

Data collection Methods at Menjangan reef

Data was collected on the reef March-April 2011, taking about a month. During this time, 11 sites were surveyed. At each site 3 50m transects, set parallel to the reef zonation, to work within habitat zones rather than across them were set up. These were set end-to-end at in shallower (2-6m) and deeper (6-10m) waters. The survey sites locations are shown on the map below:



Study sites plotted on a Google Earth image.

Data Collection

| Method | Description | Justification |
|----------------------------|---|---|
| Topographical complexity | A digital level gauge was used to measure temperature and depth measurements, which could be converted to depth measurements topside. These measurements were taken along each 50m transect, by swimming slowly along it with the gauge as close to the reef as possible without hitting the bottom. Philip controlled his swim speed by looking at the centimetre measurements along the transect tape. As he swam the gauge recorded measurements at 1 second intervals. To swim one transect took about 10-15 minutes. | A new method developed by Philip to measure the topographical complexity of the reef. Both current theory and newly suggested theories on relationships between this and the other factors measured will be tested. |
| Fish counts | Divers visually surveyed the abundance, size and species along the two 50m transects, looking at 2m wide areas for fish of 10cm long and 5m wide belt for fish over 10cm long. They made several passes to ensure accuracy. The biggest fish were the first to be surveyed as they were the shyest and would swim away first. | To measure abundance of both variety of species and number of fish of a particular species. Both current theory and newly suggested theories on relationships between this and the other factors measured will be tested. |
| Estimating substrate cover | 1 diver made observations of coral colonies and genus at 50cm intervals along each transect. Giving 100 observation points per transect. | To find out the growth of the reef, this is linked closely with coral condition. Both current theory and newly suggested theories on relationships between this and the other factors measured will be tested. |
| Coral Condition | A diver swam along each transect looking at the coral condition in a width of 2m making notes on physical damage, disease, fishing gear, bleaching and crown of thorns starfish. | To find out the health and amount of pressure on the reef from a variety of physical and human factors. Both current theory and newly suggested theories on relationships between this and the other factors measured will be tested. |

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