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Summary

Paraya australiensis, an indigenous freshwater Atyid in eastern Australia, is considered as a model species for studying biology, behavior, ecology and genetics in Atyids. They form a major food source for stream dwelling fishes and feed on algae, keeping the water body ecologically balanced and thus acting as a strongly-interacting ecosystem macroconsumer. Among the 9 highly divergent lineages (mtDNA), one lineage has been observed to favour upstream sites at higher altitudes, with cooler water temperature. My research aims to identify local adaptation in upstream and downstream populations of this lineage in three streams in the Conondale Range, North-eastern Brisbane. Genetic markers were developed using double digest RAD sequencing and *de novo* assembly approaches and used to identify adaptation.

Research Expertise

- Freshwater ponds, lakes, rivers in Bangladesh focusing on aquaculture, productivity, water quality, breeding and hybridization of fish and prawns.
- Marine and estuarine ecosystems in Bangladesh and in different European countries (Germany, Spain and Ireland) focusing on oceanography, marine microbiology, effect of climate change on marine invertebrates.
- Evolutionary genetics of Parvalbumin gene in Salmonids
- Population genomics of freshwater shrimp in Australia through using newly developed markers produced by Next Generation Sequencing to answer ecological questions.