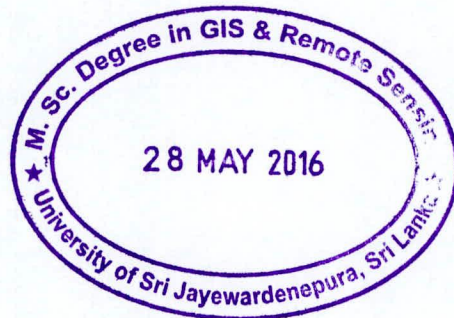


**Challenges in Conservation of Archaeological Sites and  
Monument in the North Central Province**

**By**

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Jayewardenepura For the Partial Fulfillment of Master's of Science Degree  
in GIS and Remote Sensing on 20<sup>th</sup> March 2016

## DECLARATION OF THE CANDIDATE

I do hereby declare that work described in this thesis was carried out by me under the supervision of Prof.R.M.K. Ratnayake and, Mr. C.L.K. Nawarathne and report on this thesis has not been submitted in whole or in part to any University or any other institution for another Degree/Diploma.

Date ..... 20/03/2016 .....

.....  .....

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# **Challenges in protection in Archaeological Sites and Monument in the North Central Province**

**H.K.S.N. Jayasinghe**

## **ABSTRACT**

Sri Lanka is a significant country in the world, because of the archaeological ruins. Archaeological monuments and places of interest for the history of thousands of years can be seen today. Today, the ruins of a severe deterioration due to human activities. It another way, a challenging problem since ancient times. This is a challenge hard to protect antiquities in Sri Lanka. Despite these challenges, we continue to implement strict laws. The four parts are key challenges, to secure the archaeological sites and monuments. Those are theft of antiquities, destruction of antiquities, illegal quarrying and other mistakes. That falls under the Antiquities Act in year 2002. Although important to cover the legal action by the Antiquities Ordinance. It is still underway. The problem analyze carried out of this research using Geographic Information System.

The challenging nature of the geographical spread of the situation to identify the main aim. Antiquities Law, the infringement will affect other global variables and the role, identifying the spatial distribution of the common objectives and more. So another way, new Geographic Information System tools in archeology in Sri Lanka, it is designed to be used correctly.

This research is important to carry out this analyze using the Geographic Information System. Archaeological violation cases as the main incident variables, the analysis in this regard. That is, the location of archaeological sites and regional offices, police stations, and population data, poverty, variables such as the expansion of the road network is used for this analyze. We used Arc GIS 10.3 software for purpose of Identify The Challenges Of Archaeological Sites And Monument In The North Central Province. The spatial statistics,

Data management tools, spatial Analyst tools are used in this scenario. Therefore, Maps and Tables are shown at the end of the analyze.

Recognizing the relationship between population and violations of Antiquities, the main road network, distribution and variability issues and the relationship between the mode has been Poverty. Furthermore, the overall distribution of the events and the locations of the archaeological zonal office, the locations of police stations, the analysis has been done.

### **Key Words**

GIS, Archaeology, Unauthorized Excavations, theft of Antiquities, Destruction of Antiquities,



# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Archaeological sites and monuments reveals the history of a country. “Archaeology is a source of essential data regarding the fundamental nature of human societies.”

Kintigh KW, (2013)

Heritage sites consists of renovated monuments, restored edifices, preserves, ruins and historical sites yet there are numerous places and monuments which are still to be identified. “The department of Archaeology is responsible for 250,000 archaeological sites, and ensuring the security of every single site is no easy task.” (The Sunday Times ,2014)

There are various Natural and environmental challenges faced when protecting archaeological sites and monuments but challenges related to human activities surpasses the rest. For example, development projects, population, income level, etc.

The research is done by Analyzing and describing of multi-subject basis. The challenge here is trying to identify the use of GIS which was initially used in the archeology field.

Here are some special reasons to select the North Central Province for this study. This province is said to be rich in numerous pre-historical and historic sites. Anuradhapura and Pollonnaruwa which are the first capital cities of Sri Lanka are also found in this area. Since these monastic cities consists of a very long history including constructions built long time back, and since it has a high impact of human activities this research is thus important to the North central province which is rich in historic value. Today we have to deal with a number of challenges when protecting these archaeological sites. Poverty, improper land use and various other disturbing human activities which increases along with the population can be listed as one of the main challenges faced. an example for a destructive human activity would be people using ancient stones with historical value for foundation to build houses.



The impact of adverse weather conditions is also considered as a challenge. Heavy rainfall and Temperature or other factors could cause damage to these Archaeological monuments. For example, coastal erosion has been compromised “**Pothuwil Muhudumaha Viharaya**” archaeological sites in Eastern province of Sri Lanka.

“The sand hill about 450 meters in length and 300 meters in width and a height of about 10 meters, and the archaeological evidence cannot find any way to the level of the sand dunes being heaped. Day by day, the wind blows from the mainland towards the site facing the East coast beach sand mountain is growing” (Excavation Report:14, 2013).

Floods also challenged various monuments. Examples for Deegawapiya stupa, Owagiriya Sthupa, Somawathi stupa in Eastern province of Sri Lanka.

“Then realize that the second development stage, environmentally floods have replaced the courtyard stupa may be due to hazard” (Excavation Report of , 2013) Anuradapura and Polonnaruwa are two main administrative districts in Sri Lanka. Anuradapura district covers an area 7128 sq km land side while Polonnaruwa district covers an area 3403 sq km. There are 29 Divisional Secretariat Divisions in the North Central Province. More than 800 archaeological sites have been identified in this province while there are many unknown and places which are yet to be included in the gazette.

The department of Archaeology of Sri Lanka works to protect the antiquities in these areas. One example for this would be the establishment of a security police division to protect antiquities

The Archaeological Department has divided the North central province into several zones as follows,

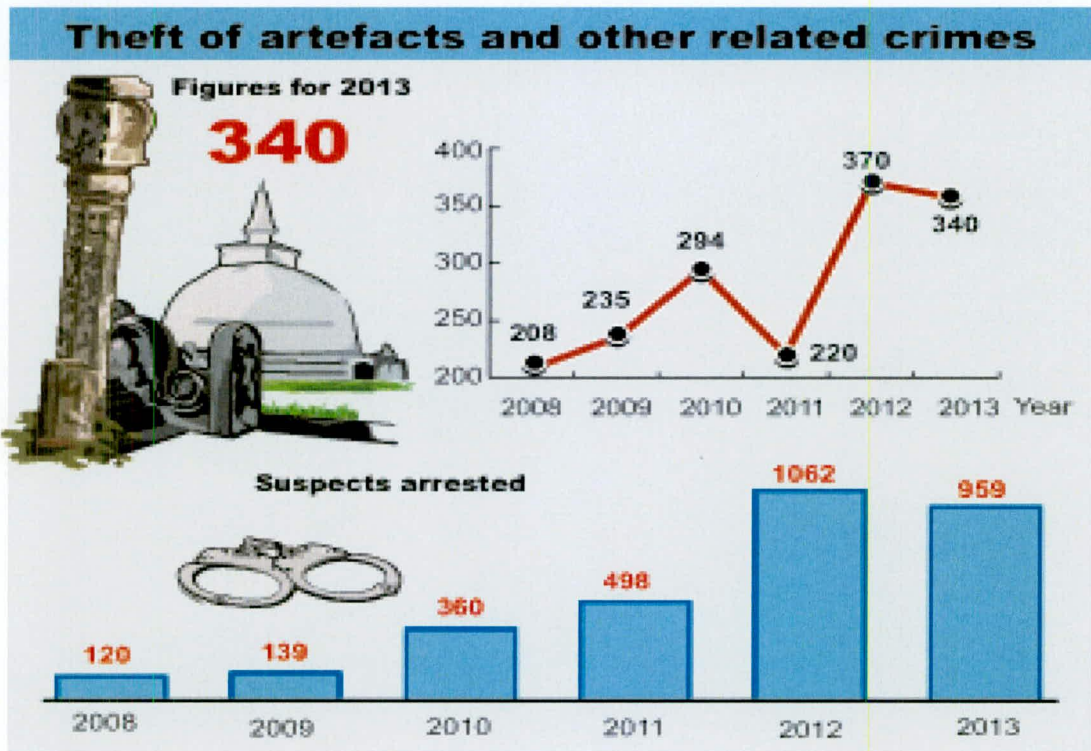
Table 1.1 Archaeological Zone in North Central Province

<b>Zone Number</b>	<b>Zone Name</b>
01	Padaviya zone
02	Kok Ebe zone
03	Mihintale zone
04	Anuradhapura zone
05	Anuradhapura special zone
06	Thanthirimale zone
07	Ritigala zone
08	Medirigiriya zone
09	Polonnaruwa special zone
10	Polonnaruwa zone
11	Dimbulagala zone

source : Department of Archaeology, Sri Lanka

This division into zones has been able to minimize certain administrative challenges faced when protecting artifacts. Also a special police unit has been established to prevent the destruction of antiquities. However, it is sad to mention that even with all these actions taken by the archeological department the number of crimes has increased in 2013 and that the challenges have been growing during the past years.

Figure 1.1 theft of artifact and other related crimes



Source :<http://www.sundaytimes.lk>

“The role of the archaeological resource, archaeologists, and more generally cultural heritage, in ‘development’ has become an increasing concern of the archaeological discipline and has been the topic of some recent conferences(13th ICOMOS Annual International Symposium: May 2010).

GIS and easy to use time for this kind of data analysis tasks. Archeology and GIS correlation between being more widely. “geographic information systems require two descriptors to describe the real world. attribute records what is present while location records where it is (Worboys,1995). the locator descriptor is what sets GIS apart from other data base systems. More importantly here, it requires a concept of what space is and a means of describing it.” (James Conolly, Mark Lake, 2015)

Currently, GIS facility in used for archaeology. GIS or geographic information system has become an important tool the past 10 years. indeed archaeologists were some of the early adopters, users and developers of GIS and archaeology has been considered a perfect match, since archaeology often involves the study of the spatial dimension of