

## Project Update: October 2014

### Summary

A biomonitoring consortium has been formed as a result of the capacity building programme organised in July 2014 in Shillong, India to provide ecohydrology fundamentals necessary to conserve freshwater ecosystems of Indian northeast. The consortium involves faculty and students from five colleges in Shillong as well as individual graduate students. The primary objective for the current year is to survey streams in forested habitats to compile baseline information for the first time on the presence and diversity of aquatic macroinvertebrates present in streams of Meghalaya. This information would then form the basis for a field guide for aquatic macroinvertebrates of the region. This report summarises a survey carried out by two graduate students, Reuben M Shabong and Apbor R Kharkongor. Similar reports from other groups will be shared in future, with a compilation to be done in July/August 2015. We are also looking into organising a camera for obtaining high resolution close-up images of the invertebrates that is necessary for both the field guide, for uploading onto India Biodiversity Portal as well as for identification beyond the taxon level, to family and perhaps genus levels.

### Biomonitoring of Central Meghalaya Streams

#### **Conducted by: Reuben M Shabong**

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September 22nd – 24th 2014

Reuben and Apbor sampled three streams of central Meghalaya to assess the quality of streams by measuring physical indicators of water quality and collecting macroinvertebrates.

Location: Shillong area, East Khasi Hills, Meghalaya, India

Temperature: 20 degrees Celsius average (September)

Rainfall: Approximately 3000 mm annually

Elevation: **Site 1** – 1700-1750 m asl, **Site 2** – 1585-1600 m asl, **Site 3** – 1550-1580 m asl





**Site 1** - "Lawjynriew stream". The sampled stream is a first order stream and in an undisturbed area. In addition to stonefly, mayfly and caddisfly larvae, many other invertebrates were found. The stream flow was 7-8 l/s, Dissolved Oxygen (DO) was 12.5 mg/l, and the turbidity was below 5 NTU.



**Site 2** - "Malki stream", is a second order stream, relatively more disturbed than the first one, but the same invertebrate larvae were found including a Hellgrammite larva. The water flow was 20-30 l/s, DO was 12.0 mg/l and the turbidity was lower than 5 NTU.



**Site 3** - "Mawshubuit stream", is a second order stream and a disturbed site. Even though the mayfly stonefly and caddisfly larvae were present the invertebrate larval community was less diverse than the other two streams. Water flow is roughly 30-40 l/s, DO levels of 12.2 mg/l and turbidity of above 5 NTU.

**Species found** - mayfly, stonefly, caddisfly, hellgrammite, midges, worms (2 species), beetles (3-4 species), water striders, mosquito larvae.



**Pic 1** - Beetle



**Pic 2** - Hellgrammite



**Pic 3** - Mayfly and stonefly



**Pic 4** - Caddisfly, midges and other species.