

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 PREAMBLE**

The water quality of the Paya Indah Wetlands (hereinafter known as Paya Indah) had been degrading for a long time and this had eventually intermitted its ecological and hydrological sustainability (Dr. Nik & Associates Sdn. Bhd. (DNASB) et al., 2003). Moreover, these situations were worsened by the water level of Paya Indah, which according to DNASB (2001), was found to be below the groundwater table. According to an unpublished working paper by the Department of Irrigation and Drainage (DID) as well, very rapid and uncontrolled development within Cyberjaya and other areas near Paya Indah also contributed to the water quality degradation. As the results of both lowered water table and anthropogenic pollution from the development in the surrounding areas, the physical and biological features of Paya Indah had been degraded. The Department of Wildlife and National Parks (DWNP) estimated that prior to their taking over of Paya Indah from the previous management in late 1990-s, the number of birds, especially migratory birds and waterfowls had greatly declined. Therefore, Paya Indah had been closed to the public for the time being.

Currently Paya Indah Wetlands is actively undergoing improvement and rehabilitation processes. These include road pavement, improvement of existing facilities and amenities, landscaping and improvement of water quality resources, before reopening to

the public. Under the rehabilitation programmes by the Government through the DWNP since late 1990-s, the number of birds at Paya Indah Wetlands had increased by approximately 30% in 2001, but during the study period, the information of the number of birds were unable to be obtained from DWNP Officials.

The degradation of Paya Indah's water quality could be contributed to the either natural process or the anthropogenic pollution. Thus, there is a need to know the factors that had caused the degradation of the water quality as it could facilitate ensuing rehabilitation works.

## **1.2 AIMS AND OBJECTIVES**

The aims of this study are to identify the main causes of the Paya Indah water quality degradation and to propose its rehabilitation and conservation works to rejuvenate its ecological and hydrological sustainability as well as to improve its physical features.

The objective for this study is to obtain and analyze recent water quality condition of Paya Indah, based on the secondary data from previous studies done by various parties. The water quality data would be useful for identifying sources and factors leading to Paya Indah Wetlands water quality degradation.

### **1.3 LOCATION OF PAYA INDAH WETLANDS**

Paya Indah is located about 30 km south of Kuala Lumpur, about 12 km west from the new administrative capital of Putrajaya, just south of the Multimedia Super Corridor (MSC) and about 15 km northwest of the Kuala Lumpur International Airport (KLIA) (DNASB, 2001). Despite its location at about 5km from Dengkil town which is in the Sepang District, Paya Indah Wetlands falls under the jurisdiction of Kuala Langat District Council. The North-South Expressway – Central Link (NSECL) forms the boundary between the two districts. The location of Paya Indah is as shown in Figure 1.1, and detailed in raster map in Figure 1.2. The study area is demarcated by blue dashed lines on an aerial map in Figure 1.3.

### **1.4 IMPORTANCE OF THIS STUDY**

This study is important because it is aimed to study the water quality of Paya Indah and to suggest ways to improve the water quality back to its original condition if possible. The study will include performing calculation of Water Quality Indexes (WQI) and analysis on each parameter. Through the analyses, certain problems could be identified such as areas that recorded poor water quality, parameters that cause water quality degradation and factors leading to the condition.

From the analyses and identification of these parameters ~~problems~~, corrective actions could be suggested to improve Paya Indah water quality. The areas that had been observed to have poor water quality should be given serious attention. Priority should be given to the areas that have the worst water quality represented by low WQI. Then,

the parameters that had been identified causing water quality degradation should be given due attention, by curbing the factors that cause degradation of these parameters respectively. Paya Indah is known as a sensitive area and an important habitat for migratory birds and waterfowls for their shelter, foraging and breeding ground. Besides, Paya Indah also has a remarkable landscape thus having the potentials to become becoming an ecotourism park. This could attract tourists, especially nature-lovers and birdwatchers. Thus the outcome from this study may facilitate the rehabilitation works on Paya Indah as improvement of Paya Indah water quality could improve its ecosystem.

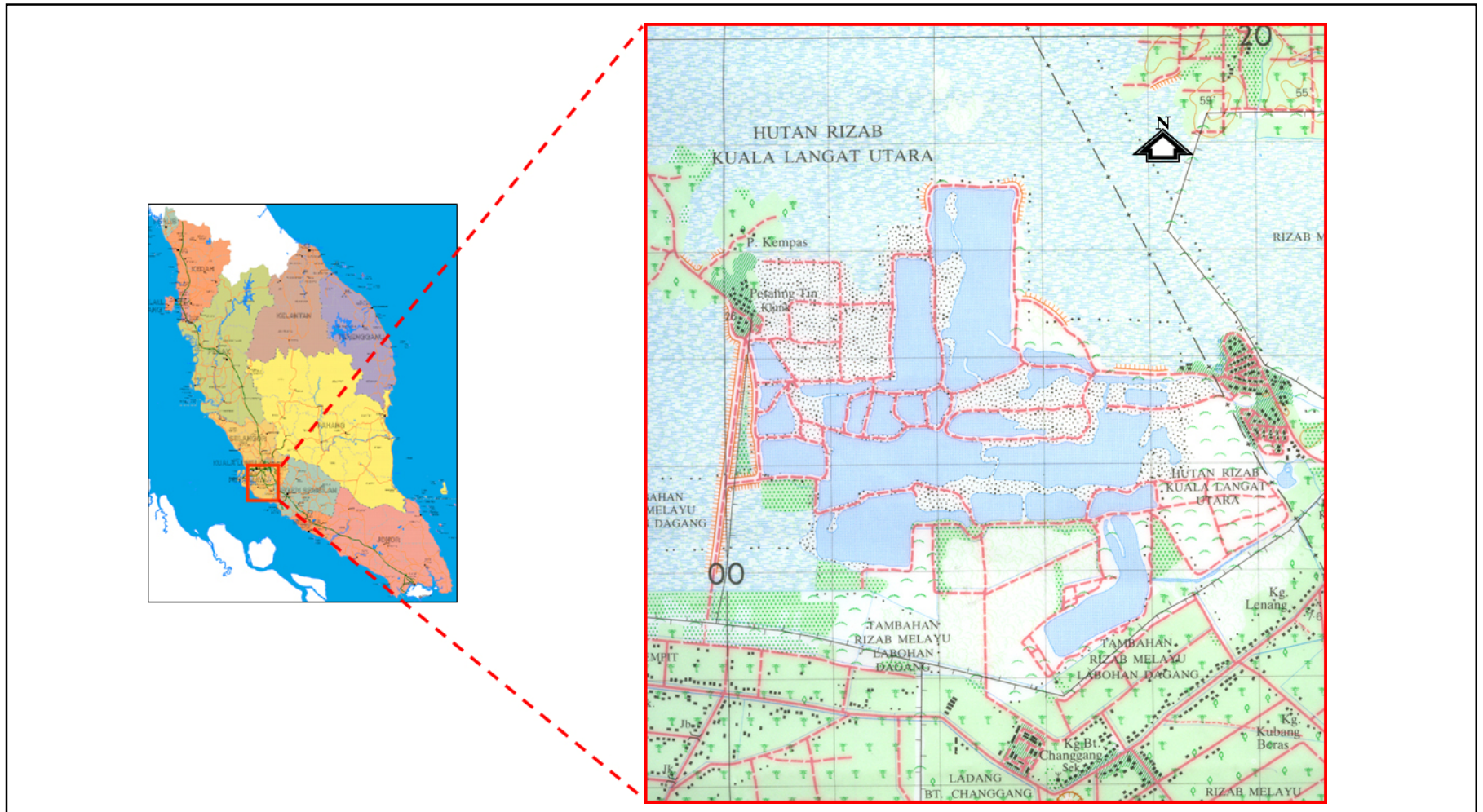


Figure 1.1: Location of Paya Indah Wetlands

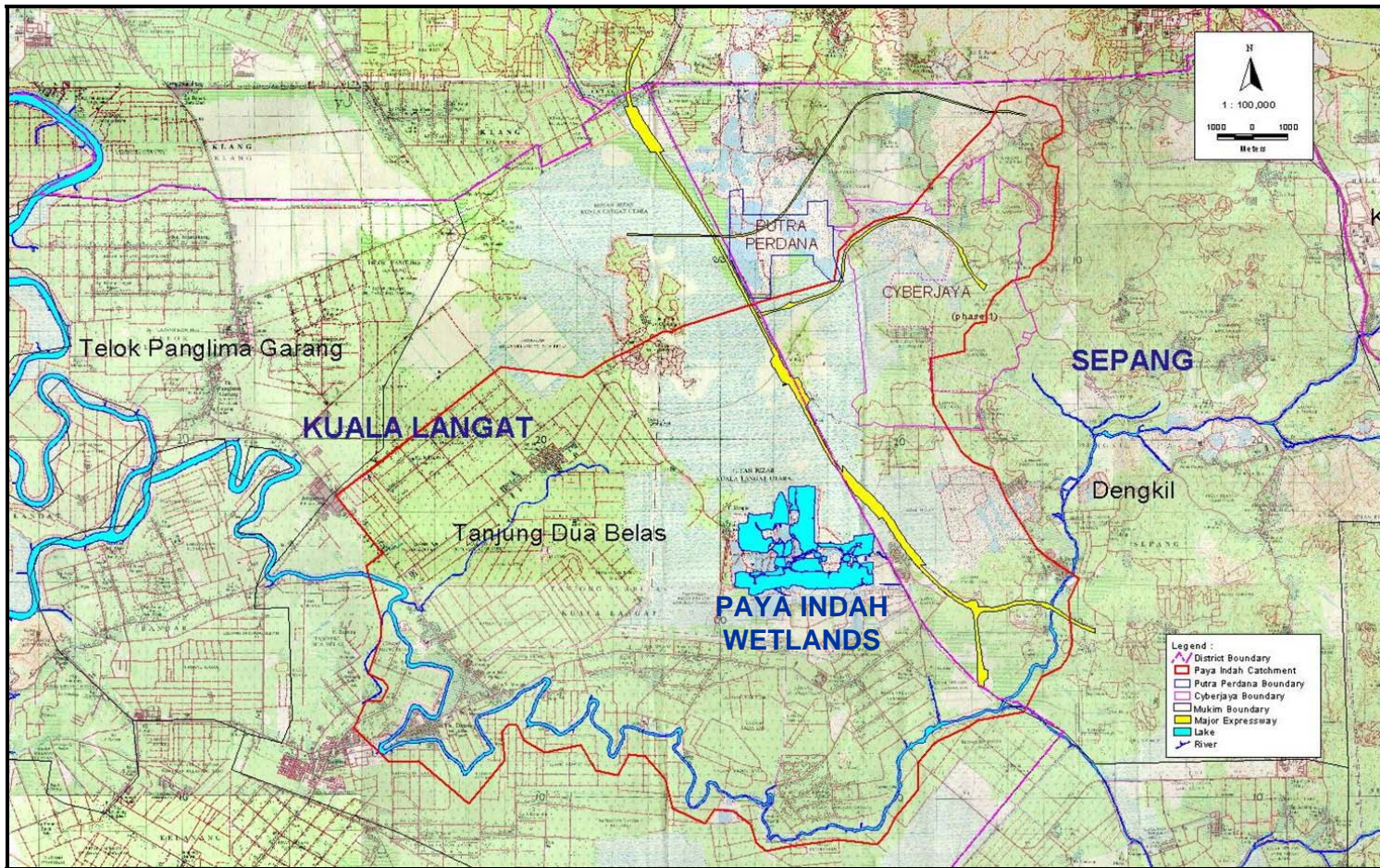


Figure 1.2: Raster map of Paya Indah  
 Source: DNASB, 2001



Figure 1.3: Aerial view of Paya Indah. Study area demarcated with dashed blue lines  
*Source: Google earth.com, accessed on 3/1/2007*