

CHAPTER III SITE DESCRIPTION

There are 12 study sites in this study. Three sites were sampled in each of 4 different kinds of water bodies; stream, river, irrigation canal and sewage canal.

And the stream sites have more information than the others due to the evaluation of the habitats.

There are three different streams;

Stream 1 (S1) : Stream 1 is situated in the Botanical Garden at 600 m above mean sea level. Mae Rim District, Chiang Mai. The riparian vegetation consisted of dense shrubs and trees ,and much of the stream bed was shaded.

This site has less impact from human activities so it is representative as a reference site(Figure 1).The average stream width was about 1.87 m.

The average stream depth was about 10 cm. The water flow was about

0.2 m/s. The substrate was mostly composed of gravel and sand. The organic substrate components comprised 80% detritus and 20% muck-mud.

Stream 2 (S2): This stream passes through an agricultural area. The stream banks were covered with shrubs and trees. The stream bed was partly shaded by riparian vegetation. The organic substrate components comprised 93-95% detritus and 5-7% muck-mud. The average stream width was about 4.35 m, average stream depth was about 40 cm. The water flow was about 0.4 m/s. The substrate comprised various substrata from bedrock to silt. Site S2 is situated at Ban Muang Khum, in Mae Rim District, Chiang Mai City. (Figure 2)

Stream 3(S3): This stream is called Huay Kheaw Stream. It passes through the Zoo, so is affected by some organic loading from animals. The surrounding area is a public park and Huay Kheaw village (Figure 3). This

stream is situated along the Huay Kheaw Road in ChiangMai City.

The average stream width was about 3.03 m, average depth was

about 15 cm. The water flow was about 0.16 m/s. The organic

substrate components was 100% detritus.

Three different sites at the Ping River comprise;

Sop Rim (P1): This is the representative site of the Ping River before it passes

through the city with the urbanize impact. Sop Rim is the sampling

spot situated in Mae Rim district. Vegetation at both sides of this site

were Bamboo, and shrubs. (Figure 4)

Ban Klang (P2): The Ping River from P1 passes through the city and reaches

Ban Klang in Hang Dong District with some organic waste from the

city. This site is situated before the outfall from Mae Kha Sewage

Canal into the river. The surrounding area has a temple and school.

Ban Tha Khi Nak (P3): This site is on a part of the Ping River which is affected by the organic waste from the city. The sampling spot is 9 km from the outlet of Mae Kha Sewage Canal at Ban Tha Khi Nak, Hang Dong District. The surrounding areas were the longan orchards and housing areas.

Three sites on two irrigation canals were chosen ;

Irrigation Canal 1 (IC1): This is situated in front of the Phu Khum Hotel, in Chiangmai City. It is an concrete irrigation cannal. Both sides of this canal are asphalt road without any shade from trees, only grass.

(Figure 5)

Irrigation Canal 2 (IC2): The second site is on the same canal which run along the same road about 9 km from the first site in Ban Kwean, Muang District, ChiangMai City. There are some villages along the canal before the sampling site.

Irrigation Canal 3 (IC3): This canal is situated in Ban Pa Khui, San Pa Tong District,

Chiang Mai Province. This differs from the above sites because it is a natural irrigation canal without cement. The surrounding areas are agricultural areas such as rice fields, vegetable gardens and longan orchards. (Figure 6)

Three sites on the Mae Kha Sewage Canal are:

Sewage Canal 1 (SC1): This site is on the Mae Kha Canal at Lanna Hospital and is

representative of the canal before it passes through the city. The

water flow at this site is quite slow. (Figure 7)

Sewage Canal 2 (SC2): This site is at the Mae Kha Bridge in the middle of the city

(near the night bazaar). At this site the substrate is black with a bad

smell. The flow rate is very low. (Figure 8)

Sewage Canal 3(SC3): This is on the Mae Kha Canal at the out fall to the Ping River

at Ban Pa Dad, Muang District. At this site all the organic waste loading from the city is drained directly to the Ping River without any treatment.

The sampling spot is located on the sewage canal before it passes to the river.

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Figure 1. The stream site S1



Figure 2. The Stream Site S2



Figure 3. Stream Site S3



Figure 4. The Ping River Site P1



Figure 5. The Irrigation Canal Site IC1





Figure 7. The Sewage Canal Site SC1



Figure 8. The Sewage Canal Site SC2

Map of Running Waters Study Sites in Chiang Mai City

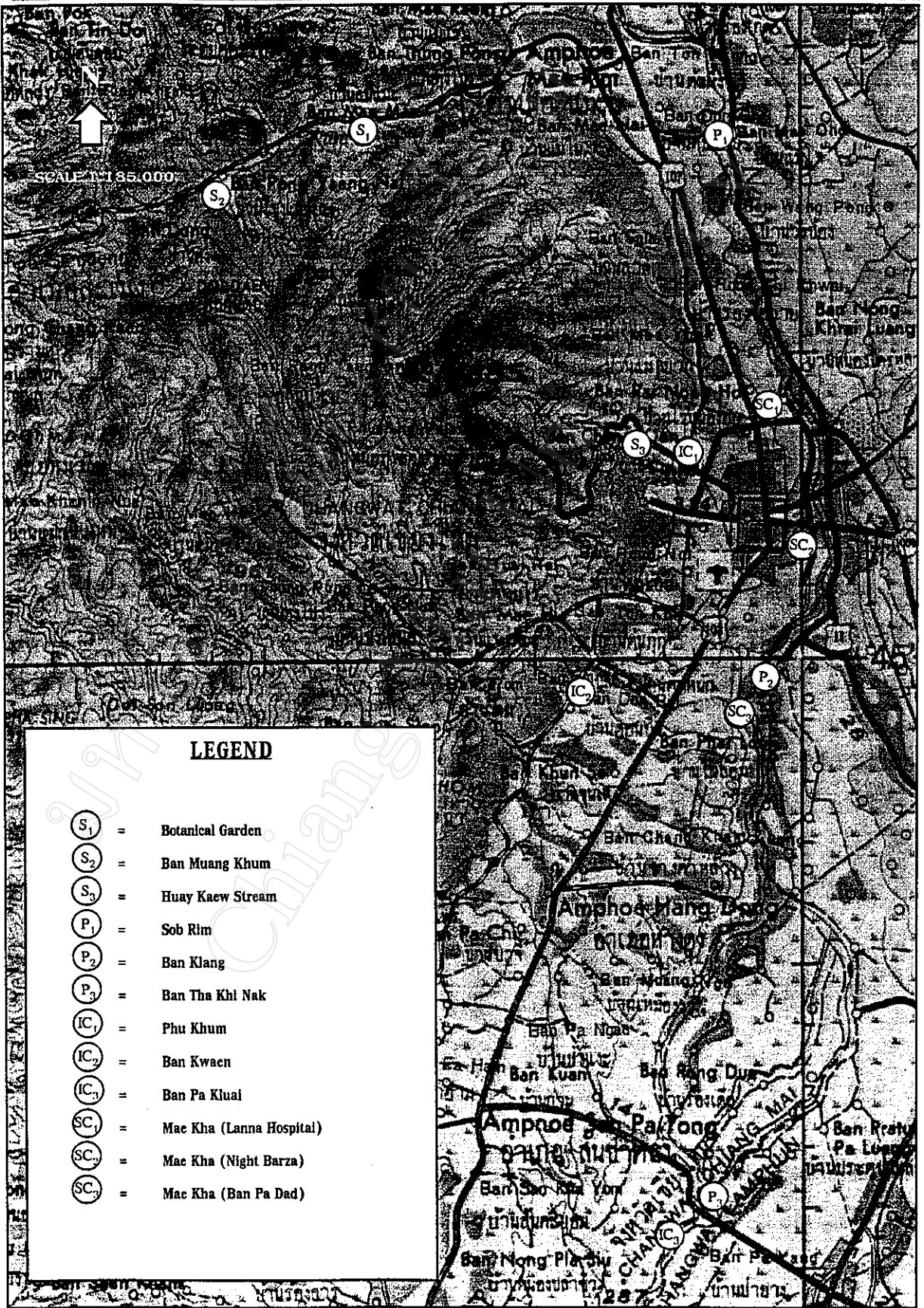


Figure 9.