Supplementary Materials for

Coral reef diversity losses in China’s Greater Bay Area were driven by regional stressors

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Supplementary Methods

Core processing methods
Each 5-cm segment was dried, weighed, and wet-sieved to separate fine-grained (<0.063 mm), sand-sized (>2 mm), and coarser clastic materials (>4 mm). The coarse (>4 mm) fraction was then oven-dried and retained for sub-fossil collection and analysis. Taxonomic analysis to generic level identification followed procedures outlined in Johnson et al. (46), with identifications checked using local coral taxonomy guide book (63) as well as Corals of the World (64). Over 5,000 individual coral specimens (~ 55 kg of coral carbonate material) were recovered and identified.

Core Accretion Rates
Estimates for core accretion rates were calculated based on the AMS-\(^{14}\)C dates, using the global marine reservoir correction. First, the cores were re-expanded based on their measured penetration depth vs. their measured recovery depth. To calculate estimates of vertical reef accretion, the expanded length of an interval was then divided by the time over which that interval had accreted. Throughout the cores, there were numerous age reversal (particularly in the East Region). To account for this, age anomalies (older ages resting above younger ages) were removed before linear accretion was calculated. Accretion rates were also determined for the core as a whole: the bottom segment depth was divided by the measured age to get an average core accretion rate. In all cases, the most recent accretion rate and entire core accretion rate was within an order of magnitude of one another (Table. S1).

Acropora sub-fossil collection
Although Hong Kong waters experience variable hydraulic conditions controlled by tides, runoff, wind, large heat fluxes and coastal currents, the major annual forces controlling water and sediment transport are changes in the Pearl River discharge during the wet (March – October) and dry (November – February) seasons, and typhoons. In general, the wet season is characterized by a strong discharge of river water, causing a strong west-to-east current throughout the study area (49, 74, 75). Though this gradient changes during the dry season and currents shift to an east-to-west pattern, the velocity is greatly reduced (74, 75). If post-mortem transport of Acropora skeletons were to occur laterally at the scale of our study site, it seems likely that they would be transported during the strongest currents in the wet season, moving them from west-to-east; this could therefore result in an under-representation of the historical range. Typhoons are another possible cause of skeleton transport within the study area. Although the province of our study area is impacted by about six typhoons per year (data from the Hong Kong Observatory, accessed Jan 2020: https://www.hko.gov.hk/en/informtc/tcStatTable4c.htm), we do not think this would cause a major lateral shift in skeletal fragments that would explain our observed pattern. More likely, the typhoons would create high wave energy within the individual sheltered bays and beaches that would transport coral skeletons from their in situ resting place and deposit them up the beach (76). Though skeletal transport varies amongst different coral morphologies (77), we only collected branching Acropora, which would have been transported uniformly around the study site. Therefore, even if coral skeletons were transported from their in-situ mortality location to the adjacent beach during a typhoon, they would still have been collected which would indicate their presence in that area. Finally, the general geography of Hong Kong’s shorelines, comprised of numerous small ways and spits would also inhibit the lateral transport of skeletons over long distances.
Fig. S1. iNEX rarefaction curves for South and East region, respectively, and sampling completeness curve for historical and modern datasets.
**Fig. S2.** nMDS plots of historical and modern datasets, plotted separately. The same data was used here as was plotted in Fig. 4, except historical and modern were analyzed in two separate nMDS plots. The separation of the East and South Region in the modern data, and the overlap in the sub-fossil data remains the same.
Fig. S3. Maps showing EPD water sampling stations around Hong Kong, and the grids used to pool coral and water quality data.
**Fig. S4. Core composition by depth.** Cores are presented in raw, un-expanded depths showing the composition is *Acropora* vs. all other genera combined. All cores from the East and South Regions are shown in Panel A, labeled by site abbreviations and replicate (A-D). Cores selected for $^{14}$C are in Panel B; dates are in year before present (1950) and highlighted in bold/italicized font.
**Fig. S5. nMDS of coral community composition.** nMDS of the same community composition data presented in Panel A, but split into three temporal bins and re-ordinated; sub-fossil (black) representing the lower sections of the cores, recently dead coral (dark grey) representing the top 10cm of each core, and modern (light grey). Called out to the right are stress vectors created using `envfit` with the coral genera scores, shown only for genera that are statistically significant in driving the spread shown in the nMDS.
Table. S1. Radiometric $^{14}$C dating results.
*Accretion rates listed were determined by dividing the expanded depth at that interval listed by the corrected YBP age. Average accretion rates for the entire core based on just the bottom date are underlined; other listed accretion dates are those calculated when possible for intervals ignoring age-reversals (See Supplementary Methods).

| Location     | Region | Depth (cm) | Expanded depth (cm) | Core ID     | Sample          | Conventional Age | Error +/- | Calendar Age (95%) | Corrected YBP | Lab            | Accretion rate (mm/year)* |
|--------------|--------|------------|---------------------|-------------|-----------------|------------------|-----------|---------------------|----------------|-----------------|--------------------------|
| Bluff Island | East   | 95-100     | 300                 | BluffIsland_1 | Coral, Acropora sp. | 960               | 30        | 1328 – 1447 AD      | 563            | BETA Analytic | 5.3                      |
| Bluff Island | East   | 65-70      | 205                 | BluffIsland_1 | Coral, Acropora sp. | 520               | 30        | 1695 – 1900 AD      | 153            | BETA Analytic | 2.3                      |
| Bluff Island | East   | 30-35      | 95                  | BluffIsland_1 | Coral, Acropora sp. | 920               | 30        | 1348 – 1472 AD      | 540            | BETA Analytic | -                        |
| Sham Wan     | South  | 130-135    | 300                 | ShamWan_1    | Coral, Acropora sp. | 4700              | 30        | 3073 – 2889 BC      | 4930           | BETA Analytic | 0.61                     |
| Sham Wan     | South  | 85-90      | 196                 | ShamWan_1    | Coral, Acropora sp. | 3920              | 30        | 2067 – 1856 BC      | 3911           | BETA Analytic | 1.0                      |
| Sham Wan     | South  | 40-45      | 92                  | ShamWan_1    | Coral, Acropora sp. | 3290              | 30        | 1278 – 1061 BC      | 3119           | BETA Analytic | 1.3                      |
| Bluff Island | East   | 40-45      | 120                 | BluffIsland_2 | Marine bivalve   | 536               | 30        | 1633 AD            | 317            | Japan – YSAMS | 3.8                      |
| Bluff Island | East   | 30-35      | 90                  | BluffIsland_2 | Marine bivalve   | 1374              | 30        | 895 AD             | 1055           | Japan – YSAMS | -                        |
| Bluff Island | East   | 15-20      | 45                  | BluffIsland_2 | Marine bivalve   | modern            | -         | modern              | -              | Japan – YSAMS | -                        |
| Bluff Island | East   | 0-5        | 0                   | BluffIsland_2 | Marine bivalve   | 1667              | 35        | 609 AD             | 1341           | Japan – YSAMS | -                        |
| North Soko   | South  | 75-80      | 150                 | NorthSoko_1  | Marine bivalve   | 4952              | 44        | 3489 BC            | 5439           | Japan – YSAMS | 0.28                     |
| North Soko   | South  | 55-60      | 110                 | NorthSoko_1  | Marine bivalve   | 4815              | 41        | 3334 BC            | 5284           | Japan – YSAMS | 0.21                     |
| North Soko   | South  | 25-30      | 50                  | NorthSoko_1  | Marine bivalve   | 5009              | 43        | 3551 BC            | 5501           | Japan – YSAMS | -                        |
| North Soko   | South  | 0-5        | 0                   | NorthSoko_1  | Marine bivalve   | modern            | -         | modern              | -              | Japan – YSAMS | -                        |
Table S2. Water quality parameters table: 1986 – 2013, dates inclusive.
Data show are the means ± standard deviation (total combined measurements).

| Region  | EPD stations | Grid | Chla (mg.l⁻¹) | PSM (mg.l⁻¹) | DIN (μM) | DIP (μM) | DO (mg.l⁻¹) | Salinity (psu) | Turbidity (NTU) | Temperature (°C) | pH     |
|---------|--------------|------|---------------|--------------|----------|----------|-------------|---------------|----------------|----------------|--------|
| East HK | MM3, MM4    | 25   | 2.4 ± 2.4 (451) | 1.9 ± 1.8 (452) | 2.1 ± 2.2 (452) | 0.09 ± 0.06 (452) | 6.9 ± 1.2 (452) | 31.8 ± 1.7 (450) | 4.8 ± 3.9 (452) | 24.0 ± 4.7 (452) | 8.2 ± 0.21 |
| East HK | MM2, MM7    | 24   | 3.3 ± 3.2 (450) | 1.8 ± 1.6 (452) | 2.4 ± 2.7 (452) | 0.08 ± 0.06 (452) | 6.9 ± 1.4 (452) | 31.5 ± 1.8 (450) | 5.0 ± 4.5 (226) | 24.2 ± 4.6 (226) | 8.2 ± 0.21 |
| East HK | MM5         | 21   | 1.8 ± 1.7 (227) | 1.7 ± 1.9 (227) | 1.9 ± 2.3 (227) | 0.09 ± 0.06 (227) | 6.9 ± 1.2 (227) | 31.9 ± 1.5 (227) | 4.6 ± 3.7 (227) | 23.8 ± 4.6 (227) | 8.2 ± 0.21 |
| East HK | MM17        | 20   | 2.4 ± 3.7 (380) | 1.9 ± 2.5 (380) | 2.0 ± 2.3 (378) | 0.09 ± 0.08 (380) | 7.1 ± 1.3 (379) | 31.7 ± 1.6 (378) | 3.7 ± 3.7 (381) | 23.4 ± 4.8 (381) | 8.2 ± 0.23 |
| East HK | PM1, PM2, PM3, PM6 | 14 | 3.1 ± 2.9 (1293) | 2.1 ± 2.2 (1292) | 2.4 ± 2.0 (1291) | 0.11 ± 0.09 (1294) | 6.8 ± 1.3 (1284) | 31.5 ± 2.0 (1290) | 4.0 ± 3.2 (1298) | 23.9 ± 4.9 (1293) | 8.2 ± 0.22 |
| East HK | MM15        | 13   | 1.6 ± 1.2 (196) | 1.5 ± 1.6 (196) | 1.8 ± 1.2 (196) | 0.09 ± 0.06 (196) | 6.9 ± 1 (196)    | 32.0 ± 1.9 (196) | 5.8 ± 10.1 (196) | 23.8 ± 4.4 (196) | 8.2 ± 0.28 |
| East HK | PM8, PM9, PM11 | 12 | 1.9 ± 1.7 (913) | 1.7 ± 2.5 (911) | 2.0 ± 1.4 (914) | 0.10 ± 0.07 (914) | 6.9 ± 1 (913)    | 32.0 ± 1.7 (914) | 4.4 ± 3.5 (243) | 23.6 ± 4.6 (243) | 8.2 ± 0.21 |
| East HK | PM7         | 11   | 1.9 ± 2.1 (335) | 1.9 ± 3.5 (335) | 2.0 ± 1.6 (336) | 0.10 ± 0.1 (336) | 7.0 ± 1.2 (334) | 31.8 ± 1.7 (336) | 3.7 ± 3.1 (336) | 23.7 ± 4.8 (336) | 8.2 ± 0.23 |
| East HK | MM19        | 10   | 3.3 ± 4.3 (155) | 1.6 ± 1.1 (155) | 2.1 ± 1.3 (155) | 0.08 ± 0.05 (155) | 7.0 ± 1.2 (155) | 32.3 ± 1.6 (155) | 6.3 ± 8.1 (155) | 23.6 ± 4.2 (155) | 8.2 ± 0.21 |
| South HK| SM1         | 8    | 3.7 ± 4.6 (252) | 2.9 ± 2.1 (250) | 3.1 ± 2.9 (251) | 0.10 ± 0.08 (251) | 7.0 ± 1.3 (253) | 31.1 ± 3.4 (254) | 5.3 ± 3.9 (254) | 23.7 ± 4.4 (255) | 8.2 ± 0.24 |
| South HK| MM8         | 7    | 4.0 ± 4.5 (239) | 1.9 ± 1.4 (240) | 2.8 ± 2.2 (240) | 0.11 ± 0.09 (240) | 7.1 ± 1.1 (239) | 31.7 ± 2.7 (240) | 5.2 ± 7.1 (239) | 23.7 ± 4.1 (240) | 8.1 ± 0.25 |
| South HK| SM5, SM6, SM18 | 5   | 4.7 ± 6.5 (737) | 4.0 ± 3.3 (738) | 4.7 ± 3.8 (736) | 0.13 ± 0.12 (736) | 7.1 ± 1.3 (739) | 30.2 ± 4.5 (745) | 6.5 ± 5.9 (745) | 23.9 ± 4.4 (745) | 8.2 ± 0.24 |
| South HK| SM9, SM10   | 4    | 5.6 ± 7.1 (486) | 7.1 ± 5.9 (486) | 9.0 ± 4.0 (486) | 0.22 ± 0.17 (486) | 6.6 ± 1.3 (486) | 29.9 ± 3.4 (489) | 8.9 ± 6.1 (250) | 23.6 ± 4.7 (250) | 8.1 ± 0.26 |
| South HK| SM11, SM12  | 3    | 6.8 ± 8.3 (500) | 6.9 ± 6.9 (496) | 7.0 ± 3.8 (496) | 0.18 ± 0.14 (496) | 7.0 ± 1.4 (499) | 30.0 ± 3.6 (500) | 8.0 ± 5.6 (501) | 23.8 ± 4.3 (501) | 8.1 ± 0.25 |
Table S3. **PERMANOVA results.** A) PERMANOVA analysis to test for differences in past (sub-fossil) and modern (coral transect) datasets. Post-hoc pairwise analysis to test for differences in: B) modern data (South vs. East region); and C) historical data (South vs. East region). D) PERMANOVA analysis to test for difference in three time bins: modern (transect data), recently dead (top of cores), sub-fossil (lower portions of cores). Post-hoc pairwise analysis to test for differences in: E) modern data (East vs. South); F) recently dead data (East vs. South); G) sub-fossil data (East vs. South); H) recently dead vs. sub-fossil (South Region); and I) recently dead vs. sub-fossil (East Region).

### A) PERMANOVA between past and modern

| Source   | Df | SS     | MS     | F.Model | Pr(>F)   |
|----------|----|--------|--------|---------|----------|
| Age      | 1  | 6.0326 | 6.0326 | 24.1220 | 0.0001***|
| Location | 2  | 1.4839 | 0.7419 | 2.9667  | 0.0004***|
| Residuals| 94 | 23.5081| 0.2501 |         |          |
| Total    | 97 | 31.0246|        |         |          |

### B) East vs. South, modern

| Source   | Df | SS     | MS     | F.Model | Pr(>F)   |
|----------|----|--------|--------|---------|----------|
| Region   | 1  | 1.3963 | 1.3963 | 5.1955  | 0.0002***|
| Residuals| 67 | 18.0065| 0.26875|         |          |
| Total    | 68 | 19.4028|        |         |          |

### C) East vs. South, past

| Source   | Df | SS     | MS     | F.Model | Pr(>F)   |
|----------|----|--------|--------|---------|----------|
| Region   | 1  | 0.0875 | 0.08754| 0.4296  | 0.9135   |
| Residuals| 27 | 5.5017 | 0.20376|         |          |
| Total    | 28 | 5.5892 |        |         |          |

### D) PERMANOVA between modern, recently dead, and sub-fossil

| Source   | Df | SS     | MS     | F.Model | Pr(>F)   |
|----------|----|--------|--------|---------|----------|
| Age      | 2  | 8.756  | 4.3780 | 16.9771 | 0.0001***|
| Location | 3  | 1.869  | 0.6319 | 2.4505  | 0.0013** |
| Residuals| 119| 30.687 | 0.2579 |         |          |
| Total    | 124| 41.339 |        |         |          |

### E) East vs. South, modern

| Source   | Df | SS     | MS     | F.Model | Pr(>F)   |
|----------|----|--------|--------|---------|----------|
| Region   | 1  | 1.3963 | 1.3963 | 5.1955  | 0.0005***|
| Residuals| 67 | 18.0065| 0.26875|         |          |
| Total    | 68 | 19.4028|        |         |          |
F) East vs. South, recently dead

| Source  | Df | SS    | MS    | F.Model  | Pr(>F) |
|---------|----|-------|-------|----------|--------|
| Region  | 1  | 0.2890| 0.28899| 0.99108  | 1.00   |
| Residuals | 27 | 7.2897| 0.29159|          |        |
| Total   | 28 | 7.5787|       |          |        |

G) East vs. South, sub-fossil

| Source  | Df | SS    | MS    | F.Model  | Pr(>F) |
|---------|----|-------|-------|----------|--------|
| Region  | 1  | 0.2121| 0.21207| 1.0615   | 1.00   |
| Residuals | 27 | 5.3942| 0.19978|          |        |
| Total   | 28 | 5.6063|       |          |        |

H) South, recently dead vs. sub-fossil

| Source  | Df | SS    | MS    | F.Model  | Pr(>F) |
|---------|----|-------|-------|----------|--------|
| Region  | 1  | 0.1473| 0.14725| 0.82258  | 1.00   |
| Residuals | 19 | 3.4013| 0.17902|          |        |
| Total   | 20 | 3.5486|       |          |        |

I) East, recently dead vs. sub-fossil

| Source  | Df | SS    | MS    | F.Model  | Pr(>F) |
|---------|----|-------|-------|----------|--------|
| Region  | 1  | 0.2370| 0.23697| 0.84244  | 1.00   |
| Residuals | 33 | 9.2826| 0.28129|          |        |
| Total   | 34 | 9.5196|       |          |        |
Table. S4. *Lmer* results. A-E) Multiple comparison of means results with Tukey contrasts, for five mixed linear models run with Time as the fixed effect and Site as a random effect. A) Coral generic richness in Northwest Mirs Bay region; B) Coral cover in Northwest Mirs Bay region; C) Coral generic richness in Tolo Harbor; D) Coral cover in Tolo Harbor; E) *Acropora* presence/absence over time.

A) Northwest Mirs Bay
Fit: `lmer(formula = Generic.Richness ~ Time + (1 | Site), data = nehk)`

| Linear Hypotheses: | Estimate | Std. Error | z value | Pr(>|z|) |
|--------------------|----------|------------|---------|----------|
| 1981-1989 - 1980 == 0 | -1.4545 | 1.2122 | -1.200 | 0.691 |
| 1990-2009 - 1980 == 0 | -0.6943 | 1.4364 | -0.483 | 1.00 |
| 2010 - 1980 == 0 | -4.4736 | 1.3527 | -3.307 | 0.006 ** |
| 1990-2009 - 1981-1989 == 0 | 0.7602 | 1.4364 | 0.529 | 1.00 |
| 2010 - 1981-1989 == 0 | -3.0190 | 1.3527 | -2.232 | 0.103 |
| 2010- 1990-2009 == 0 | -3.7793 | 1.4311 | -2.641 | 0.041 * |

B) Northwest Mirs Bay
Fit: `lmer(formula = Coral.Cover ~ Time + (1 | Site), data = nehk)`

| Linear Hypotheses: | Estimate | Std. Error | z value | Pr(>|z|) |
|--------------------|----------|------------|---------|----------|
| 1981-1989 - 1980 == 0 | -25.727 | 7.143 | -3.602 | 0.002 ** |
| 1990-2009 - 1980 == 0 | -23.794 | 8.251 | -2.884 | 0.016 * |
| 2010 - 1980 == 0 | -30.166 | 7.635 | -3.951 | < 0.001 *** |
| 1990-2009 - 1981-1989 == 0 | 1.933 | 8.251 | 0.234 | 1.00 |
| 2010 - 1981-1989 == 0 | -4.438 | 7.635 | -0.581 | 1.00 |
| 2010- 1990-2009 == 0 | -6.371 | 8.168 | -0.780 | 1.00 |

C) Tolo Harbor
Fit: `lmer(formula = Generic.Richness ~ Time + (1 | Site), data = tolo)`

| Linear Hypotheses: | Estimate | Std. Error | z value | Pr(>|z|) |
|--------------------|----------|------------|---------|----------|
| 1981-1989 - 1980 == 0 | -4.00000 | 2.19893 | -1.819 | 0.276 |
| 1990-2009 - 1980 == 0 | -7.85886 | 2.37140 | -3.314 | 0.005 ** |
| 2010 - 1980 == 0 | -7.87184 | 2.37140 | -3.319 | 0.005 ** |
| 1990-2009 - 1981-1989 == 0 | 3.85886 | 2.37140 | -1.627 | 0.308 |
| 2010 - 1981-1989 == 0 | -3.87184 | 2.37140 | -1.633 | 0.308 |
| 2010- 1990-2009 == 0 | -0.01298 | 2.55515 | -0.005 | 0.996 |
D) Tolo Harbor
Fit: `lmer(formula = Coral.Cover ~ Time + (1 | Site), data = tolo)`

Linear Hypotheses:

|                | Estimate | Std. Error | z value | Pr(>|z|) |
|----------------|----------|------------|---------|----------|
| 1981-1989 - 1980 == 0 | -28.200  | 13.175     | -2.140  | 0.130    |
| 1990-2009 - 1980 == 0 | -38.516  | 14.186     | -2.715  | 0.033 *  |
| 2010 - 1980 == 0      | -45.510  | 13.175     | -3.227  | 0.008 ** |
| 1990-2009 - 1981-1989 == 0 | -10.316 | 14.186     | -0.727  | 0.934    |
| 2010 - 1981-1989 == 0 | -14.310  | 13.175     | -1.086  | 0.832    |
| 2010- 1990-2009 == 0  | -3.994   | 14.186     | -0.282  | 0.934    |

E)
Fit: `lmer(Acro_PA ~ Time + (1|Site), data = Coraldiv2)`

Linear Hypotheses:

|                | Estimate | Std. Error | z value | Pr(>|z|) |
|----------------|----------|------------|---------|----------|
| 1981-1989 - 1980 == 0 | -0.2500  | 0.1188     | -2.1404 | 0.106    |
| 1990-2009 - 1980 == 0 | -0.4326  | 0.1323     | -3.269  | 0.005 ** |
| 2010 - 1980 == 0      | -0.5926  | 0.1229     | -4.825  | < 0.001 *** |
| 1990-2009 - 1981-1989 == 0 | -0.1826 | 0.1323     | -1.380  | 0.335    |
| 2010 - 1981-1989 == 0 | -0.3428  | 0.1229     | -2.790  | 0.021 *  |
| 2010- 1990-2009 == 0  | -0.1602  | 0.1313     | -1.220  | 0.335    |
Table S5. Compilation of coral survey data for sites in Northeast Hong Kong and Tolo Harbour from 1980 to 2013.
For analysis, data were pooled by Region, and time bins. Citations used for analysis are included in the main text reference list.

| Site                      | Region  | Data           | 1980 surveys 58,71,72 | 1981-1989 58,68 | 1990-2009 58,66,67,69,117 | 2010-present 70, current study |
|---------------------------|---------|----------------|-----------------------|-------------------|---------------------------|--------------------------------|
| Coral beach               | NE HK   | Coral Cover    | 75                    | 75                | 81                        | 63                             |
| Flat Island               | NE HK   | Coral Cover    | 52                    |                   | 43                        |                                |
| Moon Island               | NE HK   | Coral Cover    | 81                    | 19                | 52                        | 22                             |
| Sam Po Rock               | NE HK   | Coral Cover    | 51                    |                   | 27                        |                                |
| Green Point               | NE HK   | Coral Cover    | 56                    |                   | 52                        |                                |
| Porites Flat              | NE HK   | Coral Cover    | 76                    |                   | 8                         |                                |
| Hoi Ha Pier N.            | NE HK   | Coral Cover    | 71                    | 51                | 43                        | 89                             |
| Hoi Ha Pier               | NE HK   | Coral Cover    | 69                    |                   | 48                        |                                |
| WunPai (Crescent island)  | NE HK   | Coral Cover    |                       |                   | 54                        | 44                             |
| Au yue Tsui               | NE HK   | Coral Cover    |                       |                   | 22                        |                                |
| Ta Ho Pai                 | NE HK   | Coral Cover    |                       |                   | 13                        |                                |
| LaiChi Wo                 | NE HK   | Coral Cover    |                       |                   | 36                        |                                |
| Ngau Si Wu Wan            | NE HK   | Coral Cover    |                       |                   | 28                        |                                |
| Wong Chuk Kok Tsui        | NE HK   | Coral Cover    |                       |                   | 22                        |                                |
| Wong Wan Chau             | NE HK   | Coral Cover    |                       |                   | 11                        |                                |
| Crescent Island           | NE HK   | Coral Cover    |                       |                   | 9                         |                                |
| Kat O (2)                 | NE HK   | Coral Cover    |                       |                   | 54                        |                                |
| Kat O                     | NE HK   | Coral Cover    |                       |                   | 32                        |                                |
| Gruff head 1              | Tolo Harbor | Coral Cover   | 68                    | 34                | 46                        |                                |
| Gruff head 2              | Tolo Harbor | Coral Cover   | 57                    |                   | 16                        |                                |
| Gruff Head                | Tolo Harbor | Coral Cover   | 70                    | 70                | 38                        | 24                             |
| Chek Chau                 | Tolo Harbor | Coral Cover   | 90                    | 90                | 59                        | 31                             |
| Knob Reef                 | Tolo Harbor | Coral Cover   | 80                    | 5                 | 2                         | 1                              |
| Bush Reef                 | Tolo Harbor | Coral Cover   | 70                    | 10                | 1                         | 1                              |
| A Chau                    | Tolo Harbor | Coral Cover   | 5                     | 0                 | 0                         |                                |
| Taipo Kau                 | Tolo Harbor | Coral Cover   | 1                     | 0                 | 0                         | 0                              |
| Coral beach               | NE HK   | Generic Richness | 12                   | 11                 | 7                         | 9                              |
| Flat Island               | NE HK   | Generic Richness | 11                   |                   | 9                         |                                |
| Moon Island               | NE HK   | Generic Richness | 13                   | 6                  | 11                        | 2                              |
| Sam Po Rock               | NE HK   | Generic Richness | 12                   | 9                  |                            |                                |
| Green Point               | NE HK   | Generic Richness | 9                    | 8                  |                            |                                |
| Place                     | Location      | Study | Generic Richness | Acropora P/A |
|---------------------------|---------------|-------|------------------|--------------|
| Porites Flat              | NE HK         | Generic Richness | 5 | 8 |
| Hoi Ha Pier N.            | NE HK         | Generic Richness | 11 | 9 | 12 | 12 |
| Hoi Ha Pier               | NE HK         | Generic Richness | 8 | 8 |
| WunPai (Crescent island)  | NE HK         | Generic Richness | 15 | 9 |
| Au yue Tsui               | NE HK         | Generic Richness | 14 |
| Ta Ho Pai                 | NE HK         | Generic Richness | 14 |
| LaiChi Wo                 | NE HK         | Generic Richness | 9 |
| Ngau Si Wu Wan            | NE HK         | Generic Richness | 6 |
| Wong Chuk Kok Tsui        | NE HK         | Generic Richness | 2 |
| Wong Wan Chau             | NE HK         | Generic Richness | 1 |
| Crescent Island           | NE HK         | Generic Richness | 5 |
| Kat O (2)                 | NE HK         | Generic Richness | 7 |
| Kat O                     | NE HK         | Generic Richness | 5 |
| Gruff head 1              | Tolo Harbor   | Generic Richness | 11 | 14 | 11 |
| Gruff head 2              | Tolo Harbor   | Generic Richness | 13 | 7 |
| Gruff Head                | Tolo Harbor   | Generic Richness | 19 | 19 | 11 | 16 |
| Chek Chau                 | Tolo Harbor   | Generic Richness | 19 | 19 | 17 | 10 |
| Knob Reef                 | Tolo Harbor   | Generic Richness | 15 | 7 | 4 | 10 |
| Bush Reef                 | Tolo Harbor   | Generic Richness | 17 | 12 | 1 | 5 |
| A Chau                    | Tolo Harbor   | Generic Richness | 11 | 6 | 2 |
| Taipo Kau                 | Tolo Harbor   | Generic Richness | 2 | 0 | 0 | 0 |
| Coral beach               | NE HK         | Acropora P/A | 1 | 1 | 0 | 0 |
| Flat Island               | NE HK         | Acropora P/A | 1 | 1 | 0 |
| Moon Island               | NE HK         | Acropora P/A | 1 | 1 | 1 | 0 |
| Sam Po Rock               | NE HK         | Acropora P/A | 0 | 1 |
| Green Point               | NE HK         | Acropora P/A | 0 | 0 |
| Porites Flat              | NE HK         | Acropora P/A | 1 | 0 | 0 |
| Hoi Ha Pier N.            | NE HK         | Acropora P/A | 1 | 0 | 0 | 0 |
| Hoi Ha Pier               | NE HK         | Acropora P/A | 1 | 0 | 0 |
| WunPai (Crescent island)  | NE HK         | Acropora P/A | 0 | 0 |
| Au yue Tsui               | NE HK         | Acropora P/A | 0 |
| Place          | Location | Acropora P/A | Count |
|---------------|----------|--------------|-------|
| Ta Ho Pai     | NE HK    | Acropora P/A | 0     |
| LaiChi Wo     | NE HK    | Acropora P/A | 0     |
| Ngau Si Wu Wan| NE HK    | Acropora P/A | 0     |
| Wong Chuk Kok Tsui | NE HK | Acropora P/A | 0     |
| Wong Wan Chau | NE HK    | Acropora P/A | 0     |
| Crescent Island| NE HK    | Acropora P/A | 1     |
| Kat O (2)     | NE HK    | Acropora P/A | 0     |
| Kat O         | NE HK    | Acropora P/A | 0     |
| Gruff head 1  | Tolo Harbor | Acropora P/A | 1     |
| Gruff head 2  | Tolo Harbor | Acropora P/A | 1     |
| Gruff Head    | Tolo Harbor | Acropora P/A | 1     |
| Chek Chau     | Tolo Harbor | Acropora P/A | 1     |
| Knob Reef     | Tolo Harbor | Acropora P/A | 1     |
| Bush Reef     | Tolo Harbor | Acropora P/A | 1     |
| A Chau        | Tolo Harbor | Acropora P/A | 0     |
| Taipo Kau     | Tolo Harbor | Acropora P/A | 0     |