Thesis Title Use of Macroinvertebrate Communities to Assess Water Quality Classes in Doi Inthanon Stream and Ping River by Biotic and Saprobic Indices

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Abstract

This study used macroinvertebrate communities to assess water quality classes in streams on Doi Inthanon and in the Ping River which have different environments by biotic and saprobic indices. A pond net was used for sampling. Identification was up to the family level. Samples were taken from 11 sites on the Ping River and 10 sites from Doi Inthanon Streams. Each site was sampled every season for 12 months.

The quality of water samples from Doi Inthanon Streams from all 3 seasons differed only slightly. The upstream samples showed better water quality than the downstream ones. In the rainy season Biotic index values were lower than in the summer

and winter. Water quality classes at sites 6 and 7 were at the third level but sites 1,2,3,4,5,8,9 and 10 were at the second level. The saprobic index values from all 3 seasons differed slightly, being higher in the rainy season than in the summer and winter respectively. The organic load varied according to saprobity value of each site with the average for the summer season higher than for rainy and winter seasons respectively. The average distribution of the macroinvertebrates was higher in the summer season than in the winter and in the rainy seasons respectively. As to the biological-ecological longitudinal quality profile of the streams in every season, the sum of β-mesosaprobic saprobity value was highest along the length of the streams.

Water quality of the Ping River samples from all 3 seasons differed only slightly. The biotic index values from upstream were higher than those from downstream. Water quality classes at sites 1,2,3 and mt1 belonged to the second level and the other sites 4,5,6,7,8,9 and 10 were in the third level. In the summer the average saprobic index value was higher than in the rainy season and in the winter.The organic load value was higher in the summer than in the rainy and winter seasons,with the exception of sites 8,9 and 10 where the value was higher in the winter than in the summer and rainy seasons. The distribution

of the macroinvertebrates varied both in the number of families and the number of individuals, being higher in the winter than in the summer and rainy seasons respectively. As to the biological-ecological longitudinal quality profile of the river in every season, the sum of β-mesosaprobic saprobity was high upstream and was highest on the average along the length of the river.