

NUR' AINI NATASYA BINTI ROSLE

BACHELOR OF SURVEYING SCIENCE AND GEOMATICS (HONOURS)

AUGUST 2023

STORY MAP OF BIRD MIGRATION SPECIES IN MALAYSIA USING  
GEOGRAPHICAL INFORMATION SYSTEM (GIS)

NUR'AINI NATASYA BINTI ROSLE

2021615274



COLLEGE OF BUILT ENVIRONMENT  
UNIVERSITI TEKNOLOGI MARA  
PERLIS

AUGUST 2023

**STORY MAP OF BIRD MIGRATION SPECIES IN  
MALAYSIA USING GEOGRAPHICAL INFORMATION  
SYSTEM (GIS)**

**NUR'AINI NATASYA BINTI ROSLE**

**2021615274**



**Thesis submitted to the Universiti Teknologi MARA Malaysia  
in partial fulfilment for the award of the degree of the  
Bachelor of Surveying Science and Geomatics (Honours)**

**AUGUST 2023**

## DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

In the event that my project/dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree of the Bachelor of Surveying Science and Geomatics (Honours) and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

Name of Student : Nur' Aini Natasya binti Rosle  
Student's ID No : 2021615274  
Project/Dissertation Title : Story Map of Bird Migration Species in Malaysia using Geographical Information System (GIS)  
Signature and Date :  
  
8/8/2023

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the School and University and fulfils the requirements for the award of the degree of Bachelor of Surveying Science and Geomatics (Honours).

Name of Supervisor :  
Signature and Date :

## ABSTRACT

Migratory birds are one of nature's great wonders. There are more than 15,000 birds that migrate in Malaysia. For their survival throughout the winter, these birds travel up to 10,000 kilometers across the continent each year from the northern hemisphere. Migratory birds have often visited Malaysia throughout the annual roosting season from November to March. This map presents an exploration of bird migration patterns in Malaysia using Geographical Information System (GIS). The aim of this study is to develop the storymap of bird migration for Malaysia in order to facilitate the analysis of the migratory birds. Meanwhile, the objectives of this study is to collect the data of the bird's migration from related government source of bird and online resources, to develop a GIS story map of bird migration, and to validate the output of the storymap's features. This story map is created through a methodical process of data collection, analysis, and visualization using GIS technology. The dataset was obtained from eBird website from year 2018 to 2022 and BirdLife International. The process of bird species has been processed by using ArcGIS Pro while the story map is by using ArcGIS Storymap. The map shows the analysis of the hotspot area of migratory bird in Malaysia. The mapping and analysis of bird migration provides important insights into the management and conservation of bird populations in Malaysia. The findings from this study can assist in identifying species that are more vulnerable to challenges such as habitat loss, climate change, and human disturbance and may require tailored conservation efforts to ensure their existence.

***Keywords: bird migration, story map, GIS, Malaysia, ArcGIS StoryMaps***

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	<b>DECLARATION</b>	ii
	<b>ABSTRACT</b>	iii
	<b>ACKNOWLEDGEMENT</b>	iv
	<b>TABLE OF CONTENT</b>	v
	<b>LIST OF FIGURES</b>	ix
	<b>LIST OF TABLES</b>	xi
	<b>LIST OF ABBREVIATIONS</b>	xii
<b>1</b>	<b>INTRODUCTION</b>	
	1.1 Introduction	1
	1.2 Background Study	1
	1.3 Problem Statement	2
	1.4 Research Question	3
	1.5 Aim	3
	1.6 Objectives	3
	1.7 Scope and Limitations	4
	1.8 Data Acquisition	4
	1.9 Summary	5
<b>2</b>	<b>LITERATURE REVIEW</b>	
	2.1 Introduction	6
	2.2 Bird Migration	6
	2.2.1 Migration Patterns	7
	2.2.2 Hotspot Place of Bird Migrates in Malaysia	7
	2.2.3 Diversity of Birds	8
	2.2.4 Rarity of Bird Species in Malaysia	10
	2.2.5 Endangered Bird Species in Malaysia	11