

## 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

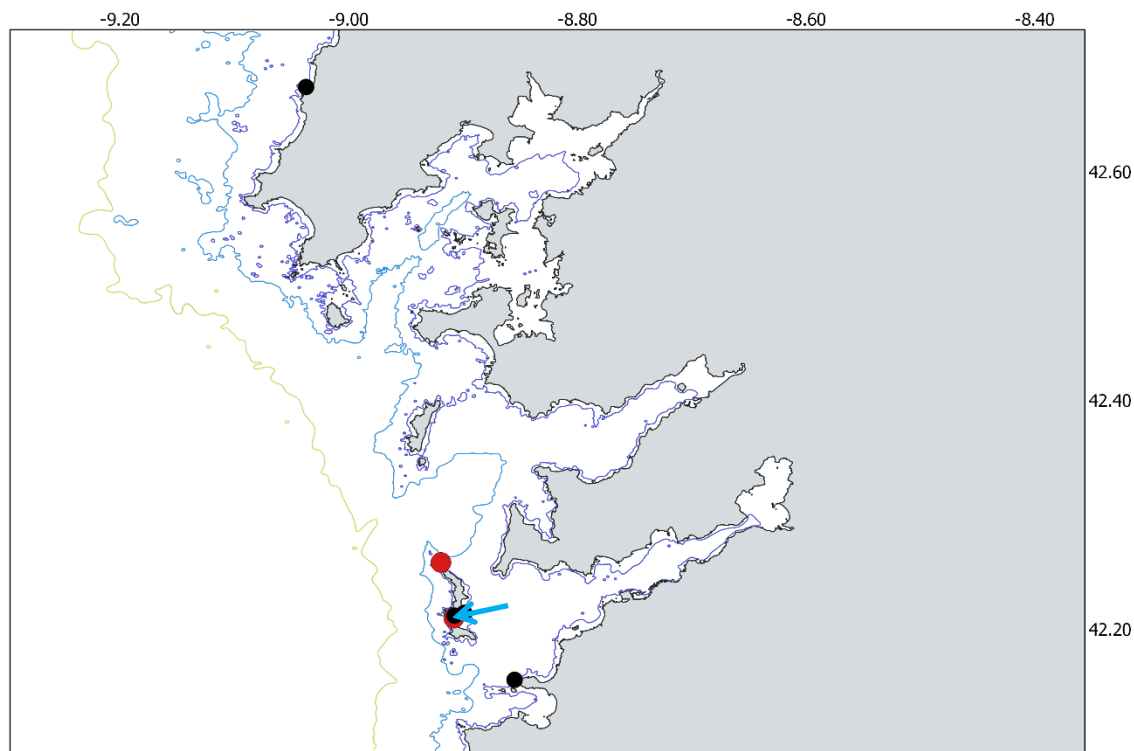
<b>IGENTAC-RUN-21-37</b>	Male	47	0.24	-14.03	12.44	2.83
<b>IGENTAC-RUN-21-45</b>	Female	42	0.70	-13.94	12.65	2.81
<b>IGENTAC-RUN-21-38</b>	Female	46	0.22	-14.17	12.03	2.78
<b>IGENTAC-RUN-21-39</b>	Female	44	0.58	-14.28	11.93	2.89
<b>IGENTAC-RUN-21-42</b>	Female	49	0.13	-14.07	11.77	2.88
<b>IGENTAC-RUN-21-46</b>	Female	41	0.08	-14.63	11.61	2.84
<b>IGENTAC-RUN-21-47</b>	Female	36	0.43	-13.16	13.45	2.78
<b>IGENTAC-RUN-21-49</b>	Female	32	0.04	-14.66	11.77	2.87
<b>IGENTAC-RUN-21-40</b>	Male	24	0.64	-15.34	11.87	3.02
<b>IGENTAC-RUN-21-41</b>	Male	50	0.01	-14.12	12.69	2.81
<b>IGENTAC-RUN-21-43</b>	Male	44	0.13	-14.25	12.32	2.89
<b>IGENTAC-RUN-21-44</b>	Male	42	0.24	-14.26	12.42	2.89
<b>IGENTAC-RUN-21-48</b>	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
$\delta^{13}\text{C}$	<b>~ DL</b>	$\varepsilon_{ij} N(0, \sigma_j^2)$	<b>ML</b>	<b>117.0656</b>
$\delta^{13}\text{C}$	~ 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
$\delta^{15}\text{N}$	<b>~ 1</b>	$\varepsilon_{ij} N(0, \sigma_j^2)$	<b>ML</b>	<b>150.0623</b>



**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.