

SUPPLEMENTARY MATERIAL

Table S1. Attribute values of each tagged individual of *Raja undulata*.

ID-PROJECT	Sex	DL	RI	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	C:N
TAC-RUN-19-32	Female	31	0.42	-14.66	11.7	2.95
TAC-RUN-19-37	Female	41	0.71	-14.79	11.69	1.09
TAC-RUN-19-39	Female	35	0.70	-14.63	12.21	2.64
TAC-RUN-19-40	Female	26	0.51	-15.25	11.93	2.91
TAC-RUN-19-42	Female	39	0.45	-14.59	11.6	2.72
TAC-RUN-19-34	Male	45	0.75	-14.37	11.97	2.86
TAC-RUN-19-41	Male	45	0.73	-14.49	11.63	2.77
TAC-RUN-19-35	Female	41	0.04	-14.26	11.67	2.87
TAC-RUN-19-43	Female	46	0.15	-14.94	11.29	2.77
TAC-RUN-19-36	Male	38	0.15	-14.78	12.08	2.78
TAC-RUN-19-44	Male	44	0.43	-14.56	11.82	2.74
DESTAC-RUN-20-01	Male	29	0.37	-13.49	12.27	2.76
DESTAC-RUN-20-02	Female	49	0.32	-13.25	12.63	2.88
DESTAC-RUN-20-08	Female	33	0.87	-14.82	11.92	2.64
DESTAC-RUN-20-09	Female	36	0.85	-14.61	12.02	2.74
DESTAC-RUN-20-04	Male	41	0.58	-14.15	12.23	2.82
DESTAC-RUN-20-07	Male	37	0.39	-14.36	11.84	2.72
DESTAC-RUN-20-10	Male	43	0.56	-14.45	12.32	2.81
DESTAC-RUN-20-12	Male	43	0.64	-14.03	12.05	2.72
DESTAC-RUN-20-03	Male	46	0.04	-13.95	12.15	2.85
DESTAC-RUN-20-05	Male	42	0.05	-14.27	12.09	2.8
DESTAC-RUN-20-06	Male	43	0.19	-14.02	12.32	2.75
DESTAC-RUN-20-11	Male	33	0.35	-15.09	11.98	2.79
DESTAC-RUN-20-13	Male	43	0.18	-14.66	12.02	2.67
DESTAC-RUN-20-14	Male	45	0.02	-14.21	11.49	2.65
DESTAC-RUN-20-15	Male	43	0.18	-13.89	12.18	2.71
DESTAC-RUN-20-16	Male	44	0.06	-15.01	11.36	2.7
DESTAC-RUN-20-17	Female	48	0.37	-14.61	11.76	2.73
DESTAC-RUN-20-18	Male	45	0.81	-14.51	12.64	2.68
DESTAC-RUN-20-19	Female	49	0.14	-15.36	10.02	2.64
DESTAC-RUN-20-20	Male	27	0.15	-14.63	12.63	2.84
DESTAC-RUN-20-21	Female	49	0.08	-14.65	10.68	2.72
DESTAC-RUN-20-22	Female	44	0.31	-14.87	11.68	2.69
DESTAC-RUN-20-23	Male	43	0.03	-13.72	12.21	2.67
DESTAC-RUN-20-24	Male	44	0.35	-14.67	11.75	2.83
DESTAC-RUN-20-27	Male	37	0.65	-14.19	11.77	2.87
DESTAC-RUN-20-31	Male	45	0.59	-14.46	12.26	2.93
DESTAC-RUN-20-33	Male	41	0.61	-14.4	11.89	2.86
DESTAC-RUN-20-26	Female	41	0.12	-13.72	12.83	2.86
DESTAC-RUN-20-28	Female	50	0.14	-14.98	12.34	2.81

DESTAC-RUN-20-34	Female	50	0.36	-13.79	12.9	2.77
DESTAC-RUN-20-25	Male	46	0.35	-15.01	11.02	2.83
DESTAC-RUN-20-30	Male	45	0.29	-14.6	12.03	2.83
DESTAC-RUN-20-32	Male	42	0.14	-14.84	12.7	2.85
DESTAC-RUN-20-35	Female	43	0.61	-14.5	11.89	2.89
DESTAC-RUN-20-41	Female	42	0.15	-14.52	11.41	2.8
DESTAC-RUN-20-37	Male	36	0.63	-14.69	11.79	2.83
DESTAC-RUN-20-38	Male	43	0.35	-14.43	11.55	2.76
DESTAC-RUN-20-40	Male	45	0.55	-14.2	12.61	2.83
DESTAC-RUN-20-39	Female	43	0.07	-14.2	11.9	2.7
DESTAC-RUN-20-36	Male	45	0.23	-14.26	11.72	2.96
IGENTAC-RUN-21-01	Male	36	0.71	-15.06	12.24	2.85
IGENTAC-RUN-21-05	Male	36	0.73	-14.98	11.68	2.78
IGENTAC-RUN-21-11	Male	48	0.75	-14.36	11.93	2.87
IGENTAC-RUN-21-16	Male	42	0.70	-14.47	12.21	2.75
IGENTAC-RUN-21-02	Female	29	0.37	-12.87	13.76	2.95
IGENTAC-RUN-21-08	Female	48	0.33	-14.13	11.94	2.88
IGENTAC-RUN-21-12	Female	37	0.49	-14.37	11.28	2.63
IGENTAC-RUN-21-15	Female	45	0.31	-14.13	12.2	2.91
IGENTAC-RUN-21-18	Female	48	0.04	-14.94	12.14	2.66
IGENTAC-RUN-21-22	Female	38	0.03	-14.62	12.2	2.65
IGENTAC-RUN-21-03	Male	36	0.68	-14.76	11.73	2.89
IGENTAC-RUN-21-04	Male	41	0.23	-14.97	12.33	1.04
IGENTAC-RUN-21-06	Male	43	0.68	-13.79	12.7	2.82
IGENTAC-RUN-21-07	Male	44	0.07	-14.69	11.63	2.84
IGENTAC-RUN-21-09	Male	30	0.21	-15.26	11.75	2.86
IGENTAC-RUN-21-10	Male	38	0.13	-14.76	11.71	2.91
IGENTAC-RUN-21-13	Male	28	0.56	-14.39	13.58	2.95
IGENTAC-RUN-21-14	Male	45	0.38	-14.41	11.24	2.72
IGENTAC-RUN-21-17	Male	45	0.02	-14.13	12.24	2.73
IGENTAC-RUN-21-20	Male	44	0.08	-13.85	12.83	2.95
IGENTAC-RUN-21-21	Male	39	0.63	-14.8	11.56	2.73
IGENTAC-RUN-21-25	Female	39	0.74	-14.59	11.73	2.82
IGENTAC-RUN-21-24	Male	31	0.72	-14.72	12.27	2.83
IGENTAC-RUN-21-26	Male	36	0.69	-15.02	11.36	2.83
IGENTAC-RUN-21-29	Male	31	0.69	-14.78	11.7	2.93
IGENTAC-RUN-21-27	Female	32	0.18	-14.49	12.68	2.88
IGENTAC-RUN-21-33	Female	38	0.41	-14.41	11.68	2.78
IGENTAC-RUN-21-35	Female	38	0.32	-14.42	11.52	2.81
IGENTAC-RUN-21-23	Male	48	0.30	-14.42	11.6	2.69
IGENTAC-RUN-21-28	Male	39	0.55	-14.39	12.04	2.84
IGENTAC-RUN-21-31	Male	46	0.30	-14.78	11.87	2.78
IGENTAC-RUN-21-32	Male	48	0.19	-13.18	12.79	2.7
IGENTAC-RUN-21-34	Male	46	0.64	-14	12.16	2.79
IGENTAC-RUN-21-36	Male	43	0.44	-13.96	11.98	2.92

IGENTAC-RUN-21-37	Male	47	0.24	-14.03	12.44	2.83
IGENTAC-RUN-21-45	Female	42	0.70	-13.94	12.65	2.81
IGENTAC-RUN-21-38	Female	46	0.22	-14.17	12.03	2.78
IGENTAC-RUN-21-39	Female	44	0.58	-14.28	11.93	2.89
IGENTAC-RUN-21-42	Female	49	0.13	-14.07	11.77	2.88
IGENTAC-RUN-21-46	Female	41	0.08	-14.63	11.61	2.84
IGENTAC-RUN-21-47	Female	36	0.43	-13.16	13.45	2.78
IGENTAC-RUN-21-49	Female	32	0.04	-14.66	11.77	2.87
IGENTAC-RUN-21-40	Male	24	0.64	-15.34	11.87	3.02
IGENTAC-RUN-21-41	Male	50	0.01	-14.12	12.69	2.81
IGENTAC-RUN-21-43	Male	44	0.13	-14.25	12.32	2.89
IGENTAC-RUN-21-44	Male	42	0.24	-14.26	12.42	2.89
IGENTAC-RUN-21-48	Male	31	0.16	-15.21	11.63	2.77

Table S2. Summary table of model selection procedure for Generalised least squares (GLS) models. Df = degrees of freedom; AIC = Akaike information criterion; REML = restricted maximum likelihood; ML = maximum likelihood.

Response	Model structure	Variance structure	Method	AIC
$\delta^{13}\text{C}$	~ Cat + DL + (Cat x DL)	None	REML	166.492
$\delta^{13}\text{C}$	~ Cat + DL + (Cat x DL)	$\varepsilon_{ij} N(0, \sigma_j^2)$	REML	157.9827
$\delta^{13}\text{C}$	~ Cat + DL + (Cat x DL)	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	117.2829
$\delta^{13}\text{C}$	~ Cat + DL	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	122.3707
$\delta^{13}\text{C}$	~ DL	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	117.0656
$\delta^{13}\text{C}$	~ 1	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	135.168
$\delta^{15}\text{N}$	~ Cat + DL + (Cat x DL)	None	REML	203.7185
$\delta^{15}\text{N}$	~ Cat + DL + (Cat x DL)	$\varepsilon_{ij} N(0, \sigma_j^2)$	REML	197.0017
$\delta^{15}\text{N}$	~ Cat + DL + (Cat x DL)	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	160.4044
$\delta^{15}\text{N}$	~ Cat + DL	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	156.8845
$\delta^{15}\text{N}$	~ DL	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	151.739
$\delta^{15}\text{N}$	~ 1	$\varepsilon_{ij} N(0, \sigma_j^2)$	ML	150.0623



Figure S1. Abacus plot showing daily presence of the tagged skates within the study site over three years. Blue dots represent high residence individuals and orange dots low residence individuals.

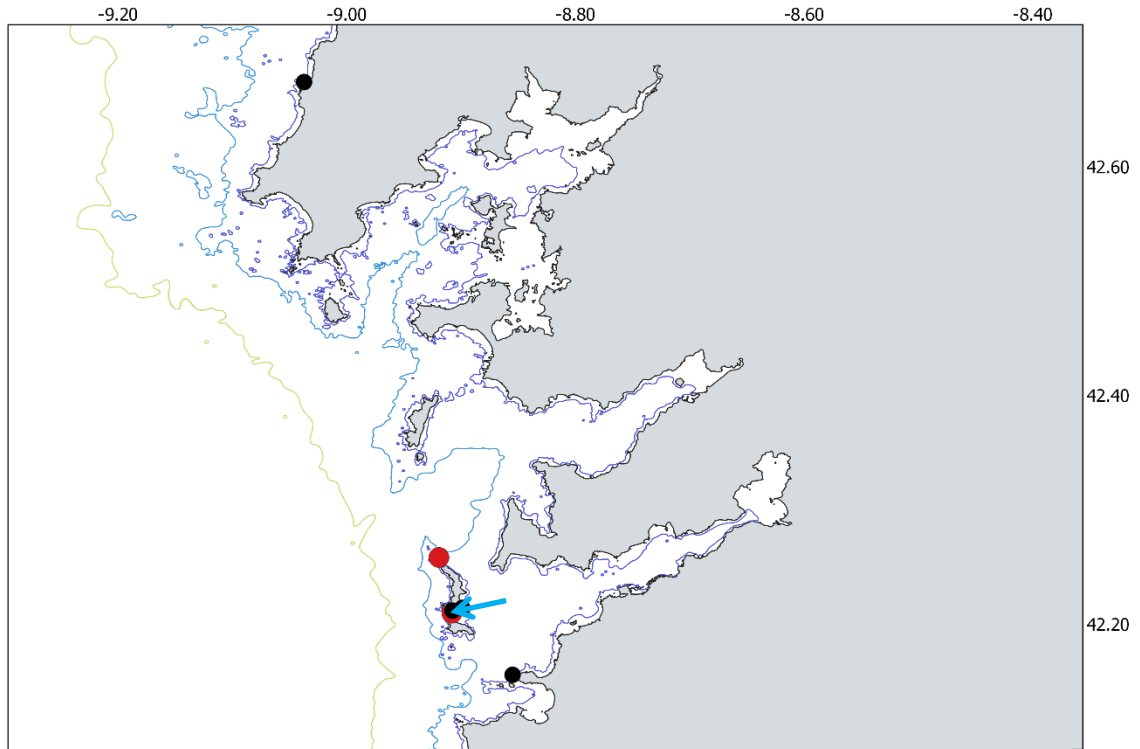


Figure S2. Map with the recaptures of tagged *Raja undulata* by commercial fisheries. Black dots represent females and red males. the blue arrow indicates the location of the aggregation area.