

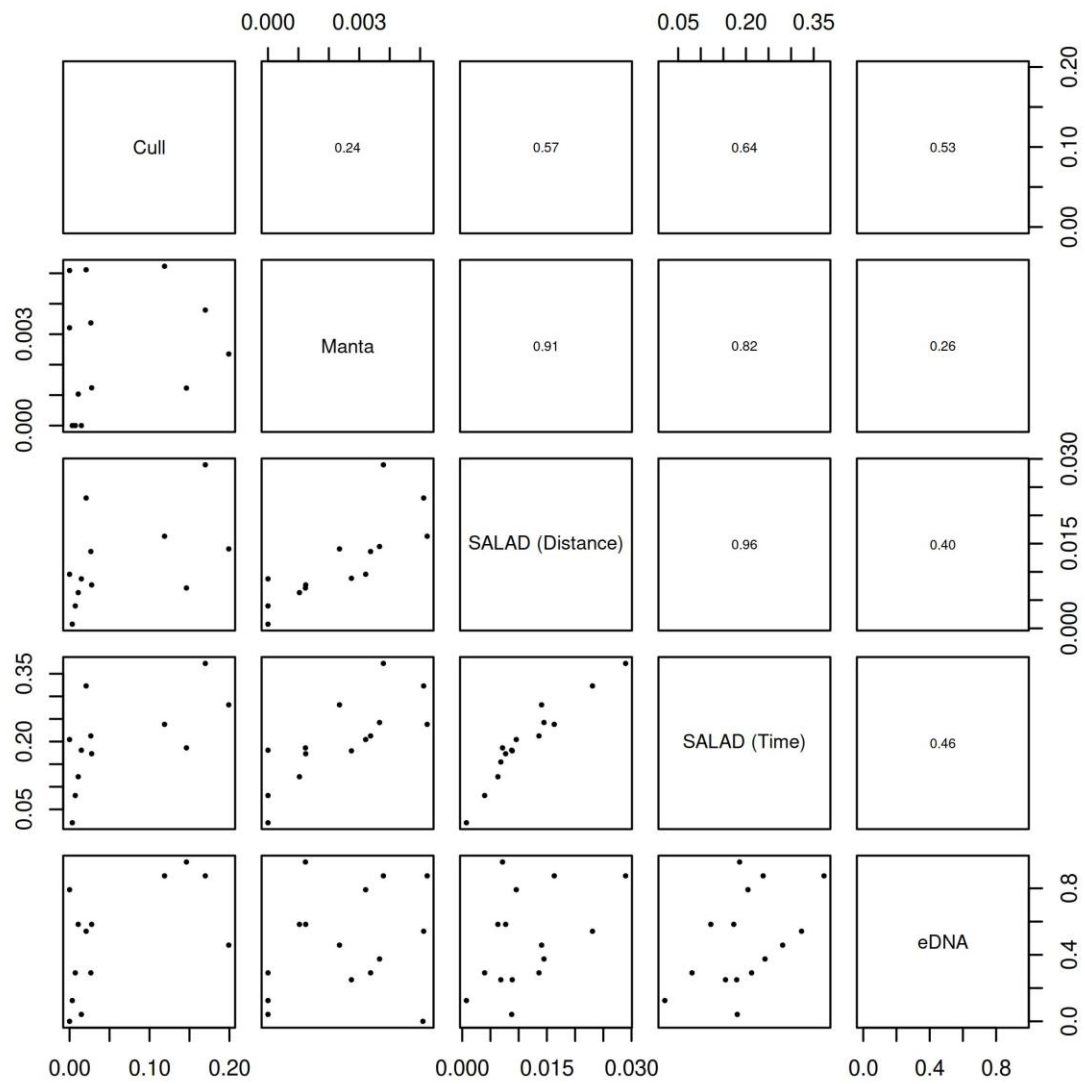


Figure S1. Pairwise Spearman rank correlations and scatterplots among COTS monitoring tools (Cull CPUE, proportion of manta tows with scars, SALAD density and rate, and proportion eDNA samples positive). Upper panels show correlation coefficients, and lower panels show site level scatterplots.

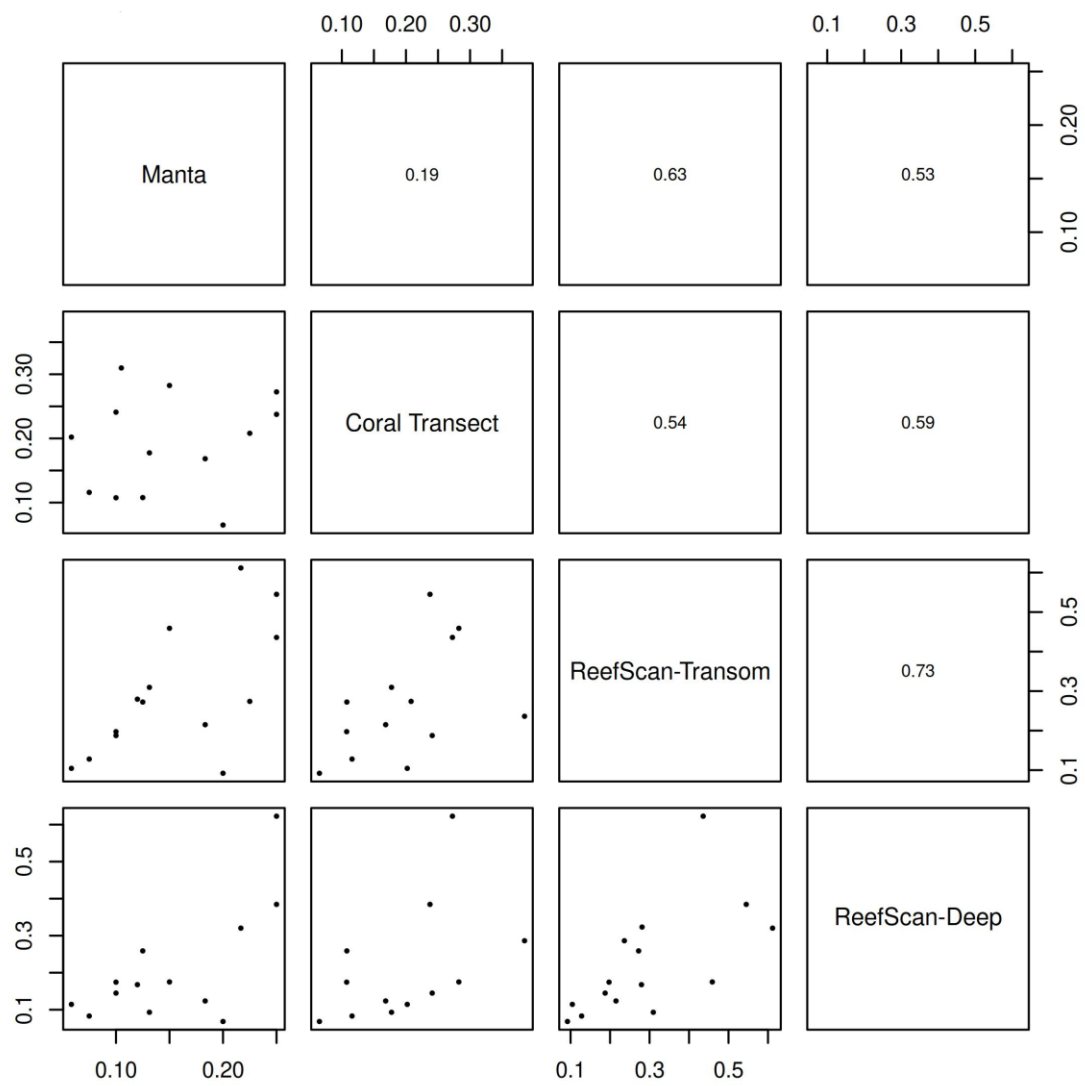


Figure S2. Pairwise Spearman rank correlations and scatterplots among coral cover monitoring tools (manta tow coral cover, coral transects, ReefScan-Transom, and ReefScan-Deep). Upper panels show correlation coefficients, and lower panels show site level scatterplots.

Table S1. Variance component means (reef variance σ^2_{Reef} , site variance σ^2_{Site} , r (overdispersion)) for the COTS calibration models presented in the main text.

From → To	Model	σ^2_{Reef}	σ^2_{Site}	r
Manta → SALAD	Negative Binomial	0.20	—	10.57
eDNA → SALAD	Negative Binomial	0.33	—	8.13
Cull → SALAD	Negative Binomial	0.15	—	18.38
SALAD → Manta	Binomial	0.23	0.27	—
eDNA → Manta	Binomial	0.53	0.51	—
Cull → Manta	Binomial	0.70	0.52	—
SALAD → eDNA	Binomial	0.23	1.52	—
Manta → eDNA	Binomial	0.29	2.01	—
Cull → eDNA	Binomial	0.26	1.97	—
SALAD → Cull	Negative Binomial	0.21	—	5.77
Manta → Cull	Negative Binomial	0.87	—	5.31
eDNA → Cull	Negative Binomial	0.76	—	4.25

Table S2. Variance component means (reef variance σ^2_{Reef} , site variance σ^2_{Site} , r (overdispersion)) for the coral calibration models presented in the main text.

From → To	Model	σ^2_{Reef}	σ^2_{Site}	r
Transect → Transom	Beta	0.28	—	22.15
Manta → Transom	Beta	0.40	—	42.79
Deep → Transom	Beta	0.17	—	17.88
Transom → Transect	Binomial	0.24	—	—
Manta → Transect	Binomial	0.44	—	—
Deep → Transect	Binomial	0.26	—	—
Transom → Manta	Beta	0.24	—	140.66
Transect → Manta	Beta	0.27	—	80.08
Deep → Manta	Beta	0.21	—	109.01
Transom → Deep	Beta	0.15	—	17.19
Transect → Deep	Beta	0.19	—	13.51
Manta → Deep	Beta	0.33	—	32.56