

CHAPTER 6

Conclusion

The results of the study of Trichoptera diversity and abundance in regulated river, Mae Ngat Somboonchol dam, during June 2013 to May 2014 were showed.

1. Total numbers of larvae's Trichoptera in Mae Ngat Somboonchol dam during 2013 to 2014 were 5,596 individuals belonging to 15 families Calamoceratidae, Dipseudopsidae, Ecnomidae, Glossosomatidae, Goeridae, Helicopsychidae, Hydropsychidae, Hydroptilidae, Lepidostomatidae, Leptoceridae, Odontoceridae, Philopotamidae, Polycentropodidae, Psychomyiidae and Xiphoncentronidae. SU1 was the most found larvae with 2,738 individuals, 15 families and SD4 was the less found of larvae with 36 individuals in 6 families.

2. The totals numbers of Trichoptera species at Mae Ngat Somboonchol dam were 97 species, during 2013 to 2014. There were a different number of Trichoptera species between upstream and downstream area, the highest number of adult male Trichoptera were trapped were 351 and 292 individuals on April 2013 and June 2014, respectively. The highest number of Trichoptera among the sites was 1,077 individuals, from SU1, and the lowest number of caddisflies was 301 individuals, from SD7.

3. Forty-four exclusive species were found only in upstream area followed by *Chimarra akkaorum*, *C. chiangmaiensis*, *C. helios*, *Kiasura peleg*, *Wormaldia nyctimon*, *Nyctiophylax zadox*, *Polycentropus admin*, *Psychomyia amphiaraos*, *P. lak*, *P. mento*, *Tinodes ragu*, *Proxiphocentron patrus*, *Ecnomus jojachin*, *E. venimar*, *Cheumatopsyche cacus*, *C. criseyde*, *Diplectona aurovittata*, *Hydromanicus eliakim*, *Hydropsyche camillus*, *H. clitumnus*, *H. formosana*, *H. harpagofalcata*, *Macrostemum fenestratum*, *M. hestia*, *Goera echo*, *G. matuilla*, *G. redsat*, *G. uniformis*, *Ceraclea hippodamia*, *Leptocerus dirghachuka*, *Oecetis asmada*, *Setodes brevicaudatus*, *S. endymion*, *S. isis*, *S. kybele*, *S.opora*, *S. orcus*, *S. thoneti*, *Trichosetodes anaksepuluh*,

Marilia mogtina, *M. arope*, *Anisocentropus brevipennis*, *A. pan*, and *Ganonema fascipenne*.

4. Twenty-three exclusive species were found only in downstream followed by *Orthotrichia maendrica*, *Chimarra momma*, *Dipseudopsis bernardi*, *D. varians*, *Psychomyia kerynitia*, *P. sampati*, *Drepanocentron curmisagius*, *Ecnomus alkios*, *E. cincibilus*, *E. mammus*, *E. puro*, *E. votticius*, *Anthaloptera sexpunctata*, *Cheumatopsyche banksi*, *C. caieta*, *Ceraclea idaia*, *Oecetis kodros*, *O. meghadouta*, *O. misenos*, *O. tripunctata*, *Parasetodes respersella*, *Setodes okyrrhoe* and *S. opheltes*.

5. Fifty species were new found from the previous recorded by Thapanya *et al.* (2013), and eighteen species were missing following by *Cheumatopsyche dhanikari*, *C. chryseis*, *C. concava*, *Hydromanicus serubabel*, *Hydropsyche dolosa*, *H. pallipenne*, *Macrostemum dohrni*, *Leptocerus lanzenbergeri*, *Leptocerus suthepensis*, *Oecetis laodike*, *O. purucha*, *O. purusamedha*, *Mystacides elongate*, *Triaenodes menestheus*, *Paduniella semarangensis*, *Psychomyia kaiya*, *Kisaura sura* and *Pahamunaya jihmita*.

6. Diversity indices of larvae Trichoptera represented; H' of upstream sampling sites were between 1.29 and 1.61 and downstream sampling sites were between 0.07 and 0.51. Evenness index of upstream sampling sites were between 0.14 and 0.17 and downstream sampling sites were between 0.15 and 0.81.

7. Diversity indices of adult male Trichoptera represented; H' of upstream sampling sites were between 3.06 and 3.13 and downstream sampling sites were between 1.99 and 2.55. Evenness index of upstream sampling sites were between 0.31 and 0.32 and downstream sampling sites were between 0.24 and 0.37.

8. The average of physicochemical of water properties did not difference among sampling sites except total dissolved solid, conductivity and dissolved oxygen were significantly difference ($p < 0.05$) among upstream and downstream sampling sites.

Recommendations

The results of the studies were significantly showed in different parameters, such as sediment transfer, temperature variability, species richness and habitat

functionality between upstream and downstream of Mae Ngat dam. Although, the result was not on critical situation on Trichoptera species but this is the ideal of the discontinuous behavior of hydraulics and morphology in rivers. The study of relations between Trichoptera or others macroinvertebrate at the artificial or man-made freshwater ecosystem should be widely concerned. At least, the prediction of changes in diversity and abundance of Trichoptera or others macroinvertebrates were realized with studied.

In Thailand, the Trichoptera conservation status was not considerable and to candidate Trichoptera to be a flagship species would be inaction. Use of only Trichoptera assessment for conserve the hole fresh water ecosystem would not enough to generate an awareness but, integrated the studies with others fact in ecology should be possible, such as studies in biomass of native fish or bird to determined their food source. For example, there have an angler games in North America and Europe which used artificial bait mimic from aquatic insects, especially Trichoptera. On this phenomenon, Trichoptera life history was widely educated from fisherman or people who interested, not only student. And finally, the trends of gaming, awareness of conservation in aquatic insects in freshwater ecosystem were raised.

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