

CHAPTER 6

CONCLUSIONS

1. Thai Trichoptera Database contained an inventory of 1,004 species, distribution of species in neighboring countries, distribution of species in biotope types, number of occurrences, monthly abundance. This initial database will be launched online via Environmental Monitoring: Aquatic Insects Research Unit, Biology Department, Faculty of Science, Chiang Mai University (http://www.biology.science.cmu.ac.th/research/AIRU%20data%20online/AIRU_website/HOME_en.html)
2. Among 28 families of Trichoptera in Thailand, family which have the highest number of species is Leptoceridae (216 species), followed by Hydroptilidae (126 species), Hydropsychidae (119 species) and Philopotamidae (100 species).
3. Biotope type were defined to 7 types depend upon habitats types (stream (>1,700; 1,700-1,200; 1,200-500; <500 m asl), river (<500 m asl), permanent (<500 m asl) and temporary (<500 m asl) standing water. The numerous species diversity occurred in stream with 1,700 - 500 m asl (represented 20 - 25 families). Philopotamidae, Hydropsychidae and Leptoceridae existed in all types.
4. To date conservation status was considered from distribution, occurrence and abundance of each species to rare (1-2 male have been specimen recorded), common (3-100 specimen have been recorded) and abundance (>100 specimen have been recorded).
5. Using Trichoptera to monitor ecosystem alteration may have to concern biotope types and also seasonal variation.

6. Thai Trichoptera database will serve as a data repository for future expansion to other locations throughout Thailand, and will allow for the evaluation of best research practices, the application of trichoptera as bioindicator for water and habitat quality, and the long-term assessment of the conservation status of the species and their habitats.
7. Mean of discharge, water and air temperature, pH, total dissolved solid, conductivity, nitrate nitrogen, ortho-phosphate and turbidity among the sampling sites showed different significantly.
8. Habitat assessment in all sampling sites showed good - excellence conditions.
9. There were 256 species which identified 137 species from five sampling sites in Doi Suthep-Pui NP and 187 species from six sampling sites in Doi Inthanon NP. Combined data with former studies showed 328 species from both NPs comprised of 75 species represented only in Doi Suthep-Pui, 134 species represented only in Doi Inthanon and 119 species represent in both NP area.
10. Only 14 species of caddisflies were found in the highest study sites (2,050 and 2,071 m asl) during the 2009-2010 collecting (number in the parentheses represent number of individuals): *Rhyacophila bicolor doiangka* MALICKY 1999 (1), *Rhyacophila blenda* Malicky&Chantaramongkol 1993 (5), *Rhyacophila falita* ROSS 1956 (5), and *Rhyacophila murhu* Malicky&Chantaramongkol 1989 (4) (Rhyacophilidae), *Chimarra inthanonensis* Chantaramongkol&Malicky 1989 (2), *Dolophilodes torrentis* Kimmins 1955 (36), and *Wormaldia serrata* Kimmins 1955 (1) (Philopotamidae), *Arctopsyche variabilis* Schmid 1968 (4) (Arctopsychidae), *Nothopsyche muqua* Malicky&Chantaramongkol 1989 (1) and *Moropsyche gerolan* Malicky&Chantaramongkol 1991 (2) (Limnephilidae), *Lepidostoma*

inthanon Malicky&Chantaramongkol 1994 (52), *Lepidostoma varithi* Malicky&Chantaramongkol 1994 (1), *Paraphlegopteryx angkangensis* Weaver 1999 (2) and *Paraphlegopteryx malickyi* Weaver 1999 (4) (Lepidostomatidae).

11. From a conservation standpoint, rare species may serve a useful role as candidate flagship species, helping to generate public awareness and appreciation of the need for habitat conservation of critical lotic ecosystems.

RECOMMENDATIONS

The initial Thai Trichoptera Database will be useful as basis knowledge on Trichoptera for researchers to apply for using Trichoptera as bioindicator in water and habitat quality monitoring programs and also as a tool for lotic ecosystems' biodiversity conservation. However, the database need to increase more additional data. The further research should be pay attention on biological data of each species which is still scarce such as life history, food preference, behavior, flight distance, and flight period etc. And also the diversity of Trichoptera in large rivers and lentic ecosystems (permanent, temporary and man-made water bodies) are still scarcely. To date only male Trichoptera are able to identify, research on larval and pupal stages and female characters are requiring.