

## HONOURS PROJECT



**Project:** Sediment dynamic influences on fish grazing behavior, Miri, Borneo

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**Project:** Many nearshore coral reef systems are under increasing pressure from increasing sediment, nutrient and freshwater inputs due to poor land management and changing climates. The reefs situated offshore from Miri, Borneo, lie 30 km south of the Baram River, which discharges  $2.4 \times 10^{10}$  kg yr<sup>-1</sup> into the coastal zone. These sediments are transported in suspension over the reefs, reducing light available at the reef surface, and once deposited covering the reef benthos. Increased frequency and intensity of rainfall events together with future planned modifications to the Baram river catchments will likely increase the threat from sediments. Grazing reef fish play a vital role in reef health and ecosystem function. They feed on and maintain low benthic algal cover, and constant levels of herbivory can prevent reefs from switching from a coral to algal dominated state. Yet, changing sediment dynamics will likely interfere with these ecological feedback loops. This study will assess grazing fish abundance and behaviour at several reefs along an inshore to offshore gradient using fish feeding assays, remote video quadrats and fish transects to determine if sediments are influencing fish grazing and reef health.

**Special Requirements:** This project would be best suited to a mid-year start. The project will involve SCUBA diving, and international fieldwork. The student should hold an open-water diving qualification or greater, with logged dive experience.

### References:

Goatley, C. H. R., R. M. Bonaldo, R. J. Fox and D. R. Bellwood (2016). "Sediments and herbivory as sensitive indicators of coral reef degradation." *Ecology and Society* 21(1).