**Supplementary Table 4** - As an additional analysis, spatio-physical models were run for human density as calculated per *outer reef area* only (i.e. human density per outer reef) using 60, 80 and 100 humans km-2 outer reef as thresholds from which to categorise ‘low’ and ‘high’ impact sites (note: the thresholds are higher as the area of reef relative to humans is smaller when considering only outer reef). Values in tables represent adjusted-R2 values from GAMM models with structure as described in the manuscript. All outcomes were consistent with those found for the 25 humans km-2 reef threshold, indicating the findings are robust. While certain target fish species only occur on the outer reefs, some of the fishing and gleaning activity to meet protein demands would be focused on areas other than outer reefs. Furthermore, additional impacts by local human populations (in particular nutrient input) would be diluted in cases where large areas of backreef occur. Thus, even though there are trade-offs involved with either calculation of human density, we feel that human density per total reef area is the most appropriate proxy of local human impact, and thus present those values in the main manuscript.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Threshold = 60 humans km-2 outer reef** | | **Threshold = 80 humans km-2 outer reef** | |  |
|  | **low (n=25)** | **high (n=37)** | **low (n=32)** | **high (n=30)** |  |
| Live hard coral | 0.48 | 0.18 | 0.38 | 0.01 |  |
| Branching | 0.33 | 0.12 | 0.33 | 0.20 |  |
| Massive | 0.49 | 0.08 | 0.47 | 0.09 |  |
| Encrusting | 0.00 | 0.00 | 0.00 | 0.00 |  |
| Turf algae | 0.23 | 0.00 | 0.15 | 0.00 |  |
| Macroalgae | 0.39 | 0.31 | 0.39 | 0.21 |  |
| Dead hard coral | 0.28 | 0.00 | 0.20 | 0.02 |  |
| CCA | 0.00 | 0.03 | 0.00 | 0.00 |  |
| **Average** | **0.27** | **0.09** | **0.24** | **0.07** |  |
| **t-test outcome** | **0.012** | | **0.011** | |  |
|  |  |  |  |  |  |
|  | **Threshold = 100 humans km-2 outer reef** | |  | |  |
|  | **low (n=35)** | **high (n=27)** |  |  |  |
| Live hard coral | 0.37 | 0.37 |  |  |  |
| Branching | 0.35 | 0.35 |  |  |  |
| Massive | 0.47 | 0.47 |  |  |  |
| Encrusting | 0.00 | 0.00 |  |  |  |
| Turf algae | 0.07 | 0.07 |  |  |  |
| Macroalgae | 0.45 | 0.45 |  |  |  |
| Dead hard coral | 0.20 | 0.20 |  |  |  |
| CCA | 0.01 | 0.01 |  |  |  |
| **Average** | **0.24** | **0.02** |  |  |  |
| **t-test outcome** | **0.009** | |  | |  |
|  |  |  |  |  |  |