APPENDIX B - FISH POPULATION ATTRIBUTES

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B2. Median fish abundance per haul by shelf zone subpopulation and percent area above Bight median by subpopulation

B3. Median fish abundance per haul and percent area above Bight median by region within shelf zone subpopulations

B4. Median fish biomass per haul and percent ... area above Bight median by region and major shelf zone subpopulation

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B6. Median fish biomass per haul and percent area above Bight median by region within shelf zone subpopulation

B7. Median number of fish species per haul and percent .....area above Bight median by region and major shelf zone subpopulation

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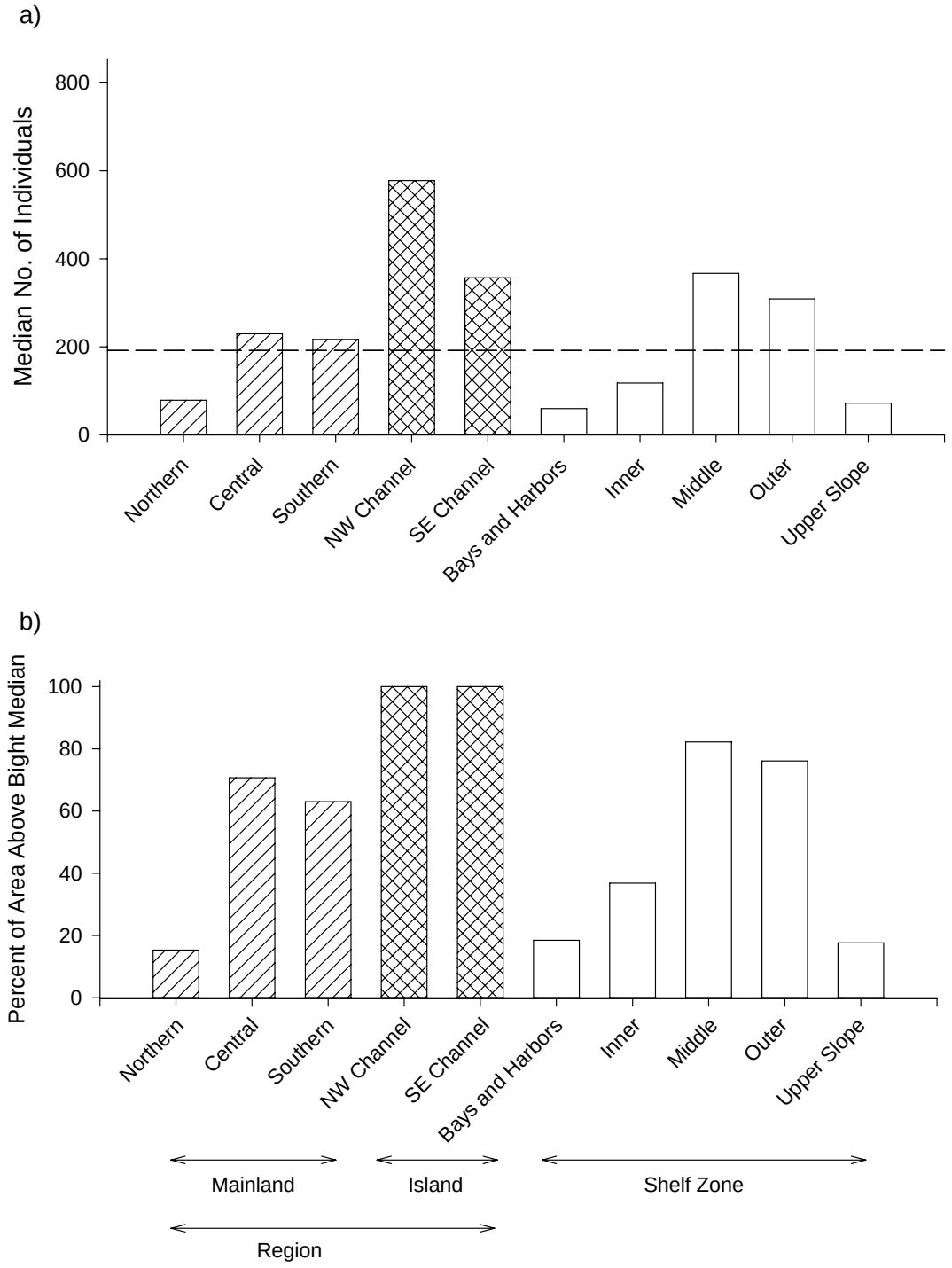
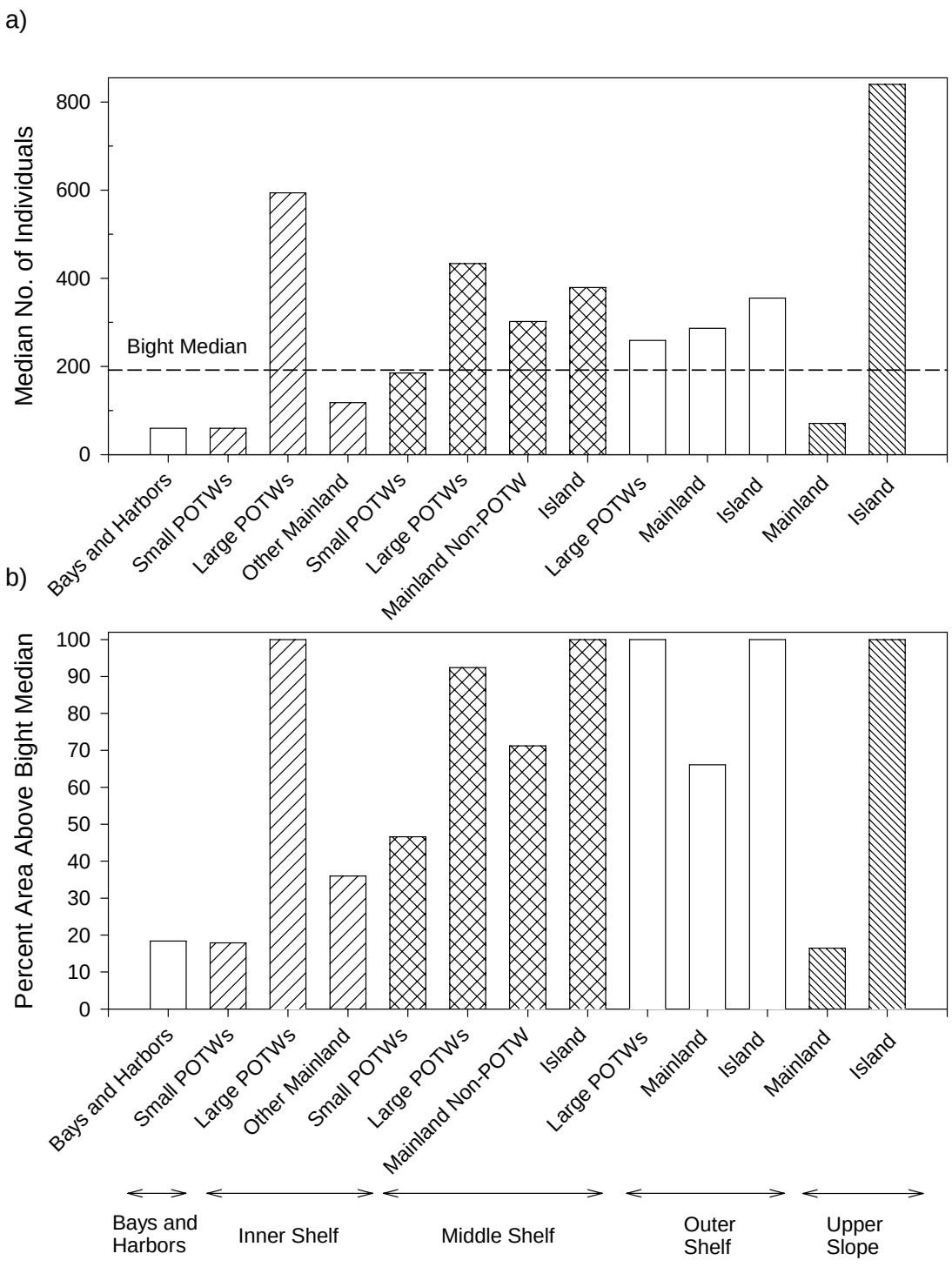
B40. Length frequency distribution of California scorpionfish (*Scorpaena guttata*), English sole (*Parophrys vetulus*), and chilipepper (*Sebastes goodei*)

B41. Length frequency distribution of Pacific sanddab (*Citharichthys sordidus*), Dover sole (*Microstomus pacificus*), and rex sole (*Glyptocephalus zachirus*)

B42. Length frequency distribution of cowcod (*Sebastes levis*) and shortbelly rockfish (*Sebastes jordani*)

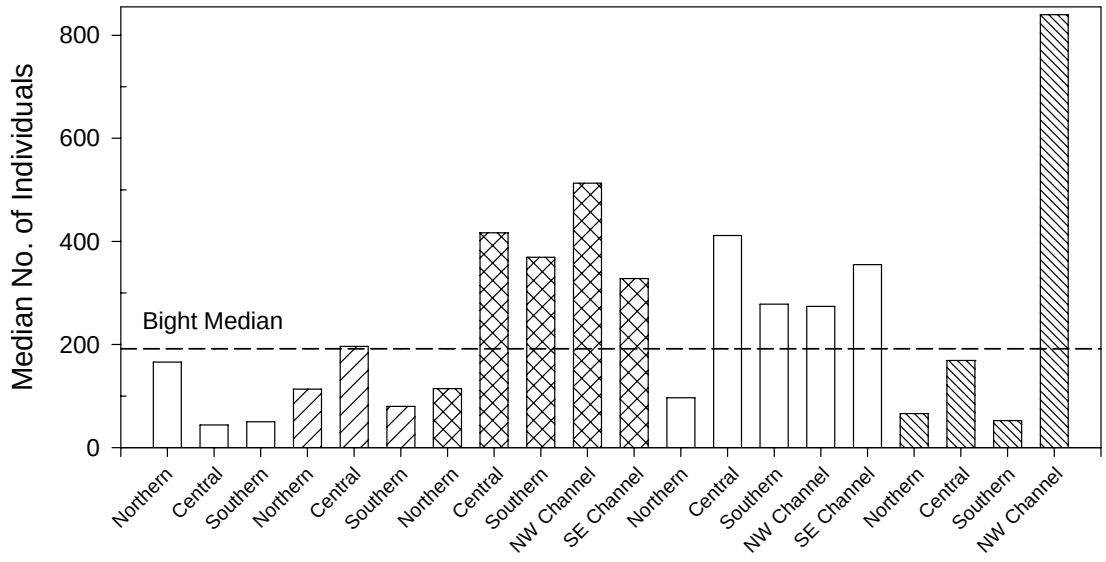


B1. Fish abundance per haul by subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

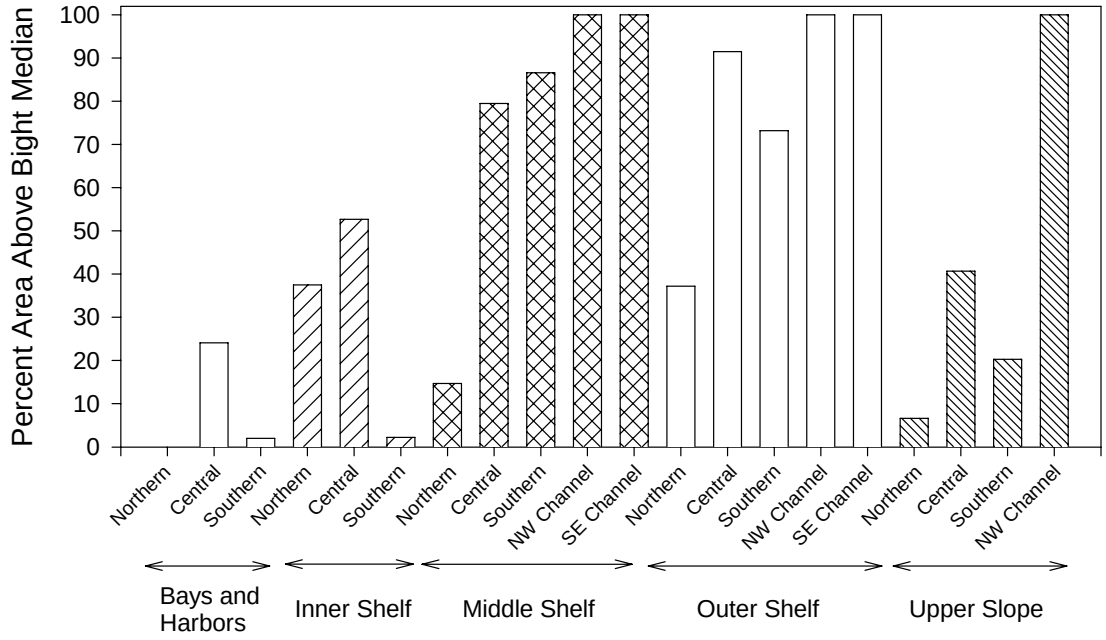


B2. Fish abundance per haul by shelf zone subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent area above Bight median.

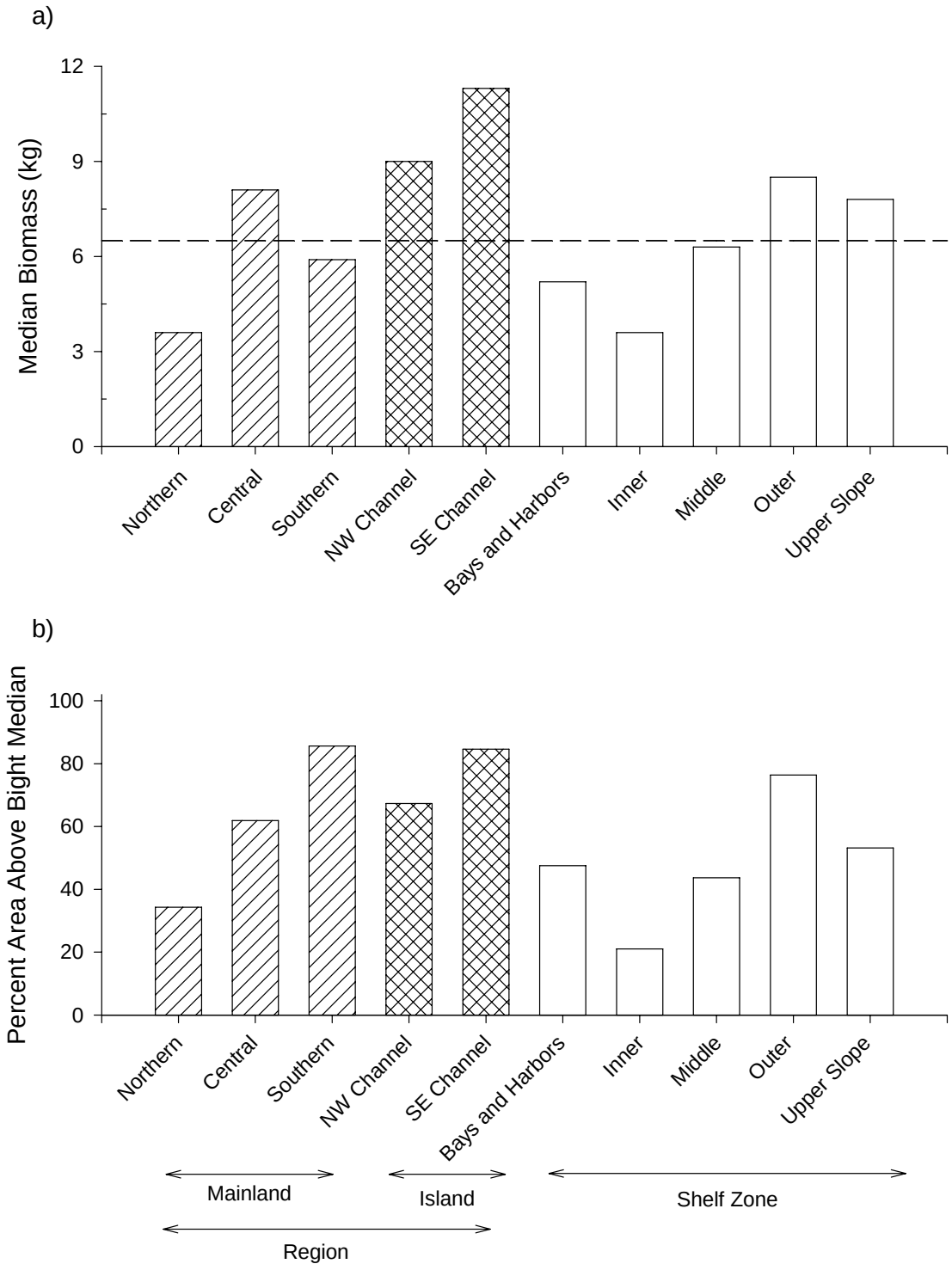
a)



b)

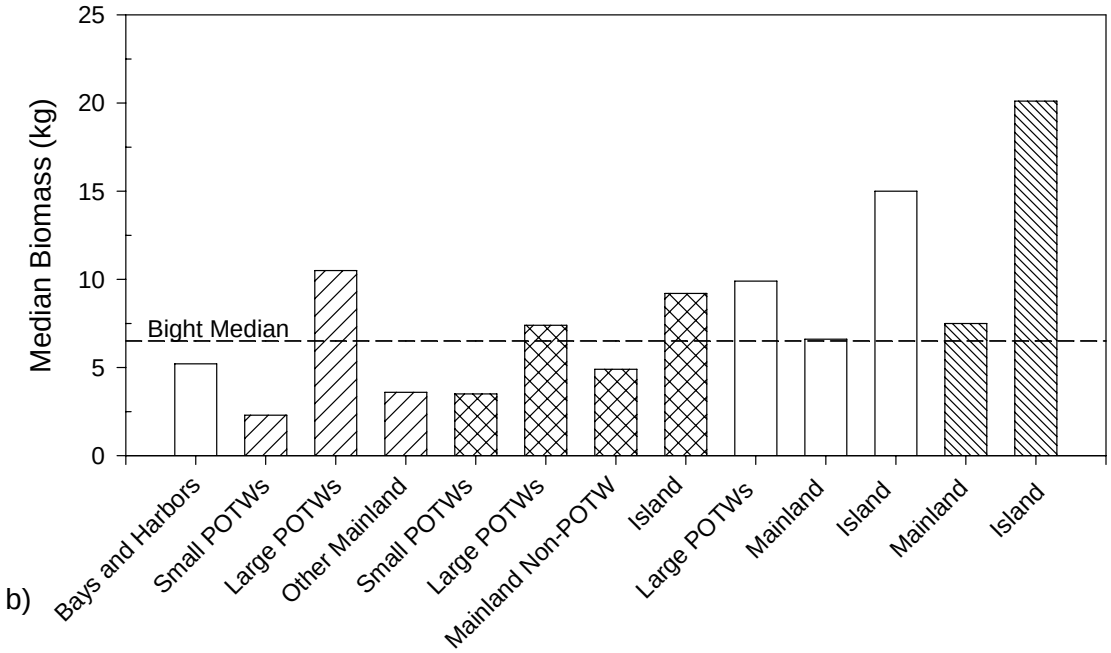


B3. Fish abundance per haul by region within shelf zone subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent area above Bight median.

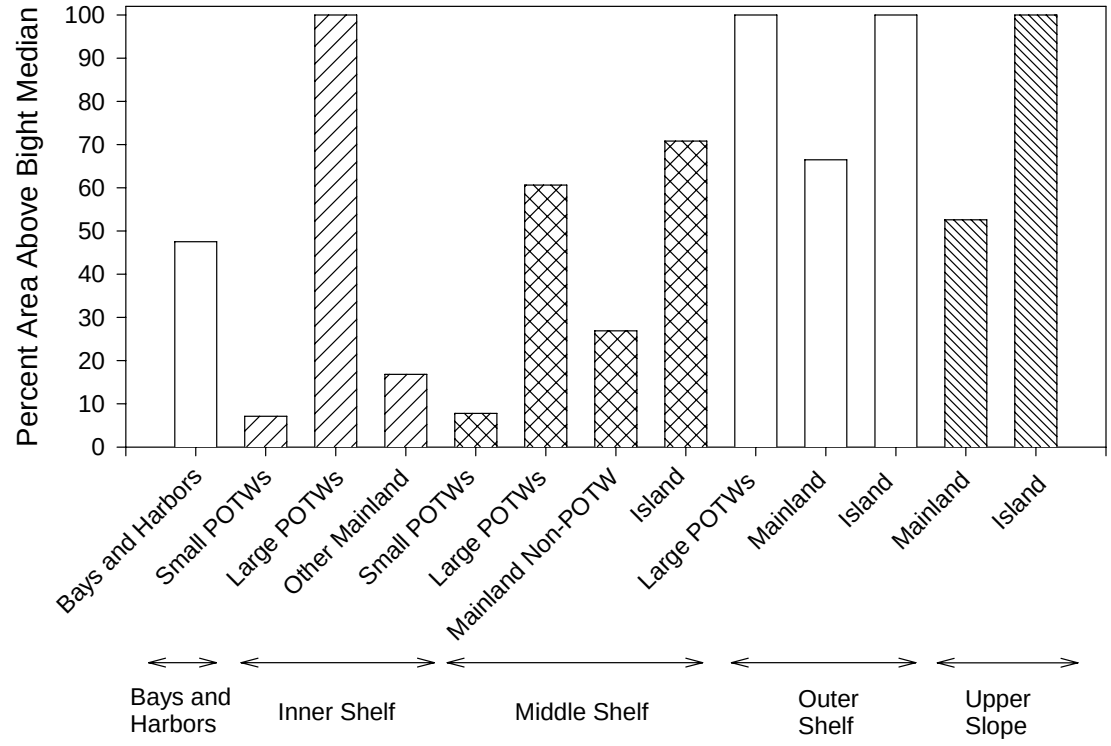


B4. Fish biomass by haul by region and major shelf zone populations on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

a)

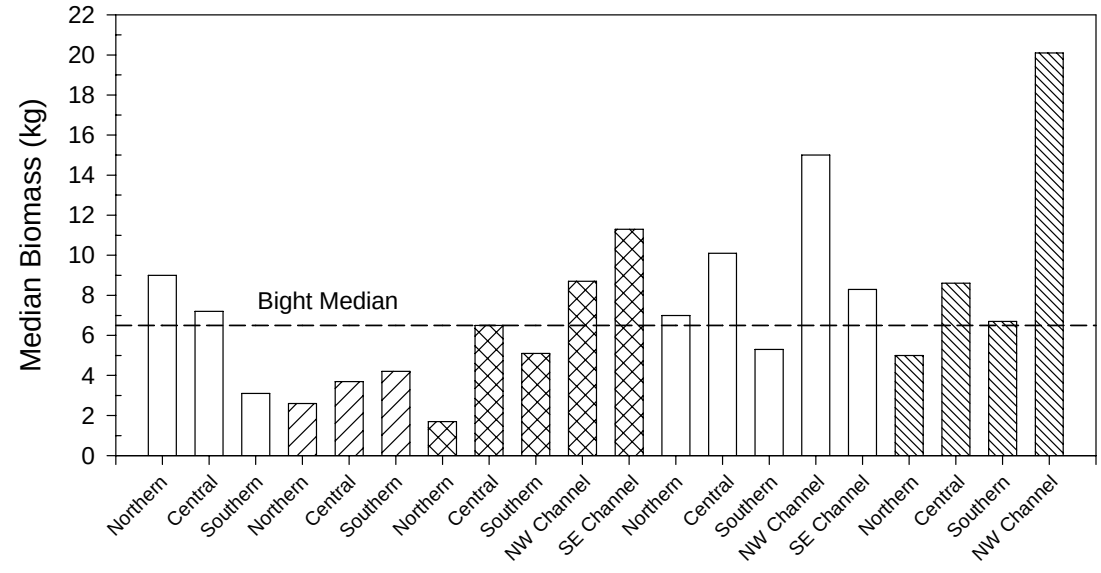


b)

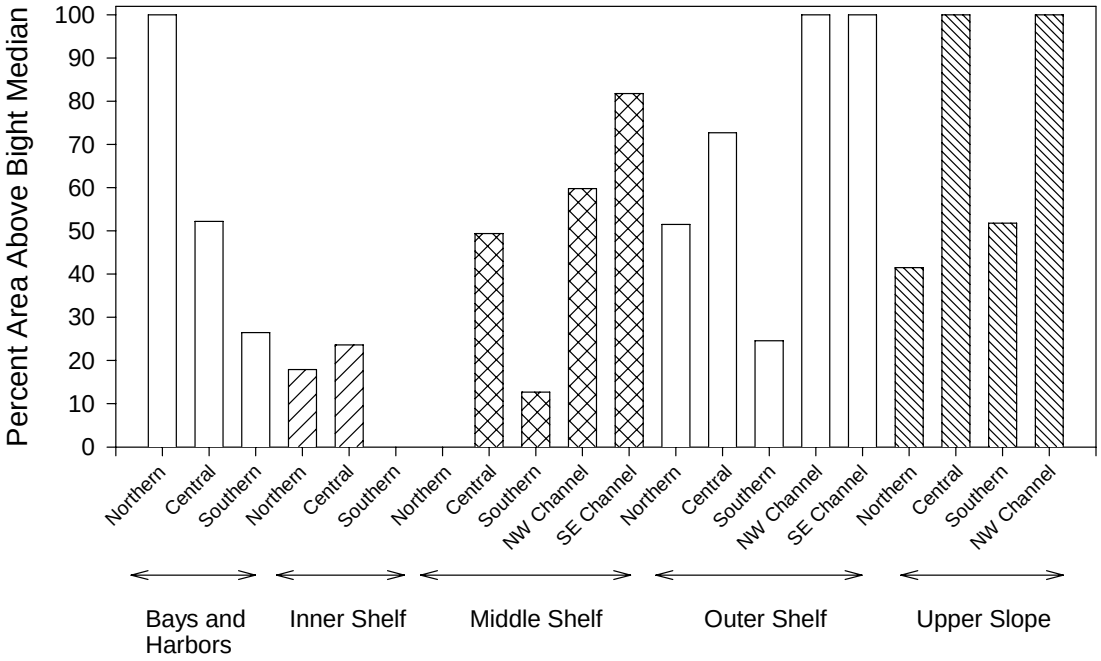


B5. Fish biomass per haul by shelf zone subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent area above Bight median.

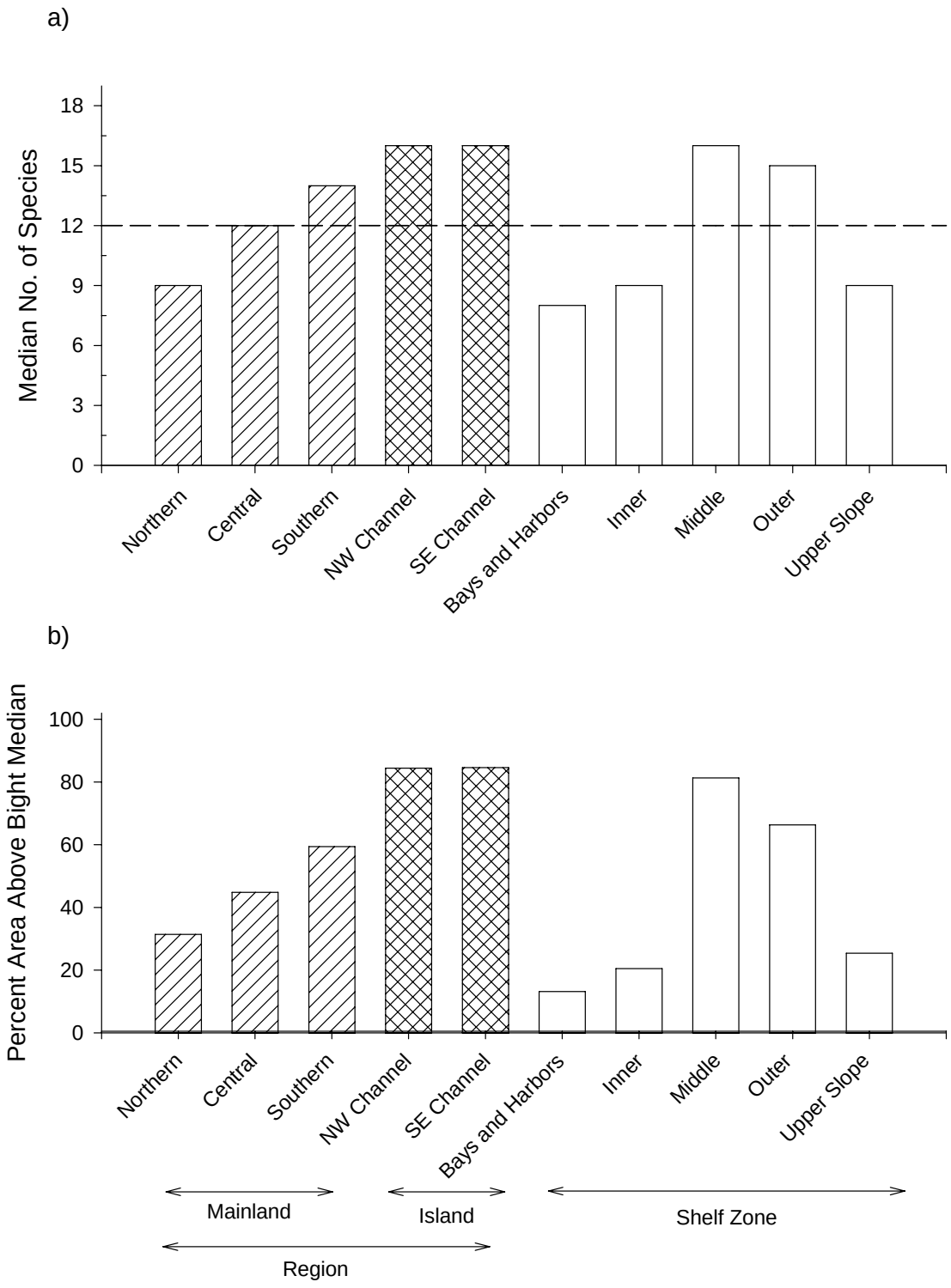
a)



b)

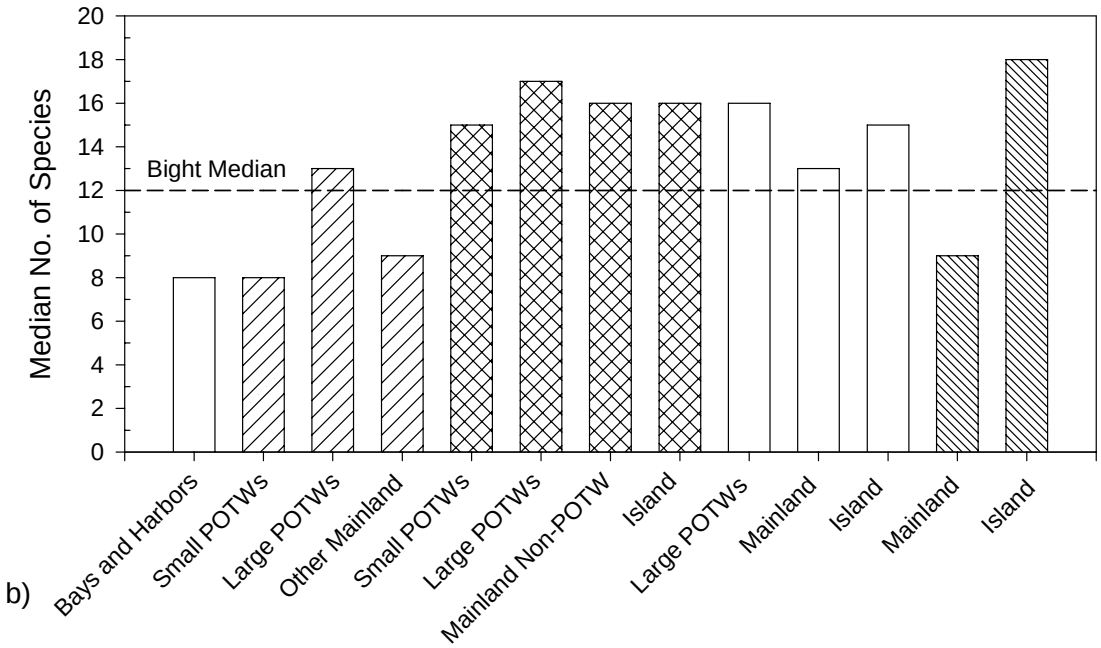


B6. Fish biomass per haul by region within shelf zone subpopulations on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

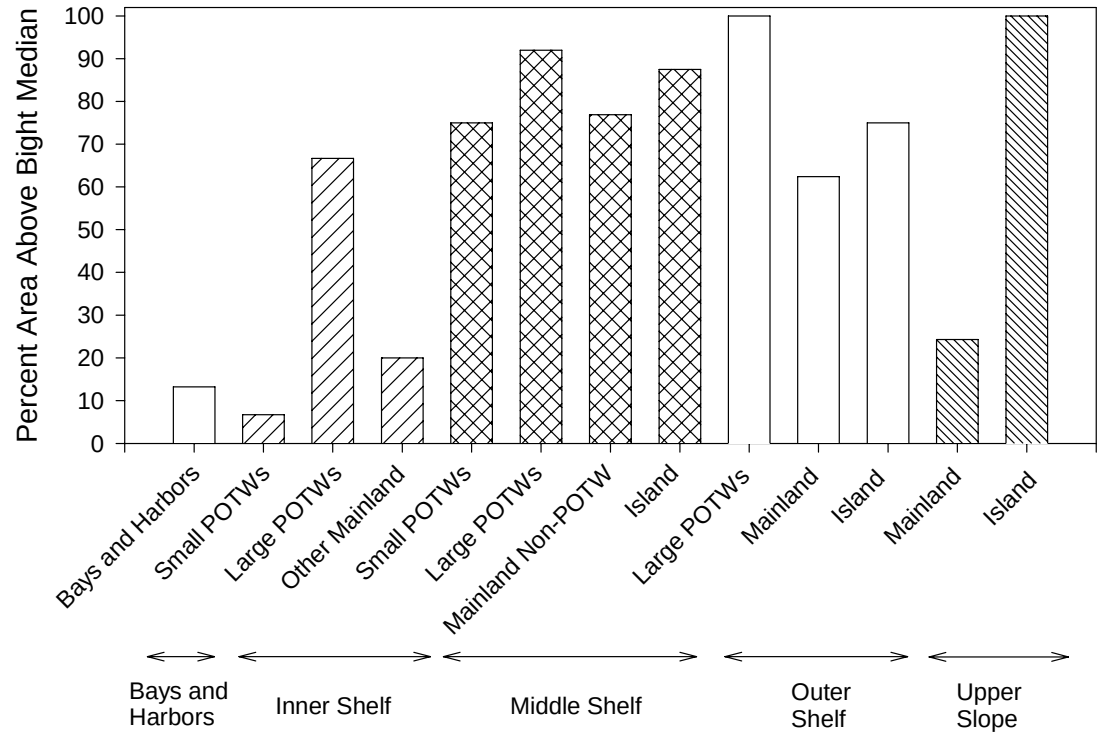


B7. Number of fish species per haul by region and major shelf zone populations on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

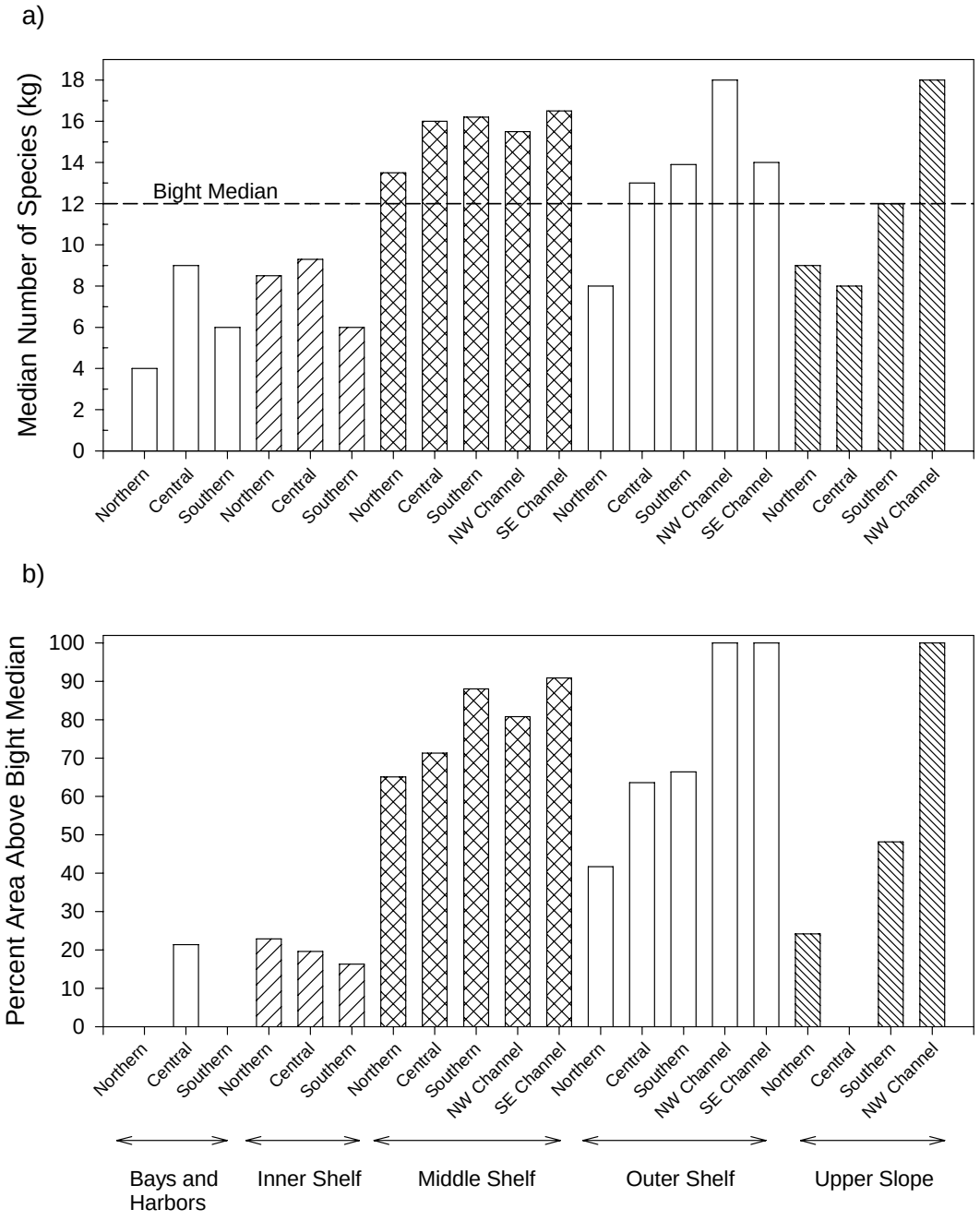
a)



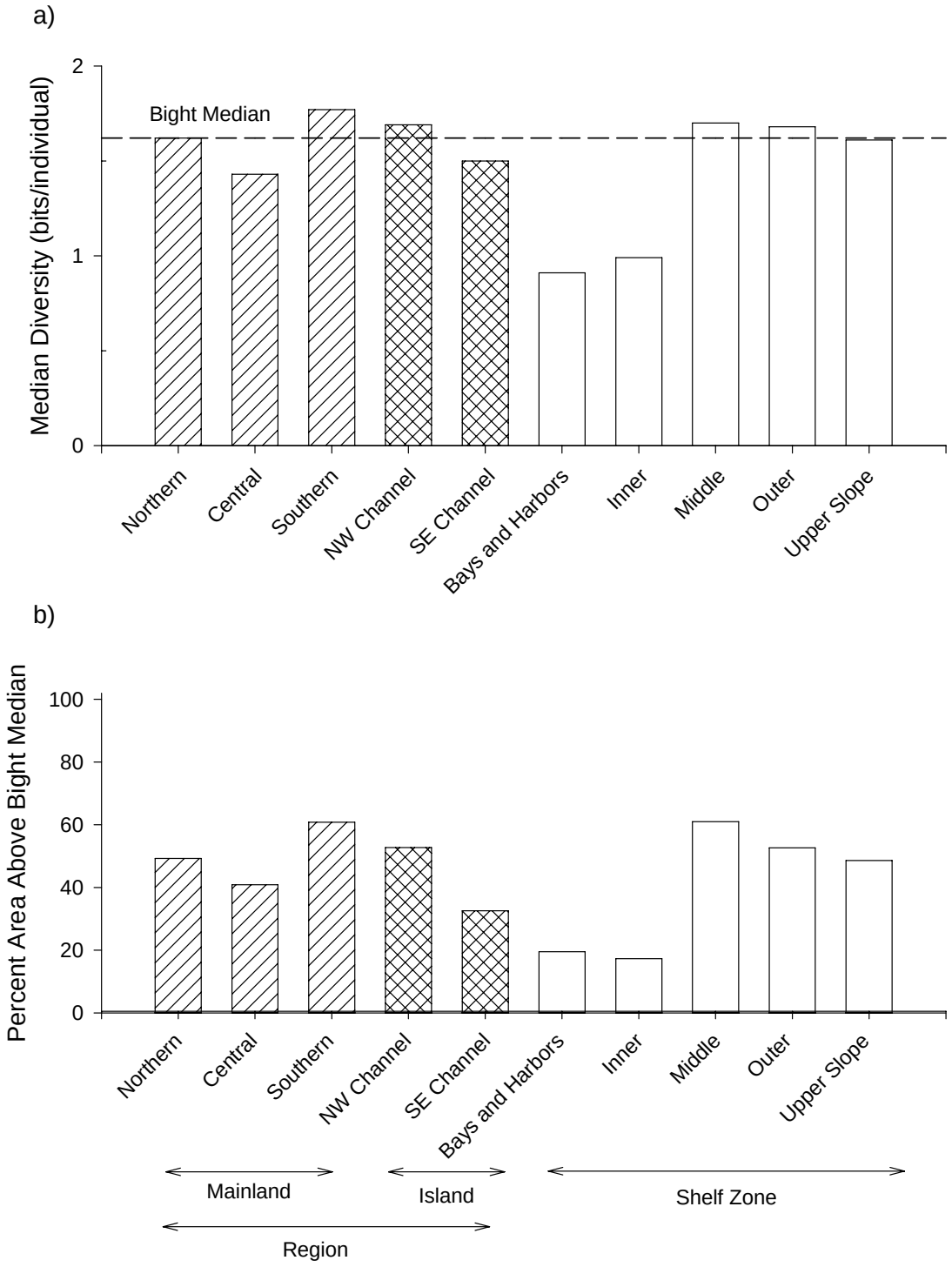
b)



B8. Number of fish species per haul by shelf zone subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent area above Bight median.

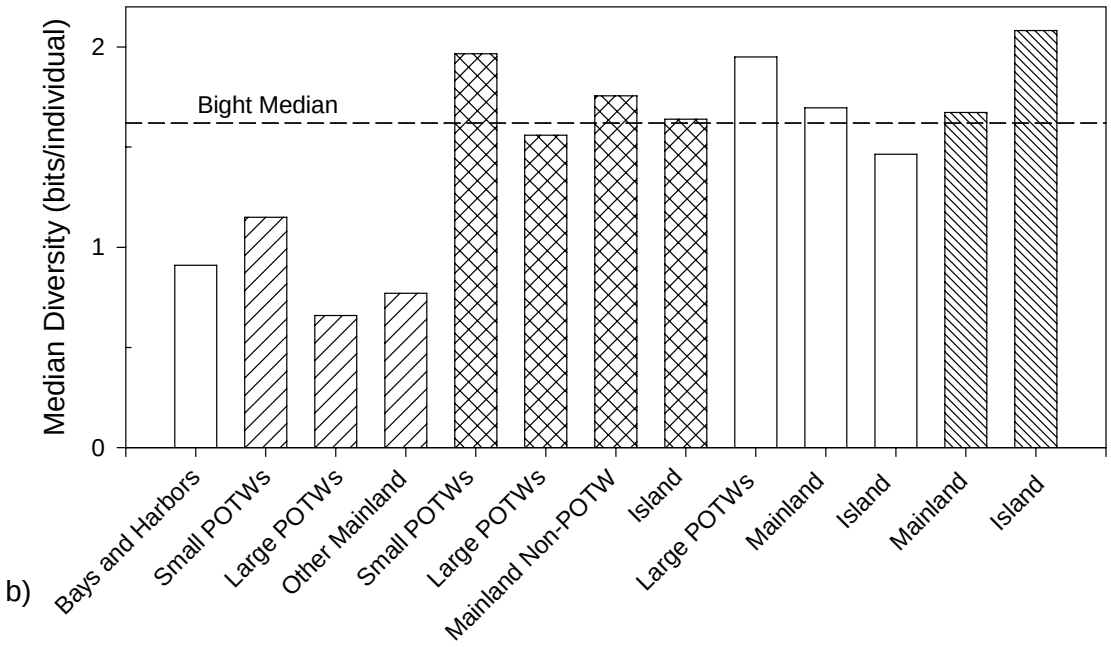


B9. Number of fish species per haul by region within shelf zone subpopulations on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

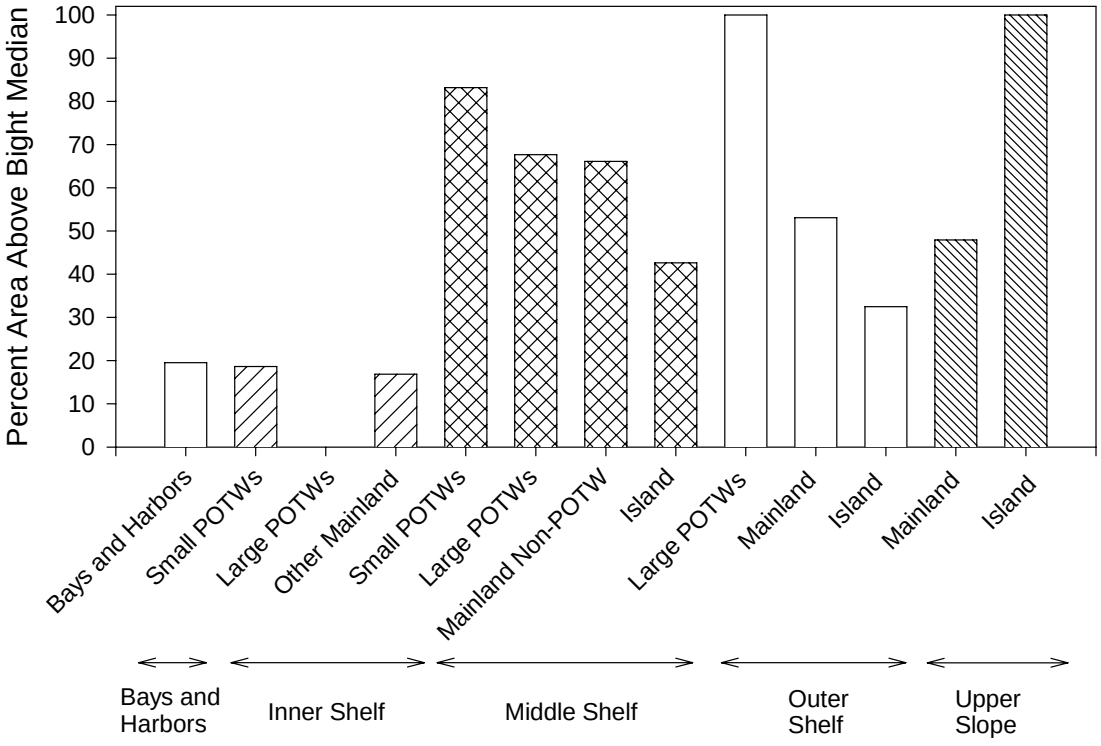


B10. Fish Diversity (Shannon-Wiener) per haul by region and major shelf zone populations of the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

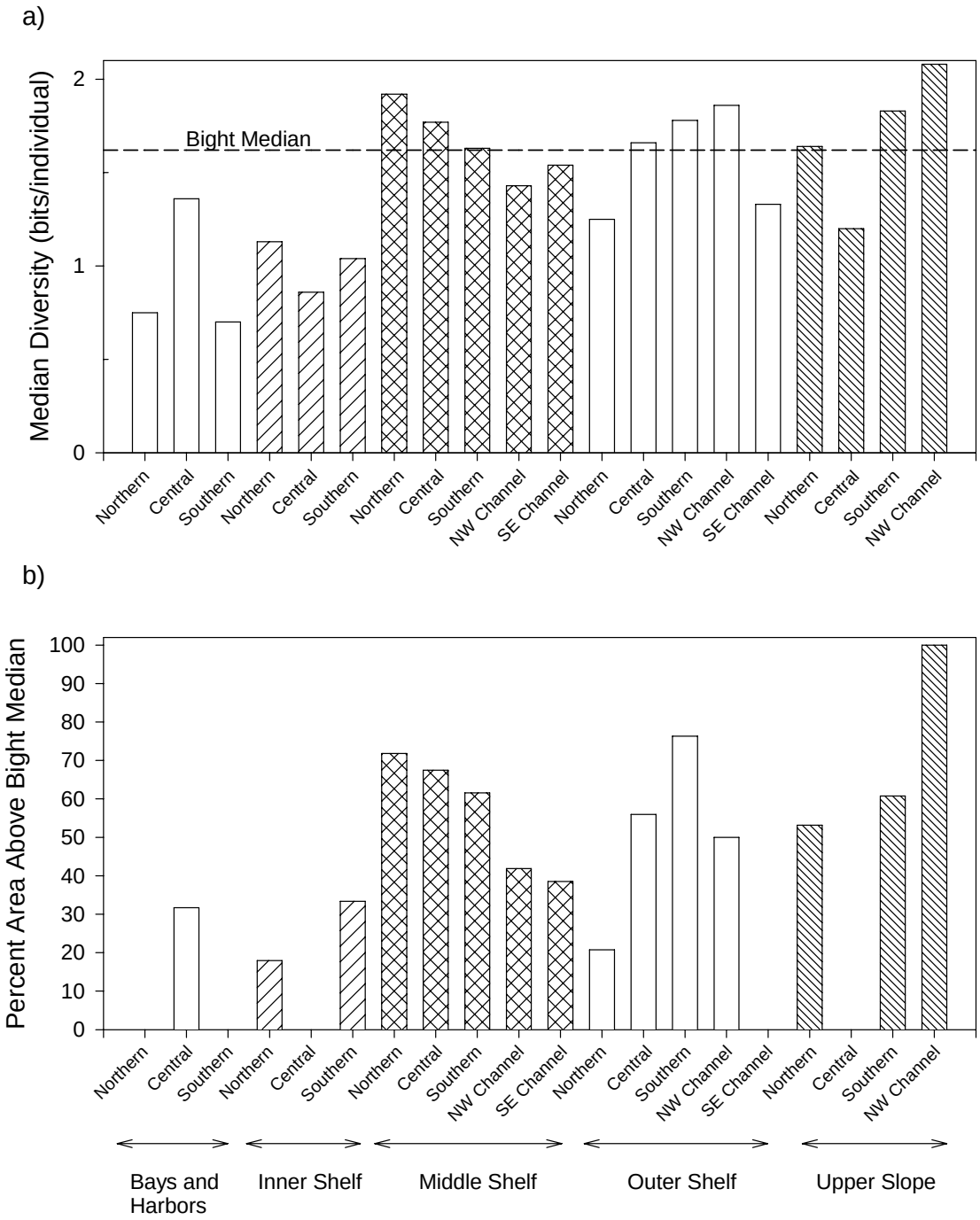
a)



b)



B11. Fish diversity (Shannon-Wiener) per haul by shelf zone subpopulation, on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent area above Bight median.



B12. Fish diversity (Shannon-Wiener) per haul by region within shelf zone subpopulations on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003: a) median and b) percent of area above Bight median.

B13. Taxonomic list of demersal fish species collected at depths of 2-476 m on the shelf and upper slope of the Southern California Bight in July-October 2003.

Taxon/Species	Author	Common Name
MYXINI		HAGFISHES
-- MYXINIFORMES		
Myxinidae		HAGFISHES
Eptatretus stoutii	(Lockington 1878)	Pacific hagfish
CHONDRICHTHYES		CARTILAGINOUS FISHES
-- CHIMAERIFORMES		
Chimaeridae		SHORTNOSE CHIMAERAS
Hydrolagus colliei	(Lay & Bennett 1839)	spotted ratfish
-- CARCHARHINIFORMES		
Scyliorhinidae		CAT SHARKS
Cephaloscyllium ventriosum	(Garman 1880)	swell shark
Parmaturus xaniurus	(Gilbert 1892)	filetail cat shark
-- TORPEDINIFORMES		
Torpedinidae		TORPEDO ELECTRIC RAYS
Torpedo californica	Ayres 1855	Pacific electric ray
-- RAJIFORMES		
Rhinobatidae		GUITARFISHES
Rhinobatos productus	Ayres 1854	shovelnose guitarfish
Rajidae		SKATES
Bathyraja interrupta	(Gill & Townsend 1897)	sandpaper skate
Raja binoculata	Girard 1855	big skate
Raja inornata	Jordan & Gilbert 1881	California skate
Raja rhina	Jordan & Gilbert 1880	longnose skate
Raja stellulata	Jordan & Gilbert 1880	starry skate
-- MYLIOBATIFORMES		
Urolophidae		ROUND STINGRAYS
Urobatis (=*Urolophus*) *halleri*	(Cooper 1863)	round stingray
Gymnuridae		BUTTERFLY RAYS
Gymnura marmorata	(Cooper 1864)	California butterfly ray
Myliobatidae		EAGLE RAYS
Myliobatis californica	Gill 1865	bat ray
ACTINOPTERYGII		RAY-FINNED FISHES
-- ANGUILLIFORMES		
Congridae		CONGER EELS
Gnathophis cinctus (=catalinensis)	(Garman 1899)	hardtail (=Catalina) conger
Nettastomatidae		DUCKBILL EELS
Facciolella equatorialis (=gilbertii)	(Gilbert 1891)	dogface witch eel
-- CLUPEIFORMES		
Engraulidae		ANCHOVIES
Anchoa delicatissima	(Girard 1854)	slough anchovy
Engraulis mordax	Girard 1854	northern anchovy
-- ARGENTINIFORMES		
Argentinidae		ARGENTINES
Argentina sialis	Gilbert 1890	Pacific argentine
Bathylagidae		DEEPSEA SMELTS
Leuroglossus stilbius	Gilbert, 1890	California smoothtongue

B13. (continued)

Taxon/Species	Author	Common Name
-- STOMIIFORMES		
Sternoptychidae		MARINE HATCHETFISHES
Argyropelecus affinis [1]	Garman 1899	slender hatchetfish[2]
Phosichthyidae		LIGHTFISHES
Ichthyococcus irregularis [1]	Rechnitzer & Böhlke 1958	bulldog lightfish[2]
Stomiidae		DRAGONFISHES
Stomias atriventer [1]	Garman 1899	blackbelly dragonfish[2]
-- AULOPIFORMES		
Synodontidae		LIZARDFISHES
Synodus lucioceps	(Ayres 1855)	California lizardfish
-- MYCTOPHIFORMES		
Myctophidae		LANTERNFISHES
Stenobrachius leucopsarus	(Eigenmann & Eigenmann 1890)	northern lampfish
-- OPHIDIIFORMES		
Ophidiidae		CUSK-EELS
Chilara taylori	(Girard 1858)	spotted cusk-eel
Bythitidae		VIVIPAROUS BROTULAS
Cataetyx rubrirostris [1]	Gilbert 1890	rubynose brotula[2]
-- GADIFORMES		
Macrouridae		GRENADIERS
Nezumia stelgidolepis	(Gilbert 1890)	California grenadier
Moridae		CODLINGS
Physiculus rastrelliger	Gilbert 1890	hundred-fathom codling
Merlucciidae		MERLUCCIID HAKES
Merluccius productus	(Ayres 1855)	Pacific hake
-- BATRACHOIDIFORMES		
Batrachoididae		TOADFISHES
Porichthys myriaster	Hubbs & Schultz 1939	specklefin midshipman
Porichthys notatus	Girard 1854	plainfin midshipman
-- ATHERINIFORMES		
Atherinopsidae (=Atherinidae)		NEW WORLD SILVERSIDES
Atherinops affinis	(Ayres 1860)	topsmelt
-- GASTEROSTEIFORMES		
Syngnathidae		PIPEFISHES
Syngnathus exilis	(Osburn & Nichols 1916)	barcheek pipefish
Syngnathus leptorhynchus	Girard 1854	bay pipefish
-- SCORPAENIFORMES		
Scorpaenidae		SCORPIONFISHES
Scorpaena guttata	Girard 1854	California scorpionfish
Sebastes auriculatus	Girard 1854	brown rockfish
Sebastes aurora	(Gilbert 1890)	aurora rockfish
Sebastes caurinus	Richardson 1844	copper rockfish
Sebastes chlorostictus	(Jordan & Gilbert 1880)	greenspotted rockfish
Sebastes constellatus	(Jordan & Gilbert 1880)	starry rockfish
Sebastes dallii	(Eigenmann & Beeson 1894)	calico rockfish
Sebastes diploproa	(Gilbert 1890)	splitnose rockfish
Sebastes elongatus	Ayres 1859	greenstriped rockfish
Sebastes eos	(Eigenmann & Eigenmann 1890)	pink rockfish
Sebastes goodei	(Eigenmann & Eigenmann 1890)	chilipepper
Sebastes hopkinsi	(Cramer 1895)	squarespot rockfish
Sebastes jordani	(Gilbert 1896)	shortbelly rockfish

B13. (continued)

Taxon/Species	Author	Common Name
Scorpaenidae (continued)		
Sebastes levis	(Eigenmann & Eigenmann 1889)	cowcod
Sebastes macdonaldi	(Eigenmann & Beeson 1893)	Mexican rockfish
Sebastes miniatus	(Jordan & Gilbert 1880)	vermilion rockfish
Sebastes paucispinis	Ayres 1854	bocaccio
Sebastes rosaceus	Girard 1854	rosy rockfish
Sebastes rosenblatti	Chen 1971	greenblotched rockfish
Sebastes rubrivinctus	(Jordan & Gilbert 1880)	flag rockfish
Sebastes saxicola	(Gilbert 1890)	stripetail rockfish
Sebastes semicinctus	(Gilbert 1897)	halfbanded rockfish
Sebastes umbrosus	(Jordan & Gilbert 1882)	honeycomb rockfish
Sebastolobus alascanus	Bean 1890	shortspine thornyhead
Sebastolobus altivelis	Gilbert 1896	longspine thornyhead
Triglidae		SEAROBINS
Prionotus stephanophrys	Lockington 1881	lumptail searobin
Anoplopomatidae		SABLEFISHES
Anoplopoma fimbria	(Pallas 1814)	sablefish
Hexagrammidae		GREENLINGS
Ophiodon elongatus	Girard 1854	lingcod
Oxylebius pictus	Gill 1862	painted greenling
Zaniolepis frenata	Eigenmann & Eigenmann 1889	shortspine combfish
Zaniolepis latipinnis	Girard 1858	longspine combfish
Cottidae		SCULPINS
Chitonotus pugetensis	(Steindachner 1876)	roughback sculpin
Enophrys taurina	Gilbert 1914	bull sculpin
Icelinus cavifrons	Gilbert 1890	pit-head sculpin
Icelinus filamentosus	Gilbert 1890	threadfin sculpin
Icelinus fimbriatus	Gilbert 1890	fringed sculpin
Icelinus oculatus	Gilbert 1890	frogmouth sculpin
Icelinus quadriseriatus	(Lockington 1880)	yellowchin sculpin
Icelinus tenuis	Gilbert 1890	spotfin sculpin
Leptocottus armatus	Girard 1854	Pacific staghorn sculpin
Radulinus asprellus	Gilbert 1890	slim sculpin
Ruscarius creaseri	(Hubbs 1926)	roughcheek sculpin
Agonidae		POACHERS
Agonopsis sterletus	(Gilbert 1898)	southern spearnose poacher
Bathyagonus pentacanthus	(Gilbert 1890)	bigeye poacher
Odontopyxis trispinosa	Lockington 1880	pygmy poacher
Xeneretmus latifrons	(Gilbert 1890)	blacktip poacher
Xeneretmus ritteri	Gilbert 1915	stripefin poacher
Xeneretmus triacanthus	(Gilbert 1890)	bluespotted poacher
Liparidae		SNAILFISHES
Careproctus melanurus	Gilbert 1892	blacktail snailfish
Elassodiscus caudatus [1]	(Gilbert 1915)	humpback snailfish[2]
-- PERCIFORMES		
Serranidae		SEA BASSES AND GROUPERS
Paralabrax clathratus	(Girard 1854)	kelp bass
Paralabrax maculatofasciatus	(Steindachner 1868)	spotted sand bass
Paralabrax nebulifer	(Girard 1854)	barred sand bass

B13. (continued)

Taxon/Species	Author	Common Name
-- PERCIFORMES (continued)		
Sciaenidae		DRUMS AND CROAKERS
Cheilotrema saturnum	(Girard 1858)	black croaker
Genyonemus lineatus	(Ayres 1855)	white croaker
Menticirrhus undulatus	(Girard 1854)	California corbina
Seriphus politus	Ayres 1860	queenfish
Umbrina roncador	Jordan & Gilbert 1882	yellowfin croaker
Embiotocidae		SURFPERCHES
Cymatogaster aggregata	Gibbons 1854	shiner perch
Embiotoca jacksoni	Agassiz 1853	black perch
Embiotoca lateralis	Agassiz 1854	striped seaperch
Hyperprosopon argenteum	Gibbons 1854	walleye surfperch
Hypsurus caryi	(Agassiz 1853)	rainbow seaperch
Phanerodon furcatus	Girard 1854	white seaperch
Rhacochilus toxotes	Agassiz 1854	rubberlip seaperch
Rhacochilus vacca	(Girard 1855)	pile perch
Zalembius rosaceus	(Jordan & Gilbert 1880)	pink seaperch
Pomacentridae		DAMSELFISHES
Chromis punctipinnis	(Cooper 1863)	blacksmith
Labridae		WRASSES
Semicossyphus pulcher	(Ayres 1854)	California sheephead
Bathymasteridae		RONQUILS
Rathbunella hypoplecta	(Gilbert 1890)	bluebanded ronquil
Zoarcidae		EELPOUTS
Lycodes cortezianus	(Gilbert 1890)	bigfin eelpout
Lycodes diapterus	Gilbert 1892	black eelpout
Lycodes pacificus	Collett 1879	blackbelly eelpout
Lyconema barbatum	Gilbert 1896	bearded eelpout
Stichaeidae		PRICKLEBACKS
Plectobranchus evides	Gilbert 1890	bluebarred prickleback
Anarhichadidae		WOLFFISHES
Anarrhichthys ocellatus	Ayres 1855	wolf-eel
Uranoscopidae		STARGAZERS
Kathetostoma averruncus	Jordan & Bollman 1890	smooth stargazer
Labrisomidae		LABRISOMID BLENNIES
Cryptotrema corallinum	Gilbert 1890	deepwater blenny
Clinidae		KELP BLENNIES (=CLINIDS)
Gibbonsia montereyensis	Hubbs 1927	crevice kelpfish
Heterostichus rostratus	Girard 1854	giant kelpfish
Gobiidae		GOBIES
Bollmannia gomezi [1,3]	Acero P. 1981	Colombian goby[4]
Ilypnus gilberti	(Eigenmann & Eigenmann 1889)	cheekspot goby
Lepidogobius lepidus	(Girard 1858)	bay goby
Quietula y-cauda	(Jenkins & Evermann, 1889)	shadow goby
Rhinogobiops (=*Coryphopterus*) *nicholsii*	(Bean 1882)	blackeye goby
Centrolophidae		MEDUSAFISHES
Icichthys lockingtoni	Jordan & Gilbert 1880	medusafish
Stromateidae		BUTTERFISHES
Peprilus simillimus	(Ayres 1860)	Pacific pompano

B13. (continued)

Taxon/Species	Author	Common Name
-- PLEURONECTIFORMES		
Paralichthyidae		SAND FLOUNDERS
Citharichthys fragilis	Gilbert 1890	Gulf sanddab
Citharichthys sordidus	(Girard 1854)	Pacific sanddab
Citharichthys stigmaeus	Jordan & Gilbert 1882	speckled sanddab
Citharichthys xanthostigma	Gilbert 1890	longfin sanddab
Hippoglossina stomata	Eigenmann & Eigenmann 1890	bigmouth sole
Paralichthys californicus	(Ayres 1859)	California halibut
Xystreurys liolepis	Jordan & Gilbert 1880	fantail sole
Pleuronectidae		RIGHTEYE FLOUNDERS
Eopsetta jordani	(Lockington 1879)	petrale sole
Glyptocephalus zachirus	Lockington 1879	rex sole
Lepidopsetta bilineata	(Ayres 1855)	rock sole
Lyopsetta exilis	(Jordan & Gilbert 1880)	slender sole
Microstomus pacificus	(Lockington 1879)	Dover sole
Parophrys vetulus	Girard 1854	English sole
Pleuronichthys coenosus	Girard 1854	C-O sole
Pleuronichthys decurrens	Jordan & Gilbert 1881	curlfin sole
Pleuronichthys guttulatus	Girard 1856	diamond turbot
Pleuronichthys ritteri	Starks & Morris 1907	spotted turbot
Pleuronichthys verticalis	Jordan & Gilbert 1880	hornyhead turbot
Cynoglossidae		TONGUEFISHES
Symphurus atricaudus	(Jordan & Gilbert 1880)	California tonguefish
Symphurus oligomerus [3]	Mahadeva & Munroe 1990	whitetail tonguefish

Taxonomic classification, scientific names, common names, and authors are from Nelson et al. (2004) unless otherwise noted.

[1] Current status of scientific name from Eschmeyer (1998) and on-line version of this catalog updated April 17, 2006 at www.calacademy.org/research/ichthyology/catalog/fishcatsearch.html.

[2] Common name from Hubbs et al. (1979)

[3] First record of species in California

[4] Common name from Allen and Robertson (1994).

B14. Percent of area of demersal fish species by subpopulation on the southern California Shelf and upper slope at depths of 2-476 m, July-October 2003.

	Percent of Area										
	Region					Shelf Zone					
	Mainland			Island							
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Microstomus pacificus	78	53	63	75	92	-	4	64	94	96	70
Citharichthys sordidus	34	62	58	100	100	-	40	100	91	14	56
Parophrys vetulus	46	55	46	38	62	-	75	71	43	19	49
Lyopsetta exilis	64	32	47	19	15	-	-	10	94	88	45
Sebastes saxicola	20	44	48	81	85	-	4	76	84	14	41
Pleuronichthys verticalis	20	64	34	19	46	23	72	64	6	-	35
Porichthys notatus	22	25	32	81	100	8	20	70	43	6	35
Zaniolepis latipinnis	15	41	30	81	62	4	21	74	30	-	34
Zalembius rosaceus	14	48	32	44	85	-	28	71	33	-	34
Icelinus quadriseriatus	16	50	28	63	46	12	32	74	-	-	33
Zaniolepis frenata	11	28	29	69	100	-	-	42	88	18	30
Sebastes diploproa	47	22	23	6	-	-	-	2	21	69	29
Merluccius productus	42	17	34	13	-	-	-	-	43	65	29
Citharichthys stigmaeus	19	38	33	38	15	23	96	36	3	-	28
Sebastes semicinctus	8	30	33	56	77	-	1	65	31	-	27
Lycodes cortezianus	47	13	23	-	-	-	-	-	6	66	26
Hippoglossina stomata	8	50	22	19	62	-	21	54	32	-	26
Symphurus atricaudus	15	50	25	-	-	23	24	51	-	-	23
Glyptocephalus zachirus	18	17	41	25	-	-	-	4	54	42	22
Citharichthys xanthostigma	11	39	37	-	-	-	33	43	4	-	22
Chitonotus pugetensis	4	46	20	38	15	-	13	50	-	-	21
Xeneretmus latifrons	26	16	15	25	-	-	-	6	71	29	19
Stenobrachius leucopsarus	31	6	24	-	-	-	-	-	-	47	19
Anoplopoma fimbria	35	7	15	-	-	-	-	-	3	47	19
Chilara taylori	12	16	16	25	54	-	0	22	48	16	18
Sebastolobus alascanus	24	19	15	-	-	-	-	-	6	43	17
Pleuronichthys decurrens	9	13	7	44	69	-	28	33	7	-	17
Odontopyxis trispinosa	4	19	19	50	38	-	8	40	7	-	17
Lepidogobius lepidus	9	32	21	-	15	12	8	41	-	-	17
Ophiodon elongatus	12	10	5	63	31	-	16	33	7	1	16
Sebastes jordani	13	8	12	44	38	-	-	20	21	17	16
Sebastes levis	11	7	9	25	69	-	-	34	7	4	15
Synodus lucioceps	1	37	23	-	8	15	39	24	-	-	15
Scorpaena guttata	-	34	19	6	31	-	25	29	3	-	15
Raja inornata	6	20	16	13	23	12	17	25	17	-	13
Lycodes pacificus	9	13	16	38	-	-	-	10	54	14	13
Lyconema barbatum	20	4	8	25	8	-	-	3	29	25	13
Sebastes elongatus	3	10	18	44	15	-	-	24	36	1	12
Parmaturus xaniurus	27	-	-	-	-	-	-	-	3	27	11
Sebastes goodei	4	5	-	44	54	-	0	20	20	4	11
Sebastes eos	1	13	30	6	8	-	-	12	16	12	10
Icelinus tenuis	1	0	10	31	54	-	-	17	32	-	9
Xeneretmus triacanthus	2	7	10	38	8	-	-	13	38	1	8
Paralichthys californicus	0	17	17	-	-	81	28	8	-	-	8
Eptatretus stoutii	15	-	8	-	-	-	-	-	-	19	8
Facciolella equatorialis	8	6	15	-	-	-	-	-	-	19	8
Argentina sialis	1	13	19	-	-	-	-	15	20	-	7
Genyonemus lineatus	7	11	9	-	-	31	35	5	-	-	7

B14. (continued)

	Percent of Area										
	Region										
	Mainland			Island		Shelf Zone					
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Xystreurys liolepis	3	21	3	-	-	4	28	8	-	-	7
Sebastes aurora	8	-	15	-	-	-	-	-	-	16	6
Lycodes diapterus	12	6	-	-	-	-	-	-	-	16	6
Plectobranchus evides	2	4	10	25	-	-	-	3	31	6	6
Raja rhina	13	-	-	6	-	-	-	-	10	12	6
Cymatogaster aggregata	9	0	6	6	-	19	28	4	-	-	6
Enophrys taurina	2	-	-	25	23	-	-	12	-	-	5
Seriphus politus	7	1	8	-	-	23	31	-	-	-	5
Hydrolagus colliei	2	1	8	13	15	-	-	1	33	4	5
Physiculus rastrelliger	4	6	8	-	-	-	-	-	-	12	5
Nezumia stelgidolepis	4	-	15	-	-	-	-	-	-	12	5
Bathyagonus pentacanthus	8	6	-	-	-	-	-	-	-	12	5
Sebastolobus altivelis	8	6	-	-	-	-	-	-	-	12	5
Careproctus melanurus	12	-	-	-	-	-	-	-	-	12	5
Leuroglossus stilbius	12	-	-	-	-	-	-	-	-	12	5
Sebastes rosenblatti	1	12	1	13	-	-	-	7	26	-	4
Sebastes rubrivinctus	-	7	9	-	8	-	-	8	12	-	4
Phanerodon furcatus	6	3	6	-	-	15	28	-	-	-	4
Rhinogobiops nicholsii	-	2	9	13	8	-	4	9	-	-	4
Pleuronichthys ritteri	1	9	6	-	-	15	20	2	-	-	4
Peprilus simillimus	6	-	6	-	-	-	19	3	-	-	4
Sebastes dallii	2	4	9	-	-	-	-	7	12	-	4
Sebastes miniatus	5	1	4	-	8	-	8	6	-	-	4
Porichthys myriaster	4	5	3	-	-	42	21	0	-	-	3
Sebastes rosaceus	-	7	-	-	23	-	-	9	-	-	3
Rathbunella hypoplecta	-	7	4	-	8	-	-	8	-	-	3
Agonopsis sterletus	0	4	-	19	8	-	-	8	-	-	3
Engraulis mordax	7	1	0	-	-	19	19	-	-	-	3
Sebastes chlorostictus	-	4	4	-	15	-	-	6	7	-	3
Sebastes caurinus	5	0	-	-	8	4	8	4	-	-	3
Sebastes hopkinsi	-	4	-	6	8	-	-	5	-	-	2
Raja stellulata	-	-	-	19	-	-	-	3	7	-	2
Lepidopsetta bilineata	-	-	-	6	15	-	-	4	-	-	2
Argyropelecus affinis	-	-	8	-	-	-	-	-	-	4	2
Gnathophis cinctus	-	-	8	-	-	-	-	-	-	4	2
Ichthyococcus irregularis	-	-	8	-	-	-	-	-	-	4	2
Stomias atriventer	-	-	8	-	-	-	-	-	-	4	2
Elassodiscus caudatus	4	-	-	-	-	-	-	-	-	4	2
Cataetyx rubrirostris	4	-	-	-	-	-	-	-	-	4	2
Bathyraja interrupta	4	-	-	-	-	-	-	-	-	4	2
Pleuronichthys guttulatus	-	5	0	-	-	35	8	-	-	-	1
Citharichthys fragilis	-	1	5	-	-	-	-	3	4	-	1
Kathetostoma averruncus	2	1	-	-	-	-	-	2	3	-	1
Sebastes paucispinis	0	-	-	6	8	-	0	3	-	-	1
Radulinus asprellus	-	-	-	6	8	-	-	3	-	-	1
Oxylebius pictus	-	-	-	13	-	-	-	3	-	-	1
Icelinus cavifrons	-	-	-	13	-	-	-	3	-	-	1
Icelinus filamentosus	-	-	-	13	-	-	-	-	7	1	1

B14. (continued)

	Percent of Area										
	Region										
	Mainland			Island		Shelf Zone					
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Sebastes constellatus	-	-	4	-	-	-	-	2	-	-	1
Cryptotrema corallinum	-	-	4	-	-	-	-	2	-	-	1
Eopsetta jordani	1	-	-	-	8	-	-	1	3	-	1
Myliobatis californica	0	0	3	-	-	12	4	-	-	-	1
Heterostichus rostratus	-	0	3	-	-	8	4	-	-	-	1
Pleuronichthys coenosus	-	0	-	-	8	-	1	1	-	-	1
Hypsurus caryi	1	-	-	-	-	-	4	-	-	-	1
Anarrhichthys ocellatus	1	-	0	-	-	-	4	0	-	-	1
Rhacochilus toxotes	1	-	-	-	-	-	4	-	-	-	1
Menticirrhus undulatus	-	-	3	-	-	-	4	-	-	-	1
Hyperprosopon argenteum	-	-	3	-	-	-	4	-	-	-	1
Gibbonsia montereyensis	1	-	-	-	-	-	4	-	-	-	1
Syngnathus exilis	1	-	-	-	-	-	4	-	-	-	1
Raja binoculata	-	-	-	-	8	-	-	1	-	-	1
Icelinus fimbriatus	-	-	-	-	8	-	-	1	-	-	1
Cephaloscyllium ventriosum	-	-	-	6	-	-	-	1	-	-	1
Paralabrax nebulifer	-	2	1	-	-	46	0	0	-	-	1
Urobatis halleri	-	0	1	-	-	38	-	-	-	-	0
Paralabrax maculatofasciatus	-	0	1	-	-	27	-	-	-	-	0
Sebastes macdonaldi	1	-	-	-	-	-	-	-	3	-	0
Icelinus oculatus	1	-	-	-	-	-	-	-	3	-	0
Xeneretmus ritteri	-	-	1	-	-	-	-	-	-	1	0
Anchoa delicatissima	-	0	1	-	-	23	-	-	-	-	0
Rhinobatos productus	0	0	-	-	-	8	0	-	-	-	0
Gymnura marmorata	-	-	0	-	-	8	-	-	-	-	0
Cheilotrema saturnum	-	-	0	-	-	8	-	-	-	-	0
Umbrina roncador	-	0	-	-	-	8	-	-	-	-	0
Sebastes umbrosus	-	-	0	-	-	-	-	0	-	-	0
Icichthys lockingtoni	-	-	0	-	-	-	-	0	-	-	0
Prionotus stephanophrys	-	0	-	-	-	-	-	0	-	-	0
Semicossyphus pulcher	-	0	-	-	-	-	-	0	-	-	0
Embiotoca jacksoni	0	0	0	-	-	4	0	-	-	-	0
Syngnathus leptorhynchus	-	-	0	-	-	4	-	-	-	-	0
Atherinops affinis	-	-	0	-	-	4	-	-	-	-	0
Torpedo californica	-	0	-	-	-	4	-	-	-	-	0
Paralabrax clathratus	-	0	-	-	-	4	-	-	-	-	0
Ilypnus gilberti	-	0	-	-	-	4	-	-	-	-	0
Sebastes auriculatus	-	0	-	-	-	4	-	-	-	-	0
Quietula y-cauda	-	0	-	-	-	4	-	-	-	-	0
Rhacochilus vacca	0	0	-	-	-	-	0	0	-	-	0
Bollmannia gomezi	-	-	0	-	-	-	-	0	-	-	0
Chromis punctipinnis	-	-	0	-	-	-	0	-	-	-	0
Ruscarius creaseri	-	-	0	-	-	-	0	-	-	-	0
Leptocottus armatus	0	-	-	-	-	-	0	-	-	-	0

N = Northern; C = Central; S = Southern; NWC = Northwest Channel Islands; SEC = Southeast Channel Islands; CAT = Santa Catalina Island; B&H = Bays and harbors; IS = Inner shelf; MS = Middle shelf; OS = Outer shelf; SCB = Southern California Bight

0 = Present in less than 0.5% of area; See Glossary G2 for common nams of fish species

B15. Abundance (number of individuals) of demersal fish species by subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003.

	Region					Shelf Zone					
	Mainland			Island							
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Citharichthys sordidus	1,135	5,235	3,755	3,919	3,014	-	311	14,595	2,125	27	17,058
Citharichthys stigmaeus	2,297	3,296	797	375	20	189	5,060	1,535	1	-	6,785
Lyopsetta exilis	1,201	2,189	997	169	3	-	-	50	2,587	1,922	4,559
Icelinus quadriseriatus	267	1,932	1,522	142	99	108	280	3,574	-	-	3,962
Sebastes saxicola	589	954	419	1,627	268	-	7	2,061	1,454	335	3,857
Zaniolepis latipinnis	191	1,656	315	763	134	2	122	2,902	33	-	3,059
Sebastes semicinctus	19	834	252	1,141	446	-	3	2,644	45	-	2,692
Microstomus pacificus	332	587	563	473	281	-	5	1,296	463	472	2,236
Zalembius rosaceus	617	366	204	17	88	-	577	691	24	-	1,292
Citharichthys xanthostigma	20	604	632	-	-	-	150	1,104	2	-	1,256
Sebastes diploproa	445	200	402	202	-	-	-	1	239	1,009	1,249
Zaniolepis frenata	81	318	194	284	278	-	-	420	621	114	1,155
Genyonemus lineatus	198	628	30	-	-	624	228	4	-	-	856
Parophrys vetulus	398	241	95	27	64	-	263	347	208	7	825
Porichthys notatus	120	164	148	241	85	6	48	534	119	51	758
Lycodes pacificus	442	133	90	81	-	-	-	30	388	328	746
Symphurus atricaudus	23	389	145	-	-	60	57	440	-	-	557
Chitonotus pugetensis	3	319	148	44	2	-	35	481	-	-	516
Glyptocephalus zachirus	286	66	95	46	-	-	-	5	225	263	493
Pleuronichthys verticalis	45	339	63	5	32	54	140	276	14	-	484
Lepidogobius lepidus	13	278	152	-	13	100	7	349	-	-	456
Xeneretmus latifrons	72	104	145	65	-	-	-	18	330	38	386
Anchoa delicatissima	-	6	356	-	-	362	-	-	-	-	362
Pleuronichthys decurrens	167	20	4	75	95	-	175	185	1	-	361
Sebastes jordani	11	13	3	300	11	-	-	304	21	13	338
Seriphus politus	28	221	18	-	-	221	46	-	-	-	267
Lyconema barbatum	51	79	4	127	1	-	-	2	84	176	262
Cymatogaster aggregata	103	14	136	4	-	100	149	8	-	-	257
Urobatis halleri	-	116	136	-	-	252	-	-	-	-	252
Sebastes goodei	188	5	-	19	31	-	186	50	6	1	243
Merluccius productus	183	17	24	7	-	-	-	-	24	207	231
Argentina sialis	1	55	145	-	-	-	-	197	4	-	201
Paralichthys californicus	4	156	38	-	-	143	44	11	-	-	198
Chilara taylori	5	16	21	17	127	-	1	81	97	7	186
Porichthys myriaster	8	166	10	-	-	156	21	7	-	-	184
Sebastolobus alascanus	49	113	16	-	-	-	-	-	11	167	178
Scorpaena guttata	-	129	31	2	6	-	21	146	1	-	168
Phanerodon furcatus	115	26	25	-	-	107	59	-	-	-	166
Hippoglossina stomata	11	109	20	5	11	-	32	115	9	-	156
Synodus lucioceps	2	78	72	-	1	10	87	56	-	-	153
Engraulis mordax	41	100	4	-	-	104	41	-	-	-	145
Paralabrax nebulifer	-	107	14	-	-	119	1	1	-	-	121
Sebastes elongatus	20	22	35	21	22	-	-	76	42	2	120
Odontopyxis trispinosa	20	30	28	28	7	-	11	101	1	-	113
Icelinus tenuis	9	3	23	20	48	-	-	72	31	-	103
Ophiodon elongatus	43	22	8	21	6	-	23	75	1	1	100
Sebastes rosenblatti	34	45	2	2	-	-	-	25	58	-	83
Citharichthys fragilis	-	75	2	-	-	-	-	2	75	-	77

B15. (continued)

	Region					Shelf Zone					
	Mainland			Island							
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Lycodes cortezianus	53	12	8	-	-	-	-	-	5	68	73
Sebastes levis	10	4	9	19	27	-	-	64	3	2	69
Sebastes caurinus	62	4	-	-	1	2	57	8	-	-	67
Plectobranchus evides	3	6	6	51	-	-	-	5	57	4	66
Raja inornata	4	42	12	3	3	19	9	32	4	-	64
Sebastes eos	1	4	28	29	1	-	-	54	4	5	63
Ilypnus gilberti	-	58	-	-	-	58	-	-	-	-	58
Stenobrachius leucopsarus	48	3	6	-	-	-	-	-	-	57	57
Rhinogobiops nicholsii	-	1	43	7	4	-	1	54	-	-	55
Enophrys taurina	1	-	-	45	4	-	-	50	-	-	50
Sebastes chlorostictus	-	24	13	-	11	-	-	47	1	-	48
Xeneretmus triacanthus	11	9	5	20	1	-	-	24	21	1	46
Icelinus cavifrons	-	-	-	45	-	-	-	45	-	-	45
Sebastolobus altivelis	8	34	-	-	-	-	-	-	-	42	42
Xystreurys liolepis	6	34	2	-	-	2	18	22	-	-	42
Anoplopoma fimbria	34	2	2	-	-	-	-	-	1	37	38
Sebastes hopkinsi	-	30	-	3	1	-	-	34	-	-	34
Facciolella equatorialis	13	3	17	-	-	-	-	-	-	33	33
Pleuronichthys ritteri	1	19	13	-	-	15	17	1	-	-	33
Pleuronichthys guttulatus	-	25	4	-	-	26	3	-	-	-	29
Sebastes dallii	3	15	5	-	-	-	-	22	1	-	23
Peprilus simillimus	9	-	12	-	-	-	18	3	-	-	21
Sebastes miniatus	9	8	1	-	1	-	6	13	-	-	19
Agonopsis sterletus	3	3	-	12	1	-	-	19	-	-	19
Bathyagonus pentacanthus	16	2	-	-	-	-	-	-	-	18	18
Paralabrax maculatofasciatus	-	6	12	-	-	18	-	-	-	-	18
Heterostichus rostratus	-	10	7	-	-	16	1	-	-	-	17
Hydrolagus colliei	7	1	1	3	3	-	-	2	12	1	15
Sebastes aurora	4	-	10	-	-	-	-	-	-	14	14
Parmaturus xaniurus	12	-	-	-	-	-	-	-	1	11	12
Careproctus melanurus	12	-	-	-	-	-	-	-	-	12	12
Eptatretus stoutii	9	-	1	-	-	-	-	-	-	10	10
Physiculus rastrelliger	1	1	7	-	-	-	-	-	-	9	9
Sebastes rubrivinctus	-	2	5	-	2	-	-	8	1	-	9
Embiotoca jacksoni	2	6	1	-	-	6	3	-	-	-	9
Icelinus filamentosus	-	-	-	8	-	-	-	-	1	7	8
Lepidopsetta bilineata	-	-	-	5	3	-	-	8	-	-	8
Radulinus asprellus	-	-	-	6	1	-	-	7	-	-	7
Rathbunella hypoplecta	-	4	1	-	2	-	-	7	-	-	7
Gibbonsia montereyensis	7	-	-	-	-	-	7	-	-	-	7
Hypsurus caryi	7	-	-	-	-	-	7	-	-	-	7
Raja rhina	5	-	-	1	-	-	-	-	2	4	6
Lycodes diapterus	5	1	-	-	-	-	-	-	-	6	6
Pleuronichthys coenosus	-	4	-	-	2	-	4	2	-	-	6
Sebastes rosaceus	-	3	-	-	3	-	-	6	-	-	6
Myliobatis californica	1	1	4	-	-	4	2	-	-	-	6
Cheilotrema saturnum	-	-	6	-	-	6	-	-	-	-	6
Gymnura marmorata	-	-	6	-	-	6	-	-	-	-	6
Leuroglossus stilbius	5	-	-	-	-	-	-	-	-	5	5

B15. (continued)

	Region					Shelf Zone					
	Mainland			Island							
Species	N	C	S	NWC	SEC	B&H	IS	MS	OS	US	SCB
Rhinobatos productus	1	4	-	-	-	4	1	-	-	-	5
Hyperprosopon argenteum	-	-	5	-	-	-	5	-	-	-	5
Rhacochilus toxotes	5	-	-	-	-	-	5	-	-	-	5
Atherinops affinis	-	-	5	-	-	5	-	-	-	-	5
Sebastes umbrosus	-	-	4	-	-	-	-	4	-	-	4
Syngnathus exilis	4	-	-	-	-	-	4	-	-	-	4
Quietula y-cauda	-	4	-	-	-	4	-	-	-	-	4
Umbrina roncador	-	4	-	-	-	4	-	-	-	-	4
Cataetyx rubrirostris	3	-	-	-	-	-	-	-	-	3	3
Nezumia stelgidolepis	1	-	2	-	-	-	-	-	-	3	3
Raja stellulata	-	-	-	3	-	-	-	2	1	-	3
Sebastes macdonaldi	3	-	-	-	-	-	-	-	3	-	3
Sebastes paucispinis	1	-	-	1	1	-	1	2	-	-	3
Oxylebius pictus	-	-	-	3	-	-	-	3	-	-	3
Leptocottus armatus	3	-	-	-	-	-	3	-	-	-	3
Argyropelecus affinis	-	-	2	-	-	-	-	-	-	2	2
Elassodiscus caudatus	2	-	-	-	-	-	-	-	-	2	2
Eopsetta jordani	1	-	-	-	1	-	-	1	1	-	2
Kathetostoma averruncus	1	1	-	-	-	-	-	1	1	-	2
Icelinus oculatus	2	-	-	-	-	-	-	-	2	-	2
Anarrhichthys ocellatus	1	-	1	-	-	-	1	1	-	-	2
Rhacochilus vacca	1	1	-	-	-	-	1	1	-	-	2
Bollmannia gomezi	-	-	2	-	-	-	-	2	-	-	2
Sebastes constellatus	-	-	2	-	-	-	-	2	-	-	2
Menticirrhus undulatus	-	-	2	-	-	-	2	-	-	-	2
Paralabrax clathratus	-	2	-	-	-	2	-	-	-	-	2
Syngnathus leptorhynchus	-	-	2	-	-	2	-	-	-	-	2
Bathyraja interrupta	1	-	-	-	-	-	-	-	-	1	1
Gnathophis cinctus	-	-	1	-	-	-	-	-	-	1	1
Ichthyococcus irregularis	-	-	1	-	-	-	-	-	-	1	1
Stomias atriventer	-	-	1	-	-	-	-	-	-	1	1
Xeneretmus ritteri	-	-	1	-	-	-	-	-	-	1	1
Icelinus fimbriatus	-	-	-	-	1	-	-	1	-	-	1
Raja binoculata	-	-	-	-	1	-	-	1	-	-	1
Cephaloscyllium ventriosum	-	-	-	1	-	-	-	1	-	-	1
Cryptotrema corallinum	-	-	1	-	-	-	-	1	-	-	1
Icichthys lockingtoni	-	-	1	-	-	-	-	1	-	-	1
Prionotus stephanophrys	-	1	-	-	-	-	-	1	-	-	1
Semicossyphus pulcher	-	1	-	-	-	-	-	1	-	-	1
Chromis punctipinnis	-	-	1	-	-	-	1	-	-	-	1
Ruscarius creaseri	-	-	1	-	-	-	1	-	-	-	1
Sebastes auriculatus	-	1	-	-	-	1	-	-	-	-	1
Torpedo californica	-	1	-	-	-	1	-	-	-	-	1
Total	10,289	22,976	12,620	10,534	5,268	2,918	8,368	35,434	9,466	5,501	61,687

N = Northern; C = Central; S = Southern; NWC = Northwest Channel Islands; SEC = Southeast Channel Islands; CAT = Santa Catalina Island; B&H = Bays and harbors; IS = Inner shelf; MS = Middle shelf; OS = Outer shelf; SCB = Southern California Bight

0 = Present in less than 0.5% of area; See Glossary G2 for common nams of fish species

B16. Biomass (kg) of demersal fish species by subpopulation on the southern California shelf and upper slope at depths of 2-476 m, July-October 2003.

	Region					Shelf Zone					
	Mainland			Island							
Species*	N	C	S	NWI	SEI	B&H	IS	MS	OS	US	SCB
Citharichthys sordidus	45.7	101.9	43.3	52.0	101.3	-	8.3	251.7	82.7	1.5	344.2
Lyopsetta exilis	22.6	45.1	22.2	4.9	0.0	-	-	0.9	50.6	43.3	94.8
Paralichthys californicus	1.2	62.2	21.8	-	-	33.2	34.9	17.1	-	-	85.2
Seriphus politus	0.8	82.6	0.4	-	-	82.6	1.2	-	-	-	83.8
Microstomus pacificus	24.6	23.5	16.6	6.7	4.6	-	0.1	18.7	10.9	46.3	76.0
Parophrys vetulus	18.3	34.3	3.5	5.1	5.7	-	10.0	41.8	13.5	1.6	66.9
Urobatis halleri	-	41.7	25.0	-	-	66.7	-	-	-	-	66.7
Sebastes saxicola	12.1	21.5	9.3	21.4	1.1	-	0.0	15.5	37.7	12.2	65.4
Citharichthys xanthostigma	0.6	33.0	23.9	-	-	-	9.2	48.1	0.2	-	57.5
Scorpaena guttata	-	35.6	5.7	0.9	4.9	-	6.0	40.8	0.3	-	47.1
Pleuronichthys verticalis	3.5	34.9	6.6	0.3	1.8	3.8	12.6	29.3	1.4	-	47.1
Citharichthys stigmaeus	15.8	19.4	5.0	3.8	0.4	1.5	32.1	10.8	0.0	-	44.4
Zaniolepis latipinnis	4.4	15.3	4.3	14.9	2.1	0.0	3.7	36.5	0.8	-	41.0
Genyonemus lineatus	11.4	22.2	1.9	-	-	22.4	12.7	0.4	-	-	35.5
Merluccius productus	24.9	3.0	6.3	0.2	-	-	-	-	1.7	32.7	34.4
Porichthys notatus	11.1	3.3	2.4	8.7	2.8	0.1	2.5	10.4	6.7	8.6	28.3
Zaniolepis frenata	2.3	6.9	3.7	9.1	5.9	-	-	9.7	13.9	4.3	27.9
Raja inornata	0.6	18.2	3.8	3.0	1.0	9.4	2.0	15.0	0.2	-	26.6
Myliobatis californica	0.9	2.0	18.1	-	-	16.2	4.8	-	-	-	21.0
Hippoglossina stomata	1.7	15.2	1.4	0.5	1.1	-	4.0	14.3	1.6	-	19.9
Sebastes diploproa	9.1	4.5	3.2	2.2	-	-	-	0.0	1.2	17.8	19.0
Sebastes semicinctus	0.4	6.9	2.1	4.0	4.9	-	0.0	17.0	1.3	-	18.3
Zalembius rosaceus	7.3	7.8	2.1	0.0	0.8	-	6.7	10.7	0.6	-	18.0
Anoplopoma fimbria	15.3	0.7	1.7	-	-	-	-	-	0.3	17.4	17.7
Paralabrax nebulifer	-	12.8	3.9	-	-	15.4	0.8	0.5	-	-	16.7
Icelinus quadriseriatus	1.1	7.3	6.9	0.6	0.5	0.5	1.0	14.9	-	-	16.4
Raja rhina	8.5	-	-	5.5	-	-	-	-	5.7	8.3	14.0
Torpedo californica	-	12.5	-	-	-	12.5	-	-	-	-	12.5
Symphurus atricaudus	0.5	8.8	3.0	-	-	0.8	1.7	9.8	-	-	12.3
Glyptocephalus zachirus	3.1	1.9	4.8	2.4	-	-	-	0.0	3.4	8.8	12.2
Rhinobatos productus	0.4	11.6	-	-	-	11.6	0.4	-	-	-	12.0
Lycodes pacificus	4.5	3.7	1.3	2.0	-	-	-	0.7	7.3	3.5	11.5
Phanerodon furcatus	8.6	2.5	0.4	-	-	9.5	2.0	-	-	-	11.5
Pleuronichthys decurrens	2.1	1.2	0.1	2.0	5.9	-	2.7	7.4	1.2	-	11.3
Sebastolobus alascanus	1.9	7.5	1.8	-	-	-	-	-	0.8	10.4	11.2
Porichthys myriaster	0.3	9.3	0.7	-	-	7.4	1.9	1.0	-	-	10.3
Sebastes jordani	1.1	0.4	0.1	7.5	0.1	-	-	6.9	1.0	1.3	9.2
Xystreurys liolepis	1.7	4.9	0.4	-	-	0.5	3.5	3.0	-	-	7.0
Pleuronichthys guttulatus	-	6.1	0.4	-	-	5.8	0.7	-	-	-	6.5
Synodus lucioceps	0.2	4.3	1.3	-	0.1	0.5	1.3	4.1	-	-	5.9
Paralabrax maculatofasciatus	-	1.6	4.1	-	-	5.7	-	-	-	-	5.7
Ophiodon elongatus	1.1	0.9	0.0	3.3	0.0	-	0.2	2.2	1.6	1.3	5.3
Lycodes cortezianus	3.2	1.1	1.0	-	-	-	-	-	0.2	5.1	5.3
Pleuronichthys ritteri	0.0	3.8	1.1	-	-	3.2	1.6	0.1	-	-	4.9
Citharichthys fragilis	-	4.2	0.0	-	-	-	-	0.0	4.2	-	4.2
Chitonotus pugetensis	0.0	1.9	1.6	0.6	0.0	-	0.2	3.9	-	-	4.1
Sebastes chlorostictus	-	0.8	3.2	-	0.0	-	-	4.0	0.0	-	4.0
Sebastes rosenblatti	2.3	1.7	0.0	0.0	-	-	-	0.2	3.8	-	4.0
Chilara taylori	0.0	0.1	0.0	0.4	3.1	-	0.0	1.2	2.4	0.0	3.6
Sebastes elongatus	2.7	0.7	0.1	0.1	0.0	-	-	0.0	3.5	0.1	3.6

B16. (continued)

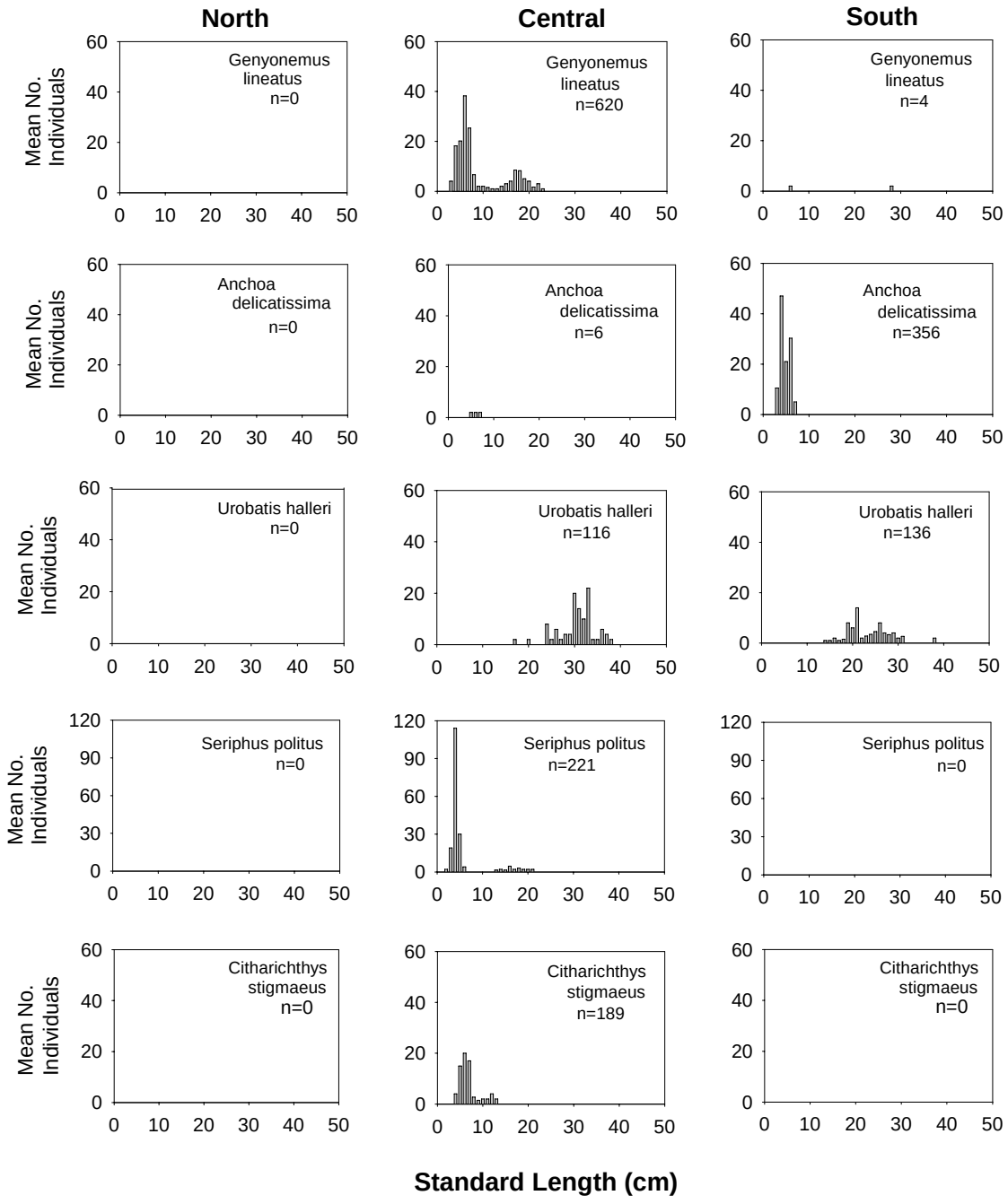
	Region					Shelf Zone					
	Mainland			Island							
Species*	N	C	S	NWI	SEI	B&H	IS	MS	OS	US	SCB
Xeneretmus latifrons	0.5	1.0	1.3	0.7	-	-	-	0.1	3.3	0.1	3.5
Cymatogaster aggregata	1.9	0.0	1.4	0.1	-	1.8	1.5	0.1	-	-	3.4
Sebastes aurora	1.6	-	1.5	-	-	-	-	-	-	3.1	3.1
Cephaloscyllium ventriosum	-	-	-	2.7	-	-	-	2.7	-	-	2.7
Hydrolagus colliei	1.3	0.4	0.0	0.0	0.9	-	-	0.7	1.9	0.0	2.6
Sebastes goodei	1.4	0.3	-	0.2	0.6	-	1.4	0.7	0.4	0.0	2.5
Sebastolobus altivelis	0.4	2.0	-	-	-	-	-	-	-	2.4	2.4
Sebastes caurinus	0.3	0.0	-	-	1.7	0.0	0.3	1.7	-	-	2.0
Umbrina roncador	-	1.8	-	-	-	1.8	-	-	-	-	1.8
Lyconema barbatum	0.5	0.3	0.0	0.9	0.0	-	-	0.0	0.3	1.4	1.7
Lepidopsetta bilineata	-	-	-	0.4	0.9	-	-	1.3	-	-	1.3
Sebastes eos	0.0	0.5	0.6	0.1	0.0	-	-	0.1	0.0	1.1	1.2
Enophrys taurina	0.0	-	-	1.1	0.0	-	-	1.1	-	-	1.1
Lepidogobius lepidus	0.1	0.6	0.2	-	0.1	0.2	0.0	0.8	-	-	1.0
Gymnura marmorata	-	-	1.0	-	-	1.0	-	-	-	-	1.0
Parmaturus xaniurus	0.9	-	-	-	-	-	-	-	0.1	0.8	0.9
Kathetostoma averruncus	0.4	0.5	-	-	-	-	-	0.4	0.5	-	0.9
Engraulis mordax	0.5	0.4	0.0	-	-	0.4	0.5	-	-	-	0.9
Hypsurus caryi	0.9	-	-	-	-	-	0.9	-	-	-	0.9
Cheilotrema saturnum	-	-	0.8	-	-	0.8	-	-	-	-	0.8
Bathyraja interrupta	0.7	-	-	-	-	-	-	-	-	0.7	0.7
Icelinus tenuis	0.2	0.0	0.1	0.0	0.4	-	-	0.4	0.3	-	0.7
Paralabrax clathratus	-	0.7	-	-	-	0.7	-	-	-	-	0.7
Pleuronichthys coenosus	-	0.6	-	-	0.0	-	0.6	0.0	-	-	0.6
Embiotoca jacksoni	0.0	0.4	0.2	-	-	0.4	0.2	-	-	-	0.6
Facciolella equatorialis	0.2	0.0	0.3	-	-	-	-	-	-	0.5	0.5
Sebastes rubrivinctus	-	0.0	0.5	-	0.0	-	-	0.5	0.0	-	0.5
Peprilus simillimus	0.3	-	0.2	-	-	-	0.5	0.0	-	-	0.5
Eptatretus stoutii	0.4	-	0.0	-	-	-	-	-	-	0.4	0.4
Eopsetta jordani	0.0	-	-	-	0.4	-	-	0.4	0.0	-	0.4
Sebastes dallii	0.0	0.4	0.0	-	-	-	-	0.4	0.0	-	0.4
Anarrhichthys ocellatus	0.2	-	0.2	-	-	-	0.2	0.2	-	-	0.4
Sebastes hopkinsi	-	0.2	-	0.0	0.2	-	-	0.4	-	-	0.4
Prionotus stephanophrys	-	0.4	-	-	-	-	-	0.4	-	-	0.4
Semicossyphus pulcher	-	0.4	-	-	-	-	-	0.4	-	-	0.4
Anchoa delicatissima	-	0.0	0.4	-	-	0.4	-	-	-	-	0.4
Plectobranchus evides	0.0	0.0	0.0	0.3	-	-	-	0.0	0.3	0.0	0.3
Rhacochilus vacca	0.1	0.2	-	-	-	-	0.1	0.2	-	-	0.3
Sebastes miniatus	0.0	0.3	0.0	-	0.0	-	0.0	0.3	-	-	0.3
Icelinus cavifrons	-	-	-	0.3	-	-	-	0.3	-	-	0.3
Sebastes levis	0.1	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.1	0.2
Icelinus filamentosus	-	-	-	0.2	-	-	-	-	0.0	0.2	0.2
Careproctus melanurus	0.2	-	-	-	-	-	-	-	-	0.2	0.2
Rhinogobiops nicholsii	-	0.0	0.2	0.0	0.0	-	0.0	0.2	-	-	0.2
Xeneretmus triacanthus	0.0	0.0	0.0	0.1	0.0	-	-	0.0	0.1	0.0	0.1
Nezumia stelgidolepis	0.0	-	0.1	-	-	-	-	-	-	0.1	0.1
Raja stellulata	-	-	-	0.1	-	-	-	0.1	0.0	-	0.1
Agonopsis sterletus	0.0	0.0	-	0.1	0.0	-	-	0.1	-	-	0.1
Rathbunella hypoplecta	-	0.1	0.0	-	0.0	-	-	0.1	-	-	0.1
Menticirrhus undulatus	-	-	0.1	-	-	-	0.1	-	-	-	0.1
Leptocottus armatus	0.1	-	-	-	-	-	0.1	-	-	-	0.1

B16. (continued)

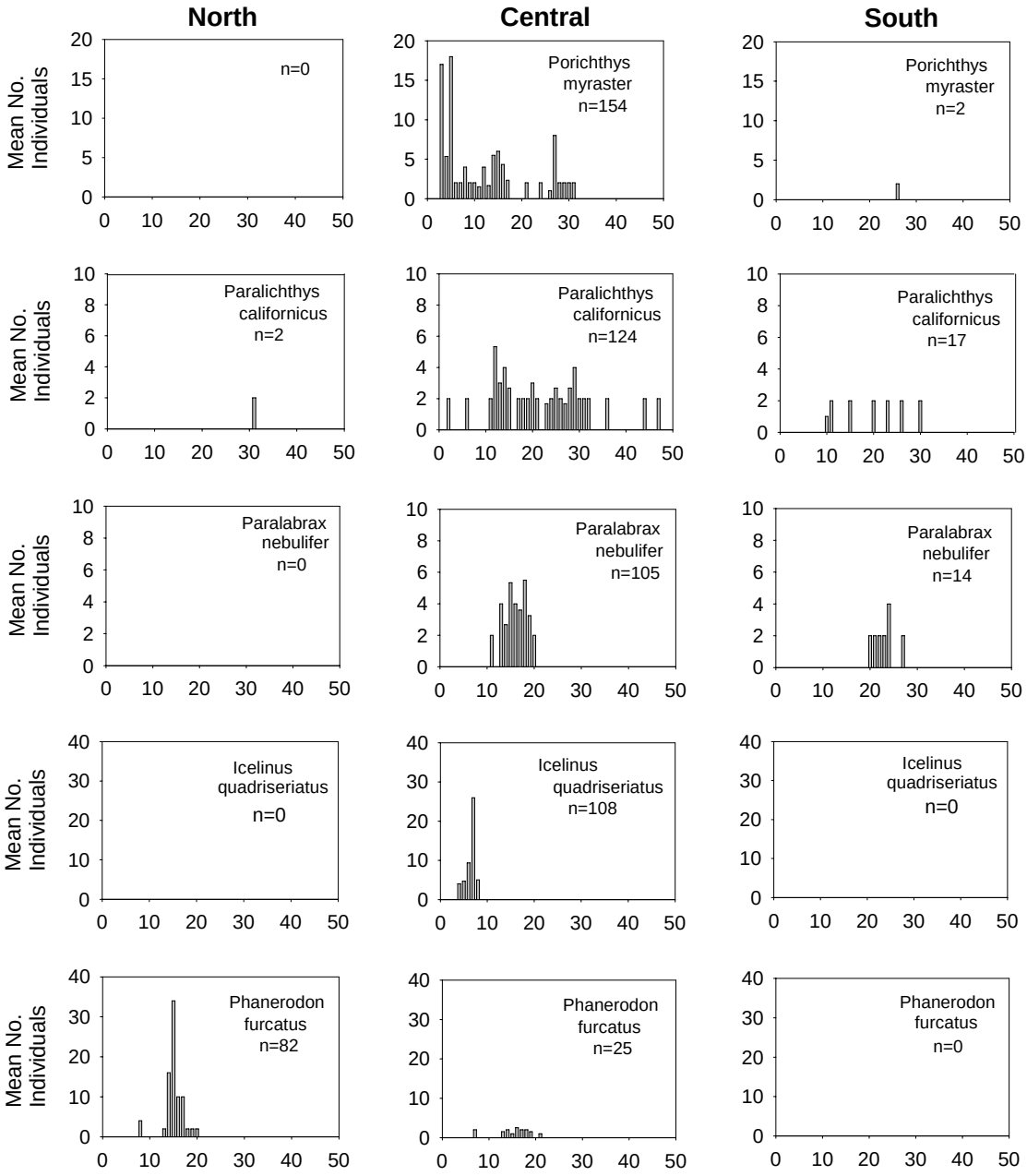
	Region					Shelf Zone					
	Mainland			Island							
Species*	N	C	S	NWI	SEI	B&H	IS	MS	OS	US	SCB
Physiculus rastrelliger	0.0	0.0	0.0	-	-	-	-	-	-	0.0	0.0
Stenobrachius leucopsarus	0.0	0.0	0.0	-	-	-	-	-	-	0.0	0.0
Argyropelecus affinis	-	-	0.0	-	-	-	-	-	-	0.0	0.0
Gnathophis cinctus	-	-	0.0	-	-	-	-	-	-	0.0	0.0
Ichthyococcus irregularis	-	-	0.0	-	-	-	-	-	-	0.0	0.0
Stomias atriventer	-	-	0.0	-	-	-	-	-	-	0.0	0.0
Xeneretmus ritteri	-	-	0.0	-	-	-	-	-	-	0.0	0.0
Bathyagonus pentacanthus	0.0	0.0	-	-	-	-	-	-	-	0.0	0.0
Lycodes diapterus	0.0	0.0	-	-	-	-	-	-	-	0.0	0.0
Cataetyx rubrirostris	0.0	-	-	-	-	-	-	-	-	0.0	0.0
Elassodiscus caudatus	0.0	-	-	-	-	-	-	-	-	0.0	0.0
Leuroglossus stilbius	0.0	-	-	-	-	-	-	-	-	0.0	0.0
Odontopyxis trispinosa	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0
Argentina sialis	0.0	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0
Icelinus oculatus	0.0	-	-	-	-	-	-	-	0.0	-	0.0
Sebastes macdonaldi	0.0	-	-	-	-	-	-	-	0.0	-	0.0
Sebastes paucispinis	0.0	-	-	0.0	0.0	-	0.0	0.0	-	-	0.0
Radulinus asprellus	-	-	-	0.0	0.0	-	-	0.0	-	-	0.0
Sebastes rosaceus	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0
Icelinus fimbriatus	-	-	-	-	0.0	-	-	0.0	-	-	0.0
Raja binoculata	-	-	-	-	0.0	-	-	0.0	-	-	0.0
Oxylebius pictus	-	-	-	0.0	-	-	-	0.0	-	-	0.0
Bollmannia gomezi	-	-	0.0	-	-	-	-	0.0	-	-	0.0
Cryptotrema corallinum	-	-	0.0	-	-	-	-	0.0	-	-	0.0
Icichthys lockingtoni	-	-	0.0	-	-	-	-	0.0	-	-	0.0
Sebastes constellatus	-	-	0.0	-	-	-	-	0.0	-	-	0.0
Sebastes umbrosus	-	-	0.0	-	-	-	-	0.0	-	-	0.0
Heterostichus rostratus	-	0.0	0.0	-	-	0.0	0.0	-	-	-	0.0
Chromis punctipinnis	-	-	0.0	-	-	-	0.0	-	-	-	0.0
Hyperprosopon argenteum	-	-	0.0	-	-	-	0.0	-	-	-	0.0
Ruscarius creaseri	-	-	0.0	-	-	-	0.0	-	-	-	0.0
Gibbonsia montereyensis	0.0	-	-	-	-	-	0.0	-	-	-	0.0
Rhacochilus toxotes	0.0	-	-	-	-	-	0.0	-	-	-	0.0
Syngnathus exilis	0.0	-	-	-	-	-	0.0	-	-	-	0.0
Atherinops affinis	-	-	0.0	-	-	0.0	-	-	-	-	0.0
Syngnathus leptorhynchus	-	-	0.0	-	-	0.0	-	-	-	-	0.0
Ilypnus gilberti	-	0.0	-	-	-	0.0	-	-	-	-	0.0
Quietula y-cauda	-	0.0	-	-	-	0.0	-	-	-	-	0.0
Sebastes auriculatus	-	0.0	-	-	-	0.0	-	-	-	-	0.0
Composite weight - Fish	8.6	7.3	6.9	2.8	4.2	1.3	5.3	16.7	3.4	3.1	29.8
Total	299.7	772.0	286.5	172.3	157.5	318.1	180.5	679.5	271.3	238.7	1688.1

N = Northern; C = Central; S = Southern; NWC = Northwest Channel Islands; SEC = Southeast Channel Islands; CAT = Santa Catalina Island; B&H = Bays and harbors; IS = Inner shelf; MS = Middle shelf; OS = Outer shelf; SCB = Southern California Bight

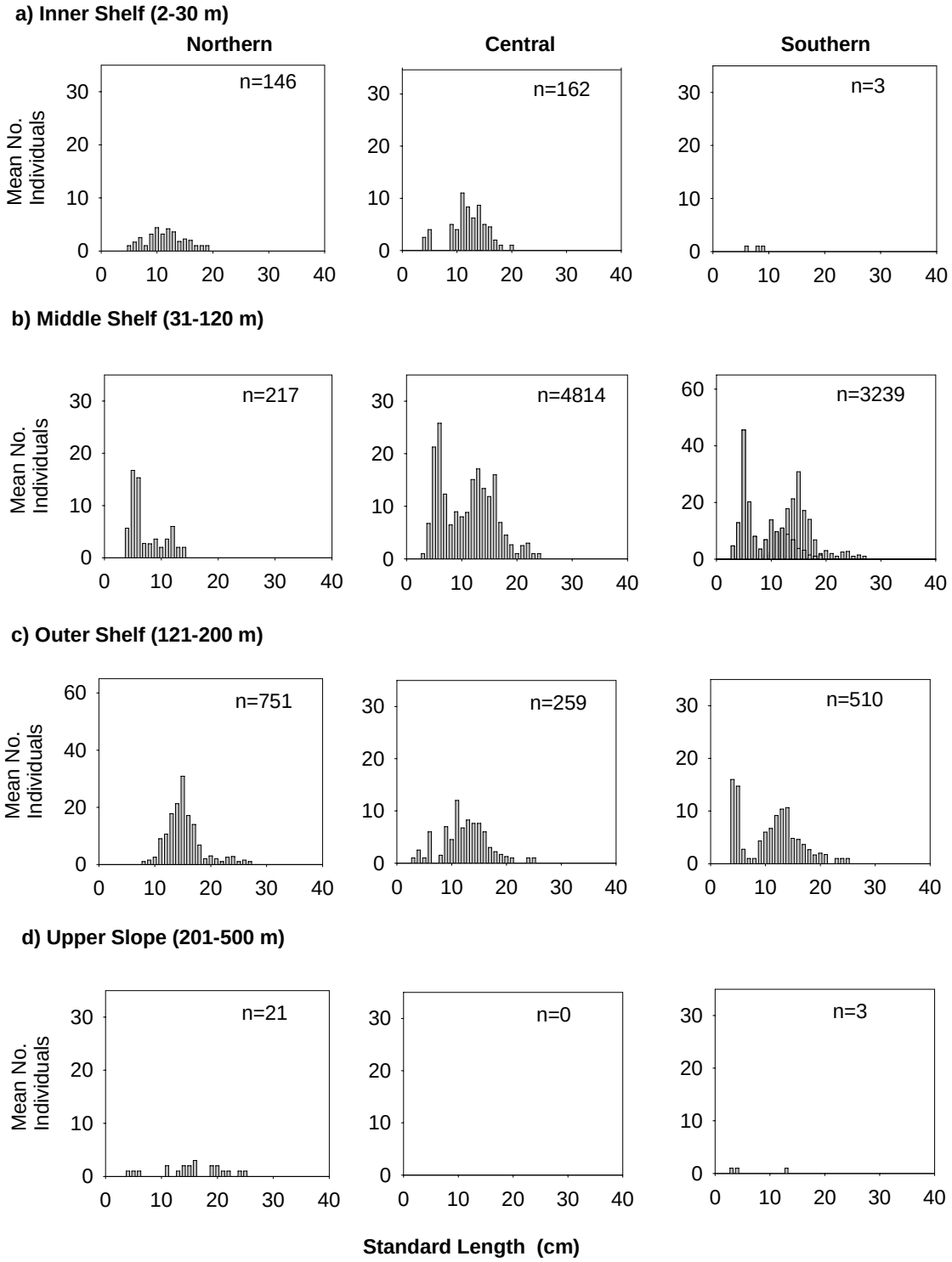
0 = Present in less than 0.5% of area; See Glossary G2 for common nams of fish species



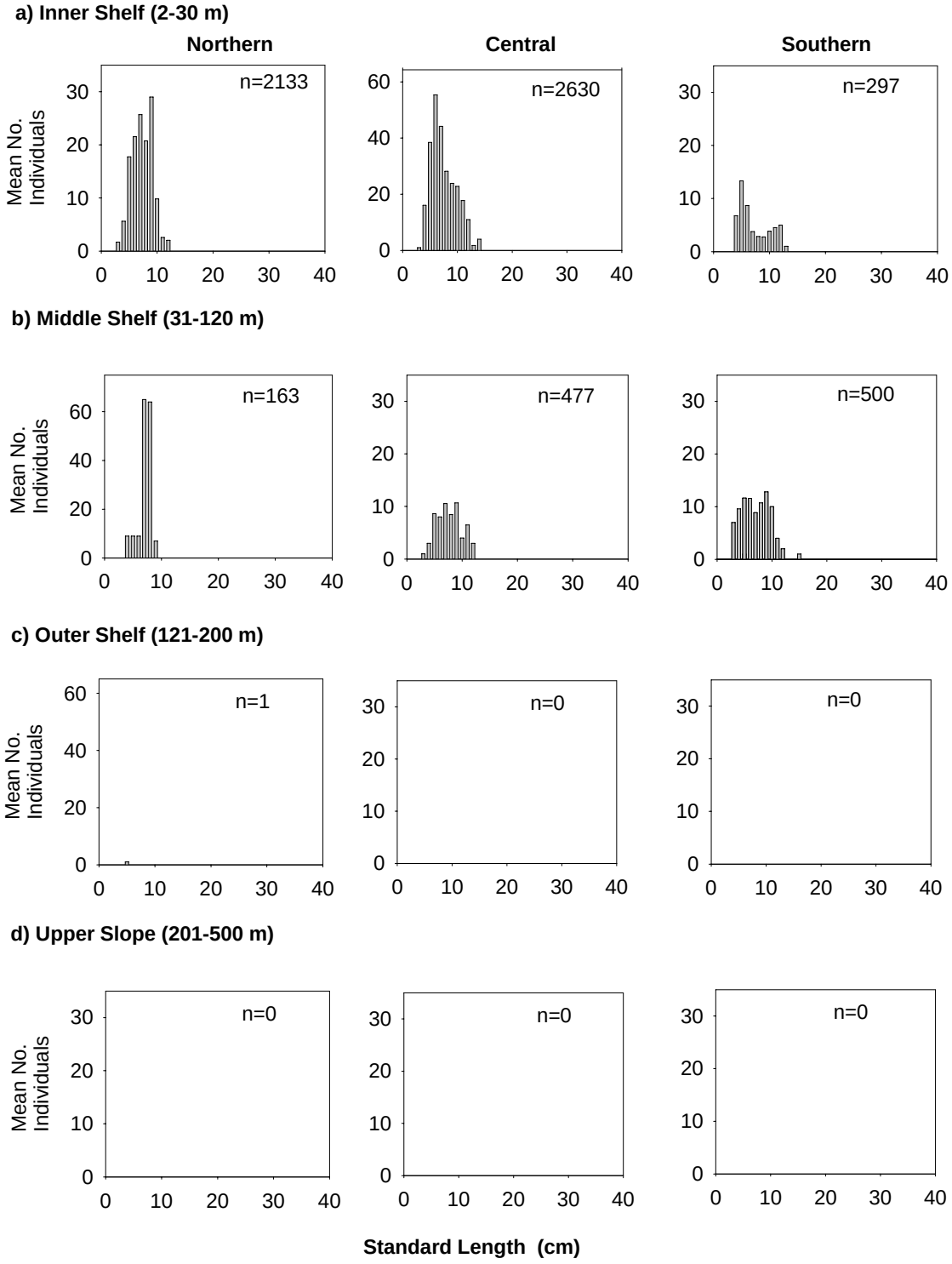
B17. Length-frequency distribution (mean number of fish per class) of the 10 most abundant species collected in the southern California bays and harbors at depths of 2-30 m, July-October 2003. n = Number of fish measured.



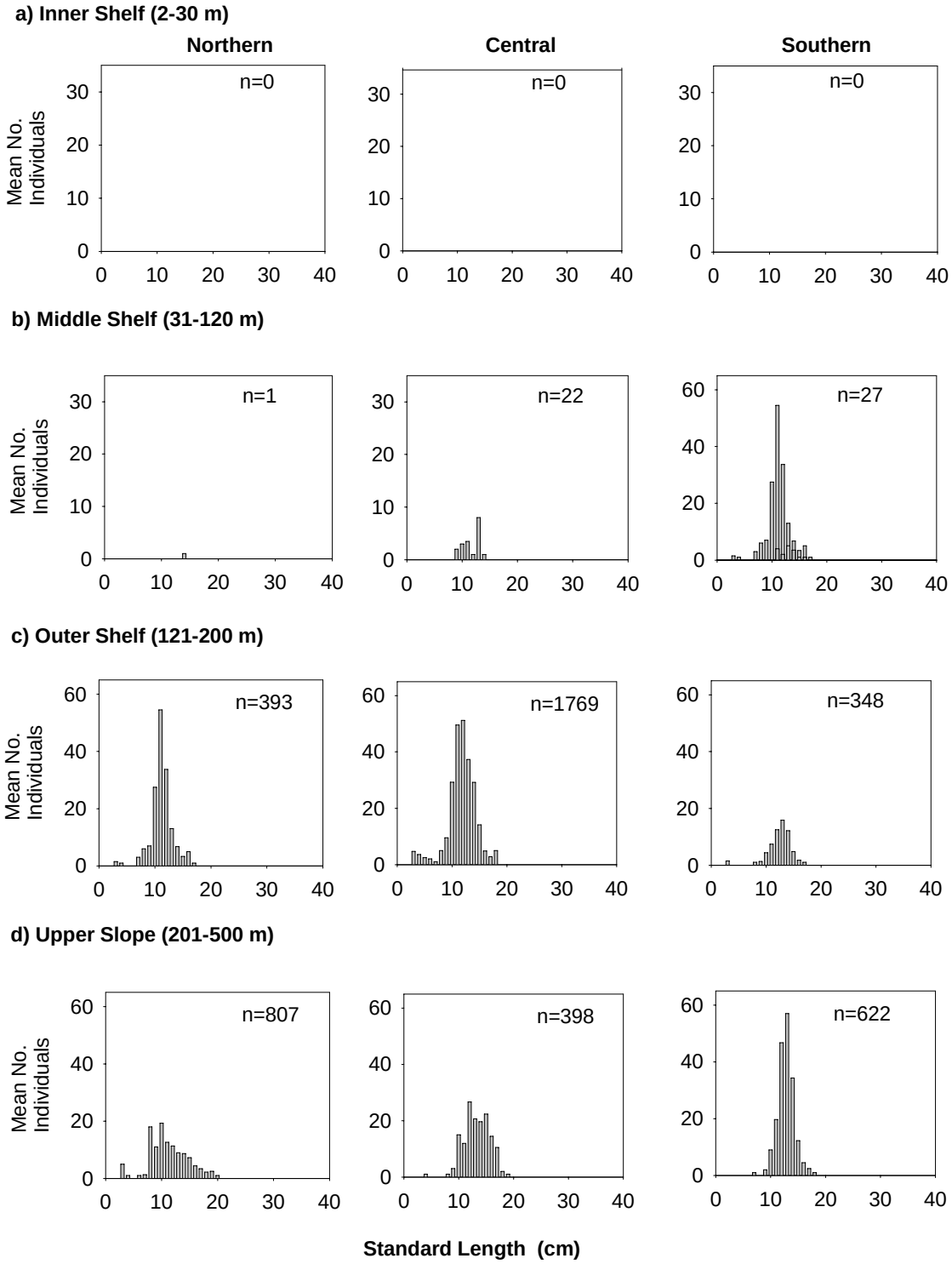
B17. (continued)



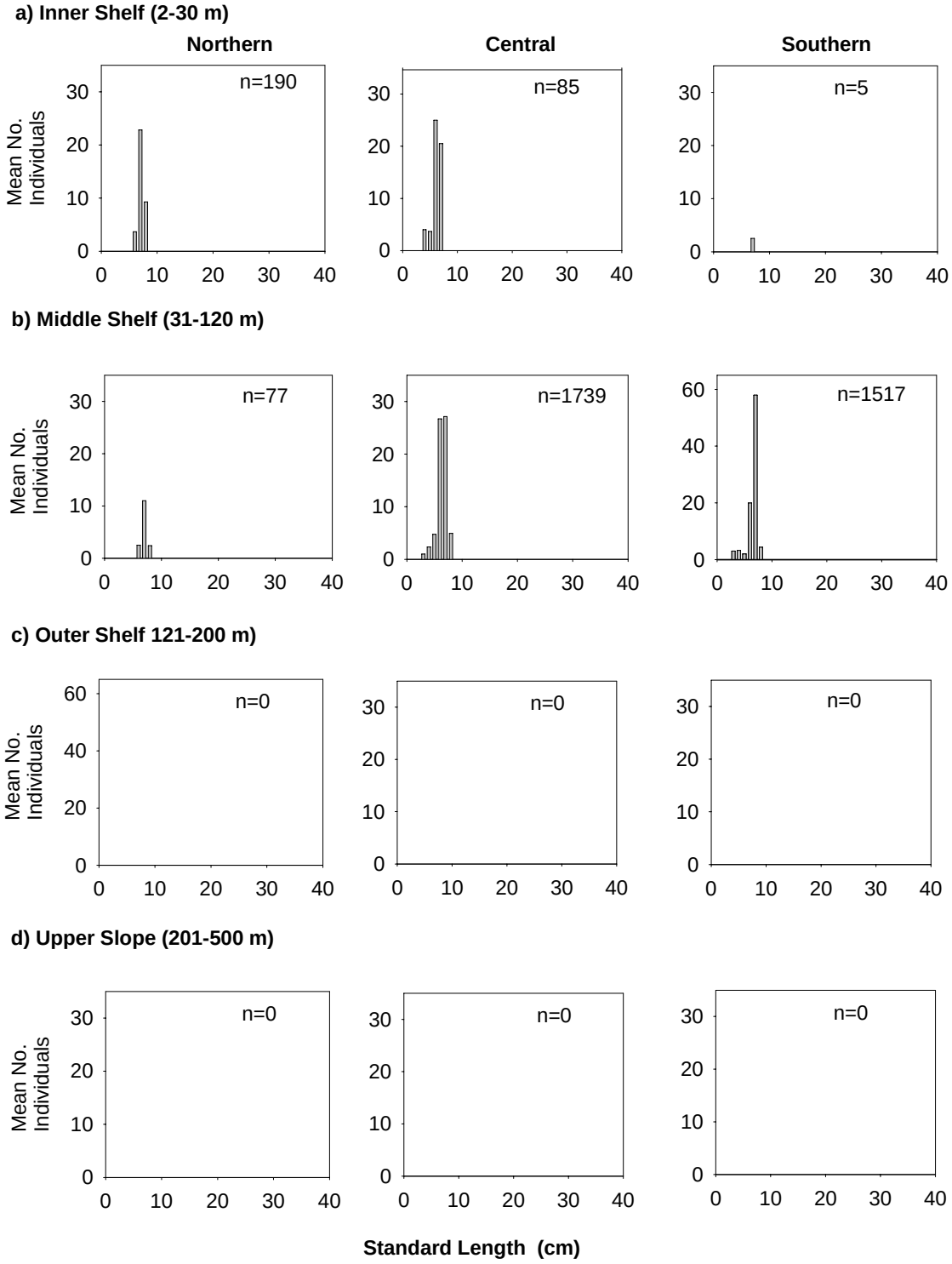
B18. Length-frequency distribution (mean number of fish per size class) of Pacific sanddab (*Citharichthys sordidus*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



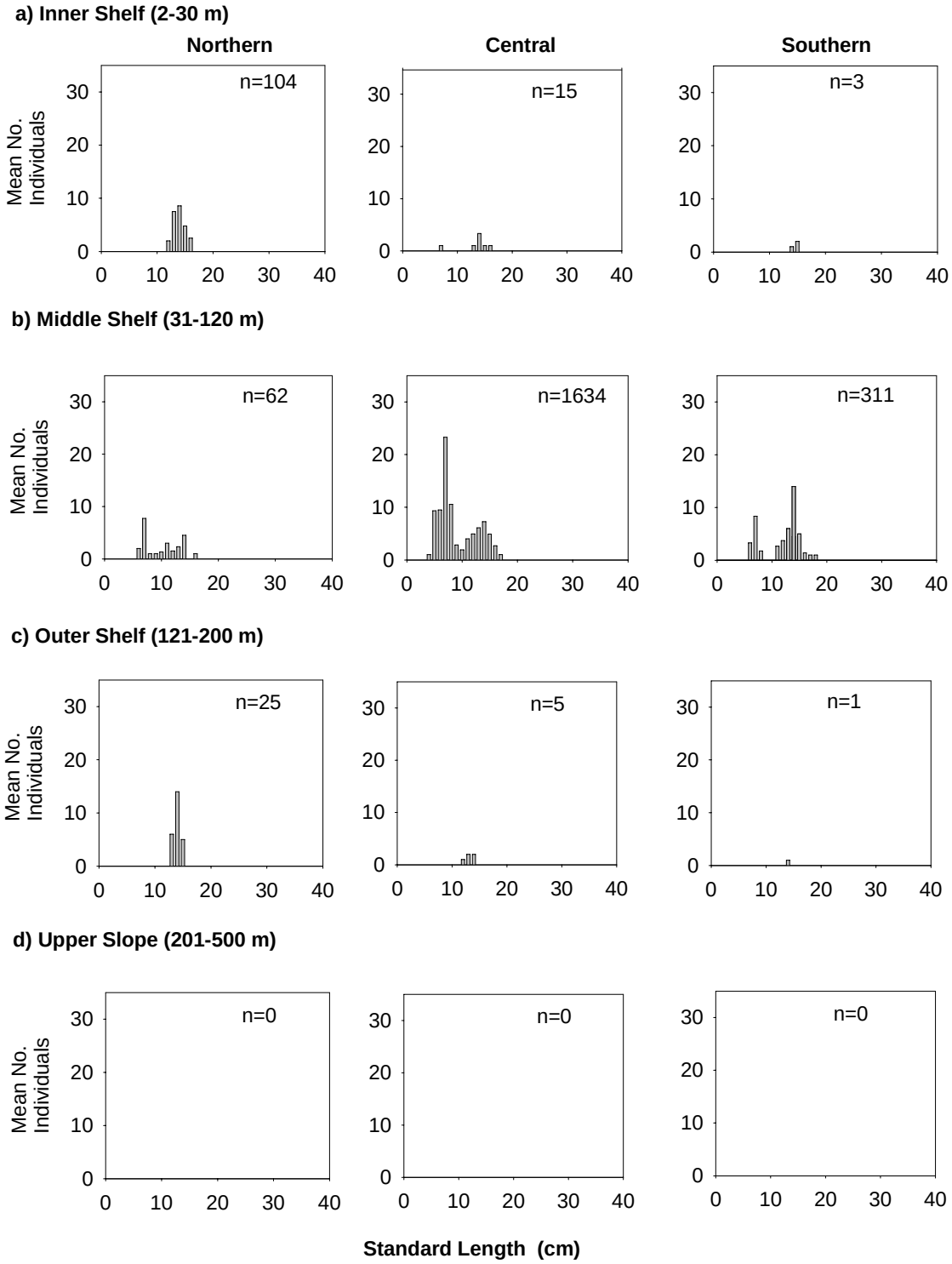
B19. Length-frequency distribution (mean number of fish per size class) of speckled sanddab (*Citharichthys stigmaeus*) collected on the mainland shelf and upper slope by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



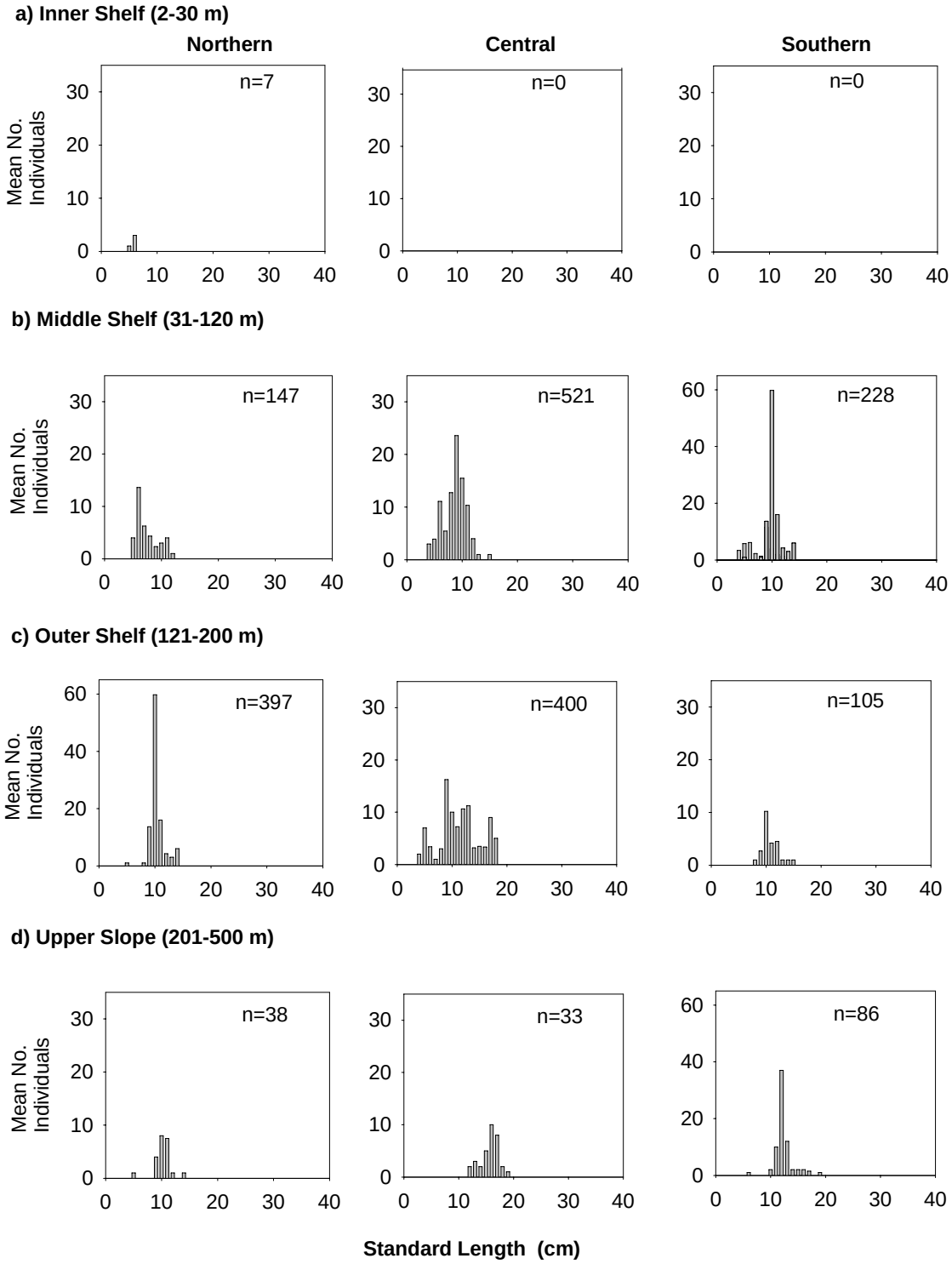
B20. Length-frequency distribution (mean number of fish per size class) of slender sole (*Lyopsetta exilis*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



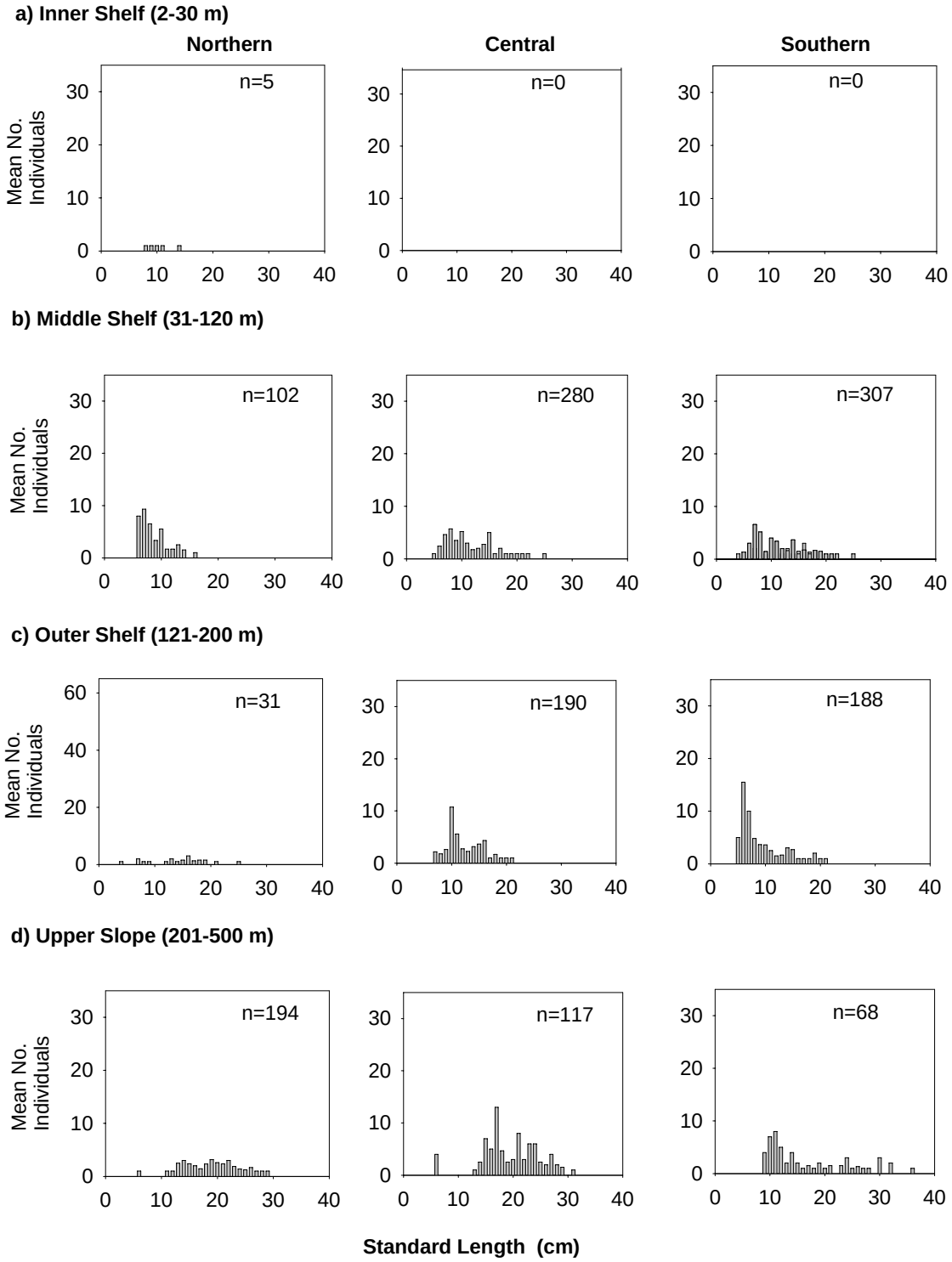
B21. Length-frequency distribution (mean number of fish per size class) of yellowchin sculpin (*Icelinus quadriseriatus*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



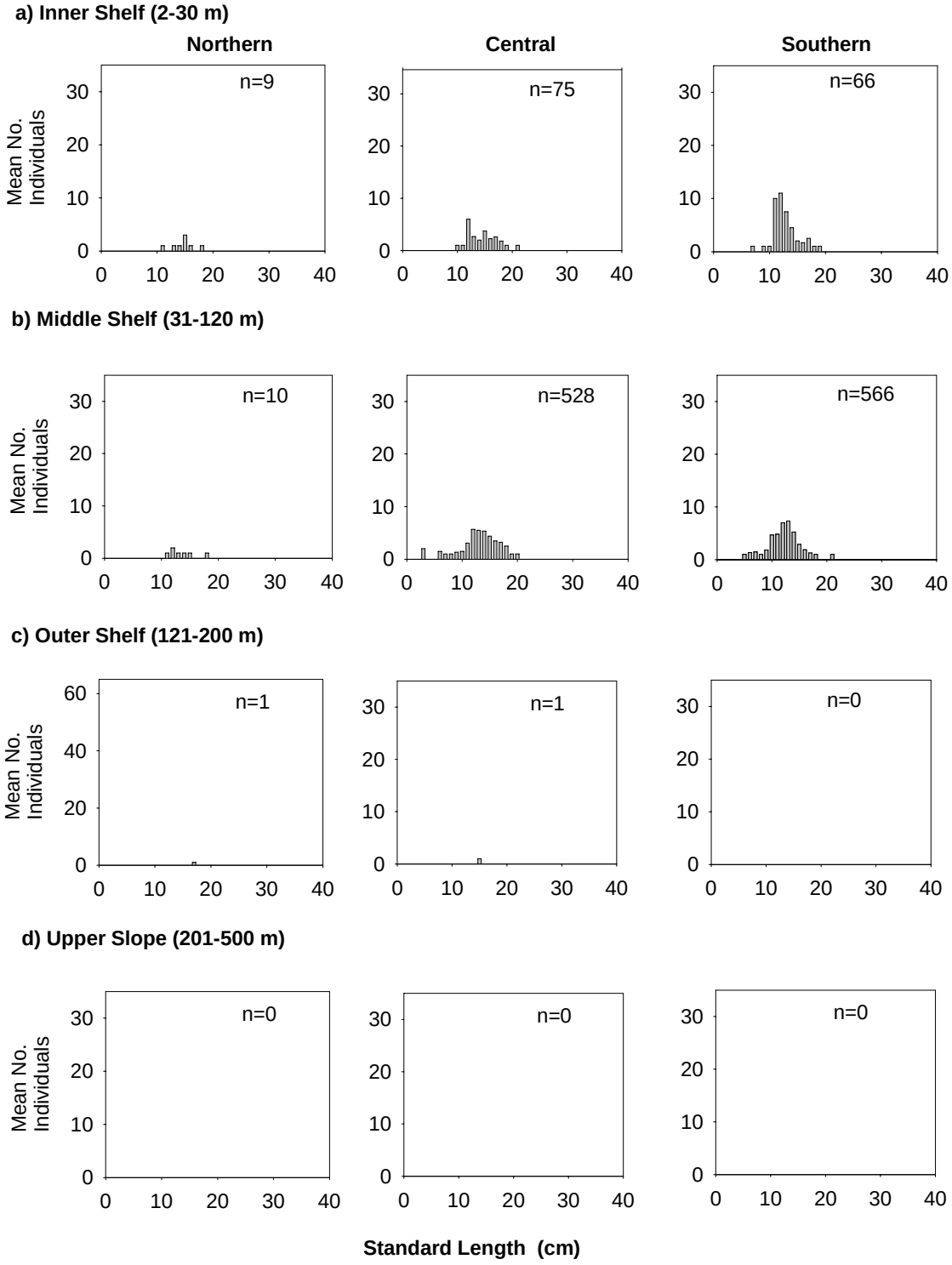
B22. Length-frequency distribution (mean number of fish per size class) of longspine combfish (*Zaniolepis latipinnis*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



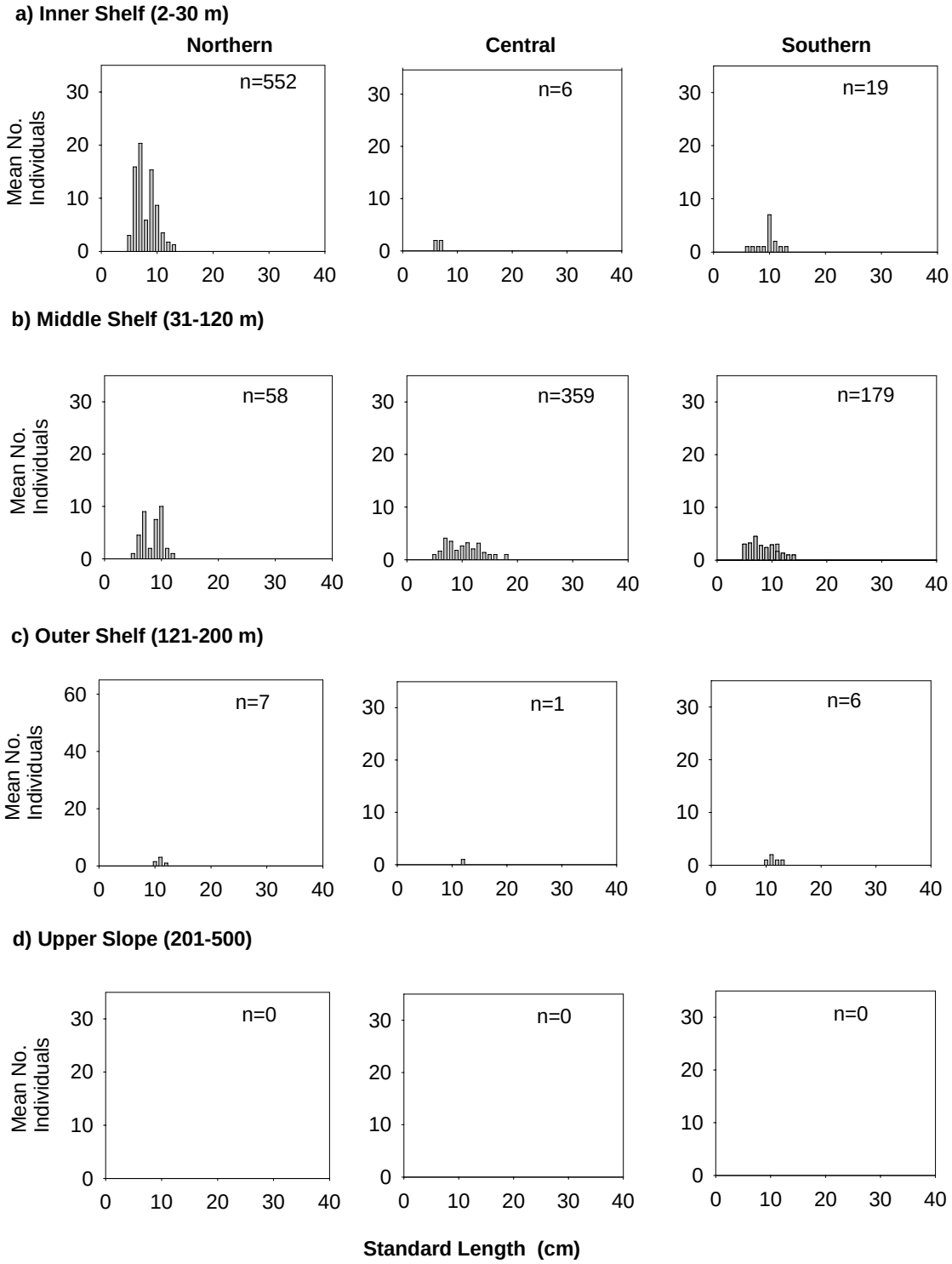
B23. Length-frequency distribution (mean number of fish per size class) of stripetail rockfish (*Sebastes saxicola*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



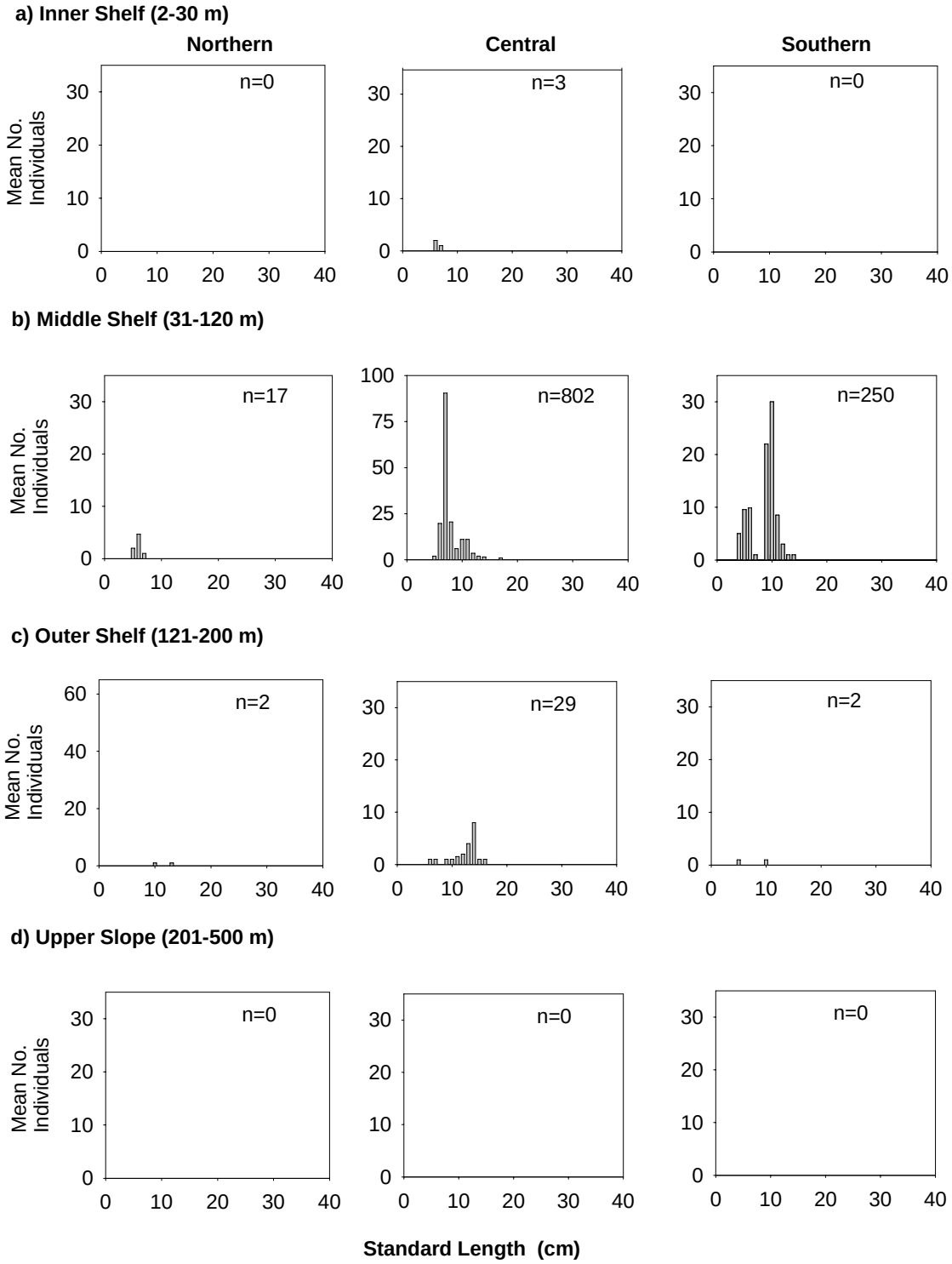
B24. Length-frequency distribution (mean number of fish per size class) of Dover sole (*Microstomus pacificus*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



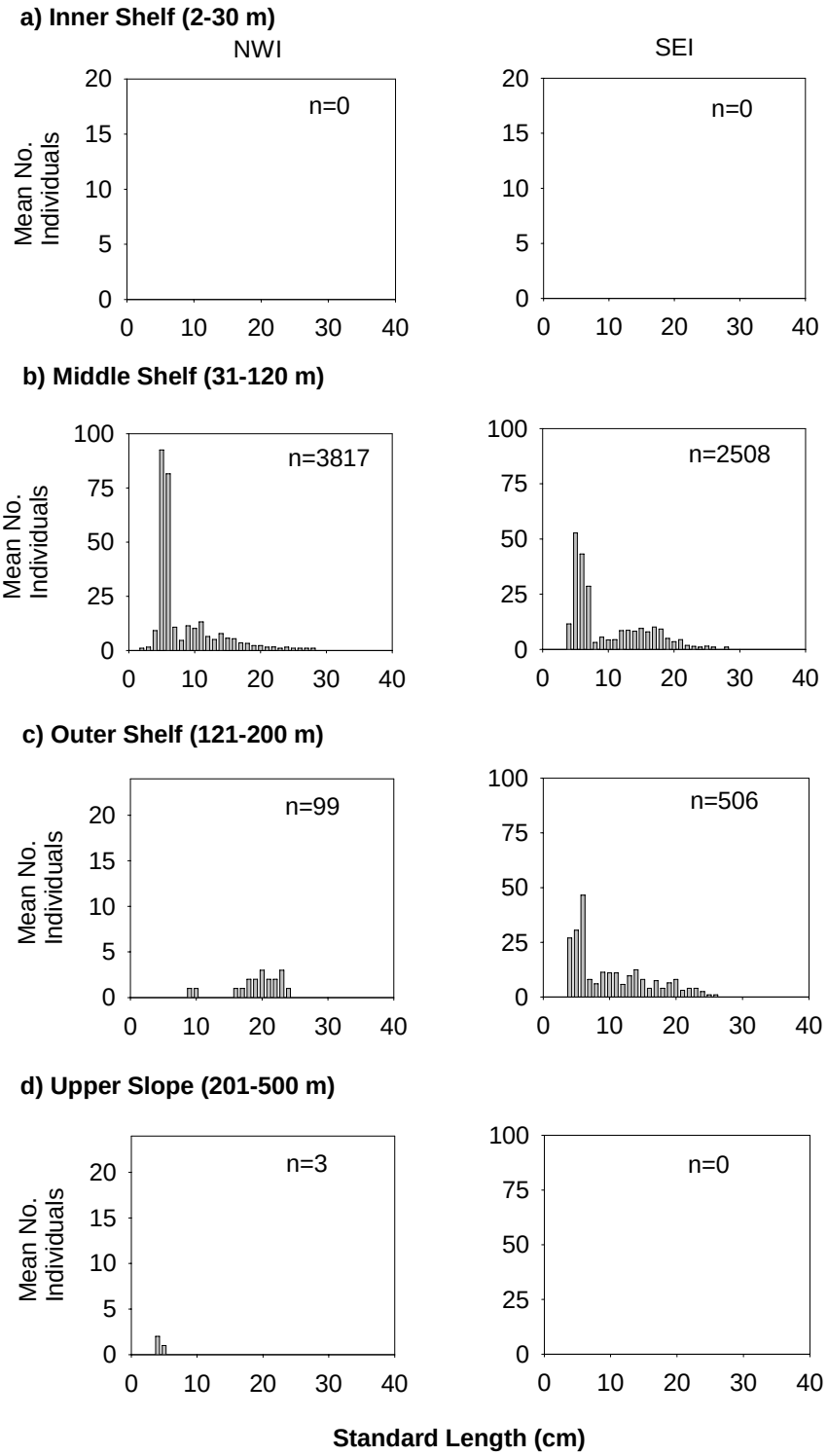
B25. Length-frequency distribution (mean number of fish per size class) of longfin sanddab (*Citharichthys xanthostigma*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



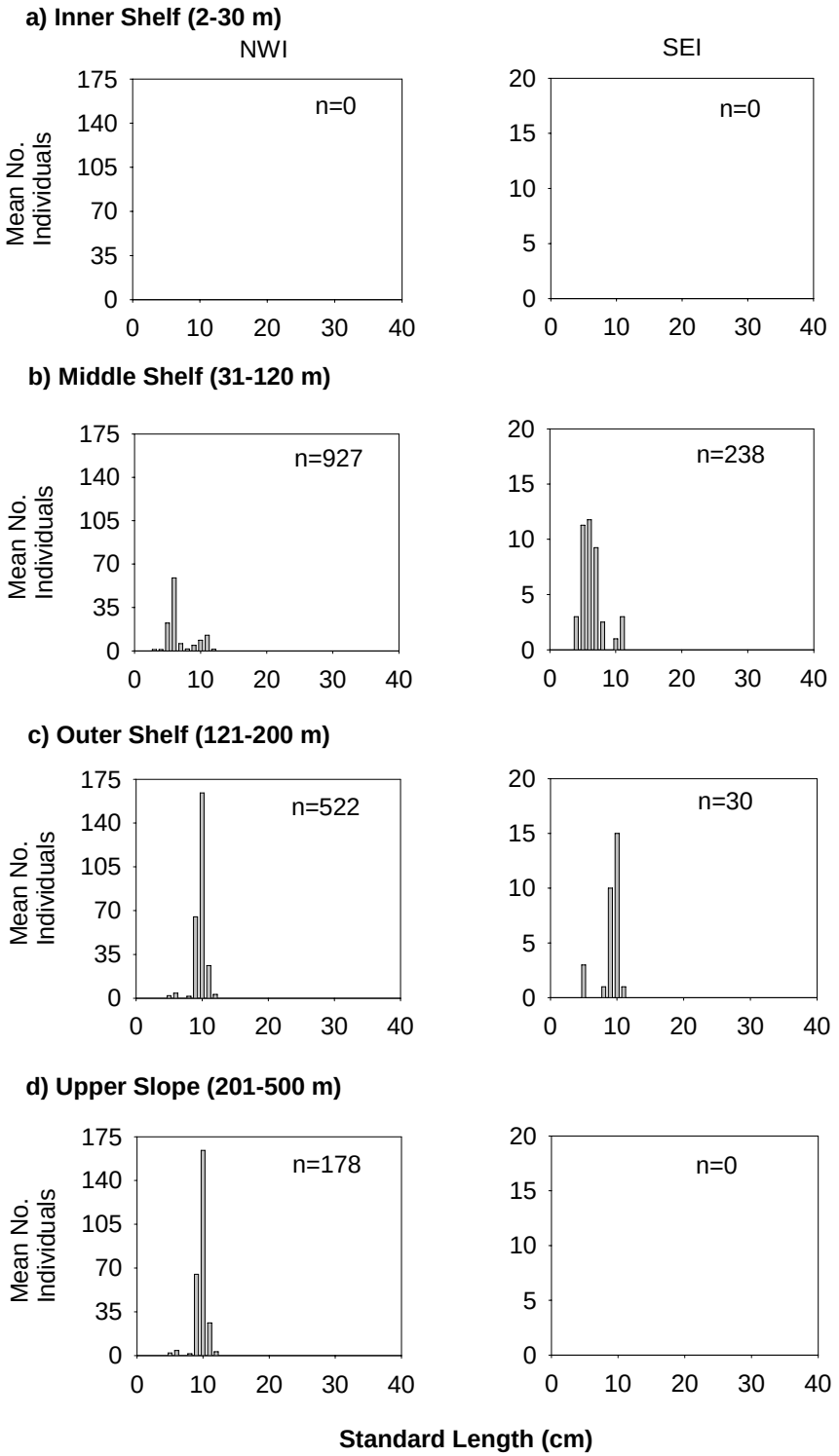
B26. Length-frequency distribution (mean number of fish per size class) of pink seaperch (*Zalembius rosaceus*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



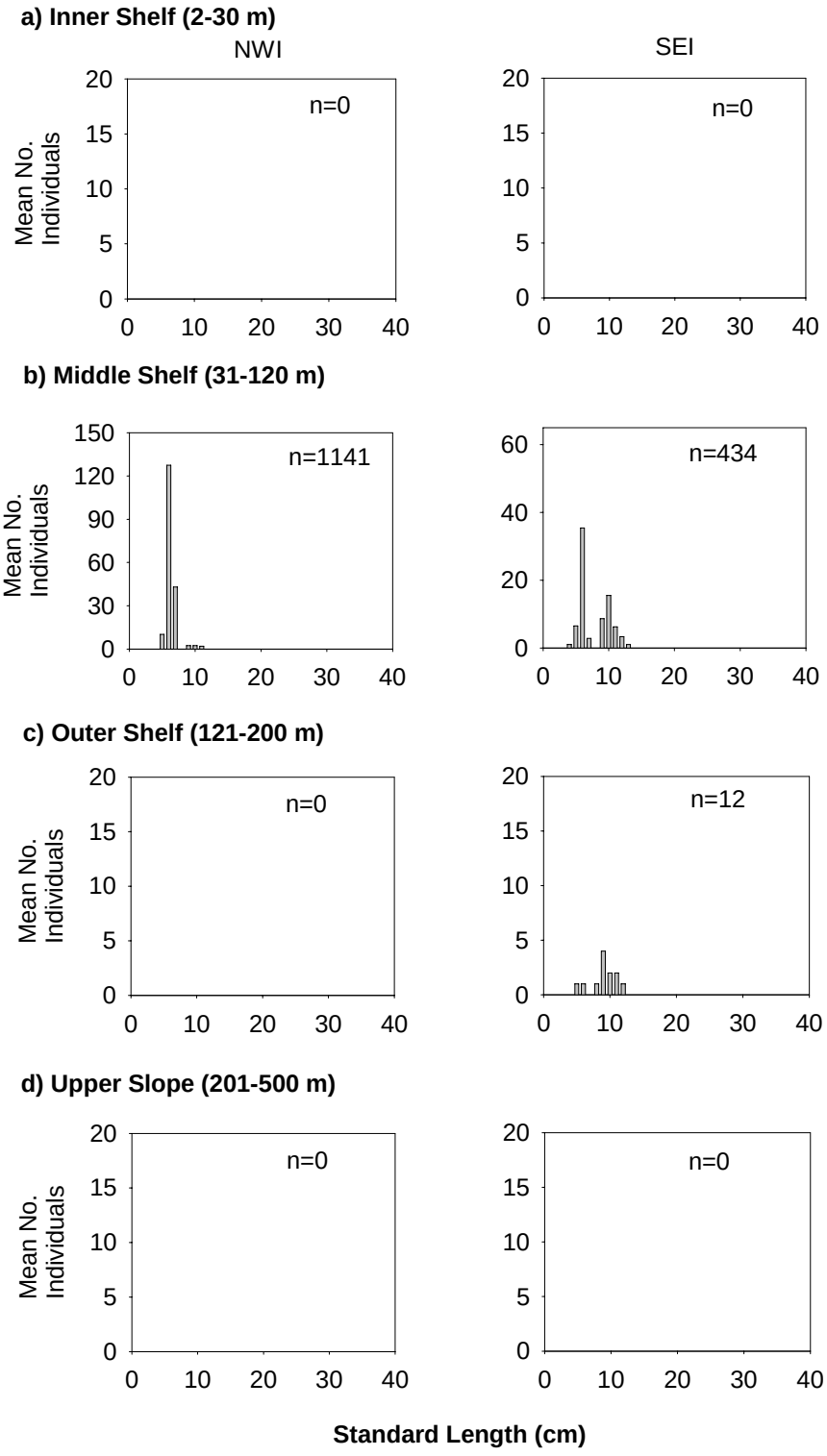
B27. Length-frequency distribution (mean number of fish per size class) of halfbanded rockfish (*Sebastes semicinctus*) collected on the mainland shelf and upper slope of southern California by depth and regional subpopulation, July-October 2003. n=Number of fish measured.



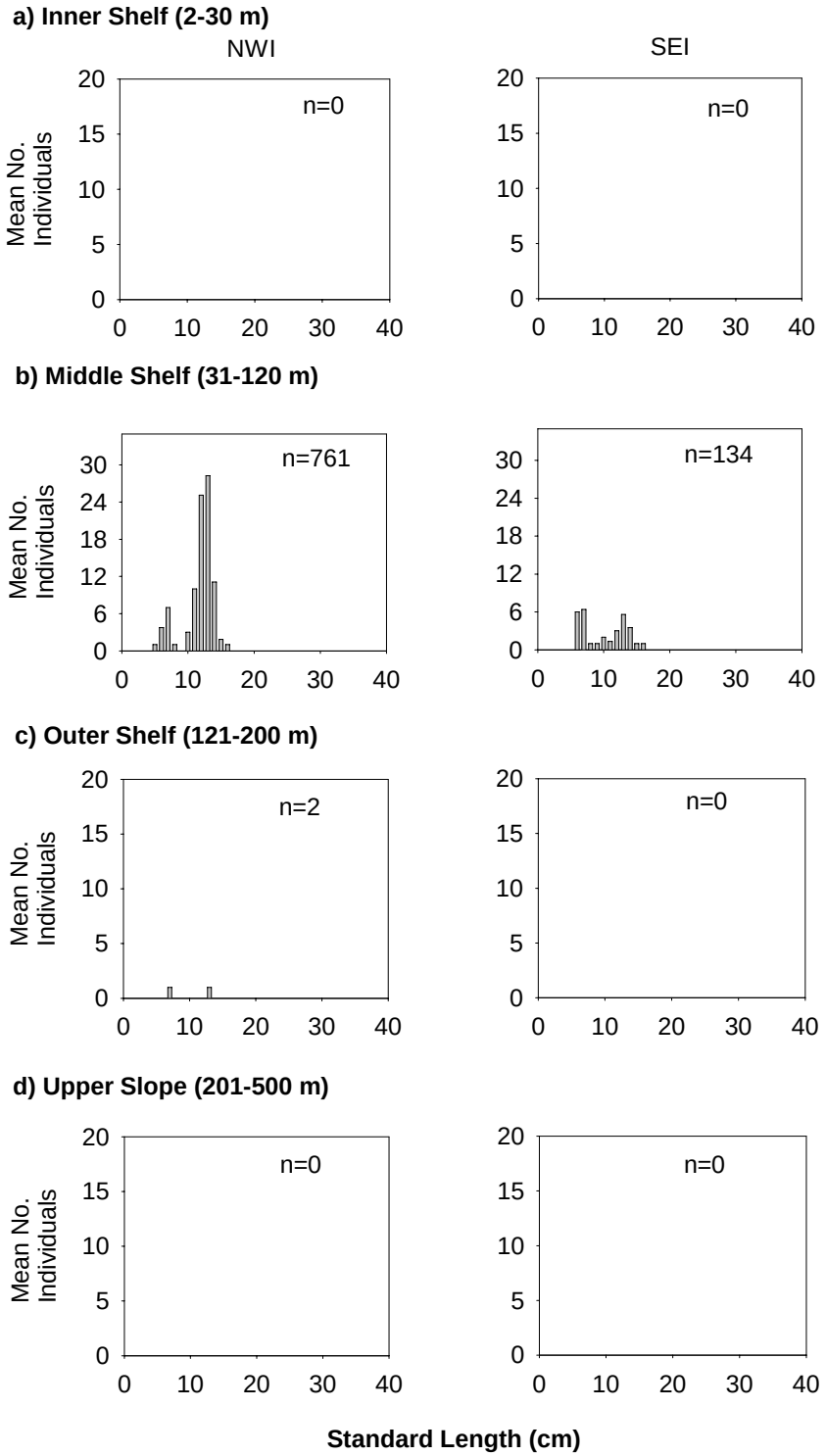
B28. Length-frequency distribution (mean number of fish per size class) of Pacific sanddab (*Citharichthys sordidus*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



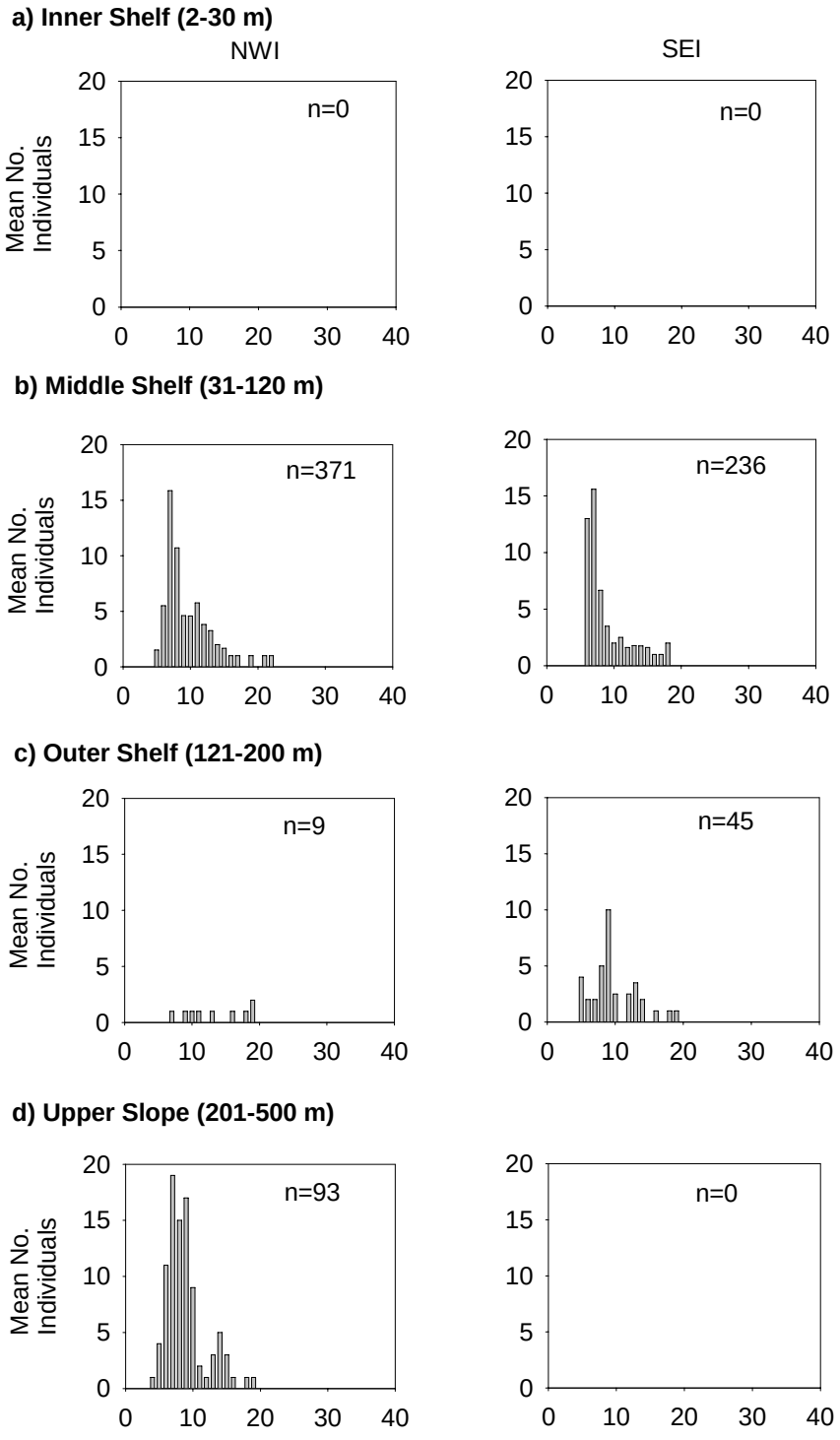
B29. Length-frequency distribution (mean number of fish per size class) of stripetail rockfish (*Sebastes saxicola*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



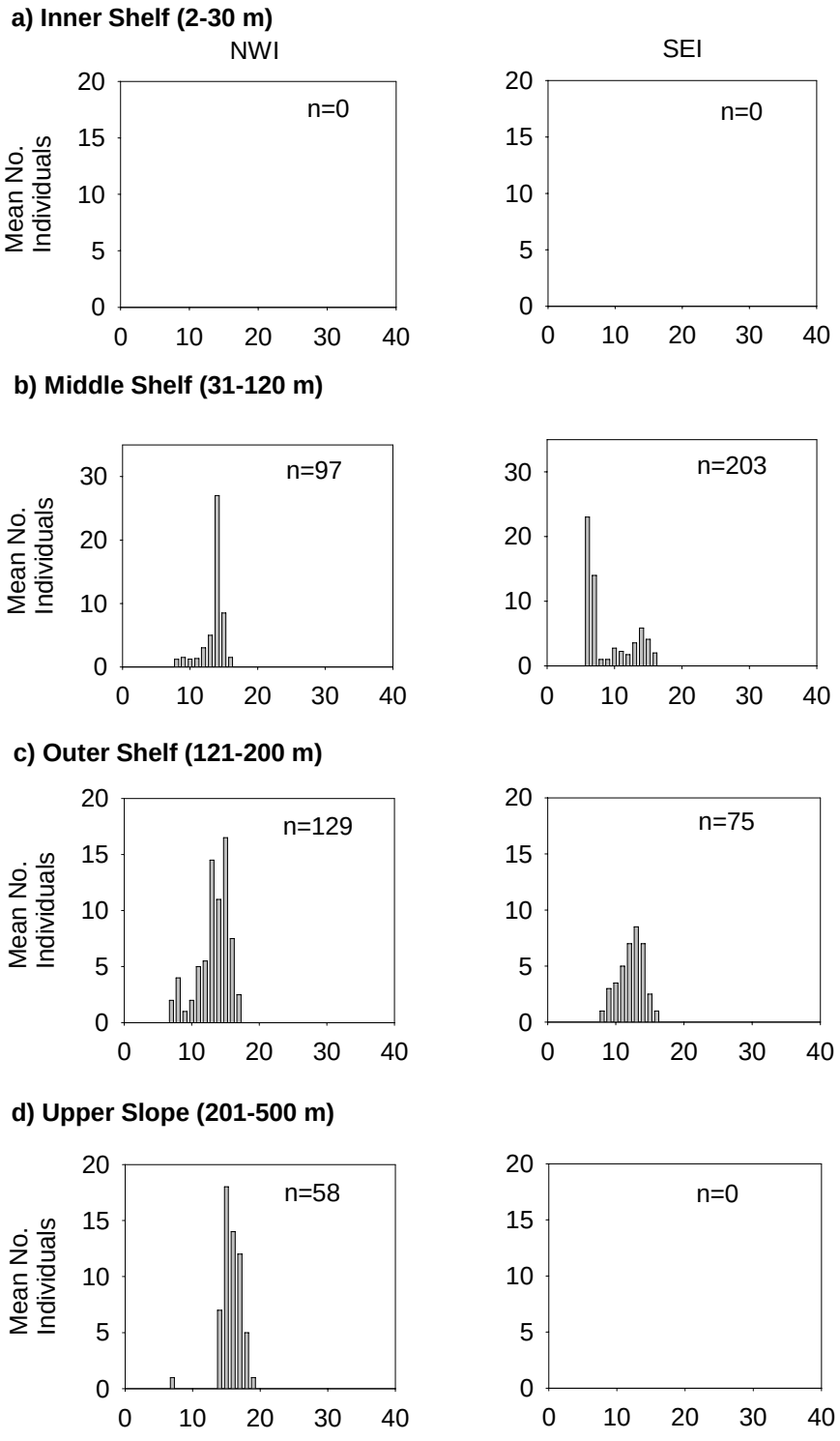
B30. Length-frequency distribution (mean number of fish per size class) of halfbanded rockfish (*Sebastes semicinctus*) collected at southern California islands by depth and regional subpopulations, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



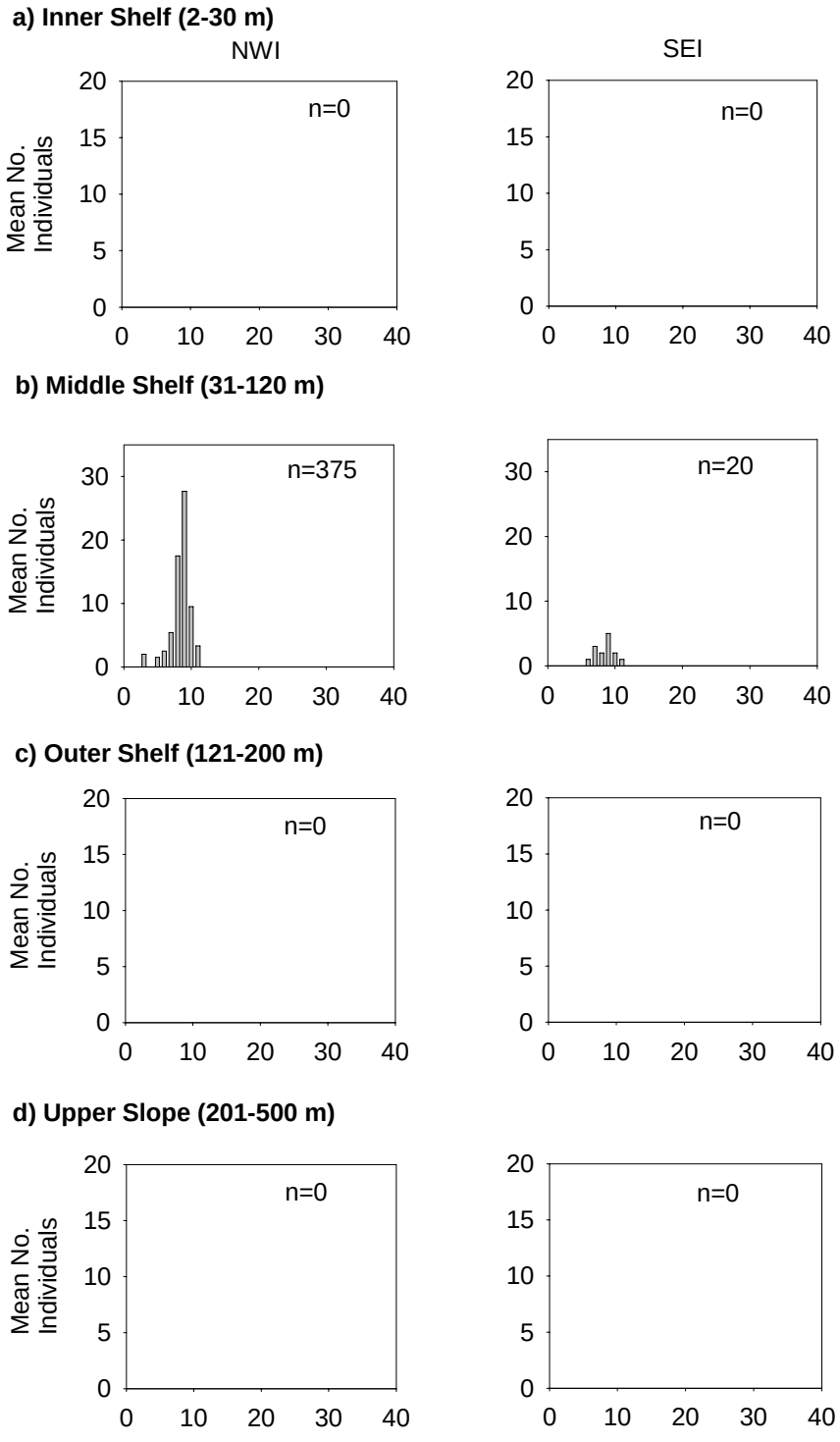
B31. Length-frequency distribution (mean number of fish per size class) of longspine combfish (*Zaniolepis latipinnis*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Island; SEI= Southeast Channel Island.



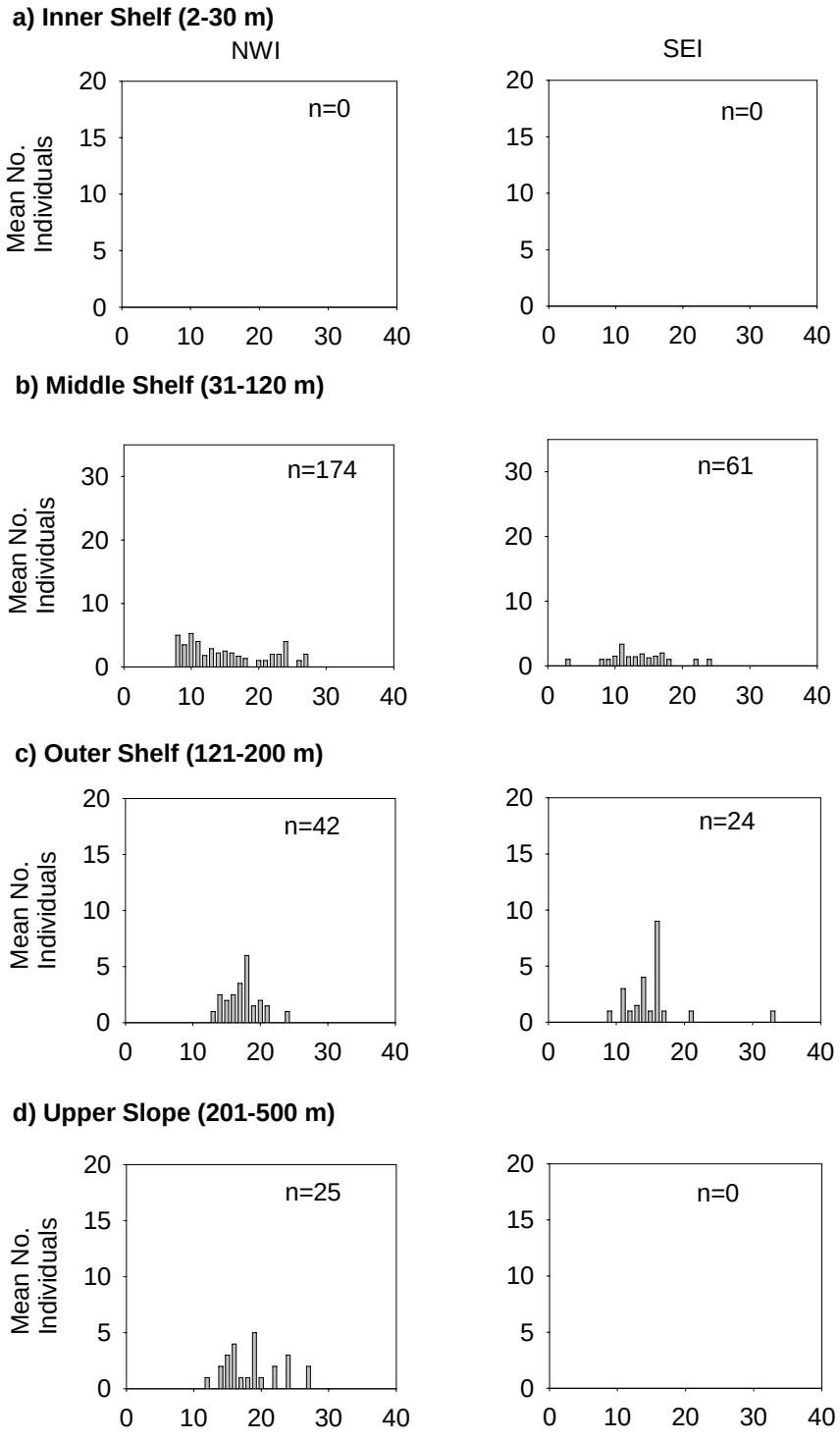
B32. Length-frequency distribution (mean number of fish per size class) of Dover sole (*Microstomus pacificus*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI= Southwest Channel Islands.



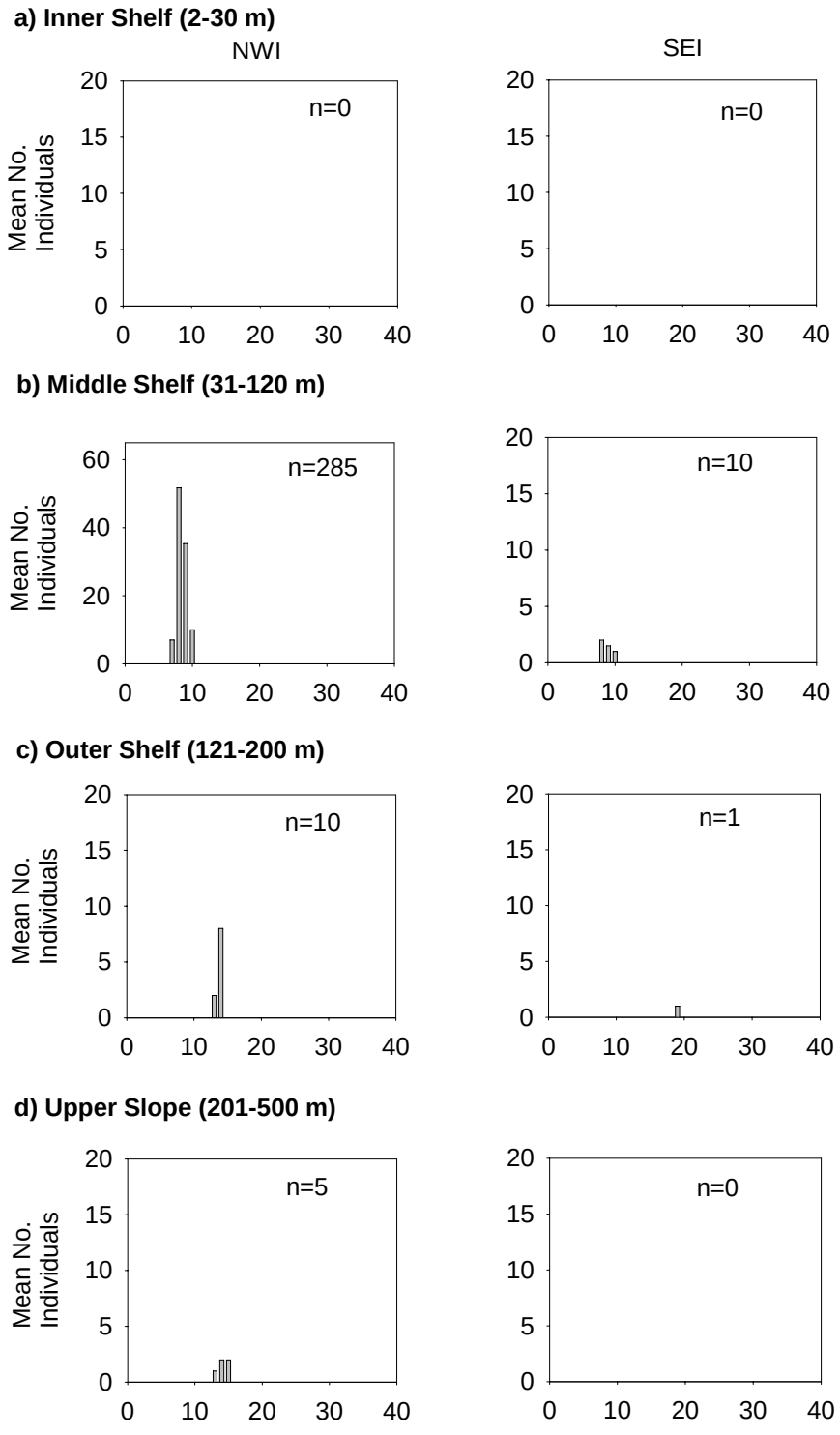
B33. Length-frequency distribution (mean number of fish per size class) of shortspine combfish (*Zaniolepis frenata*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Island; SEI = Southwest Channel Island.



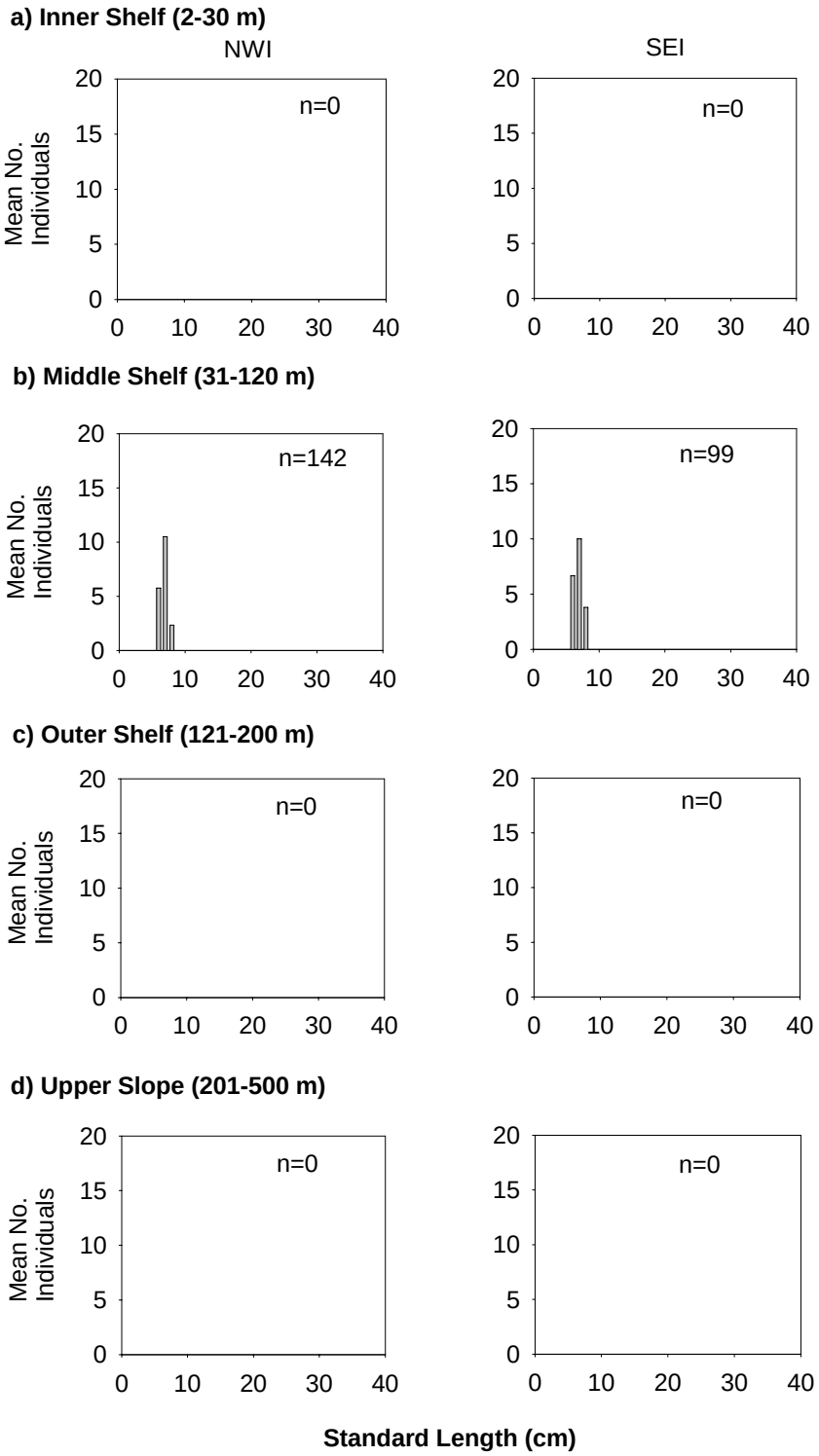
B34. Length-frequency distribution (mean number of fish per size class) of speckled sanddab (*Citharichthys stigmaeus*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



B35. Length-frequency distribution (mean number of fish per size class) of plainfin midshipman (*Porichthys notatus*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



B36. Length-frequency distribution (mean number of fish per size class) of shortbelly rockfish (*Sebastes jordani*) collected at southern California islands by depth and regional subpopulation. n=Number of fish measured. NWI = Northwest Channel Islands; SEI = Southwest Channel Islands.



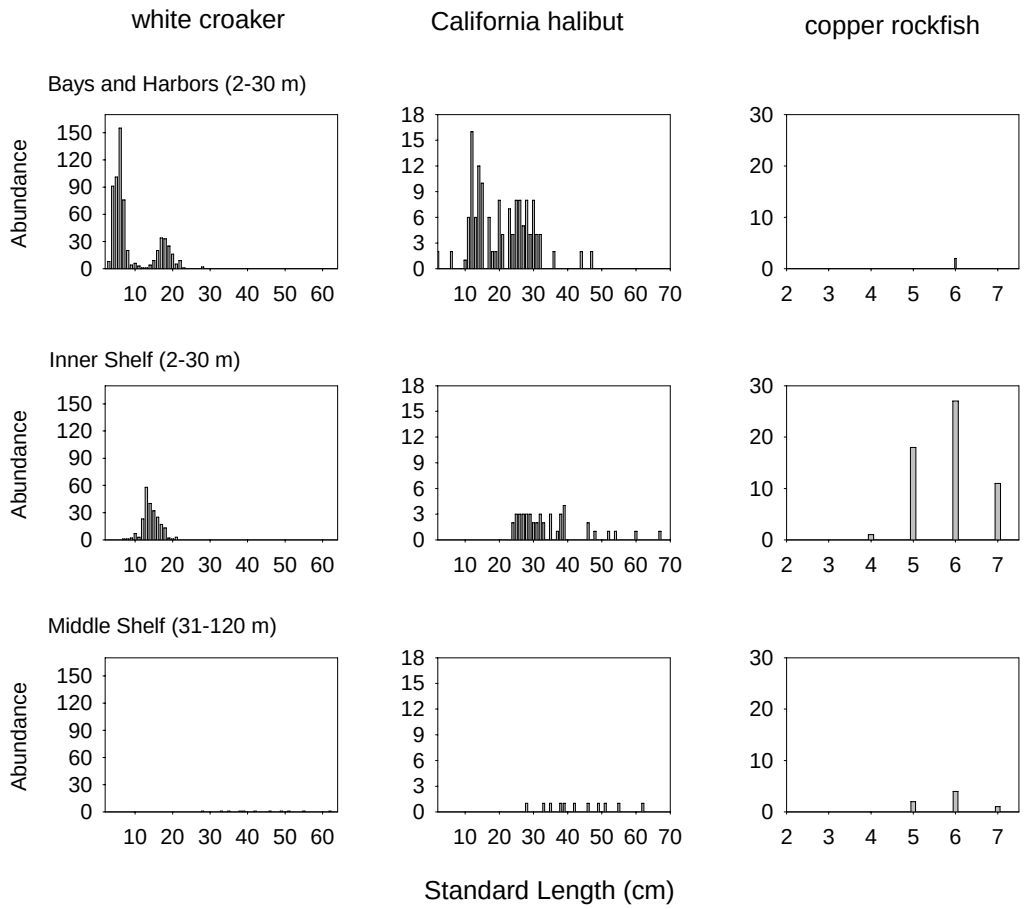
B37. Length-frequency distribution (mean number of fish per size class) of yellowchin sculpin (*Icelinus quadriseratus*) collected at southern California islands by depth and regional subpopulation, July-October 2003. n=Number of fish measured. NWI = Northwest Channel Islands; SEI= Southwest Channel Islands.

B38. Abundance by size class of critical and abundant commercial and recreational fish on the southern California shelf and upper slope, July-October 2003.

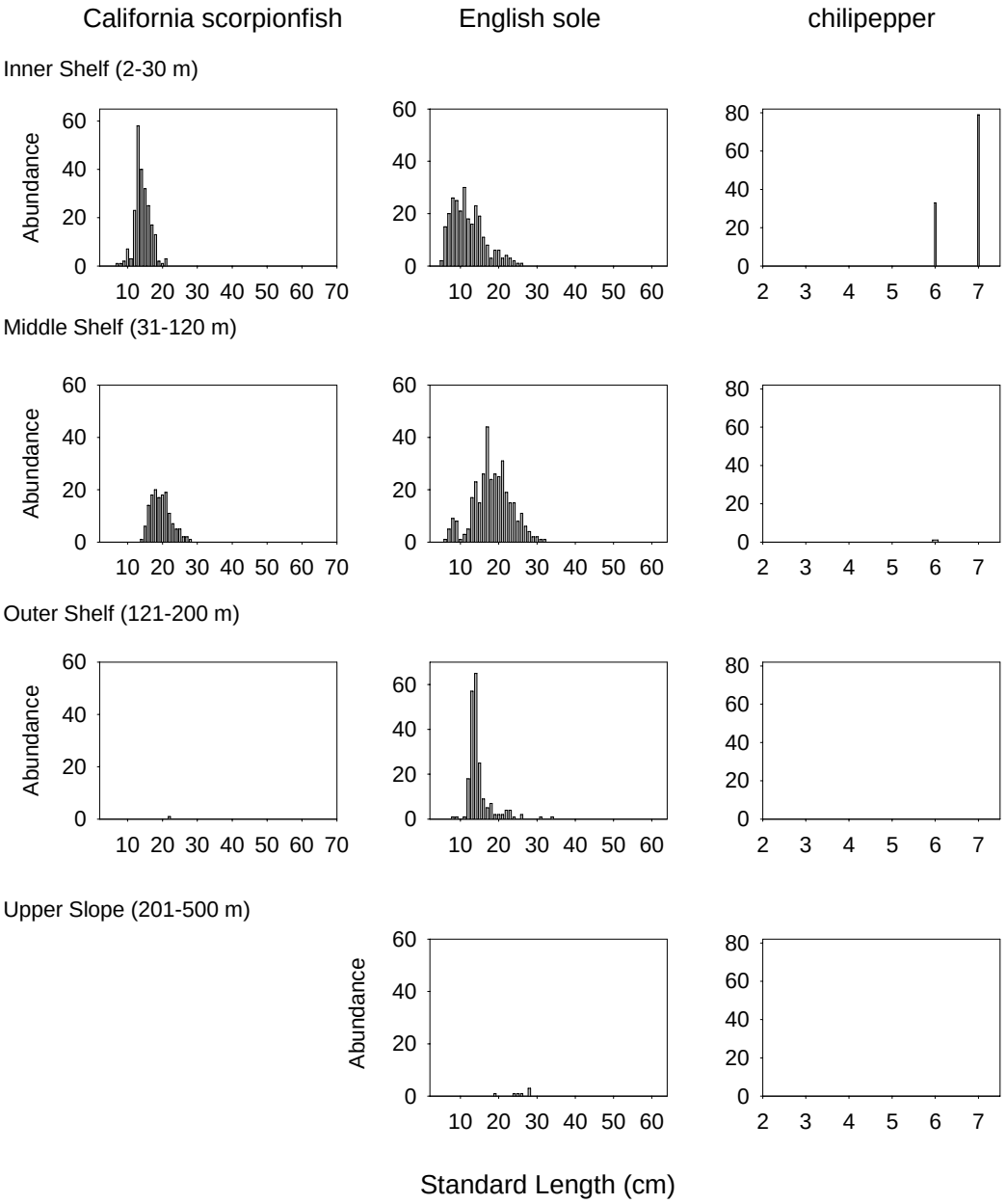
	California halibut				California scorpionfish				chilipepper					copper rockfish				cowcod				Dover sole		
size class	Bays and Harbors	Inner shelf	Middle Shelf (31-120 m)	total	Inner shelf	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	total	Inner shelf	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Bays and Harbors	Inner shelf	Middle Shelf (31-120 m)	total	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Inner shelf	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)
2	2			2																				
3																								
4															1		1							1
5															18	2	20	1			1		8	9
6	2			2					33	1			34	2	27	4	33	12			12		117	33
7									79				79		11	1	12	38	2		40		366	66
8									71	9			80					10			10	1	283	39
9									3	18			21					3			3	1	147	36
10	1			1						11			11									1	89	67
11	6			6						3	2		5						1	1	2	1	62	39
12	16			16						4	1		5										49	21
13	6			6						4			4										52	26
14	12			12	1	1		2														1	41	35
15	10			10	3	6		9			1		1										25	33
16					2	14		16												1	1		16	21
17	6			6	1	18		19			1	1	2										11	9
18	2			2	1	20		21															13	11
19	2			2	1	17		18															7	10
20	8			8	1	18		19															2	3
21	4			4	2	19		21															4	3
22					3	11	1	15															3	
23	7			7	2	7		9																
24	4	2		6	2	5		7			1		1											
25	8	3		11	1	5		6															1	1
26	8	3		11	1	2		3																
27	5	3		8		2		2																
28	8	3	1	12		1		1																
29	4	3		7																				
30	8	2		10																				
31	4	2		6																				
32	4	3		7																				
33		2	1	3																				
34																								
35		3	1	4																				
36	2			2																				
37		1		1																				
38		3	1	4																				
39		4	1	5																				
42			1	1																				
44	2			2																				
46		2	1	3																				
47	2			2																				
48		1		1																				
49			1	1																				
51			1	1																				
52		1		1																				
54		1		1																				
55			1	1																				
60		1		1																				
62			1	1																				
67		1		1																				
total:	143	44	11	198	21	146	1	168	186	50	6	1	243	2	57	7	66	64	3	2	69	5	1296	463

B38. (continued)

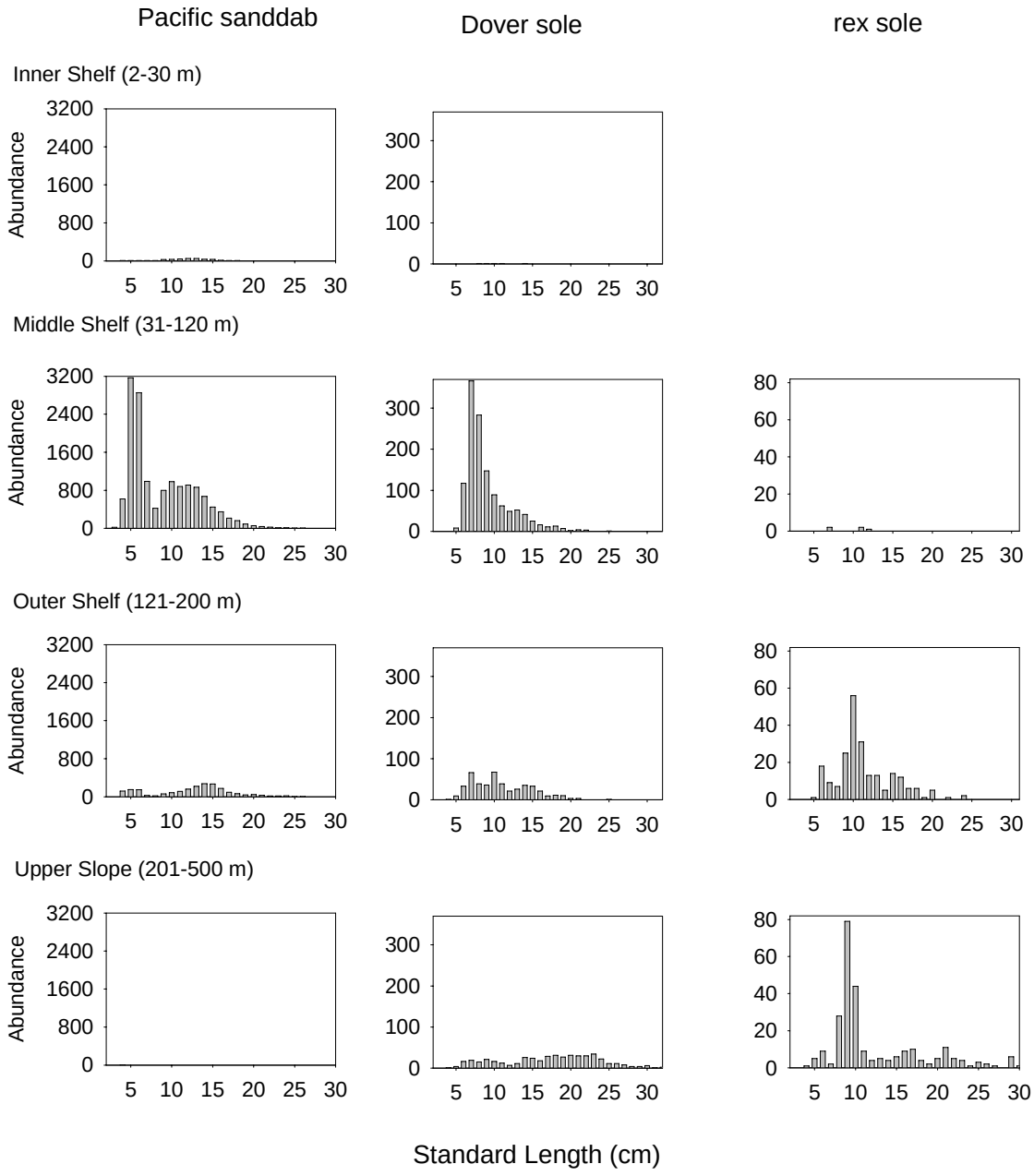
	Dover sole (cont.)		English sole					Pacific sanddab					rex sole				shortbelly rockfish				white croaker			
size class	Upper slope (200-500 m)	total	Inner shelf	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Inner shelf	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Middle Shelf (31-120 m)	Outer Shelf (121-200 m)	Upper slope (200-500 m)	total	Bays and Harbors	Inner shelf	Middle Shelf (31-120 m)	total
2									1			1												
3									21	3	1	25									8			8
4	1	2						5	619	116	4	744			1	1					91			91
5	4	21	2				2	5	3167	151	2	3325		1	5	6					101			101
6	16	166	15	1			16	6	2855	147	1	3009		18	9	27					155			155
7	19	451	20	5			25	5	989	24		1018	2	9	2	13	16			16	76	1		77
8	15	338	26	9	1		36	6	422	17		445		7	28	35	164			164	20	1		21
9	21	205	25	8	1		34	28	800	59		887		25	79	104	113	3		116	4	2		6
10	16	173	21	1			22	30	981	84		1095		56	44	100	11	1		12	6	7		13
11	12	114	30	3	1		34	41	880	111	2	1034	2	31	9	42					3	3		6
12	7	77	18	5	18		41	50	913	158		1121	1	13	4	18					1	23		24
13	11	89	16	17	57		90	49	864	216	2	1131		13	5	18		2	1	3	1	58	1	60
14	26	103	23	23	65		111	35	672	276	2	985		5	4	9		9	4	13	4	40		44
15	24	82	19	15	25		59	29	448	268	2	747		14	6	20		1	3	4	9	32		41
16	18	55	11	26	9		46	11	350	176	3	540		12	9	21			2	2	20	25		45
17	29	49	8	44	5		57	5	214	95		314		6	10	16		3	2	5	34	17		51
18	31	55	3	24	7		34	4	161	63		228		6	4	10		1	1	2	33	13		46
19	27	44	6	26	2	1	35	1	89	37	2	129		1	2	3		1		1	25	2	2	29
20	31	36	6	25	2		33	1	57	42	2	102		5	5	10					16	1	1	18
21	30	37	3	31	2		36		36	27	1	64			11	11					5	3		8
22	30	33	4	19	4		27		23	13	1	37		1	5	6					9			9
23	34	34	3	15	4		22		12	13		25			4	4					1			1
24	22	22	2	15	1	1	19		10	19	1	30		2	1	3								
25	11	13	1	8		1	10		4	5	1	10			3	3								
26	11	11	1	11	2	1	15		4	4		8			2	2								
27	8	8		6			6		1	1		2			1	1								
28	4	4		4		3	7		2			2									2			2
29	4	4		2			2								6	6								
30	6	6		2			2								1	1								
31	1	1		1	1		2								3	3								
32	2	2		1			1																	
33																								
34					1		1																	
35																								
36	1	1																						
37																								
38																								
39																								
42																								
44																								
46																								
47																								
48																								
49																								
51																								
52																								
54																								
55																								
60																								
62																								
67																								
	472	2236	263	347	208	7	825	311	14595	2125	27	17058	5	225	263	493	304	21	13	338	624	228	4	856



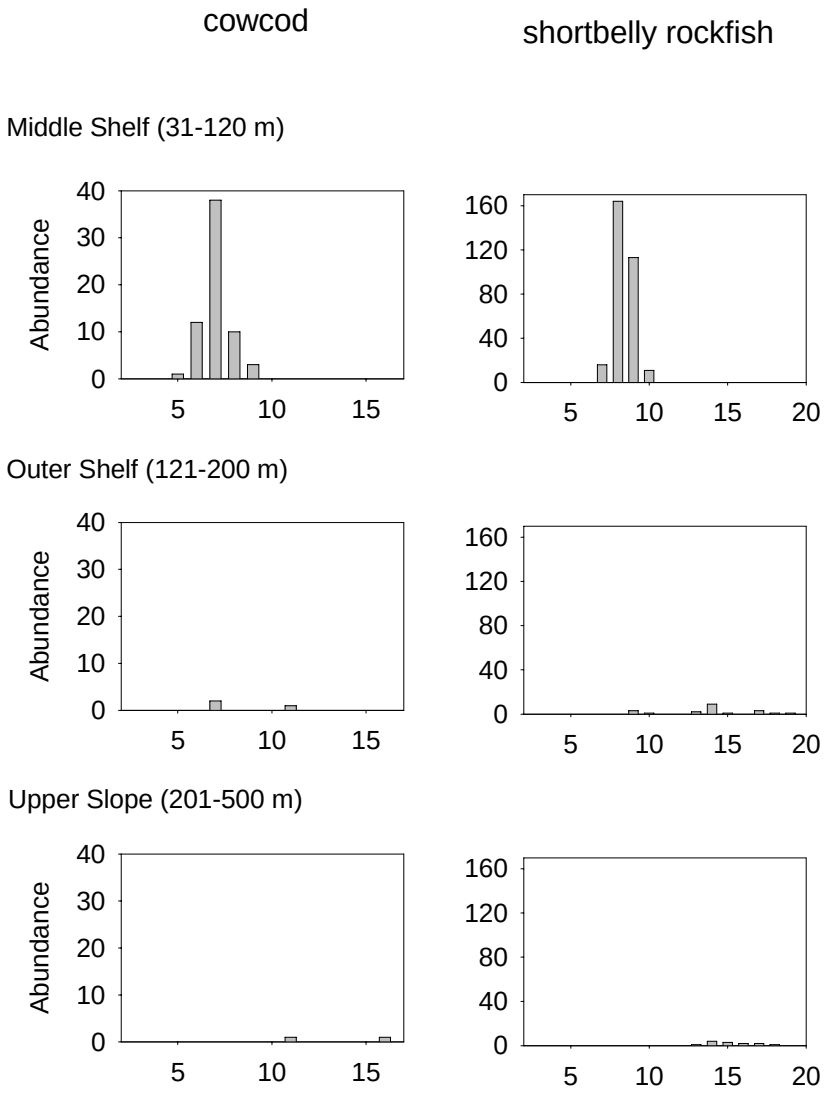
B39. Length frequency distribution of white croaker (*Genyonemus lineatus*), California halibut (*Paralichthys californicus*), and copper rockfish (*Sebastes caurinus*).



B40. Length frequency distribution of California scorpionfish (*Scorpaena guttata*), English sole (*Parophrys vetulus*), and chilipepper (*Sebastes goodei*).



B41. Length frequency distribution of Pacific sanddab (*Citharichthys sordidus*), Dover sole (*Microstomus pacificus*), and rex sole (*Glyptocephalus zachirus*)



B42. Length frequency distribution of cowcod (*Sebastes levis*) and shortbelly rockfish (*Sebastes jordani*).