CHAPTER 1

INTRODUCTION

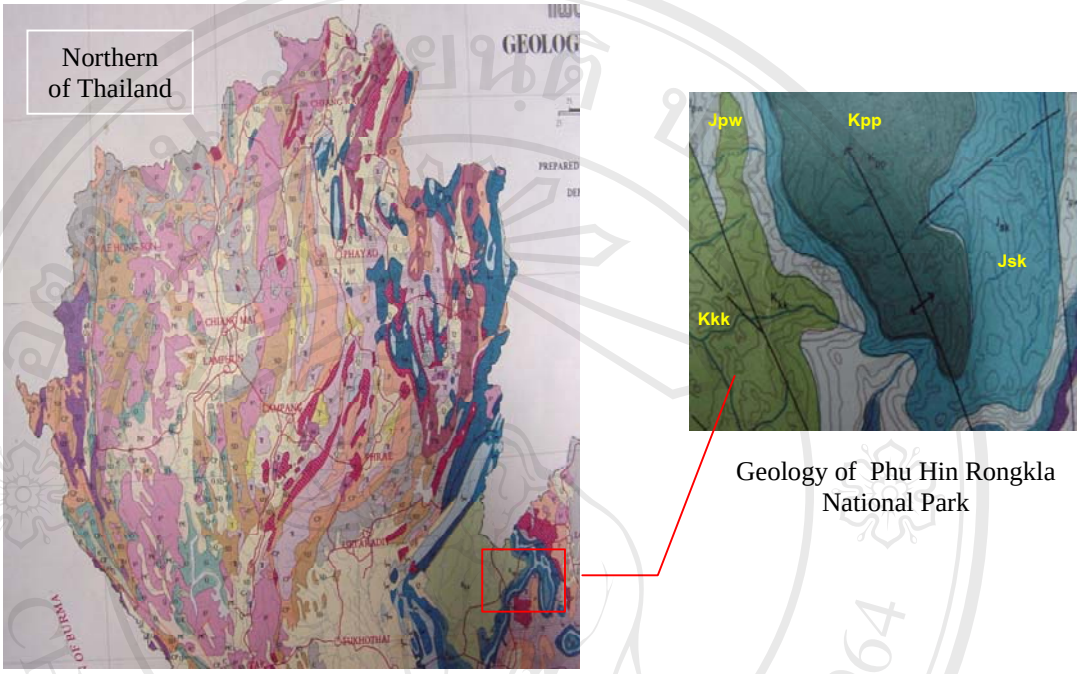
The mountains of Phu Hin Rongkla were the major strongholds for the communists for 5 years (1968-1972). Since 1982, government forces attempted to drive out these insurgents. Over the next four years, Phu Hin Rongkla has designed as the national park by the Royal Forestry Department in 1986 to preserve the historical remembrance and fertility of natural resources. Since the declaration, Phu Hin Rongkla has been promoted for the tourists, while the useful scientific research for area management have been minimal on particular topics of plant diversity and social science with very few animal diversity studies. For example, report of the Forest Land Resources Division (2002) indicated 84 species of Angiosperm and 325 species of wild animals, including 63 species of mammals, 226 species of birds, 14 species of amphibians and 22 species of reptiles. According to the government report, it indicated that diversity studies on different topics are needed. Therefore, Phu Hin Rongkla National Park is of particular interest for biodiversity studies on aquatic insects, especially Trichoptera.

The studies of Trichoptera have been done mainly in the north and showed the highest diversity in the country. The usual surveys have been studied by the research teams of Chiang Mai University. There had been the summary of the whole country of all data available in the year of 2000 (Chantaramongkol and Malicky, 2000). For the northeast, the Trichoptera studies have been conducted by the team from Khon Kaen University in certain groups or in some areas. For example, Nuangchalerm

(2001) studied the species diversity of Leptoceridae. Radomsuk (1999) and reported the species diversity of Hydropsychidae in Nam Nao National Park.

Phu Hin Rongkla is situated in the lower part of northern Thailand. The geological information of Phu Hin Rongkla indicated the areas are comprised of the sedimentary and metamorphic rocks are as the other areas of northeast, such as Phu Kradung National Park. This was confirmed by the similarity of 4 types of rock formations; Khok Kruat, Phu Phan, Sao Khua and Phra Wihan formations, which formed during the course of the Cretaceous Periods (Figure 1) (Forest Land Resources Division, 2002). The geology of Phu Hin Rongkla differs from northern Thailand, where there is granite (formed during the course of the Carboniferous orogeny), sand stone and gneisses (formed during Precambrian and Cambium orogenies, respectively) and was overlaid by later formations (Schmidt-Vogt, 1999). According to the lithology and geological time differences and the requirements of additional information of the Trichoptera in the northeast, it is important to study the spatial and temporal changes of Trichoptera community compared with the empirical data of Trichoptera in the north of Thailand.

The number of tourists, visiting the national park has been increasing every year since 1988. The tourist attraction sites, other than Communist memorials (i.e. the Political School, Communist headquarters and Flag-Pole Cliff), include magnificent waterfalls, such as Romglao Paradorn, Waterwheel, and Man Daeng Waterfalls (Forest Land Resources Division, 2002). In the case of using the information of this research for national park management, four waterfall- streams are known to be tourist attractions and were chosen and water quality parameters were measured.



Geology of the northern Thailand

Geology of Phu Hin Rongkla National Park

Figure 1 The geological characteristics of the study sites and how they are different from other national parks in northern Thailand (Abbreviations: Kkk, Khok Kruat Formation; Kpp, Phu Phan Formation; Jsk, Sao Khua Formation; Jpw, Phra Wihan Formation) (Geological Map of Thailand, 1987)

Therefore, this research was mainly focused on the diversity of Trichoptera and its spatial and temporal changes, and water quality concerns.

Purposes of this study

1. To investigate the diversity of larvae and the adult stage of Trichoptera from different streams in Phu Hin Rongkla National Park.
2. To determine the relationship between water quality and it's distribution and the diversity of Trichoptera.