

Table S1: Table shows date of first and last day of survey and total days surveyed and number of pots lifted for each seasonal survey within and outside of each marine reserve (CROP and TAWH).

Location	Year	Season	First day of survey	Last day of survey	Total survey days	Pot lifts fished	Pot lifts reserve
CROP	2018	Autumn	Mar-14	Mar-26	5	36	81
CROP	2018	Spring	Nov-15	Nov-18	4	36	61
CROP	2019	Autumn	Mar-18	Mar-21	4	35	63
CROP	2019	Winter	Aug-06	Aug-10	5	37	80
CROP	2019	Spring	Nov-18	Nov-22	5	38	81
TAWH	2018	Autumn	Mar-22	Mar-24	4	23	47
TAWH	2018	Spring	Dec-07	Dec-09	3	25	40
TAWH	2019	Autumn	Apr-03	Apr-05	3	24	39
TAWH	2019	Spring	Nov-25	Nov-28	4	22	46

Table S2: Model coefficients for Model 1 fitted independently to male and female catch (count per pot) data. Significant effects and interactions indicated by lower and upper 95% CI's not enveloping zero.

Effect	Component	Term	Estimate	Est.error	95% CI		Rhat
					Lower	Upper	
Female							
fixed	cond	(Intercept)	-4	1.27	-6.49	-1.56	1
fixed	zi	(Intercept)	-1.75	3.37	-10.6	1.98	1
fixed	cond	LocationTAWH	0.561	1.38	-2.27	3.22	1
fixed	cond	Statusreserve	3.39	1.29	0.886	5.91	1
fixed	cond	SeasonSpring	1.43	1.18	-0.777	3.83	1
fixed	cond	Year2019	0.43	1.33	-2.22	3.01	1
fixed	cond	LocationTAWH:Statusreserve	0.458	1.39	-2.29	3.26	1
fixed	cond	LocationTAWH:SeasonSpring	-0.795	1.62	-3.97	2.4	1
fixed	cond	Statusreserve:SeasonSpring	0.127	1.19	-2.28	2.4	1
fixed	cond	LocationTAWH:Year2019	-1.95	1.8	-5.58	1.43	1
fixed	cond	Statusreserve:Year2019	0.124	1.35	-2.5	2.82	1
fixed	cond	SeasonSpring:Year2019	0.646	1.44	-2.17	3.5	1
fixed	cond	LocationTAWH:Statusreserve:SeasonSpring	0.332	1.64	-2.84	3.55	1
fixed	cond	LocationTAWH:Statusreserve:Year2019	1.24	1.83	-2.09	4.9	1
fixed	cond	LocationTAWH:SeasonSpring:Year2019	0.635	2.05	-3.4	4.55	1
fixed	cond	Statusreserve:SeasonSpring:Year2019	-1.45	1.47	-4.27	1.37	1
fixed	cond	LocationTAWH:Statusreserve:SeasonSpring:Year2019	-0.144	2.08	-4.08	3.99	1
fixed	zi	Statusreserve	1.34	3.41	-2.54	10.3	1
ran_pars	cond	Date sd__ (Intercept)	0.212	0.149	0.0111	0.562	1
Male							
fixed	cond	(Intercept)	-4.15	1.04	-6.39	-2.31	1
fixed	zi	(Intercept)	-2.88	3.17	-11.5	0.418	1
fixed	cond	LocationTAWH	-2.08	1.65	-5.49	0.953	1
fixed	cond	Statusreserve	4.52	1.05	2.69	6.74	1
fixed	cond	SeasonSpring	3	1.04	1.14	5.21	1
fixed	cond	Year2019	1.03	1.16	-1.16	3.39	1
fixed	cond	LocationTAWH:Statusreserve	1.36	1.66	-1.69	4.83	1
fixed	cond	LocationTAWH:SeasonSpring	0.78	1.69	-2.38	4.15	1
fixed	cond	Statusreserve:SeasonSpring	-2.05	1.05	-4.33	-0.201	1
fixed	cond	LocationTAWH:Year2019	-0.843	1.81	-4.44	2.66	1
fixed	cond	Statusreserve:Year2019	-1.09	1.17	-3.45	1.12	1
fixed	cond	SeasonSpring:Year2019	-0.73	1.22	-3.17	1.62	1
fixed	cond	LocationTAWH:Statusreserve:SeasonSpring	-0.871	1.71	-4.35	2.29	1
fixed	cond	LocationTAWH:Statusreserve:Year2019	0.702	1.81	-2.82	4.25	1
fixed	cond	LocationTAWH:SeasonSpring:Year2019	1.08	1.87	-2.52	4.74	1
fixed	cond	Statusreserve:SeasonSpring:Year2019	0.102	1.23	-2.27	2.52	1
fixed	cond	LocationTAWH:Statusreserve:SeasonSpring:Year2019	-0.326	1.88	-4.09	3.32	1
fixed	zi	Statusreserve	0.718	3.35	-3.77	9.54	1
ran_pars	cond	Date sd__ (Intercept)	0.185	0.108	0.0116	0.412	1

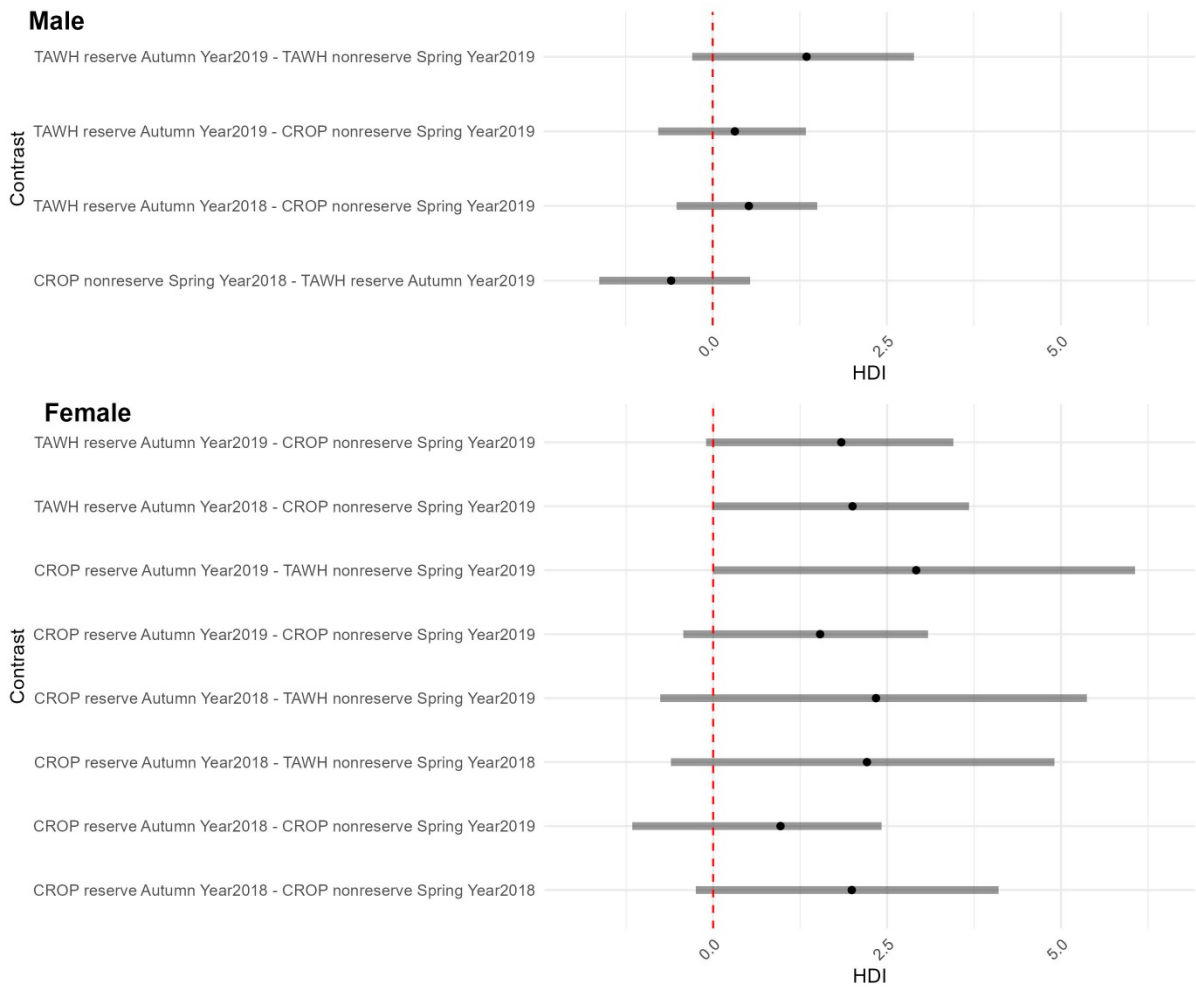


Figure S1: Estimated highest posterior density intervals (HDI) for comparisons of male and female catch rates (count/pot-lift) between location-status-season-year groups based on pairwise assessment of HDI's produced by Model 1. Differences significant if the 95% HDI of group differences did not cross zero (vertical dashed red line).

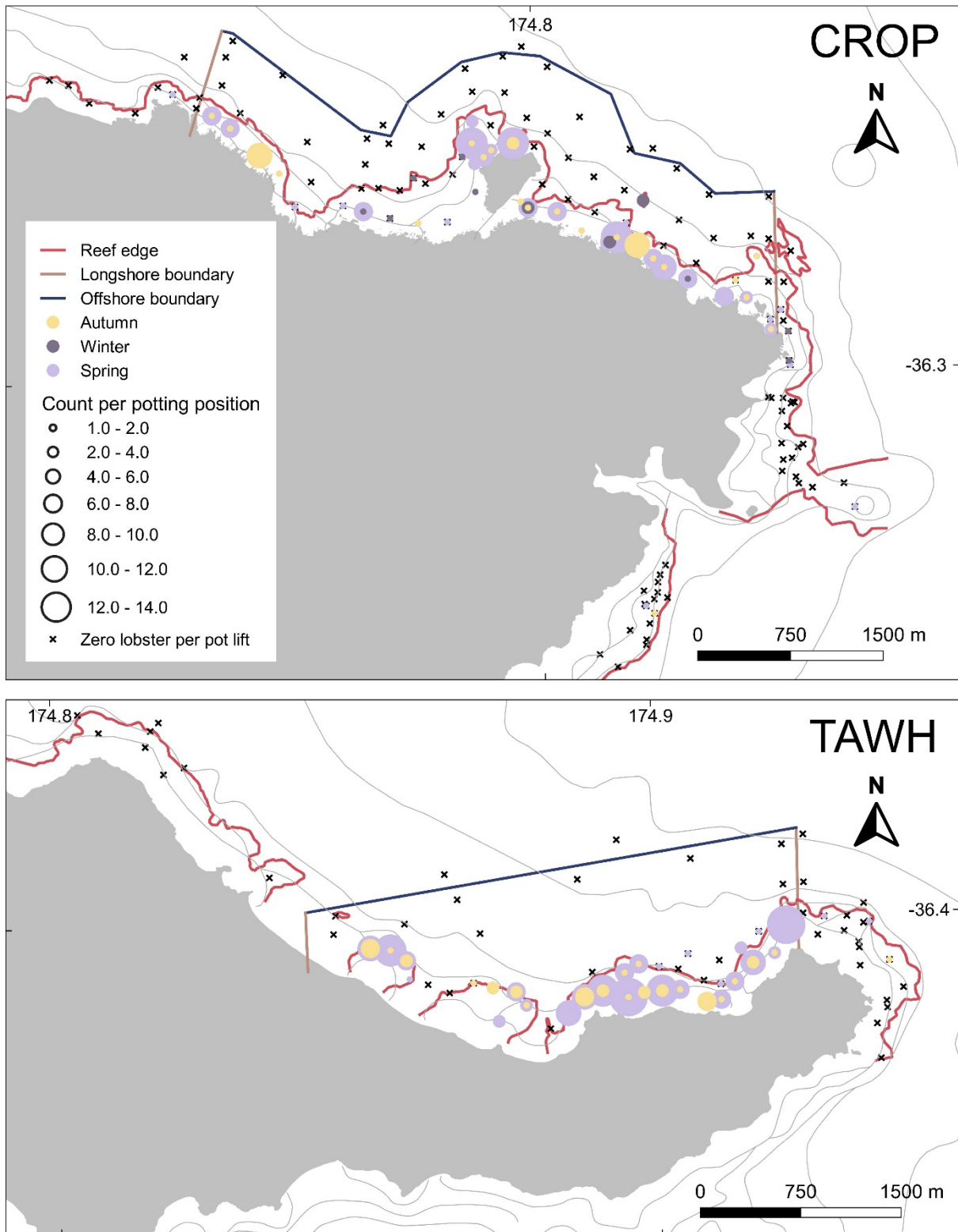


Figure S2: Spatial distribution of female lobster catch in the CROP and TAWH marine reserves and adjacent fished areas. Size of bubble indicates number of females caught in each pot for each season, over 2018 and 2019 surveys.

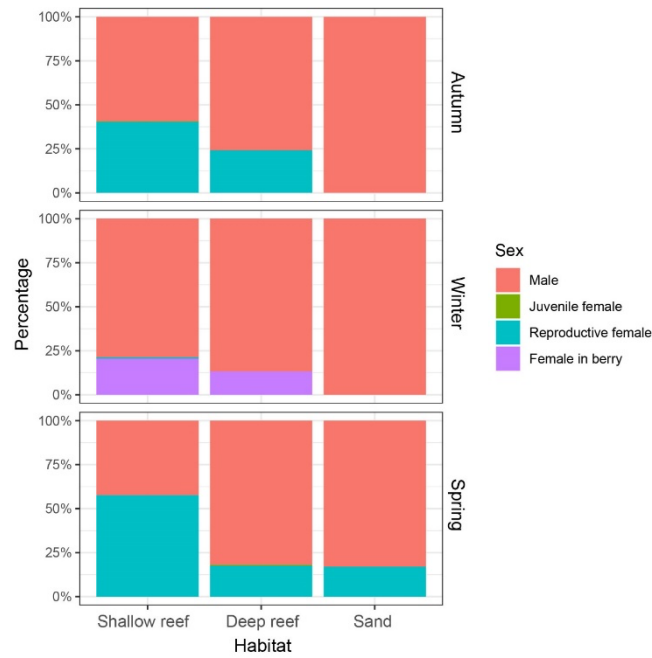


Figure S3: Proportions of lobster sex and female reproduction status per habitat type and seasonal survey. Data pooled across reserves and sampling years. Female in berry refer egg carrying reproductive females.

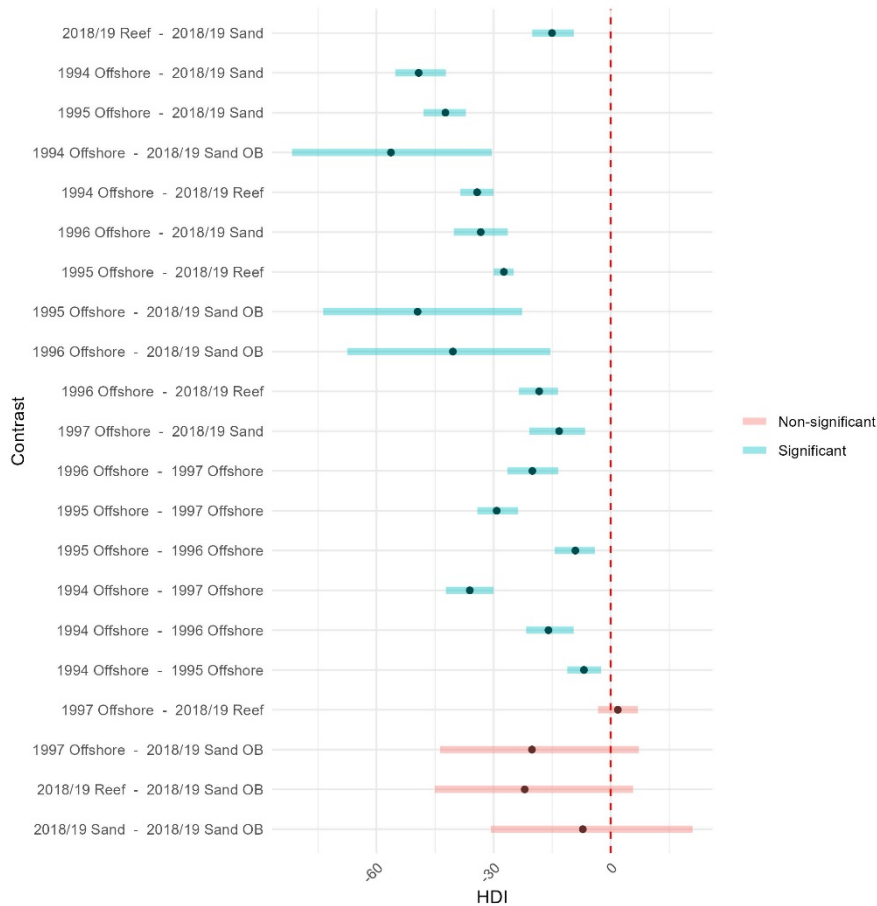


Figure S4: Estimated highest posterior density intervals (HDI) for comparisons of carapace lengths (mm) between different year-area groups based on pairwise assessment of posterior HDI's produced by Model 3 (as shown by letter groups in Fig. 8). Differences were considered significant if the 95% HDI did not cross zero (vertical dashed red line).