

Supplementary Materials Table S1 – Acoustic parameters and calibration settings used for the survey conducted on the RSS Discovery in 2019.

Variable	18 kHz	38 kHz	70 kHz	120 kHz	200 kHz	333 kHz
Transducer type	ES18-11	ES38B	ES70-7C	ES120-7C	ES200-7C	ES333-7C
Ping rate (pings/s)	2-4	2-4	2-4	2-4	2-4	2-4
Transducer power (W)	1400	1000	750	250	150	50
Pulse length (us)	1024	1024	1024	1024	1024	1024
2-way beam angle (dB)	-17.1	-20.7	-20.5	-20.4	-20.3	-20.3
Transducer gain (dB)	23.10	23.39	27.03	26.94	27.03	25.10
Sa correction (dB)	-0.67	-0.046	0.013	0.062	-0.39	-0.64
3dB beam along (°)	10.93	6.92	6.82	6.55	6.53	6.71
3dB beam athwart (°)	10.89	6.95	6.73	6.59	6.31	6.76

Supplementary Materials Table S2 – Acoustic parameters and calibration settings used for the survey conducted on the RRS James Clark Ross in 2018.

Variable	38 kHz	70 kHz	120 kHz	200 kHz
Transducer type	ES38B	ES70-7C	ES120-7C	ES200-7C
Ping rate (pings/s)	2-4	2-4	2-4	2-4
Transducer power (W)	2000	750	250	300
Pulse length (us)	1024	1024	1024	1024
2-way beam angle (dB)	-20.7	-20.5	-20.4	-19.6
Transducer gain (dB)	25.66	26.47	23.4	21.87
Sa correction (dB)	-0.52	-0.37	-0.24	-0.30
3dB beam along (°)	7.03	6.52	6.26	6.54
3dB beam athwart (°)	6.98	6.54	6.27	6.56

Supplementary Materials Table S3 – Summary of the net sampling carried out during the 2018 and 2019 surveys at the Tristan da Cunha seamounts. The catch composition is expressed in percentage derived from the total catch (in 2018 volume was used instead of weight to calculate total catch and species composition). The taxonomic group with the highest percentage in a trawl is represented in bold.

Survey	Trawl	Seamount	Gear	Date	Depth (min)	Depth (max)	Type	Crustaceans		Tunicates	Cnidaria		Fish		Other invertebrates
								Decapoda	Euphausiidae	Salpidae	Siphonophorae	Medusae	<i>Maurolicus inventionis</i>	Other Mesopelagic fish	
PLATEAU															
JCR	46-1	Crawford - East	RMT8	27/03/2018	300	428	Stratified			100.0					
JCR	46-2	Crawford - East	RMT8	27/03/2018	200	305	Stratified			99.8					0.2
JCR	47-1	Crawford - East	RMT8	28/03/2018	101	202	Stratified		92.5	1.9	3.7		1.9		
JCR	57-1	Crawford - East	RMT8	28/03/2018	85	127	Target	7.2	1.8	1.2	8.4		78.3		3.1
JCR	67-1	Crawford - West	RMT8	29/03/2018	102	270	Stratified	3.2		6.5	6.5		83.9		
JCR	67-2	Crawford - West	RMT8	29/03/2018	10	120	Stratified			71.4	28.6		3.6		
JCR	68-1	Crawford - West	RMT8	30/03/2018	207	270	Target				33.3		66.7		
JCR	68-2	Crawford - West	RMT8	30/03/2018	10	70	Target				100.0				
JCR	69-1	Crawford - West	RMT8	30/03/2018	100	165	Target			41.2			58.8		
JCR	69-2	Crawford - West	RMT8	30/03/2018	15	70	Target		7.7	38.5	46.2			7.7	
JCR	7-1	Yakhont	RMT8	24/03/2018	105	260	Stratified		25.9				74.1		
JCR	7-2	Yakhont	RMT8	24/03/2018	16	105	Stratified	25.0	25.0		16.7		12.5		20.8
JCR	20-1	Yakhont	RMT8	24/03/2018	290	290	Target			1.9			96.8		1.3
JCR	20-2	Yakhont	RMT8	24/03/2018	115	144	Target		3.8	19.2			76.9		0.1
JCR	21-1	Yakhont	RMT8	25/03/2018	175	175	Target						100.0		
JCR	32-1	Yakhont	RMT8	25/03/2018	255	320	Target		1.6				82.0		16.4
JCR	32-2	Yakhont	RMT8	25/03/2018	10	75	Stratified		2.8	73.4	21.9		1.9		
JCR	33-1	Yakhont	RMT8	26/03/2018	295	290	Target				14.3		85.7		
JCR	33-2	Yakhont	RMT8	26/03/2018	15	100	Stratified		2.8		93.0		4.2		
JCR	34-1	Yakhont	RMT8	26/03/2018	250	250	Target		3.1		24.7		72.0		0.2
JCR	34-2	Yakhont	RMT8	26/03/2018	103	135	Target				25.5		74.5		
Discovery	19-1	McNish	RMT25	24/03/2019	74	94	Target		5.3	0.4	0.8	0.2	93.2		0.1
Discovery	19-2	McNish	RMT25	24/03/2019	52	72	Target		7.5	0.3	0.1	1.9	90.1		0.1
Discovery	26-1	RSA	RMT25	26/03/2019	205	328	Target	0.1	11.3	33.5	15.9	6.9	22.7	0.5	9.2
Discovery	26-2	RSA	RMT25	26/03/2019	100	205	Target	0.3	34.1	6.9	33.1		19.3	3.5	3.0
Discovery	29-1	RSA	RMT25	26/03/2019	200	310	Target		3.4	20.7	12.6	12.9	45.7	3.7	1.1
Discovery	29-2	RSA	RMT25	26/03/2019	25	200	Target	0.1	12.2	34.4	14.0		37.5	0.1	1.7
SLOPE															
JCR	47-2	Crawford - East	RMT8	28/03/2018	15	100	Stratified		26.3		73.7				
JCR	57-2	Crawford - East	RMT8	28/03/2018	15	60	Target	10.6	0.9	66.4	22.1				
JCR	60-1	Crawford - West	RMT8	29/03/2018	200	400	Stratified	28.2	29.6	2.4	19.4			20.4	
JCR	60-2	Crawford - West	RMT8	29/03/2018	15	200	Stratified	13.5	55.2	0.9	13.9			10.9	5.7
JCR	21-2	Yakhont	RMT8	25/03/2018	20	88	Target		83.3				16.7		
Discovery	11-1	McNish	RMT25	24/03/2019	202	395	Stratified	4.0	7.5		8.9	45.6		19.2	14.7
Discovery	11-2	McNish	RMT25	24/03/2019	15	202	Stratified	7.5	2.6	33.5	27.3		1.2	17.9	10.1
Discovery	21-1	McNish	RMT25	25/03/2019	700	1000	Stratified	8.5	0.5		12.3	39.4		20.5	18.8
Discovery	21-2	McNish	RMT25	25/03/2019	400	700	Stratified	10.7	1.4	1.4	5.9	21.1		21.0	38.6
Discovery	31-1	RSA	RMT25	27/03/2019	698	998	Stratified	8.7	0.5	0.4	8.1	50.2	0.0	22.8	9.4
Discovery	31-2	RSA	RMT25	27/03/2019	387	698	Stratified	7.4	4.7	0.3	0.7	4.2	1.1	21.4	60.3
Discovery	41-1	RSA	RMT25	27/03/2019	700	1000	Stratified	2.9	1.0	0.0	9.8	36.0		13.1	37.2
Discovery	41-2	RSA	RMT25	28/03/2019	400	700	Stratified	18.8	32.6	3.7	3.7	0.9	0.2	14.3	25.9
OPEN OCEAN															
JCR	43-1	Near Yakhont	RMT8	26/03/2018	200	400	Stratified		5.5		33.3			20.0	41.2
JCR	43-2	Near Yakhont	RMT8	26/03/2018	15	200	Stratified	3.7	34.6		61.7				
JCR	74-1	Oceanic	RMT8	30/03/2018	200	398	Stratified	16.8	36.1		28.8			15.9	2.4
JCR	74-2	Oceanic	RMT8	30/03/2018	16	200	Stratified	6.1	72.7		3.0			18.2	
Discovery	1-1	Oceanic	RMT25	20/03/2019	20	200	Stratified	5.8	6.4	18.8	6.4			10.1	52.6
Discovery	1-2	Oceanic	RMT25	20/03/2019	200	350	Stratified	9.5	0.9	6.7	3.9	33.1		30.1	15.8
Discovery	42-1	Near RSA	RMT25	28/03/2019	215	441	Stratified	8.5	13.7		12.4	0.0		3.5	61.3
Discovery	42-2	Near RSA	RMT25	28/03/2019	20.5	217	Stratified	9.5	18.9		7.0	11.3	6.6	45.2	2.0

