



## **Evaluating the ecohydrology of microhabitat in an experimental watershed of Central Taiwan**

Chiang Wei (1), Ping-Shih Yang (2), and Pei-Ling Tian (3)

(1) National Taiwan University, Experimental Forest, ChuShan Township, Nantou, Taiwan (d87622005@ntu.edu.tw), (2) National Taiwan University, Department of Entomology, Taipei, Taiwan, (3) National Taiwan University, Department of Entomology, Taipei, Taiwan

The ecohydrology of microhabitat is evaluated at an alpine experimental watershed of Central Taiwan to assess the impact and influence of the natural disturbance. The physical parameter including water depth, velocity, substrate and chemical parameter pH, positive ion, nutrients, micrometeorological elements, riparian vegetation were investigated in this study. In order to understand the variation of microhabitat towards the biology, the aquatic insects are selected as the target species. Between Aug 2008 and Dec 2010, we found 19 family, 30 genus and 34 species of vegetation in the riparian area. The Hilsenhoff family biotic index (FBI) shows that the water quality is classified to "Excellent" and "Good" indicates that the stream is non-polluted. The revetment made of porous masonry provides a shelter for biology and corridor for energy. The distribution of size of substrate indicates the riverbed was carried and eroded from the upstream colluvium layer which is not stable and may cause significant change of microhabitat. The discharge varies with that the abundance of aquatic insects and the dominate family and genus of aquatic insects is Baetidae (Order Ephemeroptera) and Baetis spp. Through the measurement of water depth and velocity, the discharge of base flow interpreted from the 90%, 95% and 96% curve of duration for the daily discharge is 0.0256, 0.0123 and 0.0099 cms; the threshold value of ecological base and peak flow evaluated by curve of abundance vs. discharge is 0.0154 and 0.102 cms. The results shows that the study area is still endangered of the threat of debris flow, however, biology of the creek still recover slowly after the natural disturbances.