CHAPTER 5

CONCLUSION

The objectives of this study were to assess water quality by using biological indices and to study the relationship between diversity of macroinvertebrates and water quality of Mekong River and its tributaries in part of pass through Thailand and Lao PDR. The conclusions of this study were as follow:

1. Nine orders of aquatic insects and 14 families of freshwater mollusk covering 117 taxa were classified from this study. The most abundant of macroinvertebrates was *Baetis* sp. (family Baetidae). Within the Songkram River and Mae Mun River, these both rivers were the highest diversity of aquatic macroinvertebrates found in this study. Both rivers were included with varies of the substrate types and suitable for aquatic macroinvertebrates species.
2. The water quality was assessed by using biological indices. The majority of water quality was moderated, except in Kaeng Kudku and Songkram River in the rainy season which were lower than moderate water quality assessed by BMWP and Khong Ciam in the rainy season which assessed by FBI index.
3. From statistical analysis; the cluster analysis of the water quality in all sampling times could be classified into 6 groups by using the physico-chemical properties and could also be classified into 7 groups by using the

diversity of aquatic macroinvertebrates. The CCA analysis could expose the correlation between biological indices and water quality with conductivity, TDS, turbidity, salinity, BOD_5 nitrate nitrogen and ammonia nitrogen. From the result, ASPT and FBI were more appropriate to be used to evaluated water quality of Mekong River and its tributaries than H' index and $BMWP^{Thai}$ when compared with chemical index.