

## Project Update: December 2012

Analysis has been completed on the data describing 26,695 macro-invertebrate specimens and the environmental condition of our sampled streams. Findings suggest that family level metrics calculated from the macro-invertebrate data are sensitive to change at the sites we perceived to be most impacted: those influenced by banana cultivation and sand and gravel mining in addition to non-mechanised agriculture and residential activities. This indicates that macro-invertebrate metrics will provide a useful method for initial threat assessment of streams in southern Belize. The response of family level metrics was less consistent in areas where impacts were lower, suggesting finer taxonomic resolution and/or a focus on stressor specific responses may be necessary to prevent low-level effects going undetected.

Our work has shown that macro-invertebrates are suitable indicators for stream assessment in Belize because they respond to threats and because rangers and students have learned how to monitor and assess them with relative ease. As a direct result of our work macro-invertebrates have been included as indicators in the draft National Biodiversity Monitoring Plan.



Left: Macro-invertebrate communities differed significantly at sites influenced by banana cultivation and in-stream sand and gravel mining compared with forested streams. Right: The creeping water bug (Naucoridae) breathes air collected from the water surface facilitating its ability to cope with reduced water quality.