

**Supplementary material**

**Overlap in fish assemblages observed using pelagic and benthic baited remote underwater video stations**

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**Table S1. Species observed by benthic, pelagic and combination Baited Remote Underwater Video Stations, which were categorised as demersal (D) or pelagic (P)**

Numbers represent the number of replicates (of a potential 18 replicates, 17 for PS) that species was seen on: BS, benthic single; BC, benthic combination; PS, pelagic single; and PC, pelagic combination

<b>Class</b>	Common name	Category	BS	BC	PS	PC	Number of benthic replicates	Number of pelagic replicates	Total replicates where observed
<b>Family</b>									
Species/Taxonomic authority									
<b>Cetacea</b>									
<b>Delphinidae</b>									
<i>Tursiops</i> sp.		P	1				1	0	1
<b>Condriichthyans</b>									
<b>Carcharhinidae</b>									
<i>Carcharhinus brachyurus</i> (Günther 1870)	bronze whaler	D	2			1	2	1	3
<b>Dasyatidae</b>									
<i>Bathytoshia brevicaudata</i> (Hutton 1875)	smooth stingray	D	6	5		1	11	1	12
<b>Heterodontidae</b>									
<i>Heterodontus portusjacksoni</i> (Meyer 1793)	Port Jackson shark	D	10	13		2	23	2	25
<b>Hexanchidae</b>									
<i>Notorynchus cepedianus</i> (Péron 1807)	broadnose seven gill shark	D		1			1	0	1
<b>Myliobatidae</b>									
<i>Myliobatis tenuicaudatus</i> Hector 1877	southern eagle ray	D	2	2			4	0	4
<b>Rajidae</b>									
<i>Dentiraja flindersi</i> Last & Gledhill 2008	pygmy thornback skate	D	1				1	0	1
<b>Rhinobatidae</b>									
<i>Aptychotrema vincentiana</i> (Haacke 1885)	western shovelnose ray	D		1			1	0	1
<i>Trygonorrhina dumerilii</i> (Castelnau 1873)	southern fiddler ray	D	5	5			10	0	10
<b>Sphyrinidae</b>									

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<b>Family</b>									
Species/Taxonomic authority									
<i>Sphyrna zygaena</i> (Linnaeus 1758)	smooth hammerhead	P			1	1	0	2	2
<b>Triakidae</b>									
<i>Mustelus antarcticus</i> Günther 1870	gummy shark	D	8	7			15	0	15
<b>Teleost</b>									
<b>Apogonidae</b>									
<i>Siphamia cephalotes</i> (Castelnau 1875)	Wood's siphonfish	D	5	5			10	0	10
<b>Aracnidae</b>									
<i>Aracana aurita</i> (Shaw 1798)	Shaw's cowfish	D	1	1			2	0	2
<i>Aracana ornata</i> (Gray 1838)	ornate cowfish	D	1	1			2	0	2
<b>Arripidae</b>									
<i>Arripis georgianus</i> (Valenciennes 1831)	Australian herring	P	6	4	10	4	10	14	24
<i>Arripis truttaceus</i> (Cuvier 1829)	Western Australian salmon	P	1	2		1	3	1	4
<b>Aulopidae</b>									
<i>Latropiscis purpurissatus</i> (Richardson 1843)	sergeant baker	D	1	2			3	0	3
<b>Berycidae</b>									
<i>Centroberyx gerrardi</i> (Günther 1887)	bight redfish	D	1				1	0	1
<b>Callionymidae</b>									
<i>Foetorepus calauropomus</i> (Richardson 1844)	common stinkfish	D	1				1	0	1
<b>Carangidae</b>									
<i>Pseudocaranx</i> spp. (Whitley 1931), (Cuvier 1833)	skipjack trevally, silver trevally	D	8	12	5	6	20	11	31
<i>Trachurus declivis</i> (Jenyns 1841)	common jack mackerel	P			1		0	1	1
<i>Trachurus novaezelandiae</i> Richardson 1843	yellowtail scad	P	10	12	1	5	22	6	28
<b>Chaetodontidae</b>									
<i>Chelmonops curiosus</i> Kuitert 1986	western talma	D	3	4			7	0	7
<b>Cheilodactylidae</b>									

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<b>Family</b>									
Species/Taxonomic authority									
<i>Cheilodactylus nigripes</i> Richardson 1850	maggie perch	D	5	4			9	0	9
<i>Dactylophora nigricans</i> (Richardson 1850)	dusky morwong	D	3	2	1		5	1	6
<i>Nemadactylus valenciennesi</i> (Whitley 1937)	blue morwong	D	2	3			5	0	5
<b>Dinolestidae</b>									
<i>Dinolestes lewini</i> (Griffith 1834)	longfin pike	P	4	2	1	1	6	2	8
<b>Enoplosidae</b>									
<i>Enoplosus armatus</i> (White 1790)	old wife	D	5	2			7	0	7
<b>Gerreidae</b>									
<i>Parequula melbournensis</i> (Castelnau 1872)	silverbelly	D	6	8			14	0	14
<b>Girellidae</b>									
<i>Girella zebra</i> (Richardson 1846)	zebrafish	D	2	3			5	0	5
<b>Kyphosidae</b>									
<i>Kyphosus sydneyanus</i> (Günther 1886)	silver drummer	D	5	3	3	4	8	7	15
<b>Labridae</b>									
<i>Achoerodus gouldii</i> (Richardson 1843)	western blue groper	D		1			1	0	1
<i>Austrolabrus maculatus</i> (Macleay 1881)	blackspotted wrasse	D	9	7			16	0	16
<i>Bodianus frenchii</i> (Klunzinger 1879)	foxfish	D	1	1			2	0	2
<i>Eupetrichthys angustipes</i> Ramsay & Ogilby 1888	snakeskin wrasse	D	3	2			5	0	5
<i>Haletta semifasciata</i> (Valenciennes 1840)	blue weed whiting	D	1	3			4	0	4
<i>Neoodax balteatus</i> (Valenciennes 1840)	little weed whiting	D	5	7			12	0	12
<i>Notolabrus parilus</i> (Richardson 1850)	brownspotted wrasse	D	11	11	1		22	1	23
<i>Notolabrus tetricus</i> (Richardson 1840)	bluethroat wrasse	D	6	5	2	3	11	5	16

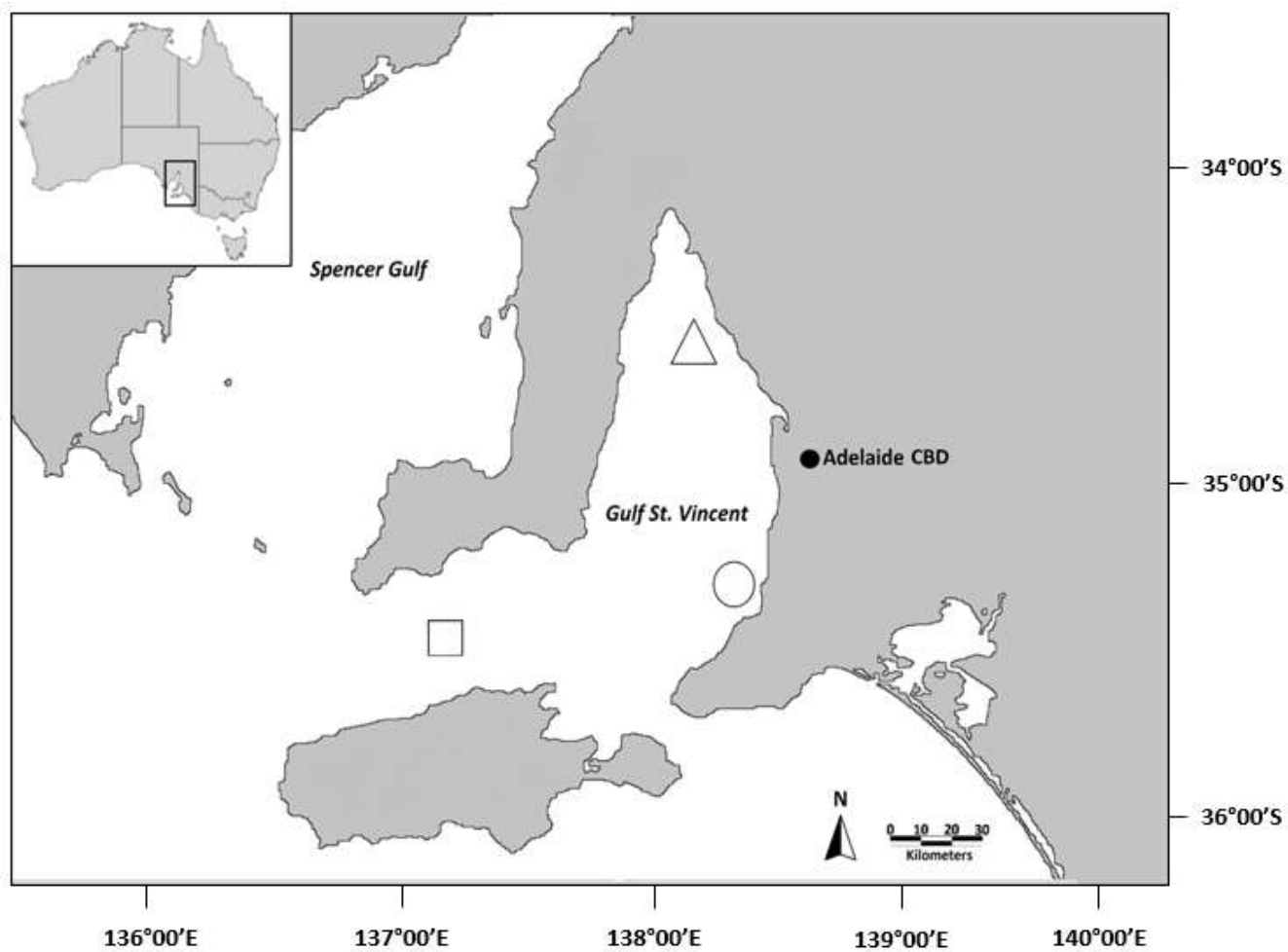
<b>Class</b>	Common name	Category	BS	BC	PS	PC	Number of benthic replicates	Number of pelagic replicates	Total replicates where observed
<b>Family</b>									
<b>Species/Taxonomic authority</b>									
<i>Olisthops cyanomelas</i> (Richardson 1850)	herring cale	D	1	1			2	0	2
<i>Siphonognathus beddomei</i> (Johnston 1885)	pencil weed whiting	D		1			1	0	1
<i>Siphonognathus caninis</i> (Scott 1976)	sharpnose weed whiting	D	1	2			3	0	3
<i>Siphonognathus radiatus</i> (Quoy & Gaimard 1834)	longray weed whiting	D	2	3			5	0	5
<b>Microcanthidae</b>									
<i>Tilodon sexfasciatus</i> (Richardson 1842)	moonlighter	D	4	4	1	2	8	3	11
<b>Monacanthidae</b>									
<i>Acanthaluteres brownii</i> (Richardson 1846)	spinytail leatherjacket	D	4	3	3	2	7	5	12
<i>Acanthaluteres spilomelanurus</i> (Quoy & Gaimard 1824)	bridled leatherjacket	D	2	2			4	0	4
<i>Acanthaluteres vittiger</i> (Castelnau 1873)	toothbrush leatherjacket	D	9	7			16	0	16
<i>Eubalichthys mosaicus</i> (Ramsay & Ogilby 1886)	mosaic leatherjacket	D		1			1	0	1
<i>Meuschenia flavolineata</i> Hutchins 1977	yellowstriped leatherjacket	D	2		2		2	2	4
<i>Meuschenia freycineti</i> (Quoy & Gaimard 1824)	sixspine leatherjacket	D	5	5			10	0	10
<i>Meuschenia galii</i> (Waite 1905)	bluelined leatherjacket	D	5	4			9	0	9
<i>Meuschenia hippocrepis</i> (Quoy & Gaimard 1824)	horseshoe leatherjacket	D	6	6	4	5	12	9	21
<i>Meuschenia scaber</i> (Forster 1801)	velvet leatherjacket	D	1	2			3	0	3
<i>Meuschenia venusta</i> Hutchins 1977	stars-and-stripes leatherjacket	D		1			1	0	1
<i>Scobinichthys granulatus</i> (White 1790)	rough leatherjacket	D	11	10			21	0	21
<i>Thamnaconus degeni</i> (Regan 1903)	bluefin leatherjacket	D	5	5			10	0	10
<b>Moridae</b>									

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<b>Family</b>									
Species/Taxonomic authority									
<i>Pseudophycis bachus</i> (Forster 1801)	red cod	D		1			1	0	1
<b>Mullidae</b>									
<i>Upeneichthys vlamingii</i> (Cuvier 1829)	blue spotted goatfish	D	10	11			21	0	21
<b>Neosebastidae</b>									
<i>Neosebastes bougainvillii</i> (Cuvier 1829)	gulf gurnard perch	D	3	1			4	0	4
<i>Neosebastes pandus</i> (Richardson 1842)	bighead gurnard perch	D	1	2			3	0	3
<b>Pempheridae</b>									
<i>Pempheris klunzingeri</i> McCulloch 1911	rough bullseye	D	1				1	0	1
<i>Pempheris multiradiata</i> Klunzinger 1879	bigscale bullseye	D		1			1	0	1
<b>Pentacerotidae</b>									
<i>Pentaceropsis recurvirostris</i> (Richardson 1845)	longsnout boarfish	D		1		1	1	1	2
<b>Pinguipedidae</b>									
<i>Parapercis haackei</i> (Steindachner 1884)	wavy grubfish	D		3			3	0	3
<i>Parapercis ramsayi</i> (Steindachner 1883)	spotted grubfish	D	2	2			4	0	4
<b>Platycephalidae</b>									
<i>Platycephalus speculator</i> Klunzinger 1872	southern blue spotted flathead	D	1	2			3	0	3
<b>Plesiopidae</b>									
<i>Trachinops noarlungae</i> Glover 1974	yellowhead hulafish	D	1	3			4	0	4
<b>Pomacentridae</b>									
<i>Parma victoriae</i> (Günther 1863)	scalyfin	D	1	2			3	0	3
<b>Scombridae</b>									
<i>Scomber australasicus</i> Cuvier 1832	blue mackerel	P			9	12	0	21	21
<i>Scombridae</i> sp.		P		1			1	0	1

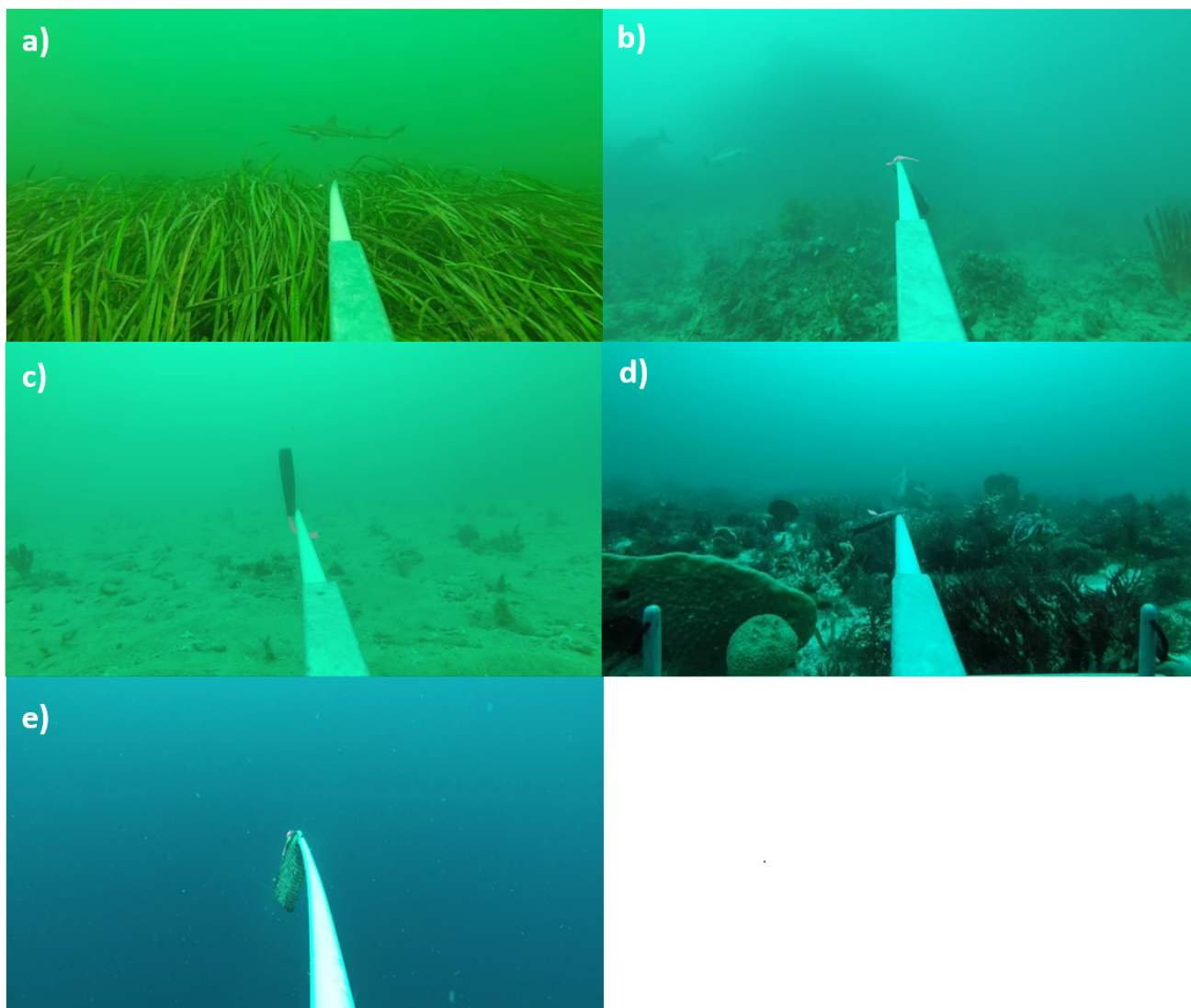
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<b>Family</b>									
<b>Species/Taxonomic authority</b>									
<i>Thunnus maccoyii</i> (Castelnau 1872)	southern bluefin tuna	P			3		0	3	3
<b>Scorpididae</b>									
<i>Scorpis aequipinnis</i> Richardson 1848	sea sweep	D	5	6	3	5	11	8	19
<i>Scorpis lineolata</i> Kner 1865	silver sweep	D	1				1	0	1
<i>Scorpis</i> sp.		D			1		0	1	1
<b>Serranidae</b>									
<i>Caesioperca lepidoptera</i> (Forster 1801)	butterfly perch	D		1			1	0	1
<i>Caesioperca rasor</i> (Richardson 1839)	barber perch	D	4	5			9	0	9
<i>Hypoplectrodes nigroruber</i> (Cuvier 1828)	banded seaperch	D	1	1			2	0	2
<b>Sillaginidae</b>									
<i>Sillaginodes punctatus</i> (Cuvier 1829)	King George whiting	D	9	8		1	17	1	18
<b>Sparidae</b>									
<i>Chrysophrys auratus</i> (Forster 1801)	snapper	D	6	7	3	4	13	7	20
<b>Sphyaena</b>									
<i>Sphyaena novaehollandiae</i> Günther 1860	snook	P	6	3	3	1	9	4	13
<b>Terapontidae</b>									
<i>Helotes octolineatus</i> (Jenyns 1840)	western striped grunter	D	6	6	2	3	12	5	17
<b>Tetraodontidae</b>									
<i>Omegophora armilla</i> (McCulloch & Waite 1915)	ringed toadfish	D	1	5			6	0	6
<i>Torquigener pleurogramma</i> (Regan 1903)	weeping toadfish	D	5	5	1	3	10	4	14
<b>Crustacea</b>									
<b>Carcinnidae</b>									
<i>Nectocarcinus integrifrons</i> (Latreille 1825)	rough rock crab	D	1	1			2	0	
<b>Portunidae</b>									

<b>Class</b>	Common name	Category	BS	BC	PS	PC	Number of benthic replicates	Number of pelagic replicates	Total replicates where observed
<b>Family</b>									
Species/Taxonomic authority									
<i>Ovalipes australiensis</i> <i>Stephenson &amp; Rees 1968</i>	common sand crab	D				1	0	1	
<i>Portunus armatus</i> (Milne-Edwards, 1861)	blue swimmer crab	D	6	7	1	4	13	6	18
<b>Cephalopods</b>									
<b>Loliginidae</b>									
<i>Sepioteuthis australis</i> Quoy & Gaimard 1832	southern calamari	D	6	10	1		16	1	17
<b>Sepiidae</b>									
<i>Sepia apama</i> Gray 1849	giant cuttlefish	D	2	1			3	0	3





**Fig. S1.** Gulf St Vincent showing BRUVS deployment sites at Long Spit (triangle), Aldinga Reef (circle), and Orcades Bank (square) in summer 2016–17.



**Fig. S2.** Examples of habitats from BRUVS which were classified as (a) seagrass, (b) rocky reef, (c) sand, (d) sponge, and (e) water-column.

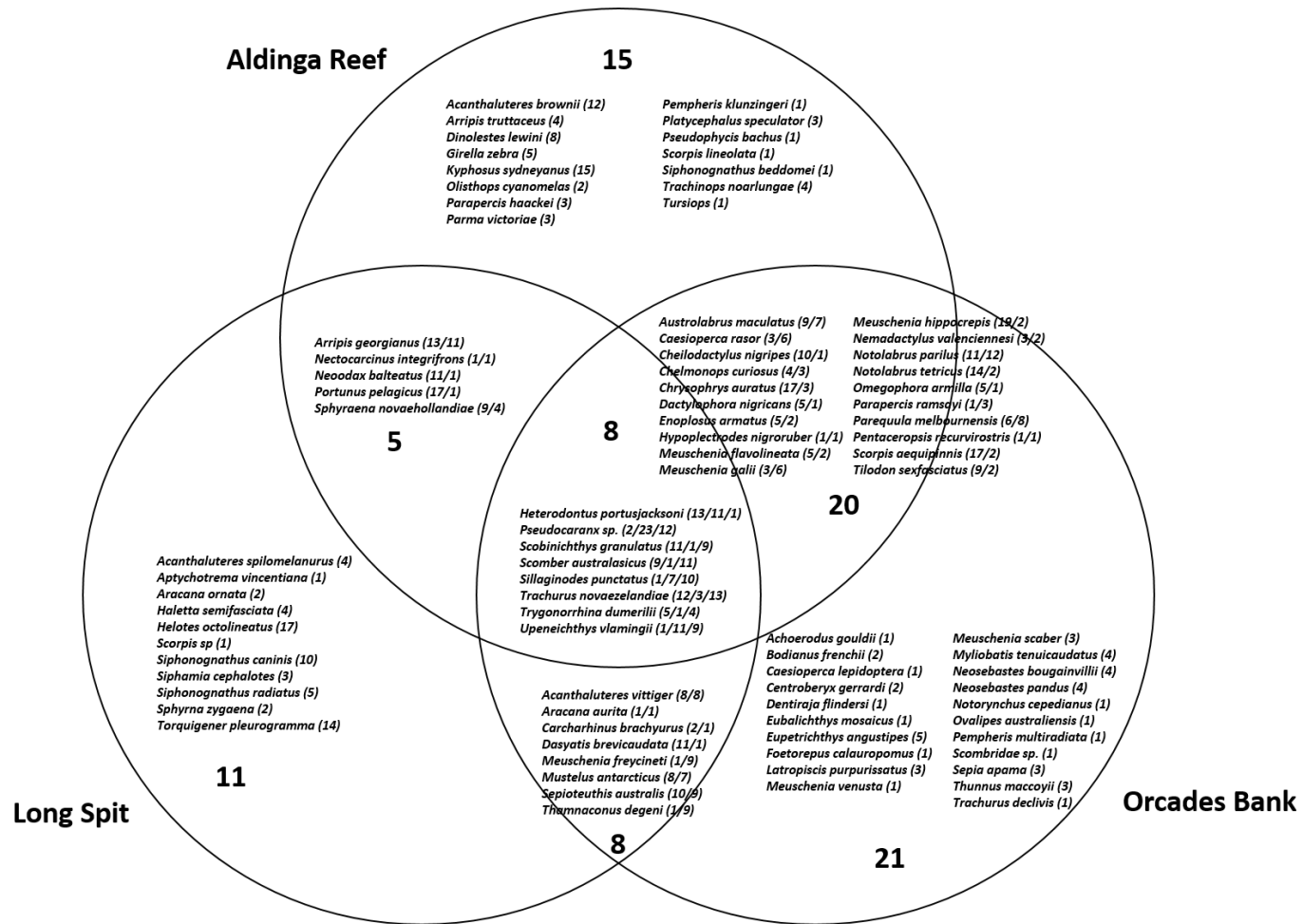
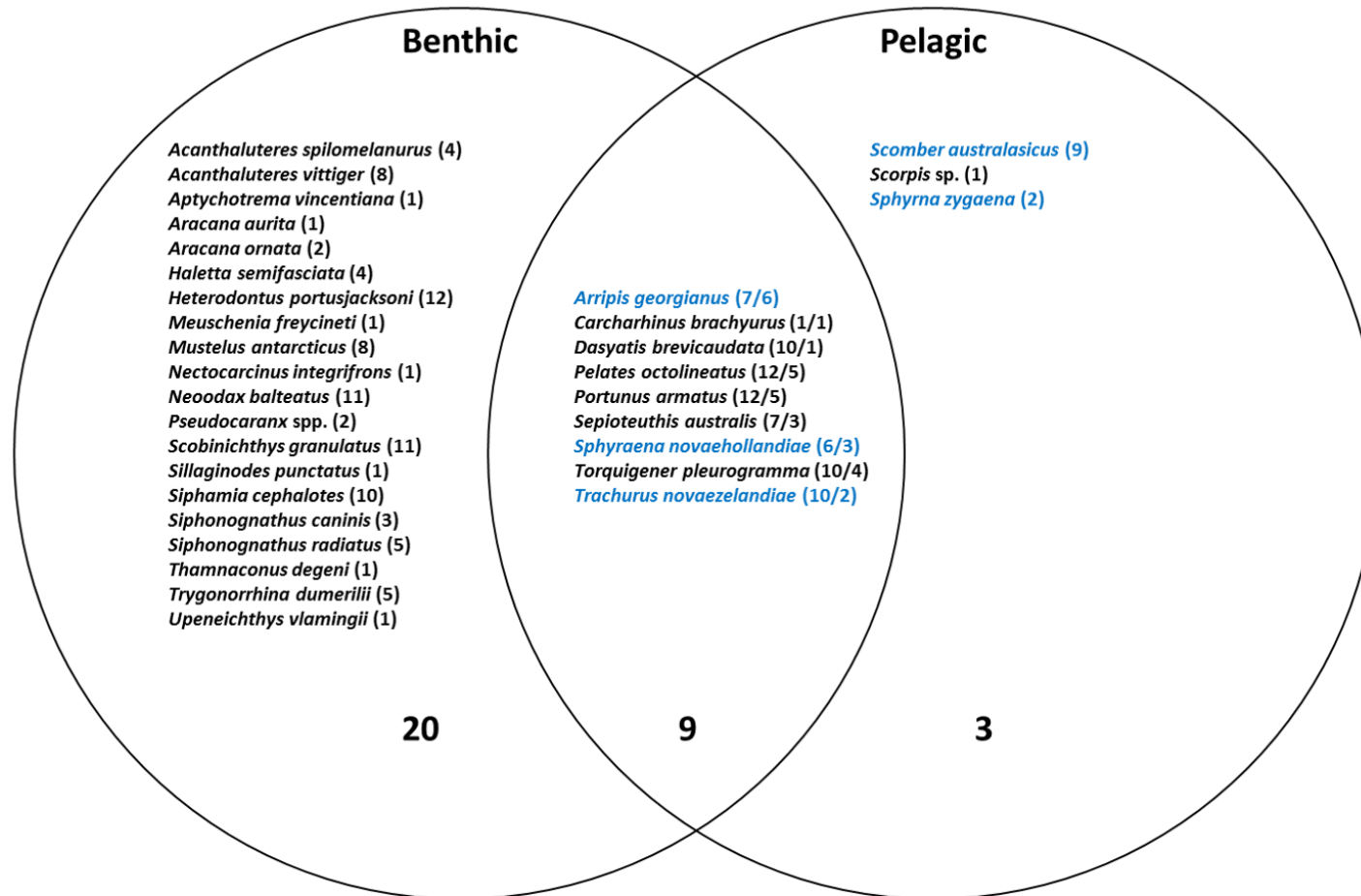


Fig. S3. Venn diagram of species seen on BRUVS at one, two, or all three study sites.

**Long Spit**  
**32 species**



**Fig. S4.** Venn diagrams of species observed on different positions, i.e. by only benthic (left circle), only pelagic (right circle) or both Baited Remote Underwater Video Station positions (centre overlap) at (a) Long Spit, (b) Aldinga Reef, and (c) Orcades Bank. Number of replicates that each species occurred at each site out of 24 (23 for Aldinga Reef) is given in parentheses (for overlap species, number given first is the number of benthic replicates, followed by number of pelagic replicates). Species categorised as demersal are indicated in black text, and species categorised as pelagic are displayed in blue text.

**Aldinga Reef  
 48 species**

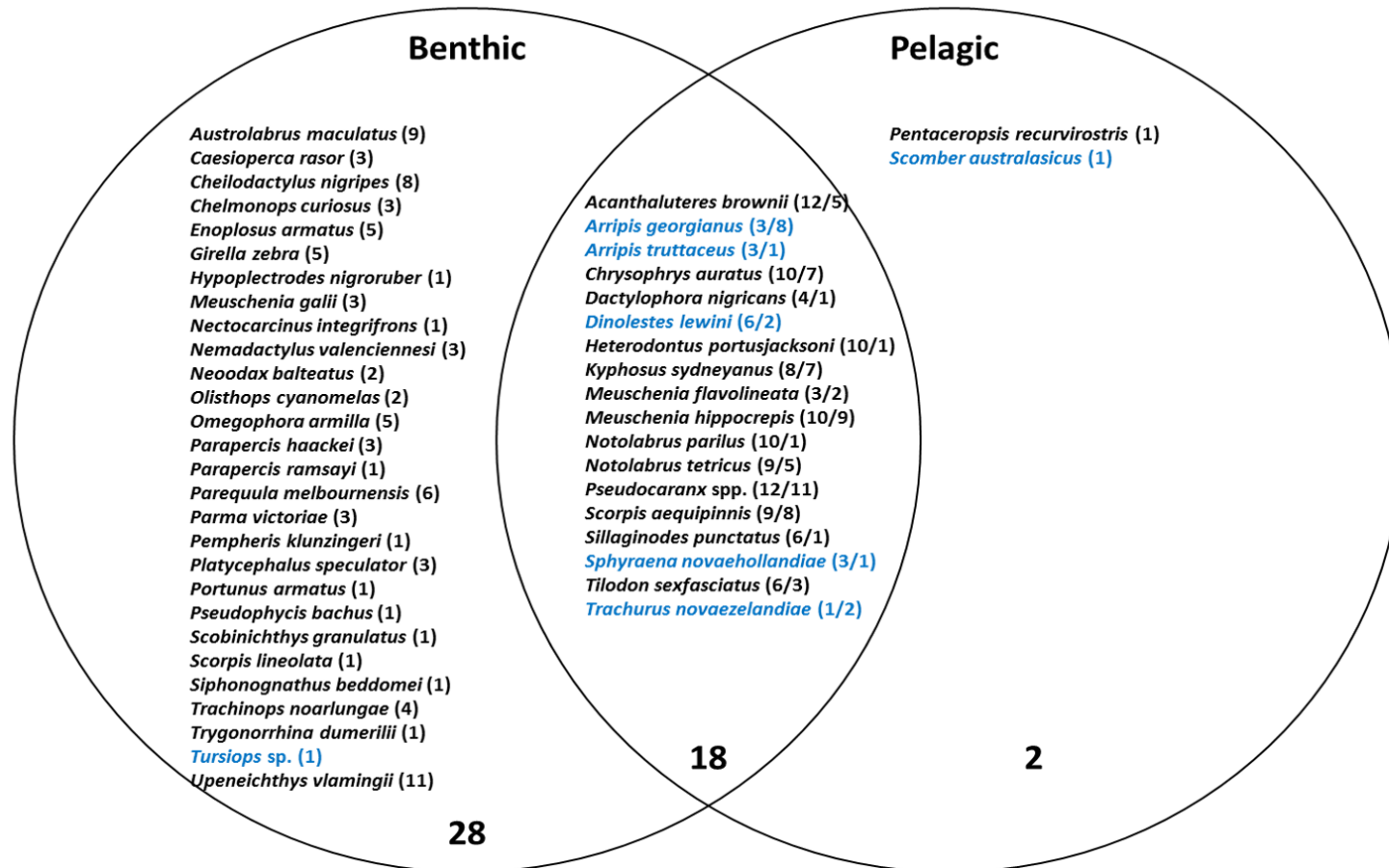


Fig. S4. (Cont.)

**Orcades Bank  
58 species**

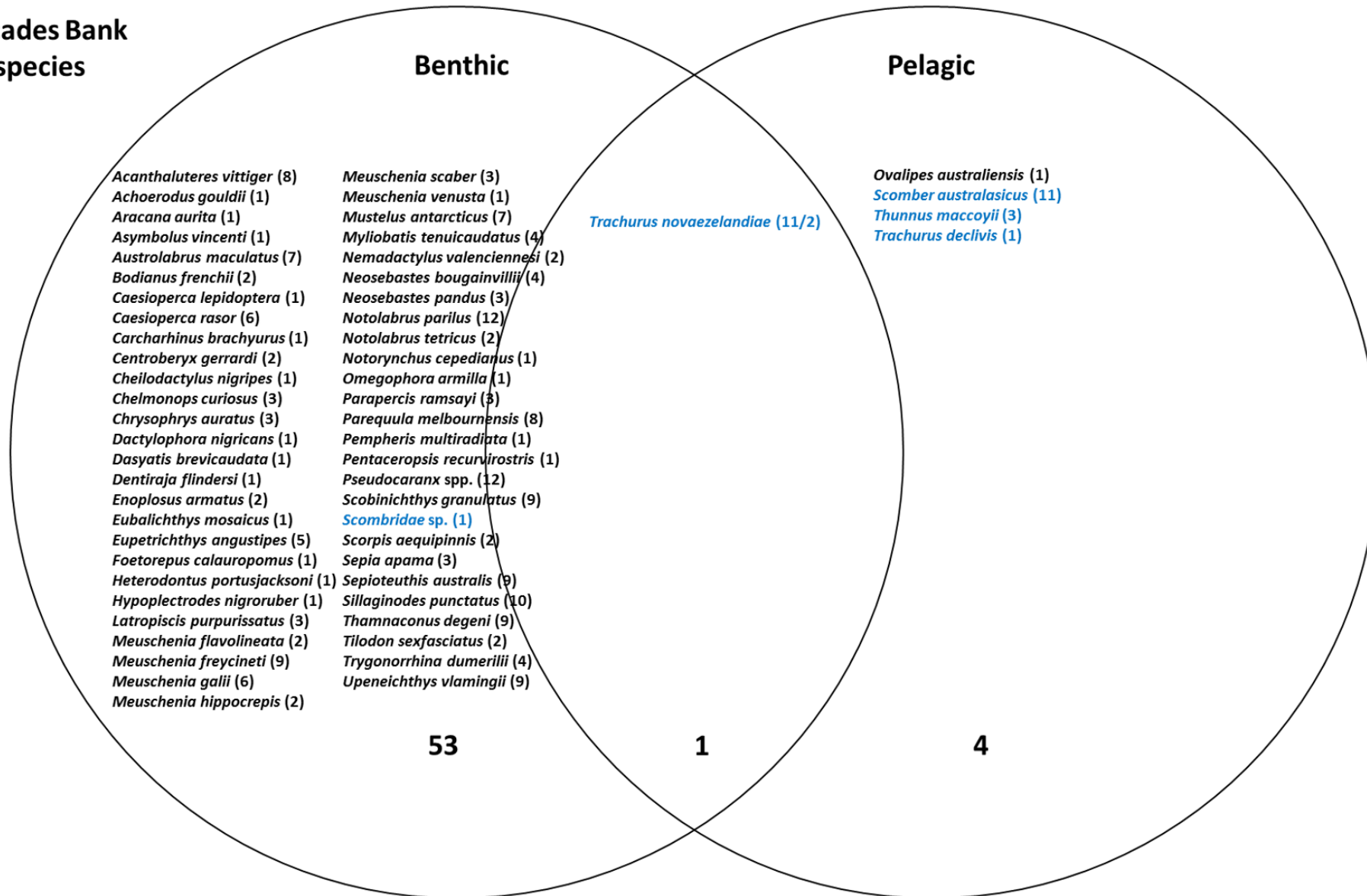


Fig. S4. (Cont.)