

Appendix B1. Compliance with field manual guidelines by agency in the regional survey of the mainland shelf of southern California, July-August 1994.

Category	Guideline ^a	Agency				
		A	B	C	D	E
Trawl Equipment						
Sample Size (n)	-	3	2	2	2	2
Life-saving						
Life jackets	Yes	Yes	Yes	Yes	Yes	Yes
Life rings	Yes	Yes	Yes	Yes	Yes	Yes
Man-overboard pole	Yes	Yes	Yes	Yes	Yes	Yes
Fire extinguishers	Yes	Yes	Yes	Yes	Yes	Yes
First-aid kits	Yes	Yes	Yes	Yes	Yes	Yes
Navigation						
GPS	Yes	Yes	Yes	Yes ^b	Yes	Yes
Loran	Yes	Yes	Yes	Yes	Yes	Yes
Radar	Yes	Yes	Yes	Yes	Yes	Yes
Fathometer	Yes	Yes	Yes	Yes	Yes	Yes
Trawl Equipment						
Bridle length (m)	22.9	23.2	Yes	Yes	Yes	Yes
Otter board dimensions (cm)						
Width	51	43	55	48	48	Yes
Length	76	Yes	Yes	Yes	79	Yes
Headrope flotation	Yes	Yes	Yes	Yes	Yes	Yes
Footrope chain	Yes	Yes	Yes	Yes	Yes	Yes
Net headrope length (m)	7.6	Yes	7.3	Yes	Yes	Yes
Net mesh size (side length) (cm)						
Body	4.1	3.5	3.8	4.4	Yes	3.8
Cod-end liner	1.3	Yes	Yes	Yes	Yes	Yes
Trawl Operations						
Proper deployment	Yes	Yes	Yes	Yes	Yes	Yes
Proper wire scope (varies with depth)	Yes	Yes	Yes	Yes	Yes	Yes
Bottom time (min)	10	Yes	Yes	Yes	Yes	Yes
Qualified crew	Yes	Yes	Yes	Yes	Yes	Yes
Proper trawl acceptance	Yes	Yes	Yes	Yes	Yes	Yes
Completed trawl cover sheet	Yes	Yes	Yes	Yes	Yes	Yes
Catch Equipment						
Sample Size (n)	-	4	2	3	1	2
Catch Sorting						
Removed all organisms from container	Yes	Yes	Yes	Yes	Yes	Yes
Sorting buckets/trays	Yes	Yes	Yes	Yes	Yes	Yes
Holding tank	Optional	Yes	Yes	Yes	Yes	Yes
Debris Assessment						
Complete debris data sheets	Yes	Yes	Yes	Yes	Yes	Yes
Species Identifications						
Field guides and aids						
Miller and Lea (1972)	Yes	Yes	Yes	Yes	Yes	Yes
Eschmeyer <i>et al.</i> (1983)	Yes	Yes	50%	Yes	Yes	Yes
Field identification notebook	Yes	Yes	Yes	Yes	Yes	Yes

Appendix B2. Species of fish and invertebrates that were misidentified at least once in presurvey, survey, or postsurvey audits for the regional survey of the mainland shelf of southern California, July-August 1994.

Incorrect		Correct		QC Check
Scientific Name	Common Name	Scientific Name	Common Name	
FISH				
<i>Chitonotus pugentensis</i>	roughback sculpin	<i>Icelinus tenuis</i>	spotfin sculpin	Voucher
<i>Citharichthys fragilis</i>	gulf sanddab	<i>Citharichthys sordidus</i>	Pacific sanddab	Voucher
<i>Citharichthys sordidus</i>	Pacific sanddab	<i>Citharichthys fragilis</i>	gulf sanddab	Voucher
<i>Heterodontus francisci</i>	horn shark	<i>Cephaloscyllium vetriosum</i>	swell shark	Voucher
<i>Lycodopsis pacifica</i>	blackbelly eelpout	<i>Lycodes cortezianus</i>	bigfin eelpout	Voucher
<i>Raja binoculata</i>	big skate	<i>Raja inornata</i>	California skate	Voucher
<i>Rathbunella hypoplecta</i>	stripedfin roquil	<i>Rathbunella alleni</i>	rough ronquil	Voucher
<i>Rhacochilus vacca</i>	pile perch	<i>Rhacochilus toxotes</i>	rubberlip seaperch	Voucher
<i>Sebastes chlorostictus</i>	greenspotted rockfish	<i>Sebastes constellatus</i>	starry rockfish	Voucher
<i>Sebastes chlorostictus</i>	greenspotted rockfish	<i>Sebastes elongatus</i>	greenstriped rockfish	Voucher
<i>Sebastes chlorostictus</i>	greenspotted rockfish	<i>Sebastes rosenblatti</i>	greenblotched rockfish	Voucher
<i>Sebastes crameri</i>	darkblotched rockfish	<i>Sebastes miniatus</i>	vermillion rockfish	Voucher
<i>Sebastes dallii</i>	calico rockfish	<i>Sebastes semicinctus</i>	halfbanded rockfish	Voucher
<i>Sebastes dallii</i>	calico rockfish	<i>Sebastes eos</i>	pink rockfish	Voucher
<i>Sebastes dallii</i>	calico rockfish	<i>Sebastes constellatus</i>	starry rockfish	Voucher
<i>Sebastes hopkinsi</i>	squarespot rockfish	<i>Sebastes ovalis</i>	speckled rockfish	Voucher
<i>Sebastes hopkinsi</i>	squarespot rockfish	<i>Sebastes diploproa</i>	splitnose rockfish	Voucher
<i>Sebastes mystinus</i>	blue rockfish	<i>Sebastes caurinus</i>	copper rockfish	Voucher
<i>Sebastes rosenblatti</i>	greenblotched rockfish	<i>Sebastes eos</i>	pink rockfish	Voucher
<i>Sebastes</i> sp.	rockfish unid.	<i>Sebastes constellatus</i>	starry rockfish	Voucher
<i>Sebastes</i> sp.	rockfish unid.	<i>Sebastes diploproa</i>	splitnose rockfish	Voucher
<i>Sebastes</i> sp.	rockfish unid.	<i>Sebastes eos</i>	pink rockfish	Voucher
<i>Sebastes</i> sp.	rockfish unid.	<i>Sebastes rosaceus</i>	rosy rockfish	Voucher
----	----	<i>Agonopsis sterletus</i>	southern spearnose poacher	Presurvey
----	----	<i>Bathyagonus pentacanthus</i>	bigeye poacher	Presurvey
----	----	<i>Chitonotus pugentensis</i>	roughback sculpin	Presurvey
----	----	<i>Citharichthys</i> sp.	sanddab unid	Presurvey
----	----	<i>Citharichthys xanthostigma</i>	longfin sanddab	Presurvey
----	----	<i>Eopsetta jordani</i>	petrale sole	Presurvey
----	----	<i>Icelinus quadriseriatus</i>	yellowchin sculpin	Presurvey
----	----	<i>Icelinus tenuis</i>	spotfin sculpin	Presurvey
----	----	<i>Plectobranchnus evides</i>	bluebarred prickleback	Presurvey
----	----	<i>Pleuronichthys ritteri</i>	spotted turbot	Presurvey
----	----	<i>Pleuronichthys verticalis</i>	hornyhead turbot	Presurvey
----	----	<i>Sebastes elongatus</i>	greenstriped rockfish	Presurvey
----	----	<i>Sebastes rosenblatti</i>	greenblotched rockfish	Presurvey
----	----	<i>Sebastes</i> sp.	rockfish unid.	Presurvey/in-survey
----	----	<i>Sebastes eos</i>	pink rockfish	Presurvey

Appendix B2 (Continued)

Incorrect		Correct		QC Check
Scientific Name	Common Name	Scientific Name	Common Name	
INVERTEBRATES				
		Asciacea unid.	tunicate unid.	In-survey
		Hexactinellida unid.	glass sponge unid.	In-survey
		Hirudinea unid.	leech unid.	In-survey
		Ophiuroidea unid.	brittlestar unid.	In-survey
		Polyplacophora unid.	chiton unid.	In-survey
		Decapoda unid.	decapod unid.	In-survey
		Amphiuridae unid.	brittlestar unid.	In-survey
		Xanthidae unid.	mud crab unid.	In-survey
		<i>Acanthoptilum</i> sp.	trilobed seapen unid.	In-survey
		<i>Aglaophenia</i> sp.	feather hydroid unid.	In-survey
		<i>Astrobdella</i> sp.	leech unid.	In-survey
		<i>Astropecten</i> sp.	sand star unid.	In-survey
		<i>Balanus</i> sp.	acorn barnacle unid.	In-survey
		<i>Cancer</i> sp.	rock crab unid.	In-survey
		<i>Loxorhynchus</i> sp.	spider crab unid.	In-survey
		<i>Luidia</i> sp.	sand star unid.	In-survey
		<i>Nassarius</i> sp.	nassa unid.	In-survey
		<i>Paguristes</i> sp.	hermit unid.	In-survey
		<i>Parastichopus</i> sp.	sea cucumber unid.	In-survey
		<i>Polyandrocarpa</i> sp.	tunicate unid.	In-survey
		<i>Pseudocnus</i> sp.	sea cucumber unid.	In-survey
		<i>Styela</i> sp.	sea squirt unid.	In-survey
		<i>Virgularia</i> sp.	sea pen unid.	In-survey
<i>Amphiodia psara</i>		<i>Amphiodia psara</i>	brittlestar	Voucher
(= <i>occidentalis</i>)	brittlestar			
<i>Amphipholis pugetana</i>	brittlestar	<i>Amphipholis squamata</i>	brittlestar	Voucher
----	----	<i>Astropecten ornatissimus</i>	sand star	Presurvey
<i>Chorilia</i> sp.		<i>Chorilia longipes</i>	longhorn crab	Presurvey
<i>Crangon nigricauda</i>	blacktail bay shrimp	<i>Crangon nigromaculata</i>	blackspotted bay shrimp	Voucher
		<i>Crangon</i> sp.	bay shrimp unid.	Presurvey
		Diogenidae unid.	hermit crab unid.	Presurvey
<i>Fusinus monksae</i>	spindle	<i>Fusinus barbarensis</i>	Santa Barbara spindle	Voucher
<i>Luidia asthenosoma</i>	fringed sand star	<i>Luidia armata</i>	mosaic sand star	Voucher
<i>Luidia foliolata</i>	gray sand star	<i>Luidia armata</i>	mosaic sand star	Voucher
<i>Luidia</i> sp.	sand star unid.	<i>Luidia armata</i>	mosaic sand star	Voucher
<i>Luidia asthenosoma</i>	fringed sand star	<i>Luidia foliolata</i>	gray sand star	Voucher
		<i>Luidia</i> sp.	sand star unid.	Presurvey
----	----	<i>Neocrangon resima</i>	flagnose bay shrimp	Presurvey
----	----	<i>Neocrangon zaca</i>	shortkeel bay shrimp	Presurvey
<i>Octopus rubescens</i>	red octopus	<i>Octopus californicus</i>	orange bigeye octopus	Voucher
----	----	<i>Octopus californicus</i>	orange bigeye octopus	Presurvey
<i>Octopus californicus</i>	orange bigeye octopus	<i>Octopus rubescens</i>	red octopus	Voucher
<i>Octopus</i> sp.	octopus unid.	<i>Octopus rubescens</i>	red octopus	Voucher

Appendix B2 (Continued)

Incorrect		Correct		QC Check
Scientific Name	Common Name	Scientific Name	Common Name	
INVERTEBRATES (Continued)				
<i>Octopus rubescens</i>	red octopus	<i>Octopus veligero</i>		Voucher
		Ophiuroidea unid.	brittlestar unid.	Presurvey
		Paguridae unid.	hermit crab unid.	Presurvey
		<i>Paguristes</i> sp.	hermit crab unid.	Presurvey
<i>Parastichopus</i> sp.		<i>Parastichopus californicus</i>	California sea cucumber	Voucher
<i>Terabratalia transversa</i>	lamp shell	<i>Terabratalia occidentalis</i>	ribbed lampshell	Voucher
<i>Pennatulacea</i>	sea pen unid.	<i>Virgularia bromleyi</i>	sea pen	Voucher
<i>Micropanope latimanus</i>	mud crab	Xanthidae	mud crab unid.	Voucher

sp. = Species.

unid. = Unidentified.

"----" = Situations where field worker asked QA specialist the name of the species.

Appendix B1 (Continued)

Category	Guideline ^a	Agency				
		A	B	C	D	E
Field guides and aids (continued)						
Other	Optional	Yes	Yes	Yes	Yes	Yes
Field identification tool kit	Yes	Yes	Yes	Yes	Yes	Yes
Qualified crew	Yes	Yes	Yes	Yes	Yes	Yes
Accurate identifications	Yes	Yes	Yes	Yes	Yes	Yes
Fish	Yes	Yes	Yes	Yes	Yes	Yes
Invertebrates	Yes	Yes	Yes	Yes	Yes	Yes
Anomalies	Yes	Yes	NA	Yes	Yes	Yes
Data reporting						
Fish species sheet	Yes	Yes	Yes	Yes	Yes	Yes
Invertebrate species sheet	Yes	Yes	Yes	Yes	Yes	Yes
Anomalies (fish/invert sheets)	Yes	Yes	Yes	Yes	Yes	Yes
FID/QC vouchers	Yes	Yes	Yes	Yes	Yes	Yes
Equipment						
Wide-mouth jars	Yes	Yes	Yes	Yes	Yes	Yes
Plastic bags	Yes	Yes	Yes	Yes	Yes	Yes
10% buffered formalin	Yes	Yes	Yes	Yes	Yes	Yes
Slitting gut cavity	Yes	Yes	Yes	Yes	Yes	Yes
Proper labeling	Yes	Yes	Yes	Yes	Yes	Yes
Proper photos	Yes	Yes	Yes	Yes	Yes	Yes
Complete photograph log	Yes	Yes	Yes	Yes	Yes	Yes
Complete FID/QC sheets	Yes	Yes	Yes	Yes	Yes	Yes
Length Measurement	Yes	Yes	Yes	Yes	Yes	Yes
Measuring boards	Yes	Yes	Yes	Yes	Yes	Yes
Proper length measurements	Yes	Yes	Yes	Yes	Yes	Yes
Proper size classes	Centimeter	Yes	Yes	Yes	Yes	Yes
Bony fish	BSL	Yes	Yes	Yes	Yes	Yes
Sharks, rays	TL	Yes	NA	Yes	Yes	Yes
Sting rays	WS	Yes	NA	NA	NA	NA
Complete size class sheets	Yes	Yes	Yes	Yes	Yes	Yes
Biomass Measurement						
Spring scales (kg)						
Small	3	0.25, 2	2	0.5, 1	1, 2	2
Large	15	33	5	7, 25	22	5
Scale calibration	Yes	Yes	Yes	Yes	Yes	Yes
Tare bucket weight	Weigh	Yes	Yes	Yes	Yes	Yes
Proper measurements						
Species > 0.1 kg	Bulk Weight	Yes	Yes	Yes	Yes	Yes
Species < 0.1 kg	Composite	Individual (g)	Yes	Yes	Yes	Yes
Proper invertebrate counts	Yes	Yes	Yes	Yes	Yes	Yes
from weights	Yes	Yes	Yes	Yes	Yes	Yes
Data reporting						
Fish species sheet	Yes	Yes	Yes	Yes	Yes	Yes
Invertebrate species sheet	Yes	Yes	Yes	Yes	Yes	Yes

Appendix B1 (Continued)

Category	Guideline ^a	Agency				
		A	B	C	D	E
Tissue Sampling	Yes	Yes	Yes	Yes	Yes	Yes
Trawl acceptability	Yes	Yes	Yes	Yes	Yes	Yes
Choice of species	Yes	Yes	Yes	Yes	Yes	Yes
Freezing specimens	Yes	Yes	Yes	Yes	Yes	Yes
Plastic bags	Yes	Yes	Yes	Yes	Yes	Yes
Proper sample labels	Yes	Yes	Yes	Yes	Yes	Yes
Complete tissue sample log	Yes	Yes	Yes	Yes	Yes	Yes

^a Condition or values recommended in SCBPP (1994b).

^b In use after 7/28/94.

n = Number of observations; GPS = Global Positioning System (standard); Yes = In compliance;
 FID/QC = Further identification/quality control; BSL = Board Standard Length; WS = Wingspan;
 NA = Not applicable.