## Table S1:

## Detailed results of statistical hypothesis tests.

For each dependent variable, we summarize the statistical model used and the results of the tests for effects of anchoring (see Methods for further details and abbreviations used).

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| **Dependent variable** | **Model** | **Test statistics, df, and p-values** |
| Observed yacht density | ANOVA | F2,147 = 12.8, p <0.00001 |
| Overturned scleractinian corals  | K-W  | Χ2 = 6.75, p = 0.034, Nemenyi pH-L = 0.046, pH-M = 0.78, and pL-M = 0.625 |
| Broken scleractinian corals  | K-W  | Χ2 = 8.67, p = 0.013, Nemenyi pH-L = 0.048, pH-M = 0.72, and pL-M = 0.71 |
| Broken gorgonians  | ANOVA, square-root transformation, | F2,14 = 10.18, p = 0.002, LSM tH-L = 4.40, pH-L = 0.002, tH-M = 1.83, pH-M = 0.20, tL-M = -0.659, pL-M = 0.79 |
| Distance from land | ANOVA | F2,20 = 0.5, p = 0.60 |
| Distance from development | ANOVA | F2,20 = 0.3, p = 0.75 |
| Coral percent cover | MLE, beta distribution | a~Anchoring+Group, dAIC = 0, weight = 0.84, pM-H = 0.047, pL-H = 0.02, pL-M = 0.89; b = 88.26, zb = 2.82, pb = 0.0048 |
| Sea fan percent cover | MLE, beta distribution | a~Anchoring, dAIC = 0, weight = 0.74, pM-H = 0.9, pL-H = 0.044, pL-M = 0.049; b = 27.05, zb = 2.70, pb = 0.0069 |
| Coral colony size | ANOVA | F2,14 = 7.16, p = 0.007; LSM H-L t ratio = -2.66, pL-H = 0.046; H-M t ratio = -1.59, pM-H = 0.28; L-M t ratio = -0.089, pL-M = 0.996 |
| Coral colony density  | MLE, lognormal distribution | μ~Anchoring; dAIC = 0, weight = 0.63; μH = 2.06, pH <0.00001; μM-H = 0.21, pM-H = 0.55; μL-H = 0.85, pL-H = 0.00028; μL-M = 0.64, pL-M = 0.068; σ = 0.54, pσ <0.00001 |
| Coral species richness  | ANOVA | F2,14 = 14.76, p = 0.0004; LSM tH-L = -5.4, pH-L = 0.0002; tH-M = 0.31, pH-M = 0.94; tL-M = 3.43, pL-M = 0.01 |
| Branching coral colony surface area  | ANOVA, cube root transformation | F2,13 = 3.8, p = 0.05; no significant contrasts |
| Branching coral colony density | ANOVA, square-root transformation, | F2,13 = 3.9, p = 0.047, LSM tH-L = -2.75, pH-L = 0.041; tH-M = -0.24, pH-M = 0.97; tL-M = 1.40, pL-M = 0.37 |
| Mounding coral colony surface area  | ANOVA | F2,14 = 26.83, p = 0.00002, LSM tH-L = -6.70, pH-L <0.0001; tH-M = -2.898, pH-M = 0.03; tL-M = 0.899, pL-M = 0.65 |
| Mounding coral colony density | MLE, lognormal distribution | μ~Anchoring, dAIC = 0.0, weight = 0.57; pM-H = 0.69; pL-H = 0.002; pM-L = 0.10; σ = 0.53, zσ = 6.93, pσ <0.00001 |
| Plate coral colony density | MLE, gamma distribution | s~Anchoring and a~Group, dAIC = 0, weight = 0.93; pM-H = 0.61; pL-H = 0.026; pM-L = 0.03; aAverage = 1.69 |
| Reef rugosity | MLE, lognormal distribution | μ~Anchoring+Group; dAIC = 0, df = 11, weight = 1; μH = 4.66, zH = 55.36, pH <0.00001; μM-H = 0.41, zM-H = 2.61, pM-H = 0.009; μL-H = 0.49, zL-H = 4.18, pL-H = 0.00003; μM-L = -0.075, zM-L = -0.49, pM-L = 0.63; σ = 0.27, zσ = 7.07, pσ <0.00001 |
| Total fish density | ANOVA | F = 6.26, p = 0.01; LSM tH-L = -3.8, pH-L = 0.005, tH-M = -1.3, pH-M = 0.4, tL-M = 1.2, pL-M = 0.48 |
| Adult fish density | ANOVA | F = 8.45, p = 0.004; LSM tH-L = -4.4, pH-L = 0.002, tH-M = -1.9, pH-M = 0.2, tL-M = 1.0, pL-M = 0.58 |
| Juvenile fish density | MLE, gamma distribution | s~Anchoring, pH=0.001, pM-H=0.2, pL-H=0.6, pM-L=0.08 |
| Fish species richness | ANOVA | F = 10.7, p = 0.002; LSM tH-L = -5.1, pH-L = 0.0004, tH-M = -0.9, pH-M = 0.6, tL-M = 2.5, pL-M = 0.06 |
| Adult scraper and excavator density | ANOVA | F = 5.03, p = 0.02; LSM tH-L = -3.8, pH-L = 0.006, tH-M = -1.4, pH-M = 0.4, tL-M = 1.1, pL-M = 0.5 |
| Other adult herbivorous fish density | ANOVA | F = 9.4, p = 0.003; LSM tH-L = -4.4, pH-L = 0.002, tH-M = -2.1, pH-M = 0.14, tL-M = 0.82, pL-M = 0.7 |
| Adult spongivore density | K-W  | X2 = 12.6, p = 0.002; Nemenyi pH-L = 0.003, pH-M = 0.4, pM-L = 0.4 |
| Benthic carnivore density | MLE, lognormal distribution | μ~Anchoring; dAIC = 0.0, df = 4, weight = 0.62; pM-H = 0.03, pL-H = 0.03, pM-L = 0.63; σ = 0.46, zσ= 6.93, pσ <0.00001 |
| Adult piscivorous fish density | MLE, lognormal distribution | μ~Anchoring+Group; dAIC = 0.0, df = 11, weight = 0.63; pM-H = 0.012, pL-H = 0.004, pM-L = 0.73; σ = 0.64, zσ = 6.93, pσ <0.00001 |