

UNIVERSITI TEKNOLOGI MARA

**ANALYSIS OF DISTRIBUTION
WATER OUTLET AT SUNGAI
PERLIS**

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ABSTRACT

Sungai Perlis is Perlis' fourth-longest river, running for 11.8 kilometres straight to the Kuala Perlis estuary. Sungai Perlis has 1,001 unique and beautiful scenery along the route that has a lot of potential to be developed as a tourist attraction. Therefore, the Sungai Perlis is likely to be threatened by water pollution. Water pollution happens when harmful substances, most commonly chemicals or microorganisms, contaminate a stream, river, lake, ocean, aquifer, or other body of water, lowering water quality and making it toxic to humans or the environment. (Melissa Denchak, 2018). The study aim is to analyse the GIS smart mapping for water pollution contributed by water outlet using GPS monitoring along Sungai Perlis. The GPS is responsible agencies to monitor Sungai Perlis, but they are not well implemented the best monitor of water pollution at Sungai Perlis, but new technologies using the GIS approach are also attempting to solve this problem. Currently, many of the outlets established along the river come from the residential areas, restaurants, or street food, as well as rapid development. The objective of this study is to determine water pollution by outlet at Sungai Perlis and to analyse water pollution by water outlet with GIS smart mapping at Sungai Perlis. ArcGIS software is used to process data to accomplish the objective. The method for assessing pollution sources was developed by integrating GIS, databases, and pollution loads in the study area using GPS monitoring. Water samples were also collected manually from the culverts at Sungai Perlis. The water samples were then tested at the Chemistry Laboratory at UiTM Arau's Star Complex in Perlis. Lastly, the expected outcome of this research is to produce a digital mapping of GIS smart mapping to show an analysis of the water pollution caused by Sungai Perlis's water outlet.

Keywords: *Sungai Perlis, Water Pollution, Water Outlets, GIS, GPS Monitoring*

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

The smallest city in Malaysia, Perlis is bordered to the north by Thailand and to the east and south by Kedah. It is situated at the northwest tip of Peninsular Malaysia. The Melaka Straits encircle its western shore. The nights may get chilly as the sun rises, but the days are hot and windy. (Malaysian Meteorological Department (MMD), 2011).

As shown in fig. 1.1, Sungai Perlis, the fourth-longest river in the state, was one of the community's earliest commercial routes and settlements. Sungai Perlis covers 724,398 km². 350 km² make up the catchment area of Sungai Perlis, which is 9.6 km long. The river flows through Perlis from Bandar Kangar to Kuala Perlis and is situated in latitude 6.40° and longitude 100.13° in the northwest of Peninsular Malaysia. As it approaches Kuala Perlis from the Malaysia-Thailand border, Sungai Perlis. Sungai Perlis now serves as a hub for the public to congregate and partake in leisure activities, particularly at Denai Larian, Perlis.



Figure 1.1: Sungai Perlis

In Malaysia, water pollution is a major issue that threatens the long-term viability of water resources. In addition, it also gives effects for plants and organism living, people's health and the country's economy. However, water pollution reduces total water