaster parelii</i>	scarlet sea star
<i>Cryptopeltaster lepidonotus</i>	
<i>Mediaster tenellus</i>	
<i>Mediaster aequalis</i>	vermilion sea star
<i>Ceramaster japonicus</i>	red bat star
<i>Ceramaster patagonicus</i>	orange bat sea star
<i>Ceramaster arcticus</i>	Arctic bat sea star
<i>Ceramaster clarki</i>	
<i>Ceramaster stellatus</i>	
<i>Luidia foliolata</i>	sand sea star
<i>Dermasterias imbricata</i>	leather sea star
<i>Solaster endeca</i>	northern sun sea star
<i>Solaster hypothrissus</i>	
<i>Solaster dawsoni</i>	morning sun sea star
<i>Solaster stimpsoni</i>	striped sun sea star
<i>Crossaster borealis</i>	grooved sea star
<i>Crossaster papposus</i>	rose sea star
<i>Heterozonias alternatus</i>	cannonball sun star
<i>Lophaster vexator</i>	crested star
<i>Lophaster furcilliger</i>	crested sea star
<i>Pteraster tessellatus</i>	
<i>Pteraster jordani</i>	
<i>Pteraster militaris</i>	wrinkled star
<i>Pteraster marssipus</i>	

<i>Pteraster obscurus</i>	obscure sea star
<i>Diplopteraster multipes</i>	pincushion sea star
<i>Asterias amurensis</i>	purple-orange sea star
<i>Ctenodiscus crispatus</i>	common mud star
<i>Leptychaster pacificus</i>	
<i>Leptychaster arcticus</i>	North Pacific sea star
<i>Dipsacaster borealis</i>	northern sea star
<i>Dipsacaster eximus</i>	
<i>Cheiraster dawsoni</i>	fragile sea star
<i>Nearchaster variabilis</i>	
<i>Nearchaster aciculosus</i>	
<i>Nearchaster pedicellaris</i>	
<i>Astronebris tatafilius</i>	
<i>Strongylocentrotus droebachiensis</i>	green sea urchin
<i>Strongylocentrotus franciscanus</i>	red sea urchin
<i>Strongylocentrotus polyacanthus</i>	
<i>Strongylocentrotus purpuratus</i>	purple sea urchin
<i>Alloccentrotus fragilis</i>	orange-pink sea urchin
<i>Brisaster latifrons</i>	heart urchin
<i>Brisaster owstoni</i>	
<i>Echinarachnius parma</i>	parma sand dollar
<i>Florometra inexpectata</i>	
<i>Florometra asperrima</i>	common northern feather star
<i>Gorgonocephalus eucnemis</i>	basketstar
<i>Asteronyx loveni</i>	serpent sea star
<i>Astrochele laevis</i>	
<i>Ophiura sarsi</i>	notched brittlestar
<i>Amphiophiura</i> sp.	
<i>Stegophiura ponderosa</i>	
<i>Ophiacantha normani</i>	
<i>Ophiacantha cataleimmoidea</i>	
<i>Ophiopholis longispina</i>	

	<i>Ophiopholis aculeata</i>	ubiquitous brittle star
	<i>Ophiosphalma</i> sp.	
	<i>Ophiolebes</i> sp.	
	<i>Parastichopus leukothele</i>	giant orange cucumber
	<i>Parastichopus californicus</i>	California sea cucumber
	<i>Pseudostichopus mollis</i>	sandy sea cucumber
	<i>Molpadia arenicola</i>	
	<i>Molpadia intermedia</i>	sweet sea potato
	<i>Pentamera lissoplaca</i>	crescent sea cucumber
	<i>Bathyploetes</i> sp.	
	<i>Cucumaria fallax</i>	sea football
	<i>Cucumaria frondosa</i>	
	<i>Psolus squamatus</i>	whitescaled sea cucumber
	<i>Psolus japonicus</i>	
	<i>Thylonidium</i> sp.	
	<i>Synallactes challengeri</i>	
Porifera	<i>Suberites ficus</i>	
	<i>Suberites domuncula</i>	hermit sponge
	<i>Aphrocallistes vastus</i>	clay pipe sponge
	<i>Mycale loveni</i>	tree sponge
	<i>Mycale adhaerens</i>	smooth scallop sponge
	<i>Coelospaeridae</i>	ginseng sponge
	<i>Geodia mesotriaena</i>	
	<i>Halichondria panicea</i>	barrel sponge
	<i>Rhabdocalyptus</i> sp.	cloud sponge
	<i>Mycale bellabellensis</i>	lampshade sponge
	<i>Phakellia cribrosa</i>	funnel sponge
	<i>Phakellia dalli</i>	cat-o-nine-tails sponge
	<i>Myxilla incrustans</i>	scallop sponge
	<i>Myxilla brunnea</i>	soft brown sponge
	<i>Phakellia beringensis</i>	hat sponge
	<i>Plicatellopsis amphispicula</i>	firm finger sponge
	<i>Histodermella</i> sp.	spud sponge
	<i>Leucosolenia blanca</i>	yellow leafy sponge
	<i>Tethya</i> sp.	ball sponge

	<i>Hyalonema</i> sp.	fiberoptic sponge
	<i>Halichondria sitiens</i>	black papillate sponge
	<i>Halichondria cf. sitiens</i>	yellow green papillate
	<i>Polymastia</i> sp.	orange nipple ball sponge
	<i>Leucandra</i> sp.	hairy vase sponge
	<i>Neoesperiopsis rigida</i>	soft finger sponge
	<i>Neoesperiopsis infundibula</i>	rough China hat sponge
	<i>Neoesperiopsis digitata</i>	
	<i>Inflatella</i> sp.	orange papillate sponge
	<i>Stelletta</i> sp.	stone sponge
	<i>Polymastia fluegeli</i>	Flugel's nipples sponge
	<i>Polymastia robusta</i>	long nipples sponge
	<i>Tentorium semisuberites</i>	two nipple sponge
	<i>Plakina tanaga</i>	white convoluted sponge
	<i>Latrunculia</i> sp.	green papillate sponge
	<i>Axinella</i> sp.	firm gray sponge
	<i>Stelodoryx alaskaensis</i>	Alaskan lobed sponge
	<i>Staurocalyptus</i> sp.	
	<i>Geodinella robusta</i>	calcareous finger sponge
	<i>Aulosaccus schulzei</i>	vase sponge
	<i>Farrea beringiana</i>	Bering lace sponge
Platyhelminthes	<i>Platyhelminthes</i>	flatworm unident.
Rhynchocoela	<i>Nemertea</i>	nemertean worm
	<i>Emplectonema</i> sp.	
	<i>Tubulanus</i> sp.	
	<i>Cerebratulus californienesis</i>	
Sipuncula	<i>Sipuncula</i>	peanut worm
	<i>Phascolosomatidae</i>	
Echiura	<i>Echiura</i>	echiuroid worm unident.
Bryozoa	<i>Leieschara orientalis</i>	
	<i>Bugula californica</i>	
	<i>Flustrellidra corniculata</i>	
	<i>Alcyonidium pedunculatum</i>	
	<i>Myriozoum subgracile</i>	
	<i>Rhaphostomella costata</i>	ribbed bryozoan

	<i>Hippodiplosia insculpta</i>	
	<i>Microporina borealis</i>	
	<i>Dendrobeania</i> sp.	
Brachiopoda	<i>Terebratalia transversa</i>	common brachiopod
	<i>Frieleia halli</i>	
	<i>Terebratulina unguicula</i>	snakeshead brachiopod
	<i>Laqueus californianus</i>	California lamp shell
Chordata	<i>Styela rustica</i>	sea potato
	<i>Boltenia ovifera</i>	
	<i>Halocynthia igaboja</i>	
	<i>Halocynthia aurantium</i>	sea peach
	<i>Cnemidocarpa</i>	
	<i>finmarkiensis</i>	broad base tunicate
	<i>Pyura haustor</i>	wrinkled tunicate
	<i>Distaplia occidentalis</i>	
	<i>Distaplia smithi</i>	
	<i>Amaroucium soldatovi</i>	
	<i>Aplidium</i> sp.	sea glob
	<i>Synoicum</i> sp.	sea blob
	<i>Ascidia paratropa</i>	glassy tunicate
	<i>Halocynthia hispidus</i>	hairy tunicate
	<i>Chelysoma productum</i>	
	<i>Molgula griffithsii</i>	sea grape
	<i>Molgula retortiformis</i>	sea clod
Miscellaneous	<i>Craniella cranium</i>	baseball sponge
	<i>Tetilla sigmoanchoratum</i>	spiny ball sponge
	<i>Craniella</i> sp.	puffball sponges
		brain sponge
		scapula sponge
		club sponge
		orange ball sponge
		slimy antler sponge
		pita sponge
		lobed tree sponge



## APPENDIX C

## Weight-length relationships

Appendix Table C-1. -- Length-weight parameters (a and b) for species where individual length and weight data were collected. The number of individuals measured and weighed (n) is also provided.

Species	Sex	a	b	n	Species	Sex	a	b	n
Arrowtooth flounder	Male	1.016E-05	2.967	452	Walleye pollock	Male	1.009E-05	2.955	648
	Female	3.965E-06	3.137	740		Female	8.997E-06	2.972	683
	Both	3.201E-06	3.161	1195		Both	9.764E-06	2.96	1338
Atka mackerel	Male	4.149E-07	3.583	110	Pacific ocean perch	Male	1.433E-05	2.993	546
	Female	4.002E-05	2.814	121		Female	2.670E-05	2.886	620
	Both	4.120E-05	2.818	231		Both	2.241E-05	2.916	1186
Blackspotted rockfish	Male	2.496E-05	2.921	236	Rex sole	Male	1.209E-06	3.286	291
	Female	1.675E-05	2.991	280		Female	8.495E-07	3.351	393
	Both	1.959E-05	2.963	518		Both	7.279E-07	3.375	684
Pacific cod	Male	2.947E-06	3.201	241	Rougheye rockfish	Male	2.438E-05	2.93	163
	Female	2.006E-06	3.263	241		Female	2.171E-05	2.948	189
	Both	2.129E-06	3.253	482		Both	2.280E-05	2.94	352
Dover sole	Male	4.524E-06	3.129	253	Sablefish	Male	4.042E-06	3.136	314
	Female	4.481E-06	3.132	251		Female	3.588E-06	3.155	283
	Both	4.143E-06	3.144	504		Both	3.715E-06	3.149	598
Dusky rockfish	Male	1.895E-05	2.986	475	Sharpchin rockfish	Male	1.216E-05	3.028	403
	Female	2.009E-05	2.978	604		Female	8.131E-06	3.104	525
	Both	1.854E-05	2.99	1079		Both	7.632E-06	3.114	938
Flathead sole	Male	1.006E-06	3.383	374	Shortraker rockfish	Male	1.820E-05	2.983	105
	Female	8.964E-07	3.396	445		Female	1.269E-05	3.043	170
	Both	1.194E-06	3.35	819		Both	1.309E-05	3.037	275
Giant grenadier	Male	1.005E-03	2.626	58	Southern rocksole	Male	5.848E-06	3.131	174
	Female	3.914E-04	2.801	100		Female	1.628E-06	3.347	275
	Both	3.580E-04	2.816	158		Both	1.816E-06	3.33	449
Northern rockfish	Male	1.032E-05	3.064	849	Shortspine thornyhead	Male	3.369E-06	3.212	305
	Female	1.001E-05	3.073	1009		Female	2.054E-06	3.293	339
	Both	8.678E-06	3.096	1858		Both	2.305E-06	3.275	707
Northern rocksole	Male	4.473E-06	3.168	234					
	Female	3.552E-06	3.215	307					
	Both	2.668E-06	3.261	541					