

Table S1. Fish species list recorded from baited assays

Family	Species	Trophic Group
Acanthuridae	<i>Prionurus microlepidotus</i>	herbivore
Atherinidae	<i>unknown sp1</i>	#N/A
Blenniidae	<i>Aspidontus dussumieri</i>	#N/A
Blenniidae	<i>Petroscirtes fallax</i>	#N/A
Carangidae	<i>Atule mate</i>	#N/A
Carangidae	<i>Pseudocaranx georgianus</i>	predator
Carangidae	<i>Seriola hippos</i>	#N/A
Chaetodontidae	<i>Chelmonops truncatus</i>	predator
Cheilodactylidae	<i>Cheilodactylus vestitus</i>	predator
Didontidae	<i>Dicotylichthys punctulatus</i>	predator
Enoplosidae	<i>Enoplosus armatus</i>	predator
Fistulariidae	<i>Fistularia petimba</i>	#N/A
Gerreidae	<i>Gerres subfasciatus</i>	predator
Kyphosidae	<i>Atypichthys strigatus</i>	planktivore
Kyphosidae	<i>Girella elevata</i>	#N/A
Kyphosidae	<i>Girella tricuspidata</i>	omnivore
Kyphosidae	<i>Microcanthus strigatus</i>	omnivore
Kyphosidae	<i>Scorpis lineolata</i>	predator
Labridae	<i>Achoerodus viridis</i>	predator
Labridae	<i>Eupetrichthys angustipes</i>	predator
Labridae	<i>Leptojulius cyanopleura</i>	#N/A
Labridae	<i>Notolabrus gymnogenis</i>	predator
Labridae	<i>Ophthalmolepis lineolatus</i>	predator
Labridae	<i>Pictilabrus laticlavus</i>	predator
Labridae	<i>unknown sp2</i>	#N/A
Latridae	<i>Morwong fuscus</i>	#N/A
Monacanthidae	<i>Brachaluteres jacksonianus</i>	herbivore
Monacanthidae	<i>Meuschenia scaber</i>	#N/A
Monacanthidae	<i>Meuschenia trachylepis</i>	omnivore
Monacanthidae	<i>Monacanthus chinensis</i>	omnivore
Monacanthidae	<i>Nelusetta ayraudi</i>	omnivore
Monacanthidae	<i>Scobinichthys granulatus</i>	predator
Monodactylidae	<i>Schuettea scalaripinnis</i>	predator
Mullidae	<i>Parupeneus spilurus</i>	predator
Mullidae	<i>unknown sp3</i>	#N/A
Mullidae	<i>Upeneichthys lineatus</i>	predator
Mullidae	<i>Upeneus tragula</i>	predator
Platycephalidae	<i>Platycephalus caeruleopunctatus</i>	#N/A
Pomacentridae	<i>Parma unifasciata</i>	herbivore
Sillaginidae	<i>Sillago ciliata</i>	predator
Sillaginidae	<i>Sillago maculata</i>	#N/A
Sparidae	<i>Acanthopagrus australis</i>	predator
Sparidae	<i>Chrysophrys auratus</i>	#N/A
Sparidae	<i>Rhabdosargus sarba</i>	predator
Tetraodontidae	<i>Torquigener pleurogramma</i>	predator
Tetrapontidae	<i>Pelates sexlineatus</i>	predator

Table S2. Fish species list recorded from fish surveys across sites and used in fish biomass analyses

Family	Species	Trophic Group
Acanthuridae	<i>Acanthurus dussumieri</i>	herbivore
Acanthuridae	<i>Acanthurus lineatus</i>	herbivore
Acanthuridae	<i>Acanthurus nigrofuscus</i>	herbivore
Acanthuridae	<i>Acanthurus olivaceus</i>	herbivore
Acanthuridae	<i>Acanthurus triostegus</i>	herbivore
Acanthuridae	<i>Prionurus microlepidotus</i>	herbivore
Aplodactylidae	<i>Aplodactylus lophodon</i>	herbivore
Apogonidae	<i>Apogon limenus</i>	predator
Balistidae	<i>Rhinecanthus rectangulus</i>	predator
Blenniidae	<i>Plagiotremus rhinorhynchus</i>	predator
Carangidae	<i>Carangoides orthogrammus</i>	predator
Carangidae	<i>Pseudocaranx georgianus</i>	predator
Carangidae	<i>Trachurus novaezelandiae</i>	predator
Chaetodontidae	<i>Chaetodon auriga</i>	predator
Chaetodontidae	<i>Chaetodon citrinellus</i>	predator
Chaetodontidae	<i>Chaetodon flavirostris</i>	predator
Chaetodontidae	<i>Chelmonops truncatus</i>	predator
Chaetodontidae	<i>Heniochus diphreutes</i>	planktivore
Chironemidae	<i>Chironemus marmoratus</i>	predator
Clinidae	<i>Cristiceps aurantiacus</i>	predator
Clupeidae	<i>Spratelloides robustus</i>	predator
Dinolestidae	<i>Dinolestes lewini</i>	predator
Diodontidae	<i>Dicotylichthys punctulatus</i>	predator
Enoplosidae	<i>Enoplosus armatus</i>	predator
Fistulariidae	<i>Fistularia commersonii</i>	predator
Gerraeidae	<i>Gerres subfasciatus</i>	predator
Girellidae	<i>Girella tricuspidata</i>	herbivore
Hemiramphidae	<i>Hyporhamphus australis</i>	herbivore
Labridae	<i>Achoerodus viridis</i>	predator
Labridae	<i>Eupetrichthys angustipes</i>	predator
Labridae	<i>Halichoeres nebulosus</i>	predator
Labridae	<i>Heteroscarus acroptilus</i>	herbivore
Labridae	<i>Labrid spp.</i>	#N/A
Labridae	<i>Labroides dimidiatus</i>	predator
Labridae	<i>Notolabrus gymnogenis</i>	predator
Labridae	<i>Olisthops cyanomelas</i>	herbivore
Labridae	<i>Ophthalmolepis lineolatus</i>	predator
Labridae	<i>Pictilabrus laticlavus</i>	predator
Labridae	<i>Pseudolabrus guentheri</i>	predator
Labridae	<i>Scarus ghobban</i>	herbivore
Labridae	<i>Stethojulis interrupta</i>	predator
Labridae	<i>Stethojulis strigiventer</i>	predator
Labridae	<i>Thalassoma lutescens</i>	predator
Latridae	<i>Cheilodactylus fuscus</i>	predator
Latridae	<i>Cheilodactylus vestitus</i>	predator
Microcanthidae	<i>Atypichthys strigatus</i>	planktivore
Microcanthidae	<i>Microcanthus strigatus</i>	omnivore

Microdesmidae	<i>Ptereleotris microlepis</i>	predator
Monacanthidae	<i>Acanthaluteres vittiger</i>	herbivore
Monacanthidae	<i>Brachaluteres jacksonianus</i>	herbivore
Monacanthidae	<i>Eubalichthys bucephalus</i>	predator
Monacanthidae	<i>Meuschenia trachylepis</i>	omnivore
Monacanthidae	<i>Monacanthus chinensis</i>	omnivore
Monacanthidae	<i>Scobinichthys granulatus</i>	predator
Monodactylidae	<i>Schuettea scalaripinnis</i>	predator
Mugilidae	<i>Mugil cephalus</i>	omnivore
Mullidae	<i>Parupeneus multifasciatus</i>	predator
Mullidae	<i>Parupeneus pleurostigma</i>	predator
Mullidae	<i>Parupeneus spilurus</i>	predator
Mullidae	<i>Upeneichthys lineatus</i>	predator
Mullidae	<i>Upeneus tragula</i>	predator
Orectolobiformes	<i>Orectolobus maculatus</i>	predator
Orectolobiformes	<i>Orectolobus ornatus</i>	#N/A
Ostraciidae	<i>Ostracion cubicus</i>	omnivore
Ostraciidae	<i>Ostracion meleagris</i>	omnivore
Paralichthyidae	<i>Pseudorhombus jenynsii</i>	predator
Pempheridae	<i>Pempheris affinis</i>	planktivore
Pempheridae	<i>Pempheris compressa</i>	planktivore
Pempheridae	<i>Pempheris multiradiata</i>	planktivore
Plesiopidae	<i>Trachinops taeniatus</i>	predator
Plotosidae	<i>Plotosus lineatus</i>	predator
Pomacentridae	<i>Abudefduf bengalensis</i>	omnivore
Pomacentridae	<i>Abudefduf sexfasciatus</i>	herbivore
Pomacentridae	<i>Abudefduf vaigiensis</i>	herbivore
Pomacentridae	<i>Chromis hypsilepis</i>	planktivore
Pomacentridae	<i>Parma microlepis</i>	herbivore
Pomacentridae	<i>Parma unifasciata</i>	herbivore
Pomacentridae	<i>Pomacentrus sp.</i>	#N/A
Pomacentridae	<i>Pomacentrus coelestis</i>	omnivore
Pomacentridae	<i>Stegastes gascoynei</i>	herbivore
Scorpaenidae	<i>Scorpaena jacksoniensis</i>	predator
Scorpaenidae	<i>Scorpis lineolata</i>	predator
Serranidae	<i>Acanthistius ocellatus</i>	predator
Serranidae	<i>Diploprion bifasciatum</i>	predator
Serranidae	<i>Epinephelus daemeli</i>	predator
Serranidae	<i>Hypoplectrodes maccullochi</i>	predator
Siganidae	<i>Siganus fuscescens</i>	herbivore
Sillaginidae	<i>Sillago ciliata</i>	predator
Sparidae	<i>Acanthopagrus australis</i>	predator
Sparidae	<i>Chrysophrys auratus</i>	#N/A
Sparidae	<i>Rhabdosargus sarba</i>	predator
Sphyraenidae	<i>Sphyraena obtusata</i>	predator
Synodontidae	<i>Synodus variegatus</i>	predator
Terapontidae	<i>Pelates sexlineatus</i>	predator
Tetrodontidae	<i>Tetractenos glaber</i>	predator
Tetrodontidae	<i>Torquigener pleurogramma</i>	predator
Tetraodontidae	<i>Canthigaster callisterna</i>	herbivore
Tetrarogidae	<i>Centropogon australis</i>	predator

Table S3. Algal species list recorded from photo quadrats

Genus	Species (if known)
<i>Amphiroa</i>	
<i>Caulerpa</i>	<i>filiformis</i>
<i>Codium</i>	<i>fragile</i>
<i>Colpomenia</i>	
<i>Corallina</i>	<i>officinalis</i>
<i>Delisea</i>	<i>pulchra</i>
<i>Dictyota</i>	
<i>Eklonia</i>	<i>radiata</i>
<i>Gymnogongrus</i>	
<i>Homoeostrichus</i>	<i>sinclairii</i>
<i>Lobophora</i>	
<i>Padina</i>	
<i>Phyllospora</i>	<i>comosa</i>
<i>Sargassum</i>	
<i>Tricleocarpa</i>	
<i>Ulva</i>	<i>lactuca</i>

Table S4. Analysis of deviance results and modelled group means from linear mixed models and post-hoc comparisons for total fish abundance and species richness from video footage

Source	Abundance				Species richness		
	df	Dev	χ^2	P	Dev	χ^2	P
Protection	2	245.51	15.025	<0.001	241.14	8.739	0.013
Residuals		230.49			232.40		
Post-hoc comparisons				P			P
Partially protected vs No-take				0.001			<0.001
Fished vs No-take				0.002			<0.001
Fished vs partially protected				0.908			0.853
Modelled group means		Mean	Se	95% CI's	Mean	Se	95% CI's
Fished		29.10	14.43	0.8, 57.4	3.35	0.71	2.0, 4.7
Partially protected		9.67	18.6	-26.9, 46.2	2.76	0.77	1.2, 4.3
No-take		48.50	22.81	3.8, 93.2	10.66	3.21	4.4, 17.0

Table S5. Results from permutational multivariate analysis of variance for fish composition from both video footage and surveys, and algal composition with protection status as the fixed predictor variable and site a random factor nested within protection. Pair-wise test output included where the fixed factor showed significance

Source	Video fish composition				Survey fish composition				Algal composition			
	df	MS	Pseudo-F	P	df	MS	Pseudo F	P	df	MS	Pseudo-F	P
Protection	2	13525	1.074	0.374	2	19483	1.773	0.021	2	2281.5	0.1609	0.998
Site (Protection)	7	13470	9.581	0.001	7	10956	5.378	0.001	7	14286	7.0266	0.001
Residuals	45	1405.9			108	2037.1			149	2033.1		
Total	54				117				158			
Pair-wise test								P				
Partially protected vs No-take								0.001				
Fished vs No-take								0.030				
Fished vs partially protected								0.247				

Table S6: Analysis of deviance results from linear mixed models and post-hoc comparisons for total fish abundance, species richness, total fish biomass and large fish size ($\geq 20\text{cm}$) from biodiversity surveys

Source	Abundance				Species richness			Size ($\geq 20\text{cm}$)			Total fish biomass			
	df	Dev	χ^2	P	Dev	χ^2	P	Dev	χ^2	P	Dev	χ^2	P	
Protection	2	7268.20	0.621	0.733	781.70	4.753	0.093	2668.00	16.518	0.005	2019.70	10.763	0.005	
Residuals		7268.80			776.95			2685.00			2030.50			
Post-hoc comparisons				P				P				P		
Partially protected vs No-take				0.720				0.171				<0.001	0.001	
Fished vs No-take				0.942				0.036				<0.001	<0.001	
Fished vs partially protected				0.831				0.831				0.905	0.873	
Modelled group means		Mean	Se	95% CI's	Mean	Se	95% CI's	Mean	Se	95% CI's	Mean	Se	95% CI's	
Fished		119.2	39.39	42.0, 196.4	10.32	1.55	7.3, 13.36	23.8	0.85	22.1, 25.5	1309	320.4	680.5, 1937	
Partially protected		108.7	46.3	17.9, 199.4	11.23	2.16	7.0, 15.5	24.56	1.01	22.6, 26.5	1431	451.6	546.3, 2317	
No-take		209.27	109.27	-4.4, 424	19.04	4.42	10.4, 27.7	30.66	0.99	28.7, 32.6	7938	3053.2	1954.3, 13923	

Table S7. Summary results of a generalised mixed model and post-hoc comparisons for urchin density

Urchin density				
Source	df	Dev	χ^2	P
Protection	2	1869.00	1.1019	0.576
Intercept		2030.50		
Post-hoc comparisons				
Partially protected vs No-take				0.846
Fished vs No-take				0.548
Fished vs partially protected				0.853
Modelled group means		Mean	Se	95% CI's
Fished		25.06	28.88	-31.6, 81.6
Partially protected		5.58	8.36	-10.8, 21.9
No-take		6.29	12.21	-17.7, 30.2

Table S8. Analysis of deviance results from linear mixed models for total habitat complexity and algal cover with protection status (top) and line fishing restrictions (bottom) as the predictor variable

Source	Habitat complexity				Algal cover		
	df	Dev	χ^2	P	Dev	χ^2	P
Protection	2	-92.095	1.981	0.371	1453.80	0.750	0.687
Residuals		-90.114			1454.50		
Post-hoc comparisons				P	P		
Partially protected vs No-take				0.371			0.755
Fished vs No-take				0.811			0.809
Fished vs partially protected				0.594			0.982
Modelled group means		Mean	Se	95% CI's	Mean	Se	95% CI's
Fished		0.83	0.02	0.8, 0.9	79.15	6.40	66.6, 91.7
Partially protected		0.80	0.03	0.7, 0.9	77.25	8.26	61.1, 93.4
No-take		0.86	0.33	0.8, 0.9	86.5	10.1	66.6, 106.4

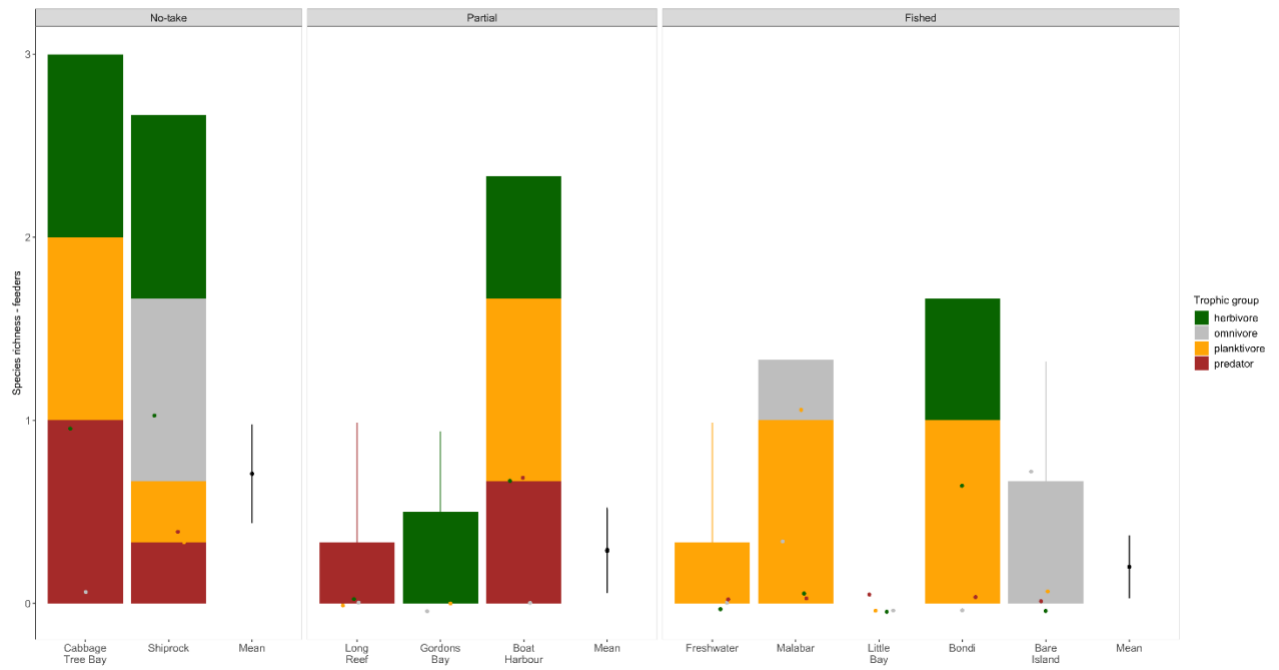


Figure S1: Mean species richness across sites for fishes observed to feed on squid baits from squidpop baited video footage within the first hour of deployment. Columns represent the mean recorded across the 3 days of the study divided by trophic group where green represents herbivorous fishes, grey omnivores, orange planktivores and red predators. Coloured dots represent individual data points from camera replicates ($n=3$) per day ($n=3$) and black dots represent group means based on levels of protection (No-take, Partial and Fished) from left to right. Bars represent the 95% confidence interval around the mean (where the number of observations was >1)

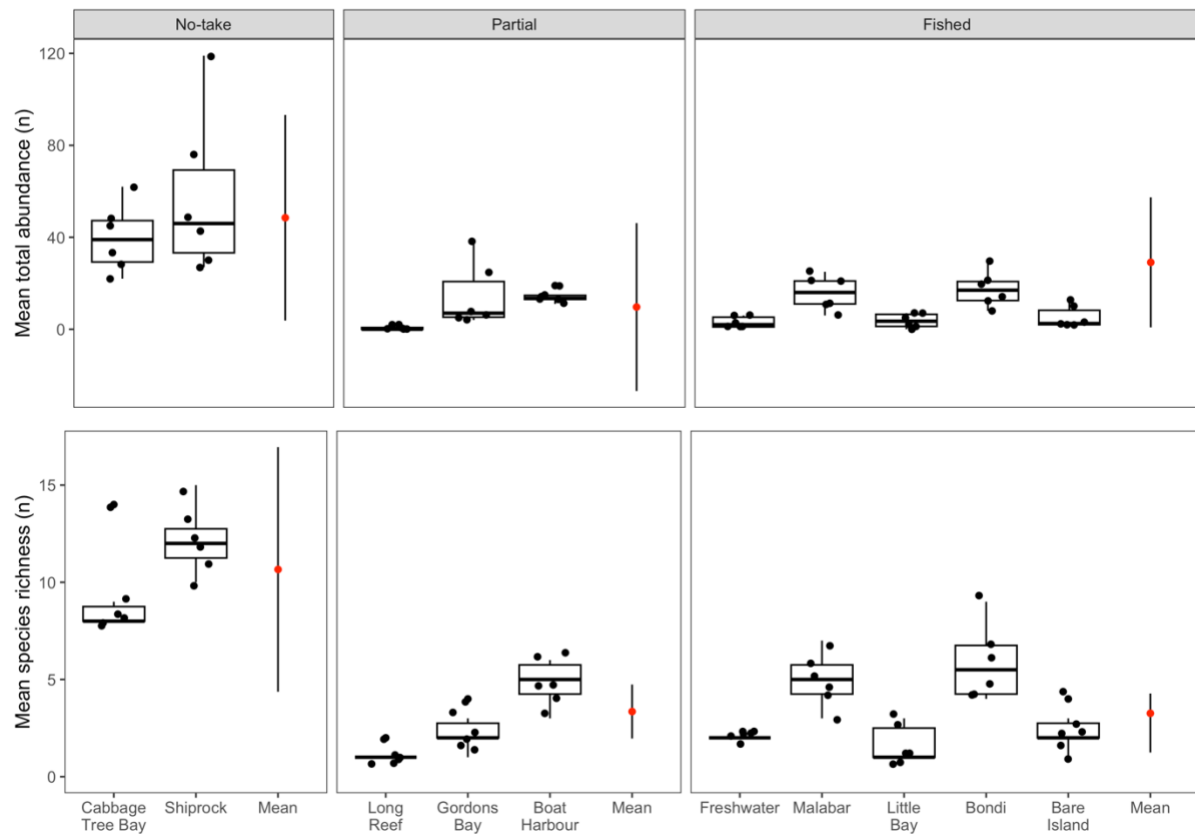


Figure S2. a) Boxplots showing mean total (MaxN) fish abundance and, b) mean species richness, across sites from squidpop and *Ulvapor* baited video footage. From left to right: no-take MPA, partial MPA and fished study sites. Black dots represent the replicate counts for each camera ($n = 3$) per day ($n = 3$) for each site. Group means for each level of protection are also presented in red with bars around the mean showing upper and lower 95% confidence intervals

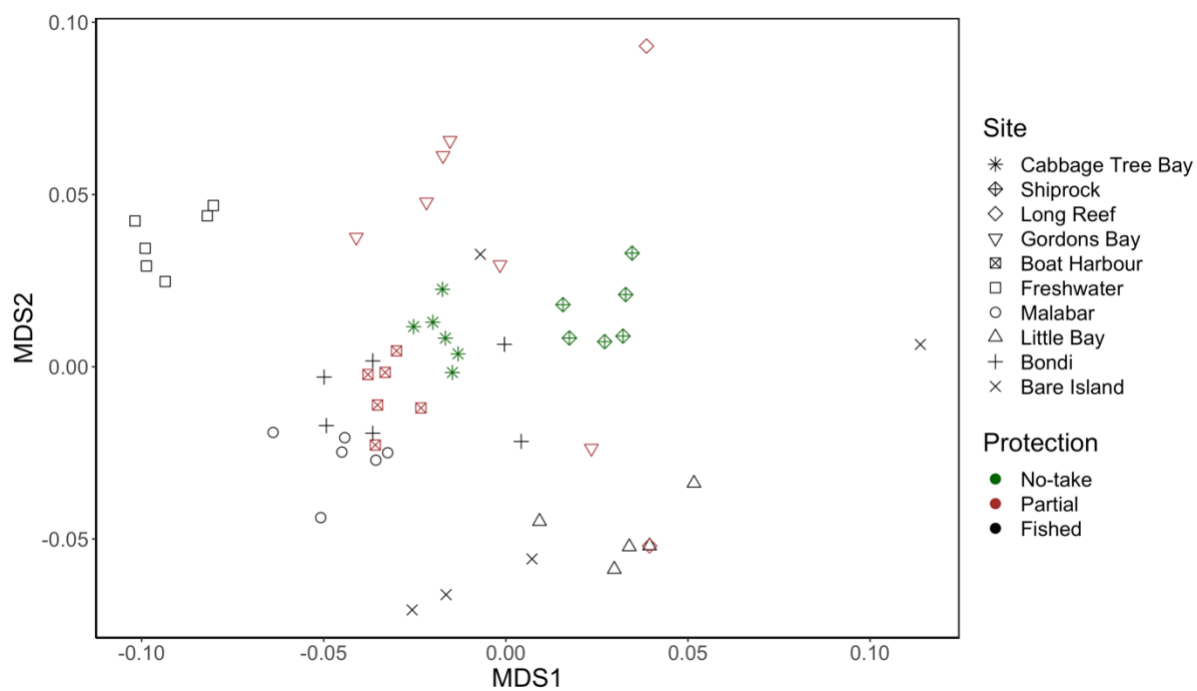


Figure S3. Multidimensional scaling plot of fish species composition from video footage

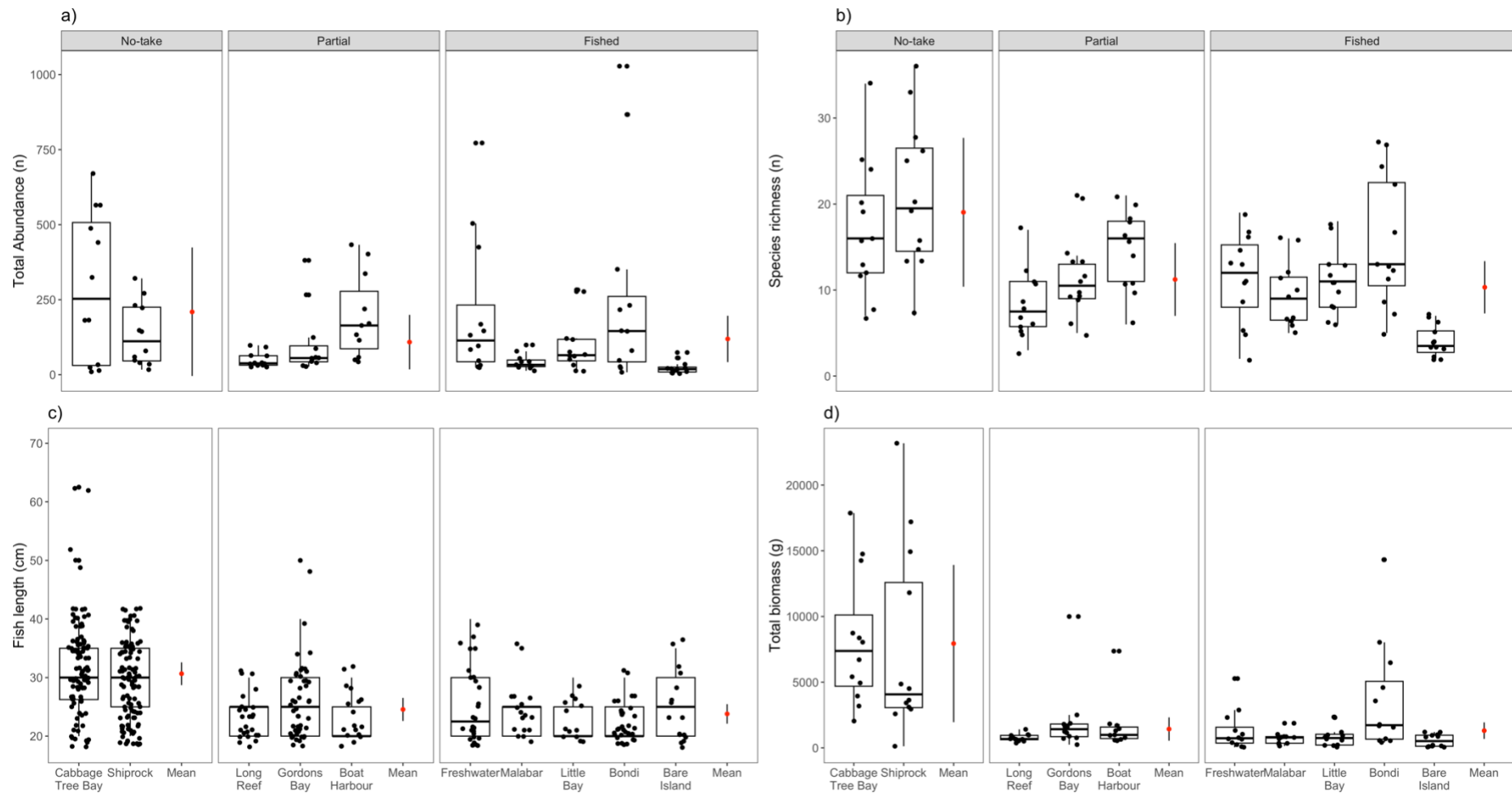


Figure S4: Boxplots showing a) Total fish abundance, b) species richness, c) fish length and d) total biomass from fish surveys for, from left to right: no-take MPAs, Partial MPAs and fished study sites. Black dots represent replicate counts for each a-b & c) transect ($n = 6$ over $n = 2$ days) and c) for each fish counted (for Cabbage Tree Bay; $n = 206$, Shiprock; $n = 251$; Long Reef; $n = 100$, Gordons Bay; $n = 132$, Boat Harbour; $n = 161$, Freshwater $n = 136$, Malabar; $n = 105$, Little Bay; $n = 133$, Bondi; $n = 187$; Bare Island; $n = 48$). Group means for each level of protection are also presented in red with around the mean showing upper and lower 95% confidence intervals

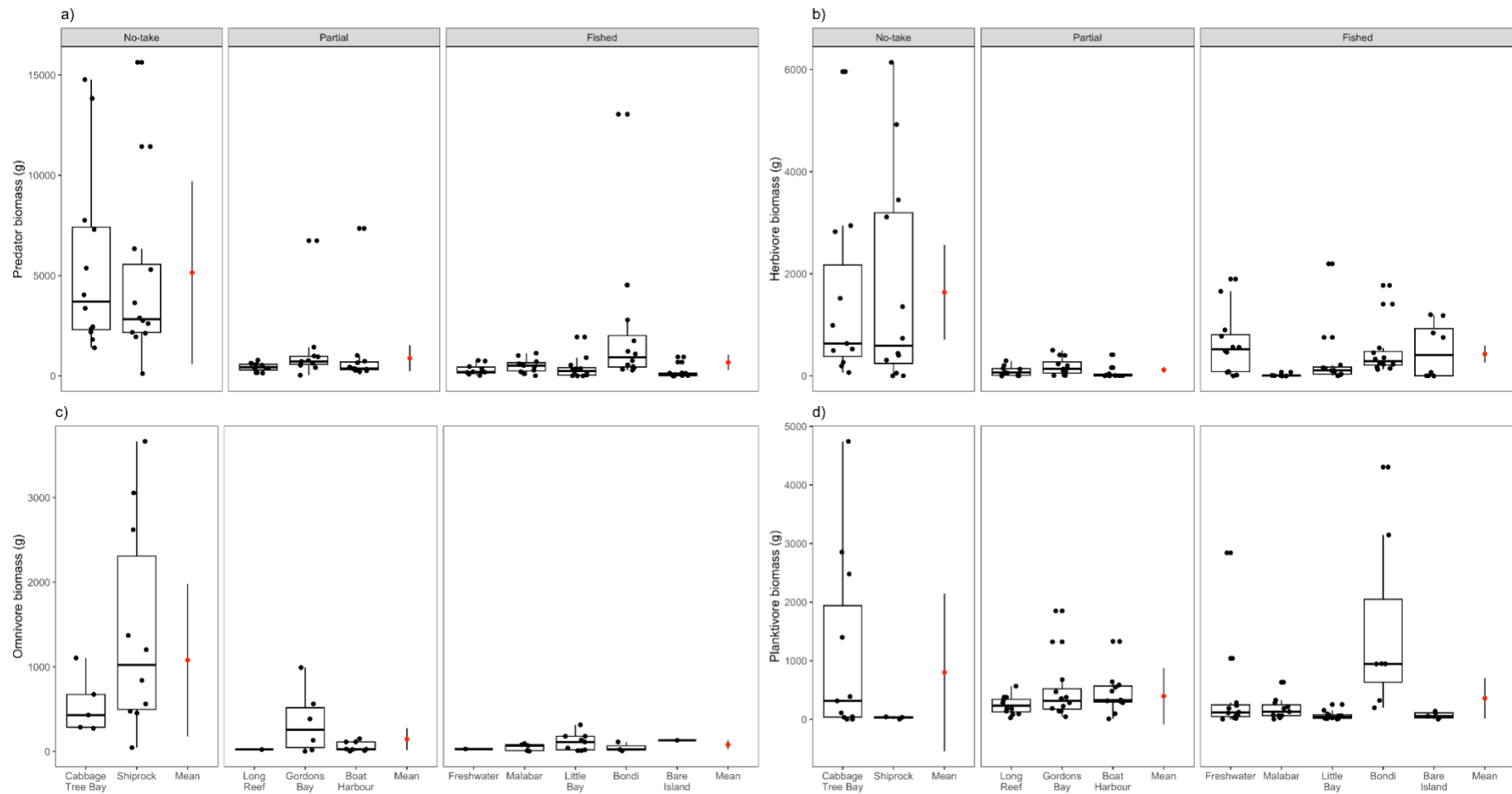


Figure S5. Boxplots showing a) Predator, b) herbivore, c) omnivore and d) planktivore fish biomass for, from left to right: no-take MPA, partial MPA and unprotected study sites. Black dots represent replicate counts for each transect ($n = 3$) per day ($n = 2$) for each site. Group means for each level of protection are also presented in red with bars around the mean showing upper and lower 95% confidence intervals

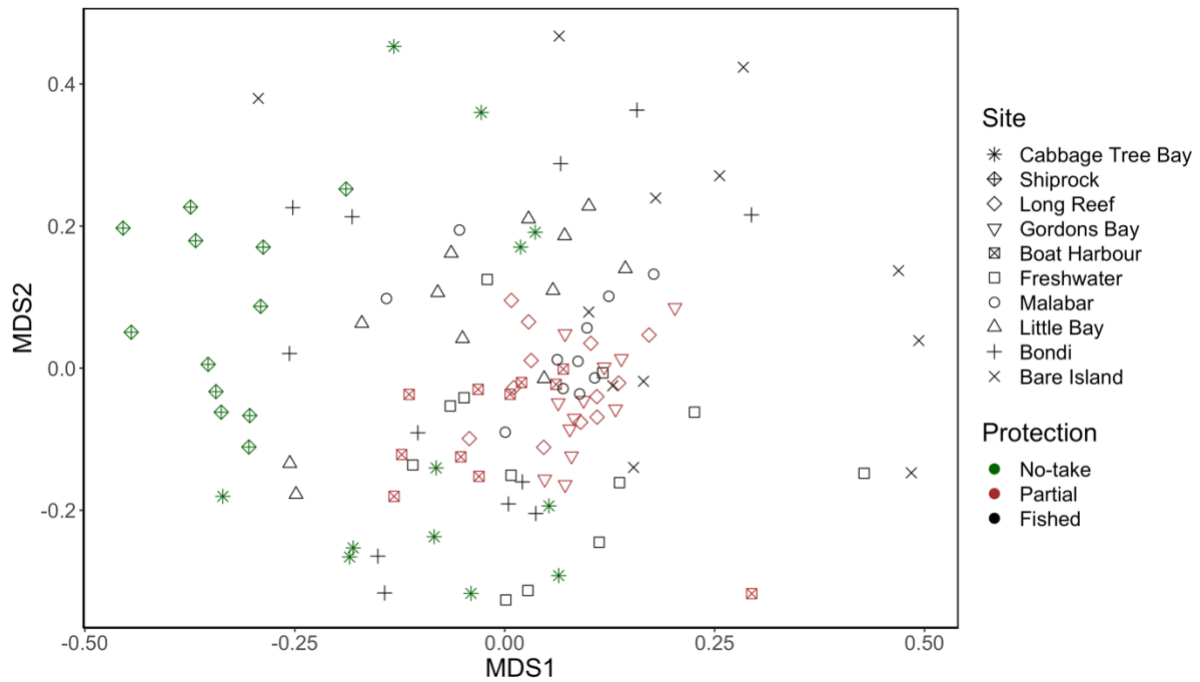


Figure S6. Multidimensional scaling of fish species composition from surveys

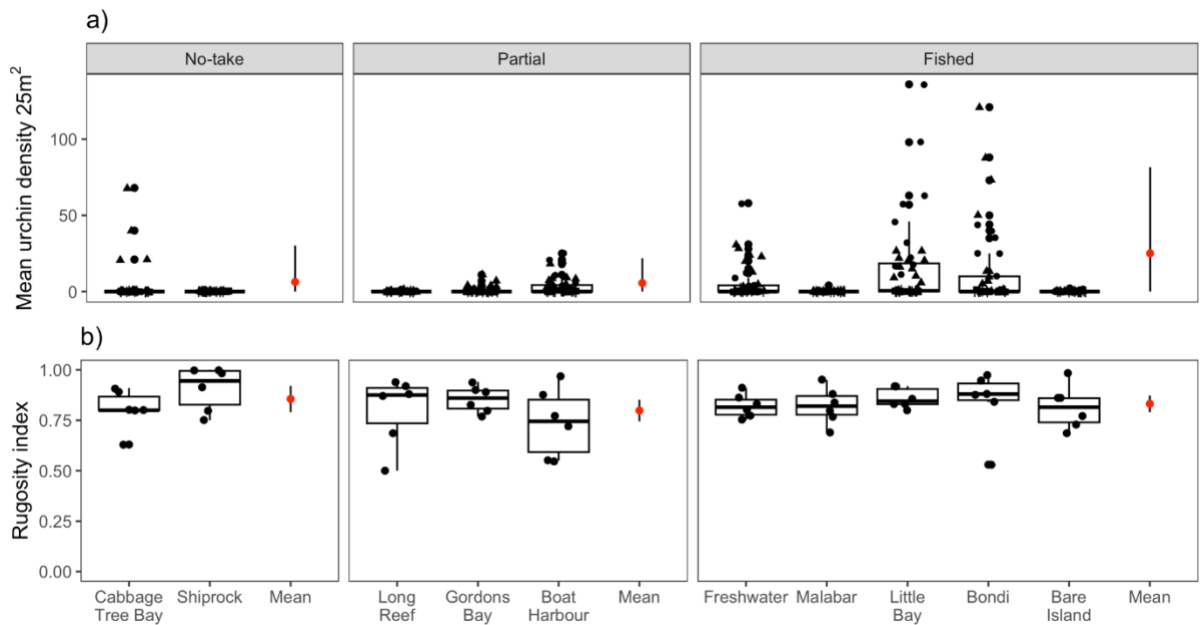


Figure S7. Boxplots showing a) urchin density by species (number of urchins per 25m²) where triangles represent *Centrostephanus rodgersii*, circles represent *Heliocidaris erythrogramma*, squares *Phyllacanthus parvispinua* and plus symbols *Heliocidaris tuberculata*, and b) habitat complexity for, from left to right: no-take MPAs, Partial MPAs and fished study sites. Black dots represent replicate counts per transect (n = 6 over n = 2 days). Group means for each level of protection are also presented in red with around the mean showing upper and lower 95%

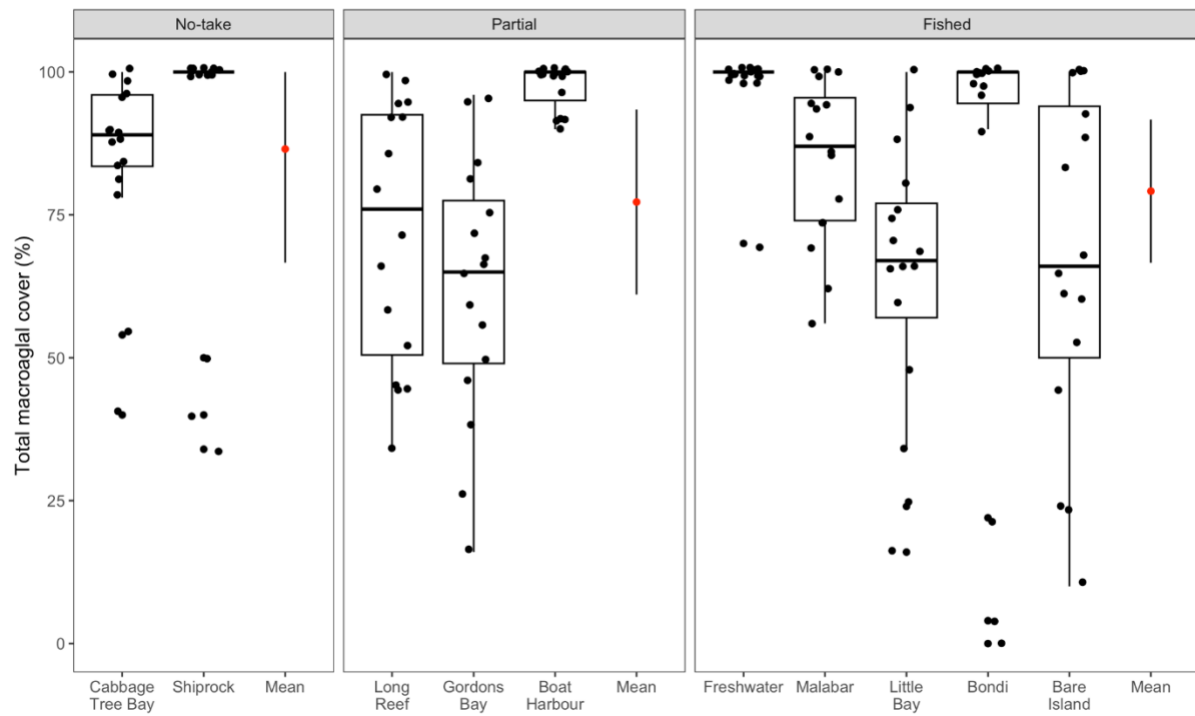


Figure S8. Boxplots showing the total percent macroalgal cover from photo quadrats. Black dots represent replicate counts for each transect ($n = 16$). Group means for each level of protection are also presented in red with around the mean showing upper and lower 95% confidence intervals