

**Table S1.** Number of responses (*n*) and the frequency of occurrence (%) of responses about the demographics of Blue Swimmer Crabs and Black Bream fishers. Data obtained from respondents that answered all questions in the closed question online survey.

	Blue Swimmer Crab		Black Bream	
	<i>n</i>	%	<i>n</i>	%
<b>Gender</b>				
Male	298	83.94	99	93.40
Female	55	15.49	7	6.60
Other	2	0.56	0	0.00
<b>Age</b>				
18 - 24	30	8.47	18	16.98
25 - 34	66	18.64	26	24.53
35 - 44	96	27.12	29	27.36
45 - 54	70	19.77	15	14.15
55 - 64	53	14.97	16	15.09
65 or more	39	11.02	2	1.89
<b>Education</b>				
Primary School	3	0.88	1	0.94
Secondary School	108	31.67	41	38.68
Technical or Further educational institution	119	34.90	31	29.25
University or other Tertiary institution	111	32.55	32	30.19
Other	0	0.00	1	0.94
<b>Household annual income</b>				
<\$0	5	1.61	3	3.06
\$0	14	4.50	6	6.12
\$1 - \$20,799	20	6.43	9	9.18
\$20,800 - \$41,599	28	9.00	10	10.20
\$41,600 - \$62,399	48	15.43	10	10.20
\$62,400 - \$83,199	50	16.08	18	18.37
\$84,000 - \$103,999	32	10.29	16	16.33
\$104,000 - \$142,999	41	13.18	7	7.14
\$143,000 - \$181,999	32	10.29	6	6.12
\$182,000 - \$233,999	21	6.75	7	7.14
\$234,000 - \$285,999	5	1.61	1	1.02
\$286,000 - \$337,999	6	1.93	2	2.04
> \$338,000	9	2.89	3	3.06

**Table S2: Number of responses (*n*) and the frequency of occurrence (%) of responses about the characteristics of Blue Swimmer Crabs and Black Bream fishers.** Data obtained from respondents that answered all questions in the closed question online survey.

Fishing frequency	Blue Swimmer Crab		Black Bream	
	<i>n</i>	%	<i>n</i>	%
I have never been fishing for crabs*	10	1.92	2	1.40
I have not fished for crabs in the past 12 months*	33	6.32	7	4.90
Once	46	8.81	4	2.80
Once a month	92	17.62	27	18.88
Once every 2 - 3 months	87	16.67	16	11.19
Once every 4 - 6 months	97	18.58	7	4.90
1 - 2 days a fortnight	107	20.50	41	28.67
1 - 2 days a week	35	6.70	33	23.08
3 - 4 days a week	12	2.30	6	4.20
5 days or more a week	3	0.57	0	0.00

Fishing experience				
	<i>n</i>	%	<i>n</i>	%
1 year or less	24	5.16	5	3.91
2 - 3 years	34	7.31	13	10.16
4 - 5 years	40	8.60	22	17.19
6 - 10 years	63	13.55	18	14.06
11 - 20 years	93	20.00	36	28.13
21 - 39 years	119	25.59	24	18.75
40 years or more	92	19.78	10	7.81

Fishing location				
	<i>n</i>	%	<i>n</i>	%
Shore	124	26.67	51	40.16
Both but usually shore	53	11.40		
Both equally	34	7.31		
Both but usually boat	83	17.85		
Kayak			31	24.41
Boat	171	36.77	38	29.92
Other			7	5.51

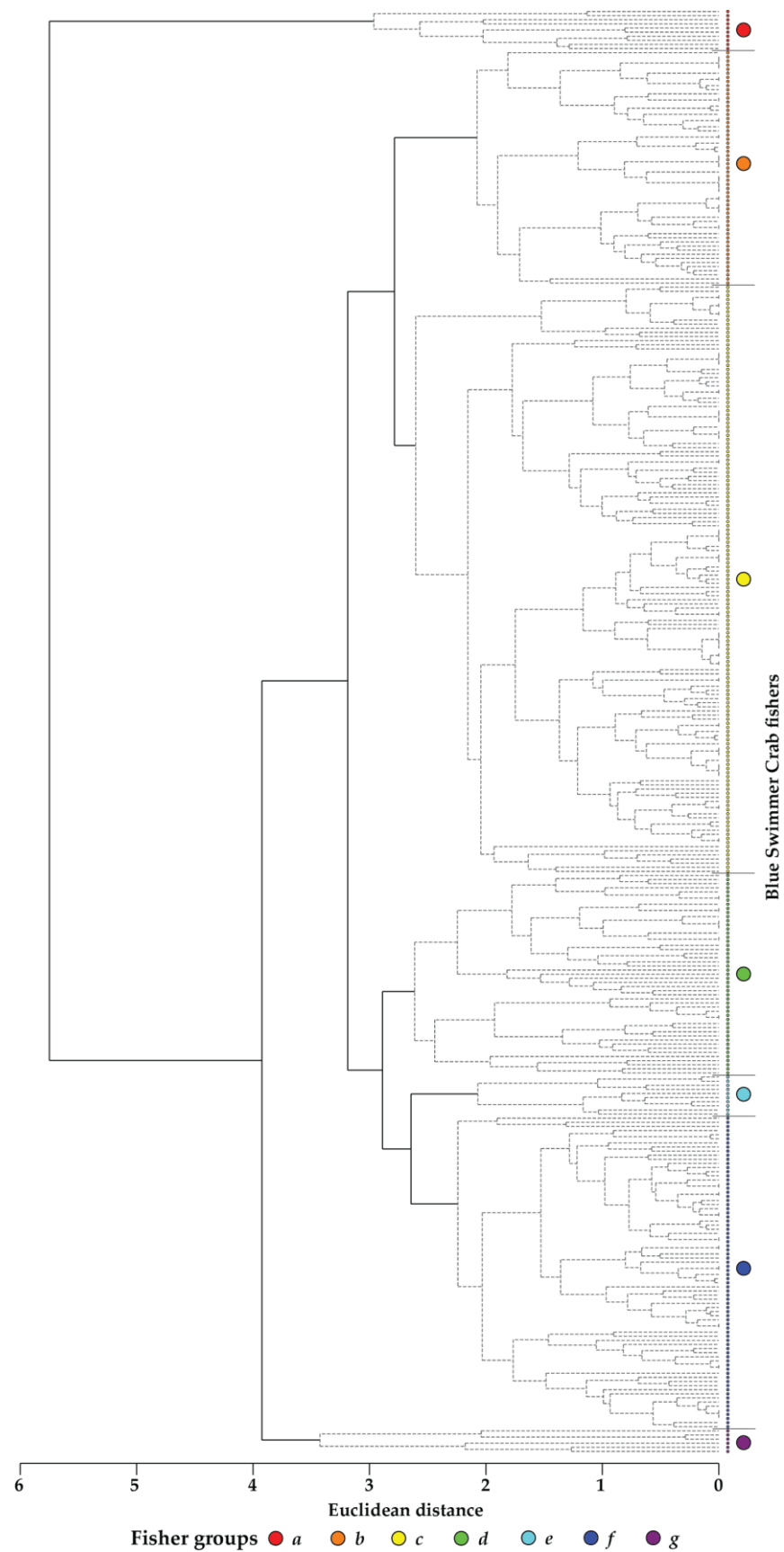
Fishing method				
	<i>n</i>	% <sup>^</sup>	<i>n</i>	%
Drop/crab nets	372	79.49		
Scoop nets	276	58.97		
Catch by hand by diving/snorkelling/wading	93	19.87		
Crab traps	3	0.64		
Wire hook	5	1.07		
Bait			30	23.08
Lures (including soft plastics)			80	61.54
Bait and lures			18	13.85
Other			2	1.54

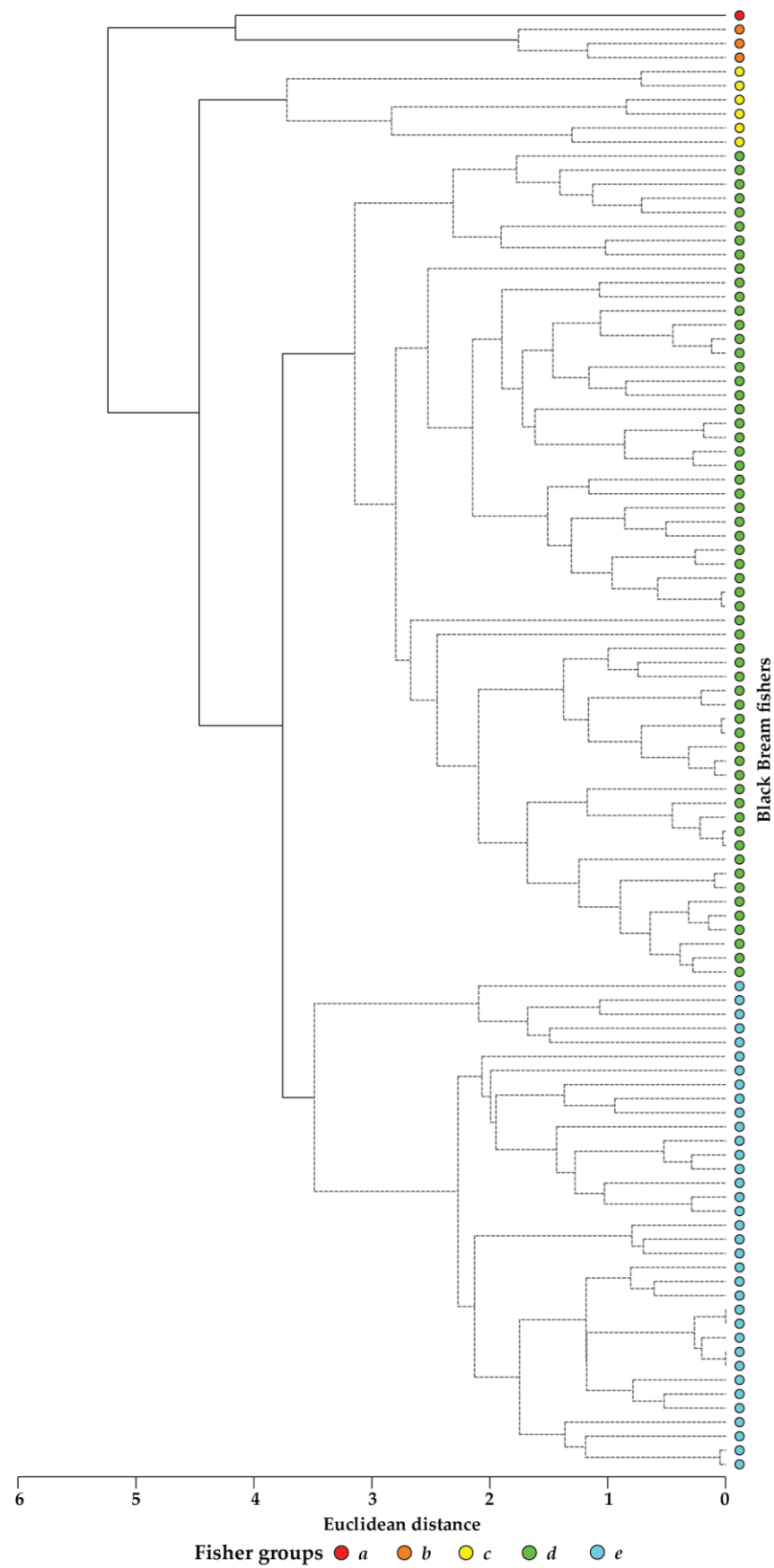
Skill level				
	<i>n</i>	%	<i>n</i>	%
Beginner (novice)	57	12.28	13	10.16
Intermediate	235	50.65	74	57.81
Expert	172	37.07	41	32.03

\* After selecting this response these respondents were automatically transferred to the final page of the questionnaire to complete some basic demographic questions and received a thank you message.

<sup>^</sup> Respondents were able to select multiple options and so value do not sum to 100.

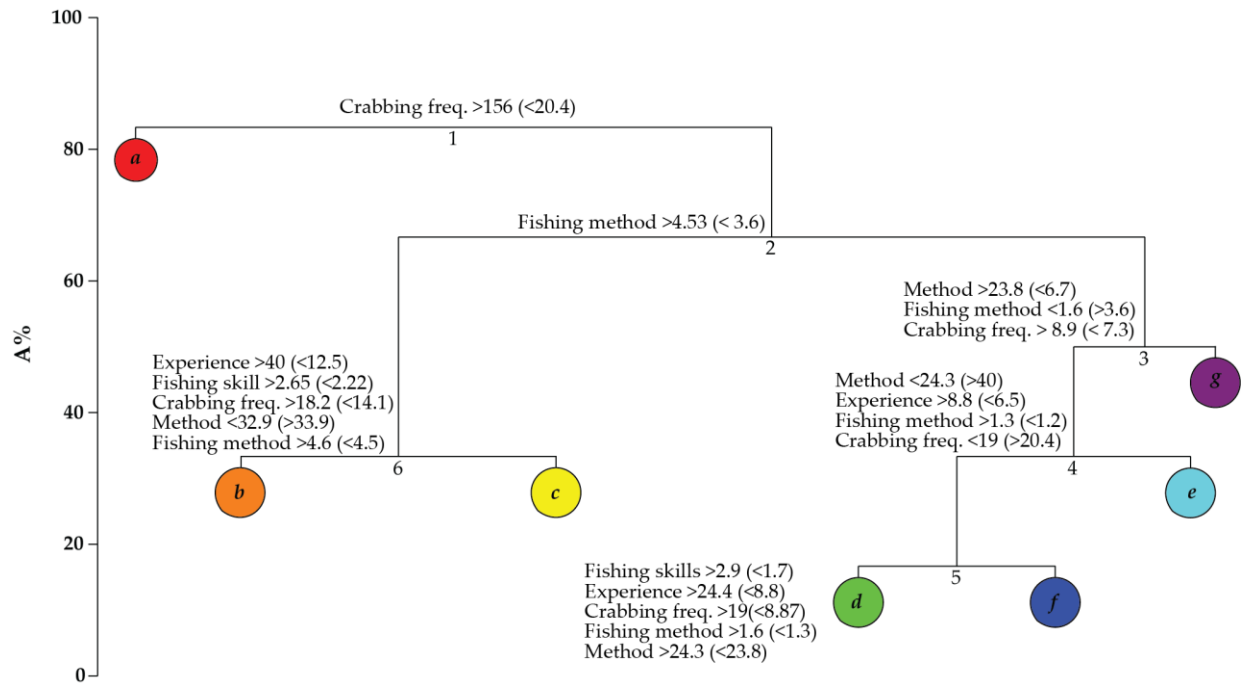


**Figure S1.** Dendrogram derived from CLUSTER-SIMPROF analysis of the fisher characteristics of Blue Swimmer Crab fishers. Samples joined by a dashed horizontal grey line represent fishers that were shown by SIMPROF to have statistically similar fisher characteristics ( $P > 0.01$ ), but to be significantly different from all those fishers in other fisher groups ( $P < 0.01$ ).

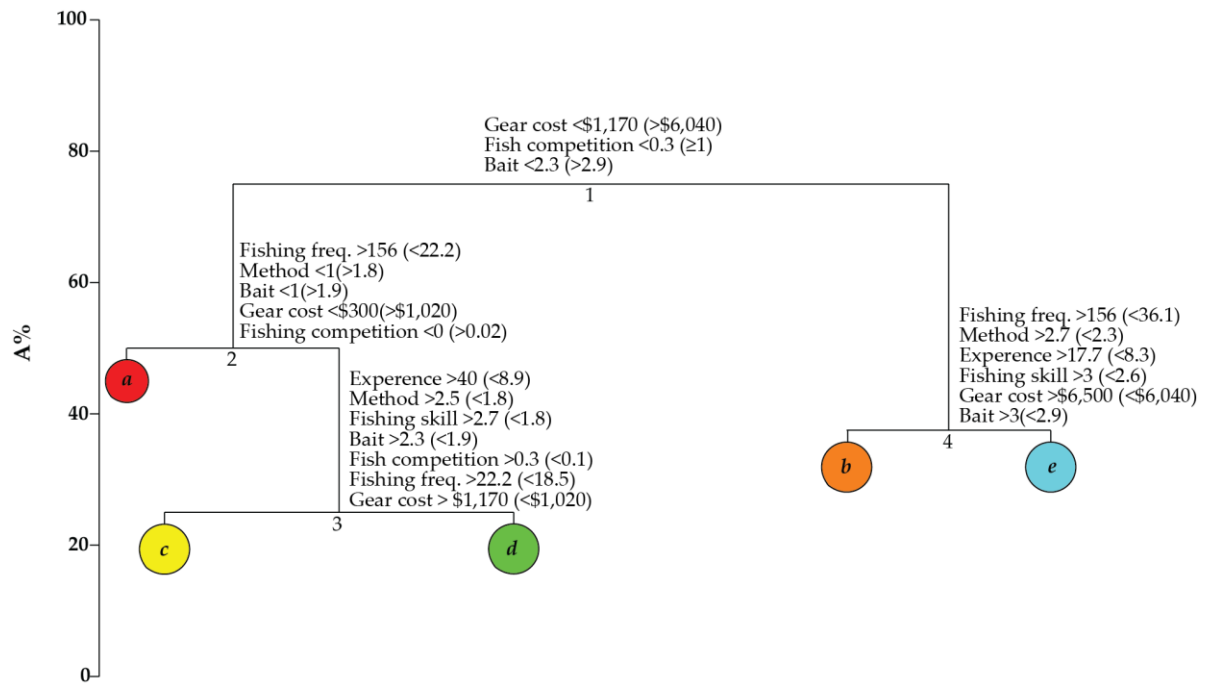


**Figure S2.** Dendrogram derived from CLUSTER-SIMPROF analysis of the fisher characteristics of Black Bream fishers. Samples joined by a dashed horizontal grey line represent fishers that were

shown by SIMPROF to have statistically similar fisher characteristics ( $P > 0.01$ ), but to be significantly different from all those fishers in other fisher groups ( $P < 0.01$ ).



**Figure S3.** Linkage tree and associated quantitative thresholds for assigning Blue Swimmer Crab fishers to their appropriate fisher group. Unbracketed and bracketed thresholds given at each branching node indicate that a left or right path should be followed, respectively. Note that all threshold values have not been subjected to any form of data pre-treatment. The terminal node represented by a coloured symbol denotes the fisher group to which any new fisher (or sample) belongs. A% reflects the extent of inter-fisher group differences as a proportion of that between the most dissimilar fisher groups.



**Figure S4.** Linkage tree and associated quantitative thresholds for assigning Black Bream fishers to their appropriate fisher group. Unbracketed and bracketed thresholds given at each branching node indicate that a left or right path should be followed, respectively. Note that all threshold values have not been subjected to any form of data pre-treatment. The terminal node represented by a coloured symbol denotes the fisher group to which any new fisher (or sample) belongs. A% reflects the extent of inter-fisher group differences as a proportion of that between the most dissimilar fisher groups.

**Table S3.** Percentage number of times a salient motivation for (a) Blue Swimmer Crab and (b) Black Bream fishing was selected from the closed-question online survey. Percentages given for all fishers targeting the species (overall), for those fishers utilising a particular fishery and allocated to a fisher group. Values in both (a) and (b) shaded separately, with values in dark red being the lowest and those in dark green the highest. Note respondents were able to select as many motivations as they deemed appropriate. The CLUSTER-SIMPROF groups assigned are given below. Fisheries or fisher groups with the same letter indicate no significant difference in the percentage contribution across the possible answers, whereas those with different letters are deemed to be different. In this and other tables, average responses from Black Bream fishers utilising Wilson Inlet and those in fisher group *a* were not subjected to CLUSTER-SIMPROF analysis due to them having very small numbers of respondents. Peel = Peel-Harvey Estuary; Swan = Swan-Canning Estuary; Lesch = Leschenault Estuary; Shark = Shark Bay; Black. = Blackwood River Estuary; Wilson = Wilson Inlet.

(a) Blue Swimmer Crabs		Fishery						Fisher group						
	Overall		Peel	Swan	Lesch.	Shark		<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
Food	92		93	94	91	86		100	95	96	92	100	90	60
Enjoyment of catch	67		71	69	67	71		30	75	70	71	50	64	60
Enjoyment of outdoors	65		72	67	58	57		50	68	71	71	70	70	20
Pleasure	65		69	70	61	57		50	84	72	65	50	59	40
Time with family	51		57	47	52	57		30	67	56	41	20	51	60
Time with friends	48		51	56	36	43		20	54	58	45	30	45	0
CLUSTER-SIMPROF group			a	a	a	a		a	b	b	b	a	b	c

(b) Black Bream		Fishery						Fisher group					
	Overall		Black.	Peel	Swan	Wilson	Other		<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
Sport / Challenge	81		83	88	83	100	77		100	67	83	69	100
Enjoyment of outdoors	67		72	50	65	100	80		100	67	67	73	66
Pleasure	64		56	56	60	100	83		100	67	67	73	54
Relaxation	63		56	63	62	100	70		0	67	50	71	51
Enjoyment of catching a big fish	58		56	50	57	100	67		100	100	67	59	54
Time with friends/family	39		33	44	40	100	37		0	0	33	47	26
Food	15		6	19	14	0	17		0	0	50	19	6
Easy access to boat ramp and fishing sites	12		17	6	8	0	20		0	0	17	14	9
CLUSTER-SIMPROF group			a	a	a		a			a	a	a	a

**Table S4.** Average rating (X) and standard error (SE) from -3 to +3 for each salient motivation for (a) Blue Swimmer Crab and (b) Black Bream fishing provided in the closed-question online survey. Average rating values in both (a) and (b) shaded separately, with values in dark red being the lowest and those in dark green the highest. The CLUSTER-SIMPROF groups assigned are given below. Fisheries or fisher groups with the same letter indicate no significant difference in the percentage contribution across the possible answers, whereas those with different letters are deemed to be different.

(a) Blue Swimmer Crabs	Fishery												Fisher group													
	Overall			Peel		Swan		Lesch.		Shark			a		b		c		d		e		f		g	
	X	SE		X	SE	X	SE	X	SE	X	SE		X	SE	X	SE	X	SE	X	SE	X	SE	X	SE	X	SE
Catching enough crabs to eat	1.89	0.06		1.98	0.08	1.89	0.10	1.90	0.26	2.50	0.30		2.20	0.47	2.04	0.12	1.87	0.11	2.00	0.18	2.11	0.29	1.83	0.19	1.00	1.11
Catching big crabs	1.89	0.05		1.86	0.07	1.96	0.09	2.11	0.18	2.40	0.32		2.00	0.63	2.12	0.14	1.86	0.11	1.98	0.19	2.38	0.24	1.77	0.17	1.00	0.96
Being with friends/family is enough	1.52	0.06		1.59	0.08	1.46	0.10	0.78	0.33	1.33	0.20		2.00	0.49	1.46	0.16	1.50	0.11	1.08	0.24	1.57	0.40	1.64	0.15	1.75	0.39
Being outdoors is enough	1.44	0.06		1.46	0.09	1.31	0.10	0.96	0.32	0.40	0.54		2.14	0.50	1.32	0.14	1.35	0.12	1.36	0.24	1.11	0.40	1.64	0.13	2.00	0.58
Catching as many crabs as I am legally allowed to	0.43	0.09		0.64	0.12	0.37	0.14	0.19	0.34	-0.17	0.76		1.25	0.77	0.52	0.25	0.35	0.16	0.62	0.29	0.60	0.76	0.13	0.24	-1.67	0.62
Catching some crabs	-0.57	0.09		-0.52	0.13	-0.32	0.15	-0.77	0.35	-0.83	0.85		-1.25	0.86	-0.64	0.28	-0.41	0.17	-0.62	0.32	-1.22	0.74	-0.39	0.26	-2.20	0.73
CLUSTER-SIMPROF group				a		a		a		a			a		b		b		b		b		b		c	

(b) Black Bream	Fishery												Fisher group											
	Overall			Black.		Peel		Swan		Wilson		Other			a		b		c		d		e	
	X	SE		X	SE	X	SE	X	SE	X	SE	X	SE		X	SE	X	SE	X	SE	X	SE	X	SE
Catching a big bream (> 30 cm)	2.33	0.13		2.53	0.36	2.92	0.08	2.40	0.15	-2.00		2.08	0.29		3.00		3.00	0.00	2.60	0.24	2.37	0.16	2.24	0.28
Having a relaxing day	1.70	0.15		1.15	0.80	2.07	0.29	1.78	0.15	2.00		1.80	0.31				0.33	1.76	1.20	0.49	2.09	0.14	1.39	0.34
Catching a legal sized bream (25 cm)	1.64	0.15		2.06	0.30	2.00	0.27	1.67	0.22	1.00		1.33	0.36		-2.00		1.67	0.88	1.00	1.00	1.59	0.20	1.88	0.34
Being outdoors is enough	1.44	0.16		0.44	0.69	2.36	0.28	1.57	0.15	3.00		1.57	0.29		2.00		-0.33	1.33	1.80	0.37	1.94	0.14	1.08	0.37
Catching a bream no matter the size	1.08	0.19		-0.38	0.74	2.07	0.28	1.31	0.24	3.00		0.88	0.32		-3.00		1.33	0.88	0.33	0.56	1.17	0.25	1.74	0.32
Being with friends/family is enough	1.07	0.21		0.58	0.79	1.44	0.73	1.18	0.22	2.00		1.15	0.42				-3.00		2.25	0.48	1.27	0.24	1.17	0.49
Good weather conditions	0.63	0.19		0.58	0.72	1.57	0.65	0.55	0.25	-1.00		0.73	0.34		-2.00		0.67	1.20	-0.25	0.75	0.96	0.24	0.38	0.41
Catching as many bream as I am legally allowed to	-0.94	0.23		0.57	0.69	-0.30	0.70	-1.50	0.29	-3.00		-0.83	0.42		-3.00		0.00	1.73	-1.25	0.25	-1.30	0.31	-0.42	0.49
CLUSTER-SIMPROF group				a		b		c				c					a		a		a		a	



**Table S5.** Percentage number of times (a) Blue Swimmer Crab and (b) Black Bream fishers eat, release and give away legal-sized individuals that they catch. Percentages given for all fishers targeting the species (overall), for those fishers utilising a particular fishery and allocated to a fisher group. Values in both (a) and (b) shaded separately, with values in dark red being the lowest and those in dark green the highest. The CLUSTER-SIMPROF groups assigned are given below. Fisheries or fisher groups with the same letter indicate no significant difference in the percentage contribution across the possible answers, whereas those with different letters are deemed to be different.

(a) Blue Swimmer Crabs			Fishery					Fisher group						
Eat them	Overall		Peel	Swan	Lesch.	Shark		<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
Always	91		93	92	90	100		80	95	96	90	90	84	83
Sometimes	8		7	7	10	0		20	4	4	10	10	14	0
Never	1		1	1	0	0		0	2	0	0	0	3	17
CLUSTER-SIMPROF group			a	a	a			a	b	b	b	b	b	c
Release after capture														
Always	2		2	0	0	0		0	5	0	0	11	3	20
Sometimes	68		69	67	55	67		60	54	68	69	78	78	80
Never	31		29	33	45	33		40	40	32	31	11	19	0
CLUSTER-SIMPROF group			a	a	b			a	a	a	a	b	b	b
Give away														
Always	8		7	9	15	0		20	7	7	6	0	7	0
Sometimes	75		73	76	55	100		60	79	76	78	60	70	83
Never	18		20	16	30	0		20	16	17	16	40	22	17
CLUSTER-SIMPROF group			a	a	b			a	b	b	b	c	b	b

(b) Black Bream		Fishery					Fisher group						
Eat them	Overall		Black.	Peel	Swan	Wilson	Other		a	b	c	d	e
Always	9		9	8	2	0	23		0	0	33	12	0
Sometimes	27		45	8	30	0	23		0	0	33	40	9
Never	64		45	83	69	100	54		100	100	33	48	91
CLUSTER-SIMPROF group			a	a	a		a			a	b	b	a
<b>Release after capture</b>													
Always	76		83	83	76	100	67		100	100	33	66	94
Sometimes	23		17	17	22	0	33		0	0	67	32	6
Never	1		0	0	2	0	0		0	0	0	2	0
CLUSTER-SIMPROF group			a	a	a		a			a	c	b	a
<b>Give away</b>													
Always	2		0	8	2	0	0		0	0	17	0	3
Sometimes	13		18	0	7	0	31		0	0	0	21	6
Never	85		82	92	91	100	69		100	100	83	79	91
CLUSTER-SIMPROF group			a	a	a		a			a	a	a	a

**Table S6.** Percentage number of times (a) Blue Swimmer Crab and (b) Black Bream fishers catch, fewer target individuals than allowed (i.e. the bag limit), the number allows, more than allowed and multiple options. Percentages given for all fishers targeting the species (overall), for those fishers utilising a particular fishery and allocated to a fisher group. Values in both (a) and (b) shaded separately, with values in dark red being the lowest and those in dark green the highest. The CLUSTER-SIMPROF groups assigned are given below. Fisheries or fisher groups with the same letter indicate no significant difference in the percentage contribution across the possible answers, whereas those with different letters are deemed to be different.

(a) Blue Swimmer Crabs			Fishery					Fisher group						
	Overall		Peel	Swan	Lesch.	Shark		a	b	c	d	e	f	g
Catch fewer crabs than allowed														
Always	31		28	33	55	0		50	14	33	22	40	41	50
Sometimes	67		70	65	40	100		50	86	65	67	60	59	50
Never	1		1	1	0	0		0	0	1	6	0	0	0
Don't know	1		0	1	5	0		0	0	1	4	0	0	0
CLUSTER-SIMPROF group			a	a	b			a	d	b	d	c	c	a
As many crabs as the limit allows														
Always	12		9	14	10	17		40	12	10	14	10	9	17
Sometimes	72		79	72	50	83		40	77	74	76	70	69	50
Never	16		12	15	40	0		20	11	16	10	20	20	33
Don't know	0		0	0	0	0		0	0	0	0	0	1	0
CLUSTER-SIMPROF group			a	a	a			a	b	c	b	c	c	d
More crabs than allowed														
Always	0		0	1	0	0		0	0	0	0	0	0	0
Sometimes	37		26	23	47	25		0	0	1	0	0	3	0
Never	1		1	2	0	0		0	2	3	2	0	0	0
Don't know	61		72	75	53	75		100	98	96	98	100	97	100
CLUSTER-SIMPROF group			a	a	b			a	a	a	a	a	a	a
All of the above depending on the day														
Always	5		5	6	0	0		0	8	3	11	10	3	0
Sometimes	23		24	25	20	67		40	29	25	17	20	18	20
Never	42		44	42	50	33		30	53	39	46	40	45	20
Don't know	30		27	28	30	0		30	10	33	26	30	34	60
CLUSTER-SIMPROF group			a	a	b			a	a	a	a	a	a	a

(b) Black Bream			Fishery					Fisher group					
	Overall		Black.	Peel	Swan	Wilson	Other		a	b	c	d	e
Catch fewer fish than allowed													
Always	73		58	55	80	100	70		100	33	83	73	74
Sometimes	4		0	9	5	0	0		0	0	0	2	6
Never	16		25	36	11	0	15		0	67	0	14	20
Don't know	8		17	0	4	0	15		0	0	17	12	0
CLUSTER-SIMPROF group			a	a	a		a			a	a	a	a
As many fish as the limit allows													
Always	4		8	0	5	0	0		0	0	0	5	3
Sometimes	1		0	0	2	0	0		0	0	0	0	0
Never	85		83	100	82	100	85		100	67	83	81	94
Don't know	10		8	0	11	0	15		0	33	17	14	3
CLUSTER-SIMPROF group			a	a	a		a			a	a	a	a
More fish than allowed													
Always	0		0	0	0	0	0		0	0	0	0	0
Sometimes	1		0	0	2	0	0		0	0	0	0	0
Never	99		100	100	98	100	100		100	100	100	100	100
Don't know	0		0	0	0	0	0		0	0	0	0	0
CLUSTER-SIMPROF group			a	a	a		a			a	a	a	a
All of the above depending on the day													
Always	1		0	9	0	0	0		0	0	17	0	0
Sometimes	14		18	0	20	0	8		0	33	0	16	9
Never	74		73	82	67	100	85		100	67	50	70	89
Don't know	11		9	9	13	0	8		0	0	33	14	3
CLUSTER-SIMPROF group			a	a	a		a			a	b	a	a

**Table S7.** Perceived importance of (a) Blue Swimmer Crab and (b) Black Bream fishing to fishers that target those species and the percentage of fishers that would undertake different substitute activities if their target species could no longer be fished in the estuary they fish most regularly in. Percentages given for all fishers targeting the species (overall), for those fishers utilising a particular fishery and allocated to a fisher group. Values in both (a) and (b) shaded separately, with values in dark red being the lowest and those in dark green the highest. The CLUSTER-SIMPROF groups assigned are given below. Fisheries or fisher groups with the same letter indicate no significant difference in the percentage contribution across the possible answers, whereas those with different letters are deemed to be different.

(a) Blue Swimmer Crabs			Fishery					Fisher group						
	Overall		Peel	Swan	Lesch.	Shark		a	b	c	d	e	f	g
Compared to other types of fishing, how important is crabbing to you?														
Much more important	19		19	22	47	17		56	28	19	11	11	17	17
More important	27		27	31	5	50		11	28	28	32	22	24	17
The same importance	50		50	45	37	33		22	44	51	51	56	53	67
Less important	3		2	2	5	0		11	0	1	6	0	4	0
Much less important	1		1	0	5	0		0	0	1	0	11	3	0
CLUSTER-SIMPROF group			a	a	b			a	b	b	b	b	b	b
Compared to other types of outdoor recreation, how important is crabbing to you?														
Much more important	17		16	20	30	17		50	20	18	15	0	14	0
More important	30		32	37	35	67		10	32	35	31	40	20	33
The same importance	44		43	36	25	17		40	46	40	46	40	47	33
Less important	9		8	7	10	0		0	2	7	8	20	18	0
Much less important	1		0	1	0	0		0	0	0	0	0	1	33
CLUSTER-SIMPROF group			a	a	a			a	b	b	b	b	b	c
If crabbing was not available in the estuary where you fish most often, what would you most likely do instead?														
Fish for Blue Swimmer Crabs elsewhere	58		60	62	42	67		67	65	54	59	70	53	50
Fish a different species in the same estuary	19		20	17	32	17		11	15	20	17	20	25	0
Do a different water-based outdoor activity	15		14	14	16	17		22	15	22	9	0	10	33
Take on a different land-based outdoor activity	4		3	3	0	0		0	4	2	9	10	4	17
Loss of the fishery will not affect me	4		2	3	11	0		0	2	2	7	0	8	0
CLUSTER-SIMPROF group			a	a	b			a	a	a	a	a	a	b

(b) Black Bream			Fishery						Fisher group					
	Overall		Black.	Peel	Swan	Wilson	Other		a	b	c	d	e	
Compared to other types of fishing, how important is bream fishing to you?														
Much more important	23		8	27	22	100	26		100	100	33	22	74	
More important	30		17	27	35	0	30		0	0	33	29	14	
The same importance	43		58	45	42	0	41		0	0	33	42	11	
Less important	3		17	0	0	0	4		0	0	0	5	0	
Much less important	1		0	0	2	0	0		0	0	0	2	0	
CLUSTER-SIMPROF group				a	b	b		b		b	a	a	b	
Compared to other types of outdoor recreation, how important is bream fishing to you?														
Much more important	44		58	55	38	100	44		100	67	33	24	77	
More important	37		17	18	42	0	44		0	33	33	49	20	
The same importance	12		0	18	16	0	7		0	0	33	15	3	
Less important	4		17	9	0	0	4		0	0	0	7	0	
Much less important	3		8	0	4	0	0		0	0	0	5	0	
CLUSTER-SIMPROF group				a	a	a		a		a	a	a	a	
If bream fishing was not available in the estuary where you fish most often, what would you most likely do instead?														
Fish for Black Bream elsewhere	63		58	82	67	0	50		100	100	50	48	86	
Fish a different species in the same estuary	30		33	9	27	100	38		0	0	17	43	11	
Take on a different land-based outdoor activity	4		8	0	4	0	4		0	0	0	5	3	
Do a different water-based outdoor activity	3		0	9	2	0	4		0	0	33	2	0	
Loss of the fishery will not affect me	1		0	0	0	0	4		0	0	0	2	0	
CLUSTER-SIMPROF group				a	b	a		a		a	b	b	a	